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Nine Dubious “Dead Sea Scrolls” Fragments from the Twenty-First Century

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Abstract

In 2002 new “Dead Sea Scrolls” fragments began to appear on the antiquities market, most of them through the Kando family. In this article we will present evidence that nine of these Dead Sea Scrolls-like fragments are modern forgeries.

Keywords

Dead Sea Scrolls – publication of Judaeen Desert manuscripts – forensic analysis – palaeography – early Jewish scribal practices – antiquities markets – forgery – papyrology

1 Introduction

This study is an analysis of nine fragments that were withheld from *Gleaning from the Caves*, the official publication of scrolls and artefacts in The Schøyen Collection:¹ MS 4612/2a (DSS F.103 [Exod3] = Exod 3:13–15), MS 4612/2b (DSS F.104 [Exod4] = Exod 5:9–14), MS 4612/2c (DSS F.105 [Exod5] = Exod 16:10), MS 4612/6 (DSS F.126 [En3] = 1 En. 106:19–107: 1), MS 4612/8 (DSS F.124 [En1] = 1 En. 7:1–5), 4612/10 (DSS F.112 [Sam1] = 1 Sam 2:11–14), MS 4612/12 (DSS F.125 [En2] = 1 En. 8:4–9:3), MS 5234 (DSS F.123 [Tob1] = Tob 14:3–4), and MS 5426 (DSS F.122 [Neh1] = Neh 3:14–15). These fragments contain a number of suspicious features that led the volume editors to remove them from this publication, and to subject them to a battery of additional physical tests on the premise that they appear to be modern forgeries.² The editors alluded to numerous problems with a handful of fragments published in *Gleanings from the Caves*, but these were allowed to remain in the volume because any decision with regards to their authenticity was at the time inconclusive.³ It is important

1 Torleif Elgvin with Kipp Davis and Michael Langlois, eds., *Gleanings from the Caves: Dead Sea Scrolls and Artefacts from The Schøyen Collection*, LSTS 71 (London: T&T Clark, 2016).

2 Ira Rabin, “Material Analysis of the Fragments,” in Elgvin, Davis and Langlois, *Gleanings from the Caves*, 62 n.1.

3 Cf. Michael Langlois’s general comments regarding palaeographic anomalies in several fragments from The Schøyen Collection: “The quality of the script is often correlated to that of the skin. While the skilled hands of MS 4612/3 (Eschat.Frg.) or MS 4611 (Lev), for instance, benefit from a smooth surface, the naive hands attested on many manuscripts are worsened by the use of parchment with a rough surface ... the lack of affinities with Qumran scrolls leads me to suggest that those fragments, if authentic, may well come from a previously unknown location;” Langlois, “Palaeographical Analysis of the Dead Sea Scrolls in The

to point out that a number of fragments published in *Gleanings from the Caves* and elsewhere may also not be authentic.⁴

Several of the fragments presented here are known to the scholarly community and have been previously published, prior to their purchase by Martin Schøyen. In 2004 Esther and Hanan Eshel published a preliminary edition and discussion of MS 4612/12 based on a photograph they received from antiquities dealer Bruce Ferrini (see further below in Section 2).⁵ MS 5234 was published by Michaela Hallermayer and Torleif Elgvin in 2006.⁶ The existence of MS 5426 was made public when James H. Charlesworth released a preliminary report and a photograph online in 2008.⁷ Subsequently, Emanuel Tov designated this fragment X25=XNeh in his *Revised List of Texts from the Judaean Desert*,⁸ leading to Armin Lange’s reference to it in *Handbuch der Textfunde*

Schøyen Collection,” in *Gleanings from the Caves*, 124. Langlois also described the hand of MS 4612/11 along with a number of others as “hesitant,” and noted “inconsistencies” in the script. Fragment editor Torleif Elgvin, “MS 4612/11. 4Q(?)Prov (Prov 4.23–5.1),” in Elgvin, Davis and Langlois, *Gleanings from the Caves*, 239, made similar even more pointed observations to suggest the possibility that MS 4612/11 might not be genuine, but ultimately concluded that “there is insufficient evidence to make any firm judgments about the authenticity of the text.”

- 4 These suspicions extend to non-provenanced fragments in other private collections including those belonging to the Museum of the Bible, published in *Dead Sea Scrolls Fragments in the Museum Collection*, ed. Emanuel Tov, Kipp Davis, and Robert Duke, Publications of Museum of the Bible 1 (Leiden: Brill, 2016). Also cf. *Biblical Manuscripts at Azusa Pacific University and The Institute for Judaism and Christian Origins*, ed. James H. Charlesworth and William Yarchin, PTS DSSP, Suppl. Vol. (Tübingen: Mohr Siebeck; Louisville, KY: Westminster John Knox Press, forthcoming). Davis discusses in greater detail the troubling corresponding features of many published fragments from The Schøyen Collection and the Museum of the Bible in this issue, see “Caves of Dispute: Patterns of Correspondence and Suspicion in the Post-2002 ‘Dead Sea Scrolls’ Fragments.” Cf. comments by Elgvin, “Texts and Artefacts from the Judaean Desert in The Schøyen Collection: An Overview,” in Elgvin, Davis and Langlois, *Gleanings from the Caves*, 52 n.10: “The appearance of the scripts in a number of Schøyen fragments exhibits a conspicuous nonuniformity in letter sizes, forms, and ductus, in line spacing and word spacing. This is true for MS 4612/5 (Num), MS 5214/1 (Deut 6), MS 5214/2 (Deut 32), MS 5480 (1 Sam 5), MS 5233/1 (2 Sam 20), MS 5233/2 (Ps), MS 5440 (1 Kgs), MS 5441 (Ruth).”
- 5 Esther Eshel and Hanan Eshel, “A New Fragment of the Book of the Watchers from Qumran (XQpapEnoch),” *Tarbiz* 73 (2004): 171–79 [Hebrew]; v [English Abstract]; idem, “New Fragments from Qumran: 4QGen^f, 4QIsa^b, 4Q226, 8QGen, and XpapEnoch,” *DSD* 12 (2005): 134–57. The odyssey of MS 4612/12 is traced in a forthcoming study by Årstein Justnes and Torleif Elgvin, “A Private Part of Enoch: A Forged Fragment of 1 Enoch 8:4–9:3.”
- 6 Michaela Hallermayer and Torleif Elgvin, “Schøyen ms. 4234: Ein neues Tobit-fragment vom Totem Meer,” *RevQ* 22/3 (2006): 451–61.
- 7 www.ijco.org/?categoryId=28681 (accessed 26 October 2008). This web page is no longer active, but can be accessed through <http://archive.org/web/>.
- 8 Emanuel Tov, *Revised List of Texts from the Judaean Desert* (Leiden: Brill, 2010), 110.

vom Totem Meer.⁹ Michael Langlois set his primary focus on MS 4612/8 in a study of 1 En. 7:4 that was published in *Semitica* in 2013.¹⁰ Significantly, these four fragments have become integrated with datasets, erroneously affecting textual studies of Nehemiah, Tobit and 1 Enoch.¹¹

The results of physical tests conducted on the nine aforementioned fragments from The Schøyen Collection are presented below, following a description of method, a short overview of forged manuscripts and artefacts acquired on antiquities markets, and the private sale and publication of Dead Sea Scrolls-like fragments since 2002.

2 Review of Dead Sea Scrolls Purchases by The Schøyen Collection

The Schøyen Collection was the only private collection to successfully obtain Judean Desert fragments in the 1990s. The first acquisitions were minor fragments purchased from Louise Brownlee and the John C. Trever family in 1994. In March 1993 Martin Schøyen approached Kando in Jerusalem about the possibility of purchasing scroll fragments that might still be available. Kando's response as it is recorded by Schøyen was abrupt and clear: "Those days are gone!"¹² Schøyen goes on to write that within a few months after Kando's death the same year he inquired of his sons—William and Edmond Kando—whether there might still be fragments present within the extended family or among the heirs of their father's early customers.¹³

This second question might explain how probably authentic fragments were sold to The Schøyen Collection by the Kando family in the period 1999–2003.¹⁴

9 Armin Lange, *Handbuch der Textfunde vom Totem Meer*, vol. 1 of *Die Handschriften biblischer Bücher von Qumran und den anderen Fundorten* (Tübingen: Mohr Siebeck, 2009), 523–24.

10 Michael Langlois, "Un manuscrit araméen inédit du livre d'Hénoch et les versions anciennes de 1 Hénoch 7,4," *Semitica* 55 (2013): 101–16.

11 I.e., Prof. Tov's *Revised List* furnished the basis for Martin Abegg's inventory of electronically tagged texts that forms the most recently updated modules of Qumran Biblical texts in Accordance ("Dead Sea Scrolls Biblical Corpus" = DSSB—M/C), and Logos Bible Software.

12 Martin Schøyen "Acquisition and Ownership History: A Personal Reflection," in Elgvin, Davis and Langlois, *Gleanings from the Caves*, 27.

13 Schøyen "Acquisition and Ownership History," 29.

14 E.g. MS 2713 Mur/HevJosh; MS 2861 XJudg; MS 4612/1 Hev(?)Joel; MS 4611 Mur/HevLev; MS 4612/3 Eschat. Text ar; MS 5095/1 and 5095/4 11QT^a scraps, 11QUnidentified Fragments. Cf. Elgvin, "MS 4611. Mur/HevLev (Lev 26.3–9, 33–37)," "MS 2713. Mur/HevJosh (Josh 1.9–12;

But the terseness of the prior verdict delivered by Kando himself should raise serious doubts about the large number of Judaean Desert fragments that has poured onto the market since 2003, and especially since 2009.¹⁵ In 2002 Hershel Shanks profiled Schøyen as a collector keen on buying more fragments, and effectively announced to the public that he was “open for business”: “If you have a Dead Sea Scroll for sale, you should get in touch with Martin Schøyen [...] in Oslo. He is a prime prospect. He already owns several Dead Sea Scroll fragments—making him one of the few individuals in the world (I can think of only one other) who owns Dead Sea Scroll material.”¹⁶ One may wonder whether Schøyen’s quest for DSS fragments inspired also modern scribes.

In 2003–2004¹⁷ Schøyen bought eight fragments, four of those featured in this study (MS 4612/2a–c, MS 5234), plus MS 5214/1 (DSS F.Deut5), MS 5233/1 (DSS F.Sam3), MS 5233/2 (DSS F.Ps2), and MS 4612/3 (DSS F.Eschat ar).¹⁸ In the same time period the American antiquities dealer Lee Biondi published photographs of a number of fragments in American exhibition catalogues;¹⁹ one of which was later added to The Schøyen Collection (MS 4612/2b).

2.3–5,” “MS 4612/1 Hev(?)Joel (Joel 4.1–5),” in Elgvin, Davis and Langlois, *Gleanings from the Caves*, 159–68, 185–92, 223–32; Esther Eshel, Hanan Eshel and Årstein Justnes, “XJudg with MS 2861 (Judg 4.5–6),” in *Gleanings from the Caves*, 193–202; Esther Eshel, “MS 4612/3. 11QT(?)Eschatological Fragment ar,” in *Gleanings from the Caves*, 295–98; Elgvin and Kipp Davis, “MS 5095/1, MS 5095/4. Wads from 11QT^a, Unidentified Fragments from Cave 11,” in *Gleanings from the Caves*, 301–8.

15 Eibert Tigchelaar and Årstein Justnes have documented around forty fragments sold to four private collections, and thirty more said to still be the property of the Kando family. Cf. Tigchelaar, “A Provisional List of Unprovenanced, Twenty-First Century, Dead Sea Scrolls-like Fragments” (*DSD* 24 (2017): 173–88); Justnes, “A List of 75 Unprovenanced, Post-2002 Dead Sea Scrolls-like Fragments,” *The Lying Pen of Scribes*, *lyingpen.com*. Released August 11, 2016. <https://lyingpen.com/2016/08/11/a-list-of-70-unprovenanced-post-2002-dead-sea-scrolls-like-fragments/>

16 Hershel Shanks, “Scrolls, Scripts and Stelae: A Norwegian Collector Shows BAR His Rare Inscriptions,” *BAR* 28/5 (2002): 24–34.

17 The following is based on personal communication by Martin Schøyen, recently with Torleif Elgvin.

18 The Schøyen Collection exhibited MS 4612/2a–c and MS 5234 along with a number of other manuscript fragments and artefacts at the Nordic Network in Qumran Studies conference in Oslo in June 2004.

19 Lee Biondi, *From the Dead Sea Scrolls to the Forbidden Book: A Brief History of the Bible Told Through Ancient Manuscripts & Early Printed Bibles* (Dallas: HisStory, 2003); idem, *The Dead Sea Scrolls to the Bible in America: A Brief History of the Bible From Antiquity to Modern America: Told Through Ancient Manuscripts and Early European and American Printed Bibles* (Phoenix: Biblical Arts of Arizona, 2004). Subsequently Esther and Hanan

In November 2008 one of William Kando's go-betweens obtained from Kando a list of sixteen Judean Desert fragments that were available for sale.²⁰ Two of these fragments were subsequently acquired by The Schøyen Collection (MS 4612/8, MS 4612/12). In 2009–2010 sixteen more fragments were added, either by way of direct purchases or in the form of gifts from William Kando, or were purchased from other, anonymous private collectors with whom Martin Schøyen's contact was facilitated by the Kandos. Late February and early March 2009 Schøyen approached William Kando about the possibility of acquiring fragments containing text belonging to specific books: Nehemiah, Chronicles, Ezra, 2 Kings, 1–2 Samuel, Proverbs, Qohelet, Esther, Jeremiah, and 1 Enoch. And the same year he was able to obtain MS 5426 (Nehemiah),²¹ MS 4612/10 and MS 5480 (1 Samuel), MS 4612/9 (DSS F.Jer1), MS 4612/11 (DSS F.Prov1), as well as two papyri and a parchment fragment containing text from 1 Enoch (MS 4612/6, MS 4612/8, MS 4612/12). In addition to these fragments Schøyen also purchased MS 4612/4 (DSS F.Gen1), MS 5214/2 (DSS F.Deut6), and MS 4612/5 (DSS F.Num1). In 2010 he acquired MS 5439/1 (DSS F.RP1 + DSS F.Unident), MS 5441 (DSS F.Ruth1), MS 5440 (DSS F.Kings1) and MS 5095/7 (DSS F.CommGen). Five of the 2009–2010 purchases are featured in this study.

By this time more buyers appeared on the market. From 2009 to 2014 twenty-eight fragments were sold by William Kando to Southwestern Baptist Theological Seminary,²² Azusa Pacific University, the Lanier Theological Library, and Museum of the Bible.

Eshel published preliminary editions based on these photographs as well as photographs provided by Bruce Ferrini; see Hanan Eshel, "The Fate of Scrolls and Fragments: A Survey from 1946 to the Present," in Elgvin, Davis, and Langlois, *Gleanings from the Caves*, 43–44. For the editions, see Eshel and Eshel, "New Fragments from Qumran."

- 20 Three of the sixteen fragments form a group that contains large sections of Genesis 37–38. From the same list six fragments (Exod 23:8–10; Lev 20:24, 18:28–30; Deut 9:25–10:1; Deut 12:11–14, and Dan 6:22–24 [papyrus]) were later acquired by Southwestern Baptist Theological Seminary.
- 21 MS 5426 was first published in July 2008 by James H. Charlesworth on his webpage, and a picture of it appeared in Biondi's 2009 catalogue, *From the Dead Sea Scrolls to the Bible in America: A Brief History of the Bible From Antiquity to Modern America: Told through Ancient Manuscripts and Early European and American Printed Bibles* (Camarillo, CA: Legacy Ministries International, 2009). According to Martin Schøyen this fragment came to The Schøyen Collection from an American collection that earlier had bought it from the Kandos.
- 22 Armour Patterson, *Much Clean Paper for Little Dirty Paper: The Dead Sea Scrolls and the Texas Musawama* (Collierville, TN: Innovo Publishing, 2012); Gary and Stephanie Loveless, *Dead Sea Scrolls & the Bible: Ancient Artifacts, Timeless Treasures* (Forth Worth, TX: Southwestern Baptist Theological Seminary, 2012).

3 Forgery of “Ancient” Texts and the Dead Sea Scrolls

In the 1950s the first handlers of the DSS became aware of the existence of forgeries. Roland de Vaux included a series of seventeen personal journal entries in the second volume of *Discoveries of the Judaean Desert* (DJD 2), several of which describe attempted sales of forged scroll fragments.²³ Several non-provenanced asserted Second Temple Jewish inscriptions (*Vision of Gabriel*, the James Ossuary, etc.) have surfaced over the course of the past fifteen years. During those years a number of antiquities have either been exposed as forgeries, or barely withstood serious questions regarding their authenticity (e.g. the Ivory Pomegranate, the Moussaieff ostraca, the Jehoash Inscription, the James Ossuary, the infamous Secret Gospel of Mark, the so-called “Gospel of Jesus’s Wife” fragment and its “sister-in-law,” a forged fragment of the Gospel of John).²⁴ In spite of these controversies the entrance of unprovenanced material into scholarly discussions continues, often without rigorous review of provenancial claims.²⁵ The persistence of this problem points to the existence of forgers with the skills, means and requisite motivation to produce highly credible fakes, and this should heighten concerns with regard to recent appearances of many Judaean Desert manuscript fragments.²⁶

23 Roland de Vaux, “Historique de découvertes,” in *Le Grottes de Murabba’at: Texte*, ed. Pierre Benoit, Józef T. Milik, and Roland de Vaux, DJD 2:1 (Oxford: Clarendon, 1961), 3–8.

24 See Christopher A. Rollston, “Non-Provenanced Epigraphs I: Pillaged Antiquities, Northwest Semitic Forgeries, and Protocols for Laboratory Test,” *Maarav* 10 (2003): 135–93; Christian Askeland, “Jesus Had a Sister-in-Law,” *Evangelical Textual Criticism Blog*, 24 April 2014, <http://evangelicaltextualcriticism.blogspot.ca/2014/04/jesus-had-ugly-sister-in-law.html>.

25 There is nothing about forgeries in Roger S. Bagnall’s (ed.) voluminous *The Oxford Handbook of Papyrology* (Oxford: Oxford University Press, 2009). Bagnall’s comments concerning the Gospel of Jesus’s Wife fragment that he made to the *New York Times* might be construed as a tacit endorsement of its authenticity: “I don’t know of a single verifiable case of somebody producing a papyrus text that purports to be an ancient text that isn’t. There’s always the first.”

26 Christopher A. Rollston, “The Crisis of Modern Epigraphic Forgeries and the Antiquities Market: A Palaeographer Reflects on the Problem and Proposes Protocols for the Field,” *SBL Forum*, March 2005, <http://sbl-site.org/Article.aspx?ArticleID=370>: “The field has sometimes had the a priori assumption that modern forgers cannot produce ‘good forgeries,’ that is, forgeries that ‘appear ancient.’ However, I would argue that forgers have all of the resources necessary to produce superb forgeries that ‘pass all the tests,’ or at least pass them to the satisfaction of many [...]” While Rollston was diligent to raise awareness of the need for scholarly rigor, he also posited that the corpus of Judaean Desert scroll fragments was free from artifice. See *Writing and Literacy in the World of Ancient Israel: Epigraphic Evidence from the Iron Age* (Atlanta: SBL, 2010), 140.

The primary formal method for authentication of manuscripts has traditionally been comparative palaeography. De Vaux himself recognized the first forgeries he encountered accordingly, and described them consisting of “several lines in awkward square Hebrew characters which don’t make any sense, and are written in modern ink, on an old fragment of skin that didn’t have any writing on it.”²⁷ Based on palaeographical observations Eibert Tigchelaar has been sceptical of a number of “post 2002” fragments from other private collections.²⁸ Suspicions about the fragments featured in this study from The Schøyen Collection arose from similar palaeographic and scribal anomalies. In an effort to supplement and reinforce the findings of these prior palaeographical investigations this article is focused on results from material examination, which probe beyond the mere appearance of antiquity in the script. This study seeks to implement a multidisciplinary approach of investigation using empirical methods alongside historical interpretive methodologies, intuition and aesthetic evaluation, which may allow for credible multi-contextual reasoning.

It is important to acknowledge an ethical dilemma that this task potentially presents: we are ultimately concerned with the expansion and dissemination of knowledge, but are also wary of the benefits detailed documentation potentially provides to enterprising forgers. Nevertheless, we are convinced that the importance of this study outweighs any such potential drawbacks.²⁹

27 De Vaux, “Historique,” 4, translated in Weston W. Fields, *The Dead Sea Scrolls: A Full History: Volume 1, 1947–1960* (Leiden: Brill, 2009), 120.

28 Eibert Tigchelaar, “Dittography and Copying Lines in the Dead Sea Scrolls: Considering George Brooke’s Proposal About 1QpHab 7:1–2,” in *Is There a Text in This Cave? Studies in the Textuality of the Dead Sea Scrolls in Honour of George J. Brooke*, ed. Ariel Feldman, Maria Cioată, and Charlotte Hempel, STDJ 119 (Leiden: Brill, 2017), 297 n.14: “I surmise that DSS F.153 (APU 3) is a modern forgery, imitating 4Q30 5, even up to a similarity of the shapes of some letters.” Cf. also idem, “A Provisional List”; Justnes, “A List of 75 Unprovenanced, Post-2002 Dead Sea Scrolls-like Fragments”; and Tigchelaar, “Notes on the Three Qumran-Type Yadin Fragments Leading to a Discussion of Identification, Attribution, Provenance, and Names,” *DSD* 19 (2012): 198–214, esp. 212 n.47: “The *DSD* fragments [...] are a pastiche of different forms of the letters, as if they were copied by an inexperienced hand from different samples.”

29 On the relationship between the sciences and the academy and the formation of such “anti-epistemologies” which are enshrined in law, cf. Jonathan Ben-Dov and Seth L. Sanders, “Introduction,” in *Ancient Jewish Sciences and the History of Knowledge in the Second Temple Period*, Ancient World Digital Library (online: <http://dlib.nyu.edu/awdl/isaw/ancient-jewish-sciences/chapter1.xhtml#endnote-chapter1-8>; New York: NYU Library, 2014), esp. nn.7, 8. Our thanks to Prof. Sanders for drawing our attention to this important and useful resource.

4 Advantages and Limitations of Physical Testing

To understand better the possible input from material studies for the present question we should consider that archaeometry, conservation and forensic sciences employ material analysis for the study of historical artefacts, though with different aims. The first—archaeometry aims at elucidation of past production processes and use; the second—conservation seeks to protect the artefacts from deterioration while the third—forensics focuses its efforts on identification of forgeries. Traditionally, these disciplines use destructive methods to obtain the necessary information. Unfortunately, the heterogeneity of the archaeological material coupled with the scarcity of suitable reference material results in great difficulty when choosing a representative sample. Industry-driven development of so-called non-destructive technologies (NDT) that do not require extraction of samples seemed to solve this problem. However, non-invasive analysis has its own limitations. A destructive approach may deliver a complete or nearly complete description of a sample composition, contamination, production and deterioration processes using extraction and separation methods. In contrast, a strict NDT approach offers an interpretation resulting from a study of a mixture of components in various stages of deterioration. Combination of high-resolution NDT scanning instrumentation to single out a representative area with considerable reduction of the sample sizes within quickly developing invasive methods have opened a new era in the studies of historical artefacts leading to rapid acquisition of large data sets related to history of materials, plants and animal life.

It is important to point out, however, that material analysis alone—especially its non-destructive variety—cannot offer scientific proof that the object is genuine. The best material analysis can do, after all *appropriate* tests have been conducted, is to announce that nothing has been found to contradict the assumption of genuineness. Moreover, the results of natural analysis can never form the only justification for the authentication in cases of composite objects, such as manuscripts or epigraphs. A certification would always require a mutual corroboration of the claims of the relevant scholars, associating an unquestionable time and place with the unbiased empirical evidence.

Despite great advances in archaeometry, not enough attention has been paid to the construction of a body of knowledge on the writing materials employed in the past centuries comparable with those collected in fields dealing with texts. Therefore, recent improvements in data treatment within radiocarbon dating method make it superior to other material analytics. The fact that its capabilities are reduced to determining the only age of the support should

not discourage users, since it is fairly difficult to obtain non-inscribed pieces of parchment, leather or papyri of an age that would correspond to a given text. DSS though might be an exception since there could be quite a large number of small, non-inscribed pieces of skin. Here, we should emphasize the importance of the sorting the large collection of DSS according to writing surface type, thus establishing the number of those written on true leather as opposed to ancient parchment. The latter were produced by a technology that seems to have disappeared in the first centuries CE.

Currently, non-destructive methods for analysis of inks are reduced to infrared photography and Raman spectroscopy. We do not consider the recent announcement that Raman spectra of the soot inks depend on their age to be well based.³⁰ Our experiments with ancient and modern inks have not managed to confirm this tendency so far. We are currently investigating the possibilities of comparing carbon inks using different methods with the aim of establishing their coincidence within the measurement error. The growing data set on carbon inks used in antiquity together with their geographical occurrence increases our confidence that ink testing will eventually become the decisive factor in identification of forgeries.

In the present case the questions posed are clearly of a forensic nature. Therefore, we confine the presentation of our results to those that identify features incompatible with ancient inscription and, therefore, which undermine suspicions based on anomalies in the text, palaeography and codicology. The rest of the studies complement our database for further comparison of ink compositions and distribution of typical vs. atypical sediments. We sincerely hope that the primary collections of DSS will follow the example set by Martin Schøyen, and that these results will prompt high-resolution physico-chemical study that goes beyond the occasional radiometric dating of material, and is aimed at producing coherent descriptions of each fragment. Such work would lead to grouping fragments according to their properties, for example production technology and type of writing materials, composition of sediments, etc. It is also clear that these steps would in turn render the enterprise of forgery extremely difficult.

The testing presented here was conducted with 3D digital microscopy (Keyence VHX 60 and VHX 5000), electron scanning microscopy (Fei XL30 ESEM and FEI Quanta 200 FEG, both equipped with an EDAX system) and μ -XRF screening (Bruker M6 Jetstream).

30 S. Goler, J. T. Yardley, A. Cacciola, A. Hagedorn, D. Ratzan, and R. Bagnall, "Characterizing the age of ancient Egyptian manuscripts through micro-Raman spectroscopy," *J. Raman Spectrosc.* 47 (2016): 1185–93. doi: 10.1002/jrs.4945.

5 Nine Dubious Fragments: Scribal Tendencies and Common Phenomena

The fragments under discussion in this article contain a handful of troubling common tendencies that have prompted the need for further physical testing. Suspicions about some of these fragments were first raised by Michael Langlois in his January 2014 examination for his palaeographical analysis in *Gleanings from the Caves*.³¹ With regards to MS 5426, Langlois reported: “ink is unusually shiny and visible even where the surface of the skin is gone.” Following this initial report the editorial team gradually began to document unusual features from other fragments in the collection, which ultimately led to their disqualification for publication in the volume and—at the behest of and with support from their owner, Martin Schøyen—the development of new physical tests. The nine fragments under discussion in the following section are MS 4612/6 (1 En. 106:19–107:1), MS 4612/8 (1 En. 7:1–5), MS 4612/12 (1 En. 8:4–9:3), MS 5234 (Tob 14:3–4); MS 4612/2a (Exod 3:13–15), MS 4612/2b (Exod 5:9–14), MS 4612/2c (Exod 16:10), MS 4612/10 (1 Sam 2:11–14), and MS 5426 (Neh 3:14–15).

Eibert Tigchelaar published online a draft copy of a short critical review of the publication of the Schøyen fragments in August 2016. In this paper he made the following pertinent observation regarding the combination of unusually poor writing and omitted manuscript fragments from the volume:

On the basis of the writing, one wonders whether the team of Schøyen editors came to the conclusion that the Nehemiah fragment was a forgery, and therefore did not include this fragment in the volume. But then, did they also have misgivings about the other missing fragments? The lack of any explanation of the absence of the Enoch and the Tobit fragments is remarkable and should be a case for concern. If there are indications or even evidence of possible forgery, one would wish to know the nature of these indications, and likewise, the status of the other fragments that are incorporated in the volume.³²

A number of unusual scribal and textual features have been documented by Kipp Davis in a comparison of the published material from The Schøyen Collection and the 13 Dead Sea Scrolls fragments owned by the Museum of

31 Langlois, “Palaeographical Analysis,” 79–128.

32 Eibert Tigchelaar, “Gleanings from the Caves? Really? On the likelihood of Dead Sea Scrolls forgeries in The Schøyen Collection” (unpublished paper; online: <https://www.academia.edu/s/a7df26bd43/gleanings-from-the-caves-really-on-the-likelihood-of-dead-sea-scrolls-forgeries-in-the-schoyen-collection>), 3.

the Bible (MOTB) in the first volume of their new Brill series, *Dead Sea Scrolls Fragments in the Museum Collection*.³³ Davis has isolated six exceptional scribal and textual characteristics that appear in fragments in both collections:³⁴

- 1) Rudimentary scribal skill: An unusually large number of fragments appear to have been written by fairly unskilled and novitiate scribes, but which also attempt to mimic stylized, formal book hands common among more exquisite “scripture” scrolls.
- 2) Bleeding letters: A handful of fragments contain extensive, stray tendrils of ink that bleed outside of letter frames in a manner that is uncommon among other Judaean Desert manuscripts. This type of bleeding is a product of the especially coarse surfaces of many of the fragments.
- 3) Misaligned lines or letters: Several fragments contain lines of text on top- and bottom-edges that align more closely to the contours of the fragment than they do to straight lines of text in the middle of the fragment.
- 4) Palaeographic anomalies: As Tigchelaar pointed out for one of the unpublished fragments, MS 5426, several other fragments in the Schøyen and MOTB collections contain “a remarkable variety of letter forms, with all kinds of unusual ways in which the letters and even the strokes are written.”³⁵
- 5) Scribal inconsistencies on fragment edges: In much the same fashion as lines on some fragments tend to follow the contour of the edges, so also the appearance of letters are often described as “squeezed in” to fit within the damaged edges of a fragment.³⁶ Davis has also written in his introductory chapter to the MOTB fragments about letters that “conform to damaged portion(s) of the fragment.”³⁷ These are not mere palaeograph-

33 Tov, Davis, and Duke, *Dead Sea Scrolls Fragments*. Cf. Davis, “Caves of Dispute.”

34 Davis has assessed fragments in both publications on the basis of eight criteria: 1) size, 2) colour, 3) condition, 4) scribal skill, 5) letter formation, 6) alignment, 7) palaeographical consistency and 8) textual plausibility. He has posited the coarse condition of a high number of these fragments as “the primary distinguishing characteristic that separates these fragments from the Qumran DSS as well as most of the other Judean Desert manuscripts.” The number used here is a direct reflection of the five scribal criteria in Davis’s analysis and his final criterion, “textual plausibility;” “Caves of Dispute,” 263.

35 Tigchelaar, “Gleanings from the Caves? Really?,” 2–3; cf. also his discussion of MS 5480 on pp. 4–5.

36 Cf. for instance Torleif Elgvin, “MS 5214/1. 4Q(?)Deuti (Deut 6.1–2),” in Elgvin, Davis, and Langlois, *Gleanings from the Caves*, 174.

37 Kipp Davis, “Paleographical and Physical Features of the Dead Sea Scrolls in the Museum of the Bible Collection: A Synopsis,” in Tov, Davis, and Duke, *Dead Sea Scrolls Fragments*, 23.

ic anomalies, but rather irreconcilable scribal inconsistencies that cannot be explained by centuries of post-deposit deterioration experienced by the manuscript.

- 6) Variants: It is unsurprising that many of the fragments in the private collections contain textual variants, as this fits clearly within the matrix of manuscript production of the late Second Temple period. However, it is striking that some fragments “document” for the first time emendations which were only suggested by the BHK or BHS editors in the absence of any corroborating manuscript evidence. Furthermore, what is occasionally odd is the manner and level of agreement that also appears in some of the fragments in terms how closely they align to previously published text editions—such as in the extremely precise correspondence observed by both Tigchelaar and Davis between APU 3 owned by Azusa Pacific University and 4QDeut^c 5 6. Davis has also implicated one of the MOTB fragments, MOTB.Scr. 003175, for how it appears to have reproduced a text-critical mark from the corresponding text of Nehemiah in the 1937 edition of Rudolf Kittel’s *Biblia Hebraica* (BHK).³⁸

As the following section illustrates, all these six features appear with varying degrees and frequency also among the nine fragments from The Schøyen Collection that were withdrawn from the official publication: 1) Tigchelaar has drawn attention to the awkward writing in MS 5426, and this is also a notable feature in MS 4612/2a–c, MS 4612/8, and MS 4612/10; 2) The level of bleeding on the papyrus fragment MS 4612/6 is without comparison even among other non-provenanced fragments from other private collections; 3) MS 4612/2a and MS 4612/2c contain slight misalignment along their top- and bottom-edges; 4) All fragments in addition to MS 5426—with the possible exception of MS 4612/6—contain palaeographic anomalies; 5) MS 4612/2b,c, MS 4612/12, and MS 4612/10 contain traces of letters that appear to follow the contour of fragment edges; 6) Most fragments with the exception of MS 4612/2c and MS 4612/10 show levels of surprising agreement with modern printed editions.³⁹

38 Davis, “Caves of Dispute,” 256–58. Tigchelaar has written of APU 3 in “Dittography and Copying Lines” (cf. n. 28 above).

39 This is an especially prominent feature in the three fragments containing text from 1 Enoch, MS 4612/6, MS 4612/8, and MS 4612/12, which would provide first hand Aramaic testimony to Milik’s reconstructions, often based on retroversions from the Greek or Ethiopic, in Józef T. Milik with Matthew Black, *The Books of Enoch: Aramaic Fragments from Qumran Cave 4* (Oxford: Clarendon, 1976).

The purpose of the following study is to report on material assessments of the above nine fragments which took place between February and June 2015, in an effort to provide a more comprehensive view of the nature of these fragments, and to contribute more narrowly to the question of their authenticity. The remainder of this article will proceed with a presentation of each individual fragment and their various attributes that have been discerned through digital and electron microscopy, Raman spectra and FTIR (Fourier Transform Infrared Reflection) spectra scans of their surfaces and sediments.

6 Nine Dubious Fragments: Description and Results of Physical Examination

Each of the nine fragments from The Schøyen Collection that were omitted from publication in *Gleanings from the Caves* is presented below organised by inventory number. Included with each fragment is a brief comment on acquisition and a physical description. This is followed by short discussions of relevant palaeographical, scribal and codicological features of distinction. Each fragment is presented in vlc images to scale that were taken by West Semitic Research Project at the University of Southern California in 2011. These images were produced along with infrared captures and polynomial texture maps (PTM) of every fragment in The Schøyen Collection as part of a project sponsored by Mark and Becky Lanier and Lanier Theological Library. Finally, observations of significant physical properties and phenomena are included for every fragment.

6.1 MS 4612/2a–c

Following their purchase these fragments reportedly arrived at The Schøyen Collection in 2003. With the fragments Schøyen also received from William Kando a declaration in English by an anonymous scholar who confirmed that they contained text from Exodus. These three fragments were among the first that were purchased by Schøyen after his acquisition of fragments from Louise Brownlee and the John C. Trever Family in 1994, and his 1999–2003 purchase of four fragments from the Kandos—MS 2713 (DSS F.Joshi), MS 2861 (DSS F.Judg3), MS 4611 (DSS F.Lev4), and MS 4612/1 (DSS F.Joel1).⁴⁰ A photograph of one of these fragments (MS 4612/2b) was published in an exhibition catalogue in the US in 2004.⁴¹ It was probably provided by antiquities dealer

40 Cf. Schøyen, “Acquisition and Ownership History,” 29. Also, Davis, “Caves of Dispute,” 236–37.

41 Biondi, *From the Dead Sea Scrolls to the Forbidden Book*; idem, *From the Dead Sea Scrolls to the Bible in America* (2004), cf. n.19 above.



FIGURE 1.1 MS 4612/2: Frg. a (middle), frg. b (right), frg. c (left).

IMAGE BY BRUCE AND KENNETH ZUCKERMAN AND MARILYN LUNDBERG, WEST SEMITIC RESEARCH PROJECT (WSRP). COURTESY THE SCHØYEN COLLECTION

Lee Biondi, although Schøyen already had obtained these three fragments.⁴² Additional pictures of the fragments were produced by Bjørn Rørslett in 2007 for The Schøyen Collection.

The three fragments measure 2.5×2.3 cm (frg. a), 3.1×4.0 cm (frg. b), and 1.3×2.1 cm (frg. c). They contain text that corresponds to Exod 3:13–15 in four lines (frg. a), 5:9–14 in five lines (frg. b), and possibly 16:10 in two lines (frg. c).⁴³ Line spacing varies between 6.5–7.5 mm, and letters measure about 2–2.5 mm. The three fragments were originally assumed to represent one scroll. While the line-spacing between them is more or less the same (6.5–7.5 mm in all three fragments) the fragments were ultimately separated as representative of three separate manuscripts. In retrospect, this is itself possibly a feature of

42 Lee Biondi had access to fragments and photographs belonging to the Kando family for the purpose of sale, but the fragments themselves were returned to William Kando after Biondi was unsuccessful in locating any buyers. Nevertheless Biondi continued to provide photographs of fragments to American exhibitions.

43 The arrangement of the text in MS 4612/2a aligns closely to the text in 4QExod^b (4Q13). Specifically, the only way to reconcile the digital reconstruction with the known text is to import a large *vacat* from 4QExod^b.

their inauthenticity, since even though the scripts in each fragment are very similar to one another, they contain a number of inconsistencies that led to the editors' doubts about their representation as belonging to a single scroll. For example, *lāmed* in frg. b is thickened at the top, different from *lāmed* in the two other fragments. Final *mēm* in frg. b is drawn differently from frg. a, with a sharper angle at the join between the left downstroke and the base, and a longer-extended crossbar to the left. *šīn* in frg. b is different from frg. c. In the latter, the centre arm connects to the left downstroke closer to the top than what appears in frg. b.⁴⁴

The script was described by the editors (Justnes and Elgvin) as “shaky” on all three fragments, corresponding to descriptions throughout Langlois’s palaeographical discussion of fragments in *The Schøyen Collection* written by “hesitant hands.”⁴⁵ Both frgs a and b were described by Langlois as “hesitant with inconsistencies,” and frg. c was described as “hesitant with strokes of even width.”

In accordance with Davis’s criterion of scribal inconsistencies along fragment edges, the only preserved letter in frg. a line 1—an *ʾālep*—is written considerably closer to l. 2 than we should expect (cf. also first line in MS 5233/2).⁴⁶ The line spacing between these two lines is substantially shorter than between the other lines. This *ʾālep* is different in its formation from other *ʾāleps* in the fragment, and it fills a small protrusion at the top of the fragment. Similar problems abound in frg. b, as exemplified by *lāmed* appearing in לָכֶם, the second word on line 3. This letter is short, and its elbow is situated low (cf. also MS 4612/10 below). The flag atop the letter has survived, touching the edge of the fragment, where we would tend to expect more of this letter to have been lost in the process of deterioration. The partially preserved *šīn* on the left side of line 5 is much smaller and the join between the centre arm and the left downstroke is located higher than on the other *šīns* (cf. e.g. in וְהִגַּשִּׁים in the line above, and in מֵאִשֶּׁר in line 3).

The fragments were tested in October 2012 along with the other fragments of Judean Desert manuscripts in *The Schøyen Collection*, and comparison of the elemental composition has shown that they do not originate from the

44 While we recognise that these subtleties are not necessarily disqualifying for identifying the fragments as part of the same manuscript, the point here is that these noted morphological differences appear more likely to have resulted from difficulties in working on rough surfaces of already deteriorated skin.

45 Langlois, “Palaeographical Analysis;” this descriptor is applied to MS 4612/5, MS 4612/9, MS 5214/1, MS 5233/2, MS 5441 and 5480.

46 Cf. discussion of MS 5233/2 in Davis, “Caves of Dispute,” 248.

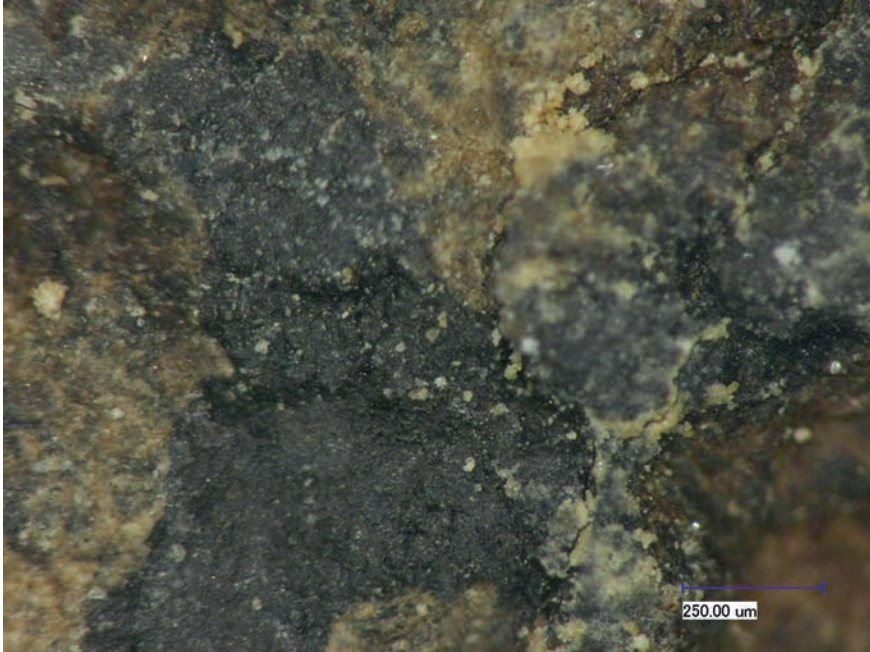


FIGURE 1.2 *MS 4612/2c line 1: Fragment with sediment overwritten by ink belonging to the letter 'ālep.*

same skin. The fragments of MS 4612/2 underwent further examination in June 2015.⁴⁷ High-resolution 3D digital microscopic inspection confirmed a heavy distribution of sediments on the surface of all three of the fragments, but especially on frg. c. More problematically this study revealed the presence of ink both atop and underneath much of the sediments. This is most clearly evident in *Fig. 1.2*, which shows the presence of ink belonging to a letter 'ālep' on line 1 of frg. c. On both images one will notice the presence of sedimentary deposits that have been overwritten with ink of the oblique stroke and the right arm of the letter. We have also observed that sediments are present underneath ink in the letter *rēš* to the right of 'ālep' on the same line, and in the first final *mēm* on line 4 of frg. b.

6.2 MS 4612/6

This papyrus fragment measuring 2.9 × 8.3 cm contains parts of three lines of text that correspond to 1 En. 106:19–107:1. Line spacing is 5–6 mm and letters

47 A number of the Schøyen fragments were analyzed on-site 18–19 June, 2015, with a Keyence digital microscope.

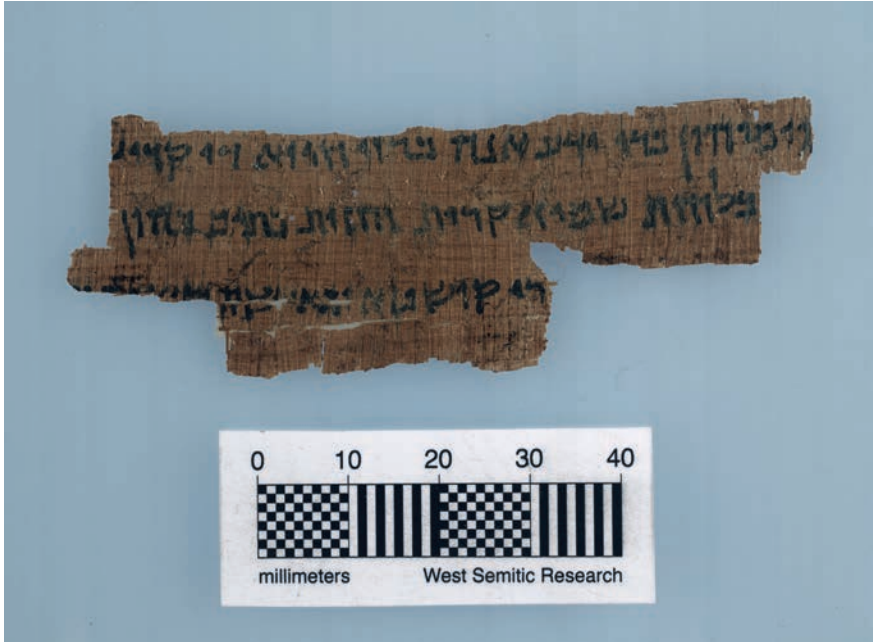


FIGURE 2.1 MS 4612/6.

IMAGE BY BRUCE AND KENNETH ZUCKERMAN AND MARILYN LUNDBERG, WEST SEMITIC RESEARCH PROJECT (WSRP). COURTESY THE SCHØYEN COLLECTION

are large, measuring between 3–3.5 mm. The fragment arrived at The Schøyen Collection in 2009, a few months after a special request made by Schøyen to William Kando to locate fragments of 1 Enoch, as well as of Samuel, Nehemiah and Esther (cf. Section 2 above). It consists of two layers of fibres. Like the two other papyrus fragments in The Schøyen Collection its text was written *transversa charta* with the vertical fibres on the *recto* and the horizontal fibres on the *verso*. The same goes for a papyrus fragment that was purchased sometime between 2008–10 by SWBTS, containing text from Dan 6:22–24.⁴⁸ While not unprecedented, this scribal anomaly is unusual among papyri from Qumran, and the fact that fragments from these four different scrolls display the same anomaly is by itself peculiar.⁴⁹

48 Personal communication from editor of the SWBTS Daniel fragment, Ryan Stokes.

49 To our knowledge there is not at present a discussion of papyrus construction features in the Qumran papyri, but from our observations most are written on the horizontal grain. Myriam Krutzsch notes that the phenomenon becomes more common by the Byzantine period, and corresponds to rolls that are constructed and written vertically.

This fragment is exceptional for the level of bleeding endured by the ink, which migrated outside the boundaries of the letters in an unprecedented fashion. This effect is illustrated in *Fig. 2.2 below*. Inspection of papyri at Ägyptisches Museum, Berlin, and examination of high resolution images of papyri in the Leon Levy Digital Dead Sea Scrolls Library suggest that this level of bleeding, in particular the vertical migration, is a unique phenomenon.

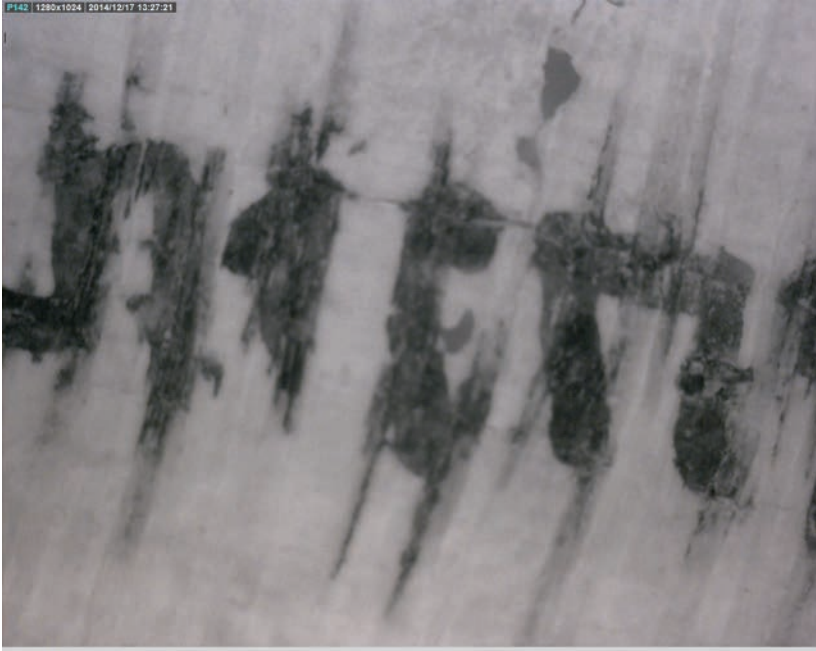


FIGURE 2.2 MS 4612/6, ink bleeding on line 2.

There are a number of early Egyptian scrolls and single papyrus sheets in the Ägyptisches Museum und Papyrussammlung which are also written *transversa charta*. For more cf. Eric G. Turner, *The terms recto and verso: the anatomy of the papyrus roll: Actes du XV^e [quinzième] Congrès International de Papyrologie: Bruxelles, Louvain 29 août— 3 sept, vol. 1*, Papyrologica Bruxellensia vol. 16 (Brussels: Fondation égyptologique Reine Élisabeth, 1977). One of the Tobit scrolls from Qumran, 4QpapTobit^a ar (4Q196), is one of the few Qumran papyri written *transversa charta*. MS 5234 is one of two dubious fragments that contain text from Tobit. The other—a papyrus corresponding to text from Tob 7:1–3—is also written *transversa charta*. It is still with William Kando. Both of these fragments duplicate text line-for-line in accordance with 4QTob^b (4Q197) 4 iii and 4QTob^c (4Q198) fig. 1, as it appears in *Qumran Cave 4.XIV: Parabiblical Texts, Part 2*, eds. Magen Broshi et al., DJD 19 (Oxford: Clarendon, 1995), 51, 57.

The inks of MS 4612/6 have a peculiar greyish colour under visible light but are deep black under infrared light. The fragment was sent to Berlin for physical testing in February 2015. The strange colour of the ink in visible light results from a fine complex deposit that cannot be identified by non-destructive methods alone.

MS 4612/6 has the most unusual distribution of chlorine that is illustrated in *Fig.2.3*. We observe a considerable quantity of salt (NaCl) whose adherence to the papyrus fibers and distribution is not consistent with having derived from the plant support material. The structure and distribution is also not characteristic of salt contamination from soil or caves. The crystals are of uniform size and dispersed in a manner consistent with dry common table salt

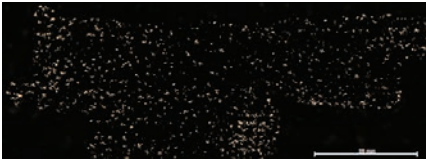


FIGURE 2.3
MS 4612/6: Cl distribution measured by μ -XRF scanning device.



FIGURE 2.4 *MS 4612/6 Salt crystals.*

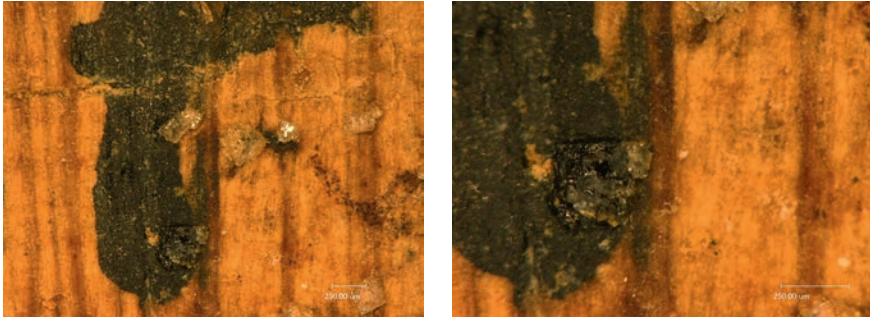


FIGURE 2.5 MS 4612/6 Salt crystals viewed at 100x (left) and 200x (right) magnification.

sprinkled evenly on the object. This uniformity in the shape and size of the salt crystals is seen in *Fig. 2.4*.

Scanning the fragment at a higher magnification reveals that some of the salt crystals are in fact covered with ink. *Fig. 2.5* shows, amidst a group of crystals resting on the ink surface, a crystal blackened with ink. Inspection at a higher magnification (right image) confirms that the crystal does not evolve from the plant material as it does not rupture the plant fibers, but rather sits on the ink surface touched up further with a glossy ink. The writing and the deposition of the salts must have occurred in modern times.

6.3 MS 4612/8

This is one of three fragments containing text from 1 Enoch, and it is the only one written on leather, not papyrus. The fragment measures about 3.8×5.3 cm and contains five lines of text corresponding to 1 En. 7:1–5. Line spacing is about 7 mm and letters measure 2.5–3 mm. It entered The Schøyen Collection along with the other two fragments of 1 Enoch in 2009 (cf. MS 4612/6 above and MS 4612/12 below). The fragment is leather—not parchment—tanned on both sides. Similar to MS 5426 (see below) the text appears on the flesh side rather than the grain side raising questions of authenticity as the smoother grain side was the preferential writing surface.⁵⁰

50 It is generally easier to write on the smooth hair side of leather rather than a rougher flesh side. The adhesion of the writing fluid is much better on the hair side. Ira Rabin suggests that maybe this is why Egyptian and Jewish scrolls that are written on leather are usually written on the hair side. The Talmud explicitly mentions that holy texts should be written on the hair side of un-split (i.e. not parchment) skins. It seems that in this case the Talmud transforms practical use of the early time into a ritual prescription. In the case of

MS 4612/8 was judged to be suspect in the eyes of the editors by reason of a number of problematic palaeographical inconsistencies, and its close correspondence to Józef T. Milik's edition of the *reconstructed* text of 1 En. 7:1–5 in 4QEn^a 1 iii 15–20.⁵¹

The handwriting was described by Langlois in similar terms to several others in The Schøyen Collection as “hesitant,” and “inconsistent.” This inconsistency is most particularly pronounced in the occurrences of medial *mêm*, which is described by Langlois as follows:

The traverse is highly concave, or even V-shaped, so that the shoulder is angular. The right arm is sometimes straight, sometimes slightly concave or convex. The base is linear, horizontal, and does not protrude. The left arm is short and sometimes seems to prolong the slanted traverse (as in later Herodian hands), but a noticeable shift confirms that it is drawn after lifting the pen.

The bewildering variety in the formation of this letter can be seen at the end of line 1; the text editors (Esther Eshel and Justnes) were troubled by the appearance of a *mêm* with a long and heavily shaded traverse, intersected by what was at first understood to be a stray, unrelated stroke. However, the incompatibility of this oddity prompted the resolution that the stroke should be interpreted as the *serif* of the *mêm*. Two medial *mêms* written in the following line carry forward this incongruity where the first appears in the shape of a *bêt* but with an awkwardly placed *serif* appended to the crossbar. The second is also penned like a differently constructed *bêt*, but with an extension of the traverse from the *serif* as if penned as an afterthought.

Further palaeographical inconsistencies are also observed in a word in line 4, transcribed by the editors as וה'זו. The text corresponds to 1 En. 7:4 and the word in question is a puzzle with several potential solutions that were comprehensively documented in a 2013 article by Langlois.⁵² Regardless of how one chooses to read and interpret this word, the first two letters must be construed as unusually and inexplicably undersized, and out of character with the appearance of the script in the remainder of the fragment.

Most problematically, the extant text of MS 4612/8 attests an extraordinary level of correspondence to Milik's reconstruction, which he derived by

the DSS Rabin knows of only two scrolls that were written on the flesh sides: the first copy of the *Temple Scroll* and the Greek Minor Prophets scroll from Naḥal Ḥever.

51 Milik, *Books of Enoch*, 150.

52 Michael Langlois, “Un manuscrit araméen;” cf. n.10 above.

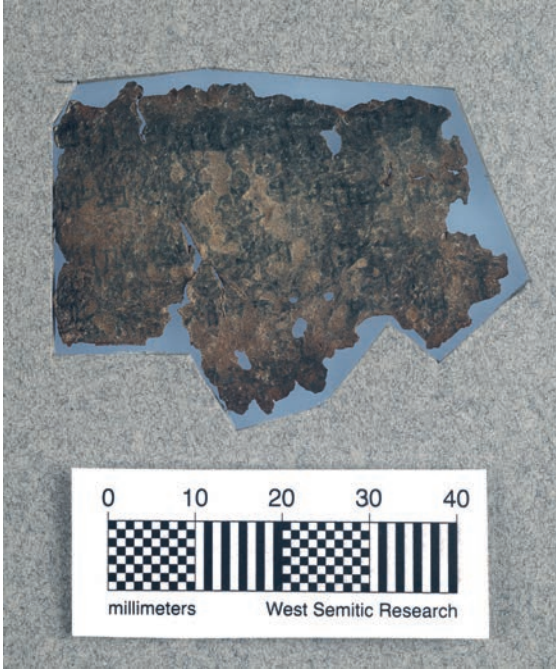


FIGURE 3.1 *MS 4612/8*.
IMAGE BY BRUCE AND KENNETH ZUCKERMAN
AND MARILYN LUNDBERG, WEST SEMITIC
RESEARCH PROJECT (WSRP). COURTESY THE
SCHØYEN COLLECTION

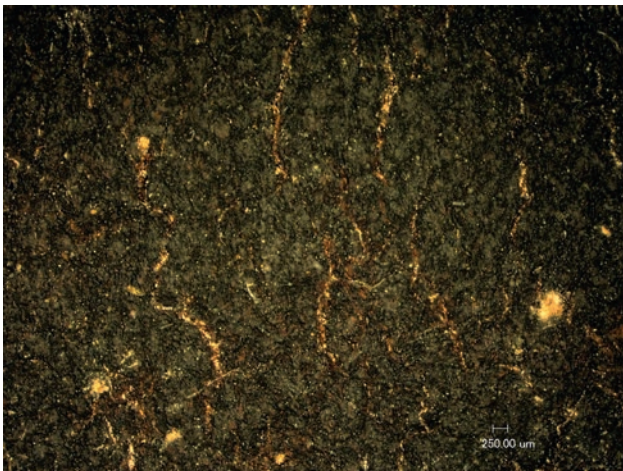


FIGURE 3.2 *MS 4612/8* Micrograph of the grain side (verso with respect to the inscription).

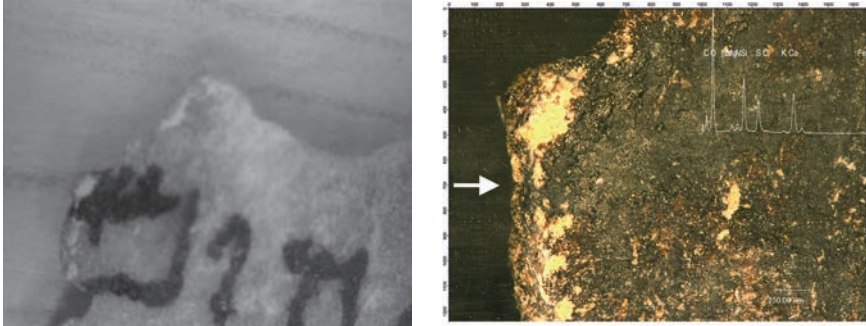


FIGURE 3.3 MS 4612/8_2: (left) NIR micrograph, (right) inscribed upper left corner.

retroverting late medieval Ethiopic text of 1 Enoch into second century BCE Aramaic. In multiple instances the fragment attests Milik's reconstruction of 4QEn^a ar (4Q201) 1 iii 15–20: his suggestion [תלתת] וילדה גברין רמין בתלתת in line 16 is fully preserved on MS 4612/6 line 2; his reconstruction [כילדותהן] in line 16 is fully preserved on MS 4612/6 line 2; his reconstruction [ומתרבין כרביותהן] (v. 3) is nearly completely extant in the following line of MS 4612/6, line 3; his suggested infinitive construct [למחטא] (v. 5) is the only surviving word on line 5 of MS 4612/6.⁵³

This fragment was included in the group that was tested in Berlin in February 2015. One of the key tests employed digital microscopy to more precisely identify regions of the fragments that have suffered alleged delamination of the upper layer of parchment. MS 4612/8 was one of several fragments that left editors with the impression that pen strokes were extant on both the surviving surface as well as the exposed “under layer” where the surface had flaked off. The relatively pale central part of the fragment was hitherto believed to have resulted from delamination but the type of surface damage is more characteristic of the bored channels produced by insect attack.

A focused investigation of the inscription in the upper left corner provides certain insight into how the inscription was formed (*Fig. 3.3* above). The arrow points to an area where two types of sediments as well as ink were found in close proximity to one another. The loose yellow deposit and a more compact whitish deposit were analyzed and their distribution observed. The loose yellow particles—a mixture of quartz, gypsum and carbonate, as can be seen from the element spectrum in the upper right portion of *Fig. 3.3*—were located

53 The above example of the odd looking word ורהו(?) on MS 4612/8 line 4 is best explained as a less successful attempt to copy Milik's reconstruction of 4QEn^a 1 iii 18, ורוו גבריא, קשרין.

on the surface of the ink as well as under the ink. In fact, these particles were found in abundance dispersed in clusters on both the front and the back of the whole fragment in contrast with the whitish deposit which was not detected on the ink surfaces.

Environmental scanning electron microscopy (ESEM) relies on the low penetration of electrons, limiting the depth of surface layer probed to approximately 15 μm . Moreover, the signal from carbon is strongly attenuated by the presence of other elements. Therefore, one can see carbon inks in a scanning electron micrograph only if the ink lies on the surface and not obscured by dust or sediments. Continued investigation in an adjacent inked area using ESEM revealed that ink covered a deposit of different composition shown on the ESEM micrograph below (*Fig. 3.4*). As with MS 4612/10 (see below), we trace the sediment composition under the ink and compare it to an off-ink spot on the skin support. As expected for a carbon ink top layer, the spectrum is dominated by carbon but also reveal a low-intensity spectrum of the sediment area underneath.

We conclude that the ink was inscribed on the existing sediment.

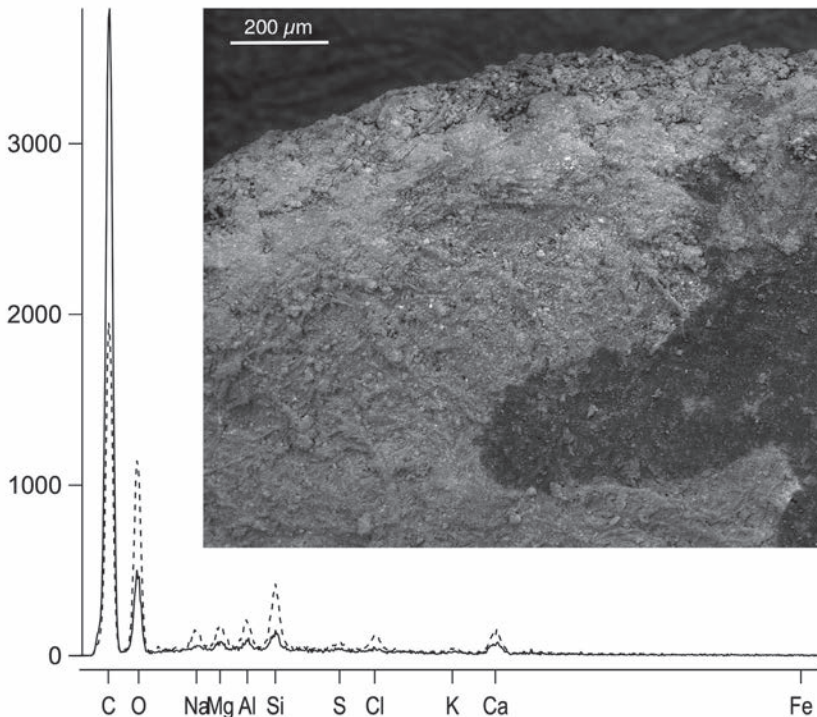


FIGURE 3.4 MS 4612/8_3: ESEM micrograph and spectra of the ink portion.

6.4 MS 4612/10

The fragment arrived at The Schøyen Collection in 2009, after Schøyen's special request of William Kando in February of that year to locate specifically fragments of Samuel, along with certain other texts (cf. Section 2 above). This is a leather-like fragment, tanned on both sides. It measures 2.2×2.7 cm and contains text in four lines that corresponds to 1 Sam 2:11–14. Line spacing is 6.5 mm and letters measure 2–2.5 mm. This was the first fragment in The Schøyen Collection about which the editors of *Gleanings from the Caves* began to raise questions of authenticity. It was isolated by Langlois who drew attention to an unusually glossy appearance of the ink in January 2014.

Langlois described the script as a “more or less regular book hand,” but similar to other fragments there are also troubling scribal inconsistencies throughout. Most notably, Langlois said of *lāmed* that this letter is “of inconsistent height and shape: it is sometimes tall and barely thickened at the top, sometimes short and looped.” These phenomena are manifest in a series of *lāmeds*



FIGURE 4.1 MS 4612/10.

IMAGE BY BRUCE AND KENNETH ZUCKERMAN
AND MARILYN LUNDBERG, WEST SEMITIC
RESEARCH PROJECT (WSRP). COURTESY THE
SCHØYEN COLLECTION

appearing in close succession on line 2: only the supralinear downstroke and flag of the first letter of the line is visible, and measures 3.8 mm; the second *lāmed* is obviously shorter, and the flag loops backwards against the top edge of the fragment, but the supralinear downstroke measures only 3.3 mm; the third example is even shorter still, with the backwards-looping flag also touching the top edge of the fragment, and the supralinear downstroke measures 2.2 mm. These instances fairly clearly reflect Davis’s criterion of scribal inconsistencies along fragment edges, as do anomalous letters at the top and bottom of the fragment. The preserved parallel downstrokes of a *tāw* in line 1 are dramatically undersized, and the first letter in line 4 on the right edge of the fragment is penned high on the line, and in alignment with the contours of the bottom fragment edge. This *ālep* in comparison to other *āleps* on the same fragment is penned with a traverse on a much shallower angle, and a very short right arm that attaches high on the traverse.

MS 4612/10 was taken to Berlin for further testing in February 2015. The text is written on the grain side in deep black glossy ink, which rises well above the skin support. The thickness of the ink layer was measured by means of 3D digital microscopy and varies from about 40 to 140 μm , which is an unusually high reading for an ancient document. *Fig. 4.2* illustrates how the writing seems to be partially eroded by insects but is otherwise in good condition. In

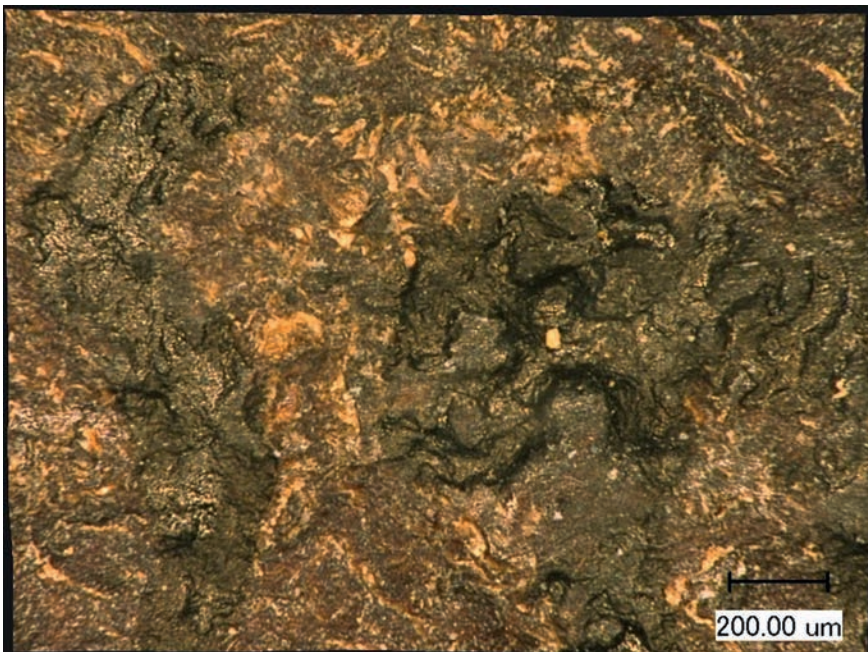


FIGURE 4.2 MS 4612/10 micrograph of the portion from the upper text line.

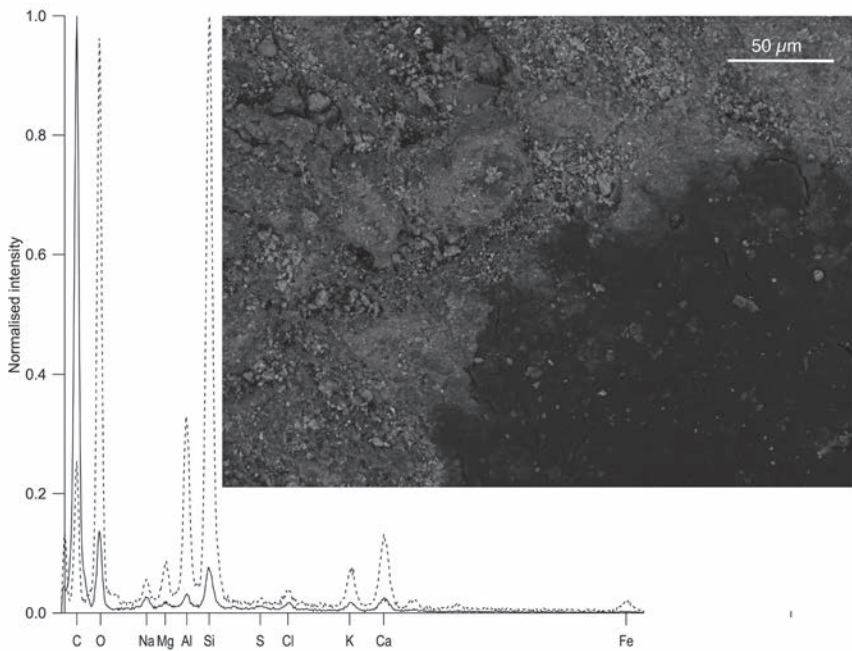


FIGURE 4.3 MS 4612/10 ESEM micrograph and spectra of the portion from the upper text line.

contrast, the skin surface as a whole shows a network of breaks packed with fine dust or sediment. This network of sediment-filled crevices clearly disappears under the letters, the ink surface being void of sediment. Investigation with ESEM is illustrated in *Fig. 4.3* which clearly shows the “ink pool” covering the sediments. A comparative composition analysis was conducted of the ink region and the neighbouring skin support. Probing the sediment beyond the inked area showed the presence of aluminosilicate sediment manifested by a large Si-peak in the spectra followed by an aluminum peak (dotted curve). In contrast, the spectra of the ink showed a prominent carbon peak as expected (black curve). In addition, the spectrum includes the profile of the sediment identical to that found on the skin (dotted curve), but at a much lower intensity. The weak signal of the sediment picked up through the ink indicates the presence of a layer of sediment under the inked area.

We conclude from this testing that the ink was applied to a weathered fragment.

6.5 MS 4612/12

This fragment is one of three Aramaic papyrus fragments in The Schøyen Collection (see MS 4612/6 above and MS 5234 below), and the last of three containing text from 1 Enoch (see MS 4612/6 and MS 4612/8 above). It was first

published by Esther and Hanan Eshel in 2004.⁵⁴ The fragment measures 5.8 × 4.3 cm and contains text that corresponds to 1 En. 8:4–9:3. Linespacing is 11 mm and letter height is fairly large at around 3 mm. Langlois called the script “quite regular but rather naive, with a constant stroke thickness.”

While there are not the same sort of dubious palaeographical and scribal features in this fragment as compared to the other two 1 Enoch fragments, its contents nevertheless bear a striking resemblance to modern editions of and literature about 1 Enoch. The extant text of MS 4612/12 is in close alignment to Milik’s 1976 edition of 4QEn^a ar 1 iv 6–10, with words appearing in an identical vertical arrangement as they do in his transcription.⁵⁵ This is particularly noticeable in the space left between 1 En. 8:4 and 9:1 in his transcription, which



FIGURE 5.1 MS 4612/12.

IMAGE BY BRUCE AND KENNETH ZUCKERMAN AND MARILYN LUNDBERG, WEST SEMITIC RESEARCH PROJECT (WSRP). COURTESY THE SCHØYEN COLLECTION

54 Eshel and Eshel, “A New Fragment”; cf. n.5 above.

55 Milik, *Books of Enoch*, 157.

was needed to accommodate the superscripted verse and chapter references from 1 Enoch. A similar sized space between the verses appears on line 1 of MS 4612/12.⁵⁶

Especially troubling of this fragment is the fact that the text corresponds to a correction made by Loren Stuckenbruck to Milik's edition of 4QEn^a ar, published in DJD 36.⁵⁷ Milik had reconstructed 1 En. 9:1 on 4QEn^a ar 1 iv 8 to read הָאֵלֹהִים אֶתְּחַטְּטִי עַל־הָאָרֶץ, but this has been challenged by Stuckenbruck. In his discussion of a possible parallel text in 4QEn^c ar (4Q203) frg. 5 Stuckenbruck writes:

The roots of the verbs appearing in lines 2–3, חמס and קטל, also occur together, though as substantives, in the context of Aramaic Enoch 4Q201 iv 6–8 (to 1 Enoch 9:1): the four angels “peered down from among the hol[y] one[s of heaven and saw] much blood being sh[ed upon] the[earth], and [the] whole [earth] was filled with e[vil and] violence (חמסה) against the ones killed (קטיליא).”⁵⁹

Line 3 of MS 4612/12 clearly reproduces Stuckenbruck's suggested correction of Milik's reconstruction, even though Stuckenbruck cautioned in a footnote that his own proposition is “uncertain.” In his 2008 study of 4Q201, Langlois further noticed that the two fragments joined together by Milik (which form the basis for his and Stuckenbruck's readings) should in fact be considered as separate fragments that do not preserve the same line.⁶⁰ This observation casts reasonable doubt onto both Milik's and Stuckenbruck's readings, and it is all the more suspicious that Stuckenbruck's suggestion אֶתְּחַטְּטִי אֵי appears on MS 4612/12.

As with the other papyri in The Schøyen Collection featured in this study MS 4612/12 is written *transversa charta*. The most striking characteristic of

56 It might be argued that this small *vacat* represents a section marker that corresponds to later versification. There are instances in the DSS where one finds breaks before the adverb אֶתְּחַטְּטִי or בְּאֶתְּחַטְּטִי (1 QapGen 10:1; 20:21; 22:20; 4QEn^c ar [4Q204] 1 xiii 24; 4QEnGiants^b ar [4Q530] 2 ii + 6–12 15). However, relatively less common in-line, “closed” paragraph markers in Judaean Desert manuscripts are always considerably larger than the word space described here, measuring on average between 10–15 mm in contrast to the 4 mm space on MS 4612/12 line 1. Moreover, in another preserved verse transition on line 5 there is no evidence for any sort of break.

57 *Qumran Cave 4.XXVI: Cryptic Texts*, ed. Stephen J. Pfann; *Miscellanea, Part I*, ed. Phillip S. Alexander, et al., in consultation with J. VanderKam and M. Brady, DJD 36 (Oxford: Clarendon, 2000).

58 Milik, *Books of Enoch*, 157.

59 DJD 36: 18.

60 Cf. Michael Langlois, *Le premier manuscrit du Livre d'Hénoch. Étude épigraphique et philologique des fragments araméens de 4Q201 à Qumrân* (Paris: Cerf, 2008), 385–87.

this fragment is the dynamic relationship between the top and bottom papyrus leaves. Examinations of the PTM images of the fragment, especially under specular enhancement suggested to the editors of *Gleanings from the Caves* that there were pen strokes on both the vertical and horizontal leaves, which would also indicate that the fragment was inscribed after suffering deterioration. The specular enhancement where this is demonstrated appears in *Fig. 5.2* below. Further examination was conducted in June 2015, and this anomaly was confirmed by digital microscopy. In *Fig. 5.3* one can see clearly the ink belonging to the base of a right downstroke of *hê* in line 2 on the papyrus backing on the left side. On the right the much higher top leaf with vertical grains is highlighted along with a trace of ink from the same letter. The micrograph in *Fig. 5.4* shows the difference in height between the two layers where the base of this letter traverses the papyrus leaves, which is probably around 220–230 μm .



FIGURE 5.2 MS 4612/12 line 2 specular enhancement.

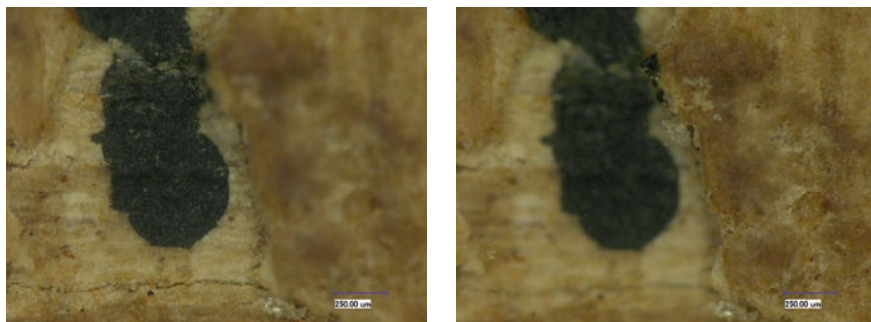


FIGURE 5.3 MS 4612/12 focused on pen stroke on backing (left) and focused on trace on top leaf (right).

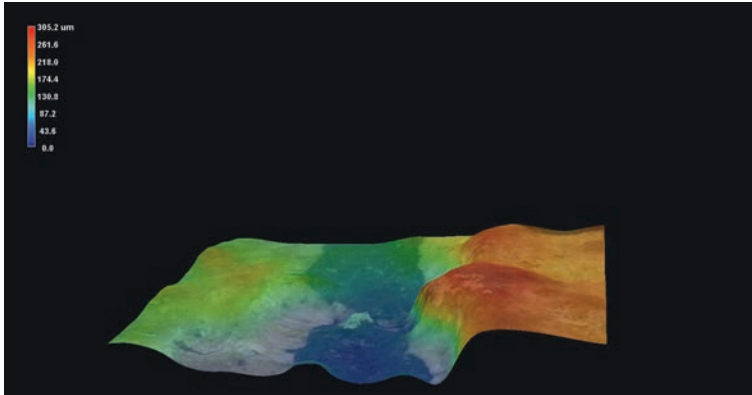


FIGURE 5.4 MS 4612/12 line 2 micrograph: Shows relative height of papyrus surface and backing.

6.6 MS 5234

This papyrus fragment was purchased between 2002 and 2004, although it was not photographed by Rørsløtt in 2007 along with the other DSS fragments in The Schøyen Collection. It measures approx. 6.8×2.2 cm and contains parts of text in seven lines that correspond to Tob 14:3–4. Line spacing is 9 mm, and letters are relatively large, measuring 4 mm. The fragment was first published by Michaela Hallermayer and Elgvin in 2006, which they mistakenly identified as belonging to 4QpapTob^a ar (4Q196).⁶¹

Langlois has described the script as regular, and there are no obvious scribal anomalies on the fragment. However, MS 5234 does bear a striking resemblance to previously published fragments from Qumran in both shape and physical structure. MS 5234 shares with the other two papyrus fragments in The Schøyen Collection the conspicuous feature of having been penned *transversa charta*. As noted above, this form of construction is unusual in the Qumran scrolls, but it is also characteristic of 4QTobit^a (4Q196).⁶² MS 5234 was once identified as belonging to 4QTobit^a,⁶³ and the text of this fragment is largely extant in 4QTobit^c (4Q198) frg. 1 (= Tob 14:2–6). 4QTobit^c frg. 1 is a partially rectangular shaped fragment measuring about 11.5×3 cm with the long side on

61 Hallermayer and Elgvin, “Schøyen ms. 4234;” cf. n.6 above.

62 Cf. *Qumran Cave 4.XIV: Parabiblical Texts, Part 2*, ed. Magen Broshi et al., DJD 19 (Oxford: Clarendon, 1995), 7–40.

63 This identification was offered by Florentino García Martínez to Martin Schøyen based on a photograph that appeared on The Schøyen Collection website.

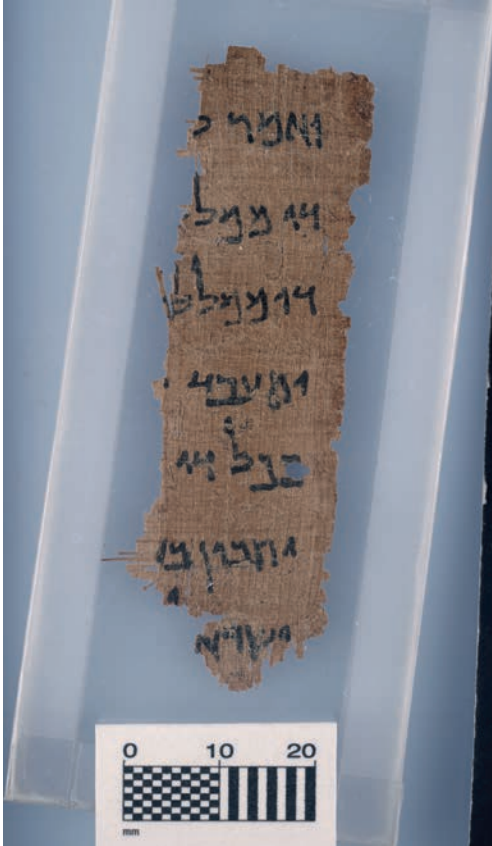


FIGURE 6.1
 MS 5234.
 IMAGE BY BRUCE AND KENNETH
 ZUCKERMAN AND MARILYN
 LUNDBERG, WEST SEMITIC
 RESEARCH PROJECT (WSRP).
 COURTESY THE SCHØYEN
 COLLECTION

the vertical.⁶⁴ Significantly, this fragment also preserves the right margin of the extant column, and the corresponding text in lines 3–8 aligns quite closely to the vertical arrangement of text from the same passage on MS 5234.

6.7 MS 5426

This fragment has been known since 2008 when it was first published online by James H. Charlesworth, prior to its purchase by Martin Schøyen.⁶⁵ Unlike the

64 DJD 19: Plate VIII. Cf. the digital images published online at the Leon Levy Digital Dead Sea Scrolls Library, B-359919 (<http://www.deadseascrolls.org.il/explore-the-archive/image/B-359919>), and B-359920 (<http://www.deadseascrolls.org.il/explore-the-archive/image/B-359920>).

65 www.ijco.org/?categoryId=28681 (accessed 26 October 2008). This web page is no longer active, but can be accessed through <http://archive.org/web/>. The fragment is probably the



FIGURE 7.1 MS 5426.
IMAGE BY BRUCE AND KENNETH
ZUCKERMAN AND MARILYN
LUNDBERG, WEST SEMITIC
RESEARCH PROJECT (WSRP).
COURTESY THE SCHØYEN
COLLECTION

other fragments featured in this study, MS 5426 was acquired—according to Martin Schøyen—through an exchange with an American collection, and not from the Kando family.⁶⁶ An image of this fragment was featured in a museum catalogue published by book and manuscript dealer Lee Biondi in 2009.⁶⁷ It arrived at The Schøyen Collection in 2009, following a special request for William Kando in February 2009 to locate fragments of Nehemiah along with specific other texts (cf. Section 2 above). The fragment is parchment measuring 3.0 × 4.3 cm, and contains parts of four lines of text corresponding to Neh 3:14–15 (= 2 Esd 13:14–15). Linespacing is 6.5 mm and letters are small, measuring about 2 mm.⁶⁸ Similar to MS 4612/8 (see above), this is a leather fragment, tanned on both sides, which was also written on the flesh side of the parchment as opposed to the grain side.

The fragment was under suspicion by the editors of *Gleanings of the Caves* fairly early on the basis of Langlois's observation that there seems to be ink in

one designated X25=XNeh by Emanuel Tov in *Revised List*, 110, and is briefly discussed in Lange, *Handbuch der Textfunde*, 523–24; cf. nn.8, 9 above.

66 In 2008, James H. Charlesworth posted an image of this fragment on his website with the caption: “The Dead Sea Scroll fragment is published with the permission of Lee Biondi, Los Angeles, California.” (<https://web.archive.org/web/20130829163116/http://foundation.judaismchristianorigins.org/ftp/pages/dead-sea-scrolls/unpub/nehemiah.html>).

67 See n.21 above.

68 The small script is very similar to that of 4QEzra (4Q117), and the editors had initially ascribed MS 5426 to this scroll. Cf. E. Ulrich et al., eds., *Qumran Cave 4.XI: Psalms to Chronicles*, DJD 16 (Oxford: Clarendon, 2000), 291–93.

several places where the fragment has suffered delamination of the top layer. This is especially evident in line 2, where ink in the letter *šîn* belonging to the word שלום appears on the right side sharp and clear like pen strokes in line 1, and then partly faded or impressed into the leather on the left side. The *lāmed* that follows it also exhibits the same characteristics.

There are some discrepancies in the formation of some of the letters. The second *šîn* on line 2 is shaped dramatically differently from the aforementioned sample at the beginning of the line. The right arm of this letter and the oblique stroke to which it is attached are heavily shaded as a result of overwriting to emphasize the strokes. The oblique is also set at a much shallower angle, almost parallel to the imagined baseline, and the centre arm attaches to the left arm in a lower position. All of these peculiarities appear to be products of damage to the skin on the left side of the fragment, and correspond to a break and a wormhole situated just above the letter. Additionally, there is a discrepancy in the formation of medial *mēm*. At the left edge of the fragment in line 1 the surviving pen strokes are anticipated to correspond to *mēm* in מנעליו (Neh 3:15). While the reconstruction of this word is theoretically possible, the shape of this letter is quite obviously different from the others, and the editors (Elgvin and E. Eshel) were at first prompted to introduce a textual variation to the end of v. 14. The pen strokes appear most likely to correspond to the contours of the left and top edges of the fragment. In another instance on line 3 this letter and a subsequent medial *nûn* are strangely penned along the bottom edge of the fragment. The oblique stroke of *mēm* is on a shallower angle than it appears in both samples in line 1, and this has also affected the placement of the *serif*. Both letters are unusually shaped and seem to correspond to the contour of the fragment edge below.

Moreover, the text on the fragment contains a handful of alternative readings that were suggested by the *Biblia Hebraica* editors, but in the absence of any manuscript support. For example, line 2 preserves] שר ח on the left edge where the corresponding text in Neh 3:15 reads שר פלך המצפה, but a note attached to the text suggests amending the title to שר-חצי in accordance with similar forms in vv. 16, 17 and 18. This prompted the editors of this fragment originally to reconstruct the line to read שר חצני פלך המצפה in alignment with the *BHS* editors' suggestion.

MS 5426 was among the fragments taken to Berlin in February 2015 for physical examination. Measurements conducted with a 3D digital microscope revealed that there was a considerable difference in the texture of the surface layer from that on the apparent underlayer. The ridges and breaks on the inscribed side do not seem to have resulted from a natural skin delamination

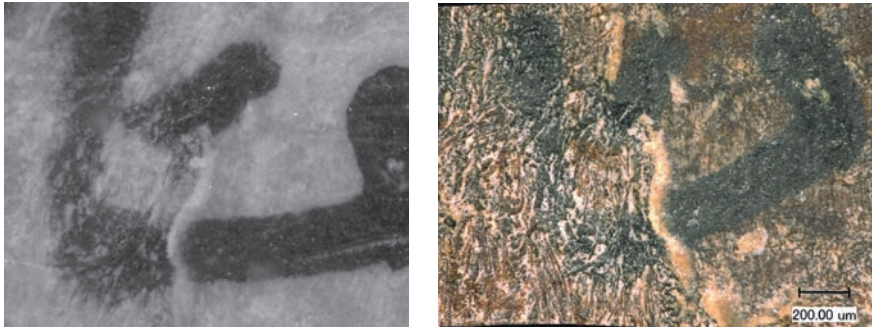


FIGURE 7.2 MS 5434 NIR micrograph of the letter *šîn* from the second line (left); micrograph of the same letter obtained with a 3D digital microscope (right).

process but rather a mechanical process. The text appears to have been written on both damaged and undamaged areas.

The bold shiny black letters of the top line of text and the right arm and oblique stroke of the *šîn* in the second line display anomalies incompatible with writing in distant past. *Fig. 7.2* shows the letter *šîn* from the second line viewed under magnification in near infrared light and visible light. The letter is constructed of several strokes written in the vicinity of a ridge approximately 300 µm high. The right arm and oblique stroke forms a heavy, bright black ink line with an insignificant amount of sediment on it, which stops abruptly at the edge of the ridge; the upper part of the left downstroke is also a bright bold ink mark which has some sediment on the upper part. The oblique stroke ends at the bottom of the ridge producing an impression of a break caused by the skin deformation. Yet, the centre arm—a bold black ink mark, free of sediment—smoothly crosses the ridge. It is clear that the letter was added to a damaged surface rather than suffered deformation synchronously with the skin. To continue in the same vein, the first *tāw* in line 1 offers a similar example of an anomaly. The right downstroke of the letter at first glance seems to be broken by a fissure in the skin as can be seen in the NIR-micrograph in *Fig. 7.3a*. Looking closer with the help of scanning electron microscopy we discovered a peculiarity in the inscription: the ink line does not coincide with the flaws in the skin but seems to be written in two strokes above and below the long fissure (*Fig. 7.3b*).

Increasing the magnification further confirms that the missing portion of the ink could not have resulted from a surface break in the skin (*Fig. 7.3c*). Moreover, the thicker deposition of ink below the fissure is consistent with the beginning of a stroke rather than the middle of a stroke.

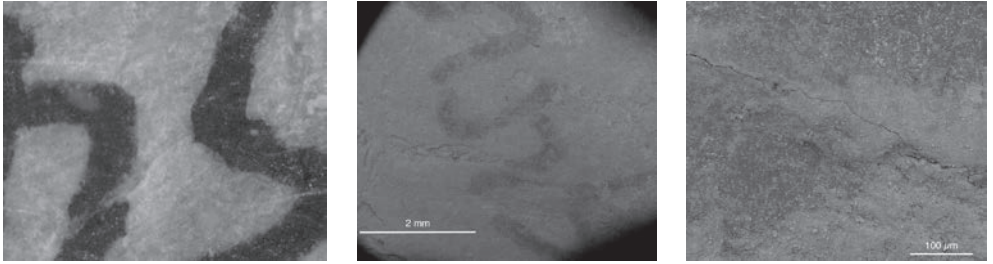


FIGURE 7.3 MS 5426: a) NIR micrograph; b,c) ESEM-micrographs at different magnifications.

7 Summary, Conclusions, and Future Research

A variety of palaeographical, scribal and textual anomalies are demonstrated in the nine fragments from The Schøyen Collection above that correspond to similar observations made regarding several already published fragments from the collection as well as those belonging to Museum of the Bible. The authors of this article continue to harbour doubts as to the authenticity of a good number of these additional, non-provenanced fragments, but the fragments featured in this article are deemed to be among the most suspicious from the high combination of cited palaeographical and scribal anomalies mentioned above. In addition, the following common physical features were observed in the fragments to varying degrees:

- Papyri written *transversa charta* as opposed to the traditional method of inscribing on the horizontally grained papyrus leaf
- Parchments written on the flesh side as opposed to the grain side
- Composition and distribution of sedimentary deposits that are incongruous relative to the DSS fragments
- The occurrence of pen strokes and ink in regions of delamination or skinning of the surface layer
- Uncharacteristic properties in inks

These observations cumulatively raise doubts with regards to the authenticity of these nine fragments. At least two papyri in this study, MS 4612/6 and MS 4612/12, can be regarded with a high degree of confidence to be modern forgeries. More than that, all the fragments discussed here are most likely ancient leather and papyrus penned in modern times; in several instances fragments have undergone further treatment to induce the appearance of age or damage to the text in an effort to conceal their twentieth / twenty-first century origin.

This presentation of suspicious scribal and textual features in conversation with results from physical testing of purported “Dead Sea Scrolls” fragments in The Schøyen Collection helps to confirm earlier suspicions regarding their authenticity. These results along with recent articles by Tigchelaar and Davis⁶⁹ should form the basis for future examinations of non-provenanced parchment and papyrus antiquities in other private collections.

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69 Tigchelaar, “Gleanings from the Caves? Really?,” and Davis, “Caves of Dispute.”

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