A COMPLETE OLD TORAH SCROLL
(NICHOLSON MS. 37)
HELD AT FISHER LIBRARY,
UNIVERSITY OF SYDNEY

Gary A. Rendsburg, Rutgers University
Marc Michaels, University of Cambridge
Ian Young, University of Sydney
Julie Sommerfeldt, University of Sydney
Vladimir Levchenko, ANSTO, Sydney
Linda Barry, ANSTO, Sydney

ABSTRACT

The present article provides a detailed analysis of the complete Torah scroll, Nicholson Ms. 37, held at Fisher Library at the University of Sydney. The scroll was described by Alan Crown on several occasions (1967, 1984), though this precious treasure has not received the attention it deserves. We begin with a discussion of how the Nicholson collection, including the Torah scroll, reached Sydney. We then survey scribal matters such as: the layout of the two poems (Exodus 15, Deuteronomy 32); the use of dilated letters in the service of the ביה שמו system; special features such as tagin, dotted letters, large and small letters, etc.; corrections made by the scribe; and the manner of stitching. Most importantly, we now have a secure scientific dating of the scroll material, determined via $^{14}$C measurements: 17th century CE. The provenance, based on the handwriting and various paratextual features, is determined to be eastern Mediterranean.

THE DATING OF OLD TORAH SCROLLS IS A NOTORIously DIFFICULT ENTERPRISE. As a case in point, we present here Nicholson Ms. 37, held by Rare Books and Special Collections of Fisher Library at the University of Sydney.2 This complete Torah scroll was described by Alan Crown in great detail in his 1967 article

---

1 ANSTO = Australian Nuclear Science and Technology Organisation.
2 Marc Michaels’ research in conjunction with this project was made possible by the support of the Rothschild Foundation Hanadiv Europe, while Gary A. Rendsburg wishes to acknowledge both the Mandelbaum Trust (Sydney) and the Blanche and Irving Laurie Chair in Jewish History (New Brunswick, N.J., U.S.A.) for their support. We also thank Samuel Lurie (Rutgers University, B.A., 2023) for technical assistance during the long process of producing this article.
published in *Arts: The Journal of the Sydney University Arts Association.*

Regarding its origins, Crown wrote as follows:

Nicholson states that the scroll had been examined by C. D. Ginsburg (the editor of the “Ginsburg Bible”) and was pronounced by him to “correspond in characters” with Bible MSS. of the thirteenth century A.D. in the British Museum and the Bodleian Library and to be of the same age “if not earlier.”

Some years later, Crown included a summary description of the Torah scroll in his very useful catalogue of the Hebrew manuscripts and rare books held at Fisher Library, as follows:

The scroll once belonged to M. W. [=Moses Wilhelm] Shapira and would seem to have been acquired by Sir Charles Nicholson at the auction of Shapira’s collection in June 1885 after the latter’s suicide. The scroll is one of three items (the other two are described here, nos. 38, 39) listed in a bill of lading dated to November 1885. C. D. [=Christian David] Ginsburg examined the scroll and dated it to the tenth or eleventh century A.D. On paleographical grounds it would seem to be, almost certainly, of a later date, probably from the thirteenth century from the Yemen. The last sheet is of fourteenth century date or later.

In what follows, we present in updated fashion much of what Crown observed in the scroll, based on our own inspection of this precious treasure in April 2019. We then turn to the question of the date and provenance of the scroll. We will show, based on a $^{14}$C test conducted at ANSTO, that the Torah scroll is to be dated to the 17th century, hence, not nearly as old as either Ginsburg or Crown had assumed (though for a corrective, see below, at the end of the next section of our article). Moreover, it is clear that our document was not created in

---


4 Crown, “Authenticity” 56.

5 Alan D. Crown, *Hebrew Manuscripts and Rare Printed Books, Held in the Fisher Library of the University of Sydney* (2nd edition; Sydney: Wentworth Press, 1984) 6–8, esp. 8—online at: https://ses.library.usyd.edu.au/handle/2123/13358. Note that the description of the scroll appears in the typewritten catalogue on pp. 6 and 8, with a photograph reproduced on p. 7.

6 Though this may not be quite accurate, for which see below, in the next section.

7 We gratefully acknowledge the assistance of Melissa A. Rendsburg, who accompanied I. Y. and G. A. R. during our visit to Rare Books and Special Collections at Fisher Library.

8 This work was supported by the Centre of Accelerator Science (CAS) at the Australian Nuclear Science and Technology Organisation (ANSTO) with the financial provision through the Australian National Collaborative Research Infrastructure Strategy
Yemen, but rather somewhere in the eastern Mediterranean region, within the Ottoman Empire, perhaps in Eretz-Israel, perhaps by a scribe with Portuguese heritage. We reach this conclusion based both on the handwriting analysis and on various technical features, all to be described below.

Naturally, the new empirical evidence for both the date and the provenance of the scroll could be transmitted in a short report; nonetheless, we have decided to present a much more detailed survey of the scroll for several reasons. First, we simply felt that the time was ripe to bring this document to the attention of a wider audience, including the biblical scholars who constitute the majority readership of this journal, and who may be unaware of the very existence of this centuries-old complete Torah scroll located here in Australia. Secondly, and perhaps more importantly, we also are driven to provide a detailed analysis at this time in light of the full digital photographic record of the entire Torah scroll, now available online: https://digital.library.sydney.edu.au/nodes/view/8871—thereby allowing us to pepper our discussion with excellent images at every turn.

THE NICHOLSON COLLECTION AT THE UNIVERSITY OF SYDNEY LIBRARY

Although the bulk of the Nicholson manuscript collection in Rare Books and Special Collections at the University of Sydney Library was received following his death, Sir Charles Nicholson (1808–1903) was already an active benefactor to the University of Sydney during his lifetime, as exemplified by the Torah scroll studied here, which arrived in Australia in 1885.

Emigrating from England to Sydney in 1833–1834, Charles Nicholson was, variously, a physician, grazier and landowner, benefactor and Member of the Upper House of the NSW Parliament. From 1845, he collected antiquities, rare books and manuscripts, and artworks, and was recognised as “one of the most

\footnote{We also express gratitude to the staff of the radiocarbon laboratory at CAS who helped processing our samples.}

\footnote{Note that there are other scrolls in the collection, namely, Nicholson Ms. 38 (covering only Gen 1:1–24:39), Nicholson Ms. 39 (covering only Gen 30:14–50:24), Nicholson Ms. 40 (book of Esther), Add. Ms. 32 (complete Torah), and Add. Ms. 390 (complete Samaritan Torah, written c. 1930)—all of which deserve detailed analysis as well. For more information, see the descriptions at the relevant pages in Crown’s catalogue (see above, n. 5); and see here for the full digital record: https://digital.library.sydney.edu.au/nodes/view/8340. Concerning the first three items listed here, see also further below, in the next section of our article.}

\footnote{Unfortunately, the photographer did not capture each sheet separately, so that the images are not as user-friendly as one would hope, but they are of fine quality regardless. This will explain why two of the photos herein (Figures 7 and 9) required the splicing of sections from the official digital record. Unless otherwise indicated, all images are used with kind permission of Rare Books and Special Collections, Fisher Library, University of Sydney.}
cultivated men in the colony.”  

Nicholson was instrumental in the establishment of the University of Sydney in 1850 and went on to serve as Vice-Provost from 1851–54 and Provost (later Chancellor) from 1854–62. In 1862 he returned to England, though he remained as a member of the University Senate for over 20 years. From England, Nicholson sent periodic shipments of antiquities, books and manuscripts as gifts for the University’s collections.

Nicholson Ms. 37 was one of four Hebrew scrolls gifted to the University of Sydney in this manner in 1885. As Crown already reported (see above), this scroll is believed to have once belonged to M. W. Shapira, notorious for the major controversy surrounding the authenticity of the famous Shapira Scroll which led to his suicide in 1884. It is at the 1885 auction of Shapira’s collection following his suicide that Nicholson apparently acquired the scroll, along with two others (see below), and then soon thereafter gifted them to the University.

In a foolscap document written in Sir Charles’s own hand, “List of Hebrew Manuscripts presented to the University of Sydney,” he includes Nicholson Ms. 37 (noted there as “roll marked No. 1”) as one of four manuscripts, each with short descriptions (see Figure 1).

The other three scrolls now bear the shelfmarks Nicholson Ms. 38 (containing Gen 1:1–24:39), Nicholson Ms. 39 (containing Gen 30:14–50:24), and Nicholson Ms. 40 (a complete Esther scroll). The two incomplete Genesis scrolls most likely derive from the Shapira estate as well (as Crown suggests in the catalogue), though the Esther scroll would seem to have been obtained by Nicholson through some independent avenue.

---


Figure 1: “List of Hebrew Manuscripts presented to the University of Sydney,” written by Sir Charles Nicholson in his own hand, housed amongst the documents related to Nicholson’s donations, catalogued as Supplementary Ms. 030 in Rare Books and Special Collections at the University of Sydney Library.

At this point we direct the reader to the two excerpts from Crown’s pen quoted at the beginning of this article. As an inspection of the foolscap document reveals (see at the bottom), Ginsburg’s judgment as reported by Nicholson concerned rolls nos. 2 and 3 = Nicholson Ms. 38 and Nicholson Ms. 39, the two incomplete Genesis scrolls. It is unclear if Ginsburg ever passed judgment on roll no. 1 = Nicholson Ms. 37. Did Crown have access to another document, which no longer is available to us in the archival material? This is possible, since we also should report that the “bill of lading” to which Crown refers (see the second of the quotations at the outset) appears to have gone missing. Or did Crown simply err by assigning Ginsburg’s judgment regarding rolls nos. 2 and 3 to roll no. 1 as well? This would be most uncharacteristic of the great scholar’s
meticulous scholarship throughout his illustrious career, though it remains a possibility. One would imagine that if Ginsburg had opined similarly about roll no. 1, then Nicholson would have reported such in the foolscap document.

Regardless of how this issue is to be resolved, and of course we never may know, we proceed with our presentation of Nicholson Ms. 37, which—irrespective of earlier pronouncements—is worthy of renewed interest, analysis and inspection.

GENERAL FEATURES OF THE SCROLL

Nicholson Ms. 37 is a complete Torah scroll, comprised of 51 parchment sheets, measuring 22 metres (72 feet) long when fully unrolled, with an average height of 60 cm (24 inches).13 Most of the sheets bear three columns of text, a relatively common practice and in fact the halakhic (i.e., Jewish legal) minimum,14 though sheets nos. 1, 34, and 35 include four columns of text, while sheet no. 51 includes only one column. This last sheet is clearly younger than the remainder of the scroll (see further below).

Each column contains 59 lines, except for the columns on the last two (extant) sheets of the original scroll (sheets no. 49–50), which contain 57 lines—presumably to accommodate the poetic layout of haʾazinu in Deuteronomy 32. And then the single column of the younger sheet no. 51 also has 57 lines.15

In the following sections we call attention to some special features of all Torah scrolls, with special attention to how they are reflected in Nicholson Ms. 37. At times, we offer more detail than Crown did in his 1967 article; at other times we present a mere sketch, with less detail than Crown included. Regardless, our goal here is to provide the reader with a flavour of our Torah scroll and to offer some general comments and observations.16

---

13 Crown reported this information in Imperial measurements only, understandably so given the dates of his publications.
14 On several occasions herein, we refer to halakha “Jewish law,” without providing sources and without entering into details. Suffice it to say that halakhic treatises, such as Masekhet Sofrim “the tractate of the scribes,” dated to c. 8th century C. E. (written in Eretz-Israel), present all manner of stipulations for the writing of Torah scrolls (and other handwritten documents as required by the tradition).
15 For the record, note that Crown stated this correctly in his article, “Authenticity” 61, though less accurately (with reference to the last three columns, not sheets) in his catalogue summary, Hebrew 6.
We further note that the systematic study of Torah scrolls remains in its infancy, a point underscored recently by Viktor Golinets: “The study of the Torah (and Esther) scrolls in general is a neglected field. ... There is only a handful of studies dealing with Torah scrolls. ... [Torah] scrolls should be studied anew according to latest research questions and the modern knowledge of these textual artefacts. Such questions are the geographic and chronological provenance of the scrolls, their text as well as the presence of corrections and other (meta-)textual marks.”

Such issues are crucial especially for the following reason: Jewish scribal practice is exceedingly conservative, so that the basic mechanics of writing a Torah scroll have changed little during the course of the last one thousand years plus. Thus, for example, contemporary scrolls still are written on parchment, using a reed or quill, with individual sheets stitched together. Most importantly, no paratextual material may appear on the scroll, which is to say, only the consonantal text of the Torah itself may be written. Hence, unlike other manuscripts (that is, codices), Torah scrolls do not include colophons, which otherwise would provide the usual helpful information: date, place, name of scribe, name of benefactor, etc. In sum, anyone approaching an old Torah scroll must study closely the most minute details, including the handwriting, format features, stitching style, and so on—in addition to the most modern tool available, to wit, the $^{14}$C test for dating.

---


LAYOUT OF THE TWO SONGS

The poem shirat hay-yam, “Song of the Sea,” in Exodus 15 is written in the customary style of "אריח על גבי לבנה ולבנה על גבי אריח" “half-brick over brick, and brick over half-brick” (Babylonian Talmud, Megilla 16b), as seen in Figure 2.

Figure 2: Exodus 15, written in the customary style, in sheet no. 16, col. 3.
Our scribe succeeded in producing the desired pattern in fine fashion, though note the use of one dilated letter at the word "heap of water" (v. 8) (see in Figure 2, line 11).

At the end of the “Song of the Sea,” the text appears in its later format, which is to say, with the words "the waters of" (v. 19) at the end of the penultimate line.19 This stratagem allows the final line to commence with the word "the sea" (v. 19), followed by white space, then the words "and the children of Israel walked on dry land in the midst of," followed by more white space, and finally the word "the sea" once again, right justified—hence, as follows (see Figure 3):

![Figure 3](image3.png)

Figure 3: The final two lines of *shirat hay-yam*, in Nicholson Ms. 37, sheet no. 16, col. 3.

The result is a visual wordplay, as it were, as the reader envisions the Israelites walking on dry land through the sea, with the word "the sea" on either side, both left- and right-justified.20 By reader here, we mean of course only the person actually chanting the Torah text in the synagogue, for the congregants listening to the reading would not be able to distinguish between one layout and the other. This arrangement of the final two lines of the “Song of the Sea” has become standard in modern Torah scrolls, especially Ashkenazi ones, thus, for example (see Figure 4):21

![Figure 4](image4.png)

Figure 4: The final two lines of *shirat hay-yam* in an Ashkenazi scroll held by Radlett Reform Synagogue, on permanent loan from the Memorial Scrolls Trust, MST Czech scroll no. 1176, likely from Vlašim, Bohemia [photo © Marc Michaels].

---

19 Here and throughout this article, we present the Hebrew text with consonants only, since this is how the text appears in all Torah scrolls.


21 Late medieval codices (including the famous Kennicott Bible) also present the text in this fashion; see the images in Rendsburg, *How the Bible Is Written* 391.
Older scrolls, including the Bologna Scroll (see above, n. 18), as well as Yemenite scrolls unto the present day, follow the older system of ending the penultimate line with וישב יהוה עליהם “and YHWH returned upon them” and then commencing the final line with את מי הים “the waters of the sea,” with no attempt for the visual wordplay, hence (see Figures 5 and 6):

**Figure 5:** the final two lines of *shirat hay-yam* in the Bologna Scroll [used with permission granted by Mauro Perani, Università di Bologna].

**Figure 6:** the final two lines of *shirat hay-yam* in a 19th-century Yemenite Torah scroll, housed in the Yemenite synagogue in Reʿut, Israel (with thanks to Itamar Ezra for arranging access) [photo © Marc Michaels].

The poem *haʾazinu* “give ear” (the incipit) in Deuteronomy 32 is written over 70 lines, following one well-known tradition, as seen in Figure 7.

**Figure 7:** The poem *haʾazinu*, written over 70 lines, in sheet no. 50, cols. 2–3.
This practice stands in contrast to the alternative tradition, which writes the poem over 67 lines, as seen in the Aleppo Codex (c. 920 CE), in some early Torah scrolls (most prominently the Bologna Scroll), and in Yemenite Torah scrolls until the present day—all in line with the opinion of Maimonides (Mishneh Torah, Hilkhot Sefer Torah 8:4, per Bodleian MS Huntington 80, fols. 135b–136a).

The layout of the two poems in Nicholson Ms. 37, both the “Song of the Sea,” with attention to the manner of writing the last two lines, and ha’azinu “give ear,” with the 70-line poetic format, are major indicators that our Torah scroll is not of Yemenite provenance.

DILATED (OR ELONGATED) LETTERS IN THE SERVICE OF THE בְּיָה שְׁמוֹ SYSTEM

The scribe has not followed the general custom of wave ha-ʾammudim, lit. “the waws of the columns,” that is, beginning each column of text with the letter waw. He has, however, endeavoured to follow the much older custom of בְּיָה שְׁמוֹ “the LORD is his name” (cf. Psalms 68:5), namely, to commence six particular columns with the letters bet – yod – he – shin – mem – waw (that is: ב – י – ה – ש – מ – ו). The six are:

<table>
<thead>
<tr>
<th>Sheet No.</th>
<th>Column</th>
<th>Verse</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Genesis 1:1</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>Genesis 49:8</td>
</tr>
<tr>
<td>16</td>
<td>3</td>
<td>Exodus 14:28</td>
</tr>
<tr>
<td>22</td>
<td>1</td>
<td>Exodus 34:11</td>
</tr>
<tr>
<td>38</td>
<td>3</td>
<td>Numbers 24:5</td>
</tr>
<tr>
<td>50</td>
<td>2</td>
<td>Deuteronomy 31:28</td>
</tr>
</tbody>
</table>

And while he succeeded to do so, it was only through some scribal machinations, as explained in the following.

---

22 Though not in the St Petersbourg (Leningrad) Codex.
24 Note that Jordan Penkower, New Evidence for the Pentateuch Text in the Aleppo Codex (Ramat-Gan: Bar-Ilan University Press, 1992) 56–61 [Hebrew] believes that the 70-line arrangement of ha’azinu is the original, since it is mentioned in Masekhet Sofrim (on which see n. 14). The issue of which layout is the original one is only of secondary interest to the present enterprise, however.
Naturally, the *bet* of בְּרָאָשִׁי “in the beginning” commences the entire Torah scroll, so there are no issues involved there (for a glance, see Figure 25 below). But look what happens on sheet no. 12, bottom third of col. 1 (see Figure 8): for the verses of Gen 48:18‒49:7, the scribe recognised that he did not have enough words to fill the rest of the column, and thus he wrote almost every letter in dilated fashion, in order to allow the *yod* of יהודה “Judah” to appear at the top of the next column.  

Figure 8: Sheet no. 12, with the word יהודה at the top of the second column, though note the dilated letters in the bottom third of the first column, necessary for the placement of the key word.

25 Such is the custom in Sephardic and Ashkenazi scrolls; Mizrahi scrolls typically use the word יששכר (Genesis 49:14) to create the second letter of the בְּרָאָשִׁי pattern, plus there are still other variant traditions.
Such manoeuvring was not needed in the next instance, perhaps because the scribe had some experience in the writing of the “Song of the Sea,” with the six usual lines preceding it, including the word ההבאים “who followed” (Exod 14:28) at the top of the column (see Figure 9).

Figure 9: Sheet no. 16, cols. 2–3, with the word ההבאים at the top of the third column.

At the next instance, the scribe again needed to resort to his manipulation of the text in order to allow Speakers, “observe well” (Exod 34:11) to appear at the head of the column. The preceding section, that is, virtually the entirety of sheet no. 21, col. 3, is written with almost every single letter dilated (see Figure 10).
Only through such scribal technique could the words שמר לך appear at the top of the next column, that is, at sheet no. 22, col. 1 (see Figure 10).

**Figure 10**: Sheet no. 21, col. 3, with most every letter dilated, and sheet no. 22, col. 1, with the key phrase שמר לך at the top.

For the next item within theutherford שמר pattern, the scribe resorted to a different approach: in sheet no. 38, the first two columns are much wider than normal, while the third column is much narrower. The presentation may be less aesthetic, but presumably the scribe learned his lesson well by this point, for the use of the two wider columns allowed him to situate מה טבו “how goodly” (Num 24:5) at the top of col. 3 (see Figure 11), without recourse to elongated letters.
For the sixth and final item in the system, the scribe encountered only minimal difficulty, as presumably he once again relied on his special training and experience for the writing of *haʾazinu* “give ear” (as with the “Song of the Sea”). We say ‘minimal difficulty,’ because he still needed to resort to the dilation of some letters near the bottom of col. 1, as seen in Figure 12.
In sum, the effort exerted in the writing of these sections of the Torah text demonstrates how important it was to our scribe to adhere to the custom.

On the one hand, the liberal use of the dilated letters may indicate the lack of advanced planning and may suggest an inexperienced scribe, perhaps a novice even. As we shall see below, there are other infelicities in the scribal production, which may confirm this conclusion. On the other hand, perhaps our scribe was an experienced one, who knew well how to plan in advance, in order to achieve the pattern, even if said planning required the dilation of so many letters. To be sure, in our experience, we cannot recall seeing a Torah scroll with this degree of elongated letters (for an example in a late 19th-century scroll, with several lines of dilated letters, see Figure 13).
Figure 13: Late 19th-century Torah scroll, originally the property of the Jewish community of Adlerkosteletz (now Kostelec nad Orlicí), Bohemia, housed in the Bournemouth Reform Synagogue since 1965—with several lines of elongated letters in the two columns of text presenting Numbers 23, and the beginning of Numbers 24, in order to allow for מ"ה מ"ה
“how goodly” to appear at the top of the next column (not pictured here)
[photo © Marc Michaels].

If Nicholson Ms. 37 was produced by copying from an earlier scroll, then presumably the older scroll also used such dilated letters liberally. More likely, though, one should assume that our scribe worked from a codex (or perhaps even an early printed book), with a totally different layout, from which he copied the words (consonants only, of course), adjusting his formatting as necessary as he proceeded.

THE BRIDGES BETWEEN THE PENTATEUCHAL BOOKS

Here we simply observe that the scribe included the usual four blank lines between books, per the standard practice, as mandated by the halakha (i.e., Jewish law). One illustration will suffice, the bridge between the books of Exodus and Leviticus (see Figure 14).

Figure 14: Sheet no. 24, col. 1 (Exodus–Leviticus bridge). Note also the manner of ‘blind stitching’ to the right, at the seam between sheets nos. 23–24, discussed below.
SPECIAL FEATURES

Tagin

As the images above and below indicate, tagin “tittles” are used throughout on the expected letters. Though for a close-up image, selected at random, see Figure 15:

![Figure 15](image)

**Figure 15**: Sheet no. 43, col. 3, selection of Deut 7:12–16, with tagin “tittles” used throughout on the expected letters.

Inverted nunin

As one would expect, the inverted nunin surround the two verses of Num 10:35–36 (see Figure 16):

![Figure 16](image)

**Figure 16**: Sheet no. 35, col. 2, with Num 10:35–36 offset with the inverted nunin.

---


28 For a detailed study of this feature, including its various manifestations, see Marc Michaels, *Sefer Binsoa* (5th ed.; London: Kulmus Publishing, 2010).
Dotted Letters

Dotted letters (created by the use of supralinear dots, also known as *puncta extraordinaria*) appear in the standard ten places in our Torah scroll:29 Gen 16:5, 18:9, 19:33, 33:4, 37:12; Num 3:39, 9:10, 21:30, 29:15; Deut 29:28—though two comments are here added.

First, at Num 21:30, where the traditional reading is דִּנְתֵּא, it appears that the dot has been erased over the letter reš, as seen in Figure 17:30

![Figure 17](image)

**Figure 17**: The presentation of Num 21:30 (sheet no. 38, col. 1), with the dot above the letter reš apparently removed (see line 3, word 3, in this image).

Secondly, at Deut 29:28, the Jewish tradition differs on the number of dotted letters: ten (that is, לַנְוַ וֹלָנְוַיְוַנְוַי) or eleven (including the following ʿayin of the word עד).31 The two great early codices—the Aleppo Codex and the St. Petersburg [Leningrad] Codex—place dots above only the ten letters of the two relevant words; and the same holds for the Bologna Torah scroll.32 Over time, the Jewish tradition seems to have moved more and more towards placing a dot also over the following letter ʿayin in the next word, as seen in our Torah scroll (Figure 18).

![Figure 18](image)

**Figure 18**: The presentation of Deut 29:28 (sheet no. 49, col. 2), with eleven supralinear dots. Note, the same image appears below as Figure 28.

---

29 Note that Crown, “Authenticity” 63, mentioned this para-textual issue generally, but did not state explicitly whether or not Nicholson Ms. 37 contains this feature.

30 On the issues involved here, see Diamond, *Scribal Secrets* 67–71, and the editorial addition by Gary A. Rendsburg on 74–75.

31 On the background of these dotted letters, see Diamond, *Scribal Secrets* 56–63.

There is no need here to present photos of all the additional eight places, and thus we limit ourselves to one example, Gen 33:4, with the dots above the word וַיְשָׁקָהוּ (see Figure 19).

**Figure 19:** The presentation of Gen 33:4 (sheet no. 8, col. 1), with supralinear dots on the word וַיְשָׁקָהוּ (the last one is less prominent, though clearly still visible).

**Large and Small Letters**

Crown listed the majuscule (large) and minuscule (small) letters in Nicholson Ms. 37, as follows (the three *sic* items are treated below):

**Majuscules:**
- Gen 34:31 וַיְשָׁקָהוּ
- Exod 34:7 בָּא
- Exod 34:14 אָזָר
- Lev 11:42 נֶזָּר
- Lev 13:33 הוֹדָה
- Num 27:5 מָשָׁם
- Num 32:16 לְפִימוֹ (sic)
- Deut 3:23 לְפִימוֹ (sic)
- Deut 6:4 שָׁם
- Deut 6:4 אָזָר
- Deut 21:17 בָּכָר (sic)
- Deut 32:4 לִי

**Minuscules:**
- Gen 2:4 בֹּכָר
- Gen 23:2 לְבִרְכָּה
- Gen 27:43 קֶנֶּה
- Lev 1:1 יָדָה
- Lev 6:2 מָכָּה
- Deut 32:18 מָשָׁם

---

33 On the variant traditions for majuscules, see the online presentation at https://www.sofer.co.uk/large-letters.
In Crown’s words, “The majuscule and minuscule letters in the Fisher Library scroll are not always easy to distinguish since the writing is uneven in places”\textsuperscript{34} — an assessment with which we concur. By “uneven,” we assume that Crown means that the large and small letters at times are only barely so, not differing in any glaring way from the standardly written letters. As a case in point, see the small ʾaleph in ויקר א “and he called,” the opening word of the book of Leviticus, for which see Figure 14 above.

Four of the items included in the above list require special comment.\textsuperscript{35}

1. The word לטפنو “for our children” in Num 32:16, in which Crown believed that he detected a large pe (see Figure 20). Almost undoubtedly, however, a later scribe corrected the text here (note the rubbing visible within the relevant letter, in addition to the darker black ink), so that the pe only looks larger, but is not to be considered a true majuscule. To be sure, to the best of our knowledge, the pe in לטפנו is never written large in other Torah scrolls.

\textbf{Figure 20}: The presentation of Num 32:16 (sheet no. 40, col. 3), with a possible (though doubtful) large letter pe in the word לטפنو (seen here in line 3, word 2).

2. The word החלות “you have begun” in Deut 3:24 (not 3:23), in which Crown believed that he detected a large he (see Figure 21). Once again, there is no such tradition elsewhere within Jewish scribal practice; and in any case, once more the scroll reveals rubbing and a correction, with a slightly larger letter he, in darker ink (along with several other letters above and below), hence not a true majuscule.

\textsuperscript{34} Crown, “Authenticity” 64.

\textsuperscript{35} The first three of these are discussed again below in the “Corrections” section of our article.
Figure 21: The presentation of Deut 3:24 (sheet no. 42, col. 3), with a possible (though doubtful) large letter he in the word נחלות (seen here in line 3, word 3).

3. The word הקול “(in) the voice of” in Deut 21:18, in which Crown believed that he detected a large letter lamed (see Figure 22). Once again, there is no such tradition within Jewish scribal practice, and once again the combination of rubbing and correction is visible here in the scroll, with the resultant slightly larger and thicker lamed, once again in black ink, hence not a true majuscule.

Figure 22: The presentation of Deut 21:18 (sheet no. 47, col. 1), with a possible (though doubtful) large letter lamed in the word לקול (seen here in line 3, word 8).

4. The word מוקדה “hearth” in Lev 6:2 (see Figure 23), in which Crown believed that he detected a small mem. If there is a small mem at the beginning of the word מוקדה, in accordance with the widespread scribal tradition, one must admit that the size of the letter is hardly if at all reduced. Note that Yemenite scribes typically do not write this letter as small, and thus quite possibly the mem in מוקדה indeed appears as standard size—though in light of everything we have stated herein, this one data point (along with two others to be mentioned below) should not be used to argue for the Yemenite provenance of Nicholson Ms. 37.

36 Crown’s article states “lamed in bgwl’ (Deut. 21: 17),” with two typos, though clearly the intention was to refer to לקול in Deut 21:18.

37 In this instance, we hasten to add that Crown did not list this item in the description provided in his catalogue: Crown, Hebrew Manuscripts 6. Presumably he changed his mind (rightly so) in the years between the detailed article and the briefer catalogue description.
Of the remaining items on the list above, we direct the reader’s attention to "like a whore?" in Gen 34:31, in which Crown identified the large zayin (see Figure 24). Here we must declare “well spotted,” for the letter is only slightly enlarged, especially when one compares this zayin with the same letter in the word ובפרזי “and among the Perezzites” (v. 30) two lines above. Note that this letter/word is not commonly written in such fashion, though the practice is attested occasionally.38

As Crown himself duly noted, the first letter of the Torah, the bet of בראשית “in the beginning” (Gen 1:1) is not written large, even though this special notation is well-nigh universally practiced within the Jewish tradition (see Figure 25). In addition, there are no tagin on the letter bet, a practice followed by most Jewish communities, though not by the Yemenite scribes: hence, the lack of tagin here may have been another factor for Crown (no pun intended) to posit a Yemenite provenance for Nicholson Ms. 37.

---

To illustrate two true majuscules, we present the writing of Deut 6:4, the famous Shema’ line, with a large ’ayin in the first word שְׁמַע and a large dalet in the last word צְדָקָה (Figure 26).

Of the other large letters found commonly in other Torah scrolls, we observe that the following appear in standard size in Nicholson Ms. 37: the yod in יְגַדֵּל נָא “may [the power of YHWH] increase, pray” in Num 14:17, and the lamed in וַיְשָׁלְךָם “and he cast them” in Deut 29:27 (see Figures 27 and 28)—which is to say, the scribe of our Torah scroll did not enlarge these two letters.
In addition, some letters which are written large in the Yemenite tradition appear as regular sized letters in our Torah scroll—thus the samekh in דְּסִכְּכִי “book” in Gen 5:1, the sade sofit in בַּר יאֵר “the land” in Deut 11:21, the qof in קְן “nest of” in Deut 22:6, and the ’aleph in אשֶרֶך “happy are you” in Deut 33:29. The lack of majuscules in these places constitutes yet additional testimony against the previously proposed Yemenite provenance of our scroll.

For one instance of a word which typically is written with a small letter, but which does not appear thusly in our Torah scroll, see the first mem in מֶמֶרִים “rebellious” in Deut 9:24, appearing in standard size (see Figure 29). In this instance, the non-reduction of this letter follows the Yemenite practice, though once again this data point should not be used in support of a possible Yemenite provenance. For in light of everything that we have stated herein, our scroll certainly does not originate in that cultural sphere.

**Figure 28:** The presentation of Deut 29:27 (sheet no. 49, col. 2), with the lamed of רִישָלַכְבִי (first word in line 4) in regular size.

N.B. The same image appears above as Figure 18.

**Figure 29:** The presentation of Deut 9:24 (sheet no. 44, col. 2), with the first mem in מֶמֶרִים (line 3, word 3) appearing in standard size.

**Broken Letter waw**

One final issue is included here: the absence or presence of the broken waw in the word שלום “peace” in Num 25:12 (see Figure 30). Crown wrote as follows: “The waw ... appears to be broken but the parchment is too rubbed to be certain.”\(^39\) To our mind, the waw is clearly intact, notwithstanding the rubbing visible. Is it possible that originally the letter was written broken, the parchment was rubbed, and then the letter was written intact? This remains a possibility, though doubtful, and in any case naturally there is no way to know for sure.

\(^39\) Crown, “Authenticity” 64.
Figure 30: The presentation of Num 25:12 (sheet no. 39, col. 1), most likely with no broken waw in the word שלום (seen here in line 3, word 10).

Corrections

Whilst our scribe has a nice regular script, like all scribes he was not a machine and thus made errors, which in turn were spotted by the scribe or by the maggihim (proofreaders) and then corrected—or perhaps in some cases the mistakes were corrected by subsequent scribes. In this section of our article, we have selected a few items to bring to life the creation of Nicholson Ms. 37.

One particularly interesting correction appears at Gen 38:21‒22 on sheet no. 9, col. 2 (see Figures 31‒32 below), in the section concerning Judah’s liaison with Tamar. At this part of the narrative, Judah has sent his friend Hirah to locate the supposed ‘prostitute,’ in order to pay her the fee to which he previously had agreed. Those familiar with the workings of biblical narrative, including quoted speech, will know that this is one of the few places in the Torah, where reported speech is quoted directly: thus, the words לא היתה בהו פרשה “there was no prostitute here” appear both at the end of v. 21, in their original narrative context, and at the end of v. 22, when Hirah reports what transpired to Judah.\(^{40}\)

With that as background, we are able to reconstruct with some certainty what transpired in the writing of this pericope in Nicholson Ms. 37. As Figure 31 clearly reveals, the scribe erased the three lines of text which originally were present, and then replaced them with four lines of a smaller letter size to squeeze in the missing elements. We propose the following scenario. Having reached the words לא היתה בהו פרשה “there was no prostitute here” at the end of Gen 38:21, our scribe looked up for a moment, or perhaps took a short break. When he returned to his work, gazing down again, he skipped a section and instead

---

\(^{40}\) On reported speech in the Bible, see George W. Savran, *Telling and Retelling: Quotation in Biblical Narrative* (Indiana Studies in Biblical Literature; Bloomington, IN: Indiana University Press, 1988). As Savran noted (29), there are only ten instances in the grand narrative from Genesis through Kings with verbatim repetition, including five in the Torah: Gen 20:5, 26:9, 38:22 (that is, our passage), 44:25, Exod 32:8. On repetition in general, including in the voice of the narrator, see Rendsburg, *How the Bible Is Written* passim.
went to the next occurrence of the same phrase לא היתה בז槿ך קרש “there was no prostitute here” at the end of the next verse, Gen 38:22, thereby deleting a chunk of text consisting of ten words. He then continued with ויאמר יהודה “and Judah said” at the start of v. 23. No doubt when our scribe (or perhaps proof-reader) reached the end of this column of text, he realised his error and had no choice but to correct the text in the way he did.

This is a prime example of parablepsis. The visual reconstruction below shows that this is the most likely explanation. A useful marker is that whilst the scribe has done an excellent job scraping out the section, he missed the top of the ascender of the letter lamed at the end of the first corrected line which, as we can see fits with the word על at the end of the original line. Indeed, if we may so quip, the prostitute was indeed ‘not there,’ missing from the scroll as well.41

\[\text{Figure 31: The relevant section of Genesis 38 on sheet no. 9, col. 2, with portions of vv. 21–22 written in smaller letters. Note especially the small fleck of ink within the circle, evidence of the ascender of the letter lamed once present there.}\]

\[\text{Figure 32: Reconstruction of the text as originally written (as proposed herein), using a font created from an abecedary drawn from the manuscript, with the removal of the scraped area using a clone tool [© Marc Michaels].}\]

\[41\text{The dangers for a scribe of the same phrase re-occurring in close proximity are all too evident. A similar parablepsis example can be found at the bottom of the left column on sheet no. 27 (not shown here, though the reader is free to consult the online digital record): at Lev 15:6–8 the phrase עד הערב “until the evening” is repeated several times in close succession, thereby leading to a sizeable omission.}\]
An example of a fairly simple error may be seen at Gen 31:42 on sheet no. 7, col. 3 (see Figures 33–34), with attention to the elongated letter *bet* at the end of the line. The beginning of this verse reads as follows: לֹֽאָלֶ֑הי אֵ֖בֶ֣י אֵ֑לֶּה יִ֖רְאָה אָבֵ֖רֶם “if not the God of my father, the God of Abraham.” Here we may propose that the scribe skipped the two words “the God of my father” and originally wrote לֹֽא אֵ֖לֶּה יִ֖רְאָה אָבֵ֖רֶם “if not the God of Abraham” (see Figure 34), an understandable mistake since both “my father” and “Abraham” begin with the same two-letter combination of ‘*aleph* and *bet*. In this case, he immediately realised his mistake, erased the last four letters of the word אָבֵ֖רֶם “Abraham,” while keeping the initial ‘*aleph* in place, and then re-wrote the correct word אֵ֖בֶ֣י “my father.” In so doing, however, he needed to stretch the letter *bet* quite dramatically, as seen in Figure 33.

*Figure 33*: The presentation of Gen 31:42 on sheet no. 7, col. 3, with the greatly dilated letter *bet*, necessary to correct the text.

*Figure 34*: Reconstruction of the text as originally written (as proposed herein), before the writing of the subsequent lines, at which point the scribe corrected his error, as seen in Figure 33. (See Figure 32 for the method used in the reconstruction.) [© Marc Michaels].

There are also quite a few instances where we can see that Nicholson Ms. 37 received the subsequent attention of another scribe, who rewrote particularly faded letters, using black ink, with the difference in ink colour very obvious, such as the example below (see Figure 35).

*Figure 35*: Close-up of portions of Num 1:52–53 on sheet no. 32, col. 2, where a second scribe has re-inked some letters in a darker ink.

For three other instances, see our earlier discussions at Figures 20–21–22 above. In the first one, at Num 32:16 (sheet no. 40, col. 3), a later scribe rewrote the letter *pe* in the word לֶֽאַמֶּֽהֶּן “for our children” in black ink; in the second
one, at Deut 3:24 (sheet no. 42, col. 3), a later scribe wrote the letter he in the word הָלָּכָה “you have begun” in black ink (along with other letters nearby); while in the third one, at Deut 21:18 (sheet no. 47, col. 1), a later scribe rewrote the letter lamed in the word בְּקֵלָה “(in) the voice of.”

Our next example derives from Exod 37:20‒24, the section of the Torah describing the making of the Menorah to be placed in the Tabernacle, as presented on sheet no. 23, col. 1 (see Figure 36). The original writing has been scraped, but a close examination reveals that the letter forms are slightly different, with a slight slant to the left, thus indicating a second hand. It is not clear what may have been incorrect about the original writing, though presumably the later scribe or the reader of the text in the synagogue identified a problem significant enough to require rewriting.

Figure 36: The presentation of Exod 37:20‒24 on sheet no. 23, col. 1, showing the correction of a sizable chunk of text by a later scribe.

Moreover, there is another indication of the second hand, for the structure of the tagin “tittles” is different. To illustrate this point, we observe the writing of the two-word phrase שני הקנים “the two branches,” which occurs in both Exod 25:35 (where the instructions concerning the Menorah are given) and Exod 37:21 (where the work is executed) (see Figure 37). In the former (to the right in Figure 37), the original scribe created a rounded design from the tagin on the neighbouring letters shin and nun. In the latter (to the left in Figure 37), the second scribe created a pyramidal design from the tagin on the same two letters.
Figure 37: The two-word phrase כֵּינִים “the two branches,” with differently styled tagin combinations: rounded at Exod 25:35 (right), on sheet no. 19, col. 1, and pyramidal at Exod 37:21 (left), on sheet no. 23, col. 1.

These are just a small selection of interesting erasures and corrections in the scroll that help one understand the difficulties our scribe seems to have faced. In truth, the number of such large corrections are quite extensive, suggesting that our scribe was yet an apprentice, still learning his craft. Alternatively, perhaps he was in a rush to meet a deadline, and/or was easily distracted, simply lost concentration, or even tired on several or multiple occasions during the painstaking process.

Stitching

During the history of Torah scroll production, various methods of stitching were used to bind the parchment sheets, one to another. The stitching in Nicholson Ms. 37 is ‘blind stitching,’ where the sewing is hidden by the flap created by the join of two sheets (see, for example, Figure 14 above and Figures 39–40 below). No stitches show on the front, and thus they may be seen only on the back. This method of stitching is known on earlier scrolls, including from the 17th century, though it became the more standard practice during the 19th century.

Prior to this the favoured method was loop stitching where one could see a loop of gidin (animal sinew) periodically up the seam. There were also other more dramatic ways of sewing the sheets together, including with zigzags or very close-knit loop stitching.

All of these are attested during the 17th century (see Figure 38), so that the use of ‘blind stitching’ in Nicholson Ms. 37 cannot be used to date the scroll per se, but we mention this technique here nonetheless.

---

42 For readers who would like to inspect other corrections, we direct your attention to the following: sheet no. 30, col. 1; sheet no. 41, cols. 1–2; sheet no. 47, col. 3; etc.
43 This information was conveyed by Rabbi Dr Eric Ray (1926–2005), the scribal teacher of Marc Michaels’ teacher.
44 The close-knit loop stitching is also seen in the Dead Sea Scrolls.
That said, stitching techniques, including how they varied over time and by geographical region, is a subject which requires further study.

![Figure 38: Four methods of stitching, in three different 17th-century scrolls (from left to right): Nicholson Ms. 37 (blind stitching); BL Add MS 11828 (loop stitching) [used with permission granted by the British Library]; BSB Cod. hebr. 488 (with two types of stitching, zigzag above and close-knit loop below).](#)

**Pricking and Ruling**

The parchment sheets show clearly the prick holes used to guide the ruling of the *śirṭuṭ* (guideline). In most places the guidelines are fainter impressions, visible mainly in the margins. Note further that the Hebrew writing hangs from the guideline (in Yemenite and much older manuscripts the letters are written slightly below the guideline—for an illustration, see the few lines from a Yemenite scroll in Figure 6). All three of these items—the prick holes, the guidelines, and the position of the letters—may be seen in Figure 39 (one of innumerable examples we could have chosen):

---

45 The entire scroll may be viewed online at: https://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Add_MS_11828.

46 Used with permission granted by the Bayerische Staatsbibliothek via its Nutzungsbedingungen, which directs the user to https://creativecommons.org/licenses/by-nc-sa/4.0/. The entire scroll may be viewed online at: https://daten.digitale-sammlungen.de/~db/0010/bsb00103892/images/index.html. The close-knit loop stitching appears to be original in this scroll, while the zigzag stitching appears to have been used during the process of repairing/strengthening the scroll.
Figure 39: A section of Genesis 10, from sheet no. 2, col. 3, with all three of the points discussed above visible. Note further another example of ‘blind stitching’ in the seam between sheets nos. 2 and 3.

In some places, especially where dirt has likely become ingrained into the depressions created by the ruling implement, one may observe that in fact the scribe used a double guideline for both the top and bottom of the letter (see Figure 40).

Figure 40: A section of Numbers 24–25, from sheet no. 38, cols. 2–3, with clear evidence of the use of a double ruling for the positioning of the letters.

The use of double guidelines is rare in a Torah scroll: their employment here might suggest a student scribe who needed the extra help to keep his baseline consistent. Though given the regular consistency of his letter writing with good proportions, spacing and upright angle (that is, when there are no corrections), it is surprising that he would feel the need for the double guidelines. Alternatively, the ruling with double guidelines may simply be a tradition that he received from his teacher, in order to ensure even neater writing.
Sheet No. 51

As readily visible, and as described by Crown, the final sheet, no. 51, is younger than the rest of the scroll, clearly as a replacement sheet. As the final sheet on the scroll, one can understand how the original had become detached and perhaps even torn, especially in light of the considerable amount of rolling that a Torah scroll undergoes in its lifetime. Further stress is placed on the end of the scroll during *hagbaha* “raising,” with reference to the raising of the scroll during the synagogue service, especially when reading the end of Deuteronomy during the weeks of the month of *Tishre* (culminating in the holiday of *Simḥat Torah*, “the rejoicing of the Torah,” when the annual reading cycle is completed and started anew).

![Figure 41: Sheet no. 50, column 3, and Sheet no. 51, column 1 (the only column on this smaller sheet), with the final portion of Deuteronomy and thus the conclusion of the entire Torah.](image)

Hence, the Jewish community which owned and used this scroll in its synagogue liturgy must have commissioned a new sheet for the final portion of the Torah, Deut 33:16–34:12. As the previous two columns, which include the poem *haʾazinu* “give ear,” had used 57 lines each, the scribe also wrote sheet no. 51 with 57 lines. In addition, he used slightly larger letters throughout, so that the
text would reach the bottom of the column, thereby fulfilling the halakhic (Jewish legal) requirement (see Figure 41).  

Provenance

Since the scroll once was owned by Moses Shapira, and since we know that he collected many manuscripts from the Jews of Yemen, it is easy to understand why earlier scholars assumed a Yemenite provenance for Nicholson Ms. 37. Such in fact was claimed by Crown, both in his detailed article and in the summary description in the catalogue. And yet the evidence does not bear this out.

Above we observed that certain letters written large in the Yemenite scribal tradition do not appear as such in our scroll. There is much more, though, for other features typically found in Yemenite scrolls are wanting in Nicholson Ms. 37. We refer here to matters of spelling (plene vs. defectiva), paragraphing, and even the occasional difference in the consonantal text. In every single instance (13 according to the usual counting), our scroll follows the more general Sephardic-Ashkenazic tradition – and not the Yemenite one. Two examples may be seen in Figures 42 and 43, with the captions providing further information.

**Figure 42**: The relevant word is written יִוָי in Gen 9:29 (sheet no. 2, col. 2) (line 3, word 2, here), whereas Yemenite scrolls use the plural form יִיוְי (thus also in the St. Petersburg [Leningrad] Codex).

**Figure 43**: The relevant word is written דַּכָּה in Deut 23:2 (sheet no. 47, col. 2) (line 2, word 3, here), whereas Yemenite scrolls spell this word with 'aleph, hence, דַּכָּה (thus also in the St. Petersburg [Leningrad] Codex).

---

47 For another example of this practice, see the much older Torah Scroll in the British Library, Harley 7619, perhaps from the 14th century, available here: https://www.bl.uk/manuscripts/Viewer.aspx?ref=harley_ms_7619.

48 For a convenient list, based on Yemenite halakhic sources, see https://en.wikipedia.org/wiki/Torah_scroll_(Yemenite).
In addition, note that Yemenite scribes typically write 51 lines per column, whereas Nicholson Ms. 37 contains 59 lines per column, or 57 lines in the case of the columns on sheets nos. 49–51 (see above).

Next is the issue of script, especially since different styles are used from region to region: to be sure, the handwriting of Nicholson Ms. 37 is not Yemenite. In the opinion of our colleague Judith Olszowy-Schlanger (Oxford/Paris), the handwriting style is Sephardic, though a more specific provenance is difficult to judge. In light of the spread of Iberian Jewry throughout the Mediterranean during the 16th and 17th centuries, she hypothesises on the style of the script that it could have been written in Italy or somewhere within the Ottoman Empire.\footnote{We are grateful to Prof. Olszowy-Schlanger for her generous assistance regarding the paleography.}


Though we also note two similar Portuguese scripts from the \textit{Specimens} database, namely, vol. 2, no. 51 (Moura), and vol. 2, no. 57 (Lisbon).\footnote{The respective shelfmarks are: Bodleian MS Can. Or. 42 (Pentateuch/Haftarot/Megillot dated to 1470); and British Library MS Or. 2626–2627–2628 (the famous Lisbon Bible, in 3 vols., dated to 1482). We also observed several other Portuguese bookhand manuscripts with similar script, accessed through “Ktiv: The International Collection of Digitized Hebrew Manuscripts,” available at \url{https://www.nli.org.il/en/discover/manuscripts/hebrew-manuscripts}.}

Of course, by the 17th century, there were no more Portuguese Jews resident in Portugal (in the wake of the expulsion of 1497), but per what we state in the previous paragraph, large communities had established themselves in the Ottoman Empire, including the land of Israel. Thus, it is possible that our scribe was one resident in the eastern Mediterranean with a Portuguese heritage or a teacher with Portuguese heritage.

We focus on the Ottoman Empire, more so than on Italy or other possible locations, due to Shapira’s activity throughout the region, including his residency in Jerusalem itself—and thus one may assume that he obtained the scroll from a Jewish community in the proximate vicinity.

\textbf{Summary Statement}

The complete Torah scroll housed in Fisher Library, Nicholson Ms. 37, appears to reflect the work of an inexperienced scribe. He is competent, and his letter forms are consistent, but he encountered difficulties along the way. Such difficulties are evident in his efforts to create the בְּיֵהוָה שָׁמָּה pattern (see above) and in the many corrections (of which we have presented only a sampling above). Possibly our scribe was a novice, still learning his profession. One may even go
further and suggest that he was the only trained scribe available in the local area, and/or that his work was all that the presumably poor Jewish community which owned this scroll could afford.

In light of everything that we have observed in Nicholson Ms. 37, it is important to recall the intense labour required in the writing of a Torah scroll, summarised best by Philip Alexander: “constant exercise of the hand muscles, and better judgment of the lay-out which comes with constant training of the eye—the ability to judge distances, keep lines straight, justify or semi-justify left-hand margins, and fit the text into the space available,” in short, a delicate dance at every stage.

The impoverished nature of the synagogue community was explicated by Alan Crown, building on an earlier comment by Moses Gaster. We quote the former here in extensio:

One further item of general evidence must be adduced in support of the belief that this scroll had seen long service in a synagogue. Gaster has observed that in poor communities the chances of an ancient scroll surviving are better than in wealthier communities, for when a scroll was *pasul* it was patched up rather than being put aside for burial since the community could not afford new scrolls. Not only is the Fisher Library scroll patched, as described above, but sections have also been rewritten in an unusual, but ritually permissible, manner as though the owners of the scroll could afford to do no other but preserve it carefully.

In sum, we will assume that Nicholson Ms. 37 originates in the early modern period, that it was written by a scribe influenced by Portuguese tradition, and that the scroll belonged to a Jewish community somewhere in the Ottoman Empire, including (or perhaps most likely) in Eretz-Israel.

**Scientific Dating of Nicholson Ms. 37**

Six samples of parchment were taken from the Torah scroll left to right along the scroll length from sheets 2, 13, 26, 38, 50 and 51. Samples were taken at the inconspicuous folded seam joints to minimise the visual effect. Five samples were taken from regular sheets, one from the last sheet, which looked visually younger and was probably a later replacement. Samples were taken with small clean scissors, which were wiped with alcohol between sampling.

---


At ANSTO laboratories pieces of parchment were divided in halves each, and one half was preserved. The other bits were cut into smaller pieces, and clean ones were selected for further processing.

Parchment is a collagen-based writing medium made from processed, but untanned, skins of cattle, sheep and goats. Once a hide had been removed from the animal, it may have been dried or cured with salt. Further processing included washing, liming, mechanical thinning, bleaching, dyeing, surface cleaning and polishing. Various substances might have been applied to the surface of parchments including lime, chalk and ash. More contaminants could appear on the parchment over time from handling and conservation practices. Pretreatment procedures are aiming to remove contaminants that may be of a different carbon age from the parchment without causing unnecessary destruction. We followed the protocol outlined in Brock (2013). All samples were initially subjected to a sequential solvent wash to remove lipids and potential conservation treatments, namely hexane (45°C, 1 hr); acetone (45°C, minimum of 1 hr); 2 × 1:1 methanol/chloroform mixture (room temperature, 1 hr each). Samples were then left to air-dry overnight or longer to ensure complete removal of the solvents. The next step involved acid treatment: 1M HCl at room temperature for 1 hour. Most samples fizzed when acid was added, indicating the presence of carbonates, so this step was repeated. No reaction was observed in repeated treatment. Samples were washed at least three times with MilliQ® water after acid treatment. The next alkali step included 0.2 M NaOH at room temperature for 30 min, repeated twice. No colouring or reactions were observed. Again, samples were rinsed at least three times with MilliQ® water. The final acid step included 1M HCl at room temperature for one hour (no reactions observed) followed by three rinses with MilliQ® water. Samples were freeze-dried overnight. After that samples were combusted to CO₂ and converted to graphite following the standard ANSTO procedure (Hua, et al., 2001). Graphite targets were analysed for radiocarbon using a VEGA AMS installation (Wilcken, et al., 2015) and stable isotope (¹³C/¹²C) ratios for graphite were determined on EA-IRMS (Elementar varioMICRO CUBE® coupled to a Micromass Isoprime®). The results of these measurements are presented in Table 1:

---

55 For the references in this section of the article, see towards the end of the section.
Table 1: Summary table of $^{14}$C measurements and calibrated ages of parchment samples.

<table>
<thead>
<tr>
<th>ANSTO code</th>
<th>Sample Type</th>
<th>Submitter ID</th>
<th>d($^{14}$C) per mil</th>
<th>percent Modern Carbon</th>
<th>Conventional Radiocarbon age yrs BP</th>
<th>Calibrated ages, AD 68.3% probability ranges</th>
<th>95.4% probability ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>OZZ267</td>
<td>Parchment</td>
<td>Joint 1–2 – s2</td>
<td>$-22.1 \pm 0.2$</td>
<td>97.02 $\pm 0.22$</td>
<td>245 $\pm 20$</td>
<td>1646 (57.0%) 1662 1788 (11.3%) 1792 1639 (70.0%) 1668 1781 (25.4%) 1798</td>
<td></td>
</tr>
<tr>
<td>OZZ268</td>
<td>Parchment</td>
<td>Joint 12–13 – s13</td>
<td>$-22.5 \pm 0.3$</td>
<td>96.79 $\pm 0.22$</td>
<td>260 $\pm 20$</td>
<td>1638 (68.3%) 1660 1632 (77.5%) 1665 1784 (6.4%) 1794</td>
<td></td>
</tr>
<tr>
<td>OZZ269</td>
<td>Parchment</td>
<td>Joint 25–26 – s26</td>
<td>$-24.4 \pm 0.1$</td>
<td>97.17 $\pm 0.29$</td>
<td>230 $\pm 25$</td>
<td>1647 (40.6%) 1668 1782 (27.7%) 1796 1638 (51.1%) 1680 1740 (3.6%) 1753 1762 (39.0%) 1800 1939 (1.8%) 1950</td>
<td></td>
</tr>
<tr>
<td>OZZ270</td>
<td>Parchment</td>
<td>Joint 37–38 – s38</td>
<td>$-22.2 \pm 0.4$</td>
<td>96.69 $\pm 0.23$</td>
<td>270 $\pm 20$</td>
<td>1529 (12.1%) 1539 1635 (56.2%) 1658 1523 (29.8%) 1571 1630 (63.0%) 1664 1786 (2.6%) 1794</td>
<td></td>
</tr>
<tr>
<td>OZZ271</td>
<td>Parchment</td>
<td>Joint 50–51 – s50</td>
<td>$-21.7 \pm 0.1$</td>
<td>97.15 $\pm 0.22$</td>
<td>230 $\pm 20$</td>
<td>1650 (42.6%) 1664 1784 (25.7%) 1794 1640 (57.6%) 1673 1768 (0.5%) 1771 1776 (37.4%) 1800</td>
<td></td>
</tr>
<tr>
<td>OZZ272</td>
<td>Parchment</td>
<td>Joint 50–51 – s51</td>
<td>$-22.4 \pm 0.1$</td>
<td>98.3 $\pm 0.25$</td>
<td>140 $\pm 25$</td>
<td>1683 (9.3%) 1698 1722 (7.8%) 1736 1802 (6.6%) 1814 1834 (31.0%) 1886 1909 (13.6%) 1936 1674 (31.7%) 1766 1774 (0.4%) 1776 1798 (45.2%) 1895 1902 (18.2%) 1934</td>
<td></td>
</tr>
</tbody>
</table>
The calibrated ages below have been calculated using the $^{14}$C calibration program OxCal 4.4 (https://c14.arch.ox.ac.uk/oxcal.html) that was developed by Bronk Ramsey (1994) based on the IntCal20 calibration curve (Reimer, et al., 2020). Figure 44 presents probability plots for calibrated ages with indicated 68.3% and 95.4% probability intervals. As it is reasonable to assume that the five oldest sheets were manufactured at the same time, the combined weighted average age result for them is also shown in the plot. All five visually older sheets came in very good agreement between each other indicating the uniform source of parchment for the scroll. The visually younger sheet (sheet no. 51) calibrated age agrees with its suggested later addition, and probably a few decades younger than the rest of the manuscript.

**Figure 44:** Calibrated ages probability plots for studied parchment sheets, together with weighted average age for five visibly older sheets. Brackets indicate 68.3% and 95.4% probability intervals respectively.

Based on the calibrated ages as shown in Figure 44, we conclude as follows. The five sheets together originate with ~88% probability from 1642 to 1662 C.E., or with a slightly narrower window from 1647 to 1658 C.E. with 68.3% probability. The visibly younger final sheet (sheet no. 51) is a few decades younger (probably from ~1700 CE), and could be even more recent.

**References for this section of the article:**


In sum, the scroll dates to the 17th century, obviously not nearly as old as Ginsburg or Crown had assumed (though once again, it is unclear if Ginsburg actually passed judgment on the matter). We must admit that we too were surprised (or at least disappointed) by the relatively recent date of the scroll, but the $^{14}$C test is consistent and trustworthy. The ‘surprise’ date of the scroll serves as testimony to the extremely conservative nature of Jewish scribal practice, especially in the writing of Torah scrolls. It often is difficult to ascertain the date of a scroll, simply by looking at the document—indeed, even experts may err considerably in their judgements and estimations.

**CONCLUSION**

Nicholson Ms. 37, housed at Fisher Library, University of Sydney, is a complete Torah scroll, written with a competent though not fully professional standard. Its many features afford for great discussion, which we have provided above. Naturally, we would have wished for the scroll to be older, dating to the medieval period, akin to the Bologna scroll, the Biella scroll, and other Torah scrolls dated via the $^{14}$C determination.

In the end, such was not the case, but our expedition as a team of scholars into the minutiae of the Jewish scribal tradition, with sidebar comments on the history of scholarship and with a side excursion into modern science, has been fruitful nonetheless. We trust that the readers of this article will benefit from our findings, as an illustration of the kind of scrutiny required for the investigation of a centuries-old complete Torah scroll.