DISCOVERIES IN THE JUDEAN DESERT

EMANUEL TOV, EDITOR-IN-CHIEF
DEDICATED TO

ALAN AND KAREN ASHTON

FOR THEIR CONTINUING GENEROUS SUPPORT

OF THE PUBLICATION OF THE DEAD SEA SCROLLS
## CONTENTS

**TABLE OF PLATES**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOREWORD</td>
<td>xi</td>
</tr>
</tbody>
</table>

### A. CALENDRICAL DOCUMENTS and MISHMAROT by S. Talmon  
with the assistance of J. Ben-Dov

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>320–330, 337, 394 1–2: Introduction</td>
<td>1</td>
</tr>
<tr>
<td>320. 4QCalendrical Document/Mishmarot A (Pls. I–II)</td>
<td>37</td>
</tr>
<tr>
<td>321. 4QCalendrical Document/Mishmarot B (Pls. III–IV)</td>
<td>65</td>
</tr>
<tr>
<td>321a. 4QCalendrical Document/Mishmarot C (Pl. V)</td>
<td>81</td>
</tr>
<tr>
<td>322. 4QMishmarot A (Pl. V)</td>
<td>93</td>
</tr>
<tr>
<td>323. 4QMishmarot B (Pl. V)</td>
<td>99</td>
</tr>
<tr>
<td>324. 4QMishmarot C (Pl. VI)</td>
<td>103</td>
</tr>
<tr>
<td>324a. 4QMishmarot D (Pl. VI)</td>
<td>107</td>
</tr>
<tr>
<td>324b. 4QpapCalendrical Document A? (Pl. VI)</td>
<td>113</td>
</tr>
<tr>
<td>324c. 4QMishmarot E (Pl. VI)</td>
<td>119</td>
</tr>
<tr>
<td>325. 4QCalendrical Document/Mishmarot D (Pl. VII)</td>
<td>123</td>
</tr>
<tr>
<td>326. 4QCalendrical Document C (Pl. VII)</td>
<td>133</td>
</tr>
<tr>
<td>328. 4QMishmarot F (Pl. VII)</td>
<td>139</td>
</tr>
<tr>
<td>329. 4QMishmarot G (Pl. VII)</td>
<td>143</td>
</tr>
<tr>
<td>329a. 4QMishmarot H (Pl. VIII)</td>
<td>147</td>
</tr>
<tr>
<td>330. 4QMishmarot I (Pl. VIII)</td>
<td>151</td>
</tr>
<tr>
<td>337. 4QCalendrical Document E? (Pl. VIII)</td>
<td>155</td>
</tr>
<tr>
<td>394 1–2. 4QCalendrical Document D (Re-edition) (Pl. VIII)</td>
<td>157</td>
</tr>
</tbody>
</table>

### B. ORDO by U. Glessmer

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>334. 4QOrdo (Pl. IX)</td>
<td>167</td>
</tr>
</tbody>
</table>

### C. OTOT by J. Ben-Dov

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>319. 4QOtot (Pls. X–XIII)</td>
<td>195</td>
</tr>
</tbody>
</table>

**CONCORDANCE** by Y. Shemesh

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATES</td>
<td>I–XIII</td>
</tr>
</tbody>
</table>


# TABLE OF PLATES

I–II. 320. 4QCalendrical Document/Mishmarot A

III–IV. 321. 4QCalendrical Document/Mishmarot B

V. 321a. 4QCalendrical Document/Mishmarot C  
322. 4QMishmarot A  
323. 4QMishmarot B

VI. 324. 4QMishmarot C  
324a. 4QMishmarot D  
324b. 4QpapCalendrical Document A  
324c. 4QMishmarot E

VII. 325. 4QCalendrical Document/Mishmarot D  
326. 4QCalendrical Document C  
328. 4QMishmarot F  
329. 4QMishmarot G

VIII. 329a. 4QMishmarot H  
330. 4QMishmarot I  
337. 4QCalendrical Document E  
394 1–2. 4QCalendrical Document D

IX. 334. 4QOrdo

X–XIII. 319. 4QOrdo
FOREWORD

CALENDARS and the celebration of feasts and holidays form an important part of religious and national movements. The Qumran calendrical texts provide new information about otherwise little-known festivals. These issues often form the substance of debate and are the grounds for schism. The Qumran calendrical texts, together with the previously published community documents, reveal that the Qumran community followed a solar calendar which differed fundamentally from the lunar calendar observed at the Temple in Jerusalem. This volume contains texts composed by the Qumran community delineating its calendar, which was considered to be God-ordained. The service cycle of the priestly courses in the Temple plays a central role in the community’s concept of chronology.

The texts published in this volume contain manuals for calendrical and liturgical events recorded in several types of annual or multi-annual lists. Some of the scrolls, designated here 'Calendrical Documents', display a festival calendar for the 364-day year. Other documents additionally include the component of the priestly courses (mishmarot). These documents record various festivals in a six-year cycle, and were also combined with certain lunar features in three additional texts (4Q320, 321, 321a). A longer cycle of 294 years (six jubilees of forty-nine years) is reflected in 4Q319 which mentions a 'sign' at the beginning of every third year. 4Q334 refers to the number of prayers to be recited daily. Calendrical texts written in a unique script dubbed 'Cryptic A', indicating their esoteric and secret nature, are published in vol. XXVIII. A different calendrical system is reflected in 4Q318 published in vol. XXXVI.

It is a pleasant duty to thank the authors of the texts included in this volume for their thorough and professional work.

We wish to thank the production team for a very professional job. The volume was prepared and copy-edited in Jerusalem by Eva Ben-David, S. Ben Or, S. Chavel, Janice Karnis, N. Gordon, Sarah Presant-Collins, and Valerie Carr Zakovitch. The production was co-ordinated efficiently by Janice Karnis, who also prepared the camera-ready version. The plates were carefully prepared by Valerie Carr Zakovitch. S. Holst checked the lemmas and references in many texts and also critically read the whole manuscript.

The in-context concordance was prepared by Yehudit Shemesh of the Department of Hebrew Language at the Hebrew University. The corrections and formatting of the concordance for this volume have been supported by the Foundation for Ancient Research and Mormon Studies in Provo, Utah.

We are indebted to the Israel Antiquities Authority for its constant encouragement and for the network of support services it supplies. In particular, we wish to thank the Director, General (ret.) A. Drori and Ayala Sussmann, Director of Publications. By the same token, we owe a debt of gratitude to Tsila Sagiv, photographer, and Lena Libman, conservator. We were guided by the Advisory Committee of the Israel Antiquities Authority which has been actively involved in the reorganization of the Dead Sea Scrolls Publication Project for the past eleven years.
S. Talmon wishes to thank the 'Israel Science Foundation' administered by the Israel Academy of Sciences and Humanities for supporting the preparation of his text editions.

The Qumran Project of the Oxford Centre for Hebrew and Jewish Studies is to be thanked for its support for the typesetting of this volume.

Jerusalem
1 February 2001

EMANUEL TOV
EDITOR-IN-CHIEF
General Observations

FRAGMENTS of some twenty calendrical works were recovered from the Qumran caves: 4Q320-330; 4Q337; 4Q394 1-2; the tail end of an ephemeris preserved in a fragment of a copy of Miqṣat Maʿasè ha-Torah (4Q394 3-7 i); 6Q17; and a computation of jubilees over a long period of time, harnessed to otoṭ of the priestly watches (4Q319). These remnants of diverse chronometrical registers greatly complement the various details of information pertaining to the Covenancers' ritual timetable, partially preserved in their 'Foundation Documents' (1QS, CD, 1QpHab, 1QHa, 11QPs, and 11QT), prayers (1Q34bis, 4Q408-409, 4Q507-509), and prayer collections such as Shiḥot Olāt HaShabbat and 4QDaily Prayers (4Q503). The considerable number of calendrical works and the diverse calendar-related statements highlight the momentous importance attached to 'proper chronology' in the Yahad's world view. The Covenancers conceived of time as running its course according to a divinely preordained pattern.¹ Their messianic-millenarian expectations anchored in the belief that history unfolds in a divinely established sequence of epochs² (מַחֲנֶה [1QpHab VII 12-13], or קָשָׁר מַעֲשֶׂה [1QH 1:24-25; IV 16; 1QM I 8-9]),³ which is expected to culminate in a 'cut-off period and the making (establishment) of a new (world) age', ימיו וThanOrEqualTo מצלה והשנה [1QS IV 25].⁴ Equally, cultic acts, foremost the observance of the annual festivals and the offering of sacrifices—the domain of the 'priestly watches', מִטְפָּה—were seen to be subject to a preordained schedule with their efficacy depending upon precise timing. For these reasons, calendar-related notations are accorded a place of prominence at the conclusion of Yahad works, as in 1QS X, 4QS*, and 11QPs² XXVII, or at their beginning, as in 4QMMT.

¹ See J. Licht, 'Time and Eschatology in Apocalyptic Literature and in Qumran,' JJS 16 (1967) 177-82.
³ See S. Talmon, 'מַחֲנֶה', TWAT 7 (1990) 84-92; idem, 'Between the Bible and the Mishnah', WQW, 45-8.
TABLE 1 presents the comparative data for the present and former sigla of the calendrical documents.

<table>
<thead>
<tr>
<th>Present Siglum</th>
<th>Former Siglum</th>
</tr>
</thead>
<tbody>
<tr>
<td>4Q320</td>
<td>4Q320 Mishmarot A</td>
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<tr>
<td>4Q321</td>
<td>4Q321 Mishmarot B&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>4Q321a</td>
<td>4Q321a Mishmarot B&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>4Q322 Mishmarot A</td>
<td>4Q323 Mishmarot C&lt;sup&gt;b&lt;/sup&gt; 1</td>
</tr>
<tr>
<td>4Q323 Mishmarot B</td>
<td>4Q323 Mishmarot C&lt;sup&gt;b&lt;/sup&gt; 2</td>
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<tr>
<td>4Q324 Mishmarot C</td>
<td>4Q324 Mishmarot C&lt;sup&gt;a&lt;/sup&gt;</td>
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<tr>
<td>4Q324a Mishmarot D</td>
<td>4Q324a Mishmarot C&lt;sup&gt;a&lt;/sup&gt; 1</td>
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<tr>
<td>4Q324b pap</td>
<td>none</td>
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<td>4Q324c Mishmarot E</td>
<td>4Q324a Mishmarot C&lt;sup&gt;a&lt;/sup&gt; 3–4</td>
</tr>
<tr>
<td>4Q325 Calendrical Document/Mishmarot D</td>
<td>4Q325 Mishmarot D</td>
</tr>
<tr>
<td>4Q326 Calendrical Document C</td>
<td>4Q326 Mishmarot C&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>4Q394 1–2 Calendrical Document D</td>
<td>4Q327 Mishmarot E&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>4Q328 Mishmarot F</td>
<td>4Q328 Mishmarot F&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>4Q329 Mishmarot G</td>
<td>4Q329 Mishmarot F&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>4Q329a Mishmarot H</td>
<td>4Q329a Mishmarot G</td>
</tr>
<tr>
<td>4Q330 Mishmarot I</td>
<td>4Q330 Mishmarot H</td>
</tr>
<tr>
<td>4Q337 Calendrical Document E?</td>
<td>4Q337 Fragment of Calendar</td>
</tr>
</tbody>
</table>

The sigla for items previously designated 'Mishmarot', now subsumed under 'Historical Texts' (DJD XXXVI, 275–89), are provided here:

| 4Q322a Historical Text H? | 4Q323 Mishmarot C<sup>b</sup> 3–5 |
| 4Q331 papHistorical Text C | 4Q324b Mishmarot C<sup>a</sup> |
| 4Q332 Historical Text D | 4Q322 Mishmarot C<sup>a</sup> 1–3 |
| 4Q332a Unidentified Text | 4Q322 Mishmarot C<sup>a</sup> 4 |
| 4Q333 Historical Text E | 4Q324a Mishmarot C<sup>a</sup> 2, 5 |

<sup>5</sup> The designations 'Mishmarot B, C' etc., instead of B<sup>a</sup>, B<sup>b</sup> et sim., were chosen in order to highlight the fact that the fragments in question stem from independent documents, and not from copies of one common source.

<sup>6</sup> This is the only calendrical text written on papyrus; all others are inscribed on parchment.
Structure and Characteristics of the Covenanters’ Calendar

The Covenanters abided by a solar ephemeris of 364 days which probably had its origin in ancient Mesopotamia,7 and whose essential characteristics, to all intents and purposes, are identical to the principal features of the calendar propagated in the Book of Heavenly Luminaries (1 Enoch 72–82), and in Jubilees (chap. 6; cf. also chap. 2).8 In contrast, the schedule of the sacrificial services in the Jerusalem Temple conformed to the 354-day lunar year of mainstream Judaism. The difference caused the members of the community to abstain from participation in the Temple cult so as not to ‘kindle (fire on) His altar in vain’ (CD VI 13–14), ‘because there everything is confounded, the proper course of the annual festivals is corrupted, holy days are profaned and profane days are sanctified’ (Jub. 6:32–38).

No calendar-related document from Qumran, nor references in 1 Enoch and Jubilees, comprise all facets of the Yahad’s 364-day ephemeris. The item which comes closest to indirectly preserving a detailed, comprehensive outline of this calendar is the particularized catalogue of ‘David’s Compositions’ (11QPs2 XXVII 5–9),10 which are to be recited as accompaniments to the 364 daily sacrifices, יבנלאי, every Sabbath, at the beginnings of the months, and on all festivals throughout the year. However, by collating and integrating discrete details preserved in the various fragments and calendar-related notations, the structure of the Covenanters’ calendar can be fully reconstituted.

364 days make up fifty-two weeks, and subdivide into four identical annual quarters of thirteen weeks. The sequence of the quarters parallels the progression of the four major agricultural seasons termed (mo‘ed) qyr, qys, zr‘, 5d (1QS X 7; 1Q34bis),11 and coincide with the astronomical seasons: vernal equinox, summer solstice, autumnal equinox, and winter solstice. The first two months of a quarter, תכפיה, number thirty days each, whereas the last, viz. the third, sixth, ninth, and twelfth months have an extra day, עים, and thus number thirty-one days each.12 The four added epagomenal days are invested with a heightened cultic significance. King David is accredited with

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10 The authors of 1 Enoch and Jubilees recurrently explicate the total of 364 by which the year is completed, but do not systematically itemize the annual course of the Holy Seasons.
12 This division is reflected in a rabbinic tradition which speaks of the beginnings of four annual festivals separated from one another by ninety-one days and seven-and-a-half hours: הקוממות intended הกำไรות ימי, הקוממות הפחות, הקוממות הפחות והกำไรות ימי, הקוממות הפחותות, הקוממות הפחותות (b. Erub. 56a).
having composed four special songs of supplication for use on these days (11QPs\textsuperscript{a} XXVII 9-10).\textsuperscript{13}

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<thead>
<tr>
<th>Table 2: The 364-day Solar Calendar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Months</td>
</tr>
<tr>
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</tr>
<tr>
<td>I</td>
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<tr>
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</tr>
<tr>
<td>VII</td>
</tr>
<tr>
<td>X</td>
</tr>
<tr>
<td>II</td>
</tr>
<tr>
<td>V</td>
</tr>
<tr>
<td>VIII</td>
</tr>
<tr>
<td>XI</td>
</tr>
<tr>
<td>III</td>
</tr>
<tr>
<td>VI</td>
</tr>
<tr>
<td>IX</td>
</tr>
<tr>
<td>XII</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The authors of the calendrical documents and mishmarot rosters do not note regular workdays in their account, but record solely the sacred seasons of the ritual year and, in some instances, the Sabbaths.\textsuperscript{14} The only exceptions are the secular Sunday and Monday, the twenty-ninth and thirtieth days of the third month of each quarter, which fall between the last Sabbath of the month on the twenty-eighth of the month, and the epagomenal day on Tuesday, the thirty-first (4Q394 1-2 ii 6-8; 4Q394 3-7 i i).

In contrast to the 354-day lunar calendar in which the festivals 'wander' and can fall on different days of the week, in the 364-day solar ephemeris each festival is riveted permanently to the same weekday. The first day of the year falls invariably on the fourth day of the week, and likewise also the fifteenth day of the first month. Since the annual quarters are identical, the first and fifteenth days of the first month of each quarter also always fall on the fourth day of the week. The Covenanters presumably attached great significance to this fact since, according to biblical tradition, it was on

\textsuperscript{13} For this understanding of the collocation see S. Talmon, 'The Covenanters' Annuario According to King David's Compositions in the Psalms Scroll from Cave 11 (11QPs XXVII)', Fifty Years of Dead Sea Scrolls Research, ed. by G. Brin and B. Nitzan (Jerusalem: Yad Ya'akov Ben Zvi, forthcoming, Hebrew).

\textsuperscript{14} These registers resemble a type of festival roster which rabbinic tradition designates עבדי המזות (v. Erub. 21c).
the fourth day of Creation that God fashioned the sun and the moon that rule the solar and the lunar year (Gen 1:14-19).

The 364-day ephemeris ensures that four major 'holy seasons' are immutably observed on a Wednesday: ḫוי יוהיה (pl. יוהיה יוהיה) 'the beginning of the year' on the first day of the first month in the spring (IQS X 6); יְהֵון יְהֵון, the Feast of Mazzoth, on the fifteenth (11QTa XII 10-11); וְיָשָׁר סַלְמִיא, the autumnal commencement of the year (11QTa XXV 2-3 et al., cf. Lev 23:24) or מַלְשְׁנִים יְהֵון, termed לֶחַמְיָה יְהֵון in rabbinic terminology, on the first day of the seventh month (4Q320 and 4Q321 passim); and שִׁבְעַת, the Festival of Booths, on the fifteenth (11QTa XVII 10; cf. 4Q320 passim).

It is of interest to note that later rabbinic tradition denies the fourth day of the week the special cultic status which it has in the Covenanters' calendar by enacting that the Mazzoth Festival on the fifteenth of the first month never falls on Monday, Wednesday, or Friday; New Year, יָהֵון יְהֵון, on the first day of the seventh month, never falls on Sunday, Wednesday, or Friday, יָהֵון יְהֵון, on the first day of the month (Lev 16:29; 23:26; Num 29:7) never falls on a Friday, whereas in the Covenanters' tradition it is always observed on a Friday, and thus immediately precedes a Sabbath. The Covenanters probably hailed this junction as the correct timing of 'the years of release' מַלְשְׁנִים יְהֵון Yi, which biblical priestly tradition designates מַלְשְׁנִים יְהֵון or מַלְשְׁנִים יְהֵון יְהֵון (Lev 16:31; 23:32), by taking this designation to signify 'one Sabbath after the other'.

In the 364-day solar year, the Feast of Weeks, יִשְׁתַּלְמִיא יְהֵון, is also designated יִשְׁתַּלְמִיא יְהֵון. It is conceived of as being constituted of two 'holy seasons' as in 4Q324d I 3-4: (cf. Jub. 6:21), and is always celebrated on Sunday the fifteenth day of the third month (cf. Jub. 6:17-18; 15:1; 16:13; 44:1-5), the seventh Sunday after the 'sickle is put to the standing corn' (Deut 16:9-10) on the day of the 'Waving of the Omer', וְיָשָׁר סַלְמִיא יְָֽשׁוּב יְָֽשׁוּב יְָֽשׁוּב, and the standing יְָֽשׁוּב יְָֽשׁוּב יְָֽשׁוּב יְָֽשׁוּב (Lev 23:9-11). The Covenanters considered the observance of the festivals on these dates to be the correct implementation of the biblical injunction to celebrate the Feast of Weeks, יִשְׁתַּלְמִיא יְָֽשׁוּב יְָֽשׁוּב יְָֽשׁוּב, seven weeks after the Waving of the Omer, counting from יִשְׁתַּלְמִיא יְָֽשׁוּב יְָֽשׁוּב יְָֽשׁוּב (Lev 23:15-16). Identifying this term with יִשְׁתַּלְמִיא יְָֽשׁוּב, the day following the Sabbath, יִשְׁתַּלְמִיא יְָֽשׁוּב יְָֽשׁוּב יְָֽשׁוּב—the standard designation of Sunday in their calendrical terminology—they understood יִשְׁתַּלְמִיא יְָֽשׁוּב יְָֽשׁוּב יְָֽשׁוּב as referring to Sunday the twenty-sixth day of the first month, the first Sunday after the entire Mazzoth Festival, which extends from Wednesday the fifteenth to Tuesday the twenty-first. In contradistinction, in the tradition of mainstream Judaism the collocation מַלְשְׁנִים יְָֽשׁוּב יְָֽשׁוּב is understood to designate the day after the first day of the Mazzoth Festival, the sixteenth of the first month, irrespective of

16 In 1QpHab XI 6-8, the day is paraphrastically designated מַלְשְׁנִים יְָֽשׁוּב יְָֽשׁוּב יְָֽשׁוּב.
17 In other biblical occurrences, the collocation מַלְשְׁנִים יְָֽשׁוּב pertains to the abstinence from work on the Sabbath, the seventh day of the week (Exod 16:23; 31:15; 35:2; Lev 23:3) or to the command to let fields lie fallow in the seventh year, the year of בָּשָׁנָה יְָֽשׁוּב (Lev 25:4). Similarly, in 1QM II 8-9 the expression מַלְשְׁנִים יְָֽשׁוּב defines the 'years of release', in which all military undertakings are to be suspended.
18 Text (not final) quoted courtesy of S. J. Pfann.
19 Cf. הַשָּׁנָה יְָֽשׁוּב, 'the next year' (Gen 17:21; 11QTa XLIII 5).
the weekday on which it falls. Accordingly, בַּיָּמַיָּהֶם is observed on the same weekday fifty days hence, viz. on the sixth day of the third month.

The discrepancies between the solar and lunar calendrical schedules inevitably undermined the social order and communal life of Judaism at the height of the Second Temple period, and effected an unbridgeable gap between the ‘Community of the Renewed Covenant’ and its opponents. It may be said that the calendar controversy was a major cause, possibly the causa causans of the Yahad’s separation from mainstream Judaism.21 The discrepancies between the solar and lunar calendrical schedules inevitably undermined the social order and communal life of Judaism.22 Rather each one must stand on his watchtower, “the fence is built, the boundary-line extends far” [Mic 7:11-12]. And during all these years Belial will be set loose against (or: in) Israel’ (CD IV 10-12).

**Intercalation with the True Solar Year**

The Covenanters’ 364-day solar year required periodical adjustment to the true solar year of approximately 365.25 days in order to ensure that the agricultural festivals of Mazzoth and the Waving of the Omer, the Feast of Weeks, and Tabernacles would be observed each at its appropriate time. Unless adjusted, the progressive accumulation of the discrepancy of one-and-a-quarter day per annum over an extended time period ultimately would overturn the entire system of holy seasons; spring and summer festivals would fall in the autumn, and vice versa.

Qumran documents do not provide details on how the required calibration was achieved. Whatever method was used, it must have been based on the periodical insertion of one or several full weeks.23 The periodical intercalation in the Covenanters’ solar year of a month of twenty-nine or thirty days, as practiced in the lunar calendar of mainstream Judaism, would upset the smooth functioning of the rotating one-week service cycle of the priestly watches. A fairly accurate concordance of the 364-day ephemeris with the ‘true’ solar year could be achieved by intercalating one week every seven years. The intercalation of one additional week every twenty-eight years then would take care of the as yet not covered six hours per annum (28 x 6 hours = 168 hours = seven days).

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23 Thus correctly posited by E. R. Leach, ‘A Possible Method of Intercalation for the Calendar of the Book of Jubilees’, *VP* 7 (1957) 391-7.
Classification of Calendar-related Documents

The various calendar-related registers will be subsumed here under three main categories: 24 Calendarical Documents, Mishmarot Registers, Mixed-type Rosters.

A. Calendrical Documents

1. Simple enumerations of the months together with the number of days in each month. The essential structure of this category can be discerned in the fragmentary, but still restorable lines of 6Q17, 25 which originally may have contained a mnemotechnical phrase:

<table>
<thead>
<tr>
<th>かい</th>
<th>0000</th>
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</thead>
<tbody>
<tr>
<td>รก</td>
<td>1</td>
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<tr>
<td>ולט</td>
<td>2</td>
</tr>
</tbody>
</table>

1. [The first (month), 27 in it 30 days, the] second month, in it 30 [days]
2. [the third month, in it 31 days,] and completed are the days of [the quarter]

2. Itemized schedules of the annual holy seasons. In comprehensive rosters such as 4Q326 and 4Q394 1–2, the Sabbaths and the biblical festivals are itemized seriatim, together with their respective dates in the solar year. The extant fragments of these documents contain mentions of the biblical festivals of Passah, the Feast of Mazzoth, and the Feast of Weeks.

Some registers of this type also include the Covenanters’ distinctive holy seasons: the Festival of the Priests’ installation, (First) Grapes (I/8; 11QTa XV 4–14; cf. 4Q326 1 [restored]; Lev 9:1); the harvest festivals of (First) Grapes, (First) Olives, and the Festival of the Wood Offering (III/15), and (First) Olives, and the Festival of the Wood Offering lack an explicit biblical basis. However, they are presumably rooted in an ancient tradition which may be reflected in Neh 10:35–38 (cf. v 40; 13:5,12): ‘We . . . have cast lots for the wood offering, so that it may be brought into the house of our God . . . at appointed times, year by year . . . and the first of . . . the (new) wine and oil’ (cf. Num 18:12; Deut 14:23; 18:4).

With the exception of the epagomenal days, no biblical or extrabiblical holy season is recorded for the last four months of the year. Especially noticeable is the absence of any reference to the biblical Festival of Purim, which originates in the book of Esther and which mainstream Judaism celebrates on the fourteenth and fifteenth of Adar, the

26 Possibly a scribal mistake instead of מיר. For the proposed restoration of the phrase, cf. 4Q394 5:17 i 2 [37–3]
27 The different Hebrew sequence of ‘month’ and the numeral cannot be reproduced in the translation.
twelfth month. As is well known, not a single fragment of the book was discovered among the remains of biblical scrolls found at Qumran. However, verbatim quotations from Esther in Covenants’ writings indicate that the Masoretic version of the book was known to authors of the community.28

The unchanging calendrical schedule is always applicable because it is not impaired by references to the rotating mishmarot service cycle, in which different watches are on duty at the various festivals from year to year.29

B. Mishmarot Registers

The Covenants considered their abstention from participation in the sacrificial service at the Jerusalem Temple to be a temporary state of affairs. They confidently expected the restitution of a new sanctuary, in which their own priesthood would conduct the holy service in accordance with their solar calendar and ritual rulings. Fragments of several ‘Tables of Priestly Watches’ (4Q320-344a; 324c-325; 328-330) preserve various parts of a six-year service cycle of twenty-four priestly houses, which are expected to officiate in the Temple in weekly turns of duty. This matter of cultic import finds mention in the description of the role played by the priests in the future War of the Sons of Light Against the Sons of Darkness (IQM II 1-6), but is not noted at all in cult-related compositions such as 1QS, 1QH, and CD. Most surprisingly, there is no reference whatsoever to mishmarot in the Temple Scroll, in which affairs of the sanctuary and the divine service are central.

The names of the twenty-four divisions of priests detailed in these tables derive from a list embedded in an account of King David’s testament in 1 Chronicles 22-29.30 In the context of his last dispositions concerning the affairs of the Temple, the dying king is credited with having determined the functions of the Levitical families in the sanctuary (ibid., 23:2-32; 24:20-27:15) and with the establishment of the rotating service system of the various priestly houses (24:1-19, esp. vv 7-19). The Qumran finds preserve, in fact, the earliest extrabiblical duplicates of the biblical roster, with the only difference being that the list is headed by Gamul, in service already at the time of Creation (4Q320 1 i 3-5; 3 i 10-12; 4 ii 10-14; 4Q319 IV 10-11), while in the Chronicles version, the course Jehoiarib heads the list. Later specimens of the list are extant in mediaeval inscriptions, and also serve as a motif in Jewish liturgical compositions.31

The service registers of the priestly courses preserved in 4Q320-330 are aimed at supplying the Covenants, principally the priesthood, with practical guidelines for


29 In view of the absence of mishmarot references in 4Q324b and 4Q337, these small fragments are subsumed here under A. CALENDRIAL DOCUMENTS.

30 The names of several of these priestly families are adduced in a record of the cultic personnel said to have returned with Zerubbabel from the Babylonian exile (Neh 12:1-22).

determining the immutable dates of the annual festivals or of other important events over the course of the year. They are designed to display the entire six-year cycle, whose recurrent, unvarying implementation was considered essential for the maintenance of the sacred time-scheme from *Urzeit* to *Endzeit*.

**The Terms mishmerot and 'X ira'**

As a technical term connoting ‘priestly watch’ is not found in Qumran calendrical documents or in rosters of the priestly courses, nor is it extant in the biblical list of the names of twenty-four priestly houses. In that list, ‘divisions’ or ‘detachments’ is employed instead (1 Chron 24:1, cf. vv 3-5), as in similar contexts throughout the book of Chronicles. In the Covenanters’ writings, the synonymic female form *מישמרות* appears only in 1QM II 2-4 (conjecturally restored in 4Q471 1 s). In rabbinic literature, the noun *מישמרות* serves recurrently in this technical sense in descriptions of the turns of duty of the priestly echelons in the Jerusalem Temple: ‘four priests would enter there, two of this watch and two of that watch’ (b. *Sukk.* 56b); ‘when the time came for a watch to go up, the priests and Levites go up to Jerusalem, and the Israelites of (connected with) this watch assemble in their towns’ (b. *Ta'an.* 27a,b). Especially noteworthy in the present context are passages which relate explicitly to one mishmar arriving for duty and seeing another: ‘when mishmarot see each other’, especially *מישמרות*, and the incoming watch does (takes care of) the *tamid* at twilight and of the incense vessels’, according to the Covenanters’ writings, the sole occurrence of the term mishmar rot (b. *Sukk.* 56b).

It is noteworthy that rabbinic texts refer to both the entry and exit of watches into the Temple, while the latter is never mentioned in Qumran sources. The rabbinic definition of their entry by *למעלה* (see e.g. above and *m. Yeb.* 11:7) has a counterpart in the Qumran expression ‘*למעלה*’ (4Q325). However, the term *למעלה* which prevails in rabbinic texts is not used by Qumran authors, who employ instead the collocation ‘*למעלה*’ (4Q322, 323, 324, 324a) which is totally absent from the pertinent rabbinic literature. This linguistic phenomenon warrants further comment.

The noun *למעלה* is a *hapax legomenon* in Biblical Hebrew. In the sole occurrence of the term, it has the spatial signification ‘gateway’ or ‘means of access’, ‘to the north of the altar gate’, where ‘the image of Lust’ could be seen, וִיהִי בֹּאָבָא אָדָם לַמִּשָּׁמָרָה בְּצֵי אֵלֶּחָה (Ezek 8:5). Here, *למעלה* is synonymous with *למען* (Ezek 44:5; 46:19; cf. also 2 Kgs 16:18; Jer 38:14; 2 Chron 23:15 et al.), and likewise the antonym of *למעלה*, ‘exit’ (Ezek 43:11).
In the Copper Scroll, Aramaic בֵּיתוֹנָה similarly connotes ‘entrance’ in the spatial sense (3Q15 II 12; III 9; IV 3; V 13; XI 13; XII 1) as in rabbinic writings. In contrast, in 4Q322-324 בֵּיתוֹנָה has a temporal-technical meaning, connoting the beginning of a mishmar’s spell of duty. In Biblical Hebrew, the same connotation is attached to the verb אֲנַעְתִּי in the summary line אֲנַעְתִּי בֵּיתוֹנָה לַעֲבֹד יְהוָה יְהוָה מְשַׁמֵּרָּם בִּרְכֹו, ‘these is/are the(ir) rule(s) of their service when (they) enter the house of YHWH according to the rule (prescribed) for them by their ancestor Aaron’ (1 Chr 24:19), which concludes the preceding detailed roster of the names of the twenty-four priestly watches (vv 7-18).

The conjunction of בֵּיתוֹנָה with the name of a mishmar in descriptions of the rotating service schedule of the priestly watches leads to the supposition that the technical term ‘X בֵּיתוֹנָה’ may have its roots in a biblical episode. I venture to suggest that the employment of בֵּיתוֹנָה in this specific technical meaning derives from the appearance of the multifaceted stem בֵּיתוֹנָה in the biblical account of the revolt against Queen Athaliah, staged in the Temple precincts by the high priest Jehoiada, who enthroned Joash, King Ahaziah’s legitimate heir, as king of Judah. The episode is preserved in two versions which agree on the salient details, but differ considerably on the identity of the main actors in the conspiracy; 2 Kgs 11:4-16 gives all credit to the military, led by ‘the captains of the hundreds’, whereas the Chronicler puts the cultic personnel centre stage (2 Chron 23:1-11). He presents ‘the captains’ as chiefs of the Levites who surround the child-king with weapons in hand to make sure that he does not come to harm (23:7-8). Jehoiada carefully times the coup d’état to coincide with the changing of the courses of Levites and priests, so that at the crucial moment he has at his disposal two contingents of cultic personnel, one that came on duty, הבים, and one that was off duty, הבים, but whom he did not discharge, הבים, (23:8).

In summary, the collocations ‘X בֵּיתוֹנָה’ and ‘X הבים’, like the biblical expression הבים הבים, are technical terms pertaining to the entry of a priestly watch into the Temple on the afternoon of a Sabbath, named after it ‘X热水器’ or ‘X הבים’, before beginning its week of service הבים darm רבי אהר, viz. on the ensuing Sunday morning.

Types of Mishmarot Registers

Mishmarot registers fall into four main categories:

1. Plain lists of the names of priestly watches as in 4Q329. Such a schedule precedes several mishmar rosters of various types.

2. Rota of mishmarot that serve at the heads of years, quarters, and months throughout the six-year cycle (exemplified by the proposed reconstruction of 4Q328-329 and 4Q319 VII presented in APPENDIX 3).
3. Rosters of the dates of Sabbaths and beginnings of the months in the 364-day solar calendar (4Q322–324, 4Q324a, 4Q324c), together with the names of the mishmarot that serve on these dates.

4. Registers of the priestly courses in whose respective terms of duty the annual festivals fall in the fixed six-year cycle (4Q320 4 iii–vi; 4Q 321 IV–VII).

The accounts always include the biblical festivals: the celebration of the Passah Lamb, פסח (I/14); the Mazzoth Festival, חן (I/15) which, in accordance with biblical tradition (Lev 23:5–6; 2 Chron 35:17), is considered a holy season separate from פסח; the Waving of the Omer or the Festival of the (First) Grain, חנ כפרים (II/26); the Second Passah, חנ חג (II/14); the Festival of Weeks or of the (First) Wheat, חנ חג (III/15); the autumnal New Year Festival, חנ תקנו (VII/1); the Day of Atonement, חנ לולו (VII/10), the Festival of Booths, חנ תמך (VII/15).

It should be stressed that in the calendrical documents only the first day of the seven- or eight-day festivals is recorded: חנ חנ, which in some instances is subsumed under חנ (e.g. 4Q320 4 passim; 4Q321 IV–VII passim), as in the rabbinic tradition, and חנ חנ. There is no explicit reference to צער הנ lofty seasons, nor to צער הר 삐י, the day after the seventh day of the Festival of Booths (Lev 23:36; Num 29:35; Neh 8:18; 2 Chron 7:8–10, cf. 1 Kgs 8:65–66), which is mentioned once in the Temple Scroll (11QTh XI 13). In contradistinction, mainstream Judaism also observes these latter days as holy seasons, צער מ or צער ע (moth, in conformity with biblical law (Exod 12:16, 13:6; Lev 23:8, 36; Num 28:25; Deut 16:8; cf. Ezek 45:25; Ezra 6:22).

The exclusive concentration on the first day of the festivals of Mazzoth and Booths is revealed in mishmarot rosters by the fact that only one course is on duty during these holy seasons, although the first day of the festival, invariably a Wednesday, falls in the middle of its week of service. Therefore only the three ensuing intermediate days are included in its turn of duty. The remaining days of צער מ or צער ע, and the day termed צער הר, fall in the service week of the next watch that begins its turn of duty on Sunday, the nineteenth of the month, necessitating the mention of that mishmar’s name.41

Such a 'Catalogue of Holy Seasons' is partly preserved in 4Q321 IV–VII. In a detailed register of the turns of duty of the priestly watches, all mishmarot are named that serve on the first day of each of the seventy-two months in a fixed six-year cycle. In addition to these data, attention is paid only to the four months in which the biblical festivals fall: in the first, Passah (I/14), Mazzoth (I/15), and the Waving of the

40 The noun חס is a biblical hap. leg. (Ezra 9:5) but is frequently employed in rabbinic writings. In 1QpHab XI 8, the Day of Atonement is designated חס ופסח חס(auth.
41 The pointed absence of references to the closing days of the Festivals of Mazzoth and Booths in calendrical documents and mishmarot rosters undermines Abegg’s supposition that the qualification of the fifteenth day by צער מ or צער ע, as ‘glorious festivals’ (frg. 33 ii 1–2), implies that ‘the period in question must be either the first or the seventh month for these are the only months in the Qumran [actually altogether in the Jewish] calendar that have festivals on these days—namely Pesach (first month) and Sukkoth (seventh month).’ See M. G. Abegg Jr., ‘Does Anyone Really Know What Time It Is?: A Reexamination of 4Q503 in Light of 4Q317’, in Parry and Ulrich, Proto International Conference, 398–9.
Omer (I/26); in the second, the Second Passah (II/14); in the third, the Festival of Weeks (III/15); in the seventh, the Day of Remembrance (VII/1), the Day of Atonement (VII/10), and the Festival of Booths (VII/15).

5. Catalogues of mishmarot in whose spells of service a specific festival falls, for instance Passah (4Q329a), in each year of the six-year cycle.

A difficulty arose from the fact that according to the biblical tradition, twenty-four priestly courses took turns in carrying out the sacrificial rituals in the Temple (1 Chron 24:7-19). Rabbinic sources ascribe the division of the priesthood into twenty-four courses to 'the prophets' (b. Arak. 12b), who are credited with having developed an earlier arrangement of eight (m. Ta'an. 1:2) or sixteen courses (b. Ta'an. 27a), introduced by Moses. Each mishmar is appointed to serve alone for one week every half-year, thus covering altogether 336 days per annum (24 x 2 x 7). Several courses officiated jointly on festivals (m. Sukk. 5:6-8; b. Sukk. 55b-56b; b. Mo'ed Qat. 17b et al.) and thereby completed the service cycle of the 354-day year.

In contradistinction, the solar calendar of 364 days requires twenty-six priestly courses to cover the fifty-two weeks of the year, with each course officiating for two one-week spells. Since the Covenanters were committed to never deviating from a biblical tradition, a system had to be devised which would allow for the application of the biblical prototype of twenty-four priestly courses to the solar year of fifty-two weeks. They solved the problem by establishing a six-year cycle with a staggered rotation of mishmarot. In this system, the four weeks by which the solar year exceeds the forty-eight week lunar year are covered by four courses that serve for one additional week and accordingly officiate three times annually. This arrangement is reflected in a comment in the War Scroll (1QM II 1): ‘The fathers of the community are fifty-two. The major priests shall be appointed after the high priest and his deputy in twelve courses to serve constantly before God. And the twenty-six heads of courses shall serve in their appointed term’ (1QM II 1-2). The seemingly baffling statement does not refer to the twenty-four priestly families enumerated in 1 Chron 24:7-18, but rather to the twenty-six courses that actually served, each for one week every half-year, whose leaders together make up ‘fifty-two fathers of the community’. It is probably because of this discrepancy between the biblical and the Covenanters’ traditions that watches are not given numbers in Qumran documents, whereas in Chronicles they are numerically sequenced.

In contrast to the calendrical connotation which inheres in the enumeration of the names of priestly watches in calendar-related documents, a reference to the name of a mishmar in a historical text, such as 4Q331, 4Q332, or 4Q333, has a different purpose. For example, the mention of המפר in 4Q332 1 and 3, in proximity to the truncated dates in the surrounding lines, serves as an additional means for pinpointing the date of the specific event being described, and cannot be construed as a sufficient basis for identifying the fragment as the remnant of a mishmarot register. The employment of the name of a mishmar as a dating device also occurs in rabbinic literature:

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The employment of multiple synchronizing calendrical notations in historical works and legal documents was evidently a popular technique in the waning Second Temple period and the early centuries CE, although the principal work of that genre, Meg. Ta'anit, does not use it. In any case, historiographical documents, in which an occasional mention of the name of a mishmar and a date in its turn of duty serve as a supportive device for dating historical events, as in 4Q331 5 and 7; 4Q332 1; 3; and 4Q333 1, must be kept distinct from registers of mishmarot names in a comprehensive six-year cycle. The two types of references are never found together in one document.

C. Mixed-type Rosters

In some calendar-related scrolls several registers and tables of discrete categories are combined. Notwithstanding the considerable difference in length, the resulting amalgam bears comparison with other literary compounds found at Qumran, such as the Temple Scroll.

1. In 4Q320 3 ii 11–14; 4 i 11–14 (cf. 6Q17), a register of the months and the number of days in each month is combined with a catalogue of the mishmarot that serve at the head of every month.

2. In 4Q325, the annual festivals are recorded in a similar way to the 'Calendrical Document' type. Since the festivals are tied to mishmarot, which implies that 4Q325 covered the entire six-year cycle, this item is subsumed here under the category 'Mixed-type Rosters'. However its inclusion in the category 'Mishmarot Registers', like 4Q322–323, cannot be ruled out.

3. Lunar Phenomena: X and רדס. In 4Q320, 4Q321, and 4Q321a, two specific phases in the monthly revolution of the moon are recorded seriati, together with the corresponding dates in the solar month, and in the service schedule of the mishmarot. One of the two lunar phases is not given a particular appellation in the documents; therefore the designation 'X' was suggested. The other phase is specified by the same parameters, but is designated additionally רדס/רVES.44

In 4Q320 1 i 5–2 i 14, three

43 Parallels of the saying with slight variants are found in b. Ta'an. 29:1, b. Arak. 11:2, j. Ta'an. 68:4, Seder Olam Rabbah ch. 30, line 50, ed. by C. Milikowski (Ph.D. diss.; Yale University, 1981).

data are presented next to one another: a table of a monthly recurring lunar phenomenon is framed on one side by a detailed roster of the corresponding days in the weeks of duty of the priestly courses, and on the other side by a table of the concordant dates in the solar calendar. In 4Q321 and 4Q321a, two monthly phases of the moon are similarly recorded together with their parallel dates in the solar year and the service schedule of the mishmarot.

According to prevailing scholarly opinion, X and duga|o(h) define the ‘full moon’ and the ‘new moon’. The juxtaposition of these ‘bright’ and therefore ‘positive’ lunar phases with their parallel dates in the solar calendar and the mishmarot’s service schedule is understood as a comprehensive method of synchronizing the lunar with the solar calendar, culminating in the intercalation of one lunar month after every third year to bring the moon’s revolution in line with the solar year. In contrast, a dissenting interpretation, based on an internal analysis of the pertinent texts, supported in APPENDIX 4, maintains that the specification of only one or two particular phases in the moon’s monthly orbit cannot be construed as a systematic attempt to coordinate the 354-day lunar ephemeris with the 364-day solar system. Rather it is aimed at singling out two ‘dark’ phases in the moon’s monthly revolution. The term duga|ah refers to the moon’s phase when it begins to wane in the middle of the lunar month, and X pertains to the night of the moon’s total eclipse at the end of the lunar month. Thirty days pass from the night in which the moon begins to wane to the night of its total darkness, and sixteen or seventeen days from that night to the next waning phase in the following month.

The detailed rosters which forewarned the Yahad members of the ‘dark’ phases of the moon, viz. the onset of its waning and its total eclipse, must be accorded a significant role in the Covenanters’ dispute with their opponents. Such rosters armed them with a timetable warning them of the days in each month which were presumed to be under the moon’s ‘evil’ spell.

The pluriformity of calendar-related documents suggests that they were intended to provide relevant information and instructions for the diverse Covenant echelons. The various mishmarot rosters pertain primarily to the priestly domain, first and foremost to the regulation of their ritual duties. Divergences among such lists, e.g. the inclusion of the feasts of the grape and olive harvests and the wood offering in some items, while they are omitted from others, perhaps resulted from the different or possibly inferior status of these festivals in the sacrificial temple service in comparison with the status of the biblical ‘Holy Seasons’. In contrast, the target audience of the unchanging calendrical schedules was the general membership of the Yahad. The possibility that certain variances among the Covenanters’ calendar-related documents may reflect a synchronous use of somewhat-differing chronometric schedules or evidence diachronic developments of the calendrical system by which they abided must also be taken into account.

45 See int. al. VanderKam, Calendars, 77–80, 85–86.
47 The discussion of 4Q320 and 4Q321 lends support to this interpretation.
48 Similar considerations may apply to some differing data of the shared 364-day ephemeris in the Covenanters’ calendrical documents and 1 Enoch and Jubilees.
# APPENDIX 1

'Thirty Holy Seasons'  
Based on 11QPs² XXVII 'David's Compositions'

<table>
<thead>
<tr>
<th>Month and Day</th>
<th>Holy Seasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/1</td>
<td>New Year's Day</td>
</tr>
<tr>
<td>I-XII</td>
<td>Beginnings of Months</td>
</tr>
<tr>
<td>I/8</td>
<td>Festival of the Priests' Investiture</td>
</tr>
<tr>
<td>I/14</td>
<td>Sacrifice of the Passah Lamb</td>
</tr>
<tr>
<td>I/15</td>
<td>Festival of Mazzoth</td>
</tr>
<tr>
<td>I/26</td>
<td>Festival of the Waving of the First Sheaves</td>
</tr>
<tr>
<td>II/14</td>
<td>Second Passah</td>
</tr>
<tr>
<td>III/15</td>
<td>Festival of Weeks</td>
</tr>
<tr>
<td></td>
<td>Festival of the First Wheat</td>
</tr>
<tr>
<td>V/3</td>
<td>Festival of the New Wine</td>
</tr>
<tr>
<td>VI/22</td>
<td>Festival of the New Oil</td>
</tr>
<tr>
<td>VI/23</td>
<td>Festival of the Wood Offering</td>
</tr>
<tr>
<td>VII/1</td>
<td>Day of Remembrance</td>
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<tr>
<td>VII/10</td>
<td>Day of Atonement</td>
</tr>
<tr>
<td>VII/15</td>
<td>Festival of Booths</td>
</tr>
<tr>
<td>III,VI,IX,XII/31</td>
<td>Epagomenal Days</td>
</tr>
</tbody>
</table>

* New Year's Day  
* I-XII: Beginnings of Months  
* I/8: Festival of the Priests' Investiture  
* I/14: Sacrifice of the Passah Lamb  
* I/15: Festival of Mazzoth  
* I/26: Festival of the Waving of the First Sheaves  
* II/14: Second Passah  
* III/15: Festival of Weeks  
* Festival of the First Wheat  
* V/3: Festival of the New Wine  
* VI/22: Festival of the New Oil  
* VI/23: Festival of the Wood Offering  
* VII/1: Day of Remembrance  
* VII/10: Day of Atonement  
* VII/15: Festival of Booths  
* III,VI,IX,XII/31: Epagomenal Days
APPENDIX 2

The Six-year Mishmarot Service Cycle

— > indicates the entrance of a priestly course into the Temple on the afternoon of the Saturday preceding his first day of service on Sunday.

— X refers to the lunar phenomenon defined only by date in 4Q320–321a and called here 'X'.

— D refers to the lunar phenomenon defined by date and designated 'duqah' in 4Q321–321a.

— The Festival of Wood Offering is recorded on the twenty-ninth of the sixth month, precisely a week after the Festival of Oil; see comments ad 4Q394 1–2.

— In the schedule, the term 'Passah' also includes the Feast of Mazzoth. However, in 4Q326, as in the Temple Scroll, Passah on Tuesday the fourteenth of the first month is mentioned separately from the Feast of Mazzoth which begins on Wednesday the fifteenth.
<table>
<thead>
<tr>
<th>Year 1</th>
<th>Sun</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
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<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month 1</td>
<td>1\textsuperscript{X}</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
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<tr>
<td>נאום</td>
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<tr>
<td>ריהו</td>
<td>5</td>
<td>6</td>
<td>7</td>
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<td>9</td>
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<td>11</td>
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## Discoveries in the Judean Desert

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### Month 7

**Day of Remembrance**

- **שנה** > 5<sup>x</sup>
- **סוכות** > 12
- **אילוח** > 19
- **טסיר** > 26

### Month 8

- **תשא** > 3
- **סוכות** > 10
- **比利** > 17
- **אמר** > 24

### Month 9

**Festival of Booths**

- **תודה** > 1
- **טוואר** > 8
- **משה** > 15
- **токאל** > 22
- **ךין** > 29

### Month 10

- **סנה** > 1
- **דלילה** > 12
- **טפור** > 19<sup>D</sup>
- **ជថ** > 26

### Month 11

- **שעון** > 3
- **רות** > 10
- **שמח** > 17
- **סול** > 24

### Month 12

- **סמש** > 1
- **ברא** > 15
- **טש** > 22
- **ספניה** > 29
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DISCOVERIES IN THE JUDEAN DESERT XXI
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APPENDIX 3
Reconstructed Master Register of Mishmarot

מלכיהשעוריםחריםידעיהיהויריבמעוזיהדליהנמול
אלשכניהישועאביההקוץמימין-
חופהיקיםטיב
יכיןיתקלפחחיההפצץחזיראמרבלנהושבאב
הبشניתגנרלבראשונה-
mימיןבשלימתעזה-
dפצץבששיתישבאבבחמשיתשכניהברביעית
השניםרשיאלה-
וצפהמעחיהאלישיבננצלהראקינהחשנה-
mימיןבשלישיתחזירשעוריםבלגהידעיהבשנית-
יקסדליהשכניהברביעיתיכיןאביהפההיה-
מלכיהאמרחריםישבאבכחמשיתיויריב-
ישועיחזקאלהקוץהפצץבששית-
יויריבמעוזיהدلיהנמולהרישוןבחודשהרישונה-
בשלישימימיןמלכיהשעוריםחריםידעיהבשני-
יקסחהיעברביעישכניהיסיעאביההקוץ-
חופה-
dחזיראמרבלגהבחמשיסכאכ,
pצץ-
בשיבוצירליהעצליכיןיחזקאלבשסעפתחיה-
היויריבמעחיה-
בשםחריםהיה-
שעוריםשכניהישועבתשטיאביההקוץמימיןמלכיה-
אמרבלנהישבאבציפהבעמירייקיםאלישיב-
ייוקאלפתחיההפצץזחירהחודשעשרבעשתי-
מעחיהدلיהנמוליכיןהחודשעשרבעשקי-
החתעתרבשנסידיויריב-
סעוריםחרטידעיהיהויריב-
מימיןהרישוןבחודשדגמלישיתמלכיה-
אבההקוץ:
חופהיקיםאלטיבשכניהבשניגמוע-
ברביעידפצץחזיראמרבלגהבשלישיישבאכ-
ipתחיה,
בחמשגמוליכיןקקאל-
מעחיהدلיהיהוי-
mימיןמלמהשעוריםבטbbingריםידעיהב-
בשםאלישיבשכניהישועאביהבשביעיהקץ-
ני-
הפצץדתירבתשיעיאמרבלגהישבאבחופהקים-
mנקיהבעשירישעוריםחריםהיה-
אבההקוץ-
ושרשעשרבעשהו-
סעריהחרריםהיה-
אביההקוץמימיןדיצדשעסרבשניםמלכיה-
דובתצישיחצ-
דובחורשוז-
שכניהשון-
דוביהצישיחצ-
דובה-
שכניההחודםעשרבשניםישועאביה-
דובhoodשהחמסיחחופהיקים-
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ישון-
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ידייריכמעתותוליהבשלישיננצליכיןיחזקאל-
בחמשימטיןמלכיהשעורוםחריםברביעיידעיה-
חופהיקיםבמשיאלטובמנציהישועאביההקוץ-
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בתשיעייחזקإلפחחיההפצץחזיראמר-
cין-
חריםידעיהיהויריבבעשירימעוזיהدلיהנמול-
הקוץמימיןמלכיההחורשעשרבעשתישעוריפ-
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בחמשימטיןמלכיהשעורוםחריםברbyss-
חופהיקיםבמשיאלטובמנציהישועאביההקוץ-
פתהיהדפצץופירامرבלנהושבאב-
בת_CREATION:1462

ברעשים שלטי מתוך המלכיה שערולים בחרים
ידעיה היהויריב מעוזיה דליה נמול
אל שכניה ישועабיה הקוץ מימין-
- חופה היקים-
יכין ייתקל פחחיה הפצץ
חזיר אמר בלנה ישבאב
הבשנית גנרל בראשונה
- מימין בשלימת עזה-
דפצץ בשש חית
ישבאב ב חמשית שכניה בברביעית
השנים רשיאלה
וצפה ממעחיה אלישיב
ננצלה ראקינה-
חשנה
מימין בשלישית
חזיר שערולים
בלגה ידעיה ב שנית-
יקס דליה שכניה
ברביעית
יכין אביה פההיה-
מלכיה אמר
חרים ישבאב
ב חמשית יוייריב-
ישועה חזקאל
הקוץ-
הפצץ ב ששית-
יויריב מעוזיה דליה
נמול-
רשון
בחודשה
רישונה
בשלישית
מימין
מלכיה שערולים
חרים ידעיה
ב שני-
יקים-
חופה-
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APPENDIX 4

TABLE 1: X and duqa'oh Occurrences\(^4\)

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<th>C Date in Texts Y:M:D</th>
<th>D Day No. in Solar Cycle</th>
<th>E X&gt;d/d&gt;X Interval (Days)</th>
<th>F X&gt;X Interval</th>
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\(^4\text{APPENDIX 4 was prepared by J. Ben-Dov with the advice of W. Horowitz.}\)
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1. Table Components
The only element in the table which is based on explicit information in 4Q320-321a is registered in col. C, in which the date of each X or duqah is denoted by its month and
day.\textsuperscript{50} From this account, the information contained in cols. B and D is deduced: col. B shows the ordinal number for each X or \textit{duqah} occurrence in the three-year cycle; col. D displays the day number in the cycle. Col. A comprises the day number in the lunar cycle, which is always one day behind the number in col. C (see below). Col. E exhibits the time interval between the \textit{duqah} occurrence and its preceding X, or the X and its antecedent \textit{duqah}. In col. F is displayed the time span between two X occurrences, seen most clearly in 4Q320.

The cycle of three 364-day years recorded in 4Q320 1–2 is intended to achieve a concordance of the divergent 354-day lunar year with this 'ideal' ephemeris, on the basis of the simple equation \[3 x 364 = 3 x 354\] plus an added month of 30 days. This additional month upsets the alternating sequence of one lunar month of 29 days and one of 30 days. Since the twelfth month of the third year, viz. month 36, is a full month, it should be followed by a hollow month of 29 days. The deviation from the norm causes the unique 14-day interval between the last \textit{duqah} of year 3 and the first X of year 4, instead of the otherwise unvarying interval of 13 days.

2. Reflections on the Meaning of X

The restored keyword הָאָרָאָי, 'Creation' (4Q320 1 i 3; cf. 4Q319 IV 11, 17) before 'from evening until morning of the 4th (day) . . . in the first month of [the first]st (solar) year', מֶעְרַבִּי נֵבְרֶךְ בָּא, strongly suggests that this collocation refers to the day on which the 'great luminaries' were created. The conjunction of this reference with the ensuing roster implies that the first X phenomenon also occurred on this day; it is then tracked 36 more times for the entire 3-year cycle. The intervals of 29 or 30 days between one X occurrence and the next correspond to the regular alternation of 29- and 30-day lunar months. This scheme, which is already implicit in cuneiform texts from as early as the seventh century BCE,\textsuperscript{51} plays an important role in Enochic astronomy (\textit{J En.} 74:10ff.). Since X marks a crucial transition point in the lunar calendar, its occurrences are meticulously recorded \textit{seriatim} in 4Q320.

The equation of three data elements in 4Q320 1 i 6 clearly indicates that the 29th day of the first lunar month, which is the the fifth day (Thursday) in the service week of Jedah, corresponds to the 30th day of the first solar month. This equation can only be correct if the first X phenomenon on the first day of Creation, which is day 1 of the solar month, occurred in fact one day before the beginning of the first lunar month. This means that lunar day 0 equals solar day 1. From this, it follows that the first lunar day coincides with solar day 2, and the 29th lunar day with the 30th solar day. Thus, prior to the first hollow lunar month, the roster begins on a preceding day, a postulated day 0, which actually forms the last day of a hypothetical previous month. From then on, the recording of X after 29 or 30 days always refers to the last day of

\textsuperscript{50} The fifth X occurrence, falling in month 4 of the first year, is misrepresented in 4Q320 1 i 9 but correctly registered in 4Q321a 1 6. Another mistake occurs in the recording of the first X of year 3 in 4Q321a V 9.

the lunar month and not to the first.\footnote{This fact was correctly noted by J. C. VanderKam (Calendars in the Dead Sea Scrolls, 80) following F. Garcia Martinez's translation in 'Calendars on Qumran (II)', EB 54 (1996) 526. Both authors nevertheless maintain that X occurs on the day of the full moon.} Rather than presenting a sequence of the 'beginnings of months', as could be expected, 4Q320 1–2 actually preserves an account of the 'ends of the lunar months' in respect to the three-year cycle.

This conclusion is borne out by the hypothetical line posited in the above table of data for the last day of the triennial cycle, viz. day no. 1092 (= 364 x 3). However, in the lunar count (col. A), which began with lunar day 0, it is only day 1091 (3 x 354 + 29), the day before the end of the 37th lunation. The next cycle commences with the actual termination of the 37th lunation on day 1092. Therefore, the first lunar month of the next cycle begins with solar day 2, like at the onset of the first cycle.

The definition of X as the last day of the lunar month raises the question of which lunar phenomenon was taken to signify its beginning. Two theses have been put forward in recent years. One school maintains that the new moon, הַמָּיִם, signals the beginning of the month in the Covenanters' tradition, in accordance with a common trait in Semitic culture. However, in the wake of Milik's interpretation of the puzzling pericope 4Q320 1 i 1–3, another school argues that the lunar month was understood to begin at full moon.\footnote{See int. al. J. T. Milik, Ten Years of Discovery in the Wilderness of Judaea (London: SCM, 1959) 152 n. 5; B. Z. Wacholder and M. G. Abegg, A Preliminary Edition of the Unpublished Dead Sea Scrolls, fasc. 1 (Washington, D.C.: Biblical Archaeology Society, 1991) 104; M. Albani, 'Die lunaren Zyklen im 364-Tage-Festkalender von 4QMishmeroth/QQS', Kirchliche Hochschule Leipsig, Mitteilungen und Beiträge 4 (1992) 24–5; U. Glessmer, 'Calendars in the Qumran Scrolls', The Dead Sea Scrolls After Fifty Years, vol. II, ed. by P. W. Flint and J. C. VanderKam (Leiden: E. J. Brill, 1999) 244; Garcia Martinez, 'Calendars', 524.} This faction failed to notice that according to the above calculations the luminaries were created on lunar day 0, i.e. one day before the actual beginning of the first month. Accordingly, on the day of its creation the moon would have been only about thirteen parts of fourteen full. Thus, the month cannot be said to begin at full moon. Alternatively, if on the day of its creation the moon indeed was full, in accordance with Milik's interpretation of 4Q320, then it must be assumed that, for whatever reason, the lunar month was calculated to begin on the day after the full moon, an unprecedented practice in Semitic cultures.

However, if the first lunar month begins at new moon then 4Q320 conveys the logical assertion that the moon was dark on the day of its creation (cf. 1 En. 73:4),\footnote{See M. O. Wise, 'Second Thoughts on פְּרָטִי and the Synchronistic Calendar', Pursuing the Text. Festschrift B. Z. Wacholder, ed. by J. C. Reeves and J. Kampen (JSOTSup 184; Sheffield: Academic Press, 1994) 98–120. In a similar way, 1 En. 73:4 calculates the month to begin (schematic day 1) on day 30 of a previous month, i.e. the day of conjunction. The Astronomical book of Enoch states explicitly: 'and (when) on this day it becomes visible, it is for you the beginning of the (lunar) month on the thirtieth day' (trans. O. Neugebauer, in The Book of Enoch or 1 Enoch, with commentary and textual notes by M. Black [Leiden: E. J. Brill, 1985] 396), while 4Q320 clearly places the beginning of the lunar month one day later. The phrase וְלָכְבֵּא can mean 'the beginning of the lunar month', as translated by O. Neugebauer and E. Isaac, or 'the first phase of the moon' (Charles, Kahana). Therefore, 1 En. 73:4 does not provide unambiguous evidence in this matter. (Thanks are due to M. Segal for his observations on Genes).} since at that stage the luminaries were in conjunction, with the moon on the same line as the sun. Only at a later stage, when the moon gains sufficient elongation from the sun, does the first crescent appear on the horizon at sunset.
3. The Significance of 4Q320 1 i-5
The textual element of 4Q320 that gave rise to Milik’s theory that the month began at full moon is the poetic introduction, especially the phrase מַלְאֹךְ נִשְׂנָה, ‘from evening until morning’ (line 3). Taken literally, this phrase evidently refers to the full moon, observed on the horizon from sunset to dawn. Attention was drawn to a mediaeval report which ascribes the same practice to the Magharians, possibly an offshoot of the Yahad. More recently, scholars attempted to find evidence in the Hebrew Bible and in early post-biblical literature for a practice of beginning the month at full moon.55

These attempts do not solve the original difficulty. In this interpretation, 4Q320 stands out clearly as exceptional, in contrast to numerous texts of varying provenance which attest to the conventional practice of the month beginning at the new moon. In 4Q320 1 i-5, the day of Creation is designated בְּשָׁנָה הַרְישוֹן לְחַרְשָׁם בִּשְׁלֹשׁ, ‘on the fourth (day) in the week (of service) [of Ga]mul, at (the beginning of) the first month’ in [the first] (solar) year’. This designation can hardly be construed to refer to the full moon, since in its literal sense the term שָׁם pertains to the renewal of the crescent after a period of darkness.

Moreover, in Yahad documents a conspicuous tendency prevails to totally deny the moon a standing in the timetable of the cultic domain. This tendency appears in the Book of Mysteries (1Q27), undoubtedly a Qumran foundation document, and in the ‘Song of the Seasons’ (1QS X), in which the sun is praised for its correct conduct of time, whereas the moon is never referred to.56 Similar polemics transpire in Jub. 6:32. Against this cultural background, the assumption that at Qumran the new month was celebrated at full moon cannot be supported.

All uncertainties are satisfactorily resolved if, as suggested in the comments on 4Q320 i-5, the relevant passage is understood as pertaining to the sun and not to the moon.

4. The Connotation of Duqah
We now can determine the essence of the lunar phase, designated duqah in 4Q321-321a. The meaning of the word cannot be ascertained unequivocally since its etymological derivation from אֶדֶמָה or אֶדֶמָא is ambiguous, and the term is not known from any other literary source.57 Therefore, its intrinsic connotation must be determined on the basis of its employment in the Qumran calendrical documents. The proposals given above for the identification of X reflect on the meaning of duqah. In contrast to the prevalent interpretation of the term as ‘new moon’, the count of 16/17 days from conjunction leads to the conclusion that it pertains to the night after the full moon, on

56 This is the meaning of מַלְאֹךְ here. Cf. e.g. 4Q321 V 1-3.
which the moon begins to wane. This lunar phase is easily observed by monitoring the rising of the moon after sunset.

It will be possible to decide between the two interpretative options once fuller reconstructions of 4Q317 and 4Q503 become available, and a comprehensive study has been made of the entire calendrical corpus discovered at Qumran (including 4Q208–209, 4Q318–319). However in view of the cultural background noted above, it is difficult to accept *prima facie* an interpretation of the Qumran evidence which attaches great cultic-religious significance to the full moon. Rather, the analysis presented above supports the conclusion that the synchronistic rosters in 4Q320–321a track two highly suggestive phases in the moon’s orbit, the night of its darkness and the night on which it begins to wane, as first proposed by Talmor-Knohl.

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59 Two different interpretations of the meaning of *X* and *duqah* on the basis of information culled from 4Q317 (4Qcrypta Lunisolar Calendar) and 4Q503 (4QDaily Prayers) were recently put forward by Wise, *Second Thoughts* and Abegg, *Does Anyone Really Know What Time It Is?*. However, no conclusion can be reached without first explaining the textual peculiarities of 4Q317, especially the corrections by a second hand, which obscure the dating system employed by the scribe. In addition, the proposed reconstruction of the papyrus fragments in 4Q503 does not allow for any conclusive judgement.
320. 4Q Calendrical Document/Mishmarot A

(PLATES I-II)


4Q320 is the largest and most diversified calendrical scroll attested at Qumran. It appears to be a compendium of discrete chronometrical lists, which differ from the purely register-like form of other calendrical rosters in that the technical data here are framed by concise literary introductions and/or summary notations. Whereas the larger frgs. 1-4 of this scroll were published and discussed briefly, little attention was given to the smaller frgs. 5-10. These will be presented here in an order which differs from that proposed by Wacholder and Abegg on the basis of the entries in the Handkonkordanz, and which reflects the arrangement initially proposed by J. T. Milik (see CONTENTS).

Physical Description

The scroll consists of four fairly large fragments which contain extensive stretches of text, and six small pieces which preserve only a few letters or parts of up to four lines. Two of these fragments are discussed here on the basis of PAM 42.329, the only evidence available.

The triangular frg. 1 is dark brown and frayed at the edges; it measures 11.7 x 13.1 cm. In the creased parchment there is a perpendicular split along the lower part of the intercolumnar margin. The fragment consists of two written columns framed by vertical and horizontal dry-rulings. In the first column, the partially preserved lines, still legible for the most part, are 3-4.5 cm wide. The longest, fully extant line, col. ii 2, comes to 5.7 cm. The width of the margin between the columns fluctuates between 1 and 1.5 cm; the margin at the left side of the second column ranges between 0.7 and 2 cm, depending on the width of the written lines. The fully extant top margin is 1.5 cm wide and the partly preserved bottom margin is 8 mm.

The equally dark brown frg. 2 measures 8 x 5.3 cm. Its straight edges resulted from breakage of the material, with the exception of the rather frayed bottom margin. The fragment contains the still legible lower lines of a third column. To the right of the two uppermost lines a piece of the above-mentioned 1 cm-wide margin between frgs. 1 ii and 2 can be seen. The absence of traces of stitching on frgs. 1 and 2 leads to the conclusion

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that the first three columns of the document, and possibly one or two more, were written on one sheet of parchment.

Frg. 3 is rectangular, with somewhat serrated edges. It turns from dark brown to grey in the middle due to the flaking of the parchment, which also resulted in the partial loss of the writing. The fragment measures 4 x 6 cm and contains parts of two columns. The intercolumnar margin is c.1 cm wide in the upper part and narrows to 3 mm towards the bottom.

Frg. 4 is heavily damaged and measures 22.3 x 13.5 cm. It is a somewhat lighter brown, and is comprised of two pieces of parchment which measure 18.5 x 10.7 cm and 6.5 x 6 cm respectively. The first piece has two large holes in its middle where the stitching facilitated the breaking of the material, with bits of the thread still extant. On the lower part of the left piece, flaking of the parchment resulted in extensive lacunae.

The composite fragment contains the remains of six written columns from four consecutive sheets. The columns are appreciably narrower than those of frgs. 1 and 2, and are of varying widths: in col. ii the broadest line measures 2 cm; in cols. iii and v, 4 cm; in col. iv, 3 cm; and in col. vi, 2.7 cm. Also, the width of the intercolumnar margins varies considerably: between cols. i and ii, c.6 mm; between cols. ii and iii, c.7 mm; between cols. iii and iv, 1–1.8 cm; between cols. iv and v, 2.5–3 cm; and between cols. v and vi, 2.5 cm. The partly extant bottom margin is c.1.5 cm wide in cols. i–ii. In cols. iii–v the width of the remnants of the top margin fluctuates between 0.5–1 cm.

The scribe appears to have misjudged the amount of text which could be accommodated in a line of col. ii, or else he had only narrow strips of parchment at his disposal. This is suggested by the fact that the adjacent sheet contains only col. iii, and the one after it has only cols. iv and v, whereas in Qumran manuscripts the standard number of columns per sheet appears to be four to five. Whatever the reason, the lines of col. ii are exceptionally narrow, containing only between seven to fourteen letterspaces, with the writing actually coming up to the very edge of the sheet.

Pieces of the thread with which the sheets were stitched together are preserved on this fragment between cols. ii and iii and between cols. v and vi, with the end loop of the thread still showing at the bottom of the sheet between cols. iii and iv. The imprecise manner of sewing the sheets together, or else the crumpling of the parchment, caused the lines of one column not always to come flush with those of the next, as, for example at the bottom of cols. ii and iii.

A small triangle-shaped fragment which measures 2 x 2.5 cm and is bordered by the remnant of a 1.5 cm intercolumnar margin contains the letters נְּדַמ, presumably the ending of the word מָדַמ. This little piece can be attached to the bottom line of col. iv.

Frg. 5 measures 2 x 1.5 cm. It contains the first words of two lines of one column. To their right a 1 cm-wide snippet of an intercolumnar margin is still extant.

Frg. 6 measures 2.3 x 3.1 cm and contains the middle sections of four lines of one column.

The irregularly shaped frg. 7 measures 2.2 x 3.1 cm. It holds a few letters from two lines of adjacent columns with an intercolumnar margin of 1.1 cm.

On the similarly shaped frg. 8, which is 1.4 cm wide and 2.6 cm high, one letter of one line can be seen and one word on the line beneath it.
Frg. 9 measures 1.7 x 2.2 cm. It holds remnants of two lines with an exceptionally wide interlinear space of 1.2 cm.

The rectangular frg. 10 measures 3.1 x 1.3 cm. The word פֶּתֶל and the top of a lamed in the following line have been preserved on it.

A collation of the text of frg. 3 i with frg. 4 i, supported by a comparison with frg. 1 i–ii, prompts the conclusion that the standard column of the scroll contained fourteen lines, possibly with the exception of some rosters, whose final columns may have been shorter. The small number of letter-spaces per line in the entire document facilitates the full restoration of the text of several lines, not only of the calendrical schedules which conform to a set pattern, but at times also of the non-technical, literary introductions, e.g. in frgs. 3 i and 4 ii.

In the comparative chart of the average number of letter-spaces per line, digits (see below) are counted as half-spaces.

<table>
<thead>
<tr>
<th>TABLE 1: Average Number of Letter-spaces per Line</th>
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<tbody>
<tr>
<td>Frg.</td>
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<tr>
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<tr>
<td>1 i</td>
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<td>1 ii</td>
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<td>4 ii</td>
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<td>4 iii</td>
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<td>4 iv</td>
</tr>
<tr>
<td>4 v</td>
</tr>
<tr>
<td>4 vi</td>
</tr>
</tbody>
</table>

Contents

4Q320 is a compendium of calendar-related compositions, phrased in the formal style known from other calendrical documents, for which it possibly served as a prototype. The literary passages which frame some of the registers at their beginnings or endings constitute, as said, a special feature. Three examples of such non-technical, literary passages are found in 4Q320 1 i 1-5; 3 i; and 4 ii. A practically parallel clause is

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2 The five upper lines of this column are appreciably shorter.
3 This is the maximum value, evinced by line 5. The other lines are probably shorter.
4 A similar introduction is presupposed in the tentative reconstruction of 4Q321.
preserved at the beginning of 4Q319. These literary segments exhibit similar verbal components:

1. לֵּבָּדָה. The preservation of the expression in 4Q320 1 i 7 and at the beginning of 4Q319, suggests its tentative restoration in 4Q320 3 i and 4 ii.

2. וַיִּבְנֵהוּ. The phrase opens three registers in 4Q320 (frgs. 1 i 3–4; 3 i 11–12; 4 ii 13–14), as well as the otot roster in 4Q319. It bears witness to the important concept that on the fourth day of Creation, on which the luminaries were fashioned that are the bases of all calendrical and astronomical computations, also the first six-year cycle of mishmarot commenced. This cultic institution was thus shown to be rooted in the very creation of the universe.

3. The concept is further supported by the employment of the term בָּרֹית in three of the above texts, 4Q320 1 i 3; 3 i 6; and 4Q319 IV 11, 17.

4Q320 contains the following distinct schedules:

1. In frgs. 1 and 2, one specific date in every lunar month is listed seriatim between the day in the service week of a mishmar on which it falls and the concordant date in the Covenanters’ solar calendar, as illustrated by the text of frg. 1 ii 5:

בָּרֹיתוֹ לְמַלְכָּה לְלָאָרָה בֵּרָו וּרְשָׁם

on the 2nd (day) in (the service week of) Malkiah at (or: falls) the 29th (of the lunar month) on (or: coinciding with) the 20th in the first (solar month of year two).

The text of this register is preserved only for the first three years of the priestly service cycle. The dates given are identical with those listed in 4Q321 and 4Q321a, including two dates in the first month of the first year in the cycle, provisionally named X (see introduction). However, in contrast to 4Q320, another date appears in 4Q321 and 4Q321a, termed רִדּוֹק (rehok), pronounced duqah or possibly duqoh, which is sequentially recorded next to X for every single lunar month. The formulaic nature of the schedule recorded in 4Q320 1 and 2, and the permanent service order of the twenty-four priestly courses provide the means for a full restoration of that schedule in 5.5 columns.

The technical enumeration of concurrent dates in three schedules is preceded by an almost poetic introduction, of which only a few lines are preserved. This introduction refers to the appearance or the rise of a ‘(great) luminary’ on the fourth day of Creation. Most scholars presume that the text refers to the first sighting of the moon, whereas in my opinion the reference is to the rising of the sun, as argued in detail below. It should be noted that the implantation of the mishmarot cycle in the creation of the universe is peculiar to 4Q320 1 i 3–5; 3 i 10; 4 ii 13–14; and 4Qotot (4Q319). There is no trace of this idea in any other extant Qumran source. Most significantly, it is absent from the partly preserved comparable tables of dates in 4Q321 and 4Q321a, unless the concept had found expression in a not preserved introduction to the calendrical registers.

2. Frg. 3 i consists of six partial lines of an otherwise undocumented type of literary composition. Presumably, it had been appended as a finale to a preceding calendrical

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1 Accordingly, two X dates would have to be recorded also in the first month of the fourth year.

2 It is equally absent from 1 Enoch and Jubilees, whose authors fervently champion the 364-day solar calendar, but give no attention to the mishmarot and their service cycle.
roster, possibly sandwiched in between frgs. 1–2 and 3 i, but now lost. A vacat in frg. 3 i 14 probably indicates the ending of that literary finale whose contents can only be tentatively ascertained. Next to a reference to סינר ימ, 'the) years of holiness' in line 9, one finds in line 10 a reference to Creation, אabbo (cf. 4Q319 IV 11). The restored reading חסן in line 13 and what may have been a summary of החטבא in line 14 suggest that 4Q320 3 i held a text which by its contents is connected with 4QOtot, although not necessarily identical to it.

On frgs. 5 and 7 an unspecified number of otot is recorded. Frg. 6 contains calculations which surpass the sum of four, seven, or nine thousand (days), סינר ימ, depending on the reading of the first legible letter in line 3. These data conform reasonably to the assumed nature of the original text. Therefore, it seems plausible to place frgs. 5 and 6, and perhaps also frgs. 7–9, before frg. 3 i. The lost roster may have included an additional element, rudimentarily preserved in frgs. 6–9, which held remnants of numbers that probably relate to a counting of days in a given period of time, totalling several thousand. These large numbers must pertain to calculations of a larger time span than the six-year cycle of $6 \times 364 = 2184$ days, most probably to the much more extensive periods covered by otot documents. A day count, together with an enumeration of חטבא, is found in frg. 7.7

3. Frgs. 3 ii–4 i contain a plain enumeration of the seventy-two solar months in the six-year cycle, stating explicitly in every single case that the first and second months of an annual quarter have 30 days each, while every third month has thirty-one days (cf. 6Q17 and 4Q326 6). In addition, the mishmar on duty at the beginning of the month is noted, and then the month is identified by its ordinal number (cf. 4Q321 and 4Q329). Only a small fraction of text pertaining to the first and fifth years is preserved, preceded by a few words of an introduction whose full meaning escapes interpretation (frg. 3 ii 8–11).

4. In frg. 4 iii–vi, the succession of the biblical festivals is recorded seriatiim for every single year in the six-year cycle, together with the name of the mishmar and the day in its week of service on which each festival falls (cf. 4Q321). The relatively well-preserved list concludes with the mention of Sukkoth, the last festival in the sixth year. The apparent catalogue formula (frg. 4 ii) which precedes the technical roster exhibits some similarity with introductory preambles of calendrical texts in priestly passages in the Pentateuch (Lev 23:37–38 and Num 29:39), in apocryphal works (1 En. 75:3; 82:10; Jub. 2:9, in the prologue), and in the Rule of the Community (1QS X 6–8), one of the Foundation Documents of the Yahad.

**Palaeography**

4Q320 is penned in a 'typical Hasmonaean script' (c.125–100 BCE). This dating makes it the earliest calendrical scroll written in the standard Jewish script.8 Note inter alia the crooked, perpendicular strokes of zayin and final nun, and the looped upper stroke of

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7 In 1 En. 14:13–15, a count of days is specified by which the solar year of 364 days exceeds the number of days in the lunar year of 354 days: 30 days in three years, 50 in five, and 80 in eight years.

lamed which inclines noticeably to the left. Samek is not a full circle; rather, its two arms are separated by a gap which makes it similar to standard mem. Letters measure mostly somewhat less than 2 x 2 mm.

Numerals are designated by symbols, like in other Qumran documents, e.g. 4Q321 and 4Q321a. A slanted stroke from right to left (ג) stands for the value ‘one’, a hook which may have developed from a horizontal stroke (נ) stands for ‘ten’, and two superimposed hooks (ס) signify ‘twenty’. Digits are arranged in groups of three, with the last triad commonly closed by an elongated stroke. In some instances, the last of a triad of strokes slants in the opposite direction, viz. from left to right (ך). Digits usually precede the symbol for twenty, whereas the symbol for ten precedes digits. A symbol for 100, represented here by (ן), is clearly extant in frg. 6, and less so in frg. 9. This symbol is known from the Elephantine papyri (see COMMENTS on frg. 6), and is also found in the Copper Scroll 3Q15, e.g. in col. I 6 (cf. J. T. Milik, DYD III, 221, 284).

The identical execution of recurring letters bespeaks the hand of a trained scribe. However, a uniform layout of the sheet is displayed only in frgs. 1–3. In frg. 4 the column widths and interlinear spaces vary noticeably.

Orthography

The name of mishmar Jehoiarib is spelled יריב and was probably pronounced Joiarib as opposed to the מ plene spelling יריב (1 Chr 9:10; 24:7) or יריב (Ezra 8:16; Neh 11:5). Note the defective spelling of יריב passim, which predominates in מ (Ezra 10:15; Neh 10:8; 1 Chr 24:9), and of ירח (frgs. 2 10; 4 v 6) spelled with aleph, as opposed to the spelling with he in the single mention of the name in the biblical mishmarot list (1 Chr 24:13). The ordinals ב, רביעי, and שישי are mostly spelled defectively, e.g. in frgs. 1 i 8, 10; 3 ii 14.

Mus. Inv. 681 (frgs. 1–3), 682 (frgs. 4–10)
Frgs. 1–3: PAM 40.579, 40.587, 40.591, 40.611, 40.619, 41.700, 42.330, 43.330*
Frgs. 4–10: PAM 41.699*, 42.329, 43.331*; IAA 374594

Frg. 1 i

* But spelled plene, ירח in frg. 1 ii 7.
NOTES ON READINGS

L. 1 A speck of ink before the lacuna at the right edge of the parchment is the remnant of a letter before an inter-word space.

L. 1 Traces of the head and the foot of lamed can be discerned before הראותה.

L. 2 חיראת. It appears that the word was written in the space between lines 1 and 2. At the very right edge of the fragment the vertical stroke of a lamed can be discerned, followed by an erasure, a snip of yod, a fairly certain rel, and possibly a trace of he. The ensuing inter-word space is somewhat wider than usual, and could have contained an additional letter before שיתו, presumably bet.

L. 3 The two parallel perpendicular strokes at the beginning of the line, best seen in PAM 41.700, are parts of he, presumably the last letter of the noun כתראיה written mostly in the margin, rather than 'ayin of הרקי, 'the firmament', as read by Wacholder-Abegg. כתראיה is mentioned in a similar context in 4Q319 IV 11, 17, and in 4Q225 1 17: יסוד ווונד, presumably bet.

L. 4 חיראת]. The name of the mishmar was perhaps preceded by יב, viz. 'the sons (or: house) of Gamul', like in frg. 4 ii 14 14 (cf. frg. 4 iii 2 תבシャ). In this case, יב was possibly partly written in the margin, like the first four letters of in the preceding line.

L. 5 חיראת]. The restoration is based on the spelling of the fully preserved word in frg. 4 iii 1. The vacat after חיראת] sets the introduction apart from the ensuing roster of data.

TRANSLATION

1. [to its being seen (or: appearance) from the east]
2. [in] the middle of the heavens at the foundation of
3. [Creation] from evening until morning on the 4th (day) of the week (of service)

10 The same variance of terms is found e.g. in B Ezck 40:45 יי , כבש כבש Ezck 40:46: כק תרשו .
11 For the significance of the collocation יבשכ , see COMMENTS.
4. [of Ga]mul in the first month in [the fir]st (solar)
5. year *vocat
6. on the 5th (day) in Jedaijah at (or: coinciding with) the 29th (day of the lunar month), on the 30th in it (the first solar month).
7. [Sabbath in Ha]qoa at the 30th on the 30th in the second (solar month)
8. [on the 1st (day) in Elia]shib at the 29th on the 29th in the third (solar month)
9. [on the 4th (day) in Bila]sh at the 30th on the 29th in the fourth (solar month)
10. [on the 4th (day) in Petai]sh at the 29th on the 27th in the fifth (solar month)
11. [on the 6th (day) in Delai]sh at the 30th on the 27th in the sixth (solar month)
12. [Sabbath in Seon]m at the 29th on the 25th in the seventh (solar month)
13. [on the 2nd (day) in Abia] at the 30th on the 25th in the eighth (solar month)
14. [on the 3rd (day) in Jasiim at the 29th on the 24th in the ninth (solar month)]

COMMENTS

L. 1-2 These lines are part of a poetic composition, in which, presumably, details of the biblical account of Creation are recapitulated, culminating in the account of the fourth day when the Creator fashioned the great luminaries and placed them in the heavens to serve as the basis of all calendrical computations (Gen 1:14-18; cf. Jub. 2:1-10). The apposition of the reference to the fourth day of Creation to a roster of X dates reveals the author's intent to convey the notion that the luminaries came into existence on an X date. It thus serves as an appropriate preface for the ensuing detailed schedule of X dates throughout the six-year mishmarot cycle and the parallel dates in the solar year. It is of interest to note that in Psalm 19, a poetic pericope pertaining to the sun's orbit (vv 1-7) precedes the major part of the song in which the poet extols the glory of God's Torah (vv 8-15).

L. 1 נוֹמַר. A Nip'al form of נְוָר. The last two letters of the word can be vocalized נו- and understood as the 3rd fem. pronoun or נו- to indicate a 3rd masc. pronoun (cf. נוֹאֵל in 4Q321 and 4Q321a).

L. 1 וּמְנוּר. I En. 77:1 states 'they call the east East' because this quarter of the heaven is the first (ㅠוֹרֶד) in which the luminaries arise. See 4Q209 3; 4Q210 1 iii 15 (DJD XXXVI, 159).

L. 2 וּמְנוּר. The same ambiguity regarding the pronoun suffix pertains to the Hipil form of נוֹר, written here with the well-attested elision of he.

L. 2 בְּנַוְרֵיעוֹן. In rabbinic parlance, לַמְנוּרֵיעוֹנִים is synonymous with the term נְוָרִיָּה מִירַקְלִים, which pertains exclusively to the sun's position at its zenith (e.g. b. Tamid 32a) and never refers to a phase in the moon's revolution. Most important for our concern is a saying which relates this stage in the sun's orbit to its position at Creation: 'The holy one praised be he created 365 windows (corresponding to the 365 days of the solar year) . . . 182 in the east and 182 in the west, and one in the midst of the firmament, from which it (the sun) came from the beginning (viz. from the fourth day) of Creation, רְאוּ אֶלֶף עֲשָׂר נְוָרִיְיָה עִבְדֵּי מֶשֶר מִיַּרְבּוֹן' (v. Rol Hal. 2.58a; cf. Pinto R. El. 513).

L. 2 וּמְנוּר. Vocabules derived from נוֹר are Leitwörter in biblical Creation traditions and pertain especially to the formation of the earth (Isa 48:13; Ps 89:12; 102:26; 104:5; Job 38:4 et al.). In that context, words from the semantic field of נוֹר are often paralleled by terms derived from נָר (Amos 9:6; cf. Ps 78:69), נָר (Ps 24:1-2; Prov 3:19), and נוֹר, which relate to the making of the heavens (Isa 51:13, 16; Zech 12:1).

In biblical literature, as in Qumran writings, the term נוֹר can take on a pragmatic synonymy with נָר (cf. e.g. Isa 40:21, 26; Job 38:4). Conjoined in an A + B structure the two nouns connote 'Creation' (not 'foundation of the creation' or 'of the firmament'), like in the phrase: יִתְנָהֵן אֶת הָרְאָל תַּנְנָה אֵל הַמְּנוֹרָה תַּנְנָה אֵל הִנְרָה, 'the essence of Creation is (that) "male and female he created them"' (CD IV 21). In 4Q215a 2 1-2, the verbs נוֹר and נָר are employed in a parallel structure, in an evident 'Creation' context:

12 The term 'windows' equals 'gates' in the astronomical vocabulary of 1 Enoch.
In 4Q320 the construct 발דה קה (קאֵד) has a temporal not a spatial signification, like the expression עון ביר סיםIVERS with והשא in ח. 1:27, reconstructed by VanderKam in 4Q216 iv 7, which is synonymous with זהדיה (4Q217 2 2). It does not identify the position of one of the 'great luminaries' in the 'midst of heaven', (line 2). Rather, the collocation refers to the luminaries' function of giving light on earth throughout the entire (fourth) day (of Creation), *מָאָרְבִּירָך קְּדֶשֶׁר* (line 3), like in the phrase, 'the hour of the creation which is before the beginning of the morning of the third day' (4Q319 IV 10-11).

L. 3. The author employs the biblical phrase יִדְּיָהוֺ יִדְּיֶרֹחְבִּירָך, which recurs in the Creation pericope (Genesis 1, passim) to denote 'one day', viz. a period of twenty-four hours. The same sequence seemingly can be restored in 4Q503 27–28 2 in what appears to be a similar Creation context: שָׁמָּאָרְבִירָך קְּדֶשֶׁר. In contrast, in 4Q408 3a+3a, the mention of 'morning' precedes the reference to 'evening' in a Creation context:

אֶלָּחֶנְה קִנְתֵּדֶשֶׁר אֲשֶׁר לֹא לֶאֹרֶתֶא מֵסֶלֶת אֲשֶׁר לֶאֹלֶל לֶיֶלֶת (cf. Ps 19:3)

אֶלָּחֶנְה קִנְתֵּדֶשֶׁר אֲשֶׁר לֹא לֶאֹרֶתֶא מֵסֶלֶת אֲשֶׁר לֶאֹלֶל לֶיֶלֶת (cf. Ps 19:3)

L. 3. 'שבוע'. As in other Qumran documents, the term והשא signifies here a septad of days, not the seventh day of the week (cf. e.g. 1IQiq XVIII 11; 11X 12; 20X 13).

L. 4. ישד. The noun is spelled plene, whereas in fig. 1 ii 3 it is spelled defectively. For the preposition *לֺא* connotating a given day in a given month cf. e.g. Gen 7:11; 8:4-5; Lev 16:29 et al.

L. 4–5 לֶאָרוֹחְבִּירָך קְדֶשֶׁר. Here the month precedes the year, in contrast to the order in fig. 1 ii 4-5.

L. 6. רֶמֶשֶׁר יִדְּיָהוֺ לֶאָרֶתֶא בִּתְאָרְבִּירָך. The first line contains the formula which recurs throughout the roster: X is determined by concordant dates in three discrete calendrical systems. In the present instance, it falls on the fifth day in the week of Jedaiah, which coincides with the twenty-ninth of the first lunar month and the thirtieth of the solar month.

From the equation of the 30th day in the solar month with the 29th day in the lunar month it follows that in that night the moon was invisible, as implied by the description of the moon's *orbit* in 1 Enoch (73:3–4): 'And her (the moon's) rising and setting changes every month...her first phase in the east comes forth on the thirtieth morning; and on that day she becomes visible, and constitutes for you the thirtieth phase of the moon on the thirtieth day together with the sun.'

L. 6. רֶמֶשֶׁר יִדְּיָהוֺ לֶאָרֶתֶא בִּתְאָרְבִּירָך. In the entire roster the preposition *לָא* has the temporal connotation 'at', like in biblical Hebrew, e.g. לֶאָרֶתֶא בִּתְאָרְבִּירָך (Gen 8:11; 24:11; 2 Sam 11:2; 2 Sam 17:14; Zech 14:7), לֶאָרֶתֶא בִּתְאָרְבִּירָך (Joz 10:27), לֶאָרֶתֶא בִּתְאָרְבִּירָך (2 Sam 11:1;).

L. 6. יִדְּיָהוֺ לֶאָרֶתֶא בִּתְאָרְבִּירָך. The first mention of a month is by its appropriate ordinal number, in the present instance יִדְּיָהוֺ לֶאָרֶתֶא בִּתְאָרְבִּירָך (line 4). In succeeding references only the pronoun בְּ is employed, as in other calendrical documents (cf. e.g. 4Q394 1–2, passim). In Meg. *Taan* (7:8) the Aramaic equivalent יִדְּיָהוֺ לֶאָרֶתֶא בִּתְאָרְבִּירָך serves in an identical meaning, e.g. יִדְּיָהוֺ לֶאָרֶתֶא בִּתְאָרְבִּירָך, 'on the 14th of Sivan (was) the capture of Migdal Sur; on the 15th in it. . . . the people of BethShean and Bigqata went into exile; on the 25th in it (was) the capture of the wall of Samaria'.

L. 9. יִדְּיָהוֺ לֶאָרֶתֶא בִּתְאָרְבִּירָך. The correct number should be 28, as in 4Q321a I 6. The scribe either inserted an extra stroke mistakenly, or else he erred altogether by calculating a wrong date. In this case, the beginning of the line should be restored to read יִדְּיָהוֺ לֶאָרֶתֶא בִּתְאָרְבִּירָך, in order to keep week-days and month-days concordant.

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14. The phrase is not relevant to the calendar issue and cannot be adduced as proof that 4Q319 and 4Q320 reflect an ephemeris in which the day was reckoned from the evening. See my discussion of the issue in 'The Reckoning of the Day in the Biblical and Early Post-Biblical Periods: From Morning or From Evening'. _The Bible in the Light of its Interpreters, Sarah Kamin Memorial Volume_, ed. by S. Japhet (Jerusalem: Magnes Press, 1994) 109–29, esp. 109–12 (Hebrew).
ANALYSIS

The prevailing scholarly consensus takes the preamble of the technical register to refer to the first appearance of the moon at the time of Creation. However, in my view, the text speaks of the very first sunrise in the east.\textsuperscript{15} It defines 'sunup,'\textsuperscript{17} viz. the phase of the sun's becoming visible on the eastern horizon on the first day of the first month in the first year which coincides with the fourth day in the week of Gamul (cf. 4Q596 IV 10, \textit{calendrical documents}). (line 2) stands for 'noon,' when the sun is at its highest point. An intermediate stage in the sun's orbit, approximately mid-morning, when its heat is beginning to be felt, is defined in biblical Hebrew \textit{סֶעְדָּה} (Neh 7:3) or \textit{שָׁמְשַׁם הָסָּף} (1 Sam 2:7).\textsuperscript{18} In this description of the sun's daily circuit, the author of 4Q320 possibly was inspired by the words of the psalmist: 'the sun' comes out like a bridegroom from his wedding canopy ... (its) rising (is) from the end of the heavens, \textit{מֶשֶׁךְ הַשָּׁמְשָׁם מִצָּבָה} its circuit (leads) to their (other) ends, and nothing is hidden (i.e., escapes) from its heat' (Ps 19:5-7). The passage is partly preserved in 11Q7 frg. 10.

This interpretation of the text is borne out by the employment of the term \textit{לַאֲרָדָה} in 4Q503 (Daily Prayers) in a formula pertaining to the sunrise, \textit{בְּמֵאֲרָא בְּמַגָּדְלָה} (frg. 10 v 1),\textsuperscript{19} which the editor convincingly restored at several junctures of the text (e.g. frgs. 24-25 vii 32; 29-32 vii 7, 9; 40-41 i-ii 4 et al.). It should be stressed that the formula is never applied there to the rising of the moon, nor is the moon ever explicitly mentioned. The references to daily prayers in the evening, \textit{בְּבַשַּׁר}, relate to invocations offered after sunset, and cannot be construed as evidence that the text pertains to the moon or the lunar calendar. Equally, mentions of the hours of darkness next to the hours of daylight in the 'Rule of the Community' do not strictly pertain to calendrical issues, but rather to the daily prayers which are to be offered in the course of twenty-four hours, viz. during the day and at night (1QS X i-4).\textsuperscript{20} Altogether, in the writings of the \textit{Yahad}, the term \textit{כתובא} signifies 'moon' only in evident references to the biblical Creation tradition (Genesis 1), in combination with 'stars' (e.g. 4Q216 2 iii 5; 4Q392 1 5; 4Q458 2 i 2 restored). In calendrical documents, \textit{יָשָׁׁב} invariably stands for 'month(s),' but never for 'moon'.

The author of the initial part of 4Q320 purports to buttress the Covenanters' claim that the legitimacy of the 364-day solar calendar by which they abided is rooted in a
divine fiat at the Creation of the Universe. The precedence accorded in the biblical Creation pericope (Gen 1:14-18) to ‘the great luminary’, the sun, over ‘the lesser luminary’, the moon, is echoed, as said above, at the very outset in the ‘Book of the Heavenly Luminaries’ attached to the book of 1 Enoch (72-82): ‘And this is the first law of the luminaries: the luminary the Sun has its rising in the eastern portals of the heaven and its setting in the western portals of the heaven’ (1 En. 72:2); ‘And after this law I saw another law dealing with the smaller luminary, which is named the Moon . . . her first phase in the east comes forth on the thirtieth morning; and on that day she becomes visible, and constitutes for you the first phase of the moon on the thirtieth day together with the sun’ (73:1-4).

This statement has important implications for the interpretation of the opening line in the calendrical schedule of 4Q320 i 6. Slightly paraphrased, the text can be rendered as follows: ‘the 5th day in the service week of Jedaiah falls on the 29th day of the (first) lunar month and coincides with the 30th day in the (first) solar month’. The only way to make day 29 (lunar) and day 30 (solar) coincide is the method explicated in Astronomical Enoch. The first day of Creation, counted as solar day 1, is considered day zero of the lunar month, i.e. day 30 of the preceding month. On this day, the moon is only beginning to emerge from the conjunction with the sun, and is invisible during the day. The night of day zero, when the moon is altogether eclipsed, is termed here X. This explanation makes the text at the beginning of 4Q320 tally with the calculation method of Astronomical Enoch. See INTRODUCTION and APPENDIX 4.

The Covenanters’ belief in the hoary antiquity of this calendar is shared by the authors of 1 Enoch (cf. e.g. 79:5) and Jubilees (cf. e.g. 2:8-9 [= 4Q216 vi 5-8]; 6:34-36), who never tire of proclaiming its exclusive authenticity. The author of CD evidently accords to the book of Jubilees a binding force in calendrical matters which equals that of the ‘Law of Moses’ in respect to all other cultic statutes and prescriptions (CD XVI 1-4). In Jubilees the introduction of the exclusive legitimate calendar of 364 days is ascribed to the antediluvian patriarch Enoch to whom it was divinely revealed (1 Enoch 81-82). At the same time, the Covenanters, like the writers of Jubilees and the Enoch literature, categorically reject the misleading lunar calendar, which became prevalent ‘when Israel was blind in all these’ (CD XVI 2-3), viz. in chronometrical matters, with the exception of the precursors of the Yahad.21 However, in a reference to the fourth day of Creation, identified in 4Q320 i 3-5 as the fourth day in the week of Gamul in the first six-year service schedule of the mishmarot, the fact could not be overlooked that according to biblical tradition the sun and the moon were created together on that very day (Gen 1:14-19; cf. 4Q392 1 s, and Jubilees 2). Therefore, the moon’s revolution needed to be given attention, albeit as an adjunct to a detailed description of the sun’s annual circuit.

The subordination of the lunar to the solar calendar, justified by the biblical tradition (Gen 1:16), is highlighted by the systematic synchronization of days in the service weeks of the mishmarot with the concordant dates in the solar calendar. It also shows in the

absence of any explicit mention in 4Q320 1–2 of the required intercalation of a lunar month of 30 days at the end of the third lunar year. Since the lunar year is altogether irrelevant for the six-year service cycle of the priestly courses, this arrangement proves conclusively that the list of one X date in every lunar month is sandwiched in for the one and only purpose of identifying the moon's monthly eclipse by the concurrent dates in the two calendrical systems which depend on the course of the sun, viz. the 364-day ephemeris and the six-year mishmarot cycle.

Frg. 1 ii

top margin

1. on the 5th (day) <in (the week of) Immer> at the 30th (day of the lunar month) on the 23rd (day) in the tenth (solar month)
2. on the 6th (day) in Jebezqel at the 29th on the 22nd in the eleventh (solar month)
3. on the 1st (day) in Jowarib at the 30th on the 22nd in the twelfth (solar month)
4. The second year "vacat"
5. on the 2nd (day) in Malkiah at the 29th on the 20th in the first (solar month)
6. on the 4th (day) in Jeshua at the 30th on the 20th in the second (solar month)
7. on the 5th (day) in Huppah at the 29th on the 19th [in the third (solar month)]
8. Sabbath in Happuas at the 30th on the 18th in the fourth (solar month)
9. on the 1st (day) in Gamul at the 29th on the 17th in the fifth (solar month)
10. on the 3rd (day) in Jedaiah at the 30th on the 17th in the sixth (solar month)
11. on the 4th (day) in Mijamin at the 29th on the 15th in the seventh (solar month)
12. on the 6th (day) in Shekaniah at the 30th on the 15th in the eighth (solar month)
13. Sabbath in Bilgah at the 29th on the 14th in the ninth (solar month)
14. [on the 2nd (day) in Pethahiah at the 30th on the 13th in the tenth (solar month)]

COMMENTS

L. 2 כַּלְכָּל אָבַד. The Aramaic designation of the eleventh month prevails in Qumran documents (e.g. 4Q394 1–2 iii 2; see comments ad loc.) as in the Hebrew Bible (e.g. Num. 7:72; Deut. 1:3; 2 Kgs. 25:2). In frg. 2 13 (like in 4Q321 1 4–5, 11 7–8, 111 6–7, et al.) the text reads כַּלְכָּל אָבַד, similar to the designation of the twelfth month כַּלְכָּל אָבַד in line 14, as in frg. 1 ii 3 (1 Chr. 27:14–15). In the present instance, the scribe omitted כַּלְכָּל, possibly because of the excessive length of text in the line.22 The use of כַּלְכָּל in regard to the eleventh and twelfth months is a definite scribal convention, which in no way pertains to the ‘renewal of the moon’.23

L. 8 כַּלְכָּל אָבַד. The mention of a Sabbath is not introduced by the preposition bet (cf. frgs. 1 i 12 and 2 13), in contrast to the formula used in references to other days in the week of service of a mishmar.

Frg. 2

בַּטַּלְכָּל לְשֵׁם בַּשַּׁבִּית ובַּשַּׁבִּית
בַּטַּלְכָּל לְשֵׁם בַּשַּׁבִּית
בַּטַּלְכָּל לְשֵׁם בַּשַּׁבִּית
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בַּטַּלְכָּל לְשֵׁם בַּשַּׁבִּית

NOTES ON READINGS

L. 14 בַּטַּלְכָּל. The letters of the name were presumably crowded into the narrow space between the number at the beginning of the line and the partly preserved final nun.

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22 Similar considerations would apply to a tentative reconstruction of the text in the presumed three ensuing lost columns.

TRANSLATION

9. on the first (day) in (the week of) Je[shu’a at the 29th (of the lunar month) on the 5th of the seventh (solar month)]

10. on the 3rd (day) in Huppah at the 30th on the 5th in the eighth (solar month)

11. on the 4th (day) in Hezir at the 29th on the 4th in the ninth (solar month)

12. on the 6th (day) in Jakan at the 30th on the 3rd in the tenth (solar month)

13. Sabbath in Jedai’ah at the 29th on the 2nd in the eleventh (solar month)

14. on the 2nd (day) [in Mijami] at the 30th on the second day in the twelfth (solar month)

COMMENTS

The fragment begins with the seventh month of the third year of the cycle. On the top eight lines, which are not preserved, the data for the eleventh month of the second year to the sixth month of the third year were recorded.

L. 14 נ[noon. 'The second day' is written out in full against the usual practice of indicating the day of the month by numerical symbols throughout the entire document. The seemingly superfluous addition of נ[noon before the numeral נ[noon is not attested in any other calendrical composition (cf. 4Q321a III 7).

Frg. 3 i

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NOTES ON READINGS

L. 11 יב. The restoration of the cipher 'four' before נ[noon is borne out by a comparison with frg. 1 i 3 and 4Q319 IV 11.

L. 12 נ[noon. A remnant of the top stroke of lamed and of the horizontal bar of resh can be discerned at the right edge of the fragment; these are followed by a gap, apparently resulting from the obliteration of te[sh, since a defective spelling of נ[noon for נ[noon or נ[noon is unlikely.

L. 13 נ[noon. The partly preserved te[sh at the beginning of the line, preceded by same or possibly by the left perpendicular of another te[sh, suggests the restoration of נ[noon or the defectively spelled נ[noon.

TRANSLATION

9. | the years of holiness
10. | the Creation holy
11. | on the 4th (day) in the week
12. of Gamul, head of all the years
13. otot of the second jubilee
14. 17 otot vacat

COMMENTS

L. 9 הקדש as an adjective is frequently associated with calendrical units: קדש שן (1QS X 5), קדש שְׁנֵים (CD III 14), קדש שֵׁנֶק (4Q286 i 2). The mention of 'the years of holiness' may be connected with the ensuing phrase 'head of all the years' in line 12.

L. 10 הקדש האיראזר. The reference to 'Creation', parallels the mention of the term in frg. 1 i 3 and in 4QOt (4Q319 IV 11, 17). Cf. also 4Q225 i 7 א"ע י"ע ומשה ע"ע ומשה.

L. 10 It cannot be decided whether הקדש refers to 'Creation' in a somewhat problematic structure, or whether it closes a syntactical unit, so that the word would be part of a construct, such as הקדש הקדש.

L. 11–12 Any calendar reckoning could begin only from the fourth day of Creation when the sun and the moon were fashioned, here again identified as the 4th day in the week of Gamul (cf. frg. 1 i 4). This mishmar is befittingly designated מה-born, 'head of all the years', viz. 'the years of holiness', mentioned in line 9.

L. 13 In 4QOt (4Q319 IV 16–17) the summary formula of otot in one jubilee is couched in identical terms: 17 הסופים [משה י"ע etc.], 'the (sum total of) signs of the second jubilee (amounts to) 17 signs'. This wording could perhaps be restored here with an inverted sequence of the last two components: 17 otot. For reasons unknown, in neither document is a summation of otot given for the first jubilee. The first summary specified pertains to the second jubilee. See the discussion in 4Q319. The summations of otot in the third to the seventh jubilees were possibly recorded in the same manner in the upper half of the next column (frg. 3 ii).

The summary of the number of otot for the second jubilee in frg. 3 i 13–14 prompts the conjecture that the text of this column or of its lower part served as the conclusion of a preceding detailed roster of otot, which covered a significantly longer span of time measured in jubilees, like in 4Q319. Remains of this roster are possibly preserved in frgs. 5–6, in which otot are explicitly mentioned, and perhaps also in frgs. 7–9. This suggests that 4Q320 originally contained a lengthy schedule of otot, and possibly other calendrical calculations, sandwiched in between the list of X dates in the six-year cycle (frgs. 1–2), and the roster of the number of days in each of the solar months in the cycle, together with the names of the pertinent mishmarot (frg. 3).

Frg. 3 ii
NOTES ON READINGS
L. 8 b. The letter at the intercolumnar margin appears to be medial mem, or else a ligature of bet with part of another letter, possibly the right arm of sin.
L. 9 כ. The reading be medial mem or mem bet seems to be certain.

TRANSLATION
8. 
9. with (?) (the) sacrifice[s]
10. days [ 
11. holy [the first (month has) 30 (days and is headed by) Gamul]
12. the second (month has) 30 (days) [(and is headed by) Jedediah]
13. the third (month has) 31 (days and is headed by) Haqqoq]
14. the fourth (month has) 30 (days) [(and is headed by) Eliashib]

COMMENTS
L. 9 כ. Possibly a reference to sacrifices to be offered at the beginnings of the months, but the connotation of the particle bet cannot be readily explained.
L. 11 Here the introductory passage ends. Since in the next line the second month is mentioned, this line was probably somewhat longer, assumedly containing the formula pertaining to the first month.
L. 11 שד. See COMMENTS ad frg. 3 i 9.
L. 12-14 The list details the number of days in every single solar month in the annual quarters—30, 30, 31—in the six-year service cycle of the mishmarot. A similar schedule probably is partially preserved in 6Q17. The list further records the name of the mishmar that serves at the beginning of the month, as proven by 4 i 11-14. These data are also recorded in 4Q321 and 4Q329.

Frg. 4 i

Translation
11. [the ninth (month has) 31 (days and is headed by) ]Joari[b]
12. [the tenth (month has) 30 (days and is headed by)] Malkiah
13. [the eleventh (month has) 30 (days and is headed by) ]Jejahu'a
14. [the twelfth (month has) 31 (days and is headed by) ]Eshebab

bottom margin
COMMENTS
The extant bottom margin proves that the last lines of the column contained the record for months 9–12 of year five in the cycle. Twelve more lines, each holding at least fifteen spaces, would have been required for the list of the sixth year in the next column. But the last five lines of that column are taken up by an introduction to the subsequent roster. Since the lines of the column are extremely narrow, and the writing comes up to the very edge of the sheet, abutting the stitching, it would have been impossible to accommodate in them the remaining text of the schedule or to enter it perpendicularly in the intercolumnar margin. Therefore, we must assume that the scribe accidentally or deliberately omitted the data for the sixth year or that he crammed a larger number of lines into the column by narrowing the interlinear spaces. Neither of these assumptions is satisfactory.

Frg. 4 ii

women of the seasons
the months
and the seven-year periods
and for the jubilees. On the 4th (day)
in the week of the sons of Gamul

TRANSLATION
10. the days and for the Sabbaths
11. for the months
12. [and for the ]years and for the seven-year periods
13. and for the jubilees. On the 4th (day)
14. in the week of the sons of Gamul

COMMENTS
L. 10 עזרות. The lack of a preposition before עזרות prompts the supposition that the last word in line 9 was לשל.
A similar text is found in *Jub*. 2:9 (= 4Q216 vi 7). The wording is especially close to the enumeration of prayer times in the Community Rule: ירחו ירוחמ וירש ... וירש ... וירש ... וירש וירש וירש, 'at the beginnings of (the) months ... and (the) holy days (i.e. Sabbaths) ... at the beginnings of (the) years ... at the annual festivals in their seven-year periods and at the beginnings of the seven-year periods until the festival of (the beginning of) the jubilee' (1QS X 5-8). The text is also reminiscent of the statement in *m. Rot Hal.*, which pertains to one of the four 'beginnings of the year': *Trouves* את המסה למטות והפסחנה ל‡ו ל‡ו (1:1). In frg. 4 ii, the précis possibly followed upon an unpreserved clause like ל‡ו"ה‡ו לאוורא (cf. frg. 1 i 1-3 and 4Q319 IV 10) which closed a concise report of the fourth day of Creation.

Ll. 13-14 The fashioning of the luminaries on the fourth day of Creation, identified as 'the fourth day in the week of the sons of Gamul', is again presented as the starting point for all calendrical calculations, serving as an anchor for the ensuing schedule of holidays in frg. 4 iii–vi, as in the roster of X days in frgs. 1 and 2.

L. 14. The somewhat fuller term ג困難 rather than the more common name ג困難 designates the mishmar. Cf. frg. 4 iii 2.

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25 "מש" in this text is reflected in 1QS X 1-6 in the enumeration of prayer times in the course of every twenty-four hour period.
NOTES ON READING

L. 1. A blank space illogically separates the last word in the line, מָצָא, from the preceding phrase, מָצָא מִי יָמִים.

L. 2. מָצָא. This word is similarly disjoined by an even larger blank space from the mention of the day in the week of service of Ma'oziah on which the festival falls.

L. 5-6. A larger than usual interlinear space separates line 5 from line 6. The layout of this column is not as carefully designed as the preceding columns.

L. 6 כ. The final mem appears to be a correction of a medial mem.

TRANSLATION

1. the first year its festivals
2. on the 3rd (day) in the week of the sons of Ma'oziah (falls) the Passah
3. on the 1st (day) in Jed['iah] (falls) the Waving of the Omer
4. on the 5th (day) in Se'orim (falls) the [Second] Passah
5. on the 1st (day) in Jeshu'a (falls) the Festival of Weeks
6. on the 4th (day) in Ma'oziah (falls) the Day of Remembrance
7. on the 6th (day) in Jairib (falls) the Day of Atonement
8. on the tenth in the seventh (month) vacat
9. on the 4th (day) in Jed'iah (falls) the Festival of Booths
10. vacat
11. the second (year) its festivals
12. on the 3rd (day) in Se'orim (falls) the Passa[h]
13. on the 1st (day) in Mija[m]in (falls) the Waving of the Omer
14. on the 5th day in ]Abiah (falls) [the Second Passah]

COMMENTS

This roster of the annual festivals parallels the six-year roster of holidays preserved to a large degree in 4Q321 IV–VII. In both registers only the biblical festivals are listed. The Festival of Unleavened Bread, מָצָא מִי יָמִים, is not adduced explicitly, whereas in the Temple Scroll (XI 6-12) and in 4Q326 it is presented as a separate holiday which falls on Wednesday, the 15th of the first month, the day after the Passah. Rather, in 4Q320 4 iii as in 4Q321 IV–VII, the Mazzoth Festival is evidently subsumed under מָצָא מִי יָמִים, like in the rabbinic tradition. There is no mention of the last days of the Festivals of Mazzoth or Booths, which in the Bible and in the tradition of the mainstream community are also ranked as מָצָא מִי יָמִים. Equally missing are the Covenanters’ special Festivals of the First Oil (olives), the First Wine (grapes), the Wood Offerings, and the Consecration of the Priests (cf. 4Q326).

In some important details, the roster of festivals in 4Q320 differs from the register preserved in 4Q321:
1. The roster in 4Q321 lists *seriatim* the beginnings of the months in the solar calendar, together with the name of the *mishmar* that serves on the first day of each month. These data are not recorded in 4Q320 4, possibly because they were already given in a somewhat different format in the preceding register (frgs. 3 ii–iv).

2. 4Q321 records only the name of the *mishmar* that serves at a given festival, whereas the catalogue of 4Q320 also lists the day in that *mishmar*’s week of service on which the festival falls.  

L. 2 בושם. The specification בושם, ‘in the week of a *mishmar*’, seemingly is entered only at the beginning of the first and the second three-year periods, viz. at the onset of the first and fourth years of the six-year cycle.

Ll. 7–8 ידה ייבא יד חמשה [יֶשָּׁר יָרָי]. The double date of the Day of Atonement is the only entry in the list for which the day in the month is given, similar to 4Q394 1–2 and 4Q324 1 6–7 and in contrast to 4Q320 4 iv 3–4; v 6–7; vi 1–2, 12–13. In view of the otherwise formulaic wording of this and other calendrical documents, the double date is evidently irregular. It proves, however, that there are exceptions to the rule.

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Frg. 4 iv

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26 It is of interest to note that in the calendar of holy days partly preserved in 4Q394 1–2, a document which is not of the *mishmarot* category, the day of the month on which a festival falls is explicated.
NOTES ON READINGS

L. 2 The scribe or a corrector entered the accidentally omitted word וָקָרַד in the space between this line and the next.

L. 9 עָכִּיתָ. Note the ligature of he and pe.

L. 10 For an unknown reason the scribe left the first half of the line blank (a vacat?), and began writing after the lacuna. Therefore, he was forced to crowd the letters of בָּדַד in the line, and most certainly also of the last words, מְסָרִים, which are now lost.

L. 13 עָכִּיתָ. As noted above, the word is partially extant on a small fragment which presumably can be placed here.

TRANSLATION

1. on the 1st (day) in[ Hupp]ah (falls) [the Festival of W]eeks
2. on the 4th (day) in Se’[orim] (falls) the Day [of Re]membran[ce]
3. on the 6th (day) in Malkia[h] (falls) the Day of Atone[men]t
4. on the[ 4th (day) in ]Mijamin (falls) the Festival of Booths
5. vacat
6. the third (year) its festivals
7. on the 3rd (day) in Abiah (falls) the Passah
8. on the 1st (day) in Shekaniah (falls) the Waving of the Omer
9. on the 5th (day) in Jaq[i]m (falls) the[ Second] Passah
10. [ vacat on the 1st (day)] in Hezir (falls) [the Festival of Weeks]
11. [on the 4th (day) in Abiah (falls) the Day of Remembrance]
12. [on the 6th (day) in Jeshu’a (falls) the Day of Atonement]
13. [on the 4th (day) in Shekaniah (falls) the Festival of Bo]oths
14. [the fourth (year) its festivals]

Frg. 4 v

top margin

וָכָרַד 1
בָּדַד 2
בָּדַד 3
בָּדַד 4
בָּדַד 5
בָּדַד 6
בָּדַד 7
vac at 8
NOTES ON READINGS
L. 2  For the blank space after בותי cf. frg. 4 iii 1 and 2.
L. 12 [ב]. A possible remnant of בותי is visible on the small fragment preserving col. iv 13.
L. 12 יִצְפֶּה. The unusually large inter-word space after יִצְפֶּה caused יִצְפֶּה to be written in the margin.
L. 13 The reading of the flimsy remnants of letters in this line is borne out by a comparison with the fully preserved text in frg. 4 iii 5.

TRANSLATION
1. [on the 3rd (day) in the week of the sons of Jaqim (falls) the Passah
2. on the 1st (day) [in Jeshe]bab (falls) the Waving of the Omer
3. on the 5th (day) in Immer (falls) the Second Passah
4. [on the 1st (day) in Jakjin (falls) the [Festival] of Weeks
5. [on the 4]th (day) in Jaqim (falls) the Day of Remembrance
6. [on the 6th (day)] in Huppah (falls) the Day of Atonement
7. [on the 4th (day)] in Jeshebab (falls) the Festival of Booths
8. vacat
9. [the fifth] (year) its festivals
10. on the 3rd (day) in Immer (falls) the Passah
11. [on the 1]st (day) in Happisses (falls) the Waving of the Omer
12. [on the ]5th (day) in Jehezqel (falls) the Second Passah
13. [on the 1st (day) in Jooiar]bab (falls) the Festival of Weeks
14. [on the 4th (day) in Immer (falls) the Day of Atonement]

Frg. 4 vi

בֵּשָּׂרָה יִשְׂרָאֵל וְהָגְפֹּרִים 1
בֵּשָּׂרָה הָגְפֹּרִים וְהָסָּלִים 2
gap 3
gap 4
59

משה בביתו
ב בוחקול הפסק
ב GAMUL הכף העמר
ב [ } במצוי הפסק וחש[ ]
[ ] ב[ ] מחילה וח'טעים
[ ] ב[ ] בוחקול [ ] המזור[ ]
[ ] ב[ ] פז[ ] [ ] [ ] הנומר[ ]
[ ] ב[ ] [ ] [ ] המול וחכ[ ]

NOTES ON READINGS
The lines in this column do not run parallel to the lines in the last column of the preceding sheet. The irregularity may have resulted from the fact that the already inscribed sheets of parchment had been stitched together unevenly; or else it was caused by the uneven surface of the material.

TRANSLATION
1. on the 6th (day) in Hezir (falls) the Day of Atonement
2. on the 4th (day) in Happiṣeph (falls) the Festival of Booth[s]
3. vacat
4. vacat
5. the sixth (year) its festivals
6. on the 3rd (day) in Jehezqel (falls) the Passah
7. on the 1st (day) in Gamul (falls) the Waving of the Omer
8. on the 5th (day) in Maṣṣaiah (falls) the Second Passah
9. on the 1st (day) in Malkiah (falls) the Festival of Weeks
10. on the 4th (day) in Jehezeqel (falls) the Day of Remembrance
11. on the 6th (day) in Jakin (falls) [the Day of Atonement]
12. [on the 4th (day) [in Gamul (falls) the Festival of Booths]

Frg. 5
NOTES ON READINGS
L. 1 [דוע]. Only a minute remnant of the left perpendicular of het can be discerned.
L. 2 [ט]. The first numerical symbol without doubt stands for 20, and so does the less clearly preserved
second symbol.

TRANSLATION
1. [the ]months[
2. oot 40[

COMMENTS
L. 2 [ט]. The mention of oot suggests that the fragment is connected with the roster preceding frg.
3 i (see above). The number of at least 40 oot pertains to the sum total of oot in more than two jubilees,
which amount to 32, 33, or 34. Because of the break at the end of the line no restoration of the original can
be suggested.

Frg. 6

NOTES ON READINGS
L. 2 [ט]. The first composite symbol, known from the Elephant papyri, represents the number
100.27
L. 3 [א]. The trace of a letter before the legible tav appears to be the left stroke of ’ayin. The next
word, , suggests the restoration of , , , or .
L. 4 [א]. The faint traces of letters at the beginning of the line can be read as א with
a ligature of pe and yod. In the , the fragmentary nun coalesces with mem. The restoration of א is
clearly appropriate.

TRANSLATION
1. [ ]
2. [150 da[y]s []
3. folut (or: seven; or: nine) thousand and six[ hundred
4. thousand and eig[ht hundred
5. [ ]

COMMENTS

This fragment, too, is possibly connected with frg. 3 i.

L. 2 אָשְׁר. The reading of the sum 150 proposed by U. Glessmer (private communication), and the significance of that number of days in the framework of the Covenanters' calendrical system, remain unexplained.

L. 3 וְהָלָא הָנָּה. There is no way of preferring one of the three possible readings 4600, 7600, 9600 over the other, nor can the meaning of any of them be ascertained.

L. 4 וּמַחֲמָא מַמֶּשׁ. By restoring in this line the reading המַמֶּשֶׁתָּהָהּ מַמֶּשׁ, viz. 4800, and 9600 in line 3, the number in line 4 would be exactly half of the number in line 3.

Frg. 7

<table>
<thead>
<tr>
<th>Col. ii</th>
<th>Col. i</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>א</td>
</tr>
<tr>
<td></td>
<td>י</td>
</tr>
<tr>
<td></td>
<td>ט</td>
</tr>
<tr>
<td></td>
<td>ט</td>
</tr>
</tbody>
</table>

NOTES ON READINGS

Col. i

L. 2 אָשְׁר. The reading of the number 12 is certain. The letter before it appears to be final mem.

TRANSLATION

Col. i

1. ]
2. day 12
3. וּנְוִי
tot

COMMENTS

Col. i

L. 2 אָשְׁר. The number 12 suggests completing the preceding final mem to read יָשָׁר. Cf. the count of 150 days in frg. 6, and the mention of יָשָׁר in frg. 8.

Frg. 8

|         | 1 |
|         | יְמִי | 2 |
NOTES ON READINGS

L. 2 עשת ב. A slanted stroke follows the lamed. Wacholder-Abegg proposed restoring לשת ב. However, the gap after the slanted stroke in the middle of line 2 proves that it cannot be connected with the ensuing word ב, thus refuting the proposed restoration. Rather it appears to be the remnant of a partly erased final pe connected to the preceding lamed. This prompts the restoration of the reading ששת ב, 'one thousand days'. Also this fragment could stem from the missing list.

Frg. 9

| חינר | 1 |
| לאוונ | 2 |

NOTES ON READINGS

L. 1 עשת. It appears that at the beginning of the line three number symbols can be discerned with some difficulty: 100, 20, and 10, amounting to a total of 130. After an inter-word space, the letter he of the next word can be read.

TRANSLATION
1. נ30 נ
2. חישון י

COMMENTS
Judging by the script, the external appearance, and the colour of material, this fragment belongs with 4Q320. but it is unclear where it should be placed. On PAM 41.699 it is placed on top of frg. 4 ii; but on PAM 42.329 it appears in a different position; in the latest photograph, PAM 43.331, as well as in IAA 374594, it is missing altogether.

L. 1 עשת. The total of 130 has no evident explanation.

L. 2 עשת. In 4QAstronomical Enoch this word is employed several times to connote 'calculation' / 'order', in the context of astronomical computations. It is rendered in Ge'ez by te'zaz, which equals Greek ταξις or πεταγμενος (I En. 2:1).28

Frg. 10

| רורטש | 1 |
| ליאנ | 2 |

TRANSLATION

1. [ the first [ ]

COMMENTS

The material appearance of this small rectangular fragment seems to be somewhat different from that of the other fragments of 4Q320. In addition, the rather broad base of *tin* differs from the spiked base of the letter in all other fragments. Therefore, the ascription of this piece to 4Q320 is open to question.
321. 4QCalendrical Document/Mishmarot B

(PLATES HI-IV)


Physical Description

4Q321 (olim Mishmarot B*) consists of a group of fragments of varying size, most of which were assembled by Milik into a lengthy strip of leather. Frgs. 1, 2, and 3 are each comprised of one piece, whereas frgs. 4 and 5 consist of a number of large and small pieces which can be tentatively combined.

Altogether, parts of seven columns are preserved. Cols. I–III contain eight lines each, whereas cols. IV–VI have nine lines. Col. VII consists of only six lines. This fact may be taken as an indication that the text ends here. The lengths of the reconstructed lines of each column are laid out in the following table:

<table>
<thead>
<tr>
<th>Col.</th>
<th>Letters per Line</th>
<th>Letters and Word-spaces</th>
<th>Average Number of Letter-spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>59–60</td>
<td>67–70</td>
<td>68</td>
</tr>
<tr>
<td>II</td>
<td>63–70</td>
<td>77–85</td>
<td>81</td>
</tr>
<tr>
<td>III</td>
<td>86–98</td>
<td>107–118</td>
<td>112</td>
</tr>
<tr>
<td>IV</td>
<td>58–66</td>
<td>68–78</td>
<td>73</td>
</tr>
<tr>
<td>V</td>
<td>63–69</td>
<td>75–80</td>
<td>78</td>
</tr>
<tr>
<td>VI</td>
<td>67–81</td>
<td>85–90</td>
<td>88</td>
</tr>
<tr>
<td>VII</td>
<td>46–60</td>
<td>52–71</td>
<td></td>
</tr>
</tbody>
</table>

No average was calculated for col. VII because the line best preserved is very short, holding only sixteen letters or nineteen letter-spaces.

The manuscript is horizontally ruled, with the letters suspended from the dry ruling. This is best seen on the left side of frg. 5. In several places also vertical lines can be traced which delimit the columns and intervening margins. The interlinear spaces measure c.7 mm. Inter-word spaces range between 2 and 7 mm. Most letters average 2 x 2 mm, separated by a space of approximately half a millimetre. The uniform
lettering shows that the manuscript was penned by an expert scribe. On the whole, the text can be read with little difficulty.

Frg. 1 measures 8.4 x 8 cm and is light brown. Puncture holes in the leather were made by vermin or resulted from corrosion. The lower and right margins are serrated, whereas the edge of the upper margin is evenly preserved. The fragment contains the beginnings of eight lines of col. I, which take up 5.2 cm of its height. The top margin measures 1.3 cm and the bottom margin 1.5 cm, where intact.

Frg. 2 measures 13.5 x 7.4 cm and is dark brown, blackening in some places, which renders the decipherment of the text somewhat difficult. There are several large holes in the leather and its edges are serrated. Vertical rulings delimit the 1-1.3 cm margin between cols. I and II. On the right side of the fragment, the ends of lines 3-8 of col. I are extant. On its left side eight partial lines of the text of col. II can be seen, taking up 5.2 cm of its height. At its fully preserved middle section, the bottom margin is 1.5 cm wide, like that of frg. 1, and the partly extant top margin, 7 mm.

Frg. 3 measures 8 x 5.8 cm. It is light brown, but darker at the ragged edges. The middle sections of lines 3-8 in col. III take up 3.8 cm of its height. At the top left and right part of the fragment the space between lines 2 and 3 is preserved to the height of 4 mm. Where fully extant, the bottom margin measures 1.6 cm.

The composite frg. 4 is dark brown. It consists of two comparatively long strips of leather and several smaller pieces which, all in all, measure 26.5 x 8.8 cm. The fragment contains nine partially preserved lines of text of the left sides of cols. IV and V, and the line beginnings of col. VI. The partly extant bottom margin measures 9 mm. Margins of 0.8-1.5 cm separate col. V on the right side from col. IV and on the left side from col. VI. The inscribed lines in col. V were thus c.12.5 cm long.

Frg. 5 consists of a long, narrow strip of dark brown leather measuring 22.7 x 4 cm. Several additional smaller pieces bear a few letters of text of the upper six lines of col. VI. The ends of the last three lines of the column are preserved to a larger extent, together with the 1.1 cm wide bottom margin. Also extant is the lower section of the left margin. However, its width cannot be ascertained, since the line beginnings of col. VII are not preserved. At the lower left corner of the fragment remain the last words of the bottom line of col. VII, and some letter-traces of the line above it. As mentioned, col. VII contained only six lines. Two additional horizontal dry rulings still can be discerned below the writing, merging with the bottom margin to a width of c.3 cm, a clear indication that the text of the manuscript ends here.

Contents

The scroll contains two rosters of data, each encompassing a cycle of six years which subdivides into concordant cycles of three solar years, of thirty-six months each.

a. In the first list (cols. I-IV 8), two dates in each lunar month are recorded seriatim. One is defined by its identification with a particular day in the week of service of a priestly course, which coincides with a particular date in the solar calendar. Since it is not designated by an explicit appellation, it will be called 'X' (cf. 4Q320 1-2). The other is defined by the same parameters, but in addition is also termed duqah. For a discussion of X and duqah, see INTRODUCTION, APPENDIX 4.
The partially preserved opening lines of the document illustrate the system:

1. On the second (day) in (the week of) Abia[h] (which falls) on the twenty-fifth [in the eighth (month); and duqah (is) on the third (day)]

2. [in (the week of) Mijamin (which falls) on the twelfth] in it (the eighth month).

In this passage two specific dates in the eighth month of the first year in the cycle are noted. The reference begins in the middle of line 1 and ends in the middle of line 2. The first date, viz. X, falls on the second day in the week of service of the course Abia[h] which corresponds to the twenty-fifth day of the eighth solar month. The other, designated duqah, falls on the third day in the week of service of mishmar Mijamin, which coincides with the twelfth of that same month.

Although duqah falls in the middle of the solar month, preceding by thirteen days X, which occurs at the end of the month, in the initial part of the list X is always mentioned first and duqah second. Later on, X gradually moves toward the middle of the solar month, and concomitantly duqah shifts to the beginning of the month. After the duqah which falls on the first of the ninth solar month of the second year (col. II 6), the sequence is reversed and now it comes sixteen or seventeen days/night after X. The reversal occurs again in the first month of the fourth year (col. III 7), and accordingly must be restored in the ninth month of the fifth year, with the time intervals between the two phenomena remaining fixed: X occurs thirteen days after duqah or precedes it by sixteen or seventeen days.

In the proposed restoration of col. II 4-6, two duqah dates are presumed to occur in one solar month:

[Sabbath in (the week of) Bilgah] (falls) on the fourteenth in the ninth (month); (the first) duqah (is) [on the first (day) in (the week of) Huppah (which falls) on the first] in the ninth (month); and a second [duqah (is) on the third (day) in (the week of) Hezir (which falls) on the thirty-first] first in [it (the ninth month)].

This ‘double duqah’ results from the fact that in the solar year the ninth month numbers thirty-one days. In the second year, when duqah occurs on the first of this month, X will fall thirteen days later, i.e. on the fourteenth. The next duqah will then occur after an interval of seventeen days, on the thirty-first of the month. The same sequence must be restored in the ninth month of the fifth year.  

The last duqah recorded in the list coincides with the fourth day in the week of service of mishmar Jehezkel, on the eighteenth day of the twelfth month in the sixth year of the cycle (col. IV 7). In the Covenanters’ calendar the twelfth month has thirty-one days. Therefore, the third day in the week of mishmar Gamul, whose service begins on the twenty-ninth, always falls on the last day of the year. This course then completes its turn of duty in the first year of the next cycle, from the first to the fourth day of the first month, i.e. from Wednesday to Saturday (col. I 1-4).  

The term נַפַיָא is a hapax legomenon in Qumran writings and is not attested in either biblical or rabbinic Hebrew. Therefore, the meaning of the term must be ascertained from its use in the scroll under review and in the parallel roster 4Q321a, rather than from its putative etymological derivation. נַפַיָא is understood here as the designation of

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1 The posited occurrence of two duqah dates in the ninth month of the fifth year is substantiated by the required mention of two duqah dates at that juncture in the parallel mishmar scroll 4Q321a. The restored reference to two X occurrences in col. III 7 is borne out by the fact that in the solar calendar the first day of the first month in the first and fourth years of the cycle falls on the thirtieth day of the lunar month (cf. 4Q320 1 i 6).
the onset of the moon's waning in the middle of the lunar month; X is taken to signify the moon's full eclipse at the end of the month. As mentioned, from the onset of the moon's waning to its total eclipse thirteen days pass; from the appearance of the new moon to the onset of its waning in the next month, sixteen (or seventeen) days.²

This explanation of the above data helps in elucidating the meaning of ידיע. The term should be etymologically derived from ידיע, 'to be thin', rather than ידיע, 'examine, observe', as proposed by Milik.¹ ידיע thus pertains to the time when the moon begins to wane, and not when it begins to wax.

b. The latter part of the scroll contains a roster of the dates of the biblical festivals in reference to the week of service of the officiating priestly course.⁴

All festivals, מועדים, detailed in the list are rooted in biblical law and were observed by all Israel on the same dates, although on days differing from those assigned to them in the Covenanters' solar calendar. It should be stressed that there is no mention in the roster of the two particular Harvest Festivals of the 'First Wine', מֵשֶׁר יִדְיוֹר, and the 'First Oil', דְּעוֹח, nor of the 'Festival of the Wood Offering', מָצָאָר קַרְן, which are recorded in 11QT² XLIII 6-15, (restored) in 3-4 (cf. XXI-XXIII) and in other Qumran documents, but have no explicit biblical basis.⁵ Their absence from the mishmarot rosters possibly indicates that in the Temple service the Covenanters did not accord these מועדים a status equalling that of the biblical festivals.

Palaeography

The scroll was penned in a 'late Hasmonaean or early Herodian book hand', similar to that of 4QSam⁶ and 1QIsa.⁷ Accordingly, 4Q321 can be tentatively dated to c.50–25 BCE. Of all the calendrical Scrolls, this is the best example of a well-executed script by a highly qualified scribe. There are two interlinear marks in cols. V 3 and VI 7. See NOTES ON READINGS.

² See INTRODUCTION, APPENDIX 4.
⁴ The naming of the week after the priestly course on duty is possibly also attested in rabbinic tradition. See J. H. Tigay, ‘Notes on the Development of the Jewish Week’, H. L. Ginsberg Volume, ed. by M. Haran (BrIn 14; Jerusalem: IES, 1978) 116*-18⁸, further S. Lieberman, Tosfia Ki-fishah, vol. 10 (New York: Jewish Theological Seminary, 1988) 452 and no. 4, 5.
⁵ See INTRODUCTION, APPENDIX 1.
Orthography

The scroll exhibits the typical *plene* spelling of Qumran manuscripts, such as וַיַּעֲמֹֽד (passim), פֶּסֶק (cols. V 2; VI 9). Some names of priestly courses are spelled differently from מַעֲלָה 2 Chr 24:7-18: מַעֲלָה (cols. I 6; IV 4; V 6) as opposed to בֶּטַלָּה (col. V 9) compared with מַעֲלָה (col. II 3) or מַעֲלָה (cols. IV 8; V 2) instead of מַעֲלָה. At times, a *lapse calami* appears to have caused a spelling which differs from that of מַעֲלָה, as, for example, מַעֲלָה (col. I 4) for מַעֲלָה (cols. II 6; III 8; V 5); יְרֵיב (col. V 2), emended to the usual spelling יְרֵיב (cols. I 5; IV 3; VI 2) by a supralinear insertion of yod.

Mus. Inv. 365, 372
PAM 40.610, 40.966, 41.697*, 41.698, 42.328*, 43.328, 43.329

Col. I (Frags. 1, 2)

*top margin*

[בָּאה יִדְּרָעֵי בְּסֹנִיהַ עֹסֶרָא נַוַּכֹּה בְּכֻנֵּי בָּאַרְכֵּה] 1
[בָּכַי מְכֶסֶת נְתֶרָא נַוַּכֹּה בְּכֻנֵּי בָּאַרְכֵּה נַוַּכֹּה וּרְדֵּק בָּשֵׁלָה] 2
[בָּכַי מְכֶסֶת נְתֶרָא נַוַּכֹּה בְּכֻנֵּי בָּאַרְכֵּה נַוַּכֹּה וּרְדֵּק בָּשֵׁלָה] 3
[בָּכַי מְכֶסֶת נְתֶרָא נַוַּכֹּה בְּכֻנֵּי בָּאַרְכֵּה נַוַּכֹּה וּרְדֵּק בָּשֵׁלָה] 4
[בָּכַי מְכֶסֶת נְתֶרָא נַוַּכֹּה בְּכֻנֵּי בָּאַרְכֵּה נַוַּכֹּה וּרְדֵּק בָּשֵׁלָה] 5
[בָּכַי מְכֶסֶת נְתֶרָא נַוַּכֹּה בְּכֻנֵּי בָּאַרְכֵּה נַוַּכֹּה וּרְדֵּק בָּשֵׁלָה] 6
[בָּכַי מְכֶסֶת נְתֶרָא נַוַּכֹּה בְּכֻנֵּי בָּאַרְכֵּה נַוַּכֹּה וּרְדֵּק בָּשֵׁלָה] 7
[בָּכַי מְכֶסֶת נְתֶרָא נַוַּכֹּה בְּכֻנֵּי בָּאַרְכֵּה נַוַּכֹּה וּרְדֵּק בָּשֵׁלָה] 8

*bottom margin*

The first extant column was definitely preceded by a column, in which the occurrences of *duqah* and X in the first seven months of the first year of the cycle were detailed.

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7 This spelling is peculiar to 4Q321. In other *mishmarot* texts the name is given as מַעֲלָה like in מַעֲלָה.
Considerations of the space filled by the restored text of that column suggest that it was most probably headed by a superscription, a short introduction, or possibly another calendrical composition (cf. 4Q321a).

NOTES ON READINGS

L 4 בגמגמ. For this spelling instead of גֶּמֹמ see above, ORTHOGRAPHY.

L 6 It appears that in the lacuna between בָּשַׁם and דַּעַח at the end of the line no more than ten letters can be accommodated, as in the proposed restoration.

TRANSLATION

1. [on the first (day) in (the week of) Jedaijah (which falls) on the twelfth in it (the seventh month). On the second (day) in (the week of) Abia[h] (which falls) on the] twen[ty-fifth in the eighth (month); and duqah (is) on the third (day)]

2. [in (the week of) Mijamin (which falls) on the twelfth] in it (the eighth month). On the third (day) in (the week of) Jaqin (which falls) on the [twenty-fourth in the ninth (month); and duqah (is) on the fourth (day)]

3. [in (the week of) Shekaniah (which falls) on the eleventh in it (the ninth month). On the fifth (day) in (the week of) Immer (which falls) on the twenty-first in the tenth (month); and duqah (is) on the sixth (day) in (the week of) Je[sh]ebab (which falls)

4. [on the tenth in it] (the tenth month). On the [si]xth (day) in (the week of) Je[he]zqel (which falls) on the twenty-second in the eleventh month; and [duqah (is on the) Sabbath in] (the week of) Petahah (which falls)

5. [on the ninth in it (the eleventh month)]. On the first (day) in (the week of) Joiarib (which falls) on the twenty-second in the twelfth month; and [duqah (is on the second) (day) in (the week of) Delaiah (which falls)

6. [on the ninth in it (the twelfth month). vacat The] second year:] The first (month). On the second (day) in (the week of) Malakia[h] (which falls) on the twen[tieth in it (the first month); and] duqah (is)

7. [on the third (day) in (the week of) Harim (which falls) on] the seventh in it (the first month). On the fou[rth (day) in (the week of) Jeshua (which falls) [on] the twentieth in the second (month); and [duqah (is on the fifth (day) in (the week of) Ha[j]qos (which falls) on the seventh

8. [in it (the second month). On the fifth (day) in (the week of) Huppah (which falls) on the [nine]teenth in the third (month); and duqah (is) on the sixth (day) in (the week of) E[j]ia[sh]b (which falls) on the [si]xth in it (the fourth month). Sabbath in (the week of) Happyes (which falls)

Col. II (Frg. 2)
NOTES ON READINGS

L. 4  המשנה שבח. This is a scribal mistake. The text should read המשנה שבח. A mishmar entered the Temple on the afternoon of a Sabbath and this Sabbath is named after it. However, the counting of the seven days of its term of service begins on the following Sunday (see INTRODUCTION). On the Sabbath which falls on the second of the eighth month in the first year of the cycle, the term of mishmar Abiah ends and the course Jeshu'a begins its service. Therefore, this Sabbath must be called המשנה שבח. Ensuingly, Abiah is always mentioned after Haqqos and before Jeshu'a (see e.g. col. IV 4-5).

L. 5 הַיְיֵל. The phenomenon of a 'second dugah' is explained in CONTENTS.

L. 7 הֶזֶּה. For the elision of the preposition - cf. sollen (col. III 5).

L. 8 The comparison with the beginning of the second year (col. 1 6) suggests reading here [הַרְשָׁע] המשנה בָּכִין. However, it is preferable to restore the text in accordance with the opening phrase of the fourth year without the explicit mention of the first month (col. III 7).

L. 8 The ending of the second year is indicated by a vacat before the beginning of the third year, as is the beginning of the fourth year after the ending of the third (col. III 7). A vacat is also reconstructed between the first and second year (col. I 6). The closure of the entire dugah list is thus highlighted (col. IV 8), as are the endings of years one, two, and three in the ensuing roster (col. V 3, 8; VI 3).

TRANSLATION

1. [on the eighteenth in the fourth (month); and dugah (is) on the first (day) in (the week of) Immer (which falls) on the fifth] in it (the fourth month). On the first (day) in (the week of) [Gamul (which falls) on the seventeenth in the fifth (month)];
2. [and dugah is on the second (day) in (the week of) Jehezqel (which falls) on the fourth in it (the fifth month). On the third (day) in (the week of) Jedaijah (which falls) on the [seventeenth in the sixth (month); and dugah (is) on the fourth (day)]
3. [in (the week of) Ma'oziah, (which falls) on the fourth in it (the sixth month). On the fourth (day) in (the week of) Mijamin (which falls) on the fifteenth in the seventh (month); and dugah (is) on the fifth (day) in (the week of) Se'orim, (which falls) on the second]
4. [in (the seventh month). On the sixth (day) in (the week of) Shekaniah (which falls) on the fifteenth in the eighth (month); and dugah (is) on the Sabbath in (the week of) Abiah (which falls) on the second in it (the eighth month). [Sabbath in (the week of) Bilgah (falls)]
5. on the fourteenth in the ninth (month); and (the first) 

6. first in (the tenth month). On the [second] (day in (the week of) Petahiah (which falls) on the thirteenth in the tenth (month)); and 

7. On the [third (day) in (the week of) Delaiah (which falls) on the twelfth in the eleventh (month); and 

8. on the twelfth in the twelfth month; and (duqa[h]) is on the Sabbath [in] (the week of) Mijamin (which falls) on the twenty-eighth [in] (the twelfth month). vac The third (year) On the [sixth (day) in (the week of) Haqqos (which falls) on the tenth]

Col. III (Frg. 3)
Notes on Readings

L. 7 According to 4Q320 2 14, the restored text should read שֶׁבֶרֶן יָשְׁ וּשְׁ יָשְׁ וּשְׁ יַסְכִי, 'on the second (day) in the twelfth month'. However, this reconstruction exceeds the lacuna in lines 6-7. It is therefore possible that through haplography one of the two identical words שֶׁבֶרֶן was omitted (cf. 4Q326 5).

L. 7 Two X dates are registered in one month. Cf. the double duqah in col. II 5, and CONTENTS.

Translation

1. [in the first (month); and duqah (is) on the second (day) in (the week of) Shekaniah (which falls) on the twenty-seventh in it (the first month). On the first (day) in (the week of) Jaqim (which falls) on the tenth in the second (month); and duqah (is) on the third (day) in (the week of) Jeshebab (which falls) on the twenty-sixth in it (the second month). On the second (day) in (the week of) Immer (which falls)]

2. [on the ninth of the third (month); and duqah (is) on the fifth (day) in (the week of) Happisses on the twenty-sixth in it (the third month). On the fourth (day) in (the week of) Jezreel (which falls) on the eighth in the fourth (month); and duqah (is) on the sixth (day) in (the week of) Gamul (which falls) on the twenty-fourth in it (the fourth month). On the fifth (day)]

3. [in (the week of) Ma'oziah (which falls) on the seventh in the fifth (month); and duqah (is) on the first (day) in (the week of) Harim (which falls) on the twenty-fourth in it (the fifth month). Sabbath in (the week of) Malakiah falls on the seventh (day) in the sixth (month); and duqah (is) on the second (day) in (the week of) Haqqo (which falls) on the twenty-sixth month.

4. [third in it (the sixth month). On the first (day) in (the week of) Jesha'a (which falls) on the fifth] in the seventh (month); and duqah (is) on the fourth (day) in (the week of) Eliashib (which falls) on the twen-ty-fourth in it (the seventh month). On the third (day) in (the week of) Huppah (which falls) on the fifth of the eighth (month); and duqah (is) on the fifth (day)]

5. [in (the week of) Bilghah (which falls) on the twenty-first in] it [(the eighth month).] On the fourth (day) in (the week of) Hezir (which falls) on the fourth of the ninth (month); and duqah (is) on the Sabbath in (the week of) Jezeqel (which falls) on the twenty-first in it (the ninth month). On the sixth (day) in (the week of) Jabin (which falls) on the third of the tenth (month);]

6. [and duqah (is) on the first (day) in (the week of) Ma'oziah (which falls) on the nineteenth in it (the tenth month). Sabbath in (the week of) Jedediah (falls) on the second of the eleventh month; and duqah (is) on the third (day) in (the week of) Se'orim (which falls) on the nineteenth in it (the eleventh month). On the second (day) in (the week of) Mijamin (which falls)]

7. [on the second (day) in the twelfth month; and duqah (is) on the fourth (day) in (the week of) Abiah (which falls) on the eighteenth in it (the twelfth month). vocat The fourth (year): (The first X is) on the fourth (day) in (the week of) Shekaniah (which falls) on the first of the first (month); the second (is) on the fifth (day) in (the week of) Jeshebab (which falls) on the thirtieth in it (the first month).]

8. [and duqah (is) on the sixth (day) in (the week of) Jaqim (which falls) on the seventeenth of the] first (month). Sabbath in (the week of) Pe'jaham (falls) on the thirtieth of the second (month); and duqah (is) on the first (day) in (the week of) Hezir (which falls) on the seventeenth in it (the second month). On the first (day) in (the week of) Delaiah (which falls) on the twenty-ninth]

Between cols. III and IV the text of two further columns needs to be restored, in which the duqah and X occurrences from the third month of the fourth year to the fourth month of the sixth year were enumerated. The restored text implies that each column contained nine lines.
Col. IV (Frg. 4)

בכרות ביכת מסתע פทดสอบ הדק הכוהן (ובתן) ליבגלצער (ומארא) מסתע (וכמהו שמע)
[בכרות מסתע]
בכרות המסתע הבן
בכרות המסתע הבן (וביתו) כספים המשייו והמדים בשתי כמות של דק
בכרות המסתע הבן (וביתו) כספיים המשייו והמדים בשתי כמות של דק
בכרות המסתע הבן (וביתו) כספיים המשייו והמדים בשתי כמות של דק
בכרות המסתע הבן (וביתו) כספיים המשייו והמדים בשתי כמות של דק
בכרות המסתע הבן (וביתו) כספיים המשייו והמדים בשתי כמות של דק
[בכרות המסתע הבן (וביתו) כספיים המשייו והמדים בשתי כמות של דק]
בכרות המסתע הבן (וביתו) כספיים המשייו והמדים בשתי כמות של דק
בכרות המסתע הבן (וביתו) כספיים המשייו והמדים בשתי כמות של דק
בכרות המסתע הבן (וביתו) כספיים המשייו והמדים בשתי כמות של דק
[בכרות המסתע הבן (וביתו) כספיים המשייו והמדים בשתי כמות של דק]

**NOTES ON READINGS**

1. א (יושב) במעל. The restoration is certain. The name is fully preserved in col. V 2 and was restored accordingly in col. VII 2, 5. This spelling resembles the readings מְרַדְּוַד and מְרַדְּוַד in 1QIsa 1 11-12 as opposed to מְרַדְּוַד ב. 1 9 10. In col. II 3 the name of this priestly order is given as מְרַדְּוַד, and was thus restored in col. III 3, 6; מ 1 Chr 24:18 reads מְרַדְּוַד.

2. י. א (יושב) במעל. In the first list, the scribe detailed the days in the week of service of the masora which coincided with the *duqah* days of the moon. In the transition to the second roster, he presumably applied the same method at its beginning whereas later he only recorded the names of the priestly courses.

**TRANSLATION**

1. [On the fifth (day)] (in the week of) *Jaqim* (which falls) on the seventh in the fifth (month); and *duqah* (is) on the first (day) (in the week of) *Biqlah* on the [twenty+y fou[rth]] in [it (the fifth month)]. Sabbath in (the week of) *Hezir* (which falls) on the seventh (th)

2. [in the sixth (month); and *duqah* (is) on the second (day) (in the week of) *Petaiah* on the twenty-third in it (the sixth month). On the first (day) (in the week of) *Jakin* (which falls) on the fifth in the seventh (month); and *duqah* is on the fourth (day)

3. [in the week of] *Deliajah on the twenty-second] in it (the seventh month). On the third (day) in (the week of) *Jonah* (which falls) on the fifth in the eighth (month); and *duqah* is on the fifth (day) (in the week of) *Harim*

4. [on the twenty-first in it (the eighth month). On the fourth (day) in (the week of) *Malakiah* (which falls) on the fourth in the ninth (month); and *duqah* is on the] Sabbath in (the week of) *Abiah* (which falls) on the [twenty-]
5. first [in it (the ninth month)]. On the sixth (day) in (the week of) Je[shul[im (which falls) on the] third in the tenth (month); and duqah (is) on the first (day) in (the week of) Jaqim (which falls) on the nineteenth in it (the tenth month).

6. [Sabbath in the week of] Jeshebab (which falls) on the second of the eleventh month; and duqah (is) on the third (day) in (the week of) Immer (which falls) on the ninetieth in it (the eleventh month).

7. [On the second (day) in] (the week of) Happises (which falls) on the second in the twelfth month; and duqah (is) on the fourth (day) in (the week of) Jehezqel (which falls) on the eighteenth.

8. [in it (the twelfth month).] תאר [The first] year: (The first day of) the first month (falls) in (the week of) [Sun] [on the thirteenth day] in (the week of) May'iziah (in it) (falls).

9. [the Passah]; in (the week of) Jedr[ah] in it (falls) the Waving of the Omer. The (first day of the) second (month) falls in (the week of) Jedr[ah]; in (the week of) Se'orim (in it) (falls) the Second Passah. The (first day of the third month) falls in (the week of) Haqq[os].

COMMENTS

L. 8 For the dating of the first day in the first month of the first year of the cycle to the fourth day in the week of service of Gamul, cf. 4Q320 1:3-5; 4Q319 IV 10.

L. 9 4Q326 2-3 specifies: [On the fourteenth in it (the first month) the Passah on the third day (of the week); on the fifteenth in it] the Festival of Mazzoth on the fourteenth day [in] (the week of) Me[zu't] [on the thirteenth day] in (the week of) [Sun] [on the sixteenth ([day]) (in the week of) [Sun] [on the eighteenth (day)] (in the week of) [Sun] [on the twentieth ([day]) (in the week of) [Sun] [on the twenty-third day] (in the week of) [Sun] [on the twenty-seventh day] (in the week of) [Sun] [on the twenty-ninth day] (in the week of) [Sun] [on the thirty-first day] (in the week of) [Sun].

It follows the offering of the Passah lamb on the afternoon of the fourteenth day of the first month (a Tuesday) was distinguished from the Mazzoth Festival which falls on the fifteenth (a Wednesday)."
NOTES ON READINGS
L. 3 Above bet of הָסָּה, a right-angled interlinear mark can be seen, perhaps a simplified form of nun.

TRANSLATION
1. in (the week of) Jeshu’a in it (falls) the Feast of Week[s]. The (first day of the) fourth (month falls) in (the week of) Eliajishib. The (first day of the) fifth (month falls) in (the week of) Bi[lgah. The (first day of the) sixth (month falls) in (the week of) Jeshu’a. The (first day of the) seventh (month falls) in (the week of) Shekaniah. The (first day of the) eighth (month falls) in (the week of) Jeda’iath. The (first day of the) twelfth (month falls) in (the week of) Gamul. [vocat]

2. in (the week of) Mo’aziah, this is the Day of Remembrance; in (the week of) Jo<i>a row in it (falls) the Day of Atonement; in (the week of) Jeda’iath in it (falls) [the Feast of Booths. The (first day of the) eighth (month falls) in (the week of) Se’orim.]

3. The (first day of the) ninth (month falls) in (the week of) Jeshu’a. The (first day of the) tenth (month falls) in (the week of) Huppah. The (first day of the) eleventh month (falls) in (the week of) Hezir. The (first day of the) twelfth month (falls) in (the week of) Gamul. [vocat]

4. The second (year): The (first day of the) first (month falls) in (the week of) Jeda’iath; in (the week of) Se’orim in it (falls) the Passah; in (the week of) [Mijamin [in] it (falls) the Waving of the Omer. The (first day of the) first (month falls) in (the week of) Pe’raiah.

5. in it (falls) the Second Passah. The (first day of the) [third (month falls) in (the week of) Eliajishib; and in (the week of) Huppah] in it (falls) the Festival of Weeks. [The] (first day of the) fourth (month falls) in (the week of) Bi[lgah. The (first day of the) fifth (month falls) in (the week of) Pe’raiah.

6. [(The first day of the) the sixth (month falls) in (the week of) Mo’aziah. The (first day of the) seventh (month falls) in (the week of) Se’orim; this is the Day of Remembrance; in (the week of) Malakiah [in it (falls) the Day of] Atonement; in (the week of) Mijamin

7. in it (falls) the Festival of Booths. [The (first day of the) eighth (month falls) in (the week of) Abiah. The (first day of the) ninth (month falls) in (the week of) Huppah. The (first day of the) tenth (month falls) in (the week of) Hezir. The (first day of the) eleventh month (falls) in (the week of) Jakan.]

8. The (first day of the) [twelth mon]th (falls) in (the week of) Jeda’iath. the third (year): The (first day of the) first (month falls) in (the week of) [Mijamin]. In (the week of) Abiah in it (falls)

9. the Passah; in (the week of) Shekanjah in it (falls) the Waving of the Omer. The (first day of the) second (month falls) in (the week of) Shekanah, in (the week of) Jaqim in it (falls) [the Second Passah. The (first day of the) third (month falls) in (the week of) Bilgah. In (the week of) Hezir

COMMENTS
L. 2 יְהוָה, יִשְׂרָאֵל. On the first day of the seventh month falls the ‘Day of Remembrance’, יְהוָה יִשְׂרָאֵל. In this designation, parts of two biblical appellations of that festival were amalgamated: יְהוָה יִשְׂרָאֵל (Num 29:1) and יְהוָה יִשְׂרָאֵל (Lev 23:24).

L. 2 יְהוָה, יִשְׂרָאֵל. In Qumran calendrical documents this designation pertains only to the first day of the seventh month (cf. cols. V 6; VI 1, 9; restored in cols. VI 5; VII 4), whereas in Jub. 6:23 the term is applied to the first day of every annual quarter. The recognition of this difference is decisive for the restoration of the text in 4Q394 1–2 ii 15–11 i.
Col. VI (FrGs. 4, 5)

Notes on Readings

L. 1 The text of this line is appreciably longer than that of the other lines in the column. It is possible that, as with [אובא אונך ובשומ], the scribe entered superlinearly some additional words which he had missed out, so that the length of the line in fact did not exceed that of the others. Note that in this column two more omissions were inserted between the lines, either by the scribe or by a second hand: שד in line 6, and yet ofיה in line 9.

L. 6 In the middle of the line a vacat must be posited, possibly resulting from a fault in the leather.

L. 7 A curved stroke, which could be an abnormally long downstroke of final sade, can be seen between lines 7–8, under [משה].

Translation

1. [in it (falls)] the [Festival] of Weeks. The (first day of the) fourth (month falls) in (the week of) Petahiah. The (first day of the) fifth (month falls) in (the week of) Delsiah. The (first day of the) sixth (month falls) in (the week of) Sejorim. [The (first day of the) seventh (month falls) in (the
week of Abia[;] <[this is the D]ay [of Remembrance; in (the week of) Jeshu'a] in it (falls) the D[ay of Atonement];

2. [in (the week of) Shekaniah] in it (falls) the Festival of [B]ooths. The (first day in the) e[ight (month falls) in (the week of) Jaqim. The (first day of the) n[inth (month falls) in (the week of) Hezir. The (first day of the) t[eenth (month falls) in] (the week of) Jakin. The (first day of the) e[venth month (falls) in] (the week of) Joiarib. [The (first day of the) two-]

3. If[th] month (falls) in (the week of) [Mijamin. [eac The fourth (year): The (first day of the) first (month falls) in (the week of) Shekaniah; in (the week of) Jaqim in it (falls) the Ha[ssah; in (the week of) Jeshebab in it (falls) the Waving of the Omer. The (first day of the) second (month falls)]

4. in (the week of) Jesh[ebah]; in (the week of) [Immer in it (falls) the Second Passah. The (first day of the) thir[d (month falls) in (the week of) Petahiah; in (the week of) Jakin in it (falls) the Festival of [Weeks. The (first day of the) fourth (month falls) in (the week of) Delai[ah.]

5. [The (first day of the) fifth (month falls) in (the week of) Ha[ri]m. The [first day of the) sixth (month falls) in (the week of) Abia[. The (first day of the) se[nventh (month falls) in (the week of) Jaqim; this is the Daly [of Remembrance; eac] in (the week of) Huppah [in it (falls) the Day of Atonement; in (the week of) Jeshebab in it (falls) the Festival]

6. of Beso[ths. The (first day of the) eighth (month falls) in (the week of) Immer[. The (first day of the) ninth (month falls) in (the week of) [Jakin. The (first day of the) tenth (month falls) in (the week of) Joiarib. The (first day of the) eleventh <mo[nth]> eac (falls) in (the week of) Ma[lahiah. The (first day of the) twelfth month]

7. ([falls) in (the week of) Shekaniah.] The fifth (year): The (first day of the) [first (month falls) in (the week of) [Jeshebab; in (the week of) Immer] in it (falls) the Passah; in (the week of) Happisses in) it ([falls)] the Waving of the Omer. The (first day of the) sec[ond (month falls) in (the week of) Happisses in (the week of) Jehoz[el in it (falls)

8. [the] Second Passah. The (first day of the) third (month falls) in (the week of) [Delai[; in (the week of) Joiarib in it (falls) the Festival of W[eks. The (first day of the) fo[rth (month falls) in (the week of) Harim. The (first day of the) fifth (month falls) in (the week of) Haq[os. [The (first day of the) six[th (month falls) in (the week of) Jaqim. The (first day of the) seventh (month falls)

9. in (the week of) Immer; this is the Day of Re[embrance. In (the week of) Hezir in it (falls) the Day of Atonement; in (the week of) Happisses in it (falls) the Festival of Booths. The (first day of the) eight[th (month falls) in (the week of) Je[ez[el. The (first day of the) ninth (month falls) in (the week of) Joiar[ib. The (first day of the) tenth (month falls)
Overall Purpose of 4Q321 and 4Q321a

As stated, 4Q321 and 4Q321a contain two rosters of special days and dates. In one are detailed the date on which the moon begins to wane, and the day of its eclipse in respect to every single month. In the other, the first day in every solar month and the dates of the annual festivals are recorded, in reference to their occurrence in the week of service of a given priestly course. In combining these rosters, the scribes of the documents intended to underscore the dichotomy between 'darkness', represented by the waning and the fully eclipsed moon, the omens of 'evil', and 'light', represented by the sun, the symbol of 'good'. The synchronization of the lunar dates of darkness with the parallel dates in the solar calendar is probably intended to enable the Covenanters to beware of these negative periods of time in the lunar months.

The duqah/duqo (ḥ) scrolls provide a vivid illustration of the calendar controversy between the Covenanters who adhered to a solar calendar and their opponents who adjusted their pace of life to the revolution of the moon. The latter emphasized the bright nights, viz. the 'positive times' in the moon's course, the former purposefully singled out the 'negative periods', viz. the moon's dark nights. This antithesis reverberates in the terse rabbinic saying: 'Like the moon, (which is either) full or waning. If you are worthy, you count (the periods of) its full(ness), and if not, you count (the periods of) its waning'.
321a. 4QCalendrical Document/Mishmarot C

(PLATE V)


Physical Description

4Q321\textsuperscript{a} (olim Mishmarot B\textsuperscript{b}) consists of seven inscribed fragments of various sizes, which were parts of eight columns of the original scroll.

Frg. 1, the second largest piece, measures 5.6 x 4.7 cm. The proposed reconstruction of the text suggests that the right side of the fragment contains remains of the line endings of col. I 4-6, 8 and a small part of the margin between cols. I and II. The very dark brown colour of the right side of the leather prevents the decipherment of much of the text; on the much lighter left side the beginnings of col. II 1-8 can be read fairly easily.

Frg. 2 measures 2.8 x 4.6 cm. Its upper part is dark brown; the lower part light brown. The preserved text suggests that this fragment contains the ends of col. III 2-8. The dark brown frg. 3, which measures 1 x 1.2 cm, holds the remnants of the beginnings of lines 4 and 5 of col. III.

Frg. 4 measures 1.5 x 2 cm and is of a light brown colour. A few legible letters can be located in lines 7-9 of col. III.

Frg. 5, which measures 2.2 x 2.3 cm, consists mainly of a part of the right margin of col. IV. Two vertical dots in the margin probably served the scribe as line-markers. The letters סנה or סנה at the beginning of one line, the possible trace of he at the beginning of the preceding line, and the faint letter top at the beginning of the succeeding line do not allow for definitely inserting this fragment in the reconstruction. However, it could be tentatively placed in col. IV at the beginning of lines 6-8, containing remains of the words: סנה. סנה, and סנה respectively.

Frg. 6 measures 2 x 1.5 cm and is also dark brown. The legible letters suggest its placement in the middle of col. IV 8-10.

The largest fragment, frg. 7, measures 7.2 x 5.9 cm and is brown to dark brown. At its right edge a vertical row of needle holes caused the breaking of the leather. The fragment contains a substantial part of the beginnings of lines 1-10 of col. V.

The lettering is very regular, evincing the hand of a trained scribe. Individual letters are mostly 2 x 2 mm with the exception of the larger lamed, qop, final nun, and final sade, and the narrow waw, sayin, yod, and final nun. Letters are separated by a space of 1 mm. Occasionally two letters run together as in a ligature.
Words are separated by a space of c.2 mm. Instances of apparent 'crowding' seem to have resulted from the crumpling of the leather.

There are no horizontal or vertical dry rulings, but where preserved to a significant extent, the lines run parallel, separated by an average space of c.4 mm.

The lines in the several columns are of unequal length. Where remains of two consecutive lines are extant, the width of a column can be assessed by measuring the longest inscribed line together with the width of the margin. In this respect cols. V, II, and III, in a descending order of their state of preservation, provide the best data for a possible restoration of the text.

Col. V appears to be comparatively wide. In line 4, the longest line, 22 letters with four inter-word spaces are preserved, which together take up 5.5 cm. The restored twenty-six letters and four inter-word spaces cover 6.6 cm. Together with the 7 mm right margin, the width of this column comes to c.12 cm.

In line 3, twenty-four letters with two inter-word spaces together take up 5.2 cm. The restored text of twenty-three letters with four inter-word spaces covers c.5.4 cm. Together with the right margin of 7 mm, this column is 11 cm wide.

Lines 5 and 9 were considerably shorter, unless each contained a large mid-line caesura. In line 5, thirty letters and six inter-word spaces cover 5.8 cm. The restored sixteen letters and three inter-word spaces measure 2.7 cm. With a 7 mm wide margin, this line comes to 9.3 cm.

Line 9 contains twenty-one letters and four inter-word spaces covering 4 cm. The restored text contains twenty-six letters and four inter-word spaces which take up 4.7 cm. With the added margin of 7 mm this line is 9.4 cm long.

The text of line 6, one of the longest in col. II,1 can be restored with much confidence, since in addition to its beginning, also the preceding and succeeding lines are preserved. Thirteen letters and two inter-word spaces take up 2.7 cm, and the restored twenty-five letters with five inter-word spaces measure 5.4 cm. It follows that in this line the written text covered c.8.1 cm. Together with the 8 mm-wide right margin, the width of col. II comes to c.9 cm.

Col. III is the narrowest. In line 7, ten letters and two inter-word spaces cover 1.7 cm. The restored text of thirty-seven letters and six inter-word spaces extends over c.6 cm. With the added margin of 8 mm, the width of this column comes to c.8.5 cm.

The above data suggest that on the average a column was c.10 cm wide. Therefore, the width of the fully unrolled scroll with its eight columns can be fairly accurately estimated at c.80 cm.

Contents

Like 4Q321 also 4Q321a contains an enumeration of the monthly dark phases of the moon in a six-year cycle, viz. the night in the middle of the lunar month when the moon begins to wane, and the night of the moon's total eclipse at the end of the month (see INTRODUCTION, APPENDIX 4). The emphasis on the progressive decrease of the moon's light and visibility contrasts sharply with the custom of the adherents to the

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1 The shortest, line 3, contains only three letters, with the rest of the line remaining blank.
Jewish lunar calendar. Rabbinic tradition attaches great importance to the bright phases of the moon: the night of the 'full moon', in mid-month, which precedes the night in which the moon begins to wane; and the 'new moon' at the beginning of the month, סדרון, which follows upon the night of its total eclipse. The denigration of the moon by assiduously listing its dark phases strongly suggests that the Covenaners whose lifestyle was determined by the solar calendar of 364 days, used these records as weapons in their dispute with mainstream Judaism whose cultic life was adjusted to the lunar calendar. In this document, as in 4Q321, the dark nights of the moon are pinpointed by tying them to parallel dates in the Qumran solar calendar. In addition, they are synchronized with specific days in the week of service of a given priestly watch, נמי, in the Temple. The painstaking correlation of these data in several Qumran rosters suggests that the preoccupation with the calendar and the prolific production of calendar-related documents were most probably a priestly prerogative.

In the extant fragments of this document, the annual festivals are not mentioned, in contrast to the parallel roster 4Q321, where they are adduced seriatim in reference to the terms of service of the priestly courses.

Substantial lacunae in the partially extant columns of the document under review can be filled in with the help of the characteristics of the 364-day calendar, known from other works, especially from the practically identical text of 4Q321. The proposed restoration suggests that 4Q321a contained eight columns, the first seven holding thirteen lines each and the last, only nine. If the bottom part of that column was indeed blank, this would indicate that the text of the scroll ended here. It is, however, possible that another now lost calendrical schedule was appended to the main roster, like in 4Q321.

The restoration of the text of col. I implies that the calendrical roster proper began in the middle of line 2 and that it was probably preceded by a superscription or a short introduction, similar to what appears to be the case in 4Q321.

**Palaeography**

The prominent top of lamed and the ascent of the middle stroke of sin from where the left and right strokes meet at the pointed base of the letter lead to the conclusion that the document was penned in a 'late Hasmonaeian book hand' (c.50–25 BCE). However, the consistently 'open' final mem at the left bottom approximates the form of that letter in the 'typical Hasmonaeian script' (c.125–100 BCE). It may, therefore, be assumed that the scroll should be dated to 100–50 BCE.

**Orthography**

The text of the document shows signs of the typical Qumran plene spelling. The plene form שֵׂכִּית (cols. I 4; II 7; V 2, 3, 4, 6, 7) is also found in 4Q321, and in other calendrical

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3 Cross, 'Development', 138, fig. 2, line 2.
fragments from cave 4. The spelling of the name אֶזְרָה (col. V 7), as opposed to אֶזְרָה in מ (1 Chr 24:13), attests to the use of אֶזְרָה as matres lectionis indicating a long vowel a at the end of a word. As in the parallel list 4Q321, we also find in 4Q321א the spelling אֶזְרָה (col. III 8) instead of אֶזְרָה in מ (1 Chr 24:14, cf. Neh 12:5,18). However, 4Q321א reads אֶזְרָה (cols. III 5; V 4), as do מ 1 Chr 24:9; cf. 9:12; Neh 11:12 et al., in contrast to אֶזְרָה in 4Q321 passim.

Of special interest in this document is a pivotal term which is spelled three different ways. In col. V 8, the one fully preserved example, it is spelled מַהִכָּה. In col. V 5, מַהִכָּה can be read with certainty. However, in col. III 5 מַהִכָּה seems to be required, which is invariably used in 4Q321. The different spellings in 4Q321א suggest that we are concerned with a technical term which pertains to the masculine noun מַהִכָּה. Therefore, מַהִכָּה, vocalized, should be understood as the realization of the long vowel o in the third person masculine possessive pronoun, while מַהִכָּה should be understood as a plene spelling of מַהִכָּה.

Mus. Inv. 190
PAM 40.610, 40.617, 41.701, 43.332
IAA 375682

Col. I (Frg. 1)

| תָּשָׁה הָרְאֵשְׁנָה בּוֹאָרָם | 1 |
| דָּמָהָרְאֵשְׁנָה בּוֹאָרָם | 2 |
| בֹּאוּרְיָהָב הָמְלַשְׁפָו | 3 |
| בֹּאוּרְיָהָב הָמְלַשְׁפָו | 4 |
| בֹּאוּרְיָהָב הָמְלַשְׁפָו | 5 |
| בֹּאוּרְיָהָב הָמְלַשְׁפָו | 6 |
| בֹּאוּרְיָהָב הָמְלַשְׁפָו | 7 |
| בֹּאוּרְיָהָב הָמְלַשְׁפָו | 8 |

4 See Kutscher, Language, 185. However, it is also possible that the scribe inadvertently combined the two spellings מַהִכָּה and מַהִכָּה.
5 The same reading should probably be restored in col. VI 8.
6 Cf. Kutscher, Language, 182-4; Qimron, The Hebrew of the Dead Sea Scrolls (HSS 29; Atlanta, 1986) 21, 137. In the proposed reconstruction of the missing parts of the text, the form מַהִכָּה, which is peculiar to this scroll, is always restored, although it cannot be said for certain in every instance which spelling was originally used. For an explanation of the significance of these terms, see INTRODUCTION, APPENDIX 4.
NOTES ON READINGS

L. 4 Before וָ, some undefinable traces of letters can still be seen in the photographs.
L. 6 The proposed gap in the line separates one pair of lunar phenomena from the preceding one.
L. 7 The scribe left the rest of the line empty, in order to open the ensuing line with the next pair of dark nights. Such gaps are also assumed in the restoration of lines 6 and 10 and in the corresponding lines of the next columns.

TRANSLATION

1. [ ]
2. [The first year: On the fourth (day) in (the week of) Gamul (which falls) on the first (day) of the first (month). On the fifth (day)]
3. [in (the week of) Jedaiyah (which falls) on the thirtieth in it (the first month) the second (occurrence of X); and duqo (is) on the sixth (day) in (the week of) Mefoziah, (which falls) on the seventeenth in it].
4. [Sabbath in (the week of) Haqqos (falls) on the thirtieth of the second (month); and duqo (is) on the first (day) in (the week of) Malkiah, (which falls) on the seventeenth] in it.
5. [On the first (day) in (the week of) Eliashib (which falls) on the twenty-ninth of the third (month); and duqo (is) on the second (day) in (the week of) Jeshu'a (which falls) on the [six-]
6. [teenth in it. On the third (day) in (the week of) Bilgah (which falls) on the] twenty-eighth of the fourth (month),
7. [and duqo (is) on the fourth (day) in (the week of) Huppah (which falls) on the fifteenth in it].
8. [vacat
9. [On the fourth (day) in (the week of) Petahiah (which falls) on the twenty-seventh in the fifth (month); and duqo (is) on the fifth (day) in (the week of) Hezi]
9. [which falls) on the fourteenth in it. On the sixth (day) in (the week of) Delaiah (which falls) on the twenty-seventh in the sixth (month)];
10. [and duqo (is on the Sabbath in (the week of) Gamul (which falls) on the fourteenth in it].
11. [Sabbath in (the week of) Se'orim (falls) on the twenty-fifth of the seventh (month); and duqo (is) on the first (day) in (the week of) Jedaiyah (which falls) on the twelfth]
12. [in it. On the second (day) in (the week of) Abish (which falls) on the twenty-fifth in the eighth (month); and duqo (is)]
13. [on the third (day) in (the week of) Mijamin (which falls) on the twelfth in it. On the third (day) in (the week of) Jaqim (which falls)]

COMMENTS

Li. 2-3 For the restoration of two X dates in the first month, cf. 4Q320 1 i 3–6.
Col. II (Frg. 1)

[In Hebrew script]

Notes on Readings

1. on the [twenty-sixth] in the ninth (month); and duqo (is) on the fourth (day) in (the week of) Shekaniah (which falls)

2. on the eleventh [in it]. On the fifth (day) in (the week of) Immer (which falls) on the twenty-third

3. in the tenth (month); and [duqo (is)] on the sixth (day) in (the week of) Jesheb (which falls) on the tenth in it.

4. On the sixth (day) in [(the week of) Jehezeqel (which falls)] on the twenty-second in the eleventh month; and duqo (is) on the]

5. Sabbath in (the week of) Petahiah [(which falls)] on the ninth in it. On the first (day) in (the week of) Joarib (which falls) on the twenty-

6. second in the twelfth (month), and duqo (is) on the second (day) in (the week of) Deliah (which falls) on the ninth

7. in it. vacat [ ]

8. The second (year): The first month. On the second (day) in (the week of) Malkiah (which falls) on the twentieth in it; and duqo (is)]

9. [on the third (day) in (the week of) Harim (which falls)] on the seventh in it. On the fourth (day) in (the week of) Jeshua's (which falls) on the twentieth]
Between cols. II and III another column intervened, which contained the X and duqa records from the fifth month of the second year to the second month of the third.

Col. III (Frqs. 2, 3, 4)

Notes on Readings

L. 5 Here the fragment is somewhat crumpled. The restored spelling הַלְּדֹה is discussed above in orthography.

L. 7 הַלְּדֹה. The vertical stroke which reaches up to the bottom of line 6 is probably the extraordinarily long head of the lamed.
TRANSLATION
1. [on the tenth in the second (month); and *duqo* (is) on the third (day) in (the week of) Jeshebaab (which falls) on the twenty-sixth in it.]
2. [On the second (day) in (the week of) Immer (which falls) on the ninth of the third (month); and *duqo* (is) on the fifth (day) in (the week of) Happišes on the twenty-sixth]
3. [in it. On the fourth (day) in (the week of) Jehezqel (which falls) on the eighth in the fourth (month); and *duqo* (is) on the sixth (day) in (the week of) Gamul (which falls) on the seventh] in the fifth (month),
4. [on the twenty-fourth (in it. On the fifth (day) in (the week of) Ma'oziah (which falls) on the twenty-fourth in it. Sabbath in (the week of) Malkiah falls on the seven (month)]
5. [and *duqo* (is) on the first (day) in (the week of) Harim (which falls) on the twenty-fourth in it. Sabbath in (the week of) Malkiah falls on the seven (month)]
6. [in the sixth (month); and *duqo* (is) on the second (day) in (the week of) Haqqos (which falls) on the twenty-third in it. *vacat*]
7. [On the first (day) in (the week of) Jeshu'a (which falls) on the fifth in the seventh (month); and *duqo* (is) on the fourth (day) in (the week of) E]l[iashilb (which falls) on the twenty-five-second]
8. [in it. On the third (day) in (the week of) Hauppjah (which falls) on the fifth in the fifth (month); and *duqo* (is) on the fifth (day) in (the week of) Bilgah (which falls) on the sixth (month); and *duqo* (is) on the third in it. *vacat*]
9. [On the twenty-first in it. On the fourth (day) in (the week of) Ḥezzi[r (which falls) on the fourth (day) in (the week of) Ḥezzi[r (which falls) on the fourth (nine (month); and *duqo* (is) on the]
10. [Sabbath in (the week of) Jehezqel (which falls) on the twenty-first in it. On the sixth (day) in (the week of) Jakin (which falls) on the third in the seventh (month);]
11. [and *duqo* (is) on the first (day) in (the week of) Ma'oziah (which falls) on the nineteenth in it. Sabbath in (the week of) Jedaišah (falls) on the second]
12. [of the eleventh month; and *duqo* (is) on the third (day) in (the week of) Se'orim (which falls) on the nineteenth in it.]
13. [On the second (day) in (the week of) Mijamin (which falls) on the second (day) in (the week of) Abjah (which falls) on the eight]

Between cols. III–IV an additional column is required, which contained the X and *duqo* dates for the first nine months of the fourth year.

Col. IV (Frg. 5, 6)
TRANSLATION

1. [eighth in it. On the fifth (day) in (the week of) Se'orim (which falls) on the twenty-third in the tenth (month);]
2. [and duqa (is) on the sixth (day) in (the week of) Jedidjah (which falls) on the tenth in it. On the sixth (day) in (the week of) Abiah (which falls) on the twenty-]
3. [second in the eleventh month; and duqa (is on the) Sabbath in (the week of) Haqqos (which falls) on the ninth in it.]
4. [On the first (day) in (the week of) Huppah (which falls) on the twenty-second of the twelfth month; and duqa (is) on the second (day)]
5. [in (the week of) Eliashib (which falls) on the ninth in it.]
6. The [fifth (year). On the second (day) in (the week of) Hezir (which falls) on the twentieth of the first (month); and duqa (is) on the third (day) in (the week of) Bilgah (which falls)]
7. on the seventh in it.] vacat [On the fourth (day) in (the week of) Jakin]
8. (which falls) on the [twentieth in the second (month); and duqa (is) on the [fifth (day) in (the week of) Petajiah (which falls) on the seventh in it.]
9. [On the fifth (day) in (the week of) Joiarlib (which falls) on the nineteenth in the third (month); and duqa (is) on the sixth (day) in (the week of) Delaiah]
10. [which falls) on the sixth in it.] Sabbat in (the week of) Mijamin (falls) on the eighteenth in the fourth (month); and duqa (is) on the first (day]
11. [in (the week of) Seorim (which falls) on the fifth in it. On the first (day) in (the week of) Shekaniah (which falls) on the seventeenth]
12. [in the fifth (month); and duqa (is) on the second (day) in (the week of) Abiah (which falls) on the fourth in it.]
13. [On the third (day) in (the week of) Jeshebab (which falls) on the seventeenth in the sixth (month); and duqa (is) on the fourth (day) in (the week of) Jaqim (which falls) on the fourth]
NOTES ON READINGS

1. 4 Two duqa phases are registered in one month.
2. 5ויר. The left part of the letter is missing, but he is a definite reading.
3. 7اص. For this spelling see above, orthography.
4. 7ש. The scribe at first wrote erroneously שתר. He then indicated the required deletion of שתר by a series of supralinear cancellation dots, and inserted the correct word interlinearly.
5. 9בר. The scribe erroneously wrote instead of the required במשה and failed to correct the mistake.

Translation

1. [in it. On the fourth (day) in (the week of) Happi’ses (which falls) on the [fifteenth in the seventh (month); and duqa (is)]
2. [on the fifth (day) in (the week of) Immer (which falls) on the second in it. [On the sixth (day) in (the week of) Gamufr (which falls) on the fifteenth in the eighth (month); and duqa]
3. [[(is) on the) Sabbath in (the week of) Jaki’reiz (which falls) on the second in it. Sabbath in (the week of) Hari’m (falls) on the fourteenth in the ninth (month); and duqa (is) on the first (day)]
4. [in (the week of) Joari’b (which falls) on the first in it; on the third (day) in (the week of) Malkiah (which falls) on the thirteenth first in it is a second duqa.]
5. On the second (day) in (the week of) Haqqo (which falls) on the thirteenth in the tenth (month); and duqa (is) [on the fourth (day) in (the week of) Jeshu’a (which falls)] on the twenty-
6. [month in it. On the third (day) in (the week of) Eliaishib (which falls) on the [twelfth of the eleventh month; and duqa (is)]

* For the use of dots as a pointer to words which should be deleted, see 'Aboth de Rabbi Nathan, Version A, chap. 34, ed. by S. Schechter (New York: Feldheim, 1945) 51; Version B, chap. 37, ibid. 49b. See further R. Butin, The Ten Negidim of the Torah or the Meaning and the Purpose of the Extraordinary Points of the Pentateuch (Masoretic Text), reissued with 'Prolegomenon' by S. Talmon (New York: Ktav, 1969) 1–25, with special reference to Qumran manuscripts; S. Lieberman, Hellenism in Jewish Palestine (New York: JTS, 1950) 43–4.
7. on the sixth (day) in (the week of) Huppah (which falls) on the <twenty>-ninth in it. [On the fifth (day) in (the week of) Bilgah (which falls) on the twelfth]

8. in the twelfth month; and duqo (is on the) Sabbath [in (the week of) Happisés (which falls) on the twenty-eighth in it.]

9. The s[i]xth (year). On[ the s[i]xth (day) in (the week of) Petahiah (which falls) on the twentieth (laged: tenth) [in the first (month); and duqo (is) on the second (day) in (the week of) Gamul (which falls) on the twenty-]

10. [seventh in it]. On the first (day) in [(the week of) Ma[oziah (which falls) on the tenth in the second (month); and duqo (is) on the third (day) in (the week of) Jedah (which falls)]

11. [on the twenty-sixth in it. On the second (day) in (the week of) Setorim (which falls) on the ninth (day) in the third (month); and duqo (is) on the fifth (day)]

12. [in (the week of) Mijamin (which falls) on the twenty-sixth in it. On the fourth (day) in (the week of) Abiah (which falls) on the eighth in the fourth (month); and duqo (is)]

13. [on the sixth (day) in (the week of) Shekaniah (which falls) on the twenty-fourth in it. On the fifth (day) in (the week of) Jaim (which falls) on the seventh in the fifth (month);]

Here, an additional column is required, which contained the records for the latter part of the sixth year.
322. 4Q Mishmarot A

(Plate V)


4Q322 (*olim* Mishmarot Cb 1 [4Q323]) is one of a cluster of fragments assembled on Mus. Inv. 694 without any explanation of how they were to be numbered. It is also not clear how the fragments in the upper three rows were meant to be divided. The proposal to assign a separate siglum to the fragment under review is justified by its particular features with respect to parchment, script, and contents. These peculiarities militate against associating it with 4Q322a, 4Q323 (*olim* 4Q323 2) or with 4Q332 and 4Q332a, the text of which does not exhibit an evident affinity with the *mishmarot* category.

The fragmentary nature of 4Q322 prevents a satisfactory explanation of its contents. However, it is provisionally grouped with 4Q323–324a (*olim* Mishmarot C) on the strength of the terms רָאשׁ and חָזְמ (line 3).

**Physical Description**

4Q322 consists of one large and one small piece of light-brown leather, presented separately in earlier photographs (PAM 41.702 and 42.334), but rightly combined in the most recent one (PAM 43.336), with the join between them still recognizable close to the right edge of the photograph. The combined fragment measures 4.7 x 3.2 cm. It holds altogether parts of three lines inscribed by one hand (lines 1, 2, and 3), and two lines plus remnants of a few letter-tops of a third line (lines 2a, 3a, and 3b) written *secunda manus* (see PALAEOGRAPHY). Line 2a was inserted between lines 2 and 3 of the original text, and line 3a plus the scanty remains of line 3b are wedged in beneath line 3. The inscription is crammed due to the lack of space; the added text was entered below the last line of the original column. The blank under the left end of line 3a, which is somewhat broader than the interlinear spaces in lines 1-3, seems to be a remnant of the bottom margin, which was partly filled by the secondarily inserted third line (3b).
Contents

Wacholder and Abegg, and in their wake Wise, in some instances misread or wrongly restored the text of the fragment (see below). However, despite the skimpy amount of writing, they correctly discerned that the text pertains to the eighth and the beginning of the ninth months of the second year in the mishmarot service cycle. This conclusion takes its starting point from the explicit mention of the course Jaqim together with the only partly preserved date of its entry into the Temple (line 3). On the strength of supportive considerations explicated below, the extant last letters of the missing date can be completed with confidence to read sacrificing, not sacrificing or weeping. It follows that the date in question must be the third day of the month, sacrificing, or the twenty-third of it, sacrificing. Now, in the entire six-year roster, there is only one single date which answers this requirement in respect to Jaqim, namely the twenty-third of the eighth month in the second year of the cycle. Immediately after the reference to Jaqim prima manu, the second hand recorded sacrificing, namely the twenty-third of the eighth month (line 3a) to indicate that the second day of service of Huppah, the next mishmar, coincides with the six-day solar calendar, which is not preserved. I would not hesitate to restore here the reading sacrificing, which [the second of the ninth month].

The suggested restorations of lost particles of text are buttressed by the preceding truncated reference to the course Shekaniah, that presumably entered the Temple sacrificing, viz. on the ninth or nineteenth of a given month (lines 1 and 2). Again, only once in the six-year cycle will the entrance of Shekaniah occur on a date including the numeral nine, namely the ninth of the eighth month in the second year of the cycle, two weeks before the entrance of Jaqim on the twenty-third of that month.

The proposed partial reconstruction of the text admittedly leaves open several questions: (a) there remains a substantial gap between the presumed recording in line 1 of Shekaniah’s entrance into the Temple on the ninth (of the eighth month) and the ensuing mention in line 2 of the name of that course (probably in connection with an event which occurred in its week of service, on a day synchronized by the calendar with an unrecorded date in the [eighth] month); (b) there is no reference to the course of Eliashib, which enters the Temple on the sixteenth of the eighth month, following Shekaniah (listed in lines 1-2) and preceding Jaqim (registered in lines 1 and 2a).

As said, the classification of 4Q322 as a fragment of a mishmarot document must remain tentative in view of the fact that both the original scribe and the interpolator noted references to occurrences which are not directly related to the six-year cycle of the priestly courses, such as sacrificing, sacrificing (line 3), and sacrificing (line 2a) and sacrificing, sacrificing (line 3).

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1 It is to be regretted that in this case, as in others (e.g. 4Q321 and 4Q321a), translators based their renditions on texts reconstructed by Wacholder and Abegg on the basis of the Handkondans, without checking their readings against the originals or photographs which had become available.

2 The only other possibility, which is the entrance of Jaqim on the twenty-fifth, sacrificing, of the seventh month in year 3, does not fit into the additional data explicated below.

3 One wonders whether an original mention of the entrance of Eliashib, was erased to make room for the text inserted by the second hand. A photograph taken from the verso of the fragment (PAM 43.337) gives reason for assuming that this possibility was indeed considered in the past, but did not produce any results. It could also be conjectured that the omission of the required reference to Eliashib through a lapsus calami was corrected prima or secondo manu by its vertical insertion in the left margin, which is not preserved, as in 4Q329a.
(line 3a). At the same time, 4Q322 cannot be classified as a 'historiographical document' of the type represented by 4Q331–4Q333 or, pace Wise, as part of an 'annalistic calendar', because no names of historical figures or references to historical events are recorded in it.

Palaeography

The basic text was written by an expert scribe in a late Hasmonaean or early Herodian bookhand, as suggested by the spiked sin and the prominent serif of taw in_namespace (line 1), final mem of וו (line 3), and nun and ச of ச (line 2). Letters consistently measure 3 x 3 mm and are separated by less than 1 mm. Words are separated by a space of c.2 mm. There are no dry rulings. Lines are nevertheless straight, as far as ascertainable, separated by an interlinear space of c.10 mm.

The script of the second hand is smaller, and is marked by the cursive forms of qop and final mem in יכ (line 2a), and by the ligature of נ in המ. Letters measure 2 x 2 mm. The fluctuation in the execution of recurring letters (cf. e.g. ב in line 2a with ב in line 3a) was possibly caused by the fact that the scribe had to accommodate his insertions in the restricted interlinear spaces and the bottom margin of the original text. The peculiarities of the second hand stand in the way of a precise dating of the script.

It should be pointed out that both the first and the second hand employ a cursive form of final mem next to the regular square form. This is shown by the comparison of mem in יכ and ו (line 3) and of the cursive mem in וכנ (line 2a) with the remnant of a square final mem in ו (line 3a).

Orthography

The spelling הב of the third person singular masculine pronoun (line 3, reconstructed in line 1), presumably pronounced bà, 'in it', is peculiar to 4Q322–324 (alim Mishmarot C; cf. 4Q324 1 3). In other mishmarot texts, the spelling ו:ב prevail (e.g. 4Q321 and 4Q321a). The word refers to a date in a previously mentioned month.

Mus. Inv. 694
PAM 41.702, 42.334, 43.336*, 43.337 (verso)

NOTES ON READINGS
L. 1 Before שֶׁמֶשָׁה, which can be reconstructed to read שֶׁמֶשָׁה שֶׁמֶשָׁה, the last letter of the preceding word is preserved, most probably yod, or possibly the left tip of the upper bar of he.
L. 2 The first legible letter is ב, followed by what seems to be a remnant of yod.
L. 2 Zayin at the end of the line is presumably the first letter of ג.
L. 2a Also in this line, the last letter is zayin of ג.
L. 3 At the right edge of the fragment the left downstroke of sin can be discerned, followed by he, presumably the final letters of שבתשעָה (see above, CONTENTS).
L. 3 ג. The two letters are so close that they actually overlap, with the upper bar of ב crossing the right perpendicular of ג.
L. 3 בְּגָפִּים. ב and yod flow together, followed by faint traces of 'alep and the top bar and left downstroke of tav.
L. 3 או. Only the lower parts of the letters yod, qof, and yod are preserved. The execution of final mem is closer to its cursive form in line 2a than to the pronounced square form in ג in line 3.
L. 3a The first legible letter, ב, is preceded by what appears to be the left part of pe or ב, the last letter of a preceding word, and is followed by three letters which seem to be י, כ, or כ, or possibly four, if the first is a ligature of two letters, e.g. כ or כ.
L. 3a Before י, the upper left part of a final mem of a preceding word is preserved, presumably ל (cf. ג in line 3).
L. 3b שֶׁמֶשָׁה. Wacholder-Abegg and Wise read שֶׁמֶשָׁה. However, sin is preceded by a space which clearly proves that the letter belongs to the next word. The tops of pe and he may be discerned in the lacuna. It should be borne in mind that, owing to the cursive character of the second hand (see ORTHOGRAPHY), somewhat irregularly formed letters can be expected here.
L. 3b Tops of letters which stem from an additional line inserted secunda manda can be discerned.

TRANSLATION
1. of the eighth[th], on the nin[th] in it (the eighth month)
2. [the entry of Shekaniah] on[ in] (the week of) Shekaniah which [is
2a. on the second (day) in (the week of) Jaqim, which [is
3. on the twenty-thi[rd] in it (the eighth month) the entry of Jaqim, and the fo[urth] day [in (the week of) Jaqim
3a. | [ the second [day] in (the week of) Huppah, which [is the second of the ninth (month)

COMMENTS
L. 1 שֶׁמֶשָׁה. The reference by ג to a presumed earlier mention of the eighth month, שבתשָׁה, is consonant with a recurring date pattern. In contrast, the reading שבתשָׁה שֶׁמֶשָׁה, proposed by Wacholder-Abegg and adopted by translators of the fragment, and Wise's שֶׁמֶשָׁה שבתשָׁה, must be rejected. In calendrical documents, the month is designated by an ordinal number only at the first mention of a date in
it. Succeeding dates are connected to that month by הבא or הבא, 'in it', as, e.g., in 4Q324a ii 4: הבא תושב (on the fourth of the tenth month is the entrance of Mija[m]in; on the eleventh in it [[is] . . . '). In the present instance, the restored term הבא dates the ensuing mention of the entrance of Shekaniah (now missing at the beginning of the next line) to the ninth, the entrance of the eighth month, or the week of Shavuot, of which only the last letter is preserved. This date was probably followed by a missing reference to a day in the week of Shekaniah's service, which on its part was presumably synchronized by הבא with a date in the solar month.

L. 2 הבא. The pronoun הבא identifies a given day or date in one calendrical schedule with its parallel in another system, similar to the collocation הבא (see below, line 3a). In the present instance, a day in the week of Shekaniah's service is presumably identified by הבא with a date between the tenth and the fifteenth of the eighth month of the second year of the priestly service roster.

L. 2a הבא, The meaning of this phrase is not clear, nor can it be decided whether the second scribe inserted it as a correction of the first scribe's הבא (line 3) or as an addition to that collocation. No day of importance in the Covenanters' calendar falls on the second day of Jaqim's service in any of the six years in the cycle.

L. 3 הבא. This term is also used in the rabbinic tradition in the same way. See e.g. Megillat Ta'anit passim.

L. 3a הבא or הבא. This letter sequence escapes explanation.

L. 3a הבא, The entrance of Huppah is not mentioned in the original text. But the annotator added here a remark concerning the service period of the course that comes on duty after Jaqim. As said, the reading הבא (Wacholder-Abegg and Wise) is untenable on palaeographical and contextual grounds.

L. 3a הבא. Like הבא (see above, lines 2 and 2a), הבא serves as a formula which synchronizes dates in two or more parallel chronological systems (cf. e.g. 4Q324 16: הבא אבריר אשא אשא בדנין). The term is similarly employed in rabbinic literature, e.g. הבא שמאו שמאו שמאו בדנין, 'the Day of Atonement, which is (falls on) the tenth of Tishre' (Tanh., Pequde 11); הבא שמאו שמאו שמאו שמאו שמאו, 'on the second (day) of the week <which is the fourth (day)> of their journey (from Egypt), which is the eighteenth (of the first month)' (Mekilta de Rabbi Simeon bar Yohai 14.5).

Unidentified Fragment

Frg. A

| ח | 1 |
| ז | 2 |
| מ | 3 |
| ה | 4 |

PAM 43.336

323. 4QMishmarot B

(PLATE V)


THE technical term הָרֹא (line 5), a characteristic of 4Q322-324a (*olim Mishmarot C*), marks 4Q323 (*olim Mishmarot Cb, frg. 2*) as belonging to this group. However, its presentation by Wacholder-Abegg and Wise as the second of three fragments which together constitute Mishmarot Cb does not stand up to scrutiny. The distinct hue of the parchment, and even greater differences of script and line-spacing, especially of the second hand in 4Q322, rule out the assignment of 4Q322, 4Q323, 4Q324, and 4Q324a to one and the same manuscript.

Physical Description

4Q323 is light brown and measures 3.4 x 3.5 cm. The upper right edge of the fragment is jagged. A vertical wedge-like crack crossing it from top to bottom may have caused the flaking of the skin and the resulting loss of several letters in the middle of the upper four of the five partially preserved lines. The 8 mm space above line 1, which is twice as large as the interlinear spaces (see below), suggests that the fragment comes from the top of a column. Lines 1, 2, 3, and 5 contain complete or almost complete words, whereas in line 4 only a few letters can be read. Due to the small size of the fragment, it cannot be ascertained whether it is a remnant of a scroll or of a one-column document.

Contents

The complete or restorable names of three priestly courses, פֶּרֶשׁ, חַיָּסָם, and יְחַיָּסָם, and the extant or recoverable dates of the beginning of their turns of duty, which dovetail with the known particulars of the priests' rotating service cycle, prove that the schedule of months 10 and 11 of the second year was recorded in the fragment. The roster begins with Ḥezir (line 1) and ends with the assumed mention of Jakin in line 4 or possibly of one or two more courses in lines 4-5 (see COMMENTS). The partially preserved double-date formula יְרִשְׁלָם יָדָעֻת, 'this (date) is (coincides with) the first (day) of the tenth (month)' (line 1), indicates that in the original document the beginnings of the months were listed, like in 4Q324 1 5; 4Q324a ii 3.

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1 Cf. 4Q322 3; 4Q324 1 4, 5, 7; 4Q324a ii 2, 4.
An additional component of the roster is the letter cluster הרי [ד] (line 4), which Wacholder-Abegg, and later Wise, wrongly read as וור [ד] (see NOTES ON READINGS). Wise (p. 196 and n. 11) then construes this enigmatic letter cluster as a reference to an event 'between 10/25 and 11/2 Year Two (of the mishmarot cycle) . . . involving, perhaps, the temple service'. He presents it as relating to an occurrence in a highly conjectural reconstruction of a series of historical incidents between 72-63 BCE, presumably referred to in the various fragments which he assigns to Mishmarot C (pp. 197-221). However, as will be shown below, this entire construction is not convincingly supported. 4Q323 is clearly a fragment of a regular mishmarot roster, like 4Q322, 4Q324, and 4Q324a, and not an historical text.

**Palaeography**

The writing evinces the hand of a trained scribe. Letters measure 2 x 2 mm. Foreseen exceptions are the thinner sayin in לֶקַח (line 3) and yod in דָּב (line 5), and the larger sade in הָיָה (line 2), which measures 3 x 3 mm. Letters are clearly separated by a space of less than 1 mm, except for the base of bet in דָּב (line 1) and דָּב (line 5), which coalesce with the following letter. Words are separated by a space of 2 mm. The straight, evenly spaced lines are 4 mm apart without dry rulings.

The small amount of text does not allow for an accurate dating of the script. However, the positioning of the suprainflammatory lamed with its base coming flush with the tops of other letters in לֶקַח (line 3), and the broad head of qop with its prominent serif, the right-angled foot of sade in הָיָה (line 2), and the spiked base of sin in הָיָה (line 2) and in דָּב (line 3), give reason for classifying the script as an early Herodian or late Hasmonaean bookhand (c.50-25 BCE). It is worth noting that in הָיָה (line 2) the medial form of sade is used both in the middle and at the end of the word.

**Orthography**

Since only the first bet of the calendrical term for 'in it' is preserved (line 2) and no fully written out occurrence of the term, it cannot be decided whether the scribe employed the spelling אַבּ or rather הב.

Mus. Inv. 694
PAM 41.702, 42.333, 42.334, 43.336•, 43.337 (verso)

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NOTES ON READINGS

L. 1 Reading. The speck of ink before ‘ayin is a remnant of yod.

L. 1 ובלא. The two dots of ink after bet are the bottom tips of zayin and rei.

L. 2 The last partially extant letter in the line is most probably bet. Before it a curled sign can be seen, which defies explanation. A similar mark precedes the bet of 4Q324 17.

L. 3 Contextual considerations suggest that the ink dot before יה ש is the remnant of the last letter of לש.

L. 4 The tiny ink mark at the right edge of the line is probably the left tip of a letter, presumably of final nun of בְּשַׁבָּה.

L. 4 יש תסנ. Before a lacuna caused by a crack in the skin, he and ‘ayin are preserved. After the crack, in which one letter was lost, traces of four narrow letters can be discerned, the last of which seems to be tav, suggesting the restoration of תְּבָרְאָה. Although this word is out of place here, it fits the calendrical context of the item better than תרננִיה, restored by Wacholder-Abegg and Wise.

L. 5 לִשְׁבָּה. The reading may be considered certain. The remnant of a letter directly after הָיֶה at the left edge of the fragment is the right downstroke of tav.

TRANSLATION

1. [the fou]rth [day] in (the week of service of) Hez[i]r [is (coincides with) the fi]rst of the te[n]th (month);
2. [on the fourth in it (is) the entrance of Happi]ses; on the elev[en]th in [it (is) the entrance of Petahiah;
3. [on the eighteenth in it (is) the entrance of Jehexqel; [on] the twen[ty-fifth in it
4. [(is) the entrance of Jakin] the(?) [] [] [ 
5. [ ] the entrance

COMMENTS

L. 1 The restored double date formula ‘is (coincides with) the beginning of the tenth month’ parallels the same formula in 4Q324a ii 6.

L. 4 After the restored reference to the entrance of Jakin at the beginning of the line there is room for the mention of an indeterminable date in this mishmar’s week of service pertaining to פֶּהַיָּבָה.

L. 4–5 The last part of line 4 and the first part of line 5 may have contained a double date which identified the sixth day in the week of Jakin with the first of the eleventh month (cf. line 1), after which was listed the ensuing entrance of Gamul on the second day of the month. This supposition supports the identification of 4Q323 as a fragment of a mishmarot schedule.
324. 4Q Mishmarot

(PLATE VI)


**Physical Description**

4Q324 CONSISTS of two fragments of light brown parchment. Frg. 1 is composed of two initially separate pieces, and measures 6.5 x 5.5 cm. It contains fractions of seven consecutive lines of one column, with undecipherable traces of one more line. A part of the bottom margin of the column is preserved to the width of 1.3 cm. A dark spot in the left part of the margin was caused by spilled ink or a flaw in the parchment. Frg. 2 is much smaller, measuring 2.8 x 2.4 cm. It holds a few identifiable letters from two lines. A white spot covers approximately two-thirds of its right part, where the surface of the parchment appears to have peeled off.

**Contents**

The extant traces of text prove that 4Q324 is the remnant of a scroll which presumably contained a register of the dates of the Saturday afternoons on which the different priestly courses entered the Temple prior to the onset of their week of service on the following Sunday morning, e.g.: באחד שער בכרית באתן, 'on the eleventh of the seventh (month is) the entrance of [(the watch of) Happiiies]' (17). Since the rotating six-year service schedule of the priestly courses is fully known from a variety of calendrical documents, it can be stated with much confidence that frg. 1 records their succession in the fifth to the seventh months of the fifth year. Frg. 2 possibly pertains to the eighth month (see below).

The running account is interrupted by the identification of the fourth day in the week of service of Immer as the first of the seventh month (15), without stating, though, that this is the 'Day of Remembrance', יומם וירם, and by the recording of the sixth day in the week of Ḥezir as the tenth of the month, 'which is the Day [of Atonement]' (line 6). In addition, there is an inexplicable mention of נירא in line 7 and probably in line 3 (see below).

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Palaeography

4Q324 was penned in a late Hasmonaean or early Herodian bookhand. Recurring letters are executed identically, and measure mostly \( c.2 \times 2 \) mm, with the exception of a larger taw close to the end of line 1 and a final mem in frg. 21 which come to \( c.3 \times 3 \) mm. Letters are kept apart by a fraction of a millimetre, and a space of 1–2 mm separates words. However, in several instances, letters flow together as in a cursive script, especially after bet, e.g. כ, כ, כ, כ, כ and כ (1 s, 6, but not in 1 s), כ (1 s), כ (1 s), and כ (1 s). Lines are kept straight, evincing the hand of a trained scribe. However, in the process of mounting the item on Mus. Inv. 694, the two separate pieces were not quite properly aligned, so that now the lines appear to be somewhat curved. The interlinear spaces are rather irregular, measuring barely 1 mm between the left parts of lines 5 and 6, and 5 mm between the right parts of lines 3 and 4.

Orthography

The cognizance of the long vowel א in the technical term וב (cf. e.g. 4Q324b, 4Q325, 4Q326, 4Q394 1–2) or וב (cf. 4Q321, 4Q321a, 4Q324a), 'in it', which links a given date to a previously mentioned month and prevails in calendar-related documents, is achieved in 4Q324 by הב, as in הב (frg. 1 s), the partly preserved הב (frg. 1 t), probably also in 4Q322 line 1, and possibly in 4Q323. This orthographic feature may be compared with the spelling of another calendrical term: הב in 4Q321a V 5 next to הב (col. V 8), spelled הב in 4Q321 passim.

Mus. Inv. 694
PAM 41.702, 42.334, 43.336*, 43.337 (verso)

Frg. 1

[1 ביאת הסכיה בנסירהו صلىוה וב] [2 ביאת יקירו ובן קדר] [3 ברבעה] [4 ביאת הב יראה בצל] (סמלת בור] ביאת אמה)
Notes on Readings

L. 1 רואים. In practically all instances, the base of bet connects ligature-like with the foot of the next letter, especially with the perpendicular upright of he, teaw, and yod. However, in the case of ‘ayin (םש, line 4) and sin (םש, line 2;םש, lines 5, 6, 7), the bend to the left of the right stroke prevents such a linkage.

L. 3 The spec of a letter before 왔 is presumably a remnant of the foot of the oblique stroke of ‘ayin. The spec in the middle of the line is the left tip of the upper bar of ב of ביכשא. After a blank space, the base of another bet is preserved, followed by the letters מ, which are preceded by pe or what is possibly a truncated ref linked in an unusual way with the yod that follows it, suggesting the restoration of the word דבר (cf. line 7).

L. 4 Before רכש, as beforepek, the left upright of he is preserved.

L. 5 At the end of the line the upper bar of a bet can be seen, the first letter of the name of the course Hezir.

L. 6 The truncated letter after ‘ayin close to the end of the line is he, followed by yod, teaw, and a trace of final mem, evincing the reading פ.

L. 7 The truncated letter before ל is at the beginning of the line is possibly the foot of lamed.

Translation

1. [the entrance of Shekaniah; on the twenty-third in it] the entrance of [Eliahish; on the thirtieth in it]
2. [the entrance of Jaqim, the first day in (the week of) Jaqim is the first of the si[th (month); on the seventh in it the entrance of Huppah;]
3. [on the fourthenth in it [the entrance of Jesheb]; covenant (?) on the tewnty-]
4. [first in it the entrance of B'ilgah; on the twenty-eighth in it the entrance of Immer;]
5. [the fourth day in Immer is the first of the seventh (month); on the fou[rth] in it the entrance of Hezir;]
6. [the sixth day in (the week of) Hezir, which is the tenth of the seventh (month) is the Day]
7. [of Atonement;] for (? the covenant; on the eleventh of the seventh (month) the entrance [of Happim;es]

Comments

The proposed restoration of the text rests on considerations of space and on the known service-cycle of the mishmarot.

L. 1 רואים. This is a construct of רבא, which defines the entrance of a priestly watch into the Temple (see Introduction). The term is fully extant in 4Q324a; it is partly preserved in 4Q322 line 3 רבא and presumably also in 4Q323 line 3 רבא. By contrast, this phase in the service of a mishmar is designated in 4Q325 1 2, 4 by the Aramaic expression: וַּיִּשְׁמָהְשׁוּלָם . . . , 'the Sabbath (on which) entered mishmar X', e.g.: מַשְׁמָהְשׁוּלָם על וַתּוֹמֶשׁוּל

L. 2 חמש. The first day in the service week of Jaqim is identified as the first day of the sixth month.

4 For the contextual equivalence of רבא and חמש, cf. e.g. Joel 2:9 ר旅游景区 הפלא and יולת, ‘into the houses they will enter, through the windows they will go in’, and Prov 11:2 וַּיִּשְׁמִירוּ בַּטָּהָה (when) wickedness comes in'; Targum: רנִיט בַּטָּהָה וַּיִּשְׁמִירוּ בַּטָּהָה. Cf. also בַּטָּהָה in contrast to בַּטָּהָה וַּיִּשְׁמִירוּ בַּטָּהָה (2 Kgs 11:9).
L. 3 The blank space posited in the reconstruction at the beginning of the line, and similar blanks at the beginning of line 6 and in line 7, possibly serve as sentence subdividers. Because of their short length, these blank spaces cannot have held any text.

L. 5ication as the first day of the seventh month, on which the third quarter, דשון, of the year begins. On this date falls the 'Day of Remembrance', which, though, is not explicitly noted.

L. 6 Equally, the sixth day in the week of Hezir is given special attention because it coincides with the tenth of the seventh month, on which falls the 'Day of Atonement'. Cf. 4Q320 4 iii 7-8: אשר ימי המ违规ות שלפני יום תששים דבשון.

L. 6 ... 드מ榮 is restored. It synchronizes a day in the week of a mishmar with a date in a given month (cf. 4Q322 line 3a; 4Q332 2 3; 4Q333 1 3). ה (restored in lines 2 and 5) identifies a 'holy season' in the Covenanters' festival calendar (cf. e.g. 4Q324v ii 3; 4Q332 3 3).

L. 7 The insertion of this term, which interrupts the sequential enumeration of mishmarot, remains unexplained. A similar mention of הברית (which in what appears to be a calendar related context is extant in 1Q22 I 8: ומשהו כמל╙ן ורבי ... טושהו וכרとするך) ו with the Hebrew and 4Q216 (4QJub') ii 17 = Jub. 1:14.

Frg. 2

| ב | 1
| שלים | 2

NOTES ON READINGS

L. 1 ב or של. The letters could possibly be restored to read של.

L. 2 These letters are probably part of either שלש, שלשת, or שלשת.

COMMENTS

The readings שלושה and שלשת, possibly to be restored שלש, fit well into the mishmarot vocabulary. The tentative restoration of שלשת gives reason for assuming that frg. 2 stems from the column adjacent to the one partly preserved in frg. 1, in which the roster of courses was continued into the eighth month, when Joiarib entered the Temple on the twenty-third.

5 However, in a similar context in 4Q333 neither של than nor שלשת are mentioned.
WACHOLDER-ABEGG and Wise present 4Q324a as the first of six fragments assembled on Mus. Inv. 684 which are supposedly remains of one manuscript, viz. Mishmarot C
. However, (a) differences of script, (b) line spacing, and (c) contents, as far as ascertainable, demonstrate that 4Q324a must be considered separately from the other five fragments which were ascribed to Mishmarot C
:

(a) In 4Q324a the left perpendicular of he descends vertically from the left end of the horizontal bar, as in מִשְׁמֵרַת (col. ii 3), whereas in מָיְדַר in 4Q333 1 3 it is slanted and connects with the angle formed by the horizontal bar at its meeting point with the top of the right perpendicular.

The foot of lamed in מִשְׁמֵרַת 4Q324a ii 2 is appreciably smaller, and the top upright is much longer than in מִשְׁמֵרַת of 4Q333 1 4, 8 and מַטֶּלֶד (line 6).

As distinct from the normal form of res in מָיְדַר and מָיְדַר of 4Q324a ii 3, 4, in מָיְדַר of 4Q333 1 1 it is as small as yod, like in מַטֶּלֶד of 4Q324c 1 2.

As against the straight right stroke of sin in מָיְדַר and מָיְדַר in 4Q324a ii 2, 3, that stroke is slightly curved in מָיְדַר in 4Q333 1 3.

(b) In 4Q324a lines are equally spaced apart by 6–7 mm, measured from the top of one line to the top of the next, whereas in frgs. A–D the interlinear spaces amount to 9–10 mm and in 4Q333 to as much as 10–12 mm.

(c) 4Q324a contains a straightforward account of the service schedule of five successive priestly courses whose names can be restored: מִשְׁמֵרַת, מִשְׁמֵרַת, מִשְׁמֵרַת, מִשְׁמֵרַת, and presumably also מִשְׁמֵרַת. The roster is only once interrupted by the identification of the fourth day in the week of Malkiah as the first of the tenth month, viz. the beginning of the second annual quarter. This type of double dating is also known from similar documents, such as 4Q323 and 4Q324. Thus, 4Q324a can be classified as the remnant of a typical mishmarot register.

In contradistinction, the references in 4Q333 1 5 and 8 to the killing by the Roman general Aemilius Scaurus of victims whose names or identity are lost, מִשְׁמֵרַת, מִשְׁמֵרַת, מִשְׁמֵרַת, strongly suggest that the allusions to the service schedule of the courses Jehezqel and Gamul (lines 3 and 6) serve here as a means for securely chronicling these events through double dates. 4Q333 is a fragment of a primarily historiographical work,1 in which dates

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pertaining to the service schedule of priestly courses play a subsidiary role (see INTRODUCTION).

Physical Description

4Q324a consists of one large and one small piece of parchment. Together they form a dark brown fragment measuring 13.4 x 4 cm, which becomes lighter at its right side. It contains remains of two columns separated by an intercolumnar margin of 2 cm. The first column holds only the word מָה—opposite line 3 of the second column—and next to it, the truncated notation יָאָו שׁי, written vertically in the margin. The second column contains four fragmentary lines with a vacat at the end of line 3. Lines 2, 3, and 4 can be fully restored, and for all intents and purposes, also line 1, so that the average written line can be assessed to have been c.9.5 cm long. The column is bordered by a partially extant margin of c.1.5 cm to the left of line 4. The bottom margin of 1.3 cm is fully preserved over almost the entire length of the written lines. In contrast to the serration of the upper edge of the fragment, which resulted from deterioration of the parchment, the straight bottom edge is undamaged.

Contents

The fragment registers the successive entrance dates into the Temple of five mishmarot, from the middle of the ninth month to the middle of the tenth in year five of the six-year cycle: Harim (IX/14), Se'orim (IX/21), Malkiah (IX/28), Mijamin (X/4), and Haqqos (X/11) (see NOTES ON READINGS). The fourth day in the week of Malkiah is identified with the first of the tenth month (cf. the double dates in 4Q323 and 4Q324). It is followed by a vacat, which most probably separates the fourth annual quarter from the third.

Palaeography

4Q324a was written by a trained scribe who employs a round semi-cursive mem with a connecting dash to the next letter. This tendency is evident at the beginning of a word, as in יָאָו (col. ii 4) and מָהָי (col. ii 2), in a medial position, as in יָאָו (col. ii 2), and also in a final position, as in נָאָו (col. ii 2), although the square final form is also partly preserved in מ (col. ii 3). Final nun is noticeably long and slightly curved, without the thickened tip at its top. Letters routinely measure 2 x 2 mm and are kept apart by a space of less than 1 mm. Exceptions are the ligatures of bet and mem with the ensuing letter, as in בְּאָו (col. ii 2, 4), בְּאָו (col. ii 4), מָאָו (col. ii 2) and מָאָו (col. ii 4).

2 The two pieces are combined only in the most recent photograph, PAM 43.338.

A space of 2–4 mm clearly separates one word from the next. Although there are no dry rulings, lines run straight, separated by a space of 6–7 mm.

**Orthography**

The *plene* spelling ש, fully preserved in lines 2 and 4 and restored in line 1 and at the beginning of line 2, differs from the spelling ר in 4Q322–324.

Mus. Inv. 684
PAM 41.702, 42.334, 43.338*

Col. i

םחר
top margin

inserted vertically in the margin

Notes on Readings

L. 2 The letter before *lamed* cannot be identified. Its rounded base rules out reading it as *sin* and the attractive restoration of *שח, ר*, or *שחש.

Translation

1. which is
2. ) day [ ]

Col. ii

[ ]Daniel 16:17, 20, 22
[ ]Dan 16:17, 20, 22
[ ]וואכשת אן רדליית את אחל בחלוות הנשייה
[ ]ואכשת אן רדליית את אחל בחלוות הנשייה
[ ]bottom margin
NOTES ON READINGS

L. 1 [א]שאוש תבשומית קלח תבשומית. In the proposed restoration of the text, the usual formulaic sequence in which the entry date precedes the name of the priestly course (cf. col. ii 1–2, 4) is reversed, as implied by the position of the extant letters — and ירבד — in the first half of the line, and by considerations of space.

L. 2 The preserved lower tip of sin in יטעם is apparently written somewhat lower than the other letters in the word, possibly because of a fault in the parchment.

L. 2 יבצ. For the spelling of the word with a partially preserved הלאפ, cf. e.g. יבצ (Q394 1–2 iv 6) and יבצ (Q398 14–17 i 15).

L. 3 The formulaic term י רועיש identifies the fourth day in the service week of Malkiah with the first day of the tenth month (see CONTENTS).

L. 3 יברוב. The clearly legible letters א and י, and the seemingly semicursive ה, suggest the restoration of יברוב proposed by Wacholder-Abegg and Wise. The slanted stroke between the apparent left tip of the upper bar of dalet and sin escapes explanation.

L. 4 The letters after י at the end of the line are יוד and טו, or possibly the remains of an imperfectly executed ה, followed by the lower part of a semicursive ו. This rules out the restoration of לשא as part of the entrance formula of the next mishmar, as suggested by Wacholder-Abegg and Wise. The partial ו gives reason for restoring the name of the priestly watch יַעֲבָד, before which, presumably, the scribe had omitted the word יָאש, probably because of haplography with the preceding vocable יָאש.3

TRANSLATION

1. Day[ the entrance of מָלַקְיahu[im (is)] on the fourteenth in it (the ninth month); on the] twenty-first
2. [in i;j (is) the en[trance of] סֶפֶר on the twenty-eighth in it (is) the entrance of מָלַק[ahu;]
3. the fourth day [in] (the week of) Malkiah (coincides with) the first of the tenth month; וַיַכְתַ[ב]
4. on the fourth of the fourth (month is) the entrance of מִיָּהו on the eleventh in it (is the entrance of) הָאָב[תים.]

COMMENTS

L. 4 יַעֲבָד יָאש. The Hebrew term is used here instead of the Aramaic יִשּׁו יַעֲבָד, which prevails in calendrical and other Qumran documents. Cf. e.g. 1Q22 (DM) I 1–2; 1QM IV 16; 11QT* XXVIII 7; 4Q320 passim; 4Q321 passim.

Unidentified Fragments

Frg. A

| יל | 1 |
| ד | 2 |
| לי | 3 |

PAM 43.338

* A similar case of haplography occurred in 4Q326 5. There the scribe supposedly omitted the numeral יָאש in reference to the second month, before יָאש, which pertains to the second day in that month.
Frg. B

This fragment possibly belongs with 4Q324a.

Frg. C

Col. ii

|о|  
|о|  
|vacat|  
|о|

Col. i

|ө|  
|о|  
|о|  
|о|

Frg. D

Col. ii

|о|  
|о|  
|шо|  

Col. i

|о|  
|о|  

This fragment is perhaps related to 4Q324a.

NOTES ON READINGS

L. 2 ُُٔ. ُٔٔٔ is a remote possibility, or ُٔٔ.
324b. 4QpapCalendrical Document A

(PLATE VI)

4Q324b CONSISTS of five narrow strips of almost white papyrus, arranged one next to the other in the bottom row of Mus. Inv. 302. The upper two rows of the plate contain fragments of one or more papyrus documents, which differ from the fragments in the bottom row in respect to script, most visibly in the execution of the letters bet and taw (see below, PALAEOGRAPHY). J. T. Milik associated the largest fragment at the right of the top row with mishmarot texts. In his description of PAM 43.335, S. A. Reed referred to it as 'one of "2 MSS" of "pap Mishmarot"', and catalogued it as 'papEssene Chronicle'. In the revised edition, the designation 'papHistorical Work' is used. That item is now designated 4Q331 4QpapHistorical Text C (olim 4Q324 pap Calendrical Document C). The remaining nine fragments in rows two and three of Mus Inv. 302 cannot be identified.

*Physical Description*

The five fragments of 4Q324b have similar left and right contours which appear to have resulted from breakage of the papyrus. Frg. 1 measures 4 x 1.3 cm and holds the clearly legible letters י in one line, with traces of the same letters in a second line. As in the other four fragments, lines are separated by a space of 5–6 mm. The 1.5 cm space above the upper line of frg. 1 is most probably the remnant of a top margin, and suggests that this fragment stems from the upper part of a column. The somewhat shorter frg. 2 measures 3 x 1.5 cm. Also here, the letters י can be read in two lines. In frg. 3, which measures 3.4 x 1.2 cm, the letters י cannot be read. The smallest fragment, frg. 4, measures 2.6 x 1 cm and holds two lines, with the three letters י appearing in both. The letters י are legible in lines 1 and 2 of frg. 5, which measures 3.5 x 1.2 cm. A third line, separated from the second by a somewhat broader interlinear space, clearly preserves the letters י, which, as said, appear in all four lines of frg. 3.

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3 S. A. Reed, *The Dead Sea Scrolls Catalogue: Documents, Photographs and Museum Inventory Numbers*, rev. and ed. by M. J. Lundberg with the collaboration of M. B. Phelps (SBLBS 32; Atlanta, Ga.: Scholars Press, 1994) 98, 376.
Palaeography

Although only a few letters are preserved, the regular script evinces the hand of a trained scribe who used a reed stylus with a broad tip, producing rather bold characters, which can also be observed in other fragments, e.g. 1Q70 and 4Q398.5 In frgs. 1, 3, and 5 letters flow together, giving the impression of a cursive script. Bet (frgs. 1, 2, 3, and 5) and taw (frgs. 3, 4, and 5) measure consistently c.3 x 3 mm, and are identically executed, whereas taw (best seen in frgs. 1 and 2, less so in frg. 4) and/or yod (frg. 5) are appreciably thinner. Bet has a horizontal top bar, without the serif (cf. 4Q398) that is a characteristic trait of this letter in most Qumran manuscripts,6 and an equally straight or slightly curved bottom bar. The most prominent feature of the script of 4Q324b is the looped left ending of taw, seemingly written in one stroke of the pen from the tip of the left downstroke to the foot of the right perpendicular (see illustration below). This semicursive form of taw is found at Qumran, e.g. in 1Q70 15 and 19, 4Q259 (QSerekh9),7 4QXIIa, and 4QEn8 as well as in a small fragment from Masada (1063–1747), which most probably stems from Qumran.8 It is known from the Nash Papyrus, dated by Albright to the Hasmonaean period, preferably to the second half of the second century BCE,9 and from ossuary inscriptions, which are generally dated to the Herodian period.10 However, since a similar form of taw appears in documents from the fifth century BCE to the second century CE, A. Yardeni concludes that it does not allow for a precise dating of manuscripts which exhibit this feature, such as 4Q324b.11

Orthography

The scribe of 4Q324b employed the spelling ר, 'in it', as e.g. the scribes of 4Q325 and 4Q394 1–2, whereas, e.g. in 4Q321 and 4Q321a the plene spelling ר is used consistently. In 4Q326 the two spellings alternate.12

Mus. Inv. 302
PAM 43.335 (bottom)

11 See the detailed discussion of the semi-cursive bet and taw (with comparative chart) by A. Yardeni in DYD X, 29–34.
12 These spellings interchange with נ in 4Q322, 4Q324, 4Q324a, and 4Q332.
Frg. 1

1. in it
2. in it

Frg. 2

1. in it
2. in it

COMMENTS
The 3rd sing. masc. pronoun 'which recurs four times in frgs. 1 and 2 relates a given date to a previously specified month (cf. ' in Meg. Ta'anit). It is a key term in the Covenanters' calendrical terminology (see int. al. 4Q321 and 4Q321a passim).

Frg. 3

1. Sabbath
2. Sabbath
3. Sabbath
4. Sabbath

TRANSLATION
1. Sabbath
2. Sabbath
3. Sabbath
4. Sabbath
The letter sequence ש and נ, which occurs five times in 4Q324b, four times here and once in frg. 53, can be restored with confidence to read שן. Like ש in frgs. 1 and 2, it is another key term in the Covenanters' calendrical terminology (see inter alia 4Q321 and 4Q321a passim).

These data induce the conclusion that frgs. 1–3 are the remains of a calendrical document, in which the annual Sabbaths were sequentially enumerated, as in 4Q394 1–2, e.g. col. iii 4–8: ‘on the eighteenth (day) in it (the fourth month) Sabbath, on the twenty-fifth in it Sabbath’, presumably with summaries of the number of Sabbaths in each annual quarter (13) and in the entire year (52), in some cases with the added mention of the officiating priestly courses after whom they are named, like, e.g. in 4Q325 14: ‘on the second (day) in it (viz. the second month) Sabbath (named after the course) Hanim’.14

**Frg. 4**

\[
\text{\textit{Sabbat}}_{\text{h}} \\
\text{\textit{Sabbat}}_{\text{h}} \\
\text{\textit{Sabbat}}_{\text{h}} \\
\text{\textit{Sabbat}}_{\text{h}} \\
\]

**Translation**

1. Sabbat
2. Sabbath
3. Sabbath
4. Sabbath

**Comments**

The mention of the term שן in the two adjacent lines of frg. 4 suggests that the first occurrence refers to the subdivision of Sabbaths or weeks in the fourth quarter, and the second to the overall summary of the year.

The above comments on frgs. 1–4 lead to the arrangement of the fragments in the order suggested, and to the necessarily conjectural translation of the restored Hebrew text, which is taken to pertain to the last quarter of the year.

[on the twenty-eighth] in it (frg. 2) (viz. the previously mentioned twelfth month) Sabbath (frg. 3)
[the (fourth) quarter is complete with thirteen] Sabbaths (frg. 4)
[the (entire year) is complete with fifty-two] Sabbaths (frg. 4).
Frg. 5

NOTES ON READINGS

Ll. 1–2 It cannot be decided whether the first and third letters preserved in lines 1 and 2 are waw or yod, viz. whether שבות, 'weeks', or שבזנה, 'seventh', should be restored in both lines, or possibly one word in one line and one in the other (see COMMENTS).

TRANSLATION

1. we ek[...]
2. we ek[...]
3. Sa]bbath [...

COMMENTS

I propose to restore in frg. 41 and 2 the word שבזנה (cf. 4Q320 4 ii 10–13; שבות), and in frg. 51 and 2 שבות or שבזנה. These words appear three times in the Temple Scroll in calendrical references pertaining to the Feast of Weeks: שבות (11QT XIX 11–13; 11QT XVIII 10–13) and שבות שבזנה (11QT XVI 11–13). Similarities give reason for assuming that the truncated words in frgs. 4 and 5 are remnants of a text which relates to the Feast of Weeks.

CONCURRING with the ascription of 4Q324c to olim Mishmarot Cd in the Handkonzordanz (cf. Mus. Inv. 684), Wacholder-Abegg, along with Wise in his annalistic reconstruction, present frg. 1 of this item as frg. 3 of Mishmarot Cd. This attribution is open to discussion (see below). Another small fragment (frg. 2 below), which does not appear at all in Wise’s reconstructions, exhibits a very similar script, an identical size of interlinear spacing, and the same consistency of parchment and ink. These features indicate that it comes from the same scroll.

Physical Description

4Q324c is of a light brown colour. The larger frg. 1 measures 3.1 x 3 cm and holds remains of three lines from the middle of a column, topped by particles of letters from a fourth line above them. In lines 1 and 3 only a few letters have been preserved; line 2 holds one complete word and two more which are nearly complete. The smaller frg. 2 measures 2.9 x 1.3 cm, and contains a few letters from three mid-column lines, but not one complete word. The small quantity of text and the lack of means for assessing the length of lines stand in the way of a definite identification of the type of composition from which the item stems.

Contents

The truncated text of frg. 1 contains a double date, which presumably synchronizes the fourth day in the week of service of the priestly course Jeshua with a date in the Covenanters’ calendar.
Palaeography

The text is written in a late Hasmonaean semi-cursive script.\(^1\) Letters are of unequal size and measure between 1 x 1 mm and 3 x 3 mm. 'ayin and sin in מָשָׁה (frg. 1 2) differ somewhat from ש (line 3) and from 'ayin in יָבַע (line 2). Letters are visibly separated, and words are divided by a space of 1–2 mm. Although there are no dry rulings, lines run straight, with a consistent interlinear space of 1 cm.

The penmanship of 4Q324c resembles that of 4Q333. Interlinear spaces are of a corresponding size. Sin in מָשָׁה (frg. 1 2) is similar to sin in מָשָׁה and מָש (4Q333 1 1, 3); final mem in מָש (frg. 2 2) and מ (frg. 1 2) and res in רֶבֶן (frg. 1 2) are similar to res and mem in מָש (4Q333 1 1); yod and samekh in מ (frg. 1 2) resemble those letters in מָש (4Q333 1 8). However, aleph in מָש (frg. 1 1) differs perceptibly from aleph in מָש (4Q333 1 3) and מָש (line 8). Furthermore, the mixture in 4Q333 1 of semi-cursive forms of mem in מָש (line 8) and res and mem in מ (line 1) with their bookhand forms in מָש (line 6) and מָש (line 8) has no parallel in 4Q324c. These divergences, along with several additional considerations (see below), put in doubt the ascription of 4Q324c and 4Q333 to the same manuscript.

Mus. Inv. 684
PAM 41.703*, 42.334, 43.338

Frg. 1

| 1  | יָבַע יָבַע יָבַע |
| 2  | יָשָׁה יָשָׁה יָשָׁה |
| 3  | זָב זָב זָב |

NOTES ON READINGS

L. 1 The fraction of a letter at the beginning of the line is possibly the lower round foot of a final cursive mem, with a longer than usual left downstroke.\(^2\) After an inter-word space, samekh can probably be read. Parallel to the foot of samekh a speck of ink can be seen, which Wacholder-Abegg and Wise construe as a remnant of lamed and restore the reading לַש. However, this reading is untenable. The foot of lamed always comes flush with the upper parts of other letters and never descends that low.

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\(^1\) Cf. the chart 'Semicursive Scripts from Qumran', apud Cross, 'Jewish Scripts', 149, lines 4-5; A. Yardeni, 'Script', in E. Qimron and J. Strugnell, Qumran Cave 4 V, Miqat Ma’ade Ha-Torah (DJD X; Oxford: Clarendon, 1994) 28-34.

\(^2\) Cf. mem in 4Q212 apud Yardeni, 'Script', 28, col. 2.
L. 2 The seemingly irregular sin at the beginning of the line may be compared with the identical form of the letter in 4Q333 1 1.

L. 3 Before he at the beginning of the line zayin may be discerned, not aleph as proposed by Wacholder-Abegg and Wise, suggesting the reading of the technical term מ which serves to coordinate two dates.

L. 3 המ can be completed to read ממה, as suggested by Wacholder-Abegg and Wise, but restoring ממה or מман or any other number between twenty and twenty-nine is also possible (see COMMENTS).

TRANSLATION
1. ]
2. Je]shu’a; the four[th] day
3. i’s (the) te[nth]/two[nieth]

COMMENTS
L. 2 The mention of Jeshu’a was evidently preceded by a specification of the date of this course’s entrance into the Temple.

L. 2-3 Wise restores:

[טณะ יומשירא]

[on the twenty-eighth in it (the ninth month falls) the entrance of Je]shu’a;

the four[th] (day) in (the week of) Jeshu’a is (the) first (day) in the tenth month . . .

which is (the) ten[th].

On the strength of this reading Wacholder and Abegg enter the explicated or restored dates of 4Q324c in a sequential series of dates in a six-year mishmarot schedule. Wise integrates them in an ‘annalistic calendar’. The combined fragments (olim) 4Q322, 4Q323, 4Q324, 4Q324a, and 4Q324b are said to contain an account of historical events which occurred between the sixth month in the second year and the tenth month in the sixth year of the mishmarot cycle, and which presumably can be dated to the span of time between 72 and 63 BCE.

However, several considerations put in doubt the ascription of 4Q324c and 4Q333 to one document: (a) In the proposed restoration of the text, the complete second line of 4Q324c contains forty-six characters plus ten inter-word spaces, viz. fifty-six spaces in all. It is thus significantly longer than the longest line of 4Q333 (frg. 1 8), which holds thirty-seven characters plus eight inter-word spaces, viz. a total of forty-five spaces. (b) With the exception of the perplexing letter cluster סח, which cannot be taken as a reference to an ‘historical event’, the restored parts of the text contain only technical terms, which identify 4Q324c as a mishmarot register. In contrast, the explicit references in 4Q333 1 4 and 8 to two events which are not directly related to the mishmarot cycle, אליעם ‘Aemilius killed’, the historiographical character of the work from which 4Q333 stems. (c) The restoration of the text of 4Q324c proposed by Wacholder-Abegg and Wise involves an inexplicable substantial gap or vacat between the last word of the phrase ממה יומשירא, which ends at the beginning of line 2, and ממה יומשירא אליעם אתו ברועא, ממה יומשירא, which begins at the end of line 2. This can be narrowed if the reconstruction is based on shorter lines, as suggested below. (d) The dating of the fourth day in the week of Jeshu’a to the first of the tenth month of the second year is a valid option, but not the only one. The fourth day in the week of service of Jeshu’a is given special attention.

3 For similar forms of semi-cursive he, see Yardeni, ‘Script’, 30.

4 The line presumably was even shorter. The text should probably be restored as follows: הממה יומשירא אליעם אתו ברועא, ממה יומשירא (4Q333 1 5); שמא לברועא התאראיהם (4Q324a ii 7). Subsequent specifications of dates in that month are referred to only by its ordinal number, e.g. ובא לברועא התאראיהם (4Q324a ii 4) or by only the month number, e.g. ובא לברועא התאראיהם (4Q324a ii 4) as in 4Q324 1 5.

5 Cf. the similarly baffling letter combination המ in 4Q324 1 3 and the same word in line 7.

6 For this reason Wise could not accommodate 4Q324c (= D3) in his table of chronicled events (‘Primo Annales Fuere’, 195–6).
in the context of another tour of duty of this mishmar in the second month of the second year in the cycle:

\[\text{ דברי החElementsBy הנדשנים במאמר 이루어 בפסוקים כנ休闲}\]

\[\text{לשנה שנייה במחזור שני:}\]

, 'on the fourth (day) in (the week of) Jeshu'a [on the twentieth of the second (month falls X)', \textit{viz.} a lunar eclipse occurs$^7$ (4Q321 17). The highlighted occurrence of a lunar phenomenon on the fourth day in the week of Jeshu'a underpins the suggestion that 4Q324c is a fragment of a mishmarot register.

The proposition that the written column of 4Q324c was somewhat narrower than presumed by Wacholder-Abegg and Wise yields a restored text which runs as follows:

\[\text{ ישראליים מעורר בגרים חסידים מברק וסינקרעירチェック}\]

\[\text{בהשך על המילים ובשנירים הלunarךן פ\}

\[\text{The fi\[st two extant letters could be any combination of הת and יוד, or semi-cursive ref.\}

The slanted downstroke appears to be the right stroke of הת, followed by a vestige of the foot of another letter, possibly הת, suggesting the restoration of הת.

\[\text{1. כ��ינפ מוק\[ה and [\}

\[\text{as the first letter of the next word.}\]

\[\text{It appears that the scribe used a final form of a letter in a medial position, since it is followed by another letter.}\]

\[\text{1. כﬁינפ מוק\[ה and [\}

\[\text{2. כﬁינפ מוק\[ה and [\}

\[\text{3. כﬁינפ מוק\[ה and [\}

\[\text{\textit{For this interpretation of the date, which is not designated by a special term and was therefore termed X, see 4Q320, 4Q321, 4Q321a, and INTRODUCTION, APPENDIX 4.\}
325. 4QCalendrical Document/Mishmarot D

(PLATE VII)

Physical Description

FOUR fragments were identified as belonging to 4Q325. The larger fragments, frgs. 1 and 2, are light brown, while the two smaller ones are dark brown, almost black. Based on its contours and the partial words it contains, one of the small fragments, measuring 1.9 x 3.4 cm, could be joined to the lower right part of frg. 1, with only a small gap remaining between them. The join shown in PAM 43.333 constitutes a definite improvement on a previous attempt at combining the pieces, as shown in an earlier photograph (PAM 42.332). In the ensuing discussion, this fragment will be considered a part of frg. 1.

Frgs. 1 and 2 can be easily placed in their original positions in the scroll. The few legible letters on frg. 3, which measures 1.3 x 2.6 cm, do not suffice for establishing its placement in the document. However, the remaining letters of four lines permit the reconstitution of several words which fit well into the vocabulary of 4Q325.

The composite frg. 1 is 10.8 cm wide and 6.4 cm high. The uneven edges at the top and bottom and the equally uneven right edge seemingly resulted from deterioration. The straight edge on the left side appears to evidence breakage of the material. A line caused by a partial split of the leather surface runs horizontally for some 4 cm from the middle of the left edge. A similar line crosses the fragment vertically at its middle, from top to bottom.

The beginnings of the inscribed lines are lost. On the left side the writing abuts on the very edge of the fragment. The right half of the lower edge is missing altogether, possibly due to a flaw in the skin. As a result, the writing extends over only the left third of the bottom line.

Frg. 2 measures 4.7 x 6.2 cm. Its contours are rather uneven, except for the straight lower half of the left edge which may have resulted from breakage along a series of what seem to be needle holes where the thread had disintegrated. A thin line of an incipient split runs from top to bottom on the left side of the fragment. Another such line runs through the right side from top to bottom, then turns upwards toward the left edge, ending at a quarter of its height.

Frgs. 1 and 2 contain parts of seven inscribed lines. The line endings of frg. 1 6-7 and frg. 2 are intact. In contrast, the beginnings of the lines of both fragments are missing, extensively so in frg. 2. Although there are no dry rulings, the lines run

straight. A slight curving of the lines in frg. 1 apparently resulted from the shape of the parchment. The interlinear spaces in all three fragments measure 3–4 mm, but are somewhat larger between lines 1 and 2: 5 mm in frg. 1, 6 mm in frg. 2.

Words are fairly regularly separated by a space of 2 mm, the width of one letter, and in some instances of 3 mm, e.g. in frgs. 1 2, 6, 7; 2 2. A caesura of 8 mm in frg. 1 6 is evidently intended to separate the phrase רִבְדוֹת בְּאָרֹן, which opens a new subsection, from כּוֹנֵן אִמְרֵיכֶם, which closes the preceding one. In contrast, the large gap which extends over two-thirds of the bottom line of the fragment and separates the ordinal number רָאָה from רָאָה רָאָה at the end of line 6, appears to have been caused by a flaw in the oddly shaped vellum.

The partly preserved top and bottom margins of frg. 1, which are 1 cm and 6 mm respectively, and likewise the 9 mm remnant of the top margin and the 1 cm left margin of frg. 2, prove that both fragments contain parts of the text of one written column each. On the basis of the above data the original dimensions of the columns of frgs. 1 and 2 can be assessed.

Frg. 1: The almost complete line 3 contains thirty-four letters and eight inter-word spaces, viz. forty-two letter-spaces, similar to lines 2 and 5. The preserved text in line 3 extends over 10.6 cm, and the reconstructed text of seven letters and one inter-word space covers c.1.8 cm. It follows that the line originally contained forty-one letters and nine inter-word spaces, and that it was approximately 12.4 cm long. The width of the missing margin on frg. 1 can be deduced from the partial left margin on frg. 2 which is 1 cm wide and originally may have measured c.1.2 cm. It follows that when intact, the column with its margin was about 13.5 cm wide.¹

Frg. 2: The proposed reconstruction of the text suggests that the lines of this fragment were somewhat shorter than those of frg. 1. The extant endings of successive lines together with the preceding restored text lead to the conclusion that each of lines 4 and 5 originally contained thirty-seven letters and nine inter-word spaces, viz. forty-six spaces altogether, and was c.11.2 cm long. With one side margin of c.1.2 cm, the column was approximately 12.5 cm wide. A similar width can be calculated for line 6 which contained thirty-nine letters and nine inter-word spaces, measuring c.9.6 cm. With one c.1.2 cm wide margin the width of the column came to c.10.8 cm.

The above calculations suggest that the scroll stood c.7 cm high: seven written lines of c.2 mm = 1.5 cm, plus six inter-line spaces of 3–5 mm = c.2.5 cm, and a top and bottom margin each of approximately 1.5 cm.

**Palaeography**

The expertly executed lettering evidences the hand of a trained scribe. With the exception of the very thin letters šva‘, zayin, yod, and final nun, and the especially long lamed, final nun, final sade, and qoph, which protrude above or below the lines respectively, the apparently customary 2 x 2 mm size of most letters emphasizes the pronounced angularity of the square Hebrew alphabet.

¹ In the assessment of the width of a column, only one margin is taken into account, since each side margin was shared by two adjacent columns.
Several prominent features suggest that the scroll was penned in an early formal Herodian script. Accordingly 4Q325 can be dated to the end of the last century BCE.2

The vertical lines of שин meet regularly at the bottom in a protruding spike, as in שמשנ (frg. 1 1), שמשנ (frg. 1 5), and in several examples of שינ in frg. 2; the thickened head of לamed bends slightly to the left as in וו וו וו (frg. 1 2), שמשנ and שמשנ (frg. 1 5); the slight incline of the right stroke of mem (passim), and the rectangular bend of the left downstroke of תaw (passim), evince the hand of a trained scribe.

Orthography

4Q325 does not exhibit the notable plene spelling which typifies Qumran scribal practice. However, in three instances it offers a plene instead of defective reading in מ: שמשנ (frg. 1 3) against וושנ (all biblical occurrences with the exception of 2 Chr 27:5 לירס; cf. 4Q329 1 1) against וו (1 Chr 24:8 and all other biblical occurrences); ווא (frg. 1 6; cf. 4Q321 II 8) against ווא (Ezra 10:25; Neh 10:8, but Neh 12:5 ולירס; 1 Chr 24:9; 4Q320 1 ii 11). On the other hand, the document twice has the spelling (שדך) שדך (frg. 1 3, 6) with the elision of ֵך which prevails in the Songs of the Sabbath Sacrifice (4Q400–405), and may be compared to (שדך) שדך (4Q328 1) and שדך in other Yahad works (e.g. 1QS II 19–20; VI 5, 8; VII 19). It further uniformly exhibits the spelling שדך in contrast to שדך e.g. in 4Q321 passim, 4Q321a passim, 4Q324.

Contents

The scroll presumably contained a six-year roster of the Sabbaths, the 'beginnings of the months', the Covenants' special harvest festivals, and the major biblical feasts, together with the names of the priestly courses that served on these 'holy days'.

The column preserved on frg. 1 holds the pertinent dates and the names of the priestly courses for the first two months of the first year in the cycle, from Sabbath Joiarib which fell on the eighteenth of the first month to the 'beginning of the third month'. The data for the first half of the first month are not listed. Therefore it stands to reason that this column was preceded by at least one more column, now lost, which ended with a record of the data for that part of the month.

The mention of מיר in the middle of the partly preserved column on frg. 2 (end of line 4) indicates that this column held the data for the fifth and sixth months, leading to the conclusion that it was the fourth column of the scroll. Therefore it must have been preceded by a no longer extant third column, in which were recorded the data for the third and fourth months. This column probably ended with a mention of the 'beginning' of the fifth month.

The overall account presented in 4Q325 follows a recurrent calendrical pattern. Since the latest annual festivals fall in the seventh month, the roster of Sabbaths and priestly courses for the eighth to the twelfth months presumably was only punctuated by mentions of the 'beginnings of the months'.

Frg. 1

Top margin

[ד]סחיה יִשְׁלֹחַ בֶּסֶם רְחֵם בַּשַּׁת עַל וְדַעְתָּו [ב]עָבָר בַּעֲפָרָה וְסָפַר הַמַּשָּה בַּשַּׁת עַל וַדַעְתָּו [ג]פַּרְנָאָדַים בַּעֲפָרָה וְסָפַר הַמַּשָּה בַּשַּׁת עַל וַדַעְתָּו [ד]בַּשָּה הַמַּשָּה עַל וְדַעְתָּו בַּשַּׁת עַל וַדַעְתָּו [ה]שָׂר הַמַּשָּה עַל וְדַעְתָּו בַּשַּׁת עַל וַדַעְתָּו [ו]סָפַר מֵאָשֶׁר בַּשַּׁת וְסָפַר וְפָנָה וְסָפַר וְתָרָה הָהוֹדָר [ז]סָפַר מֵאָשֶׁר בַּשַּׁת וְסָפַר וְתָרָה הָהוֹדָר

[ב]סָפַר מֵאָשֶׁר בַּשַּׁת וְסָפַר וְתָרָה הָהוֹדָר

[כ]סָפַר מֵאָשֶׁר בַּשַּׁת וְסָפַר וְתָרָה הָהוֹדָר

[ז]סָפַר מֵאָשֶׁר בַּשַּׁת וְסָפַר וְתָרָה הָהוֹדָר

[ח]סָפַר מֵאָשֶׁר בַּשַּׁת וְסָפַר וְתָרָה הָהוֹדָר

Bottom margin

The proposed restoration of the text reflects the same opening of such a roster in 4Q320 4 iii 1 and has a parallel in 4Q329a. The restoration of the names Delaiah and Ma'oziah derives from the known six-year cycle of mishmarot in which these courses serve before Joiarib at the beginning of the first year. The first three days of the first month are covered by Gamul, who enters on Sabbath, the twenty-eighth of the preceding month, and serves until Sabbath, the fourth of the first month, when Delaiah enters.

L. 1 [40328, 40329]. The short form which prevails also in other calendrical documents (4Q321, 4Q321a, 4Q328, 4Q329) is restored here in contrast to 1 Chr 24:7 מֵאָשֶׁר.

Notes on Readings

L. 1 Before the first faintly legible letter yod, traces of sin can be discerned, prompting the restoration יֵשְׁלָחַ, a manifest reference to a previous mention of מַשָּה (for the significance of this reading, see comments). The partly restored reading of line 3, which consists of ten letters and one inter-word space, viz. a total of eleven letter-spaces, buttresses the restoration of מַשָּה יִשְׁלֹחַ with ten letters and two inter-word spaces which neatly fill the gap at the beginning of line 1. The last lines of the preceding column would have read as follows: "The first year its festivals: the first month, the fourth (day) in it Sabbath (on which) enters Delaiah; on the eleventh in it Sabbath (on which) enters Ma'oziah; on the fourteenth in it". The proposed restoration of the text reflects the same opening of such a roster in 4Q320 4 iii 1 and has a parallel in 4Q329a. The restoration of the names Delaiah and Ma'oziah derives from the known six-year cycle of mishmarot in which these courses serve before Joiarib at the beginning of the first year. The first three days of the first month are covered by Gamul, who enters on Sabbath, the twenty-eighth of the preceding month, and serves until Sabbath, the fourth of the first month, when Delaiah enters.

L. 5 [40327, 40328, 40329]. The number of the day always precedes the pronoun בּ, which refers to the month, and equally the mention of the Sabbath which falls on that date, and is followed by the name of the course that enters the Temple on this day.

L. 1 [40328]. The short form מֵאָשֶׁר which prevails also in other calendrical documents (4Q321, 4Q321a, 4Q328, 4Q329) is restored here in contrast to 1 Chr 24:7 מֵאָשֶׁר.
4Q325

L. 3 שֵׁם הָרָוִית. The 'first (or: beginning) of the month', not the 'new moon', which is an inappropriate term in a solar calendar. \(^3\)

L. 3 רֶשֶׁת. In 4Q325, months are indicated by ordinal numbers; days of the month and days of the service week of a mishmar are denoted by cardinal numbers.

L. 4 The proposed restoration of חָסָחְת (cf. frg. 2 1) tallies with this practice. The preceding reference to the 'beginning of the month', in this instance the second month, comes before the reference to the day on which it falls in the service week of the mishmar.

L. 4 [חָסָחְת]. Here, as in frg. 2 1, חָסָחְת connotes 'week', viz. a septad of days, not the seventh day (cf. inter alia 11QTh XXVIII 11; XIX 11; XXI 13).

L. 4 לָטָה. It seems that when the account of the service week of a mishmar is interrupted by a reference to a festival or to the 'beginning of the (next) month', it is resumed with the repetition of לָטָהerald and the name of the course whose entrance into the Temple is listed before the insertion. Although there is no evident consistency in the practice, it was adopted in the restoration of the text of frg. 2.

L. 4 עָרְבֵּי. מ has the defective spelling עָרְבֵּי in 1 Chr 24:8, but מֹהַי Xαυρprof possibly reflects the plene spelling עָרְבֵּי (cf. orthography).

Translation

1. [. . . ] the Passah on the t[h]ird [day] (of the week); on the eighteenth in it (the first month) Sabbath (on which) enters Jēḏa’ā; on the twenty-fifth in it Sabbath (on which) enters Jēḏa’ā and enter[.
2. in the evening. On the twenty-fifth in it Sabbath (on which) enters Jēḏa’ā and enter[.
3. [the festival] of (First) Grain (falls) on the twenty-six in it after the Sabbath; the beginning of the second mon[th]
4. [(falls) on the sixth (day) (of the week in which)] entered Jēḏa’ā; on the second in it Sabbath Harim. On the ninth in it Sabbath
5. [Se’orim]; on the sixteenth in it Sabbath Malkiah. On the twenty-third in [it
6. [Sabbath MiJāmin. On the thirtieth in it Sabbath Haqqūqos. vacat The beginning of the third
7. vacat month after Sabbath

Comments

L. 1 The proposed restoration implies that in this list, as in the rabbinic tradition, חָסָחְת includes the Mazzoth Feast, since the reading 'כּוֹפֶס שֶׁל שָׁלוֹם יָד' leaves no room for a reference to the Mazzoth Festival before Sabbath Jēḏa’ā on the eighteenth of the month. This inclusive understanding is indeed reflected in mishmarot in which חָסָחְת is immediately followed by חָסָחְת/חָסָחְת, the 'Waving of the (First) Omer' on the twenty-sixth of the first month (4Q320 4 passim; 4Q321 passim), and also in a six-year schedule of mishmarot in whose week of service חָסָחְת fell (4Q329a). However, the Temple Scroll (11QTh XVII 6–12) manifestly presents חָסָחְת/חָסָחְת as two distinct festivals, with a vacat visually bisecting the account: \(^4\)שָׁלוֹם הָיָה תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; [ם תָּכָא לָבְרָע מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּشָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; שָׁלוֹם תֵּבְרָע שֶׁלֶגָר הַדִּשָּׁן מַסָּחִית הָרָוִית [ָכְסָחְת]; [They shall observe on the fourteenth of the first month [at twilight the Passah of YHWH] and they shall sacrifice. Prior to the evening offering they shall sacrifice [it, all males] twenty years old and over shall perform it and consume it at night in the courtyards of [the] sanctuary, (then) get up (early) and go each one to his tent. vacat And on the fifteenth of this month (is) a [holy] assembly (on this day) you shall not perform any work, (it is) the feast of mazzoth for seven days for YHWH. The differentiation between Passah and the Feast of Mazzoth also shows in 4Q326 2–3 in the pointed specification 'on the fifteenth in it (the first month)]

\(^3\) The use of the term 'new moon' in translations of 1 Enoc, Jubilees, and the Covenanters' writings should be emended to read 'beginning of the month', as in J. C. VanderKam, The Book of Jubilees (CSCO 511; Scriptores Aethiopicii 88; Louvain: Peeters, 1989).

the Mazzoth Festival (on the fourth day of the week), which presumably was preceded by the Feast of Weeks (Exod 12:16; 13:6; Lev 23:8; Num 28:25; Deut 16:8), and is observed as a "holy day" by rabbinic Judaism, is never listed in any calendrical document of the Covenanter. There is only the reference to the seven days duration of the Mazzoth Feast in the Temple Scroll (11Q14 "XVII 16). Similarly, the biblical Feast of Weeks (סוכות), the day after Tabernacles (Lev 23:36; Num 29:35; Neh 8:18), is presented only once in a calendrical context in the Temple Scroll as a separate "holy day" (11Q14 "XI 13). See my comments on this issue in 'The Covenanter's Annunciation According to the List of David's Compositions in 11Q14 "XXVII', Fifty Years of Dead Sea Scrolls Research, ed. by G. Brin and B. Nitzan (Jerusalem: Yad Vishaq Ben Zvi, forthcoming [Hebrew]).

As previously stated, between frgs. 1 and 2 an additional column must be assumed, which included records for months 3-5.

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1 Wacholder-Abegg read מָצָאָה as מָצָאָה. They are followed by M. Wise, M. G. Abegg Jr., and E. Cook, The Dead Sea Scrolls. A New Translation (San Francisco: Harper, 1997) 317, who offer the untenable translation: "Passover ends on the third day in the evening". One wonders what Hebrew collocation could be translated 'Passover ends'. Moreover, the last day of the Mazzoth Feast, which earns special mention in biblical ritual legislation (Exod 12:16; 13:6; Lev 23:8; Num 28:25; Deut 16:8), is observed as a 'holy day' by rabbinic Judaism, and never listed in any calendrical document of the Covenanter. There is only the reference to the seven days duration of the Mazzoth Feast in the Temple Scroll (11Q14 "XVII 16). Similarly, the biblical Feast of Weeks (סוכות), the day after Tabernacles (Lev 23:36; Num 29:35; Neh 8:18), is presented only once in a calendrical context in the Temple Scroll as a separate 'holy day' (11Q14 "XI 13). See my comments on this issue in 'The Covenanter's Annunciation According to the List of David's Compositions in 11Q14 "XXVII', Fifty Years of Dead Sea Scrolls Research, ed. by G. Brin and B. Nitzan (Jerusalem: Yad Vishaq Ben Zvi, forthcoming [Hebrew]).
Notes on Readings

L. 1 א"מ. The preserved upper left part of a mem makes the restoration of the name Immer a certainty.

L. 4-5 [הו] was inserted in these lines in the account of the entrance of the course of Jehezqel, which was interrupted by the reference to the beginning of the sixth month (cf. frg. 1 2-4). The proposed reconstruction of the text is determined by the flush endings of lines 3-5, leaving no room for a vacat before the 'beginning/first of the month', unless in this case two was omitted.

Translation

1. [on the sixth (day) in the week (in which) entered Bilgah; on the second in it (the fifth month) Sabbath (on which) enters Immer; on the third in it (the fifth month)]
2. [the Feast of the (First) Wine after (the) Sabbath (on which) entered Immer. On] the ninth in it Sabbath Hezir;
3. on the sixteenth in it Sabbath Happises. On the twenty-third in it Sabbath
4. [Petahiah; on the thirtieth in it (the) Sabbath (on which) enters Jehezqel. The beginning of the] sixth month
5. [(falls) after (the) Sabbath (on which) entered Jehezqel; on the seventh in it (the sixth month) Sabbath Jakin; on the fourteenth]
6. [in it Sabbath Gamul. On the twenty-first in it Sabbath Delaiah; on the twenty-second]
7. [in it the Feast of the (First) Oil after the Sabbath (on which) entered Delaiah. After it the (Feast? of the) Wjood-Offering.

Comments

L. 1 Calculations of space prompt the reconstruction of the sixth month. The phrase refers to the no longer extant mention of the entry of Bilgah at the beginning of the fifth month.

L. 2 [השא] א"מ, 'the Feast of the New Wine', is the first of the Covenanters' special harvest festivals (see 11QT* XXI 8; XLIII 1-4; 4Q261; 4Q508 13). It is celebrated on Sunday, ראש שבוע, the first service day of Immer.

L. 6-7 The proposed restoration of the minimally preserved text is buttressed by the more extensively preserved parallel text in 4Q394 1-2 v 3-9: שהשא א"מ, the regular hebREW שדא א"מ, the first service day of Immer.
L. 7 יִדְעָה. This term refers to the Yahad’s second special festival (cf. 4Q394 1–2 v 5–6), also called מַסֵּרָה (4Q261; 4Q364; 4Q508 13; 11QTXLIII 1, 9 et al.), at which the new oil, שְׁמָא, is offered (11QTX XXI 14; XXI 4; XLIII 10; 4Q365a 2 1 et al.).


The Wood offering was observed for six days, from the twenty-third of the sixth month, with the probable exclusion of the Sabbath on the twenty-eighth, culminating in the celebration of מַסֵּרָה on Sunday the twenty-ninth, כָּרְבָּן מַסֵּרָה.

Notes on Readings

L. 1 יִדְעָה. In 4Q325, יִדְעָה is followed exclusively by one of three vocables: רֵי, (תְּדוּרָה) שְׁךָ, or the name of a priestly course. The trace of the first letter in the word after יִדְעָה appears to be the remnant of בֵּית. If this is indeed the case, the restoration of בֵּית or שְׁכָה would be precluded, and only the name of a mishmar could be restored. The most plausible reconstruction is יִדְעָה, the only name of a priestly course which begins with בֵּית.

L. 2 יִדְעָה. The proximity of the phrases יִדְעָה and שְׁכָה suggests that the fragment relates to the first turn of duty of Bilgah in the first year of the cycle, when this mishmar serves from the twenty-sixth of the fourth month to the second day of the fifth month, with שְׁכָה falling on the third day of its service. Accordingly, the partly preserved and partly restored text of frg. 3 could possibly be accommodated before frg. 2. However, the letters in lines 3 and 4 preclude a positioning of the fragment at that juncture.

L. 3 יִדְעָה. The trace of a letter at the right side of the fragment appears to be the top of יָכַל, rather than of בֵּית. It is clearly followed by בּ, with a tiny trace of another letter after the mem, which could be the top of בֵּית, suggesting the conjectural restoration of יִדְעָה.

L. 4 יִדְעָה. The first letter is clearly בֵּית, followed by what appears to be the right vertical stroke of בֵּית.

Translation

1. Sabbath Bilgah
2. the [beginning] of the month
3. these are the feats of YHWH the sacred assemblies
4. which [you shall proclaim] at their appointed time
COMMENTS

The above conjectural restoration of lines 3 and 4 is based on a formula which serves both as superscription and summary notation of a biblical 'cultic calendar' (Lev 23:1, 4, 37), and may have a similar function here in 4Q325.
326. 4QCalendrical Document C

(PLATE VII)


Physical Description

4Q326 (olim 4QMishmarot E") measures 5.9 x 2.9 cm and is brown, turning greyish at the upper and right edges. The partially preserved 2 cm wide right margin suggests that the fragment stems from the first column of a document. The fairly even top rim and the somewhat less even bottom rim possibly evince breakage of the parchment, whereas the serrated upper left edge and a hole in the upper part of the margin probably resulted from deterioration of the material.

Contents

Whereas Wacholder-Abegg, Wise-Abegg-Cook, and Maier conceive of 4Q326 as a fragment which records a part of the fourth year of the six-year mishmarot cycle, I propose to view it as a fragment of a one-year roster of holy seasons in the 364-day solar year (viz. 52 full weeks). In this type of calendrical document only the annual Sabbaths and festivals are recorded. In works of the same pattern, such as the cryptic fragments 4Q324d–i, 4Q394 1–2 and 3–7 i 1–3 (cf. CD III 14–15; VI 18–19; XII 3–4; 1Q22 i 8; 4Q390 1 8; 2 i 9–10), there is no synchronization with dates pertaining to the service weeks of the priestly courses. In the 354-day lunar calendar of the mainstream community the Sabbaths are not riveted permanently to fixed dates in the months, nor the holidays to the same weekday, but rather ‘wander’ from year to year. By contrast, the time schema of 364 days per year ensures that every Sabbath falls on the same date in a given month, year in year out, and every festival always on the same day of the week. Therefore the roster represented by 4Q326 is applicable to any year. Conversely, in mishmarot lists, the holidays are geared to the rotating system of priestly courses, with twenty-four courses serving twice a year and four courses three times. As a result, the Sabbaths and the festivals in different years fall in the weeks of duty of different mishmarot. Therefore, each of the holidays must be specified in a register of a six-year cycle. Such a detailed account is also required in schedules in which dates in the solar calendar of 364 days are aligned with dates in the 354-day lunar calendar as in 4Q320, 4Q321, 4Q321a. See INTRODUCTION.
Two features of 4Q326, both based on seemingly certain textual reconstructions, are shared by the Temple Scroll: (i) the evident separation of לשים, the ritual of the sacrifice of the Passah lamb, from ושם לשון, the Feast of Unleavened Bread; (ii) the restored mention of מ—who תמאים, the celebration the priests’ investiture. These shared peculiarities shed light on the intrinsic relation of the Temple Scroll and 4Q326 in reference to matters calendrical.

Palaeography

The script bespeaks a 'late Hasmonaean or early Herodian book hand'. The text can be read without difficulty on regular photographs. The letters are mostly of equal size and measure 2 x 2 mm, except for ד PANEL, yod, and final nun, which are half as wide, and final mem which is 0.4 mm high (as in שכל, line 3). The letters are separated by less than a millimetre and words by a space of 2–3 mm.

There are no dry rulings. The scribe nevertheless managed to keep the lines straight and justified at their beginnings. A string of several dots arranged vertically in the right margin at a distance of 0.3 mm from the first letters in the written lines were possibly meant to serve as line markers, although they are not placed exactly opposite the opening words of the lines.

The interlinear space amounts to 0.5 mm. The length of the preserved written lines is between 2.5 cm (line 1) and 3.8 cm (line 3). The proposed reconstruction of the text suggests that a full line was 7.5–8 cm long, and held 28–37 letters and 7–9 inter-word spaces, viz. a total of 35–46 letter-spaces. Together with the margin of 0.3 cm the column width presumably came to 10–11 cm.

Orthography

Like in other calendrical documents and mishmarot texts, a previously explicated month is referred to by ב (lines 2 and 4) or ב ו (line 5) written plene.

Mus. Inv. 693
PAM 41.703, 42.335, 43.339

NOTES ON READINGS

L. 1 [csa] The line would be too short if it ended after [csa], which falls on the fourth of the first month, holding only fifteen letters and three inter-word spaces, viz. eighteen spaces in all, whereas the other (restored) lines contain forty spaces or more. Since the following Sabbath which falls on the eleventh of the first month is listed at the beginning of the next line, it stands to reason that another 'holy season' was recorded in the second half of line 1. I propose to restore here [csa] 'the Feast of (the priests) Investiture'. See COMMENTS.

L. 2 [c5]. It appears that the scribe erroneously began to write 'eleven' in words, but caught himself and completed the number in symbols, [c5], without deleting the redundant 'aleph, as he presumably had deleted an initial mistake above line 1, and then entered the corrected reading in the first line (see below, COMMENTS).

L. 2 [c5]. This restoration is prompted by the ensuing collocation [c5], [c5]. Similar corrections are found in other Qumran manuscripts, e.g. [c5], 141 (4Q396 1-2 iii 5).

L. 4 [c5]. Meaning 'the day after the Sabbath'. In the Covenanters' calendrical vocabulary this is a standard designation of the first day of the week (cf. e.g. 4Q394 1-2 ii 6-7), which equals their interpretation of the biblical appellation [c5] in 6Q17. Restoring [c5] as in line 1 would make line 4 too short. Cf. further 4Q320 3 ii 4 i.

Ll. 4-5 [c5]. This notation at the beginning of line 5, 'in it 30 (days)', most probably summarizes the number of days in the first month, [c5], mentioned at the end of line 4 (cf. 4Q320 3 ii 5-7; 4Q324d I [fig. 2 i] 2; ll [frgs. 2 ii + 5 i] 2; and 6Q17 1; for summaries of the days of the year cf. 4Q394 1-7 i 1-3).

L. 5 [c5]. Haplography appears to have caused the elision of [c5], the mention of the second month, before the reference to the Sabbath on the second day of that month, [c5]. A vacat separates this latter date from the details pertaining to the first month.

TRANSLATION

1. In the first (month) on the fourth (day) in it Sabbath, on the eighth in it the Feast of (the Priests') Investiture,

2. on the eleventh in it Sabbath, on the fourteenth in it the Feast of (the Priests') Investiture,

3. on the fourteenth in it Sabbath, on the third day (of the week), on the thirteenth in it


3 Similar corrections are found in other Qumran manuscripts, e.g. [c5], 135 (4Q396 1-2 ii 3). The scribe began to write [c5], but changed his mind in midcourse and wrote [c5]. See E. Tov, 'Correction Procedures in the Texts from the Judean Desert', The Proto International Conference on the Dead Sea Scrolls: New Texts, Reformulated Issues and Technological Innovations, ed. by D. W. Parry and E. Ulrich (Leiden: E. J. Brill, 1998) 375-97.
3. the Feast of Unleavened Bread on the four[th day of the week], on the 18th in it Sabbath, on the 25th in it]
4. Sabbath, on the 26th in it the Feast of (the First) G[rain after the Sabbath; the first month]
5. in [it] 30 (days) τεταχθη, on the second (day) in it [(the second month) Sabbath, on the ninth (day) in it Sabbath, on the sixteenth (day)]

COMMENTS

The practically certain restoration of the missing latter part of line 3 (see below) suggests that the written lines originally held at least double the number of letters contained in the preserved text.

L. 1 . ABOVE the beginning of line 1 faint traces of several letters can be seen which seem to have been erased. A dot in the margin to the right of them appears to be a line marker. Wacholder-Abegg restore the reading (ריבריע) and presume that 'the manuscript chronicles Sabbaths and festivals in month 1 of year 4 of the six-year cycle of mishmarot. Wise-Abegg-Cook follow this interpretation and translate line 1 'In the first month of the[forth year the beginning of the month is . . . ', evidently restoring the erased letters to read ביבריע מדוע ביבריע in reference to the fem. noun מדוע. In their view '4Q326 records the Sabbaths, the first days of the solar months, and the festivals, presumably for the fourth year of the cycle' of priestly courses, although they admit that 'the remains [of the document] preserve the names of none of the priestly divisions'. Maier goes one step further and enters in his translation the restored names of three watches—Delaiah, Ma'aziah, and Harim. The apparent ink marks are indeed traces of the first two or possibly the first three letters of מ[דוע. However, the numeral does not refer to the fourth year of the cycle of priestly watches, but rather designates the fourth day of the first month. The scribe presumably erased the notation when he realized that he should have mentioned the month before referring to the day of the date, and then entered the correct text in line 1:

In 4Q326, as in all calendrical and mishmarot texts, months are identified by numerals in accordance with the basic biblical (Israelite) system, יאנו, יאנו, יאנו etc. They are never referred to by the ancient Canaanite designations אבב (Exod 13:4; 23:15; 34:18; Deut 16:1), זיז (1 Kgs 6:1, 37), בֵּית (ibid. 6:38), שָנָה (ibid. 8:2), nor by Babylonian month names which became current in Israel after the Babylonian Exile.

In 4Q326 months are indicated by cardinal numbers, יאנו (line 1), weekday and monthly dates by ordinals, יאנו יאנו יאנו יאנו יאנו יאנו (line 3). The opposite is the case in other calendrical documents, e.g. שָנָה שָנָה שָנָה שָנָה שָנָה שָנָה . . . שָנָה שָน
L. 1 A fragmentary passage in the Temple Scroll (11QTS XIV 9–XV 14) is understood to indicate that the 'Feast of the priests' Investiture' was observed as the culmination of the seven day milliain ritual on the eighth day of the first month, as prescribed in Lev 9:1 but not explicated in 11QTS, or else on the ninth day, if according to a statute in the Damascus Document the required daily sacrifice could not be offered on a Sabbath: 'no one should offer on the altar on the Sabbath except the Sabbath sacrifice' (CD XI 17–18). The fourth of the month, a Sabbath, would thus be eliminated. In contrast, the Psalms scroll from cave I1 appears to allow for such a sacrifice, since the summary of the compositions ascribed to King David expressly states that the special Sabbath sacrifice was offered in addition to the prescribed daily sacrifice: 'And he (David) wrote... songs to be sung before the altar over the perpetual offering for every day, for all the days of the year 364 (viz. including the Sabbaths); and (in addition) for the Sabbath offerings 52 songs...' (11QPS* XXVII 4–7).8

The fourth of the month (18-17). By contrast, it must be pointed out that with the exception of the fragmentary reference to מנה לACHINE 11QTS and the here proposed restoration of the term in 4Q326, this festival is not mentioned in any other calendrical text.10

L. 2 In this document, numbers up to ten are expressed in words. Numbers exceeding ten are expressed in symbols which are known int. al. from inscriptions and weights of the First Temple period, the Elephantine Papyri,11 and some ostraca of unknown provenance.12 Units are indicated by a right to left slash in groups up to five 333, with the direction of the last slash often being reversed, e.g., 99, 99, up to a total of nine.13 This widespread technique is also found on tags from Masada.14 A hook which developed from a short horizontal line stands for ten, two superimposed hooks for twenty.15 In 4Q326, and in 4Q318 (Zodiology and Brontology), the larger numerals precede the smaller ones, whereas in 4Q320 the opposite sometimes is the case.

10 The main evidence for its observation comes from medieval Karaite sources. See int. al. Y. Erder, 'Precedences Cited by Anan for the Postponement of the Passover that Falls on Sabbath', Zion 52 (1987) 15–20 (Hebrew).
13 The system resembles a modern practice of crossing four vertical strokes with a horizontal one to signify a unit of five.
L. 2 [םהיתו]. Following a biblical norm, which is also reflected in the 'Order to keep (the Passah and) the Feast of Unleavened Bread' (419 ace) from Elephantine, the Covenaners considered the sacrifice of the Paschal lamb and the Feast of Mazzoth separate holidays (cf. 2 Chr 35:17), as evidenced by 11Q To XVI 5, 11; 11Q 48XVIII 6-11]. The preceding day [יוספ גור] of the fourteenth of the first month [Exod 12:6; 16:12; Num 9:3, 5, et al.; cf. the law of the 'Second Passah', ibid. v. 11], which in the 364-day calendar always falls on the third day of the week. The ritual of the Paschal Lamb is in fact the only holy season ( ธא) which the Covenanters observed on the third day of the week. The Mazzoth Feast began in the morning of the fifteenth (the fourth day of the week), in full accord with the Covenanters' ephemeris in which the first day of the year, the Feast of Unleavened Bread in the first month, the 'Day of Remembrance' on the first of the seventh month, and the Festival of Booths on the fifteenth of the seventh month, all fall on the fourth day of the week.

L. 4. The biblical 'Feast of the First Grain', is designated also in 4Q325 13. In other Qumran sources it is named תוגיהו (4Q320 4 passim; 4Q321 V 4, 9; VI 7; 4Q513; 11Q 48XVIII 10) or תומיאנוע (11QTo XVI 10), 'Day of Waving of the Omer' (cf. Lev 23:9-21) and in Lev 23:15, תומיאנועו תומיאנועו. In יס לוים it is named תומיאנועו תומיאנועו.

16 See J. Licht, s.v. תוגיהו, Encyclopaedia Mishpat, VI, 514–26, esp. 523–5 (Hebrew) for a summary of the evidence.

17 See Cowley, Aramaic Papyri, papyrus no. 21: 'Now you accordingly count fourteen days of the month of Nisan and keep the Passover (viz. the Paschal Lamb sacrifice, S.T.), and from the 15th to the 21st day of Nisan (are) seven days of Unleavened bread'.

18 4Q329a provides a fragmentary list of priestly courses in which the first five years of a six-year cycle, Passah always falls on the third day of a mishmar's tour of duty.
328. 4QMishmarot F


**Physical Description**

4Q328 CONSISTS of a small piece of parchment which can be joined confidently to the left edge of a larger piece, on the strength of their contours and considerations of text joins. The composite triangular fragment, measuring 5.8 x 4.6 cm, is of a dark brown colour becoming lighter at the right edge. It contains between two and five words from the middle sections of six lines. A 7–8 mm-wide blank above the uppermost line, slightly wider than the interlinear space, is evidently part of the top margin. Since no traces of a right or left margin are extant, one is led to the conclusion that the fragment stems from the middle part of a column.

**Contents**

The short stretches of text survived from a scroll which comprised at least two discrete service schedules of the priestly courses. Of the first, in which are detailed the names of the courses that served successively at the beginning of each year in the established six-year cycle, only the last line is preserved which contains two mishmarot names and ends with the summary notation ירא את המרא, 'these are (the mishmarot at) the heads of the years'. This roster is followed in lines 2–6 by portions of an enumeration of the courses on duty at the beginning of each annual quarter in the cycle. This roster is identical to such a schedule in 4Q329 and 4Q319 VII. Therefore, these fragmentary texts partly complement each other.

**Palaeography**

4Q328 was written by a trained scribe in a 'late Hasmonaean or early Herodian bookhand' of the second half of the first century BCE. The text is easily legible in a good photograph.

Letters are uniformly executed. They measure 2 x 2 mm, with the usual exceptions of the much thinner and indistinguishable waw and yod; the c.3 mm-long upper stroke of lamed, which protrudes above the imaginary line formed by the letter heads; and the

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downstroke of "qof", which descends perceptibly below the fairly straight bottom line formed by the bases of the other letters. Letters are spaced less than 1 mm apart and in some instances flow together, e.g. "ךעך in" (line 2), and "ינ in (line 3). Inter-word spaces measure consistently 2–3 mm.

There are no dry rulings, but the lines are nevertheless straight with an interlinear space of 5–7 mm. The apparent curvature of the lines results from the somewhat crinkled parchment.

**Orthography**

The spelling of fully or partly extant names of priestly courses parallels 1 Chr 24:7-18 with one exception: 4Q32V 2 (against 1 Chr1 24:7 against 4Q320 4 ii 6: ממעזיה). The scribe elided the aleph in רש רשל (line 1), but retained the mute consonant in the super-plene spelling רמשיה (line 2). At the same time he omitted the vowel-letter waw after the sin.2

Mus. Inv. 693
PAM 41.701, 42.331, 43.339* (bottom)

Parallel: 4Q329 2 (underline)

<table>
<thead>
<tr>
<th>Top margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 יסבב ברות מהזא[ ] (לזרה בשת)</td>
</tr>
<tr>
<td>2 [במשה] [ברז[ ]ע[ ] עלי[ ] מיטעין]</td>
</tr>
<tr>
<td>3 [תור[ ] במשט[ ] [ברז[ ]ע[ ] עלי[ ] מיטעין]]</td>
</tr>
<tr>
<td>4 [משש[ ] מ[ ][ ] [ברז[ ]ע[ ] עלי[ ] מיטעין]]</td>
</tr>
<tr>
<td>5 [ברובע[ ] במשט[ ] (לזרה בשת)]</td>
</tr>
<tr>
<td>6 [ישאул ברות[ ] אבר [לזרה בשת]]</td>
</tr>
</tbody>
</table>

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2 The inconsistent spelling of some other mishmarot names, like מְלָכָה/מלכה, מַלְכָּה, מַלְכָּה, תֶּשֶׁת, תְּשֵׁת, וְרִיבָרָה/יריבר, seems to call into question the hypothesis of the existence of a ‘Qumran scribal school’ that cultivated one specific scribal tradition.
NOTES ON READINGS

L. 1 שִׁמְרוֹן. For the spelling of this vocable with the elision of the mute הָלֶק see ORTHOGRAPHY.

L. 2 [םַשְׁמַר]. Considerations of space require the restoration of רֵשֶׁם. It is restored with the pronoun -ב rather than with the definite article (cf. 4Q329a 4-5) as indicated by the partially extant reading נָשָׁמִי in line 6.

L. 2 רֵשֶׁם. See ORTHOGRAPHY. The reading can be ascertained through a comparison of various photographs.

L. 2 A fault in the parchment may have forced the scribe to leave a wider than usual space between the names Eliashib and Mo'aziah.

L. 4 It appears that the scribe wrote the name מַשֶּׁמֶר twice, possibly because of some fault in the parchment, and subsequently erased the first mention.

L. 5 [םַשְׁמַר]. The name is spelled as in 1 Chr 24:7. The truncated second letter is ה (cf. the final letter in the preceding name אֵלֶישָׁבָא), and not two letters, yod and waw. A crack in the parchment has pulled apart the two parallel vertical strokes of ה in the name מַשֶּׁמֶר (line 6).

L. 6 רֵשֶׁם. Evidently the first two letters of רֵשֶׁם.

TRANSLATION

1. [Jeshebab]ab; in the sixth (year) Happiṣṣeph; these are the leaders (heads) of the years.
3. [Huppah; in] the second [Je]da'āšah Bilgah Se'ofrim He[zir;]
5. [in the fourth Shekaniah De]laiah Jaqim[; in the fifth]
6. [Jeshebab Ḥarim Immer] Malkiah; in the si[xt]h Happiṣṣeph

COMMENTS

L. 1 מִשְׁמֵרָה. The beginning of this line continues the text in the last line of the preceding column, which ended with the word מִשְׁמֵרָה, a reference to the fifth year of the cycle.
329. 4QMishmarot G

(PLATE VII)


Physical Description

PAM photographs prove that 4Q329 consisted originally of three small scraps of parchment. However, according to an entry in the Rockefeller Museum records, two were lost and cannot be traced. Therefore, the ensuing discussion is based solely on the extant photographs. The one remaining fragment is of a brownish colour turning grey.

The three scraps are presumably the remains of one column. One piece measures 2.4 x 2 cm, and holds several words from the beginning of four lines with an interlinear insertion between the two lower lines. Above them was possibly another line of which only traces of the bottom parts of some letters remain. These facts, and a 1 cm-wide portion of the right margin indicate that this piece stems from the middle of the right side of the column. The second scrap measures 2.8 x 2.5 cm. It contains remnants of four lines and possibly traces of letter tops from a fifth. The absence of any trace of a margin suggests that it comes from the middle part of the column. On the third scrap, which measures 3.2 x 2.1 cm, a few words from the middle of three lines are preserved with the tops of letters from a fourth line. A c.6 mm-wide piece of the upper margin proves that this item stems from the top of the column. The first two scraps can be combined to constitute frg. 2, on the strength of text remains which can be integrated into five lines. The remaining fragment can be placed before frg. 2, and will be designated frg. 1.1

Contents

The extant remnants of text prove that the scroll originally comprised at least three discrete rosters of priestly courses,2 similar to 4Q321a which included two separate lists, and 4Q319 and 4Q320, in which were assembled an even greater number of discrete components.

Frg. 1 preserves parts of a plain catalogue of the names of the twenty-four mishmarot, beginning with the mention of Jedaiah, Harim, Se'orim who were preceded by Gamul, Delaiah, Ma'oziah, and Joiarib. In essence, this register resembles the

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1 Wacholder-Abegg present the fragments in the reverse order.

2 There are reasons for assuming that another mishmarot list was sandwiched in between frgs. 1 and 2 but is now lost in its entirety (see below).
numbered account of the names of the priestly courses in 1 Chr 24:7-18. A parallel enumeration is partly extant in the cryptic document 4Q324i frg. 1.

Frg. 2 1-3 records the courses that are to officiate at the onsets of each annual quarter in a six-year cycle, named ‘leaders’ in 1 En. 82:10-20. The list opens with the mention of Se’orim, סֵאֵרוֹן. This course was on duty at the beginning of the third quarter in the second year of the cycle, as explicitly stated in the matching list 4Q328 נַבְשָׂע בַּשָּׂעַ תָּוָא [אָחַי] הֶרְמִיָּו, בְּלַשְׂפָא שֵׂעָרֹי הֶרְמִיָּו, ‘in the second (year) [Je]daiah, Bilgah, Se[or]im, He[zir].’

This roster is followed by a register in which were sequentially listed the four (or five) courses that served in every single month of the six-year cycle. In the preserved text are itemized the names of the courses whose spells of duty fell in the first three months of the first year (lines 4-5).

**Palaeography**

4Q329 was evidently penned by a trained scribe in a ‘late Hasmonaean or early Herodian book hand’, and can thus be dated to the second half of the first century BCE. On both fragments letters are uniformly executed and measure c.2 x 2 mm, with the exception of the thin waw and the appreciably smaller interlinear letters on frg. 2. Words are spaced c.3 mm apart. The interlinear space comes to c.5 mm. Lines run straight, especially in frg. 1, although no dry rulings can be discerned on the fragments.

**Orthography**

The name of the priestly course שֵׂעָרֹי is spelled plene and with וַעֲלִי (frg. 1 2) whereas in its only biblical occurrence in the roster of the twenty-four ‘contingents’ (טַחְולֵי מַשָּׂעַ) of priests it is spelled defectively and with הֶר (1 Chr 24:13). Similarly, in contradistinction to the defective biblical spelling מַשָּׂעַ רִבְיָּו (ibid. v. 8), in 4Q329 the name is spelled plene, מַשָּׂעַ רִבְיָּו (frg. 2 1). The name יְרִיב (1 Chr 24:7; cf. 9:10) occurs twice without הֶר (frg. 2 2 4; 4Q328 5); and הַנָּשָׂע (frg. 2 4 interlinearly) appears without the expected וַעֲלִי, as in 4Q328 3.

Mus. Inv. 710
PAM 42.332, 43.334*

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*Not the first as implied by Wacholder-Abegg in their reconstruction of the text.

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Frg. 1

Parallel: 4Q324 i 1 (underline)

top margin

[1. [Gamul Delaiah Ma'oziah Joiarib] Jeda'iah Harim Se'orim Malkiah Mijamin]
[2. [Haqqo Abiah Jessha Shekaniah] Eliashib Jaqim Ḥuppah [Jesheb Bilgah Immer]
[3. [Ḥezir Happiṣṣes Petahiah Jehez]qel Jak'in]

TRANSLATION

1. [Gamul Delaiah Ma'oziah Joiarib] Jeda'iah Harim Se'orim Malkiah Mijamin
2. [Haqqos Abiah Jessha Shekaniah] Eliashib Jaqim Ḥuppah [Jesheb Bilgah Immer]
3. [Ḥezir Happiṣṣes Petahiah Jehez]qel Jak'in

Frg. 2a, b

Parallel: 4Q328 (underline)

Notes on Readings

L. 1 [משה]. The correctness of this restoration is ascertained by the partially extant reading [משה] in 4Q328 4.
L. 2. A glaring lapsus calami. The scribe wrote רביר instead of רבעים, the evidently required mention of the 'fourth year' (see COMMENTS).
L. 4. Here begins the monthly register of the courses with the mention of the first month in the 'first (year)'. The scribe erroneously omitted the word [משה] and inserted it between the lines, somewhat to the right, instead of to the left of [משה] which it defines.
TRANSLATION
1. Se′orim [Hezir; the third (year) Mijamin Petaḥiah Abiah Jakin];
2. the third (year) [Shekaniah Delaiah Jaqi]m Joiarib; [the fifth (year) Jeshebab]
3. [H]arim Immer [Malkiah; the sixth (year)] Happissēs Haqqo[s Je]βezqel Jeshu′a.
4. The first (year) in the first month Gamul Delaiah Ma′ozjiah Joiarib; in [the second Jedediah]
5. [Harim Se′orim Malkiah Mijamin; in] the third Ha[qqo Abiah Jeshu′a]

COMMENTS
Wacholder-Abegg failed to notice that in frg. 2 2 the scribe had erroneously written תשפנ instead of תשהנמ, ‘the second (year)’ in line 1; תשנמ, ‘the fourth (year)’ in line 2; and תשנמ, ‘the fifth (year)’ in line 3. As a result, there was no room left for inserting the indispensable mention of the sixth year of the cycle before the beginning of the different additional register in line 4. The never-changing structure of the priests’ service schedule, and remains of practically identical mishmarot registers, foremost 4Q328, which most probably reflect the same prototype as 4Q329, make it possible to fully restore the master text of four discrete tables which presumably were contained in the documents (see INTRODUCTION, APPENDIX 3):

1. a simple enumeration of the names of the courses without relation to a specific time schedule (4Q329 1);
2. the names of the courses that served at ‘the beginnings of the years’, ס(א)ר הבשנים (4Q328 1) in a six-year cycle;
3. at the beginnings of the annual quarters, viz. ס(א)ר (4Q328 2-6, 4Q329 2-3; cf. 4Q319 VII 2-7);
4. at the beginnings of the months, ס(א)ר (4Q328 7-9), and in every week of each month in a six-year cycle (4Q329 4-5).
In practically all instances, the service schedule is headed by Gamul (see INTRODUCTION). This course is presented as having been on duty on the fourth day of Creation (cf. 4Q320 1 i 3-5; 4Q319 IV 11), when God fashioned the ‘Great Luminaries’, which he appointed as ‘signs for festivals and for seasons and years’ (Gen 1:14-19).
329a. 4QMishmarot H

(PLATE VIII)


Physical Description

4Q329a CONSISTS of two pieces of dark brown parchment which can easily be combined on the strength of the dovetailing edges and textual continuity to form a fragment measuring 6.3 x 3.1 cm. The top and right edges of the fragment are irregularly shaped. By contrast the extant parts of the bottom and left edges are rectilinear and meet in a perfect angle, proving that the item stems from the lower left corner of a sheet. The top and the right margins are totally lost, but the narrow bottom margin of 0.5 cm and the partial left margin of 1–1.6 cm are preserved.

The fragment shows the ends of five lines from the left bottom part of the column. In line 1 only one word is preserved; lines 2–5 preserve two or three words. In the left margin two or three words are written vertically, which are in fact parts of one or possibly two lines in which the text of line 5 was continued (see COMMENTS).

Although there are no dry rulings, lines run straight. Interlinear spaces measure 7–8 mm. The last letters in lines 1–3 are vertically aligned, giving the impression of 'justification', although line 5 is shorter, and line 4 even more so. The difference in line length presumably resulted from the varying width of the spaces between the words (see text).

Contents

4Q329a contains a schedule of mishmarot in the customary, rotating six-year cycle in whose annual turn of duty fell the sacrifice of the Passah Lamb, יִֽשֶׁר, on the third day of their week of service, viz. on a Tuesday. The mention of each year is introduced by the comprehensive term נִמְצָא, 'its holy seasons'. However, in contrast to the detailed enumeration of sacred times in other mishmarot documents—the listing of all annual festivals and the names of the respective courses on duty—in 4Q329a only those mishmarot are listed seriatim in whose week of service יִֽשֶׁר falls in the six-year service cycle. The catalogue begins with an incomplete reference to the first year and ends with a similarly truncated reference to the fifth. The account can be fully restored with the help of information elicited from other mishmarot rosters, and from the known principles of the priests' service cycle.
Palaeography

The script appears to be of the type which Cross defines as 'early Hasmonaean semiformal script of ca. 175-125 B.C.' foremost in regard to he, het, yin, and sin. However, taw with the looped left downstroke has no equal in his chart. This feature has a definite parallel in the even more pronounced loop of the letter in the tiny papyrus slivers of 4Q324b and occasionally in 4Q319. It further brings to mind the taw in a small parchment fragment from Masada (1063-1747), and in the Nash Papyrus, which is mostly dated to the second half of the second century BCE, and resembles the form of the letter on ossuary inscriptions, which are generally dated to the Herodian period.

The letters are quite large, mostly measuring 4 x 4 mm, with some measuring 5 x 5 mm, e.g. mem in ממערכ (lines 4 and 5). Some are as large as 5 x 7 mm, e.g. he in ממערכ (line 4). However, yin measures only 2 x 2 mm. Recurring letters are on the whole identically executed, with only very slight fluctuations (e.g. he and taw). In the vertically written words in the left margin, letters measure 3 x 3 mm, except for lamed which has a very long top stroke making it 7 mm high. Letters are clearly separated by less than 1 mm and words by a space of 2-5 mm, with the exception of the vertical insertion, in which they flow together.

Orthography

The scribe adhered to defective spelling, as in ממערכ (lines 4 and 5) and ממערכ (in the margin). Therefore, in lines 2 and 3 these partially preserved words are restored here without waw, and defective spelling should be equally employed in the restoration of altogether lost parts of text.

Mus. Inv. 710
PAM 41.774, 42.333, 43.334*
IAA 601848

In the proposed restoration, the words written vertically in the margin are transferred to their proper place after line 5 to form a sixth line.

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Readings

The text of 4Q329a evinces that, unlike mainstream Judaism, the Covenanters considered Passah and the Mazzoth Festival discrete 'holy seasons' (cf. 4Q326 2-3). This

becomes clearly evident in the Temple Scroll, in the visible separation of the statutes pertaining to the Passah Lamb from the prescriptions relating to the Mazzoth Festival by means of a \textit{vacat} (11QT* XVII 6-12). See also 4Q325, COMMENTS to line 1, and 4Q326, COMMENTS to lines 2-3.

L. 6 \textit{ואל лично}. The scribe had evidently misjudged the available space after line 5 at the bottom of the sheet, in which another line could not be accommodated. Therefore he entered the rest of his text vertically in the left margin. For this scribal technique of vertical insertion cf. e.g. 1QIsa* XXVIII–XXXIII. The irregularly added text prompts the conclusion that 4Q329a stems from the last sheet of a scroll or from a one-column sheet.
330. Mishmarot I

(PALATE VIII)


**Physical Description**

4Q330 (olim Mishmarot H) CONSISTS of three small fragments of brownish parchment. The largest fragment, frg. 1, is in fact composed of one large and two small pieces, as proven by a comparison of the later photographs, PAM 42.333 and 43.334, with the earlier PAM 41.703. It measures 4.5 x 4.2 cm and is of a somewhat darker hue than frgs. 2 and 3, which measure 1.7 x 2 cm and 2.5 x 2.2 cm respectively. The remnant of an intercolumnal margin and a single letter opposite lines 1 and 2 evidence that frg. 1 contains remains of two adjacent columns. Minute traces of letter bases above the partially preserved top lines indicate that frgs. 2 and 3 stem from the middle of a written column.

**Contents**

The repeated mention of the 'first of the first month' in frgs. 1 ii 1 and 3 2 (partly extant also in frg. 2 2 and 4), together with the name of a priestly course, Mijamin (frgs. 1 ii 1; 2 3) and Jeshebab (frg. 1 ii 3), suggests that the fragments stem from a schedule of mishmarot that served on the first day of a series of consecutive years. This day also signifies the beginning of the month, שָׁחַר, or ראש חודש, and of the year, יָאָשָׁר תָּמָר, (1QS X 5-6; 11QPs* XXVII 7-8; 4Q328 1). It was evidently considered a festive occasion,trap, singled out by cultic songs and special sacrifices (11QT* XIV 9).

In contrast to the comprehensive festival calendars presented in 4Q320 and 4Q321, some scrolls record only the names of mishmarot that serve on one specific festival throughout the six-year cycle. The seriatim enumeration in 4Q330 of the first day of the first month over a given number of years, together with the names of the priestly courses that are on duty on these days, parallels the service schedule of mishmarot in 4Q328 which culminates in the summary notation כאו ראז. 4Q328 then details the priestly courses that are on duty at the beginning of the annual quarters, viz. on the first day of the first, fourth, seventh, and tenth months, revolving similarly around one specific holy season, like 4Q329 and 4Q329a. The latter document lists the mishmarot that officiate annually on the day of the sacrifice of the Passah lamb, viz. on the fourteenth of the first month.

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Another unique characteristic of 4Q330 is the mention of the seven-year cycle, שבעה זנים, which is not commonly referred to in calendrical scrolls, since it does not conform to the six-year mishmarot schedule (see comments on frg. 1 ii 2). However, in 4Q319 both cycles are recorded. The names of the mishmarot that serve at the beginning of the first seven years (probably the first jubilee) are possibly also detailed in the seven lines of 4Q319 VII. The method of listing resembles that of 4Q330, and may shed some light on the nature of this composition.

The calendrical system on which the document is based cannot be unequivocally identified because of the fragmentary state of 4Q330 and the combination of typical mishmarot terminology with chronometrical vocables. References to seven-year periods and jubilees, along with those of (the beginnings of) months and festivals, are int. al. also present in 4Q286 1 ii 9-10, but without any mention of mishmarot: ... השבעה זנים ... ונטע זנים ... ונטע זנים ... חמש זנים ... ושבעה זنين... In contradistinction, mishmarot rosters invariably encompass the service order of the priestly courses in a six-year cycle.

**Palaeography**

4Q330 was penned by a trained scribe in a late Hasmonaean semi-cursive script which resembles the script of 4Q398 (4QpapMMe). See especially the form of tet in frg. 2 3.² Recurring letters are identically executed and measure uniformly 2.2 x 2 mm. They are clearly separated by a space of 1 mm, except for several instances of ligatures: מ in מימים (twice), הב in הב (frg. 1 ii 1-2), רב in רב (frg. 1 ii 3), הל in הל (frg. 1 ii 3), מ in מ (frg. 2 2). Words are separated by a space of 2 mm. There are no dry rulings, but lines nevertheless run straight, with interlinear spaces regularly measuring 5 mm. The partly extant intercolumnal margin in frg. 1 is 9 mm wide.

Mus. Inv. 710
PAM 41.703, 42.333, 43.334*

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NOTES ON READINGS

L. 2 הָּרֶב. These are possibly the last two letters of the phrase הָּרֶב הְשָׁם, as in frg. 1 ii 3.

Frg. 1 ii

NOTES ON READINGS

L. 1 הָּרֶב. A larger than usual space between אָמַּל and the preceding דַּלַּת was possibly caused by a fault in the parchment.

L. 3 ההאשוןבחודש. That the last letter of the word is הוא and not תַּא (as proposed by Wacholder and Abegg), is proven by a comparison with the final letter of the preceding word תֵא.

L. 3 ההאשוןבחודש. This interlinear insertion is a correction of the erroneous reading הָּרֶב הְשָׁם before which בת was possibly left out.

TRANSLATION

1. Mijamin (serves) on the first (day) of the first month[1]
2. in week six (in) year[2]
3. the second year in the third (th) year Jeshebab on[3]

COMMENTS

L. 1 The course Mijamin is listed in 4Q319 as heading the third year, and Jeshebab the fifth (as in 4Q330 1 ii 3), presumably of the first seven-year period of the first jubilee. These mishmarot names are accordingly reconstructed in 4Q328 and 4Q329.

L. 2 ההאשוןבחודש. This term refers to a seven-year period, like the restored vocable הָּרֶב in frg. 2 3. Therefore, 4Q330 does not conform to the fixed six-year cycle of the mishmarot rosters. A schedule constituted of seven-year units, which reflects the system that prevails in Jubilees where one jubilee equals 7 x 7 years, underlies Qumran documents like the Otot list (4Q319). A similar chronology is also known from the Apocalypse of Weeks (1 Enoch 93) and from 4Q390.

Frg. 2
NOTES ON READINGS

L. 2 קדמם ותנשא. The restoration of קדמם ותנשא is suggested by the same phrase in line 4, frg. 1 ii 1, and frg. 3 ii 2.

L. 3 קדמם ותנשא. The unmistakable traces of a semi-cursive *iet, for which cf. 4Q398, buttress the restoration of the term (see above COMMENTS on frg. 1 ii 2 קדמם ותנשא).

TRANSLATION

1. ] [ ]
2. on the first in the [first] month
4. in the] fir[st] month

Frg. 3

<table>
<thead>
<tr>
<th>[</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>קדמם ותנשא</td>
<td>קדמם ותנשא</td>
</tr>
</tbody>
</table>

TRANSLATION

1. ] [ ]
2. in the] fir[st] month

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3 Cf. Yardeni, 'Paleographic Comparative Chart', *DYD* X, 28 col. 2.
337. 4Q Calendrical Document E?

(PLATE VIII)


THE recurrence of bases makes it probable that 4Q337 stems from a calendrical composition. However, the scanty text remains do not allow for further conclusions.

**Physical Description**

The wrinkled, brown fragment is comprised of two pieces of unequal size which together measure 4.2 x 5.3 cm. The combined fragment contains the remains of four lines of a very narrow column, apparently with only one word per line. The column is framed at the right by a partly preserved 2.1 cm-wide margin. The blank at its left, which in lines 2-3 is c.8 mm wide, is a remnant of either the left margin or of an exceptionally wide inter-word space. In line 2, the word bases is fully extant and in lines 1 and 4 it can be restored with confidence on the basis of the preserved first letters.

**Palaeography**

The script is semi-cursive. Reš in line 1, the looped left perpendicular of taw and the truncated sin in line 2, suggest the dating of the text to the late Hasmonaean period.1 Letters measure 3 x 3 mm, with the exception of the appreciably smaller reš in line 3 and waw in line 4; they are separated by a space of c.1 mm. Interlinear spaces measure 1–1.2 cm. The identical execution of recurring letters and the uniform layout evince the hand of a trained scribe.

Mus. Inv. 710
PAM 41.774, 42.335, 43.334*

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Translation
1. on (the) Sabbath
2. on (the) Sabbath
3. (the) last [ ]
4. and on (the) Sabbath

Comments
L. 1-4 The triple occurrence of "בשהת" makes it probable that 4Q337 contained a roster of the Sabbaths throughout the year, with or without the mention of the mishmarot on service. A similar catalogue of Sabbaths is presumably preserved in 4Q324b, and is also known from other ancient sources.²

L. 3 "[--]. The word is usually spelled "plene" (cf. e.g. 1QS IV 17; 1QpHab VII 2, 7, 12; VIII 32). For the defective spelling "[--]" in a Hebrew text, cf. 4Q273 1 1; in Aramaic, "---" (5Q15 1 ii 7), and especially "[" (4Q209 25 3).

THE item under review was at first correctly registered as a separate document (4Q327), presumably by J. T. Milik. However, it was also incorrectly identified as Mish E and thereby associated with the category of mishmarot texts, although it never refers to the cycle of the priestly courses. Qimron-Strugnell designated the item 4Q394 1–2 and placed it before the tail piece of a calendrical roster preserved at the top of 4Q394 3–7 i, evidently presenting it as part of 4QMMT. This arrangement does not stand up to scrutiny, as Strugnell later pointed out in a detailed summary of factors which undermine this proposition.

Physical Description

Three dark brown parchment fragments, greying at the edges, were identified as belonging to 4Q394 1–2 (PAM 41.703 and 42.335). Two fragments could be conjoined on the strength of their dovetailing edges and considerations of content (PAM 43.339 and 43.521) to form the composite frg. 1. For similar reasons frg. 2 can be adjoined to the left of frg. 1.

Frg. 1 measures 10.2 x 5.2 cm and contains parts of three columns (cols. i–iii) separated by 9 mm-wide margins. The margin between cols. i and ii is 0.8–1.5 cm wide; between cols. ii and iii, 1.6–2 cm; and between cols. iii and iv, 1.7–2.3 cm.

Frg. 2 measures 5.7 x 4.6 cm and contains parts of cols. iv and v, with an intercolumnar margin of 1–1.8 cm. To the left of col. v there remains a 5–8 mm fraction of the margin between this column and the lost next one.

The preserved lines of text stem from the upper halves of the columns. All lower halves are missing. Col. iii holds the largest remains of text, ten lines, plus a tiny particle of a letter top from an eleventh line. Col. v preserves eight mostly complete lines, and above the uppermost line faint remnants of another line. In col. ii, seven practically intact lines are extant, and in col. i, four. Although the original number of lines in a column cannot be established with certainty because of the lost bottom parts

1 This practice is followed by most translators. See int. al. F. García Martínez, The Dead Sea Scrolls Translated (Leiden: E. J. Brill; Grand Rapids: Eerdmans, 1994) 455; J. Maier, Die Qumran Essener: Die Texte zum Toten Meer, Band II (Munich and Basel: Reinhardt, 1995) 300–301.

2 E. Qimron and J. Strugnell, DJD X, 6–9, 44–5.

3 Ibid., 'Appendix 3: Additional Observations on 4QMMT', 203.

4 Wacholder-Abegg, A Preliminary Edition, 89–90, wrongly placed this fragment before the composite frg. 1.
Contents

4Q394 1–2 is discussed here as a component of a self-contained roster in which were sequentially registered the fifty-two Sabbaths in the 364-day solar year; the Covenanters' special holy seasons, as proven by the mention of the 'Feast of the (New) Oil' and the '(Feast of the) Wood Sacrifice' (col. v 5–9); summary statements pertaining to the four subdivisions of the year, the תָּקְסֵף (cf. 1 En. 82:10–20), with the first summary partly preserved (col. ii 6–8). Biblical festivals are not listed, but considerations of content and space and a comparison with 4Q326 give cause to conclude that they were initially recorded in the document. The conjunction of the consecutive enumeration of the Sabbaths, which constitutes the core of the calendrical schema, interspersed with mentions of the מְסֹדָם, appears to reflect their order in Leviticus 23 in reverse. In that pericope, a Sabbath statute (Lev 23:3) is included in a detailed schedule of festival laws (23:1–2, 4–44) which opens and closes with the formula 'these are the appointed seasons of the Lord' (vv. 2, 4, cf. vv. 37 and 44). The annual festivals, מְסֹדָם, are recurrently defined 'sacred assemblies', מְסֹדָם ('23:2, 4, 44). The same designation is applied to the Sabbath (23:3). Viewed against this background, the Covenanters' fully reconstituted calendrical schedule (partly reflected in 4Q326, 4Q394 1–2, 4Q394 3–7 i 1–3, and 4Q324d–h) reads like an elaborately paraphrased version of Lev 23:3. The original biblical summary reference to the Sabbath is developed in 4Q394 1–2 into a systematic enumeration of all Sabbaths in a year, similar to the inventory of the annual festivals in the biblical source.

This supposition lends support to the conjectural restoration of minimal remains of four lines of text preserved on the tiny fragment 4Q325 3, which presumably concludes a preceding catalogue of Sabbaths and festivals in reference to the service cycle of the priestly watches (frgs. 1–3). It appears to have been worded like the resumptive opening statement of the biblical 'calendar of holy seasons': [the] קֹדֶשׁ קָרָאִים. . . רָוָי וְתַרְדֵּא פּוֹדֶה . . . (Lev 23:4; cf. v 2).

It is of interest to note that the biblical summary of the priestly calendar of festivals, מְסֹדָם (Lev 23:44), is followed in 4Q365 23 3' by a partly preserved description of the 'Wood Offering' ceremonies, after the mention of the 'Festival of the (New) Oil', מְסֹדָם (line 9).

In the type of almanac exemplified by the fragments of this document, the calendrical torso at the top of 4QMMT A, 4Q326, and the cryptic fragments 4Q324d–

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5 As also maintained by F. García Martinez, 'Dos notas sobre 4QMMT', RevQ 16 (1993) 293–5. However, I disagree with his tentative ascription of 4Q327 and the top lines of 4Q394 3–7 to different types of calendrical works. The ascription of 4Q394 1–2 to 4QMMT was also rejected by J. C. VanderKam, 'The Calendar, 4Q327 and 4Q394', Legal Texts and Legal Issues etc. Published in Honor of J. M. Baumgarten, ed. by M. Bernstein, F. García Martinez, and J. Kampen (Leiden: E. J. Brill, 1997) 179–94.


h, the monthly dates of the Sabbaths and the days of the week on which the festivals fall, are fixed forever. Therefore, this calendrical schedule is immutably applicable in any given year, differing fundamentally from mishmarot rosters. The weekly rotation of the traditional 24 priestly watches (1 Chr 24:7-18) that officiate in the Temple in two semi-annual circuits of 26 weeks requires that four units necessarily have additional tours of duty: three for another full week, and one for two half-week sessions, at the beginning and at the end of the year. This brings about a staggered service arrangement in which different mishmarot will officiate on varying Sabbaths and festivals in successive years, as illustrated by ⁴Q320, ⁴Q321, ⁴Q321a, and ⁴Q325. Only at the completion of a six-year cycle is an adjustment achieved, and the service schedule of the watches will exactly repeat itself in the next cycle, beginning with the same unit that opened the preceding one.

The fragments of the list under review here contain the partly preserved catalogues of holidays in the first two annual quarters, from the second to the sixth month. The systematic account makes it possible to fill in substantial lacunae with the help of calendrical particulars culled from fragments of similar registers, such as ⁴Q394 3-7 i 1-3 and ⁴Q325, from mishmarot rosters like ⁴Q324 and ⁴Q325, and from references to Sabbaths and festivals in works which are not of a specifically calendrical character, such as 1QpHab, 1QS, CD, 11QT², and 11QPs³. In the schedule of the second half-year, only in the seventh month would festivals be recorded next to Sabbaths: the 'Day of Remembrance', תחאתון, on the first of the month; the 'Day of Atonement', תחאתון, on the tenth; and the 'Feast of Booths', ביבס, on the fifteenth. In the account of the last five months of the year, only Sabbaths need to be listed, since no festivals fall in them.

**Palaeography**

The irregular lettering and the uneven spacing of lines, possibly executed by an unskilled scribe, show the script to be of the 'early Herodian semiformal' or 'rustic' category. Letters in the lower lines of cols. ii and iii are smaller than those in the upper ones, and are appreciably larger in cols. i and v. Equally, in contrast to the crowded writing in the lower parts of cols. ii, iii and iv, in which lines are spaced by at most 1 mm, in cols. i and v letters and words are clearly separated, and the interlinear space amounts to c.2 mm. Some letters measure almost 4 x 4 mm, e.g. mem in §ת bir (col. v 5); final mem in §ת bir (col. i 6), ב veh in §ת bir (col. v 3), and §ת bir (col. v 6); sin, bet, and tav in §ת bir (col. ii 2, v 2); others measure only c.2 x 2 mm, e.g. ינ, ינ, ינ, ינ in §ת bir (col. ii 6), ינ and tav in §ת bir (col. v 7). Especially noticeable is the small יינ in §ת bir (col. ii 6), יינ (col. iii 2), יינ (col. iii 5), and יינ (col. iii 6). Whereas in the execution of יינ in §ת bir (cols. ii 6, v 7) the right stroke joins the diagonal in the middle, in יינ (col. iv 6) it connects with the diagonal at the very bottom. The looped lower part of lamed in §ת bir (col. i 4) differs perceptibly from its triangular shape in §ת bir (col. ii 6).

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8 See Introduction, Appendix 3.
9 Qimron and Strugnell (⁴DJD X, 3-6) provide a detailed letter-by-letter analysis of the script, in which ⁴Q394 1-2 and 3-7 i are discussed as parts of one document.
The apparent similarity of the scripts of 4QMMT A and 4Q394 1–2, pointed out by Qimron-Strugnell, possibly suggests that both manuscripts were penned by the same scribe, who used a copy of the ‘annual roster of holy seasons’ written by him, for subsequently transcribing the text into an exemplar of Migpat Ma‘ase Ha-Torah, which he produced. However, a discernible difference in the execution of several letters cannot be overlooked. In 4Q394 1–2, the diagonal of šin consistently ends in a pronounced spike at its foot. This prominent feature can also be observed in several exemplars of the letter in 4Q394 3–7 i, e.g. in כהנ (line 1), מך (line 2), and מך (line 15), but is lacking in many others, e.g. in כהנ (line 9), מך (line 10), מך (line 14), and מך (line 19). In contrast to the relative smallness of ‘ayin in 4Q394 1–2, in 4QMMT A the size of ‘ayin equals that of other letters, e.g. in כהנ (line 5), מך (line 11), and מך (line 16). Moreover, the characteristic inward curvature of the top strokes of ‘ayin in 4QMMT A has no equal in their completely straight form in all exemplars of this letter in this document.

Furthermore, whereas 4Q394 3–7 has horizontal and vertical dry lines to guide the scribe, no such rulings can be discerned on 4Q394 1–2 (PAM 43.521). More significantly, in comparison with 4QMMT A, as well as with other Qumran manuscripts, the columns of 4Q394 1–2 are unusually narrow. The written lines hold only one to three words, i.e. four (col. ii 7) to eight letters plus no more than two inter-word spaces (col. iii 5), viz. a maximum of ten spaces. The lines are at most 2 cm long. By contrast, the number of words per (reconstructed) line in the calendrical torso at the top of 4Q394 3–7 i, as in 4QMMT A as a whole, amounts to between eight and eleven. The number of letters and word-dividing spaces comes to between thirty-five (lines 10, 19) and forty-nine (line 17). Fully preserved or fully restorable lines attain a length of up to 11 cm, and are consistently separated by a space of 4–5 mm. The conspicuous difference in line length between 4Q394 1–2 and 4Q394 3–7, 2 cm as against 11 cm undermines the Qimron-Strugnell hypothesis that the two items are consecutive parts of 4QMMT, and strongly suggests that they are fragments of different manuscripts.

In the Qimron-Strugnell reconstruction of 4Q394 1–2, the written columns contain a varying number of lines, and as a result are of different heights: col. i has eighteen lines, cols. ii and iv, seventeen, and col. iii, fifteen, as against nineteen to twenty lines in 4QMMT A. It is exceedingly unlikely that in this or in any other Qumran manuscript the number of lines per column would vary to such a marked degree. In contradistinction, in the partial reconstruction proposed here, each column holds

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10 This supposition gains support from information provided orally by H. Stegemann that the fragments of 4Q394 1–2 were found rolled up in the several fragmentary copies of 4QMMT.

11 A fluctuation in the length of lines between columns of a manuscript, albeit much less acute, can be observed in E. Eshel, H. Eshel, A. Yardeni, 4Q4 Apocryphal Psalm and Prayer', DJD XI, 403–25.


13 See DJD X, 7, 44.

14 Qimron-Strugnell did not attempt to reconstitute the lost text in the lower part of the column. Therefore, the number of lines in col. v, in which the upper eight lines are preserved, cannot be ascertained.
sixteen lines. These data buttress the claim made at the outset that the three fragments of 4Q394 1–2 survived from an independent calendrical document which should not be combined with 4QMMMT.

Orthography

The text preserved in 4Q394 1–2 does not exhibit the plene and super-plene spellings which characterize other Qumran manuscripts:

The term for sacrifice is spelled defectively: קרבנ‎ו (col. v 9), whereas in 11QPa* XX VII 7 it is twice spelled plene קרבנן, and equally so in 11QTa* XX 13.

Like in 4Q325, the pronoun י is always spelled without הlep. never יב, as it is consistently in other calendrical documents, e.g. in 4Q321 and 4Q321a. In 4Q326 the two spellings are used alternatively: line 4 יב, line 5 יב.

The single occurrence of יבָּרִים without יod indicating י (col. iv 5) as against יבָּרִים in all other instances (cols. i 3; ii 3; iii 6; v 3) probably resulted from a scribal mistake. Similarly, the scribe wrote יבָּרִים יבָּרִים יבָּרִים (col. iv 3) instead of יבָּרִים יבָּרִים יבָּרִים (cf. col. iii 4–5 יבָּרִים יבָּרִים יבָּרִים), and יבָּרִים יבָּרִים יבָּרִים (col. iv 6) against the prevailing spellings יבָּרִים (col. i 4), יבָּרִים יבָּרִים יבָּרִים (col. ii 4), יבָּרִים יבָּרִים יבָּרִים (col. iii 4), and יבָּרִים יבָּרִים יבָּרִים (col. iii 7). The concatenation in three lines (col. iv 3–6) of what are presumably lapsus calami appears to suggest that at this juncture the scribe erred or became inattentive, rather than that the inconsistent spellings give witness to his non-historical orthography, as suggested by Qimron–Strugnell.

Mus. Inv. 693
PAM 40.618, 40.780, 41.208, 41.703, 41.760, 42.335, 43.190, 43.339*, 43.450, 43.472, 43.492, 43.521

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15 This would pertain to all thirteen columns which the original document presumably contained, unless another calendrical register or an introduction preceding the present roster required additional writing space.

16 Such scribal mistakes abound in mediaeval biblical codices, and in manuscripts from Masada and Qumran, as e.g. in 11QPa* XX VII 6 יבָּרִים יבָּרִים יבָּרִים, but line 8 יבָּרִים יבָּרִים יבָּרִים; and line 9 יבָּרִים יבָּרִים יבָּרִים. For an illustration of orthographic 'fluidity' in Qumran manuscripts, see inter alia E. Ulrich, 'Orthography and Text in 4QDan' and 4QDan* and in the Received Masoretic Text', Of Scribes and Scrolls: Studies in the Hebrew Bible, Intertestamental Judaism and Christian Origins, Presented to J. Strugnell on the Occasion of his 60th Birthday, ed. by H. W. Attridge et al. (Lanham, Md.: University Press of America, 1990) 29–42.

17 DJD X, 6.
Frgs. 1-2

<table>
<thead>
<tr>
<th>Col. v</th>
<th>Col. iv</th>
<th>Col. iii</th>
<th>Col. ii</th>
<th>Col. i</th>
</tr>
</thead>
<tbody>
<tr>
<td>ד[כ]ה</td>
<td>יבשת</td>
<td>ב[כ]ש</td>
<td>י[כ]א</td>
<td>ב[כ]ע</td>
</tr>
</tbody>
</table>

NOTES ON READINGS

Col. ii

L. 1 [ד[כ]ה]. Tiny traces of the downstrokes of 'aleph and bet can be discerned in the otherwise lost top line, leading to the restitution of [ד[כ]ה].

L. 4 [כשת]. It cannot be decided whether mem in [כשת], like in [כשת] (col. iii 4) and [כשת] (col. iii 7), approximates the (incomplete) medial form of the letter in [כשת] (col. v 5) or comes closer to its final form in a medial position, as in [כשת] (col. v 6) and the broken mem in [כשת] (col. iii 10).

Col. iii

L. 1 [ק[כ]ן]. The first preserved letter in the line is evidently bet, possibly preceded by a trace of another letter, presumably the bottom spike of sin (see below, comments ad [כו. ל. iii 5]). However, the reading [כשת] should also be weighed.

L. 11 [ל[כ]ן]. Before the tiny speck in the line, most probably a particle of the top of bet (certainly not mem), there is room for one more letter, suggesting the restitution of the word [כשת].
Col. iv

L. 3-6 אברר ישכּו זכרון...LETTE. This reading may be considered certain. For the unusual spelling, see ORTHOGRAPHY.

TRANSLATION

i. [on the sixteenth in it (the second month) Sabbath], on the twenty-third in it Sabbath, on the thir[tie]th [in it Sabbath. On the seventh in the third (month) Sabbath, on the fourteenth in it Sabbath, on the fifteenth in it the Festival of Weeks, on the twenty-

ii. first in it Sabbath, [on] the twenty-eighth in [it] Sabbath. On to it (add) the day after the Sabbath (i.e. Sunday), and the second day (of the week), and an additional (epagomenal) day, and the season (i.e. the first quarter of the year) is complete, ninety-one days. (on the fourth in the fourth month]

iii. [Sabbath], on the eleventh in it Sabbath, on the eighteenth in it Sabbath, on the twenty-fifth in it Sabbath. On the second in the fifth (month) Sabbath, on the third in it the Festival of the (New) Wine (on the day) after Sabbath],

iv. [on the ninth in it Sabbath, on the] sixteenth in it Sabbath, on the twenty-third in it Sabbath, [on the th]irteenth [in it Sabbath. On the seventh in the sixth (month) Sabbath, on the fourteenth in it Sabbath, on the twenty-

v. first in it Sabbath, on the twenty-second in it the Festival of the (New) Oil, (on the day) af[ter the S]abbath, after the Wood] Offering, on the twenty-eighth in it Sabbath.]

COMMENTS

Col. i

L. 5 [4Q320 4 ii 5, iv 1; v 4-13; vi 9; 4Q321 V 1. 5; VI 1; 4Q324d [crypt A Liturgical Calendar*] col. I [frg. 1] 3-4: Wed. Monday, etc.] and that which could be read, as in 11QT* XIX 9. The perpetually fixed celebration of this festival on Sunday the fifteenth of the third month can be deduced from mishmarot rosters in which it is always dated to the first day of service of a priestly watch (4Q320 ibid.). The date 'fifteenth of the third month' is explicitly indicated in Jub. 15:1; 16:13; 44:1-5 (see also 11QT* XIX 13; XXI 13).

Col. ii

L. 6 וְזָעַ֣ע. This technical term signifies 'onto it (add)'. Here it refers back to Sabbath the twenty-eighth of the third month, to which Sunday, Monday, and the epagomenal day, (viz. Tuesday), are to be added, so that the third month numbers thirty-one days, and the (first) quarter altogether ninety-one days (see col. ii 9).

L. 6-7 In the Covenanters' calendrical terminology, יִשָּׁמֵּ֥שׁ הנַּשָּׁמֶ֣ה יִשָּׁמֶ֥ה is the standard designation of the day after Saturday (viz. Sunday), as in 4Q325 V 3: שִׁמְשַׁרְשְׁרֵי בֵּית וּמְטַשֵּׁה יִשָּׁמֶ֥ה. ibid. lines 6-7

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18 4Q320 i 3, 5 reads תָּכָא, restored in line 4, פָּחַב
19 Text (not final) quoted courtesy of S. Pfann.
20 Qimron and Strugnell translate the term 'after it' (i.e. the Sabbath) (DJD X, 45), and suggest in an explanatory comment that 'it is unlikely that they can... refer at least in MMT to the specific month', and that יִשָּׁמֶּה may also be taken as a substitute for 'וְזָעַע (DJD X, 44). However, a reference to the third month mentioned in col. i 10 (or col. i 9), viz. after an interval of twelve lines, seems unlikely.
The dates of the Sabbaths from the twenty-third of the fifth to the twenty-eighth of the sixth month are partly recorded in 4Q324 I 1-4, albeit without the mention of the Festival of the (First) Oil and the restored reference to the Wood Offerings, as in this document (col. v 3-9).

21 S. Pfann reconstructs a different formula, based on his decipherment of 4Q324d.
22 In the fifth year of the six-year cycle.
Col. v

23 According to m. Tabbn. 4:5 the wood was brought to the Temple on nine days during the year, with special importance attaching to the 15th of Ab, the fifth month (according to Josephus, J.JII. 2:429–30 the 14th of Ab). In Jub. 21:12–13, the kinds of woods which are suitable for the purpose are enumerated.

The ‘Wood Offering’ ceremonies lasted from the twenty-third to the twenty-ninth of the sixth month, probably with the exclusion of Sabbath the twenty-eighth. 25 As a result, the last day would fall in the twenty-ninth, viz. on a Sunday. 26 This invites the supposition that like the harvest festivals of wine and oil, which always fall on the twenty-fifth in the month of Elul (cf. the grain festival, לְאָשֶׁן הַכָּלָל), also the closing day of the Wood Offerings was marked by special celebrations and was designated שֶׁבֶרֶת עָשָׁן. The proposition is buttressed by Josephus’ statement that ‘the eighth (nota bene, not ‘sixth’) day was the feast of wood-carrying’ זְרֵעַ ξυλοφόρίας κορτῆς (J.W. 2.425). It derives further support from the statement in 11QPs* XXVII 7–8 that David wrote thirty songs, שֶׁבֶרֶת, in addition to 3,500 verses mentioned before, (as accompaniments) 'for the sacrifices of the beginnings of the months and for all holy seasons and for the Day of Atonement', הלִיךְ, viz., in addition to Psalms, מַעַרְשׁוּ הַנַּחַל, and are termed עַנְשָׁנָה בּוֹ שֶׁבֶרֶת, which always fall, וַיָּקָם אוֹתוֹ לְשֵׁן הַשָּׁבָת וַיְהִי. The sum total of ‘thirty’ can be squared if one adds to the biblical and the Covenanters’ special festivals of the ‘New Wine’ and the ‘New Oil’, two more ‘holy seasons’, מַעַרְשׁוּ הַנַּחַל, and שֶׁבֶרֶת, and the twenty-second celebration, מַעַרְשׁוּ הַנַּחַל, (for which see the discussion of 4Q326). Accordingly, the phrase מַעַרְשׁוּ הַנַּחַל needs to be inserted in the reconstructed text of 4Q394 1–2 after מַעַרְשׁוּ הַנַּחַל (col. v 11–13), followed by a slightly revised wording of the ensuing summary formula, מַעַרְשׁוּ הַנַּחַל עַל שֶׁבֶרֶת וַיְהִי. 27

25 For a similar exclusion of the Sabbath from the seven days of consecration of the Tabernacle (Leviticus 8) according to Karaite halakha, see inter alia Y. Erder, ‘The First Date in Megillath Ta’anit in Light of the Karaite Commentary on the Tabernacle Dedication’, JQR LXXXII, 3–4 (1992) 263–83.
26 See Yadin, Temple Scroll, I, 123.
27 Cf. 11QMelch 11 v 9–10, a manifest reference to Ps 110:4.
334. 4QOrdo

(PLATE IX)


**Physical Description**

This composition is comprised of nine small fragments. The leather, which has a slightly yellow colour, is very thin and nearly transparent. In some places its surface, together with remains of ink, has split off (mostly in frg. 8). No direct traces of a seam are preserved on the fragments, nor any horizontal or vertical rulings. None of the fragments has a surface area greater than 20 sq cm. The extant text on two of the largest fragments preserves the remains of five lines. The maximum number of preserved contiguous words is three, which occurs twice.

On Mus. Inv. 710 the remains of 4Q334 are grouped together with other manuscripts: in the upper half (4Q329; 4Q330; 4Q329a) and in the right bottom the fragment 4Q337. Most of the fragments appear in a similar arrangement in the latest photograph of the text in the PAM series, PAM 43.334. In the lower half of the photograph, however, nine fragments of 4Q334 are shown, while on the corresponding museum plate (IAA 601848) one of these nine fragments is missing (frg. 9 on the left bottom). Another tiny fragment, now numbered as frg. 9, is found in its place.

The numbering of the fragments used in the concordance is based on a reconstruction already visible on PAM 43.334, which groups frgs. 2, 3, and 4 together and counts them as frg. 2. This grouping is also presupposed in the *Preliminary Edition* by Wacholder and Abegg. The arrangement probably resulted from the discovery of a new portion containing the upper margin and additional parts of frg. 2 line 1, which was not present on PAM 42.333. This suggested that the three frgs. 2, 3, and 4, which share a well-preserved upper margin of 10 mm, may belong to the same column. Although this reconstruction is possible, it is far from certain that the fragments should necessarily be arranged in that sequence. The placement of the fragments according to shape as well as content allows for an alternative reconstruction. In the absence of a conclusive reconstruction, both alternatives are presented here.

**Columns and Measurements**

Since no full line of text is preserved in this manuscript, all calculations of column measurement are hypothetical. Nevertheless, the regular structure of 4Q334 allows the line width to be estimated. The length of 95 mm is suggested for both options A and
B. Ambiguity is created by the numbers $x^1$, $x^2$ for 'songs' and $y^1$, $y^2$ for 'words of praises', for which no clear system of the chosen quantities can be discerned (see below). The distance between the lines is about 6 mm, while the letter height is normally 2 mm but sometimes 3 mm.

Due to the lack of fragments in which the bottom margin is clearly preserved (perhaps in frg. 7), and because both reconstructing options A and B place the textual remains in the five upper lines only, the column height is also based on estimated values. If the size of the bottom margin corresponds with that of the top one, it would be 10 mm high. On this basis, the total height for option A can be calculated as follows: 13 or 14 lines each of 6 mm (= 78–84 mm) plus two margins each of 10 mm (= 20), totals approximately 100 mm. For option B: 8 or 9 lines each of 6 mm (= 48–54 mm) plus two margins each of 10 mm (= 20), totals approximately 70 mm. 4Q334 is therefore one of the very small manuscripts among the Qumran scrolls, which Milik examined in connection with 4QprEsth and termed 'éditions de poche de l'antiquité' (RevQ 15 [1991] 365).

Contents

The outer shapes play the most important role in the reconstruction of the scroll, but an additional factor, the formulaic structure, must also be considered. Even though the text is preserved in consecutive units to a very limited degree, it seems clear that the content consists of a list of repeated elements. It deals with numbers of 'songs' (סְמוֹנָה) and 'words of praises' (בֵּיעַר), which are given for each day in a sequential listing.

Days are marked by a day-count. Dates from the eighth to the sixteenth day have been preserved. Their basis is probably a month, to which reference is made by the preposition 'in it' (ב).

This method is also employed in 4QCalendrical Document/Mishmarot D (4Q325) and 4QCalendrical Document C (4Q326) as well as in part A of 4QMMMT (4Q394). In these texts, 'in it' refers to schematic months in 364-day years. Whether this is also the case in 4Q334, or whether the counting is in lunar months (as suggested by some scholars for the 'Daily Prayers' in 4Q503), is not certain.

Information regarding the liturgical performance in a unit of one night and one day (‘day-unit’) is formulated in three parts: (i) on (ordinal) $x$ in it [the month]; (ii) in the night: songs (ordinal) $x^1$ and words of praises (ordinal) $y^1$; (iii) and in the day: songs (ordinal) $x^2$ and words of praises (ordinal) $y^2$.

Though no fragment contains a complete 'day-unit', this structure emerges as probable from those larger fragments (frgs. 3, 4, and 7) which comprise more than two lines of legible text. This structure fits with both possible reconstructions, which will be discussed below as options A and B. The possible meaning of the numbers and their distribution over nights and days, as well as the keywords 'songs' and 'words of praises', will be interpreted in the context of available materials from other manuscripts.
Palaeography

The script of 4Q334 is not very regular and the letter forms vary. Only fourteen characters as well as final mem are extant. The letters gimel, zayin, tet, kap, samek, pe, sade, and qop, which would assist in identifying the stage of development of the script, are not preserved. Nevertheless, the script is closest to that of fig. 2 in Cross, 'The Development of Jewish Scripts',¹ showing 'the evolution of the formal hand in the Hasmonaean and Herodian periods'. Most of its similarities may be found in example 4, the script of 1QM in 'an early Herodian formal script (c.30–1 BC)', and example 5, the script of 4QNum in 'an early Herodian Round semiformal hand (c.30 BC–AD 20)'. He, zayin, and sin, several examples of which are extant, in some instances tend towards rounded shapes. Because few complete letters are preserved within the small fragments of 4Q334, and due to indications of a transition to semi-formal writing, on palaeographic criteria the date can be estimated only within the broad band of 30 BCE to 20 CE.

Mus. Inv. 710
PAM 40.962, 41.702, 42.333, 43.334
IAA 601848

Frq. 1

\[^\text{top margin}\]

\[\text{He ב בָּלָיָה} \]

\[\text{רָבָּיָה יִשְׂרָאֵל} \]

NOTES ON READINGS

L. 1 The remnants of an ordinal are visible. It is clearly he, though some of the ink has split off from its horizontal stroke.

L. 2 [יִהְיָה יִשְׂרָאֵל]. The waw is preserved only in its upper section.

TRANSLATION

1. [ ] in it, in the night
2. [and w]ords of praise[s]

Frg. 2

\textit{top margin}

\begin{tabular}{ll}
1 & [תַּחַתָּ יָהָה] \\
2 & [תַּחַתָּ יַרְבּוּ הָ שָׁמָּה] \\
\end{tabular}

\textbf{Notes on Readings}

L. 2 \(אָבָן\). \textit{Ref} is probable because of the characteristic upper bar. The top of the following letter may belong to \textit{waw} rather than \textit{yod}. Therefore the reconstructions in the concordance and the \textit{Preliminary Edition} should be used with care. A possible alternative reading may be \(אָבָן\).

\textbf{Translation}

1. [so]ngs [ ]
2. [and wor]ds of [praises] or: [so]ng[a]

Frg. 3

\textit{top margin}

\begin{tabular}{ll}
1 & [תַּחַתָּ יָהָה] \\
2 & [תַּחַתָּ יַרְבּוּ הָ שָׁמָּה] \\
3 & [מַעְרַכֶם] \\
4 & [בָּשָׂרֵו] \\
5 & [תַּחַתָּ יַרְבּוּ הָ שָׁמָּה] \\
\end{tabular}

\textbf{Notes on Readings}

L. 1 \(אֲבָנָא\). \textit{Waw} is written touching the remains of the preceding \textit{mem}.

L. 1 \(אַבָּן\). Only the upper parts of the letters \(יָהָ\) are preserved, plus a very small ink dot from the \textit{yod} to the left of the gap.

L. 3 \(חֲרָפָה\). The first letter is mainly reconstructed and only very little of the left part of the \textit{yod} is preserved at the right downstream of the following final \textit{mem}.

L. 4 \(יָסָּה\). In the \textit{Preliminary Edition}, \textit{waw} is read at the right hand of the preserved text, which is recorded in the concordance. However, the photograph shows that this impression is produced by a hole and its shadow.

L. 5 Three little strokes from one or two letters are visible preceding the extant text. If they belong to one letter, it may be a \textit{sin}, as the direction of the middle stroke goes down to the left. But the top of the left stroke has too much ink and does not look like a normal \textit{sin}. (But cf. the \textit{sin} in fig. 1 2).
TRANSLATION
1. [e]ight and [w]ords of prai[ses]
2. [ ]ixteen[n]
3. [ t]wo and for[ty]
4. [ ] On (day) ten in [it]
5. [ ] and wo[rd]s of pra[ises]

Frg. 4

top margin

[ ] וא腳ב[ית] 1
[ ] על ב[כילה] 2
[ ] וּכְלָו[ ] שִׁנָּה 3
[ ] בִּלְיַל[ה שִׁרְתָּה] סְמֵנה 4
[ ] דַּבְּרֵי [מַעֲשָׂ[ה] עֶ[מרֶ[ן]] 5

NOTES ON READINGS
This fragment contains the left margin of a column, but no traces of a vertical ruling are visible.
L. 4 בָּרַב[ ] . Though the surface is damaged the letters are legible due to the high upper part of lamed.
L. 5 בַּלְיַל. Only a very small dot from the right stroke of rei is preserved; following the gap is a remnant of ink, which may be interpreted as belonging to final mem as it is the last word in the line.

TRANSLATION
1. [ ] and forty
2. [ ] in it, in the night:
3. [ ] and in the d[ay]: songs
4. [ ] in the night: songs eight
5. [ ] and words of p[raises twenty]

Frg. 5

[ ] שֶׁשֶׁ אָכְל[ ] 1
[ ] הַאֲשֶׁר הוּ[ ] 2
NOTES ON READINGS

L. 1 לול. The rel is clearly discernible, due to the rounded combination of its horizontal and vertical parts. Only the lower left edge of the letter to its right is visible. It is a little higher than the baseline of the other letters. This corresponds to the mode of writing ʿin visible in frg. 3 4. Using ʿayin in frg. 3 4 as a model, here in frg. 5 1 the left lower part of the 'ayin would be expected in exactly the position where an extremely small remnant of ink is visible. Therefore the reconstruction of the concordance seems to be justified, against the suggestion in the Preliminary Edition to readשנה. 1

L. 2 כל. The first letter in the line cannot be discerned, because only its upper left part, which may belong to a ʿin, is preserved.

L. 2 שול. Only a segment from the right stroke of rel is preserved. On the basis of the prefixed ʿayin, the word is reconstructed as 'twenty'.

TRANSLATION

1. [On the day] six[teen]
2. [and in the day: so[ngs] 1

Frg. 6

NOTES ON READINGS

L. 1 The characteristic, long lower vertical stroke from the first letter bet is preserved only with its left edge leading below the following letter ʿin, which has lost some of its surface. At the end of the line, the upper right part of 'ayin is preserved.

L. 2 The reconstruction of the last letter in the line as ʿin is due mainly to the pattern of the text. Only two very small remnants of ink are visible at the upper part of the reconstructed letter, which may also belong to 'ayin.

TRANSLATION

1. [On the (day) sixte[en in it ]
2. [and in the day: so[ngs ]

Frg. 7

1

םי 1

ןר 2
NOTES ON READINGS
This fragment preserves the left margin of a column, but no traces of a vertical ruling are visible. The preserved uninscribed leather to the left of the column might be an intercolumnar space of 20 mm, the end of a written column, or an area of vacats. Only the lower part of an illegible letter can be seen.

L. 3 ויבר. Due to the text's formulaic structure, the reconstruction of ṭaww is possible. Only the upper part is visible, and based on its shape it could also belong to yod.

L. 5 החר. The upper part of the last letter is preserved, and has the characteristic, rounded right edge of reli or ṭaww. The latter seems to be more probable since very small ink traces of its left shaft are visible.

TRANSLATION
1. ]
2. [ ten in it
3. [ and on the day: songs
4. [ in it
5. [ song]s

Frg. 8 i–ii

<table>
<thead>
<tr>
<th>Col. ii</th>
<th>Col. i</th>
</tr>
</thead>
<tbody>
<tr>
<td>גי</td>
<td></td>
</tr>
<tr>
<td>ג</td>
<td></td>
</tr>
<tr>
<td>גב</td>
<td></td>
</tr>
<tr>
<td>ג</td>
<td></td>
</tr>
</tbody>
</table>

NOTES ON READINGS
Frg. 8 is the only fragment preserving the remains of two columns and the margin between them. However, parts of the surface of the fragment have split off, and the few preserved letters make it difficult to determine even the original horizontal orientation of lines. On the museum plate and also in PAM 43.334 it has been turned approximately 10 degrees to the right.
Col. i

L. 3 [ם] 1. Only the lower left part of mem is visible.
L. 4 [ר] נ. The reconstruction is made hypothetically on the basis of the letter taw in the final position, but this occurs in הָיְתָן as well.

Col. ii

L. 2 נ. Following sin, traces of the next letter's lower section, and perhaps even of a third letter, are visible. A round curve is preserved, which could fit the lower part of a lamed, but it seems to be relatively low in the line when compared to the preceding letter and to lameds in frg. 4 2. 4. Nun is unlikely owing to a bow to the left on its upper part. This and the low position in the line could correspond to a mem, but one would expect the lower stroke to be drawn more to the left.
L. 3 Due to the poor condition of the leather's surface, the remains of the first letter in this line are obscured.

TRANSLATION
Col. i

4. [? song}s or: [? prais]es

Frg. 9 (no traces of letters)

Physical Reconstruction

Owing to the formulaic structure of the text, content as well as physical criteria play an important part in the reconstruction of the manuscript. The following factors should be considered:

Frg. 1: The fragment contains a top margin and the beginning of a 'day-unit'. The final letter of the ordinal is visible as [ ] and therefore a day-count between 3 and 9 can be assumed (for 10, cf. frg. 3).
Frg. 2: The fragment contains a top margin, but no indication of numbers connecting it to a particular day.
Frg. 3: The five lines contain data which belong to at least two 'day-units'. Line 4 says explicitly 'On (day) ten in [it]', so the preceding day is to be reconstructed as day nine.
Frg. 4: The five lines contain data which belong to at least two 'day-units'. In frg. 4 2 only the final letter of the ordinal [ ] of ' in it' is preserved, as in frg. 1, and therefore a day-count between 3 and 9 can be assumed (for 10, cf. frg. 3).
Frg. 5: Part iii of a day-unit is mentioned in the first of the two lines which preserve the word 'day' (בְּנָע). This makes it probable that the number in line 2, which is greater than 20 (בְּנָע נ), is related to the day-count of the next 'day-unit'.
Frg. 6: The ordinal in line 1 is the day-count of day 'sixteenth'; component iii (see p. 168), occurring in the following line, also belongs to it.
Frg. 7: The remains of five lines have been preserved; the word 'in it' (ב) appears in two places (lines 2 and 4). The lines are sufficiently long for the data of one 'day-unit' to be contained in two lines. Of the ordinal in line 2, the letters of 'ten' (וּוּ) are
visible, which show that a preceding part of the ordinal is missing. This allows a date between 11 and 19 to be reconstructed.

Frg. 8: Only single letters at the beginnings or ends of lines are clearly legible; the fragment mainly preserves a margin between two columns.

Frg. 9: Does not contain any legible letter.

The difficulties of positioning the fragments conclusively depend mainly on the following factors:

Only two dates are clearly legible: day ten (frg. 3 4) and day sixteen (frg. 6 1). Beginnings of day-units are also visible in frgs. 1 and 4, with dates probably smaller than ten, and on frg 7 2, 4, with a date probably greater than ten. A date possibly greater than twenty is implied by frg. 5 2.

Frgs. 3, 4, 7, and 8 possess outer shapes of damage, which seem to belong to different but subsequent layers of the former scroll.

In frg. 7 a wide left column-margin is preserved, but no letters of the next column are visible, although they are to be expected judging by the available space (compared to frg. 8, which has 10 mm). Since there is no indication of a seam which would cause wider margins, there is the possibility of vacats.

The nearest similarity exists in the outer shape of frgs. 3 and 4. While on the plate (and in PAM 43.334) frg. 3 is at the right hand of frg. 4 (option A), the reverse order would be possible as well (option B). The merits of both options, A and B, are discussed below:

Option A

The suggested sequence of Milik’s understanding (on which the concordance is based and which is reproduced in the Preliminary Edition) takes frgs. 2, 3, and 4 as witnesses, which allow the reconstruction of the upper part of one column. The five lines contain the information concerning the three ‘day-units’ of days eight to ten:

Frgs. 2, 3, 4 (joined in the concordance as frg. 2)

<table>
<thead>
<tr>
<th>ןכממה הכיליה שלוחה [משלול</th>
<th>ורב י[טמכותח [משמ גכופר</th>
<th>וב הכיליה</th>
<th>ורב י[טמכותח [משלול אורבתוונ גכופר</th>
<th>ורב י[טמכותח [משמ גכופר</th>
<th>ורב י[טמכותח [משלול אורבתוונ גכופר</th>
<th>ורב י[טמכותח [משמ גכופה</th>
<th>ורב י[טמכותח [משלול אורבתוונ גכופר</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Presupposing that this column continued for a further eight or nine lines with the ‘day-units’ of days 11 to 15, the following column could contain frg. 6 (day sixteen) with a top margin and possibly the data of frg. 7: days 16 to 23.
FrGs. 6, 7

This reconstruction has a double advantage: frg. 7, which has similarities with frgs. 3 and 4, follows in the next column; secondly, six of the fragments are brought together in only two columns (out of a total of four). But if the text of frgs. 3 and 4 is understood to be a direct continuation of the nearly adjoining fragments (which are only about 2 mm apart), then the problem remains that the corresponding points are only 38 to 40 mm apart from each other. If they are assumed to be from the next layer, this would presuppose an extremely narrow diameter (12 or 13 mm) for the original scroll. Such a diameter could be possible in the innermost part, but normally such tight rolling causes vertical cracks in the leather and no such traces have been found on any of the fragments. Additionally, it must be assumed that no fragment was preserved from any of the layers between frgs. 4 and 7.

Option B

The reverse placement of frg. 4, to the right of frg. 3, in two different columns, would produce a distance of 74 mm between corresponding points. This would allow for a diameter of about 23 or 24 mm for these layers in the scroll, which seems more appropriate in the absence of vertical cracks. In this arrangement, which is spread wider horizontally, all the fragments are distributed over six columns, representing eight layers of the scroll. The disadvantage of this option, however, is that the vertical expansion must be reconstructed in such a way that only eight lines are contained in each column. Thus the column height is less than its width, which would imply an unusual manuscript format. An additional problem is that before day sixteen, one or two lines of the preceding column would not be filled completely by the formulaic text. Since it is unknown which calendrical system is presupposed, a special liturgical event around day 15 may make sense in schematic months as well as in lunar day-countings. Perhaps a \textit{vacat} was only used as a means of orientation in the middle of the month.

The various arrangements of fragments corresponding to both options A and B are given below.
**Purpose and Meaning**

Whether the purpose and meaning correspond to the convenient format is difficult to determine. Before further interpretation, a continuous translation of the best preserved column (corresponding to reconstruction option A) may serve as a starting point:

Frgs. 2, 3, 4 (joined in the concordance as frg. 2)

1. [On (day) eight in it, in the night: songs (x\(^1\) =) eight and [w]ords of prai[ses (y\(^1\) =) ?] and forty
2. [and in the day: songs x\(^2\) and words of [prai]ses (y\(^2\) =)] six[te]n. On (day) nin]e in it, in the night:
3. [songs x\(^1\) and words of praises (y\(^1\) =) tw]o and for[t]y, and in the d]ay: songs
4. [x\(^2\) and words of praises y\(^2\)]. On (day) ten in [it,] in the night: songs (x\(^1\) =) eight
5. [and words of praises y\(^1\), and in the day: songs x\(^2\) and words of p]raises (y\(^2\) =) twen[t]y.

Though this section differs from the reconstruction in option B, it nevertheless represents the distribution of quantities of verbal activities. Because the line-lengths are the same in options A and B, the co-ordination of 'songs' and 'words of praises' is quite similar. However, the options are differentiated by their dates, which may be significant. The translation given by Wise, Abegg, and Cook in *The Dead Sea Scrolls* informs the reader that 'The Liturgical Calendar is clearly a methodical work, but only one aspect of the method is still apparent: the number of 'words of praises' that are sung during the day is double the date of the month' (p. 323). This knowledge is based on the data according to 'option A', which is tabulated below recording the sixteen and twenty daily 'words of praises' on the dates of days eight and ten:

<table>
<thead>
<tr>
<th>Date</th>
<th>Night</th>
<th>Day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Songs</td>
<td>Words of Praises</td>
</tr>
<tr>
<td>(8)</td>
<td>8</td>
<td>&gt;42</td>
</tr>
<tr>
<td>(9)</td>
<td>?</td>
<td>42</td>
</tr>
<tr>
<td>10</td>
<td>8</td>
<td>?</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(24)</td>
<td>?</td>
<td>&gt;10</td>
</tr>
</tbody>
</table>
The distribution according to option B varies slightly, especially because the quantities for day ten are not preserved, but on the eighth day there are still sixteen 'words of praises'.

<table>
<thead>
<tr>
<th>Date</th>
<th>Night</th>
<th>Day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Songs</td>
<td>Words of Praises</td>
</tr>
<tr>
<td>(3)</td>
<td>?</td>
<td>&gt;42</td>
</tr>
<tr>
<td>(4)</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>(5)</td>
<td>8</td>
<td>?</td>
</tr>
<tr>
<td>(8)</td>
<td>8</td>
<td>?</td>
</tr>
<tr>
<td>(9)</td>
<td>?</td>
<td>42</td>
</tr>
<tr>
<td>10</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(22)</td>
<td>?</td>
<td>&gt;10</td>
</tr>
</tbody>
</table>

The question of whether the double quantity of daily 'words of praises' in option A at the eighth and tenth days is significant remains unanswerable; because no other values are preserved, this impression may be accidental. Clear arithmetic relationships are not evident. Even the decreasing number of 'words of praises' at night in option B is only a very slight indication, without any possibility of more specific evaluation, since no information about the implied weekdays is preserved. To assume something similar, such as the distribution of 'lots of light' and 'lots of darkness', which are mentioned in the 'Daily Prayers' (4Q503), is without foundation. Perhaps Wise, Abegg, and Cook have this in mind when they translate 'evening' instead of 'night' and seem to presuppose that evening prayer is the liturgical context, as in 4Q503. The text, however, shows with its choice of words that a more comprehensive meaning is intended, probably comprising the whole unit of night and day. The verbal activities seem to occur during the night as well as the day. For the night the highest preserved number (> 42) of 'words of praises' is mentioned. With a reconstruction based on frgs. 2, 3, 4, and 8 (corresponding to option A), G. W. Nebe has given a maximalistic interpretation. For him, the schematic counting of the 'words of praises' during the night and day follows a clear formulaic pattern. A constant sum of 60 is intended, decreasing in the nights, but growing in the days by an increment of two 'words of praises'. Thus it corresponds to the double of the day-count. The following table (expanded from day one to thirty) shows this idea:
If this reconstruction were correct, the procedure could help to organize the calendrical orientation of a community. However, it is dubious that the counting is related to a new moon, as maintained by Nebe. Lunations in other calendrical documents from Qumran start with a particular stage of the moon, which is considered to be created as a full moon on the Wednesday of the creation week (similar theological motifs seem to be in the background of the Ezra chronology). Nebe may be correct in supposing that a liturgical correspondence with day-counting is intended, but due to the 'rarity' or 'circularity' of arguments from reconstruction this should not be overestimated, since the basis of counting is not evident from the text. The hypothesis that the number 8 for the 'songs' means the seven psalms for each day plus an additional one for the sabbath offering is put forward by Nebe. In this case the distinctive feature of each day indicated by the use of a particular psalm, which is presupposed in the LXX and Mishna arrangement of daily psalms, would be lost.

For the institutionalized prayer, the background apparent in Qumran documents should be considered as the nearest parallel. The hymn of the appointed times in 1QS X 1-4 might be referring to six times of prayer: three during the day and three during the night. This system could correspond to the three day- and three night-watches

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that were usual in pre-Roman times. The segmentation of night and day is reflected in 1QS VI 7-8, where studying and blessing in unity within a third part of every night, is ordered for the many. But the one man who studies Torah on behalf of the community day and night (col. VI 6) is probably not only reading but also pronouncing blessings, at least at the appointed times mentioned in 1QS X 1-4. To perform this ideal task continuously (דיבר נס), the specially selected person seems to act as a deputy for the group and is relieved in this function by his fellows.

This ideal of a man who will meditate (דיבר) on His Torah day and night is formulated in Ps 1:2, and may have influenced the listing given by 4Q334 for verbal actions during ‘day and night’, because the process of ‘meditation’ also plays an important role in other documents. Probably the ‘book of HaQizr’ (>Password), which is mentioned in CD XIII 2 (cols. X 6, XIV 8, 1QSa I 7), is to be understood along the lines of Ps 1:2 and Josh 1:8. Here the root נדב emphasizes a special use of His Torah, as something that is not self-evident, but that demands continuous efforts day and night in order to be understood. The spiritual endeavour of seeking to grab the eschatological meaning of Torah is the key to revelation, which some Dead Sea scrolls claim as the special quality of their knowledge about secrets or mysteries. ‘Meditation’—or its absence (לעב נדב פל)—is used to distinguish ‘spirit of flesh’. In the Sapiential Work such knowledge is emphasized: ‘at night meditate the secrets of being, and study continuously’ (4Q417 2 i 6; 4Q418 43 4); a person considering God’s secrets is designated here as maskil (4Q417 2 i 25). In CD XIII 2, for a priest or Levite, this special qualification of being trained in the ‘Book of Meditation’ is a condition of serving as a functionary for the basic ten-person community like the rabbinic minyan. This allows it to be interpreted in a context similar to that of 1QS VI 6-7, i.e. of a man studying day and night.

The ideal of meditating on the Torah day and night, presupposed by the author of Ps 1:2 and incorporated also into Josh 1:8, builds a bridge between the practice and piety of people already responsible for transmission of biblical texts, and those who continued similar customs as attested by the Qumran scrolls. Especially notable are the singers in 1 Chr 9:33, who are described as being at work day and night.

Keywords

The terminology used for ‘songs’ ( информация) and ‘words of praises’ (дейבר השבחות) confirms the continuum of liturgical practice. The phrase ‘words of praises’ is well known from other Qumran scrolls, but its occurrence in conjunction with ‘songs’ is without direct analogy. Three aspects of the keywords will be analysed here: their biblical usage; the combination of the phrases; and later attestations of the similar phrase רבי שרי השבחות in synagogue and rabbinic texts.

In the Bible, התשׁבוח (translated like its more frequent masculine counterpart as 'song'), is employed to designate some very prominent poetic texts: the 'Song of the Sea' (Exod 15:1); the reference to the 'Song of the Well' (Num 21:17); the 'Song of Moses' (Deut 31:18ff, 30; 32:44); and David's Psalm (2 Sam 22:1-51; Ps 18:1-51). Though it is remarkable that the far more common masculine form is not used for these songs, it seems that the feminine word need not be reserved only for highly esteemed religious poetry. It is applied in both Isa 5:1 and 23:15 to songs which have other connotations. There is no clear semantic difference in its usage, compared with its masculine counterpart (see below for the later discussion in the Mekilta).

In contrast to התשׁבוח, neither תְּפִלֵי nor its plural תְּפלוֹת are used in the Hebrew Bible, though the verb טובָה is attested approximately ten times. It occurs in diverse contexts as (I) 'to praise' and (II) 'to still, to soothe', possibly reflecting two different roots. The majority of occurrences of both forms is found in the Psalms—at the end of the fourth section of the book, in מ (Ps 106:47; 1 Chr 16:35), and in the fifth and last section (Ps 117:1; 145:4; 147:12) where 'to praise' occurs as an almost technical term (doxology) for liturgical acclamation.

This trend in terminology in the later biblical language corresponds to the fact that this word is attested often in Biblical and later Aramaic. The specific connotation of 'giving praise' as an expression of religious devotion is characteristic of Daniel's piety (2:23). Even a heathen king, having recognized God's heavenly kingdom, performs this verbal demonstration of devotion (4:31, 34). Conversely, the false service to idols and the failure to acknowledge the living God by the Babylonian king in Dan 5:4, 23 are also expressed by this verb.

As a noun derived from this verb, תְּפִלֶה is also attested in doxological contexts in the Aramaic of 1 En. 5:1 and 91:10. In Targumic Aramaic a similar liturgical usage is presupposed. Targum Onqelos translates the above-mentioned instances of the feminine 'song' in Exod 15:1; Num 21:17; Deut 31:19, 21, 22, 30; and 32:44 with this noun in the by-form תְּפִלֶה. From Targum Jonathan on the Prophets it becomes clear that תְּפִלֶה is used especially in the context of eschatological doxology.7

This usage is also presupposed in some deutero-canonical Hebrew Bible texts. In the Hebrew version of Tobit, God's wondrous and glorious acts are met with a doxological response. Having encountered God's wonders personally, Tobit writes a psalm to praise the heavenly king, a work which receives the special designation 'psalm-song in praises' (ץָּתָלָת תְּפִלֶה) 4Q200 6.8 In the Hebrew of Ben Sira, a psalm which expresses the promised human response of doxology to the confessed eschatological hope is inserted following 51:12 in the B-text.9 The second line of the collective psalm (like Psalms 118 and 136) which is inserted here uses the designation 'God of praises'

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7 Cf. e.g. Ḥ Isa 4:2 and the comments on 4:2-6 by B. Chilton, 'The Isaiah Targum', ArBib 11 (Edinburgh: T&T Clark, 1987) 11.
(הзавот), showing that this fixed terminology was already being used in an abstract sense and as an attribute of God. A similar understanding is presupposed in the translation of Ps 22:4.

Similarly the term 'praise of God' (אלהים) is used in the singular in 1QM IV 8 in a sequence of doxological designations of God, which are written on the banners of those who retreat from battle. The plural term המצות also occurs in several doxological contexts in three similar groups in the Qumran scrolls: the 'Song of the Sage/Maskil' (4Q510–511); the 'Songs of Sabbath Sacrifice' (4Q400–407, 11Q17, MasShirShabb); the 'Berakhot' (4Q286 1 ii 5); and some other hymnic passages.

(i) In the first section of 'the Song of the Sage' (4Q510 1 i 1; DJD VII, 216) the plural term is preserved as the first in a list of verbal activities, which describe the praise given to the heavenly 'King of Glory' (cf. Ps 24:7-10; 1QM XII 8; XIX 1) by the sage/maskil: "אהלומה שלמים יתברך וחרזמ חכמיםbris רבי וחרזמ בחכמה [1], 'praises, blessings to the king of glory, words of thanksgiving in psalms of [...]. Similarly, in the second copy a passage is preserved in 4Q511 2 i 8 (DJD VII, 221), in which the idea behind the doxological performance is made explicit. Here the context makes clear that praise together with angels, and thus the heavenly-earthly liturgical union, is implied:

[...]ות קכ לטע מי השם ומיסותי ויהי חכמים ובוגר צדעי אהלומה [1].

lot of Elohim together with angels of the luminaries of His glory, in His name praise of [...], which he prepared for the appointed times of the year, and the dominion of a union/community in order to walk[ in the lot of Elohim].

This role of the maskil, as a person who utters praises on behalf of the righteous together with the heavenly beings in a struggle against the demonic powers, is important. B. Nitzan has explained this as being in contrast to the magical practices reported in Jewish and non-Jewish sources from antiquity. In a very similar way to that of 4Q510–511, the incantations make use of and recite doxological terminology. They bring into effect the 'Power of the Word'. The preserved beginning of the 'second song' (ברק) in 4Q511 8 4 suggests that the rest of the songs were also connected with numbers in an ordered structure. It may even be conjectured from the final 'amen, amen!' (4Q511 63–64 IV 3) that the songs 'were intended to be recited in public'. Perhaps even the number of songs should be related to another level of counting, which is preserved in one fragment only. 4Q511 42 4 starts a new section with an uncertain reference: 'on the eighth: I open [my mouth] (ברק) בשמרי אשא rendered by Baillet. Proposition that the eighth day (שנין) of the Festival of Tabernacles, or perhaps of a purification ritual lasting eight days, was in mind (DJD VII, p. 241; cf. also Nitzan, 'Qumran Prayer', 255).

É. Puech has discussed the question of the Hebrew attestations of this word in 1QM IV 8, 4Q510 i 1, and 4Q511 2 i 8 in connection with the Aramaic version in 4Q452 1 i 11.

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He is of the opinion that 'TSBHW est le décalque aramaïsé de l'hébreu TSBWHH' (Puech, RevQ 33 [1991]). This is the converse of the explanation given to Tob 13:1 (see above) by J. Fitzmyer, p. 72. It seems that the interrelated usage of Hebrew and Aramaic is at stake, as demonstrated by a comparison with a 'song of praise to the King of the Worlds' (םירטושה למלך עולם) found on an Aramaic amulet to the beginnings of other incantations where the same phrase is used. The widespread use of this sort of Aramaic and its interchangeable Hebrew counterpart is shown by another silver amulet of the fifth century CE, found in Egypt and published by R. Kotansky with J. Naveh and S. Shaked. It contains a mixture of Greek, Hebrew, and Aramaic. The words אֶלֶךֶם אַשְׁרֵי וְעָשָׂהוּ occur here in a special arrangement, not as a title of the whole composition, but within the text as a sub-unit referring to the performance and wording of such a song: . . . These are the words of David, the songs that sing (?), that he used to say on [ . . . Saul] the King: "Save (O Lord) and rescue me from the evil things, the afflictions, and from all the evil spirits that . . . before the Merciful One (?). Say a song of praise to the honoured king . . . and mighty, the god that created the spirits . . . Hallelujah, the Lord rebuke you, who rebukes Satan, ruler of all, . . . who dwells in Jerusalem in His holiness." Here, it is the recitation of a doxology towards the creator in the form of a 'song of praise' which is meant to bring about the desired effect on the spirits, which are created by him.

The terminology used for a doxological 'song of praise(s)' and its applications, as they are attested in these later Aramaic and Hebrew incantations, points to a similar practice already implied in 4Q510-4Q511. The verbal activity of uttering 'praises' links the maskil with the divine sphere and allows him to experience it in the present: a human being thus encounters the reality of the 'eternal temple' among men. By this performance he acts as priest and angel alike, in order to frighten the evil powers.

(ii) Similarly the 'Power of the Word' is demonstrated by the thirteen 'Songs of the Sabbath Sacrifice', 4QShirShabb (4Q400-4Q407), 11QShirSabb (11Q17), and the Masada fragment MasShirShabb, which are to be used by a maskil, as indicated in their headings (תשבחות Shir). In these texts, which envision the heavenly 'liturgy' performed by angels, and its plural form are used very specifically of angels giving praise. The phrase תשבחות Shir, which is used many times in 4Q334, is also attested in a prominent position.

In 4QShirShabb, this phrase is connected with a special counting of angelic utterances, which may be comparable to 4Q334. In the case of the sixth sabbath song, the whole structure is dominated by the number seven: around the heavenly king are seven angelic princes, who do actions sevenfold, e.g. 'seven times with seven words of [wondrous] praise' (4Q403 1:13). In C. Newsom's tabulation of the formulaic

12 J. Naveh and S. Shaked, Amulets and Magic Bowls. Aramaic Incantations of Late Antiquity (Jerusalem: Magnes Press, 1985) 50-51. It was E. Puech who pointed out this important link to Naveh and Shaked.
14 Cf. 4Q511 10 1-8; 35 3-6; cf. also Nitsan, 'Qumran Prayer', 262 with important ideological parallels from 1 En. 40:7; 47:1-2; 69:26.
pattern, which she reconstructed from the various manuscripts (pp. 178–80), the prominent position of the Fourth Chief Prince in the middle of a series of seven is immediately evident. The pattern of each angel’s utterance starts with a label for the verbal activity, which gives a special theme-word: ‘psalm of blessing (1), . . . of magnifying (2), . . . of exalting (3), . . . of praising (4), . . . of thanking (5), . . . of rejoicing (6), . . . of singing (7)’. This primary theme-word occurs repeatedly in each psalm, in elements A, F, and G, up to the last and climactic element I. The plural noun corresponds to the form at the beginning, which is used twice in the stereotypical formulae of elements F and I, e.g. F = ‘the seven wondrous blessings’ and I = ‘seven words of wondrous blessings’. This structure within the six utterances of the princes 1–3 and 5–7 is consistent, but shows a variation employed for the fourth and middle prince. While normally an attribute of God is given as the secondary theme-word in the pattern—in E and H as melek and Elohim—here for the fourth prince even this is different. Instead of the expected ‘occurrence of the primary theme-word . . . (יהוה/ הושנה)’ (Newsom, 182) we find a direct reflection of the secondary theme word, which in this case is ‘gibbor’: ‘the Warrior’ or ‘the Mighty’, a name of God, known from e.g. Ps 24:8 or Isa 9:5. Where a designation such as melek or Elohim occurs by the other angelic princes, this double deviation from the pattern is striking. ‘Gibbor over all Elohim’ denotes absolute supremacy, and is matched by the feminine abstract plural ‘g’vrutot’ designating the comprehensive divine ‘power’ (Newsom, 182 refers to Job 41:4: ‘God of power’). The confession of this power corresponds to the action of praise, indicated by the plural ‘tiqehot’, which should perhaps be understood as an abstract plural. Thus, by comparison with its usage in 4QShirShabb, it can be extrapolated that the phrase ‘words of praises’ refers to the quintessence of liturgical exaltation. This may be the context for its use in 4Q334.

A concrete idea of what is meant by the seven-times-seven ‘words of praises’ actually used by the angelic prince is, however, not clear. In her discussion of the schematic ‘seven-times-seven’ formula, Newsom refers to the numbers preserved in later Jewish traditions, when not only the eighteen benedictions are used in the ’amidah, but in special situations this and other prayers are complemented by a number of additional blessings.17

The ḥiḳẖiḳẖ formula with the address of the second person, which is characteristic of the later blessings in synagogues as well as in some Qumran scrolls, is only preserved in biblical texts in the alphabetical Psalm 119:2, and in David’s prayer in 1 Chr 29:10. The latter passage is instructive, because the words, which are placed as an opening part to this community-related prayer, illustrate best what may be meant by the terminology ‘words of praises’. Though the words are neither labelled in this way nor counted, their similar doxological emphasis compared to 4QShirShabb is visible by the repetition of the keyword יבשנה, as well as by the contents of the list of attributes in 1 Chr 29:10–12:

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16 Pp. 177–8; cf. also the attestation of יבשנה in MasShirShabb 2 20.
17 For an overview of the preserved data concerning the development of communal prayer and the background of prayers by special individuals, which are to be seen ‘in terms of magic’, cf. S. C. Reif, Judaism and Hebrew Prayer (Cambridge: University Press, 1993) 59–61.
greatness, power, glory, victory, majesty, all in the heavens and in the earth is thine; thine is the kingdom, thou art exalted as head above all; riches and honour come of thee, and thou rulest over all; and in thy hand is power and might; and in thy hand it is to make great, and to give strength unto all. Now therefore, our God, we thank thee, and praise thy glorious name.

For further clarification of the listing of the numbers in 4Q334 for each night and day, it would be useful to have access to the 364 songs of David which are mentioned in the list of 'David's Composition' (11QPsX XXVII 6). They should perhaps be seen as a Vorlage of the Davidec songs found in the Cairo Geniza, which may go back to mediaeval findings, as suggested by their re-editors. Each of the four preserved psalms is dated (from Iyyar 1-4) and seems to begin with a בְּכֵי formula, followed by a doxological composition with a different number of stichoi (> 20). These are closed by four fixed בְּכֵי formulae, which contain one varying element. To these psalm-praises 'all the people' respond with 'Amen!', which makes it clear that the individual psalm is to be recited before an audience.

(iii) Within the text of 4QBerakhot (4Q286) the terminology of the plural תַּהֲבָבּות is also attested in a long row of doxological terms describing the celestial sphere of the 'chariots of glory' (4Q286 1 ii 2-5). This composition is also intended for use in public, as evinced by the repeated 'amen, amen'. How the biblical tradition of blessings and cursings uttered in covenantal ceremonies should be attributed to different developmental stages of rituals within the Qumran scrolls is still not completely clear. Similarly, in 1QS II 19 (and 5Q13 4 4) a yearly act is mentioned in 4QBerb (4Q287) 4 1, here connected with the terminology 'to be in an array' (בראשך). This figurative meaning of a liturgical act, derived from military usage, is understood as a verbal struggle with the evil powers, and forms an important element in the 'war scroll(s)', 1QM and 4QM. In 1972 J. T. Milik drew attention to 4Q280 (now called 4QCurses) as being a liturgical parallel to material included in 1QM XIII 4-4, where the central point against the personification of the ungodly power is formulated: 'and there shall be no peace for you in the mouth of all who are making prayers of intercession'. Even though the exact development of the connected rituals from Maccabean times until the later stages of covenantal affirmations is unclear, the structural parallel to the performances done for a whole group is apparent. The duality of cursing and blessing is fundamental: on the one hand this confesses God's eschatological power of judgement and brings vengeance into effect upon the adversary; on the other, it affirms God's heavenly realm, which is experienced in the present as a reality by those for whom intercessory prayers are performed. Both sides are interrelated towards an expectation of the complete revelation of glory and judgement. It is important to acknowledge this context for the doxological term 'praises' (תַּהֲבָבּות), which is uttered

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19 For further common elements including the priestly blessings in 11QBar = 11Q14 and 4Q285, see B. Nitzan, 'Benedictions', RevQ 16 (1992) 77-90.
20 Cf. J. T. Milik, 'Milki-sedeq', JJS 23 (1972) 95-144, p. 128: 'et qu'il ny ait pour toi de paix par la bouche de tous ceux qui font des prières d’intercession[n].
on behalf of the community, not only as a background for a yearly covenantal
ceremony, but for its continuous affirmation as well.

Three further attestations of the keyword ‘praises’ (השבוחות) show that the world-view
sketched above is connected with elaborations on the hymnic tradition of the Qumran
scrolls, used within the community. One of these is preserved on the fragments of a
papyrus, which preserves the ‘Rule of the Community’, 4QpapSa (4Q255) on one side
and on its other side 4Q433a (4QpapHodayot-like Text B); cf. PAM 43.255. 21 This
little fragment is of interest, because it mentions the important verbal activity: ‘and
praises in my mouth (as) strength’ (בְּלֵבָּהּ יְהוָ֖ה בְּשָׁבְכֹֽהַּ). Frgs. 2 and 3 are
translated in Wise, Abegg, and Cook (1996) 446f.). The next line makes reference to
‘fresh wine’ (שׁומֹן), which may be related to a situation celebrating the eschatological
hopes as in 1QS II 16-22. It is explicitly stated in 1QSa II 22 (cf. 1QS VI 4-5) that this
pattern of community meal and blessing is even to be followed by the small community
groups of ten persons, the minyanim.

The context of 6Q18 2 8, a manuscript entitled by its editor ‘Composition
Hymnique’ (DYD III, p. 133), is also very fragmentary. The preserved parts of the
preceding lines deal with the eschatological perspective and the contrast between
darkness and everlasting life. Probably in connection to the latter, or to the heavenly
realm in general, ‘[everlasting] praises’ (שָׁבְכֹֽהַּ עָלֵיַּשֹּׁרוּל) are mentioned.

The third hymnic text, which refers to this verbal activity is the ‘Apostrophe to
Zion’ contained in 11QPsa XXII 14 and in 4QPsf 2 viii 8. 22 In its alphabetically
structured stichoi, line 14 ‘אַיָּה formulates: ‘pleasing to the nose (of God is) your praise,
O Zion’ (אִמָּת יְהוָ֖ה אָמַֽה אֶל־דִּבְרֶךְ). Here sacrificial terminology (perhaps alluding to Mal
3:4) is used to depict the verbal act performed as a praise-offering (cf. Ps 50:14, 23),
which is ‘ascending through all the world’, as the text continues.

This final passage indicates that the emphasis given to ‘praises’ and the verbal act
of doxology is not a totally new phenomenon of the Qumran scrolls, but is already
prefigured in some Psalms and in parts of the prophetic literature, which claim ethical
behaviour as a premise for sacrifice. According to this view, sacrificial action has no
worth in itself, but is understood as a mere symbol of doxology. Thus Chronicles
reports that psalms are always performed alongside sacrifices, implying that their texts
and the mental attitude of doxology expressed are also necessary components. A
similarly high estimation of prayer is already presupposed in Solomon’s prayer at the
dedication of the Temple, included in 1 Kings 8. This verbal and ethical approach
connected with a piety of prayer became increasingly important (cf. the attestations
from Daniel and from the text of Tobit mentioned above, where even during the
existence of the Second Temple a new and eternal one is expected in the praise-song)
especially for adherents of the Jerusalem Temple in the diaspora. This shift towards a
verbal link with the heavenly realm suggests that ‘praises’ became a substitute for

Inventory List (Leiden: E. J. Brill, 1993) 77; but it remains unclear whether it is the recto of PAM 43.254 or its verso
as suggested by S. Metsos, The Textual Development of the Qumran Community Rule (STDJ 21; Leiden: E. J. Brill,
1997) 18-19, who studied the originals.

22 Cf. P. Flint, The Dead Sea Psalm Scrolls and the Book of Psalms (STDJ 17; Leiden: E. J. Brill, 1997) 165-6,
249 and pl. V.
sacrifices, especially in times of conflict (from the Maccabean period on), or a wrong mental attitude of some (or all) priests. However, it remains uncertain which stage of development of institutionalized prayer and which attitude towards Temple practices is to be presupposed as the context for 4Q334. What is clear is that a piety concerned with the verbal activities of praise-songs during day and night, and which may have its counterpart in Psalm 1, should be seen in the background.

Comparison of the Keywords with Rabbinic Literature

The use of נשים in 4Q334 is explained above in the light of its usage in the Hebrew Bible, which calls some of the most important songs by the feminine form שירה, though no clear semantic difference from the masculine form can be discerned. It is likely that the choice of the feminine form over the more common masculine one was intentional, setting apart those songs for which the feminine form was used, as being of greater significance. Such a view is formulated in the Mekilta where, in the context of the well-known שירה in Exod 15:1, a list of ten songs is preserved. Perhaps even here a number of eight שירות is presupposed as an older list, which may correspond to the eight songs mentioned for two days in 4Q334.

In the Mekilta de-R. Ishmael (vol. 2; ed. by J. Z. Lauterbach [1949], p. 2), the ten songs are presented in two segments. Songs 1 to 8 are listed in one block: (i) Isa 30:29; (ii) Exod 15:1; (iii) Num 21:17; (iv) Deut 31:24-30; (v) Josh 10:12; (vi) Judg 5:1; (vii) 2 Sam 22:1; (viii) Ps 30:1. Only after a long discussion of the meaning of the eighth song, 'A Song at the Dedication of the House of David' (Ps 30:1), and its relationship to the Temple of Solomon, do the songs (ix) 2 Chr 20:21 and (x) Isa 42:10 follow (cf. ibid., pp. 5-6). The eschatological understanding of all these songs is made explicit by discussing the gender-form as intentional: 'The designation for each one of the songs of the past is a female noun. For, just as a female gives birth, so all the deliverances of the past had after them subjugations. But the salvation which is to be will not be followed by subjugation. For this reason it is designated by a masculine noun' (ibid., p. 6). The potential of the female to give birth and the inability of the male is marked in the scriptural passage cited from Jer 30:6 (ibid., p. 7): 'Ask ye now, and see whether a man doth travail with child'. The repeated conclusion of the Mekilta-exgetes is thus confirmed and in accordance with the concluding passage, cited from Isa 45:17, which announces 'an everlasting salvation'.

Though it cannot be proven that the eight songs of 4Q334 should be seen as a similar collection to the first block of songs in the Mekilta list, the special attention given to these 'feminine songs' attests at least that the corresponding lists of selected biblical songs (with similar quantities) were in use in Tannaitic times. Finally, a terminology very similar to 4Q334 mentioning 'words of songs and praises' (דברי שירות ופייא), which is used in the liturgical composition 'And in the Communities' (מספדים ופייא) still recited today in the Pesach-Haggada and in the Sabbath morning prayers, must be pointed out. This text also seems to have a long prehistory going back to Tannaitic

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23 For other recensions of this midrash, cf. K. E. Grözinger, 'Musik und Gesang in der Theologie der frühen jüdischen Literatur', Talmud Midrasch Mystik (TSAJ 3; Tübingen: Mohr, 1982) 197f.
times. The characteristic phrase is also used in m. Sukkah 5.4 to designate the verbal part of a performance presented to the public during the first night of Sukkot, when

- pious ones and men of deed
- were dancing in front of them
- with torches of fire in their hands
- and saying before them
- words of songs and praises.

One may speculate that the symbolism of the light during this night and the praises are interrelated in some way and express the enlightening function for the community by their actors, who are called 'pious ones' and 'men of deed'.

Elsewhere the latter designation is applied to persons such as R. Hanina ben Dosa, who exercises the 'power of the word' by his prayers and through them performs divine miracles (m. Ber. 5.5). Though the period of the 'men of deed' is said to end with Hanina ben Dosa, or at least their importance is said to wane after the destruction of the Temple (both in m. So'ah 9.15), this kind of piety must have been a remarkable phenomenon before and after the late Second Temple period.

As in the case of the incantations mentioned above, the terminology of 'words of songs and praises' in the mouths of the 'men of deed' may indicate a continuity in forms of piety and practice. One of their characteristics seems to be that actions are based on the handling of the verbal tradition of 'praises', in order to exorcise the powers of evil and darkness, like the praises made by the maskil on behalf of his community (4Q510–511) and also by the 'men of deed'.

**Nature of 4Q334**

Though only very few numbers of the counted verbal activities are preserved in 4Q334, it seems clear that the smaller numbers are mentioned for the 'songs'. This keyword seems to be used for larger psalm-song compositions. Perhaps the two instances, in which only number 'eight' is preserved, refer to a special selection of songs from biblical tradition. The number of 'words of praises' is much higher and seems to be related to single doxological attributes which are to be uttered. It may be assumed that the preserved numbers, between 10 and 50, are guidelines, which indicate that a certain number of praises (perhaps on certain dates) should be combined more or less spontaneously and without direct textual basis. 4Q334 would then contain an abbreviated instruction to generate a new composition (song of praises) from a repertoire of 'words of praises'. Though this new scheme would exist only orally, it may have an important function besides its devotional value. The ability to produce a performance like this would indicate that such a person is an adequate companion to angels, who similarly utter the seven-times-seven 'words of praises' in 4QShirShabb.

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But even the written scheme of Tobit's 'psalm-song in praises' is marked by its designation as a doxological composition, which correspondingly reflects the encounter of angelic presence. The usage of the plural in the meaning of an abstract term may also be explained against this background.

There is, however, no indication of which calendrical basis was used in 4Q334. The position in which it was found implies that a general framework of one of the 364-day calendrical traditions can be presupposed, but even in this environment both lunar and schematical day-countings are possible. Therefore, any period of special liturgical relevance (as the seven-times-seven day units between the first-fruit festivals) may be considered. Since no 'Qumranic' background in a narrower sense can be proven, one might surmise an older biblical background. The reference to the duties of singers during day and night, which is included in 1 Chr 9:33, would favour such a suggestion. The label 'Ordo (order of divine office)', which was given to 4Q334, therefore appears to be adequate because it expresses the 'ordo'; however it extends beyond group boundaries, i.e. it expresses a quantitative and calendrical order of verbal activities. The actors, however, remain in the darkness and do not seem to be restricted to the Qumran group.

Reconstruction of 4Q434

Option A

Col. I (Frags. 1 + 8)

top margin

Col. II (Frags. 2, 3, 4, + 8)

top margin
Col. III (FrGs. 6 + 7)

\[\text{top margin}\]

\[\ldots\text{变速器が鉄塔…} \]

\[\text{ローバリスクール}

\[\ldots\text{变速器が鉄塔…} \]

\[\text{ローバリスクール}

\[\ldots\text{变速器が鉄塔…} \]

\[\text{ローバリスクール}

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\[\ldots\text{变速器が鉄塔…} \]

\[\text{ローバリスクール}

\[\ldots\text{变速器が鉄塔…} \]

\[\text{ローバリスクール}

\[\ldots\text{变速器が鉄塔…} \]
Col. IV (Frg. 5)

**Option B**

Col. I (Frgs. 1 + 8)
Col. II (Frags. 4 + 8)

\[\text{[משלשה ב בש�件 שירחת... ובריר טבוחות... \]}"\]
\[\text{[בtempts שירחת... ובריר טבוחות... \]}"\]
\[\text{[שמעת \... ובריר טבוחות... \]}"\]
\[\text{[בריר טבוחות... במשמע וב שילדה \]}"\]
\[\text{[בריר טבוחות... במשמע וב שילדה \]}"\]
\[\text{[בריר טבוחות... במשמע וב שילדה \]}"\]
\[\text{[בריר טבוחות... במשמע וב שילדה \]}"\]

Col. III (Frg. 3)

\[\text{[במשמע וב בש�件 שירחת [ר\דכ\ג] טבוחות \]}"\]
\[\text{[בריר שירחת... ובריר טבוחות [פש\ט\ר ] בשProcessEvent וב שילדה \]}"\]
\[\text{[שעונית ... ובריר טבוחות [פש\ט\ר ] וב_episodes וב שירחת \]}"\]
\[\text{[בריר טבוחות... במשמע וב שילדה \]}"\]
\[\text{[בריר טבוחות... במשמע וב שילדה \]}"\]
\[\text{[בריר טבוחות... במשמע וב שילדה \]}"\]
\[\text{[בריר טבוחות... במשמע וב שילדה \]}"\]
Col. IV (Frzs. 7 + 2)

top margin

[כַּסְלַשְׁה עָפָר בַּכֵּלַלְּהַ שֶּרֶםְרֹתָה | רָבָּרִי חַסְבּוֹתָה | 1
[חֶבֶשָׁה שֶרֶםְרֹתָה | רָבָּרִי חַסְבּוֹתָה | 2
[כָּאָרְבֶּעַה עָפָרָה | רָבָּרִי חַסְבּוֹתָה | 3
[רָבָּרִי שֶרֶםְרֹתָה | רָבָּרִי חַסְבּוֹתָה | 4
[כָּפּוֹמָה עָפָרָה | רָבָּרִי חַסְבּוֹתָה | 5
[רָבָּרִי חַסְבּוֹתָה | רָבָּרִי חַסְבּוֹתָה | 6
[רָבָּרִי חַסְבּוֹתָה | רָבָּרִי חַסְבּוֹתָה | 7
[רָבָּרִי חַסְבּוֹתָה | רָבָּרִי חַסְבּוֹתָה | 8

Col. V (Frzs. 6 + 9)

top margin

[לָאָפָשָׁה אָפְרָאָבָר בַּכֵּלַלְּהַ שֶּרֶםְרֹתָה | רָבָּרִי | 1
[חַסְבּוֹתָה | רָבָּרִי שֶרֶםְרֹתָה | 2
[כָּאָרְבֶּעַה עָפָרָה | רָבָּרִי שֶרֶםְרֹתָה | 3
[רָבָּרִי שֶרֶםְרֹתָה | רָבָּרִי שֶרֶםְרֹתָה | 4
[כָּפּוֹמָה עָפָרָה | רָבָּרִי שֶרֶםְרֹתָה | 5
[רָבָּרִי שֶרֶםְרֹתָה | רָבָּרִי שֶרֶםְרֹתָה | 6
[רָבָּרִי שֶרֶםְרֹתָה | רָבָּרִי שֶרֶםְרֹתָה | 7
[רָבָּרִי שֶרֶםְרֹתָה | רָבָּרִי שֶרֶםְרֹתָה | 8
Col. VI (Frg. 5)

[ברכת ועשרה ובשבעה שערים... וברך השכון וברך השכון...]
[עשרה ובעשרים וברך השכון... ובשבעה שערים...]
[עשרה ובעשרים וברך השכון... ובשבעה שערים...]
[ברכת ועשרה ובשבעה שערים... וברך השכון...]
[ברכת ועשרה ובשבעה שערים... וברך השכון...]
[ברכת ועשרה ובשבעה שערים... וברך השכון...]
[ברכת ועשרה ובשבעה שערים... וברך השכון...]
[ברכת ועשרה ובשבעה שערים... וברך השכון...]

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4QOTOT was originally assigned to the lot of J. T. Milik after its discovery among the large heap of cave 4 fragments. Milik first gave this designation and supplied a tentative restoration of col. V (olim col. vi) in his 1976 volume, The Books of Enoch. Initial editorial work on 4Qotot was performed by U. Glessmer in a series of studies (see BIBLIOGRAPHY).1 While recognizing the important contributions of J. T. Milik and U. Glessmer, the present edition differs in the identification of individual fragments, the understanding of the layout of the texts, their overall interpretation, and in readings.

In form and content, 4Qotot belongs with the corpus of calendrical and mishmarot texts from cave 4 (4Q320-330). Cols. VII-IX contain material which is parallel, and sometimes virtually identical, to the subject matter of 4Q320-330. The core of the document, the otot list of cols. IV-VI, though not paralleled in the calendrical corpus, bears significant similarities to it. The otot calculations are based on the same fundamental system: 364-day years arranged in triennial cycles, with two such cycles forming the basic unit of mishmarot rotation. In fact, fragmentary references to otot are extant in 4Q320 (4QCalendrical Document/Mishmarot A), probably belonging to what was originally an extensive section of calculations of this sort. Therefore, when interpreting 4Q319, it is assumed that its time-reckoning system is not substantially different from that of the remainder of the calendrical corpus.

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1 Thanks are due to U. Glessmer for sharing his material reconstructions with the present author. They served as catalysts for my own reconstructions. I also thank E. Chazon for her comments on the section on the meaning of otor.
Physical Description

When introducing the title 4QOtot (4Q260B in his terminology), Milik established his opinion that the document should be considered separately from the other composition on the scroll, 4QS\textsuperscript{2} (4Q259, in Milik's terminology 4Q260). Owing to this distinction, the otot section is published in the present volume rather than in the volume of the cave 4 copies of Serekh ha-Yahad.\textsuperscript{2} Indeed, the variance of subject-matter between the organizational-legal material of Serekh ha-Yahad and the technical otot schedule seems conclusive. However, convincing as the thematic variance may be, the physical similarities in parchment, script, scribal customs, and state of preservation prevail; 4QS\textsuperscript{e} and 4QOtot clearly originate from the same scroll (Glessner, Die ideale Kultordnung, 170-73). This is acknowledged by the editors of 4QS\textsuperscript{e}.

In addition to the reconstructed cols. IV–VII, about ninety more fragments were extant on the museum plates. Some of these can no longer be located and are preserved only in older photographs. The extant fragments have continued to deteriorate since the 1950s, disintegrating into numerous tiny pieces. Therefore, several groups of fragments should be distinguished when discussing 4Q319:

1. Frgs. 1–15, 23, comprising cols. IV–VII and some isolated fragments, reveal the material and contextual characteristics of 4QS\textsuperscript{e} and definitely belong to this scroll. The material reconstruction is based upon these fragments.

2. Frgs. 16–20, 26–31, and 36–47 generally display the same material traits though they are too small to be integrated into the composite text. They are considered to be part of 4Q319.

3. Frgs. 24–25 and 33 are of a lighter brown colour than the main body of 4Q319 fragments and contain cursive script, suggesting that they originate from a different scroll.

4. Frgs. 34–35 are light brown in colour and contain smaller script and narrower line-spacings than are usual for this manuscript.

5. Frgs. 48–110, which have now mostly disintegrated, differ in both material form and content from the main body of fragments. They can be seen in PAM 42.863 and 43.286. Frgs. 59–64 and 85–89 are rectilinear in form and have a vertical rather than horizontal orientation, preserving shorter sections of lines than usual in 4Q319. They are inscribed in a smaller script and the contents differ.\textsuperscript{3} The rest of the fragments shown on pl. X111 also do not resemble the style and subject matter of 4Q319; none of them has the pronounced dry rulings so characteristic of 4Q259–319. Milik assigned these fragments to different plates, represented on PAM 43.231 and 43.286, thus revealing his own doubts about them. Accordingly, they are not considered part of 4QOtot and are discussed separately.\textsuperscript{4} See below, CONTENTS OF COLS. VII–IX under CONTENTS.

The physical characteristics of 4QS\textsuperscript{e} described by P. Alexander and G. Vermes are also valid for 4Q319. 4QOtot is written on a very thick skin (0.8 mm), whose colour now varies from mid- to dark brown and is sometimes even black, with some fragments


\textsuperscript{3} Frgs. 21–22 also appear to belong to this group.

\textsuperscript{4} Frg. 77 is the only fragment possibly substantial to the discussion of 4QOtot; see COMMENTS.
The exceptionally long frg. 14 and frg. 15 possibly represent cols. VIII–IX. Both fragments include text from two columns, with the intervening margin of 0.6–1.6 cm clearly visible on frg. 15.

Towards a Material Reconstruction

The last PAM photographs taken in 1960 reflect Milik's reconstruction, in which he combined some twenty-five pieces of parchment to form cols. IV–VII. This reconstruction serves as the basis of the present edition, with only a few variations. S. Metso produced a detailed study on the material reconstruction of 4QS, which pertains also to subsequent columns of the same scroll, as further exemplified by Glessmer (Die ideale Kultordnung, 173–84). The deterioration of this scroll resulted in an unusual phenomenon, in which the extant fragments bear the form of nearly uniform blocks with similar breakage-lines at the left and right edges. This unique state of preservation forms an ideal case for the material reconstruction methods employed by Metso and Glessmer.

Metso concludes that the reconstruction renders it impossible for an additional column to have appeared between 4QS IV and the first lines of 4QOTot. This conclusion is not in line with Milik's reconstruction and negates the possibility that this additional column contained either Serekh ha-Yahad material or an initial column of the otot roster. Based on the material evidence presented by Metso and Glessmer, the present author accepts their view contending that no listing of otot appeared before col. IV 9.

Columns are demarcated by clear vertical and horizontal dry rulings. Such rulings also mark the lines of every column, with the letters suspending from them. The scribe exerted much force in this task, resulting in increased deterioration along the rulings. These rulings clearly indicate which fragments belong to the scroll and which do not.

None of the columns is preserved in its entirety. 4QS III contained nineteen lines, which is probably the norm for the entire scroll. No top margins are preserved, since the upper part of the scroll was more severely damaged. A bottom margin of c.8 mm is preserved in frgs. 1c, 3h, and 8d, which is only 1 mm wider than the average line-spacing. It is possible that the scribe was conserving space on the parchment, since very few vacats are extant on the fragments. Alexander and Vermes calculated the height of the scroll to be 12.6 cm.

Very few lines have survived in their entirety. Best preserved are the bottom lines of col. IV, of which line 19 is 9 cm long. Two centimetres of inscription are missing at the beginning of the line, along with 0.5 cm from the middle, rendering a total line-length of 12 cm. The average column-margin is c.1.2 cm, yielding a column width of c.12.7 cm. Similar data pertain to col. V 5, whose width is certain based on the sequential joins in that column. Col. VI 4 is also well preserved: 5.7 cm are extant on frg. 7 and 7 cm appear on frg. 6a, together totalling 12.7 cm. This is the figure used by Alexander and Vermes following Metso. There is insufficient information available to calculate the width of cols. VII, but similar measurements may be assumed for col. VIII.

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Fr. 1 preserves most of the width of col. IV. The top right of frg. 1a is crumpled and turns upwards. Note the curved breakage line at the right of frg. 1c, as well as its unusual width, features not attested elsewhere in the scroll. A narrow bottom margin can be discerned on frg. 1c.

The ends of the bottom five lines of col. IV are extant on frgs. 2 and 3g. The latter is twice as wide as the usual width in frg. 3. Two more pieces are misjoined to frg. 2 on PAM 43.283; see frgs. 32–33, NOTES ON READINGS.

Frg. 3 holds the right side of col V. It consists of narrow strips sometimes less than 1 cm high, perhaps suggesting that the ruling of the lines was more forceful in this area. The right breakage line of frgs. 3a–f, h is noticeably straight. A 1.6 cm-wide margin between cols. IV and V is preserved in frg. 3g, and a bottom margin in frg. 3h. For the join of frg. 3h, see NOTES ON READINGS.

The middle of some upper lines from col. V is preserved on frg 4. In frg. 4b, the skin surface has to a large extent peeled off. Frg. 23 should be positioned between frgs. 4a and 5a.

Frg. 5 preserves a 0.9–1.5 cm-wide margin between the upper half of col. V and the opening words of eleven lines from col. VI. A vertical crack, similar to that found on frg. 2a of 4Q56, is clearly seen on frg. 5a–b (DYD XXVI, 131; PAM 43.263), forming a valuable clue for the material reconstruction of the scroll.

Frg. 6a actually consists of two pieces split along a vertical crack similar to that of frgs. 5 and 7 (cf. the separate pieces in PAM 42.422). Its smooth upper edge is interrupted by a unique pattern that reappears in frgs. 7 and 10, all located on the same horizontal line from right to left; see col. VII, COMMENTS. In addition to this form and the familiar vertical crack, the serrated frg. 7 preserves a 0.7–1.2 cm-wide margin between col. VI and the opening words of seven lines from col. VII. The same margin is also represented on frg. 8f, while the bottom margin of col. VI appears at the base of frg. 8d.

The oddly shaped frgs. 9 and 11–13 are the last pieces that can be placed with confidence in cols. IV–VIII, though they provide only a vague layout of the structure of cols. VII–VIII. On the placement of frg. 10, see MATERIAL RECONSTRUCTION.
The exceptionally long frg. 14 and frg. 15 possibly represent cols. VIII–IX. Both fragments include text from two columns, with the intervening margin of 0.6–1.6 cm clearly visible on frg. 15.

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It is difficult to calculate the number of letter-spaces per line in 4Q319 with any accuracy, since the semi-formal nature of the script leads to inconsistency. There are some cases in which the amount of text required to reconstruct damaged lines does not add up to the average number of letter-spaces per line. In col. IV the average of 470 corrected letter-spaces per line is consistent except for the problematic lines 9-11. A similar figure pertains to col. V, notwithstanding the problematic reconstruction of lines 4, 7-13. Col. VI appears to have been narrower but no accurate number can be given due to the fragmentary state of lines 4-9, 13-14, and 16-18. In the transcriptions, a wide lacuna in the middle of the line marks those places where the reconstructed text does not fill the assumed width of the line. The reader is referred to NOTES ON READINGS on cols. V–VI for further discussion.

As proven by Metso, the scroll was rolled with its beginning on the outside. The surviving cols. I–VII probably come from the middle of the scroll. As Metso (Textual Development, 51) calculates, 'the total number of columns would have been fifteen plus the handle-sheet (nine-and-a-half columns for Serekh ha-Yahad, five and a half columns for Otot)'. If the otot section began in the first half of col. IV, it would have ended in col. IX followed by a handle-sheet. As noted above, the textual find is insufficient to evaluate this analysis.

Metso concludes that in 4QSx stitching could have appeared only between cols. III and IV. Since no stitching is preserved after each of cols. IV, V, VI, and possibly VIII (depending upon the doubtful placement of frg. 14), it could have appeared after either col. VII or IX. Stitching remains can be seen at the left margin of frg. 10; unfortunately, the text is too poorly preserved to suggest any obvious placement. If frg. 10 appeared at the left side of col. IX, it would have concluded a six-column sheet which is exceptional at Qumran, where sheets contain an average of four columns. It is therefore surmised that frg. 10 forms the left edge of col. VII, completing a four-column sheet. The following sheet would have contained cols. VIII–IX and an uninscribed area.

The remaining fragments not associated with cols. IV–VII produce little significant material data, and mostly cannot be placed in the following columns. Some of them are positioned in cols. VII ff. on the basis of their tentative contents (see below).

Contents

According to the final edition of 4QSx (DJD XXVI, 150), the last trace of Serekh ha-Yahad text in col. IV 5 parallels 1QS IX 24, but it probably continued several lines further to the end of the Maskil's ordinance (col. IX 25). The editors believe that 1QS IX 26 is a preamble to the hymn of col. X, constructed from phrases taken from that hymn, hence the absence of the hymn in 4QSx suggests that the preamble was not present as well. A scrutiny of the photographs yields traces of the word יִזְיּוּ עֵנִיּוּ on 4Q319 IV 9 before the otot text begins; see NOTES ON READINGS. This short word may resemble אחרון, the last word of 1QS IX 26 preceding the hymn. In that case, the Serekh ha-Yahad text covered not only the initial eight lines of col. IV, as the editors believe, but also the beginning of line 9. Alternatively, the blessing may be a poetic introduction to the otot roster, thus lending the entire composition a doxological character. Indeed, a
doxology appears here in a creation context (col. IV 10–11) as elsewhere in Qumran literature (e.g. 11QPs* XXVI 13; 4Q504 1–2 vii).6

The calendrical material of 4Q319 is not confined to the otoh roster, since it contains various mishmarot lists of at least three more types. It should therefore be classified as a compendium of calendrical information, similar to the collection of lists in 4Q320. However, while 4Q320 appears to be an independent document, 4Q319 is integrated into Serekh ha-Yahad. While the placement of one calendrical composition within Serekh ha-Yahad seems acceptable (see Glessmer, 'Otto-texts'), the presence of a collection of texts raises some questions regarding the coherence of the composition.

The material of 4Q319 can be divided into two sections: 1) cols. IV 10–VI 18 in which otoh is a prominent word, attesting to a special kind of computation; 2) col. VI 19 ff. which contains calendrical rosters of a very similar and sometimes parallel character to those of 4Q320–330.

Structure and Meaning of the Otot Section

The calculations of this section are based on a unique correlation of three discrete time-reckoning devices: the standard Qumran six-year mishmarot cycle, the seven-year iemitah cycle, and the forty-nine-year jubilee cycle. In order to achieve a full integration of these cycles, a time span of six jubilees is required (49 x 6 = 294), after which the initial situation is restored, i.e. the priestly course Gamul serves at the beginning of year 1 of the first jubilee, as it did in the beginning of the first cycle. In the world view of the calendrical scrolls, the first time-unit, whether six, seven, or forty-nine years, is considered the very beginning of time. The march of time began on the fourth day of Creation, when the luminaries were created, and at this juncture the aforementioned time devices came into motion. This theological conception is expressed at the beginning of the otoh enumeration with the mention of סֵדֶרְו יָהָד, 'Its light (came forth) on the fourth day of the week' and of יָהָד, 'creation' (cf. 4Q320 1 i 1–5; 4 ii). Not only did time begin at that point, but also its accepted counting devices, first and foremost the mishmarot cycle. The placing of Gamul at the very day of Creation renders this cycle a part of the inherent world-order just like the division of time into weeks, months, and years.

Two hundred and forty-nine years is the longest span of time discussed in the calendrical documents from Qumran, which are mostly restricted to the rotating six-year cycle. Even those documents that use the mishmarot system to date a historical occurrence in concrete historical time do not exceed the limits of the six-year cycle for the sake of the seemingly more convenient (six-)jubilees cycle.7 Only one trace of the jubilee counting method is extant in the badly preserved roster of 4Q330 (cf. Comments ad loc.), but it is too fragmentary to shed any light on the framework of 4Q319. Longer spans of time are employed in some pivotal loci of Second Temple literature, first and foremost in Jubilees and in the 'Apocalypse of Weeks' of 1 Enoch.8 However, these


7 See 4Q331–333, DJD XXXVI (Oxford: Clarendon, 2000) 275–89. These documents were initially considered standard mishmarot rosters by Milik, who assigned them to the annalistic Mishmarot C group. However, examination proved that they do not contain a full record of the cycle, but only a mention of the priestly course on duty at a certain point in time.

documents do not refer to priestly courses as a time-reckoning device. It should therefore be assumed that the correlation which serves as a basis for the *otot* schedule was engendered in order to harmonize the six-year priestly cycle with the typical septad scheme, prominent in Enochic calendrical thought.\(^9\) It is well known that the standard year of 364 days presented in *Astronomical Enoch* and accepted at Qumran seeks a perfect extrapolation of the basic septad unit by positioning an ever-repeating structure with exact subdivisions: 364 days = four quarters of thirteen weeks, i.e. ninety-one days respectively, with every appointed season and festival falling constantly on the same day of the week. The objective behind the intricate edifice of 4Q*otot* is to solve the problem caused by the six-year priestly cycle, that does not comply with the septimal pattern, by integrating it into a large-scale multiplication of six, seven, and forty-nine. The grand cycle of 294 years is therefore a chronological super-structure, whose intrinsic numerical relations may yield significant affinities of *mishmarot* and dates; see TABLE 2.\(^{10}\)

The *otot* roster is made up of two components. The first records the occurrence of signs in a chronological order for each jubilee, ending with the proclamation of 'the concluding sign of the jubilee', while the second gives a summary formula of the number of signs in a jubilee together with a specification of the number of signs that occurred in a * regs, 'release year'. A survey of these components follows:

1. A sign occurs every three years, hence always falling at the beginning of years 1 and 4 of the six-year *mishmarot* cycle. As can be seen from the lunar concordances of 4Q320–321a, these two points in the cycle are astronomically equivalent, and differ only in the priestly course on duty. The six-year cycle consists of two astronomically identical triennial cycles, combined only for the sake of achieving full harmony in the *mishmarot* rotation, which cannot be achieved until the completion of six years. The priestly courses that serve at the beginnings of years 1 and 4 are always Gamul and Shekaniah respectively, hence their names are called upon the sign that occurs during their duty, either השב יא or הנל תא. However, the year-numbers employed in the *otot* list are not identical to the standard six-year numbering, but rather follow the seven-year cycle of the release years. Therefore, at the beginning of the list signs were recorded at years one, four, and seven of the first seven-year period, at years three and six of the second seven-year period, and at years two and five of the third period. In the fourth seven-year period, this cycle repeats itself with signs in years one, four, and seven, etc. The list proceeds in the same vein for the rest of the jubilee as well as for those following.

For an unknown reason, the six jubilees presented in the list are not enumerated by the ordinal numbers 1–6 but rather with 2–7. This phenomenon is discussed below in detail. TABLE 2 displays a full enumeration of *mishmarot*, *otot* (in italics), and jubilees.

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\(^9\) מְשָׁמַרְתֵּנוּ, 'six jubilees of years' are mentioned in *Jub.* 4:21 (4Q227 2.2) as the time-period of Enoch's sojourn in Heaven. However, since neither *I Enoch* nor *Jubilees* knows the calendrical significance of the number six, it is not likely to bear the same meaning as in 4Q*otot*. Cf. 'weeks of jubilees' in *Jub.* 4:18.


<table>
<thead>
<tr>
<th>2nd Jubilee</th>
<th>3rd Jubilee</th>
<th>4th Jubilee</th>
<th>5th Jubilee</th>
<th>6th Jubilee</th>
<th>7th Jubilee</th>
</tr>
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<td>1</td>
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<tr>
<td>Gamul</td>
<td>Jediah</td>
<td>Mijamin</td>
<td>Shekaniah</td>
<td>Jedelah</td>
<td>Happissq</td>
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<td>2</td>
<td>2</td>
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<td>2</td>
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<tr>
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</table>

**TABLE 2: Enumeration of Mishmarot, Otot, and Jubilees**

DISCOVERIES IN THE JUDEAN DESSERT XXI

203
The order of elements in each *otot* item is therefore: 1) the word יא; 2) the course name [Shekaniah or פשתן]; 3) the ordinal number of the year in the *šemithah* cycle: X (ו). The following example taken from the third and fourth seven-year cycles of the fourth jubilee (col. V 7-9) will clarify the sequence of *otot*:

*sign of G]amul in the third (year of the third seven-year cycle); s[ign of [Shekaniah in the sixth (year); sign of Ga]mul in the second (year of the fourth seven-year cycle); sign of Shekaniah [in the] fifth (year)*

The position within the seven-year cycle (henceforth designated *šemithah*) is usually given in ordinal numbers, except for the first and the seventh years which are named differently: the latter is designated פשתן and the former יא נין, 'after the release', a designation parallel to the prevailing designation in calendrical documents of the first day of the week,まずは (cf. Lev 23:15; for the sixth day Ps 92:1 פELS דљN מְכָּרָם רִועֵי רוֹזַיָּה). In Rabbinic Hebrew, the first year is similarly designated טטטטטטטט, 'post-sabbatical year' (e.g. m. Seb. 1.4; t. Ta'an. 3.9).

2. After recording the signs in each jubilee, the list ends with a proclamation of the concluding sign of that jubilee, יא נון וبيان. However, an irregularity occurs in this category in col. V 11-12 where a sign is counted as concluding the fourth jubilee, while in fact it belongs with the following; יא נון falls on the forty-seventh year of the fourth jubilee, therefore it should be its concluding sign, while יא נינ is יא נין, 'sign of Shekaniah after the release, (which is the) concluding sign of the jubilee' falls on year 1 of the next jubilee. Note that this sign is not even counted at the beginning of the fifth jubilee. A similar example appears in the fragmentary col. V 4, where יא נינ appears to be mentioned as concluding the third jubilee, while in fact this course’s sign does not appear until the second year of the fourth jubilee (col. V 6). Further ambiguity is caused by the long but fragmentary jubilee-concluding formula in col. VI 8-10. It is possible that uncertainty existed over the reckoning of 'the concluding sign of the jubilee' at the time of the scroll’s inscription; the uncertainty relates to whether the jubilee concludes with the last sign occurring in it or with the first sign of the next jubilee. The existence of such an ambiguity within the ancient scroll itself rather than at the modern interpretative level imposes a serious restriction on our interpretative efforts.

Another anomaly exists at the end of the fifth jubilee (col. V 18-19). In PAM 43.283, a small fragment is positioned at the end of col. V, on which the course name כנסניאין

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11 This element does not appear in the first sign of a jubilee; see V 6.

12 This ordering of the elements differs from that proposed by Milik in his preliminary publication of col. vi, now known as col. V 6-13. Milik construed the items as beginning with the year number followed by the mishmar name. However, the full text proves that the order described by the present author, first proposed by U. Glessner ('Investigation of the Otot-Text (4Q319) and Questions about Methodology', *Methods of Investigation of the Dead Sea Scrolls and the Khirbet Qumran Site* [Annals of the New York Academy of Sciences 722; New York: New York Academy of Sciences, 1994] 433-7), is correct.

13 In this case the sign is counted twice, in both jubilees, contrary to the example in col. V 12.

remains. In the present context, this course name interrupts the smooth sequence of the course names Gamul and Shekaniah. The course of Jeshebab serves in the first year of the sixth jubilee (see TABLE 2), while the fifth jubilee concludes with the sign of Shekaniah which actually forms its forty-ninth year. It appears that for some reason the fifth jubilee is not considered to be completed until the sixth jubilee begins, a thought very similar to that implicit in col. V 4 and 12, as described in the previous paragraph.

One more component of the ‘concluding sign of the jubilee’ proclamation should be mentioned. Most translations place the ordinal number of the jubilee after יובל היובל, thus forming, for example, the phrase יובל היובל היובל. Is this reading acceptable? Once again the scroll yields contradicting evidence. First, in col. VI 16 we clearly read יובל היובל היובל, with no further trace of writing whatsoever in this line. However, in the problematic transition point between the third and fourth jubilees at col. V 4–5, line 5 clearly shows יובל היובל היובל (sic) at the end of the list of jubilee signs, in what may be reconstructed to read יובל היובל היובל אות [sic]; see NOTES ON READINGS. Yet another possible case of jubilee numbering occurs in col. V 19, where the yod preceding the mishmar name Jeshebab requires a restoration of the ordinal number יובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל יובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היoblin.

3. The second component of the otot section is the summary formula of a jubilee, that appears between the jubilees. After indicating the concluding sign of the outgoing jubilee, the formula gives the total number of signs—sixteen or seventeen—in a jubilee, and then distinguishes two or three of them as being יובל היובליובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היoblin.

The poor state of preservation of the formula seems to allow contradicting interpretations as to which jubilee the otot summary refers: the outgoing second jubilee or the incoming third jubilee. The answer to this question is fundamental for the interpretation of the list, since it is the key to determining how many jubilees are recorded in it and their numerical designations.

Three examples of jubilee numbers within the summary formula are extant: יובל היoblin. How can these explicit appellations be construed in the framework of the entire list? The question whether the list covers a time-span of six or seven jubilees arises from the reference to the seventh jubilee in col. VI 17.

The most plausible interpretation, supported below with further evidence, is to view the formula as the concluding line of the jubilee. In that case, col. VI 17 implies a cycle of

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15 This positioning, probably executed by Milik, appears correct as the fragment fits materially. The occurrence of יובל prevents its placement in cols. VII–IX, where the priestly course of Jeshebab is expected (see NOTES ON READINGS).

16 In other places in the scroll, we can only deduce the occurrence of such numbering from the sum of letter-spaces in lacunae: in col. V 12 there seems to be insufficient space for a jubilee number, while in cols. IV 16 and VI 7 the length of the lacuna does seem to allow it. It may be concluded therefore that no consistent practice prevailed in this question.

17 Col. VI 9 יובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל היובל hiובל היובל היובל היובל hiובל היובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hiובל hioblin is too fragmentary to produce any evidence.
seven jubilees. Indeed, in his initial publication, Milik understood the list to contain a cycle of seven jubilees, though admitting that the data for the seventh jubilee are virtually identical to those of the first; see TABLE 2.\(^\text{18}\) As already mentioned, Milik proposed that an entire column be reconstructed after the Serekh ha-Yahad text, that would have contained the data for the first jubilee. However, this hypothesis was refuted above and the problem of the missing first jubilee remains. Two solutions have been presented: either the list designates six jubilees by the numbers 2–7, for some reason omitting the number 1; see TABLE 3,\(^\text{19}\) or else it regarded the jubilees as numbers 1–6, while the reference to the seventh jubilee in col. VI 17 is a scribal error.\(^\text{20}\) The readings in col. V 5 and 12 discussed above, which refer to the third and the fourth jubilees, support the former proposal. Despite some possible contradictory evidence in col. VI 9 and 19 (both fragmentary; see COMMENTS ad loc.), this unique method of numbering is adopted in the present edition.

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<th>Conclusion (Col.)</th>
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<td>VI 7-8</td>
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<td>שביעי</td>
<td>VI 10-16</td>
<td>VI 17-18</td>
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\(^\text{20}\) Cf. the translation in García Martínez, ‘Calendarios en Qumrán (I)’, EB 54 (1996) 345–8.
<table>
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<th>July 4</th>
<th>July 3</th>
<th>July 2</th>
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| 2     | 1     | 4     | 3     | 5     | 6     |_summary:

**Discoveries in the Judaean Desert XXI**
A few details are worthy of attention. The sign of Shekaniah in year 2 of the fourth jubilee serves both as the concluding sign of the third jubilee and as the first sign of the fourth jubilee. In the sum total of col. V 12-13, it is recorded for the fourth jubilee, but the sum total of col. V 4-6 for the third jubilee is broken. A similar example appears at the end of the fourth jubilee, with חֶסֶד הָעָיוֹן积极作用 and וּדָגָם counted with the fourth jubilee but ignored at the head of the fifth jubilee, which begins with sign Gamul of the fourth year. Inexplicably, this method of numbering does not recur in the parallel set of jubilees, 5–7. This is the reason why sixteen signs are recorded for jubilees 5–7 in contrast to seventeen for jubilees 2–4.

When integrating the summary formulas into the information on the extant jubilee numbers in cols. V 5, 12 and VI 17, it must be recognized that the six jubilees of the cycle are designated by the ordinal numbers 2–7, rather than 1–6. The explicit enumeration of חֵשֶדHonestly (col. V 5), והשלישיהיובל (col. V 12), and חֶשֶדHonesty (col. VI 17) is too certain to be explained away as a scribal error. For some reason, the first jubilee of creation is seemingly not designated חֵשֶדHonestly but rather חט, ‘the second’. This seems to imply a previously unknown concept of primordial time. Unfortunately, insufficient information is known to account for this surprising feature of time-reckoning and creation theology in Second Temple Judaism.

The meaning of חֵשֶד
1. In Gen 1:14, when the creation of the luminaries is described, their eternal task is defined: ‘Let them be for חֵשֶד Honestly and for seasons and for days and for years’. It is difficult to determine the original meaning of חֵשֶד Honestly in this verse, as can be seen from the multiplicity of interpretations given for it throughout the centuries, from ancient Jewish interpretations to modern research. This word undoubtedly serves as the basis for the term חֵשֶד Honestly in 4Q319 since the pericope Gen 1:14-18 is a key passage in the Qumran calendrical documents, especially 4Q319 and 320. The opening proclamations of those documents clearly paraphrase the creation story, as if aiming to integrate the list they introduce into the fabric of the biblical text. In this manner, 4Q320 possibly began with an account of the first three days of Creation. Thus, the practice of rewriting scripture (e.g. the rewriting of Genesis 1 in Jub. 2) was expanded to include the fundamentals of

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21 In contrast to the proposed interpretation, Glessmer (Die ideale Kultordnung: 24 Priesterordnungen in den Chronikhüchern, den kalendrären Qumranexten und in synagogalen Inschriften [Habilitation; Hamburg University, 1995] 99-101) suggests that the formulas serve as headings for the חֵשֶד Honestly lists of the incoming jubilees rather than as conclusions of those previously listed. In that case, the six jubilees that comprise the cycle were designated by the ordinals 1-6.

The reference to the seventh jubilee in col. VI 17 can be explained, according to Glessmer, by assuming that after concluding the first 294-year cycle, a proclamation of the contents of the next jubilee was introduced, i.e. the first jubilee in the next cycle, though without a detailed enumeration, in order to display a seven-based scheme (cf. Beckwith, Calendar, 122, and frg. 18 below). However, against Glessmer’s proposal, an objection may be posed regarding the reading in the beginning of col. IV 9 that leaves insufficient space in this line for the heading formula of the first jubilee, as Glessmer reconstructs, before the extant text of line 7.

More problematic are the numbers of signs counted in the heading formula for each of the respective jubilees, when compared with the actual number of signs, similar to the method of TABLE 4. Glessmer’s view raises difficulties in the interpretation of the heading of his fourth jubilee (Jubile 5 in the table). As seen in TABLE 4, three of the signs in this jubilee occur in the release year. However, what is allegedly the heading of this jubilee clearly refers to only two signs in the release (col. V 13). This may serve as sufficient evidence to reject Glessmer’s proposal, though the list is too broken to discount this interpretative option.
calendrical thought. The author of the oto\_t roster thus adds his own interpretation to the polyvalent cosmological term. The prominence of Gen 1:14-18 underscores the significance of the motion of the heavenly luminaries for the interpretation of the oto\_t roster.

In addition to the somewhat obscure meaning of ה\_ת in Gen 1:14, this word recurs in Jer 10:2 in an astronomical context: ‘Do not . . . be dismayed at the signs of the heavens; for the nations are dismayed at them’ (NRSV). Here, as in 4Q319, o\_t refers to a celestial phenomenon that has significance on the earthly plane. The specific heavenly phenomenon defined as o\_t will be discussed below. However, by marking oto\_t as special occasions, the author of this list ignores Jeremiah’s prohibitive; indeed the entire school of cosmological thought in Second Temple Judaism does likewise, but the explicit use of the word ה\_ת highlights the clash between the prophetic prohibition against the observance of heavenly phenomena and the apocalyptic interest in them (cf. Sir 3:21-22 and 43:6).

A different meaning of the Hebrew term oto\_t is seen in 4Q319 through its unique association with the mishmar names Gamul and Shekaniah, yielding the phrases ה\_ת ו \_ח and ה\_ת ו \_ח. This structure is familiar in a military context from the War Scroll, where the twelve tribes of Israel and their champions all carry standards identifying them when marching into battle. In a similar way, the observable heavenly phenomena serve as standards for the priestly courses of Gamul and Shekaniah, with each sign figuratively ‘leading’ the next three years until the appearance of the following sign. The relevance of War Scroll terminology to this material is underscored by the presence of the priestly courses in 1QM. Some significant ties exist between the mishmarot regulations of the calendrical documents and the War Scroll; see Glessmer, Die ideale Kultordnung, 110-17.

2. Exactly what type of observable heavenly phenomena are celebrated as oto\_t in 4Q319? The answer lies in the phrase ה\_ת ו \_ח in col. IV 11, which equates the first sign of the list with the identically dated phenomenon in 4Q320 i 1-5. This refers to the relation of the sun and moon at the time of Creation, which is repeated after three years, at the beginning of year 4 of the six-year cycle. The sun-moon relation at the time of Creation forms the first link in the chain of 4Q320 1-2, in a list that records the occurrence of a similar lunar phase in each one of the thirty-seven lunar months parallel to the first solar triennial cycle (probably also the second triennial cycle until a sexennial cycle is complete). In contradistinction to the different lunar phase designated duqah\_\_oh in 4Q321 and 321a, the lunar phase of Creation, never named in the ancient scrolls, is designated X in research. An o\_t occurs once every three years on a date which is astronomically an X-date. The triennial cycle is highly significant for the sun-moon synchronization of 4Q320, owing to the gap of ten days between the 354-day and 364-day years, an additional month of thirty days is added to the lunar ephemeris every three years in order to equate it with its equivalent (3 \times 364 = 3 \times 354 + 30).

This mathematical equation enables the recurrence of the initial sun-moon relation in year 4, when the beginning of the solar year, i.e. the vernal equinox, again falls on the same day as the lunar phase X. However, the identity of this lunar phase in the Qumran calendars is still under debate. An ‘emerging consensus’, so named by M. O. Wise, points to the full moon as the beginning of the lunar month and concomitantly as the lunar phase recorded in 4Q319-320. This opinion is based mainly on an analysis of
the short pericope 4Q320 1 i 1-5. If correct, the practice of beginning the month on the full moon is highly unusual in its near-eastern context, where the new moon was generally considered to begin the month, as the prevalent biblical appellation תבז proves.24 Indeed, in 4Q320, S. Talmon and the present author construe X as close to the new moon, i.e. the night before the visible new crescent, when the moon is in conjunction with the sun (thus also Wise, Beckwith). This is the moonless night, sometimes considered a bad omen, which perhaps explains its meticulous preservation in 4Q320. See APPENDIX 4 in 320-330, 337, 394 1–2: Introduction.

The identity of X, whether full-moon or conjunction, remains uncertain.25 No support for either view can be deduced from 4Q319, since both possibilities are viable. Both the concurrence of the vernal equinox with the conjunction and its concurrence with the full moon are celestial phenomena of great astronomical importance for the synchronization of solar and lunar movements. The occurrence of such a phenomenon is designated as תבז and its further appearances are recorded in the course of the 294-year cycle. One more element which is viable with both interpretations is the practice of adding an additional 30-day lunar month at the end of every third year in order to maintain the original sun-moon coordination. Thus the otor list is, technically speaking, a manual for the maintenance of the lunar calendar; cf. Albani, 'Zyklen'; Beckwith, Calendar.

The explanation given thus far for the purpose of the otor count mainly elucidates the triennial occurrence of ot. The question remains as to why these data are supplied in the framework of a 294-year apparatus if they only record a uniform addition of thirty days every three years. The 294-year cycle is not relevant to the basic sun-moon synchronization practice,26 nor does this practice account for the special count of otor in each jubilee or the concern for 'signs in the release' and the 'concluding sign of the jubilee'. However difficult, these questions are insufficient reasons to completely discard the synchronization interpretation, as Glessmer proposes. The need for synchronization remains the best explanation for the otor records. After establishing a count of signs appearing every three years, a need arose to integrate this count into the existing systems of mishmarot and jubilees. The 294-year cycle is significant precisely for this reason, being an apparatus that enables the accurate allotment of signs within the jubilees. The need to harmonize discrete time-reckoning devices was the main motivation for the various calendrical documents from Qumran; it was this motivation that prompted the development of the highly intricate otor roster with its technicalities and peculiarities.

**Intercalation**

In a series of studies, Glessmer has proposed that 4Q319 reflects a system of intercalation of the 364-day year in order to align it with the true solar year of 365.24

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days. VanderKam (Calendars, 84) surveyed Glessmer’s earlier proposal and commented thus:

It is likely that the signs of 4Q319 have something to do with a system of intercalation that would bring the 364-day system into harmony with the true solar year. Whether that system is the more complicated sort that Glessmer suggests or a simpler one reconciling the schematic lunar and solar calendars every three years, the text does point to some intercalary system and thus to an interest on the part of the author(s) in making the calendar practicable over very long periods.

The practice of adding a thirty-seventh lunar month every three years in order to reach a total of 3 x 364 days is clearly attested in both 1 En. 74:13–16 (see Albani, Astronomie, 91–2) and 4Q320–321; in contrast, there is no apparent awareness of, or explicit reference to, the length of the true solar year in either 1 Enoch or any of the Qumran scrolls. It is therefore impossible to assume such an awareness in an obscure document like 4Q319. A clear distinction should be drawn between supplementing the lunar ephemeris with a thirty-seventh lunation, which is plausible and quite common, and the problematic practice of correcting the sacred 364-day solar year. While the former practice, relating solely to the lunar system, does not affect the rotation of the mishmarot service, an employment of the latter will cause serious disruption to this elaborate cycle, considered at Qumran to be one of the fundamentals of time-reckoning, hence of world order itself.28

Contents of Cols. VII–IX
In a preliminary discussion, Milik outlined the contents of 4Q319 as follows (note that the column numbers differ this edition):29

<table>
<thead>
<tr>
<th>Col. and Line No.</th>
<th>Description of Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>i–iv</td>
<td>Text parallel to 1QS VII 10–X 4</td>
</tr>
<tr>
<td>v–vii</td>
<td>Otot cycle of seven jubilees [proven to be six jubilees, J. B.]</td>
</tr>
<tr>
<td>viii 1–7</td>
<td>Signs of the four seasons in a sexennial cycle</td>
</tr>
<tr>
<td>viii 7–18</td>
<td>Monthly signs of the six-year cycle</td>
</tr>
<tr>
<td>viii 18–ix 19</td>
<td>Calendar of festivals in the six-year cycle</td>
</tr>
<tr>
<td>x 2</td>
<td>Signs of the Sabbaths beginning a month</td>
</tr>
<tr>
<td>x 4–8</td>
<td>Concluding remark</td>
</tr>
</tbody>
</table>


28 Furthermore, the astronomical connotation of ot does not comply with the meaning ascribed to it by Glessmer. The practice of adding a thirty-seventh lunar month engenders a real astronomical phenomenon, i.e. the concurrence of the vernal equinox with the conjunction or full moon, which is compatible with the meaning of ot. However, according to the solar intercalation hypothesis, this term refers many times to a mathematical construct which is certainly an improbable meaning for ot.

The outline of cols. VII ff. (Milik's col. viii) is based mainly on his reconstructions of the small frgs. 9-15. Yet, while the contents of cols. VII-VIII can be reasonably inferred, the scanty text remains are hardly sufficient for even a tentative reconstruction of the material that follows. Furthermore, as seen above, most of the small frgs. 16 ff. do not belong materially with the scroll of 4Q259 and 4Q319 (for a discussion of their contents see below).

Milik's outline should be doubted in regard to the last two items. In 'signes des sabbats initiaux des mois' (in his col. x 2 ff.), he may have referred to the text of frg. 15. However, no reasonable sequence of mishmarot could be discerned in that fragment (see comments), and no other trace of such a list is found.

Milik's reconstruction of the concluding remark is also questionable:

None of the extant fragments can be interpreted as yielding such a reading, not even a combination of three fragments as suggested by Garcia Martinez ('Calendarios', 345), who, though acknowledging this problem, included the reading as the text of col. X in his edition, trusting Milik's palaeographical ability and the similarity to the summary formula of 4Q320 4 ii. The placement offered by Milik requires that the summary text be combined with the two columns of frg. 15, that contain a previous component of mishmarot, but this is materially not reasonable. It must be concluded that no apparent summary is preserved for the calendrical compendium of cols. VIIff.

The beginnings of the lines in col. VII 2-8 may well be the remains of a list of 'Leaders of the Year-Quarters' as interpreted by Milik. The key to determining the contents of this column lies in the parallel sequence of 4Q328 and 4Q329, which runs as follows:

1. mishmarot names in running order;
2. leaders of the years;
3. leaders of year-quarters;
4. leaders of months and mishmarot serving in each month.

This sequence forms a master list for the mishmarot regulation, prompting its restoration in 4Q319 in the following manner:

1. A sequence of 'leaders of the years' is preserved at the bottom of col. VI, and was probably continued in the first line of col. VII (but see comments on col. VI 19). This list is not preceded by a plain mishmarot order, which was probably not included in 4Q319;
2. A sequence of 'leaders of the quarters' in col. VII 2-7 (see comments).

The text of frg. 88 is the closest to this formula, especially to that of line 4. However, this is only one minor component; there is no trace of the entire chain. Furthermore, frg. 88 and the rest of the fragments on PAM 42.863 probably do not belong with 4Q1tot.
3. A list of ‘leaders of the months’ in the remainder of col. VII (frg 9, possibly also frg. 10).
4. A festival calendar of the six-year cycle on frgs. 12, 13, and possibly frg. 77, which covered col. VIII and possibly continued further.
5. There is no data regarding the contents of col. IX and the following columns, if indeed they existed.

Frgs. 48–110 appear to belong to a different mishmarot composition. Some of them contain names of priestly courses as well as ordinal numbers expressed in words or symbols. One or more jubilees are mentioned in frgs. 59 and 79 and sabbaths are recorded in frgs. 55 and 88. In addition, there are some traces of the word לארשי in frgs. 51, 63, and 74, but they are too fragmentary to affirm a connection with the main otot list of 4Q319 IV–VI.

Palaeography

The letters are neatly suspended from the dry rulings and are 3–4 mm in height. The lines are spaced generally at intervals of 7 mm. In some places, the scribe used wider rulings, and inscribed in larger letters, e.g. col. IV 15–19; cf. taw at the end of col. V 8 which exceeds 6 mm in height. In contrast, the inscription in col V is generally smaller than average.

The script of 4Q259 and 4Q319 is discussed extensively by Vermes and Alexander in DJD XXVI, 7–9, 22–3, 133–4.31 Some further examples of the semi-formal/semi-cursive script appear in 4QOtot. Note first the large cursive bet in col. VI 9. Zayin in יהב is very thin with no horizontal top bar. The top stroke of lamed is extremely high, touching the letters of the preceding line (e.g. col. IV 18). In יהב of cols. V 14 and VI 13, alef is written with a barely visible left leg. A similarly deformed alef appears in יהב in col. VI 15 near a dark section of the parchment.

The letters are not executed uniformly. In fact, as noted by Vermes and Alexander, two different forms of taw appear within one word; similar variations occur for bet (col. IV 11 and 12; one of the forms preserves the serif of the formal bet), mem (col. VII 4 and 5), and sin (col. V 11 and 13). Some coarse forms appear due to breakage of the pen, e.g. bet in יהב (col. VI 13) and יהב (col. VI 8); cf. also frg. 27.

Some cases of letter omission appear, e.g. ים in יהב (col. V 9, cf. the same word in line 7). Omitted words were inserted above the line in col. V 9, 12, and 13 as well as in col. VI 7 (see also frgs. 22, 27, 61). The corrections in col. V 12 and 13, occurring within the jubilee-concluding formula, seem to be the work of a second scribe with a more cursive hand. Generally speaking, the middle lines of col. V abound with mistakes and corrections. Two outstanding mistakes, not corrected by the scribe, appear in col. VI 15: יהב instead of יהב, and היה instead of יהב.

In respect to the date of the script, varying opinions were expressed by Milik and Cross (see DJD XXVI, 133). It should be noted that cursive scripts may give the false impression of being early; what appears to be an old form may in fact be the result of

31 Concerning the script of frgs. 48–110, which probably belong to a different scroll, very little is known. This script seems smaller than that of 4QOtot and somewhat more formal; see, however, the cursive loop of taw in frg. 77.
lack of scribal training. Therefore 50–25 BCE, the date proposed by Cross, is to be preferred, in accordance with the average date of the 4Q320–330 corpus.

**Orthography**

Due to its highly technical nature, the vocabulary of 4QOtot is very limited, and therefore little evidence is extant for its orthography. No extreme cases of *plene* or defective spelling are recorded. טכזסס is usually spelled full except for in col. IV 14. The plural is usually תרוי, but appears once as the full תרוי (col. V 13), inserted above the line by a second hand. The *mishmar* name Mijamin is spelled defectively in frg. 15 i 1, as in 4Q320. Jeshebab is spelled *plene*, אָשֶׁב, in cols. V 19, VII 6, and frg. 16 but is defective in frgs. 15 and 22.

The full spelling of the ordinal numbers is inconsistent, e.g. יָבָט (cols. IV 19, V 9) where an original defective spelling was supplemented supralinearly; but cf. the defective בְּרֵי (col. V 16).

Mus Inv. 683, 695, 696, 708
PAM 41.979*, 42.421*, 42.422, 42.863*, 43.228*, 43.229*, 43.230*, 43.231*, 43.283*, 43.284*, 43.285*, 43.286*

Col. IV (Frags. 1, 2, 3g)

| [ ] | בֵּיתוֹ | ] | 9 |
| [ ] | אָוְיָרְדָה | בָּאָרְבָּעָה | בְּכֶלֶת | ] | 10 |

NOTES ON READINGS

Ll. 9–11 The join of frgs. 1a and 1b as presented in the photographs is problematic. נֶפֶן תְּרֵךְ (line 11) stands above הֶנְפֵן. The horizontal hook extends beyond the left margin of the column. However, the required text, which is practically certain based on the pattern of the list, covers more than 40 letter-spaces. Since frgs. 1a and 1b were joined in this manner in the early PAM 41,346, this probably reflects their original placement. Therefore, the reconstruction of line 11 extends beyond the left margin of the column.

Ll. 9–14 Two small fragments which appear at the ends of these lines in PAM 43.283 were positioned incorrectly and are now labelled frgs. 32 and 33; see below. The upper fragment clearly holds remains of four lines rather than two (thus Milik). The lower piece is white and evidently belongs elsewhere; the horizontal hook on the bottom line is the digit 10 rather than he.

L. 9 נֶפֶן is clearly seen above line 10, though the script is somewhat thinner than normal for this document. בְּט is clear at the beginning of the line, with רֵפ, וּוֹ, and final קָפ appearing below the line. The bases of letters from a following word can also be seen. The space between lines 9 and 10 appears irregular, but may result from the crease in the uppermost piece.

L. 14 הָלֶה. The lam is very faint, and may be missing altogether due to a scribal error.

Ll. 15–19 The two fragments 2 and 3g are posited on Mus. Inv. 683 too far to the left. The average width of lines 15–19 is 4.40 corrected letter-spaces, very close to the average of 42.3 spaces for lines 1–5 of the same column in 4Q259. Therefore the text of lines 15–19 runs consecutively with no vacats assumed in the middle.

L. 17 וְלָשׁוֹן. A trace of yod is seen following רֵפ. Note that the tops of רֵיְפָה and הָלֶה protrude considerably into the margin.

L. 18 The trace of ink at the beginning of the line is the upper left stroke of a letter. In the script of 4Q319, this stroke most probably denotes הָלֶה; see comments.

TRANSLATION

9. [blessed]
10. [its light (came forth) on the fourth day of the week]
11. [the Creation in the fourth (day) in Gamul; Sign of Shekaniah in the fourth (year); Sign of Gamul in the year of the release]
12. [Sign of Shekaniah in the third; S[ign of Gamul] in the si[x]th; Sign of [Shekaniah in the second; Sign of Gamul]
13. [in the fifth; Sig[n of Shekaniah in the year] after the release; Sign of Gamul] in the fourth; Sign of Shekaniah]
14. [in the release; Sig[n of Gamul in the third; Sign of Shekaniah [in the sixth; Sign of Gamul]
15. [in the second; Sig[n of Shekaniah in the [fifth; Sign of Gamul] after the release]c; Sign of
16. [Shekaniah in the fourth; Sign of Gamul in the release (which is the) [concluding] sign of [the jubilee. Signs of the second]

32 This refers to corrected letter-spaces: thin letters, word-spaces, and digit symbols are counted as half-spaces.
33 This was caused by the wrong placement of 4Q259 frg. 4c, which was not corrected by the editors of DJD XXVI.
17. [jubilee] are 17 signs, of these [3] signs [fall] in the years of the release. The Creation
18. ... Shek[an]iah in the third year; Sign of Gamul in the sixth; S[ign of Shekaniah
19. [in the second; Sign of Gamul in the fifth; Sign of Shekaniah (in the year) after the release; Sign of Gamul

COMMENTS

L. 9 The word יבשך is crucial for the interpretation of the transition point between the Serekh ha-Yahad text and the calendrical material. This word may echo בָּשִׁיר or בָּשֵׁם in 1QS IX 26, 28 thus preserving the poetic lines usually considered to be a preamble to the Maskil’s hymn, not extant in this copy of Serekh ha-Yahad. Alternatively, the blessing may belong to the following calendrical portion, serving as a doxology of praise to YHWH, who created the luminaries and maintains them as everlasting signs. A doxology or blessing formula would be expected as an opening to this creation-al-storonomical list; cf. e.g. 1IQS XXVI 13.

L. 10 The three words preserved in this line refer most probably to the sun, using the 3rd fem. suffix -ת. The list begins with the creation of the luminaries on the fourth day, explicitly mentioned in line 11, יבשך. The course Gamul is introduced in this context in order to establish the mishmarot cycle as a fundamental element of world order. A similar idea is preserved in 4QS 1 i 1-5 in a fuller form, with significant verbal connections to the present text.

L. 10 יבשך. The word יבשך bears here the meaning of 'week' as often is the case in the priestly source and in Qumran writings. Cf. e.g. 4QS 1 i 3-4.

L. 11 יבשך may have been preceded by קרא, forming the phrase 'ספרא, 'the sign of creation'. See frg. 74a 1.

L. 13 יבשך. For this designation of the first year of the cycle see above, STRUCTURE AND MEANING OF THE OTOT SECTION.

L. 17 ... רבי. At the beginning of a new jubilee, Creation is again mentioned, probably preceded by one or two words, as can be seen from the length of the lacuna. For a possible phrase here, cf. יבשך in 4Q5201 i 2-3.

L. 18 יבשך. The יבשך ends a word belonging to the phrase which includes 'Creation' of the previous line. Hence the first sign of the jubilee is represented only by the name Shekaniah and is not preceded by קרא. Cf. col. V 6, 13.

Col. V (Frags. 2, 3, 4, 5, 9, 23)
NOTES ON READINGS

L. 2 [ינוע]. This reading together with two letter tops from line 3 appear on frg. 23, which may be joined here.

Ll. 4–5 On the abraded top section of frg. 5a, traces of the spike of sin and a lower horizontal stroke of kap can be discerned, being remnants of the mishmar name Shekaniah. Garcia Martinez and Tigchelaar read the transition between lines 4 and 5 as אֶחָד [הָקַּפֶּר] בֵּית שֶׁקַּנְיָ֥הוּ הָוֶל אֲחַת [הָקַּפֶּר] בֵּית שֶׁקַּנְיָ֥הוּ הָוֶל. However, the mishmar name Shekaniah appears very close to the end of the line, leaving insufficient space for שֶׁקַּנְיָ֥הוּ הָוֶל אֲחַת. Indeed, the reconstruction leaves an unexplained wide lacuna between שֶׁקַּנְיָ֥הוּ הָוֶל אֲחַת (frg. 4a) and שֶׁקַּנְיָ֥הוּ הָוֶל (frg. 5a) that cannot be filled by שֶׁקַּנְיָ֥הוּ הָוֶל alone.

L. 5 [ינוע]. Between the first yod and the lamed, an erased nun is seen. Perhaps the scribe started writing כ and then cancelled the nun and continued with a lamed.

L. 5 The reconstructed number may be 16 or 17, depending on whether the last sign of Shekaniah, continued from the fourth jubilee, is considered within the count. Cf. col. V 12 and TABLE 4.

L. 5 Below taw of מַעְרָשׂ, there is a dark stain on the parchment, which is not an ink-trace. The reading of taw is therefore certain; this implies that the number 17 preceded מַעְרָשׂ here, in contrast to the prevailing habit in 4Q407; for this order see 4Q320 3:14.

Ll. 7–13 Gaps are assumed in the middle of lines 7, 9–11, 13, possibly suggesting that frgs. 5a and 5b should be moved further to the right, closer to frg. 4a.

L. 7 קַעַד. The omission of nun occurs here and again in line 9. However, the reading here is doubtful as it appears in the join between two small pieces.

L. 9 קַעַד is clearly seen following קַעַד at the beginning of the line. The scribe must have forgotten the serial number before קַעַד, and inserted it later above the line. The last four letters of this correction can still be

seen following מַּע, together with traces of mem and bet. The yod seems to have been added by a second hand in order to correct the defective spelling; see orthography.

L. 9 סַע. See palaeography.

L. 12 At the end of the lacuna, the bases of ג and ח can be seen, above which a second hand inserted בַּע. Another supralinear trace of the second hand appears about 8 mm before that.

L. 13 מַע, omitted by the first scribe, is added supralinearly above גַּעַכ by the second hand.

L. 13 מַע. Following the digit symbols and a space, a trace can be seen that appears to be the lower part of a letter, but cannot be fully identified as such. Its form resembles neither an aleph (cp. line 15 מַע) nor a ת (pace Milik, Enoch, 62); see comments. The remaining lacuna at this point is not wide enough to include both the signs of Shekaniah and Gamul. It is therefore assumed that the sign of Shekaniah is omitted; see comments.

L. 14 At the bottom right of frg. 5b, a vertical stroke is discerned above the broken line 14. It is too short to be the upper stroke of lamed from גַּע (cf. e.g. lamed of line 10).

L. 16 מַע. Three unexplained dots can be seen above the dry ruling of this line; the first appears to the right of the initial bet, and the two others are above the left corners of resh and the following bet. For the spelling, see orthography.

Ll. 18-19 The small frg. 3h was placed here by Milik, although Glessmer discards it in his reconstruction, probably because of the problematic appearance of mishmar Jeshebab. It fits the parchment colour, letter-size, and breakage lines of col. V.

Translation

1. [in the fourth; Sign of Shekaniah in the release; Sign of Gamul in the third; Sign of Shekaniah]
2. [in the sixth; Sign of Gamul in the second; Sign of Shekaniah in the fifth; Sign of Gamul]
3. [after the release; Sign of Gamul in the fourth; Sign of Shekaniah in the fifth; Sign of Gamul]
4. [of Shekaniah in the third; Sign of Gamul in the sixth; Sign of Shekaniah (which is the concluding sign)]
5. of the third jubilee. Signs of the [third] jubilee ([are] 17 signs), of these in (the years of the) release
6. (fall) 2 signs. (sign of) Shekaniah [in the seconf year; Sign of Gamul] in the fifth; Sign of Shekaniah
7. after the release; Sign of Gamul in the fourth; Sign of Shekaniah in the release; Sign of Gamul in the third; Sign of Shekaniah in the sixth; Sign of Gamul in the second; Sign of Gamul in the first; Sign of Shekaniah
10. in the fourth; Sign of Gamul in the release; Sign of Shekaniah in the third; Sign of Gamul
11. in the sixth; Sign of Shekaniah in the second; Sign of Gamul in the fifth; Sign of Shekaniah
12. after the release (which is the) [concluding] sign of the jubilee. Signs of the fourth <jubilee> (are) 17 signs,
13. of the seconf in (the years of the) release 2 <signs>. [(Sign of) Gamul in the fourth year; Sign of Shekaniah]
14. [in the release; Sign of Gamul in the third; Sign of Shekaniah in the sixth; Sign of Gamul]
15. in the second; Sign of Shekaniah in the fifth; Sign of Gamul after the release; Sign of Shekaniah]
16. in the fourth; Sign of Gamul in the release; Sign of Shekaniah in the third; Sign of Gamul
17. in the sixth; Sign of Shekaniah in the second; Sign of Gamul in the fifth; Sign of Shekaniah
18. [after the release; Sign of Gamul in the fourth; Sign of Shekaniah in the release (which is the) concluding sign of the]
19. [fifth jubilee] in Jeshebab. [Signs of the fifth jubilee (are] 16 signs, of these in (the years of the) release]
Comments

Li. 4-5 For the jubilee-concluding formula, see Structure and Meaning of the Otot Section under Contents.

Li. 13 The unidentified mark preceding the lacuna is important for the reconstruction of the beginning of the incoming jubilee. Milik read here סכליה based on his jubilee order, but this reading is not certain. In the same manner, the mark does not support reading ימשי at the beginning of the jubilee, which prompts the conclusion that the sign of Shekaniah is omitted altogether from the beginning of the fifth jubilee. In this case, therefore, the sign of Shekaniah occurring on the first year of the fifth jubilee is counted only at the end of the fourth jubilee, while the count of the fifth jubilee begins with the sign of Gamul in the fourth year.

Li. 19 As discussed above, this reading raises two anomalies: 1. The mention of the jubilee number ‘the fifth’ within the formula of ‘concluding sign of the jubilee’; 2. The priestly course of Jeshebab serves only on the first year of the next jubilee, i.e. the fifth jubilee is not considered to have ended before the first year of the sixth jubilee; see Structure and Meaning of the Otot Section.

Col. VI (Frags. 5, 6, 7 i, 8)

According to Beckwith (Calendar, 122), it may be proposed that Jeshebab here serves as a designation for the incoming sixth jubilee, since it serves at its head. However, such a designation is expected only at the end of the jubilee-concluding formula and not in the middle.
NOTES ON READINGS

L. 2 [יתן י ''; הגברות]. In PAM 43.229, these letters are seen on a strip of parchment joined to frg. 7; the strip was subsequently moved and appears as a separate fragment in PAM 43.285. This piece provides a few more letters on lines 2-4.

L. 4-9 The amount of reconstructed text according to the formulaic structure of 4Qotot is not sufficient to fill the gap between frgs. 6 and 7, leaving unexplained gaps in lines 4-9. In lines 8-9, where no parallel text exists, those gaps are indicated as 'vac?', while in lines 4-6 they are given as a wide lacuna. Lines 13-14 preserve similar gaps as well (see above TOWARDS A MATERIAL RECONSTRUCTION).

L. 8 Some of the digit symbols at the right edge of frg. 6a lean to the right while others lean to the left.

L. 9 [?). Thus Garcia Martinez and Tigchelaar. The two downstrokes following he are connected and cannot be yod and mem of שלוש בן עשר. At the end of the line, the first trace on frg. 6b appears to be the left tip of a semi-formal bet, contrasting with the cursive bet later in the word.

L. 9 On frg. 7, a large ink stain can be discerned at the end of the line.

L. 16-19 The gaps at the beginnings of these lines possibly imply that frgs. 8b-8f should be placed some 1-1.5 cm to the right.

L. 18 [?). The line ends with the vertical stroke of yod preceded by medial mem.

L. 19 גמול. A word-space clearly follows גמול, rendering the reading גמול בעירה (fem.) impossible. However, the unidentified mark does not form bet of גמולים.

TRANSLATION

1. [3 signs. (Sign of) Gamul in the third year; Sign of Shekaniah in the sixth; Sign]
2. [of Gamul in the] second; [Sign] of Shekaniah in the [fifth; Sign of Gamul after the release; ]
3. [Sign of Shekaniah in the fourth; Sign of Gamul in the release; Sign of Shekaniah in the fourth; ]
4. Sign of Gamul in the sixth; [Sign of Shekaniah in the [second; ] Sign of Gamul
5. in the fifth; Sign of Shekaniah after the release; ] Sign
6. of Gamul in the fourth; Sign of Shekaniah in the release; Sign of Gamul in the third;
7. Sign [of Shekaniah in the sixth which is the] concluding <sign> [of the sixth jubilee. Signs]
8. of the sixth jubilee [[arc] 16 [signs] of which in (the years of the) release (are)] 2 [signs. [vac?]
9. the fifth jubilee ] in the jubilee
10. and to the jubilee. (Sign of) Gamul in the second year, Sign of Shekaniah in the fifth; Sign of Gamul after]
11. the release; Sign of Shekaniah in the fourth; Sign of Gamul in the release;
12. [Sign of Shekaniah in the third; Sign of Gamul in the sixth; Sign of Shekaniah]
13. [in the second; Sign of Gamul in the fifth; Sign of Shekaniah (after]
14. the release; Sign of Gamul in the fourth; Sign of Shekaniah in the release; Sign]
15. of Gamul in the third; Sign of *Inh* (heq Shekaniah) in the sixth; *seca* (heq Sign) of Gamul
16. in the second; Sign of Shekaniah in the fifth (which is the) concluding sign of the jubilee.
17. [Signs of the sixth] seventh jubilee] (are) 16 signs, of these in the register
18. [2 signs.] Sign of the jubilees, year of jubilees according to day[s of holiness]
19. [In Gamul the first, in Jed'aiash the] secc[nd, in Mijamin the third, in Shekaniah]

COMMENTS

L. 7 For the reconstruction of the 'concluding sign of the jubilee' formula, see Structure and Meaning of the Otot Section.

L. 8 ד. The definite article does not appear here in contrast to the prevailing habit in this document.

L. 9 (ו)ת. It is possible that the fifth jubilee was mentioned here. The remains are too fragmentary in order to prefer other suggestions.

L. 9-10 ... To a further elaboration of the jubilee-concluding formula appeared here, the contents of which have not survived.

L. 15 ... Two scribal errors appear in this line; the scribe wrote שכניה instead of שכניה and subsequently began to record the concluding sign of the jubilee too soon instead of marking a standard "at.

Both mistakes are understandable in this type of manuscript which contains a very limited, recurring vocabulary.

L. 18 ... The conclusion of the entire list was marked by a recurrence of the word 'jubilee' in various constructions. Cf. I En. 75:3.

L. 18 ... For the reconstruction, cf. 1QS X 5; 4Q320 3 i-ii. Cf. 4Q226 (ps Jub) 1 6-7.

L. 19 A list of the 'Leaders of the Years' begins in the middle of the line. The reconstruction requires that the new list commenced at the beginning of the line. However, it is unusual that no vacat appears between the two lists.

The masculine form of the ordinal number שכניה referring to a year is problematic. Since this is the only number surviving from cols. VI 19-VII 1, interpretation is limited. An alternative proposal is that this list refers to the six jubilees instead of six years, and indicates the priestly courses serving at their beginnings, thus providing a brief survey of the six jubilees of the cycle at the end of the oto]t list. If this proposal is accepted, lines 18-19 do not contain a separate calendrical list but rather a summary of the oto]t roster, which explains the masculine form. If correct, the proposal necessitates that Mijamin head the third jubilee. However, this does not match the unique numbering method in 4Q319, where the six jubilees are written the numbers 2-7, with Mijamin heading the fourth jubilee. Perhaps this unique method was discarded in the summary of the list.

Col. VII (Frg. 7 ii)

Parallels: 4Q328 1-6 (underline)
4Q329 2 (overbar)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>הרברוע יכשביוב הדטש יכשביוב בשניר יכשביוב בשניר</td>
<td>נמקל אלימאש ימעוה זמא</td>
<td>ידעטע גלה שקואים זייר</td>
<td>מיטל פחותה אבקה יכן</td>
<td>משניר [הלת יקב יירב</td>
</tr>
</tbody>
</table>
Mus Inv. 696
PAM 43.229, 43.230, 43.285

NOTES ON READINGS
L. 7 פסא. The final letter is too faint to know if it is a medial or final sade.
L. 8 In PAM 43.229, two parallel downstrokes of he can be seen at the edge of the fragment.

TRANSLATION
1. [the fourth, in Jeshebab the fifth, in Happisses the sixth. In the first year]
2. Gamul, [Eliashib, Ma'oziah, Ḥuppah. In the second]
3. Jedediah, [Bilgah, Se'orim, Ḥezir. In the third]
4. Mijamin, [Petahiah, Abiah, Jakin. In the fourth]
5. Shekaniah, [Delaiah, Jaqim, Joariib. In the fifth]
6. Jeshebab, [Harim, Immer, Malkiah. In the sixth]
7. Happises, [Haqqos, Jehezqel, Jeshu'a. ]
8. Gamul the[...}

COMMENTS
The reconstruction of col. VII is based on the solid placement of frg. 7 which contains the margin between cols. VI and VII. This column contains general mishmarot rosters concerning all priestly courses, not only Gamul and Shekaniah. An interval of three mishmarot names exists between the priestly courses at the beginning of each of the lines (2-7). This is compatible with the suggestion that these lines contain a list of 'Leaders of the Quarters', which is paralleled in 4Q328 and 4Q329 (cp. 1 Enoch 82). However, since the average line in 4Q319 is much wider than the space required by four mishmarot names, it should be assumed that this list was presented in tabular form, a very irregular phenomenon in Qumran calendrical almanacs.

A further roster, probably of the 'Leaders of the Months', begins in line 8 and is also preserved in 4Q329 2 with no overlap. This roster begins with Gamul of the first year. Later sections of it are preserved on frg. 9.

Materially speaking, frg. 10 resembles frgs. 6 and 7 having a smooth top interrupted by a similarly shaped vertical lacuna. Its placement would be expected at the top of the scroll following frg. 7, perhaps at the left of col. VII or VIII. However, the preserved text does not suggest either of these placements. It is therefore presented separately, without any attempt to integrate it into a reconstructed column.

L. 8 For an alternative interpretation, see frg. 18, COMMENTS.
Frg. 9

[שוורים שמו חותם[זה וו נול השיטה משיחי העון 1
[משמיך אלישיב בְּ[זה וו החיה מעלה השוורים טובות 2
[זוהמה יהו יִגְּנֵינָה השטישה[משמי שכונת 3
[בלוגה פשתית דלילה שעורה[אובת קם חותם 4

NOTES ON READINGS

L. 1 שֹׁנַי וּנְבִי. The unidentified mark preceding the het is possibly he of Huppah; it touches the head of the surviving lamed in line 2.

TRANSLATION

1. [Se'orim, Jeshu'ah, Hup] ah, He[zir, Gamul. The second (year) Jedafiah]
2. [Mijamin, Eliashib, Bij][ga]h, Petahiah, Ma[oziah, Se'orim, Abiah]
3. [Hup] bad, Hezir, Jakin, Jedai]iah. The third (year) [Mijamin, Shekaniah]
4. [Bilgah, Petahiah, Delaiah, Se'orjim, Abiah, Ja[qim, Hezir]

COMMENTS

This fragment records the priestly courses serving at the beginnings of the months, from the end of year 1 in the sexennial cycle to the middle of year 3. In a similar list in 4Q329 2 only the beginning of the first year survived. A tentative reconstruction of the list implies that frag. 9 stood in the middle of col. VII.

Frg. 10

[циально 00 1
[ש 0 ה 2
[אמר שכונת 3
[לא ררי הריבי 4
[5500 500 5
[0 ביש[על 6

NOTES ON READINGS

The reading is achieved by comparing PAM 43.285 with the darker PAM 43.229.
40319%

ת short left leg, normal in this script, remains. Alternatively, the traces may be the left portion of sin.

L. 4 יִם. The top stroke of lamed is clearly seen between the lines. The two letters read as יי may also be bet and se'w.

L. 6 קַשׁ. Sin and se'w are clear; yod and bet are smaller than the other letters. The unidentified mark at the beginning of the line may be bet.

TRANSLATION
3. ]Immer, Shekaniah[
4. ] in it(?) the fourth
6. ] in Jeshu[‘a

COMMENTS
The remains are too fragmentary for a clear identification. Frg. 10 preserves text from the left side of a column and may include part of the column margin. A fragment with a piece of thread attached to it can be seen to the left of frg. 10 in PAM 43.229, perhaps implying that it came from the last column of a sheet. If so, the space left between the end of the lines and the edge of the sheet must have been exceptionally narrow.

Frg. 10 mentions at least three mishmarot names and an enumeration of months or years, but no intelligible sequence can be discerned.

Frg. 11

NOTES ON READINGS
This fragment appears in its correct position in PAM 41.979; it was later repositioned as seen on the newer photographs; cf. frg. 30.

L. 1 The horizontal mark preserved on this line, which does not resemble the form of any letter, may be a scribal mark of an unknown purpose.

TRANSLATION
2. ]Bilgah sign[

COMMENTS
The reading of י[ ]א together with the priestly course Bilgah does not yield any acceptable meaning in the framework of the otoo roster. Bilgah does not serve in the Temple during any of the biblical festivals recorded in 4Q319 VIII; cp. m. Sukk. 5:8.
NOTES ON READINGS
The text of line 1, reconstructed on the basis of the parallel, is completely indecipherable.

L. 3. The last three letters appear above the line. The scribe may have added them supralinearly due to a fault in the skin. Alternatively, the positioning may be due to a misplacement of the pieces in this composite fragment.

TRANSLATION
1. [On the 1st (day) in (the week of) Jeda'iah (falls) the Waving of the Omer; on the 5th of Setorim the second Passah;

2. [on the 1st of Je]shu'a the Feast of Weeks; on the 4th of Ma'oziah the Day of Remembrance; on the 6th]

3. [of ]oiari[b the Day of Atonement]

COMMENTS
A tentative reconstruction reveals that the ‘Leaders of the Months’ roster filled most of col. VII, with its last line containing the beginning of a mishmarot festival calendar. Similar lists appear in 4Q320 and 4Q321. Frg. 12 preserves the Holy Seasons for the beginning of the first year in the sexennial cycle, and must have appeared at the beginning of col. VIII.

Frg. 13
Parallel: 4Q320 4 v–vi (underline)

[םש ביבחטאל honorable] 1
[המשת מ뚜י ביבחטאל] 2
[둠 תמי מ뚜י ביבחטאל] 3
[שם ימיהו כימי ביבחטאל] 4
[שם ימיהו כימי ביבחטאל] 5
NOTES ON READINGS
L. 1 40319. Nun is very thin and almost completely faded.

TRANSLATION
2. [in Immer the Day of Remembrance. On the 6th of Hezir [the Day of Atonement. On the 4th of Happiqeq the Feast]
3. [of Sukkoth. The sixth (year), its festivals: On the 3rd [of Jehezqel the Passah. On the 1st of Gamul]
4. [the Waving of the Omer. On the 5th of Ma'oziah the [Second] Passah. [On the 1st of Malkiah the Feast]
5. [of Weeks. On the 4th of Jehezqel the Day of Remembrance. On the 6th of Jakin the Day of]

COMMENTS
Frg. 13 contains part of the mishmarot festival calendar, preserving the Biblical feasts for the end of the fifth and beginning of the sixth years. As reconstructed, it is placed in the middle of col. VIII. However, the reconstruction can only be correct if the list contained no vacats, including at the end of the year; on frg. 77 such a vacat does appear. Therefore it is impossible to ascertain whether the festival calendar ended in col. VIII or continued in subsequent columns.

Frg. 14

Col. ii

1 000 čș (of)

Col. i

1 4 וסנינשדנוס

bottom margin

NOTES ON READINGS
Col. ii

L. 2 40319. In the context of mishmarot, Jede'iah would be expected in this line. However, in the photograph two tips of žin rather than he are visible at the end of the word.

TRANSLATION
Col. i

1. )signs of[

Col. ii

1. Gamul[
DISCOVERIES IN THE JUDEAN DESERT XXI

COMMENTS
This damaged fragment does not belong with the main body of reconstructed text, and probably appeared later in the document. Therefore, it is possible that matters of ototh were discussed outside the primary roster of cols. IV–VI.

Col. i
L. 1 יְמֹר. This should be understood as the pl. construct otyt.

Col. ii
The data is too fragmentary to deduce the exact nature of this mishmarot roster.

Frg. 15

<table>
<thead>
<tr>
<th>Col. ii</th>
<th>Col. i</th>
</tr>
</thead>
<tbody>
<tr>
<td>יְשׁ֣נָהּ</td>
<td>נַמְלִיָּהּ פָּרֹת</td>
</tr>
<tr>
<td>יַנִּיָּהּ סֶכָּנִיהּ</td>
<td>2</td>
</tr>
<tr>
<td>יִכּ</td>
<td>[ ]</td>
</tr>
<tr>
<td>יִכּ</td>
<td>[ ]</td>
</tr>
<tr>
<td>יִכּ</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

NOTES ON READINGS
Col. i
L. 1 יְמֹר. The first mem is doubtful but has been retained because of the mishmarot context. The defective spelling of the name is prevalent in 4Q320.
L. 5 The letter tops support the possibility that this line contained a reference to Shekaniah similar to those in col. i 2-4.

Col. ii
L. 1 יְשַׁנְאָה, Another possible reading is the priestly course יְשַׁנְא,.

TRANSLATION
Col. i
1. Gamu[ul Mijamin
2. Jad[ath Shekaniah
3. Shekaniah
4. Shekaniah
5. Shekaniah

Col. ii
1. Jeshe[ab
2. Gam[ul
COMMNTS
The interpretation of this fragment and its placement in the calendrical complex are obscure. Noteworthy are the well-preserved column margin with clear readings in both columns, and the recurrent references to Shekaniah, in accordance with the vocabulary of the *otot* list. However, other priestly courses appear alongside Gamul and Shekaniah, excluding the possibility that this is a further *otot* roster. It must therefore be a variation on a *mishmarot* theme, though a scrutiny of the *mishmarot* sequence does not appear to yield any reasonable interpretation. The only certain sequence, Jedadiah and Shekaniah in col. 1, does not correspond to the various combinations of priestly service. Furthermore, no explanation is available for the recurrence of Shekaniah at the ends of col. 1-5, which suggests a systematic tabulation of time-units, a style not characteristic of the Qumran calendrical almanacs which usually lack any sense of structural presentation. It should therefore be concluded that frg. 15 belongs in cols. VIII ff. with its exact purpose remaining unknown.

Frg. 16

\[\text{(bottom margin)}\]

NOTES ON READINGS
1. L. 2 The faint traces of a letter immediately after *het* exclude the reading מִלְכָּה.

TRANSLATION
2. *[[esheba]*

Frg. 17

\[\text{bottom margin}\]
NOTES ON READINGS
The fragment preserves remains from two lines separated by an exceptionally narrow line-space, perhaps suggesting that line 1 is an interlinear insertion.

L. 1 The first two traces at the right side appear to be remains of he or the like. At the left edge, above yod of line 2, appears a dot which is not a part of a letter.

L. 2 _bet is also possible.

TRANSLATION
2. ] and to the ends of [ 

COMMENTS
L. 2 .sav. For the grammatical form, cf. frg. 14 i 1.

Frg. 18

בככ asign 1

NOTES ON READINGS
L. 1 The base of gimel is clearly seen at the end of the line.

TRANSLATION
1. in the seventh year (the first course on duty is) Ga[mul

COMMENTS
The reading in line 1 is highly relevant for the interpretation of col. VII 2–8, where the signs on duty at the beginnings of years are recorded through years 1–6. Appearing here is the enumeration of Gamul’s service at the beginning of the seventh year, which repeats the beginning of the six-year cycle. This may prove that both six- and seven-based counts were applied in the otof ephemeris. Unfortunately, further knowledge of the implementation of this principle cannot be gained as line 2, which continues the count, is not legible.

Frg. 19

] והש[ 1
Frg. 20

NOTES ON READINGS
L. 1 A horizontal base stroke appears at the beginning of the line, possibly forming bet. Two arms of an 'ayin are apparent preceding lamed; the right one is better preserved than the left. The presence of the left arm, though faded, excludes the possibility of yod.

TRANSLATION
1. in the tenth month/year

Frg. 21

NOTES ON READINGS
In PAM 43.230, frgs. 21 and 22 are positioned as adjoining fragments with frg. 21 on top of frg. 22, thus forming a long piece similar in shape to frgs. 59-64.

TRANSLATION
1. fourth

Frg. 22

NOTES ON READINGS
L. 2 A second hand inserted supralinearly the number of a month or year. This hand is cursive and smaller than the first.
TRANSLATION
2. the fou[th] Jeshe[ab]

Frg. 23

[Image of the fragment]

NOTES ON READINGS
The skin is badly damaged. The peeling visible at the bottom of the fragment suggests its placement on the left side of col. V 2-3, based on the similar pattern of decay on frg. 5a. The extant reading fits well in the reconstruction of col. V.

Frg. 24

[Image of the fragment]

NOTES ON READINGS
The letter-forms are unusual. The first two signs are probably digits rather than letters (sic Milik). The last sign, read as final kap, may also be a trace of a longer than usual number 10; cf. a similar sign on frg. 25.

Frg. 25

[Image of the fragment]

NOTES ON READINGS
The script on this tiny fragment resembles that of frgs. 24 and 33. The letters are longer and thinner than the usual script of 4Q319. It is therefore doubtful that these fragments belong with 4QOtot.

L. 1 The first letter, read as cursive nun, may also be the left stroke of taw. The second letter is shorter than the nun and thus is read as yod rather than taw. An unusual thin vertical stroke descends from the middle of the fragment.
NOTES ON READINGS

Ll. 1-2 The space between lines 1 and 2 is very narrow, suggesting that line 2 is an interlinear insertion containing one letter, possibly meant to correct the omission of this letter in the following line. The seal was written with a broken pen resulting in a vulgar form.
Frg. 30

NOTES ON READINGS
This fragment was incorrectly joined to frg. 11 as seen in PAM 43.229 and 43.285. The correct join appears in PAM 41.979.

Frg. 32

NOTES ON READINGS
Milik's placement of frg. 32 at the ends of col. IV 11-12 is seen in PAM 43.283. However, it clearly contains three lines rather than two; חסנ cannot be read in the third line, as would expected in that context.

  L. 2  An unidentified mark, possibly a paragraphos, appears in the column-margin.

Frg. 33

NOTES ON READINGS
Milik positioned this fragment next to frg. 32 to fit col. IV 13-14. However, the bright hue of the parchment and the long letter-forms make it doubtful that this piece belongs to 4Q319; cf. frgs. 24 and 25.

  L. 2  The last sign in this line is the number 10. Note that its form is more curved than the angular example seen in col. VI 17.
TRANSLATION
Col. i
1. ten

Frg. 34

NOTES ON READINGS
The skin of frgs. 34 and 35 is very light in colour, with the hair appearing quite different from all the other fragments of 4Q319, rendering it doubtful that frgs. 34 and 35 belong to this manuscript. The fragments do not appear in the later PAM photographs and can no longer be traced.

TRANSLATION
1. in Ga]mul in [it

Frg. 35

NOTES ON READINGS
See frg. 34.

Unidentified Fragments

Frgs. 48–110, found on Mus. Inv. 708, were assigned to 4QOtot by J. T. Milik and have been recorded accordingly in all series of photographs. However, in the physical description and contents it has been argued that these fragments probably reflect a different composition or compositions within the genre of the mishmarot texts. Some fragments included in the plates do not yield any identifiable letters. Most fragments have disintegrated (1999).
DISCOVERIES IN THE JUDAEAN DESERT XXI

Frg. 48

Frg. 51

Translation
1. Ga]mu[l
2. sig]n of Sheka[niah

Frg. 55

Translation
1. ]Sabbat[ha

Comments
L. 1  Cf. the fragmentary 4Q324b.

Frg. 59

bottom margin
NOTES ON READINGS

L. 1 The word may be reconstructed to read רַעְבֶּךָ or רַעְבֶּךָּם.

TRANSLATION

1. jubilee[s]

Frg. 60

NOTES ON READINGS

L. 2 A vertical crack hinders the reading at the left edge of the fragment. A small trace of ink is discerned above the last letter which appears to be 'alep. The reading of this letter as the lamed of בֵּית is discounted since the bottom stroke is too low.

L. 3 The reading of this line is highly doubtful.

Frg. 61

NOTES ON READINGS

L. 1 Above the coarse he, appears an unidentified mark which is possibly a correction.

L. 2 יָדָו. The letter preceding יָד appears to be א, but the damaged leather allows the possibility that it is the he of יָדָו.

L. 3 A supralinear insertion of 'in the fourth' appears above line 3.
TRANSLATION
1. [Shekaniah [ [ [ in the fourth

Frg. 62

| 5 |
| 4 |
| 3 |
| 2 |
| 1 |

Frg. 63

| 5 |
| 4 |

bottom margin

NOTES ON READINGS
L. 1 [ר‎נ‎י‎ק‎]. The letters, though clearly seen, are exceptionally small and faded, rendering the reading uncertain.

TRANSLATION
1. [sign[

Frg. 66a

| 1 |

TRANSLATION
1. [day [
Frg. 68b

Notes on Readings
This fragment is clearer in PAM 43.231 but no further readings can be made out.

Translation
2. Happi\ldots
3. four\ldots

Frg. 70

Translation
1. \ldots

Frg. 71
NOTES ON READINGS

L. 3 The second letter, being longer than yod in the previous line, is read as way, pointing to a cardinal rather than an ordinal number. Note that the round base of sin differs from its angular execution in lines 1 and 2.

L. 4 המַדּא. The last trace of ink resembles the right curve of yadin, rather than sin, rendering 'the fourth' a more likely reading.

TRANSLATION
1. fifteenth (year?) [ ]
2. third [ ]
3. fourth (year?) [ ]

COMMENTS

Based on its contents, this sequence of years—all within the basic cycle of six (or possibly seven) years—may fit into the atot roster, although no appropriate place could be located for it in cols. IV–VI.

Frag. 72e

<table>
<thead>
<tr>
<th></th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

Frag. 73

<table>
<thead>
<tr>
<th></th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
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<td>4</td>
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<tr>
<td></td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

NOTES ON READINGS

L. 2 The trace preceding sin appears to be the base of gimmel.
L. 3 The top and possibly the bottom of nun are preserved on the right edge of the fragment. The left edge shows a downstroke which may be the leg of dalet.

L. 4 δο. The first letters may be ρο.

TRANSLATION

3. Shekaniah on the first (day in) mon[th
5. ]sixth[ 
6. ]in the first[t

COMMENTS

The *recto* of this fragment appears on PAM 42.863.

L. 3 The prefix bet, 'in' is missing before שְׂכָנִיא. Furthermore, in standard calendrical records שְׂכָנִיא never appears, and the ordinal number 'sixth, seventh' etc. stands for the month.

Ll. 5–6 In the absence of suffixes, the numbers in these lines could refer to months or years.

Frg. 74a

기لام[ 1
קונ[ 2

TRANSLATION

1. ]the sign of the[  

COMMENTS

Frg. 7536

기[ 1
קונ[ 2

COMMENTS

L. 1 기. He following גנא discounts the expected construction 'sign of Gamul/Shekaniah'. Possible reconstructions are the phrases גָּמְיוֹל חַּן (cf. col. IV 11, 17) or חַּן גָּמְיוֹל (cf. col. VI 18).

36 In PAM 43.286, this fragment is incorrectly attached to frg. 60.
Frg. 77

| 1 | יומ הַכְּפֻרִים יִשְׁבוּ וּבְשֵׁם יְהֹוָה בְּשָׁנָיוֹ | 2 |
| 3 | וּבְשֵׁם יְהֹוָה | 4 |
| 500 | תָּמְחֵית רֹא | 5 |

TRANSLATION
2. the Day of Atonement in Jeshu'a
3. day in Shekaniah
4. the Feast of Sukkoth
5. vac The fou[rth (year) its festivals

COMMENTS
The join in PAM 43,286 seems certain; the split in the leather runs through the final letters of line 3.

The key for positioning this fragment lies in the partially preserved references to the Day of Atonement, Shekaniah, and the fourth year. They suggest that it stems from a six-year mishmarot festival calendar, preserving the last items of year three, i.e. the festivals of the seventh month, Yom ha-Kippurim and Sukkoth, followed by the title of the fourth year with a vacat separating the years. However, ד (line 3) and 400 (line 4) remain unexplained.

If the suggestion is correct, frg. 77 belongs in the festival calendar of col. VIII, although its exact layout cannot be ascertained; see CONTENTS OF COLS. VII–IX under CONTENTS. However, this fragment does not show the pronounced rulings characteristic of 4Q259–319, and may stem from a different document as with the rest of frgs. 48–110.

Frg. 79b

| 1 | חָדְּשִׁים | 2 |
| 2 | וּבְּשֵׁמֶל | 3 |
| 3 | לְבָּנָה |
TRANSLATION
1. jmonth[
2. ] jubilee

Frg. 85

TRANSLATION
2. d]ay[

Frg. 86

Frg. 87

Frg. 88

---

37 The readings of this fragment were improved based on PAM 43.286.
Notes on Readings

L. 3 In PAM 43.286, a few more traces can be discerned, possibly evincing that line 3 contained elements of text rather than a vacat.

Translation
2. ]Sabbaths [ 

Comments

 Assyra (line 2) forms the closest association with Milik's reading of a summary formula; see CONTENTS OF COLS. VII–IX under CONTENTS. Perhaps Milik's reconstruction was made at an early stage in the material decay, prior to that reflected in PAM 42.863.

Frg. 89

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Notes on Readings

L. 5 The traces at the end of the line, read as the numerical symbol 'twenty' and the possible symbol 'ten' denoted by the top of a very long angular mark, are not certain.

Translation
3. ]Harim[

Comments

L. 4 ]Sever. Though the reading of this word is certain, it is unintelligible in this context. It may be restored also in line 2.

Frg. 90

<p>| | |</p>
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Frg. 92

\[
\begin{array}{l}
\text{משנה דוב} \\
\text{ב} \\
\text{השן ה} \\
\text{יתם} \\
\end{array}
\]

**TRANSLATION**

3. *the Xth year*
CONCORDANCE

This concordance refers to all the words occurring in the texts published in this volume, together with their respective contexts. All independent words are covered, thus excluding the attached morphemes -א, -ית, -ן, and -ש. From left to right, each entry contains the reference to the text, lemma, and in-context phrase. The concordance was prepared by Y. Shemesh.

SIGLA

/  beginning of line
//  beginning of column
ƙ  possible letter
ƙ  probable letter
ƙ  supralinear insertion
{ƙ}  erasure
ƙ  reconstructed letter
ƙ  modern editor’s correction
| Q3320 iv 14 | א | 40319 v 7 | 40319 v 7 | רדס תמציתו והצליל | 40319 v 7 |
| Q3320 iv 7 | א | 40319 v 7 | 40319 v 7 |شفופת המָּטֵא | 40319 v 7 |
| Q3320 i 1 | א | 40319 v 8 | 40319 v 8 | DRIVER פָּלַק חַיָּל | 40319 v 8 |
| Q3320 iv 4 | א | 40319 v 8 | 40319 v 8 | תָּכוּת סָלָמָא | 40319 v 8 |
| Q3320 i 2 | א | 40319 v 9 | 40319 v 9 | תָּכוּת מבָּא | 40319 v 9 |
| Q3320 iv 8 | א | 40319 v 10 | 40319 v 10 | תָּכוּת בַּלַּגָּא | 40319 v 10 |
| Q3320 iv 4 | א | 40319 v 10 | 40319 v 10 | תָּכוּת בַּלַּגָּא | 40319 v 10 |
| Q3320 i 2 | א | 40319 v 11 | 40319 v 11 | תָּכוּת בַּלַּגָּא | 40319 v 11 |
| Q3320 iv 10 | א | 40319 v 12 | 40319 v 12 | תָּכוּת בַּלַּגָּא | 40319 v 12 |
| Q3320 i 13 | א | 40319 v 12 | 40319 v 12 | תָּכוּת בַּלַּגָּא | 40319 v 12 |
| Q3320 i 14 | א | 40319 v 13 | 40319 v 13 | תָּכוּת בַּלַּגָּא | 40319 v 13 |
| Q3320 i 5 | א | 40319 v 13 | 40319 v 13 | תָּכוּת בַּלַּגָּא | 40319 v 13 |
| Q3320 i 3 | א | 40319 v 14 | 40319 v 14 | תָּכוּת בַּלַּגָּא | 40319 v 14 |
| Q3320 i 12 | א | 40319 v 15 | 40319 v 15 | תָּכוּת בַּלַּגָּא | 40319 v 15 |
| Q3320 iv 12 | א | 40319 v 16 | 40319 v 16 | תָּכוּת בַּלַּגָּא | 40319 v 16 |
| Q3320 iv 13 | א | 40319 v 17 | 40319 v 17 | תָּכוּת בַּלַּגָּא | 40319 v 17 |
| Q3320 iv 13 | א | 40319 v 18 | 40319 v 18 | תָּכוּת בַּלַּגָּא | 40319 v 18 |
| Q3320 i 14 | א | 40319 v 19 | 40319 v 19 | תָּכוּת בַּלַּגָּא | 40319 v 19 |
| Q3320 iv 15 | א | 40319 v 2 | 40319 v 2 | תָּכוּת בַּלַּגָּא | 40319 v 2 |
| Q3320 iv 15 | א | 40319 v 3 | 40319 v 3 | תָּכוּת בַּלַּגָּא | 40319 v 3 |
| Q3320 iv 16 | א | 40319 v 4 | 40319 v 4 | תָּכוּת בַּלַּגָּא | 40319 v 4 |
| Q3320 iv 16 | א | 40319 v 5 | 40319 v 5 | תָּכוּת בַּלַּגָּא | 40319 v 5 |
| Q3320 i 17 | א | 40319 v 5 | 40319 v 5 | תָּכוּת בַּלַּגָּא | 40319 v 5 |
| Q3320 iv 17 | א | 40319 v 6 | 40319 v 6 | תָּכוּת בַּלַּגָּא | 40319 v 6 |
| Q3320 iv 18 | א | 40319 v 7 | 40319 v 7 | תָּכוּת בַּלַּגָּא | 40319 v 7 |
| Q3320 iv 19 | א | 40319 v 8 | 40319 v 8 | תָּכוּת בַּלַּגָּא | 40319 v 8 |
| Q3320 v 2 | א | 40319 v 11 | 40319 v 11 | תָּכוּת בַּלַּגָּא | 40319 v 11 |
| Q3320 v 3 | א | 40319 v 12 | 40319 v 12 | תָּכוּת בַּלַּגָּא | 40319 v 12 |
| Q3320 v 4 | א | 40319 v 13 | 40319 v 13 | תָּכוּת בַּלַּגָּא | 40319 v 13 |
| Q3320 v 5 | א | 40319 v 13 | 40319 v 13 | תָּכוּת בַּלַּגָּא | 40319 v 13 |
| Q3320 v 6 | א | 40319 v 14 | 40319 v 14 | תָּכוּת בַּלַּגָּא | 40319 v 14 |
| Q3320 v 6 | א | 40319 v 15 | 40319 v 15 | תָּכוּת בַּלַּגָּא | 40319 v 15 |
| Q3320 v 6 | א | 40319 v 16 | 40319 v 16 | תָּכוּת בַּלַּגָּא | 40319 v 16 |
| Q3320 v 7 | א | 40319 v 17 | 40319 v 17 | תָּכוּת בַּלַּגָּא | 40319 v 17 |
| Q3320 v 6 | א | 40319 v 18 | 40319 v 18 | תָּכוּת בַּלַּגָּא | 40319 v 18 |

**DISCOVERIES IN THE JUDEAN DESERT XXI**
<table>
<thead>
<tr>
<th>Page</th>
<th>Concordance Lines</th>
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<tbody>
<tr>
<td>4Q319 VI 10</td>
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DISCOVERIES IN THE JUDAEAN DESERT XXI
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**CONCORDANCE**

Discoveries in the Judean Desert XXI
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DISCOVERIES IN THE JUDEAN DESERT XXI
CONCORDANCE
<p>| Q321 IV 4 | מראות ימוא אב norske | Q321 V 7 | כתה | (איל ה) | 255 |
| Q321 V 6 | נמא לרוור וא ה | Q321 V 2 | כתה | (איל ה) | 255 |
| Q321 V 8 | נמא ליאו | Q321 V 9 | כתה | (איל ה) | 255 |
| Q321a II 5 | שהים | Q321 IV 16 | דאנ | (איל ה) | 255 |
| Q321a V 6 | במלאות ימוא | Q321 V 7 | כתה | (איל ה) | 255 |
| Q324a v 2 | יאש | Q3219 V 15 | כתה | (איל ה) | 255 |
| Q324a v 3 | יאש | Q3219 V 16 | כתה | (איל ה) | 255 |
| Q325 15 | שהים | Q3219 V 17 | כתה | (איל ה) | 255 |
| Q325 6 | שהים | Q3220 V 1 | יאש | (איל ה) | 255 |
| Q325 11 | שהים | Q3220 V 2 | יאש | (איל ה) | 255 |
| Q325 4 i 2 | יאש | Q3225 V 1 | יאש | (איל ה) | 255 |
| Q325 4 ii | יאש | Q3225 V 2 | יאש | (איל ה) | 255 |
| Q325 4 vi 8 | יאש | Q3225 V 3 | יאש | (איל ה) | 255 |
| Q325 II 3 | יאש | Q3225 V 4 | יאש | (איל ה) | 255 |
| Q325 V 8 | יאש | Q3225 V 5 | יאש | (איל ה) | 255 |
| Q325 V 2 | יאש | Q3225 V 6 | יאש | (איל ה) | 255 |
| Q325 2 | יאש | Q3225 V 7 | יאש | (איל ה) | 255 |
| Q329 9 2 | יאש | Q3225 V 8 | יאש | (איל ה) | 255 |
| Q329 13 4 | יאש | Q3225 V 9 | יאש | (איל ה) | 255 |
| Q329 3 | יאש | Q3231 V 1 | יאש | (איל ה) | 255 |
| Q329 4 iii 3 | יאש | Q3231 V 2 | יאש | (איל ה) | 255 |
| Q329 4 iii 13 | יאש | Q3231 V 3 | יאש | (איל ה) | 255 |
| Q329 4 iv 8 | יאש | Q3231 V 4 | יאש | (איל ה) | 255 |
| Q329 4 v 2 | יאש | Q3231 V 5 | יאש | (איל ה) | 255 |
| Q329 4 v 11 | יאש | Q3231 V 6 | יאש | (איל ה) | 255 |
| Q329 4 vi 7 | יאש | Q3231 V 7 | יאש | (איל ה) | 255 |
| Q329 V 4 | יאש | Q3231 V 8 | יאש | (איל ה) | 255 |
| Q329 V 9 | יאש | Q3231 V 9 | יאש | (איל ה) | 255 |
| Q329 V 3 | יאש | Q3231 V 10 | יאש | (איל ה) | 255 |
| Q329 V 4 | יאש | Q3231 V 11 | יאש | (איל ה) | 255 |
| Q329 V 5 | יאש | Q3231 V 12 | יאש | (איל ה) | 255 |
| Q329 V 6 | יאש | Q3231 V 13 | יאש | (איל ה) | 255 |
| Q329 V 7 | יאש | Q3231 V 14 | יאש | (איל ה) | 255 |
| Q329 V 8 | יאש | Q3231 V 15 | יאש | (איל ה) | 255 |
| Q329 V 9 | יאש | Q3231 V 16 | יאש | (איל ה) | 255 |
| Q329 V 10 | יאש | Q3231 V 17 | יאש | (איל ה) | 255 |</p>
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<tbody>
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*DISCOVERIES IN THE JUDEAN DESERT XXI*
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260 DISCOVERIES IN THE JUDAEN DESERT XXI

4Q321 111 7
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4Q321 V 6
4Q321 VI 2
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4Q321 IV 13
4Q321 IV 14
4Q321 IV 15
4Q321 IV 18
4Q321 IV 19
4Q321 V 3
4Q321 V 4
4Q321 V 8
4Q321 V 9
4Q321 V 10
4Q321 V 11
4Q321 V 15
4Q321 V 17
4Q321 VI 2
4Q321 VI 13
4Q321 VI 14
4Q321 VII 5
4Q321 VI 10
4Q321 VI 15
4Q321 VI 15 1 3
4Q321 VI 15 4

4Q321 15 : 5
4Q321 51 2
4Q321 51 1
4Q321 73 3
4Q321 77 3
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4Q321 1 3
4Q321 IV 5
4Q321 IV 6
4Q321 IV 7
4Q321 IV 5
4Q321 IV 6
4Q321 IV 8
4Q321 IV 11 6
4Q321a V 5
4Q321a V 6
4Q321 1
4Q324 2 2
4Q325 1 5
4Q325 2 1
4Q325 2 3
4Q329a 2
4Q329a 3
4Q329a 6
4Q304 1–2 iv 6
4Q309 71 3
4Q325 1 6
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4Q320 1 8
4Q320 3 v 13
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PLATES
329a. 4Q Mishmarot H
IAA 601848; Mus. Inv. 710

330. 4Q Mishmarot I
PAM 43.339; Mus. Inv. 693

337. 4Q Calendarical Document E?
PAM 43.334; Mus. Inv. 710

394. 1-2 4Q Calendarical Document D
PAM 43.339; Mus. Inv. 693 (336)