

# Ovadiyah of Cairo and his transcription of *Ḳaraite piuṭim* into Norman neumes

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**Abstract**—Since Arthur Friedlander’s publication of the Adler fragment in 1921 various reconstructions had been realised during the last 100 years. This essay tries to focus on the particular shape and quality of the neumes used by the cantor, scribe and notator Giovan of Oppido Lucano, better known as “Ovadiyah the Norman proselyte” who converted in 1102 to Judaism and left Italy for a long pilgrimage in Babylonia (Iraq), Aleppo, Damascus, Lebanon and Cairo where he founded a new existence in the Jewish community of the old town of Cairo (al-Fuṣṭāṭ). This reconstruction begins with the later discovered Cambridge fragment (GB-Cu T-S K5.41) and the Tanakh cantillation on its verso side (the musical backbone of *piuṭim*), the second part of a melodic *piuṭ* and the more complex reconstruction of the longer *pizmon* about Moses known from the Adler fragment (US-NYjts ENA 4096b) with six stanzas and a conclusion.

**Keywords:** Cairo Genizah, Obadiyah the Norman Convert, Synagoga and Paraliturgical Chant transcribed into Norman neumes, al-Fuṣṭāṭ, Tanakh cantillation, *piyut*, *pizmon*, Obadiyah scrolls

## Approaches to transcribe Ovadiah's fragments with Norman neumes

Eric Werner, the author of the famous study about Jewish-Christian relationships "Sacred Bridge", was particularly interested in Ovadiah's fragments, because he also tried to transcribe three songs composed about *piuṭim*, very likely also poems composed over an existing melodic model which was not identified by the incipit of the original text, but written down in Norman musical notation.

### *Identification of the neumes written by Ovadiah*

Since Ovadiah had used almost square notation, they were rather transcribed by Arthur Friedlander and later Israel Adler in a conventional way according to official editions of the *Graduale romanum*. But Ovadiah's notation was something in between Central French neumes and square notation on staff and very close to the hand of the Norman scribe of Palermo who notated about 1150 a whole manuscript which is now preserved at the National Library of Spain in Madrid.<sup>1</sup> Here a page with a liturgical play under the title «De peregrino in die lune pasche»:

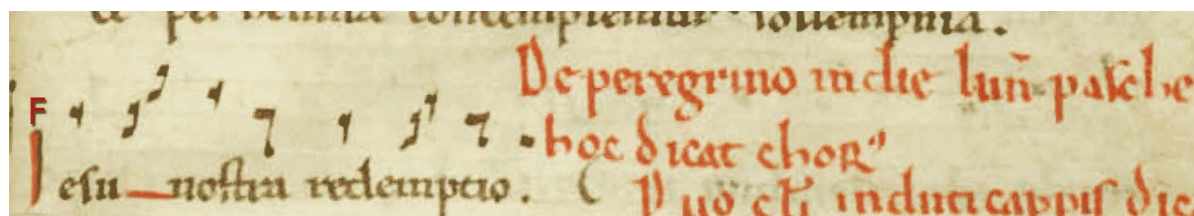


Fig. 1: Neumes in the Troper-Prosaury of Palermo about 1150 (E-Mn 289, f.117r)

In this case the staff was given by lines scratched onto the surface of the folio and one or two clefs had been written, either F or c or sometimes both of them (the pentachord of the tritus church tones). The neumes simply indicated the melodic movements over the syllables of the text, they did not reveal the exact intervals which divided a tetrachord nor the use of b natural, b flat—or their *dieses* to sharpen the smallest interval. But they did reveal ornamental details and they did provide linguistic information about the contemporary pronunciation by the use of liquescent forms (pitched ornaments for the pronunciation of voiced consonants).

In comparison Ovadiah's hand wrote a very similar *pes* (ascending step) which still has the Central French shape (like the second and the third in fig. 1), while the square-form resulted in this rectangular asymmetric shape of the *flexa* (descending step) which was written by Ovadiah from right to left, ending in slight turn to the left. He used all the first seven letters of the Hebrew alphabet to define the lines and the gaps between them. Already this easily explains, why Eric Werner was so interested in this evidence. It was the number of seven letters and the use of a stroked 'alef which could have very likely indicated octave equivalence.

But these letters were not simply written as a second row under the one with adiaستمatic neumes like it was the custom of William of Volpiano's school, but written as a kind of modal scale or clefs on the right side before the neumes and the Hebrew text. Thus, the

<sup>1</sup> All liturgical sources quoted here, are described and identified with their collocation and the link, if available online. The transcription of Hebrew follows the convention of the Library of Congress: <https://www.loc.gov/catdir/cpsa/romanization/hebrew.pdf>.

neumes had to be arranged in a vertical way, according to the *phthongi* which were represented by the letters as musical clefs in correspondence to their vertical height assisted by horizontal lines.<sup>2</sup>

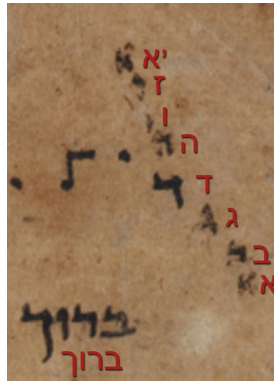


Fig. 2: Transcription of first seven letters of the Hebrew letters as modal degrees (GB-Cu T-S K5.41 verso)

The discovery of Latin neumes in a Hebrew manuscript came obviously also as a shock which was documented by Norman Golb who referred to a publication by Eric Werner who concluded about 1959:

Its text, and probably also its music, was composed by an otherwise unknown Amr ibn Salḥ'1 who lived in the eleventh century; it is very much akin to the more elaborate types of Gregorian chant.<sup>3</sup>

This reaction documents that the genre of notation already seduced readers to jump to conclusions about the music which was written down by the use of it, and very likely Eric Werner must have imagined the amodal aesthetics of so-called “Gregorian chant” as they were known by the Musica Sacra movement which established during the 19th century, but without any profound reference to a living tradition of the Western church. Norman Golb (emphasis by the author) went even further on in the same direction concluding that this kind of “Gregorian chant” must be a symptom of Christian proselytism itself:

Jews of eastern countries absorbed something of the Gregorian chant from Christianity, namely, *through the medium of European converts to Judaism who had fled their homelands after their decision to enter the Jewish fold*. [...] It is only natural, however, that, after their flight from Christian countries and their

<sup>2</sup> The term *phthongos* was Greek (ὁ φθόγγος), but it was also used untranslated “phthongus” by many Latin music theorists and simply meant a memorial place for a pitch class. Nothing was said which kind of pitch class nor which were the intervals between the *phthongi*, they were simply elements of a musical scale as those one could memorise by a kind of solfeggio syllable and in this case seven syllables similar to modern solfeggio, an thus, not at all a hexachord like in case of Guido of Arezzo which could change its position.

<sup>3</sup> Eric Werner, ‘The Music of Post-Biblical Judaism’, in *The New Oxford History of Music*, 10 vols. (Oxford etc., Oxford UP, 1957-74), I: *Ancient and Oriental Music*, ed. by Egon Wellesz (1957), p. 326. The hand was later identified as the one of the Ovadia scrolls.

resettlement in Muslim-dominated lands, they should have sought to impart some of the charm of their former religion to the one newly adopted by them.<sup>4</sup>

Since the text and its poetic genre in this case is a Tanakh cantillation, it is rather unlikely that Ovadiah recorded a melody which has anything to do with his former religion, if it was an Italian melody he must have memorised it very well and probably remembered as something coming from a local Jewish community like Bari or Venosa—as something which convinced him that conversion was the right step to continue his life. But where is the point that there was an influence coming from Western plainchant in a Norman redaction, just because he chose their notation of plainchant?

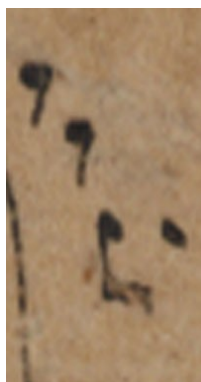


Fig. 3: Change of writing axis within Ovadiah's neumes over the sign of "adonay"  
(GB-Cu T-S K5.41 verso)

It might be helpful to regard notation as a tool to write down music and sometimes (still during medieval periods) also neume notation was used to write down something beyond the *oktoechos* idiom of liturgical monody like the chanson of the Troubadours, even Andalusian music. It does not necessarily mean that the music was adapted to the notation, but rather the other way round, that a traveller adapted notation as a tool coming from his cultural background to that music he tried to write down with it. If Ovadiah was able to learn a language and to embrace a religion different of the one he had grown up with, this adaptation was definitely the smaller challenge. His case was not that of a reform rabbi and school-teacher of the 18th century like Israel Jakobsson, who might have taught Christian children as well (by adapting a translation of a Hebrew song to a melody they were familiar with), it was the one of a convert who was very eager to learn more about his new religion. After his traumatic experience violence of Christian crusaders against his own kind was hardly a charming memory. His situation was closer to a scribe of the Western Mediterranean who used Western notation to write down an Andalusian tune or to the later Ottoman case of Dimitrie Cantemir or Ali Ufki, a Polish musician working at the Serail who taught music to young converts at the Sublime Port within the context of the *devşirme* education. He must have known very well that notation was not a very useful didactic tool within the local context of oral instruction known as *meşk*, but it was a useful tool within a diary or any kind of sketch book to write down a memory of the Ottoman court which included acoustic impressions as well. Like Ovadiah he used a staff system running from right to left according to the direction of semitic script. That the ductus of notation was nevertheless

<sup>4</sup> Quoted according: Norman Golb, 'Obadiah the Proselyte: Scribe of a Unique Twelfth-Century Hebrew Manuscript Containing Lombardic Neumes', *The Journal of Religion* 45,2 (1965), 153–56 (p. 155): <http://www.jstor.org/stable/1200142>.

sometimes from left to right (fig. 3), also proves that Ovadiah was sometimes lost between the direction of the neumes which he had to adapt to the direction of Hebrew script.<sup>5</sup>

The very reason, why Ovadiah’s efforts to document the musical aspect of religious chant, got so much attention, is that it might work as a kind of fieldwork done 900 years ago, that it might reveal to us at least the melody for three genres of Ovadiah’s time.

### ***Biblical cantillation and the precise meaning of the numeral letters***

The first question is: what does it mean that Ovadiah did use the first seven letters of the Hebrew alphabet, and did not use those of the Latin alphabet?

The difference from William Volpiano’s system seems to be, that William just numbered through the pitches of the whole ambitus used for chant. He did not care about octave equivalence as the criterium to establish a pitch class. In that respect it seems closer to Guidonic letters like A-G (whose numbering was so far identical with William), then a-aa, and the vertical disposition of the letters suggests that the lowest pitch was counted first.

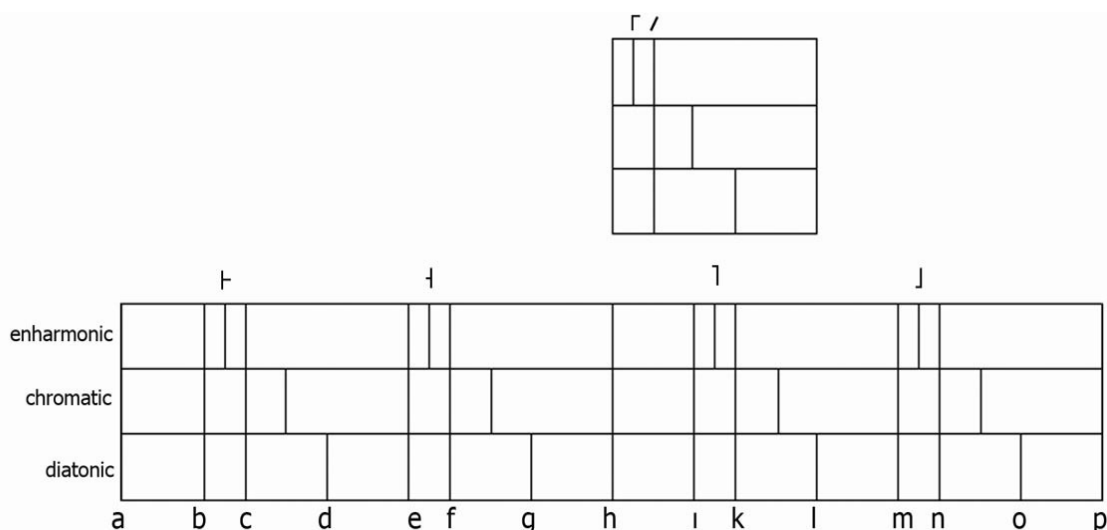


Fig. 4: Letter notation of William of Volpiano

But nobody can take it for granted that the sequence of seven letters was meant to organise modal degrees within an octave.

That seven tone steps might go through the octave was an important aspect of the *oktoechos* studied by Eric Werner as common principle of sacred chant within monotheism of the first millenium.<sup>6</sup> Seven elements which made it possible to classify any melody, was something that attracted al-Kindī who was very fond of the Byzantine tonal system present in the 8th-century Baghdad:

<sup>5</sup> The observation was first made by Gabriel Beyssac and quoted at length in: Arthur M. Friedlander, ‘Discovery of an Ancient Hebrew Manuscript Containing Neums’, *The Musical Times* 62, no. 937 (March 1, 1921), 170–72 (p. 171). doi:[10.2307/910928](https://doi.org/10.2307/910928). Friedlander already published on the base Beyssac’s remarks a first transcription in 1921, twice on the same page: in staffed square neumes with the dalet clef on F, and in modern staff notation with the dalet on c’.

<sup>6</sup> Eric Werner, *The Sacred Bridge: The Interdependence of Liturgy and Music in Synagogue and Church during the First Millenium* (London, New York: Dennis Dobson, Columbia UP, 1959): <https://archive.org/details/sacredbride007175mbp> (accessed 15.12.2020).

Every style of any tribe takes part of the Byzantine eight tones (*hiya min al-  
alḥān at-tamāniya ar-rūmīya*) which I mentioned here. Everything which can be  
heard, be it the human or be it the animal voice—like the neighing of a horse, the  
braying of a donkey, or the carking of a cock, can be classified according to one  
of the eight modes, and it is impossible to find anything outside of the *oktoechos*  
system.<sup>7</sup>

Also the Old-Persian modal system was organised as seven *advar* (“cycles”), and a 12th-  
century Sanskrit treatise mentioned “the God of seven notes” as they lead on to the path  
towards one God with a mystic connotation that each tone is as well identified with a stage  
following such a path during mystic contemplation.

But nothing is said about the *genus*, whether four elements make up a tetrachord, and if they  
do, what was the division between them? What was the quantity and quality of the smallest  
interval, was it diatonic (large), chromatic (small) or even enharmonic (very small)? And if  
these tetrachords were between ’alef and dalet (א—ס) and between he and the repetition of  
’alef (ס’—א), what was the species of them with respect to the position of the smallest  
interval within the tetrachord?

The only question which can be answered by the simple study of the neumes, was the  
question of the ambitus of its *melos*. Which tetrachord or pentachord was its frame and what  
was the frame of the whole melody? Just one third or one tetrachord, a seventh with a tonal  
centre on the connection of two tetrachords where they shared a common element, or an  
octave employing melodic phrases or formulas which appeared as well on ’alef as on he?  
The notation will never say anything about the proper intonation of the intervals which is  
one of the major problems concerning the revival of the so-called “Gregorian chant”, since it  
was not rooted within a living tradition of Western *oktoechos* modality.

The various reconstructions, all made by scholars familiar with synagogal chant, have  
already played through almost every possible constellation within the diatonic *genus*.<sup>8</sup> Thus,  
they approved through their intuition Eric Werner’s ideas about a sacred bridge, where the  
dominance of the diatonic *genus* was regarded as a common phenomenon of religious chant  
within a semitic context. But nobody can take it for granted that the *genus* of one or two  
tetrachords could not have been different, at least temporarily. These practises had been well  
known within many traditions, for Byzantine chant (definitely for the one Damascus and  
Jerusalem), for documented traditions of synagogal chant in various contexts, even for  
Western plainchant as it was performed in Paris during the 13th century. The foreword of a

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<sup>7</sup> Al-Kindī was quoted in German translation (here translated into English): Eckhard Neubauer, ‘Die acht  
“Wege” der arabischen Musiklehre und der Oktoechos – Ibn Miṣṣāh, al-Kindī und der syrisch-  
byzantinische oktōēchos’, *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften*, 9 (1994),  
373–414 (pp. 378-79).

<sup>8</sup> In his contribution for the conference at Oppido Lucano in 2004, Israel Adler referred to the reconstruction  
by Gabriel Beyssac (dalet is C or F) and Arthur M. Friedlander (dalet is F and C), Hanoch Avenary alias  
Herbert Loewenstein (dalet is D), and Eric Werner (dalet is G): Israel Adler, ‘The Music Notations by  
Ovadia the Norman Proselyte and the Significance for the Study of Jewish Music’, in *Convegno  
internazionale di Studi «Giovanni – Obadiah da Oppido: proselito, viaggiatore e musicista dell’età  
normanna» Oppido Lucano (Basilicata) 28-30 marzo 2004*, ed. by Antonio De Rosa et al. (Florence:  
Giuntina, 2005), 207-17 (pp. 209-13) with audio examples.

12th-century *divan* freely admitted that chant in the context of Arabic Islam was a 7th-century fusion of the best taken from Persian chant and taken from the Byzantine tradition of Damascus (which meant Christian chant in a Syrian context between the Patriarchates of Jerusalem and of Antioch).

Michael Alan Anderson's transcription is very individual (obviously due to practical needs preparing a performance during the conference at Oppido in 2004), but also not adapted to common standards.<sup>9</sup> It does not make sense to transpose a modal piece, because medieval notation was never meant as an absolute pitch (and there is no historical recording where we could measure the exact frequency chosen by the singer). It is only useful, if one has to prepare a performance accompanied by piano whose equal temperament is very likely even less suitable than the Pythagorean tuning used in Western plainchant.

Obviously, he expected that the untransposed tune would start on e with b natural as kind of *devteros* mode, but concluding on c. This is interesting, because such a tune would not be "Gregorian" at all, but a kind of *echos plagios devteros* with a conclusion on the *enaphonon* ("one step above" on the *tritos phthongos*), in his case the transcription was transposed a major second up (not a fourth down). Such a tune is known as a particular *mesos devteros* only within the cathedral rite of Constantinople, but even there the *melos* would either return to the *finalis* E (likely with a slightly lower intonation) or as an enharmonic *phthora* with a *diesis* as the smallest interval resolved into the lower third of *plagios tetartos* (based on C or G). Thus, Anderson's modal transcription did more or less follow Eric Werner's reconstruction who read the *dalet* clef as G which results that the *melos* conclusion on the *gimel* clef is F, even if Eric Werner did never try a transcription of this tune given in the Cambridge fragment T-S K5.41, because the resulting *melos* would hardly have offered an impression of "something Gregorian".

Anyway it can be said, that the example "Barukh ha-gever" ("Blessed is the man") which has eight clefs, has just a small ambitus of a fourth. Whatever its interval structure was, its *melos* just moved between the clefs *bet* and *he* (ב—ה) and it is only twice exceeded by a step above to the clef of *vav* (ו).

According to MacDonald's and Michael Alan Anderson reconstruction, the smallest interval within the tetrachords given by the octave of the clefs is in the middle of the lower tetrachord between the *phthongi* *bet* (ב) and *gimel* (ג). With respect to the tetrachord as the frame of the *melos* (ב—ה) the smallest interval is right on the "foot" of the tetrachord between the first, the lowest modal degree of the whole *melos*, and the second and concluding element.

In case of Israel Adler's transcription the smallest interval is between *gimel* (ג) and *dalet* (ד): on the top of the lower tetrachord within the octave given by the clefs, or in the middle between the second and third *phthongos* of the *melos* tetrachord (ב—ה).<sup>10</sup> Such a tune could be understood as a "kind of Phrygian" or *maḡam sigah*, but with a cadential degree on D which is also the base degree of the *melos*, *bet* (ב), and a final degree on a low E, represented by *gimel* (ג).

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<sup>9</sup> Royal B. MacDonald, 'Observations on the Music of Ovadiah the Proselyte, with Special Attention to the Problem of Clef Identification', in *Convegno internazionale «Giovanni – Obadiah» 2004* (Florence: Giuntina, 2005), pp. 197-205 (see transcription on p. 277).

<sup>10</sup> Israël Adler, 'Les chants synagogaux notés au XIIe siècle (ca 1103-1150) par Abdias, le prosélyte normand', *Revue de Musicologie*, 51,1 (1965), 19–51 (transcription p. 44).



Fig. 5: The annotated fragment (GB-Cu T-S K5.41 verso)

It was Richard Flender within the same proceedings published in 2005 who followed Adler's approbation of his own reading by a comparison with fieldwork made in Jewish communities on the Tunisian island of Djerba.<sup>11</sup> He followed Lachmann's assumption that Djerba due to its isolation preserved a rather archaic custom of psalm recitation (psalmody),

<sup>11</sup> Robert Lachmann working for the phonogramme archive in Berlin made an early recording in 1929, while Flender compared it with an own recording of Baruk Huri in 1979. It should be mentioned that Israel Adler himself justified his own reconstruction by a comparison with psalm cantillation on Djerba: Israel Adler, 'The Notated Synagogue Chants of the 12th Century of Obadiah, the Norman Proselyte', in *Contributions to a Historical Study of Jewish Music*, ed. Eric Werner (New York: Ktav, 1976), pp. 166–99 (p. 190).

although Lachmann regarded it “as influenced by Arabic musical patterns”. In his abstract Flender emphasised that the documented psalmody was different from the “mode of Moroccan, Yemenite and Kurdish Jews”, while Israel Adler also found similar formulas documented in Italy (Leo Levi), Djerba (George Herzog), Syria (with attraction of D towards the final note on E, or better fret sigah) and Baghdad (Abraham Zvi Idelsohn). According to Flender’s informant whom the latter described as “almost identical” with the version documented by Lachmann, psalmody was structured up to three sections using three cadential patterns (G was recitation tone) which he also transcribed into Western staff notation:<sup>12</sup>

1. **‘oleh ye-iorod** clausula (transcribed as cadential degree on G which corresponds to Ovadiah’s he clef): Ga—GF—E—D—GG
2. **atnah** clausula (transcribed as cadential degree on D which corresponds to Ovadiah’s bet clef): EG—FEDD
3. **siluk** or Sephardic **sof pasuk** clausula (transcribed as cadential degree on E which corresponds to Ovadiah’ gimel clef). GaG—F—EE

Now, what about a Gregorian influence, even if it was just a notational habit of Ovadiah?

Concerning Werner’s “sacred bridge”, mainly three scholars studied psalmody from the point of view of a common heritage of Jewish provenance. Concerning Orthodox and Byzantine chant it was Oliver Strunk, concerning Western plainchant it was Peter Wagner.<sup>13</sup> Their finding was a more complex psalmodic recitation organised in three sections. It was known as *antiphonon* in Byzantium, but Oliver Strunk believed that the written out form which appeared quite late in the 14th-century books of *akolouthiai* was a codification of a very ancient practice which had already existed since the 5th century. Wagner emphasised that the monotonic simple psalmody was an Carolingian innovation introduced together with the *tonaries*, while the ancient form in three sections only survived as the more complex psalmody of the *invitorium* which was still practised at the beginning of the night service as the recitation of *Venite exultemus* (Ps. 94) which Peter Wagner analysed in the second volume of his “Introduction into Gregorian melodies”.

The very same Siculo-Norman manuscript which has a strong resemblance with Ovadiah’s notating hand, has in fact a *tonary* which is not based on Carolingian psalmody like was William of Volpiano’s tonary which was unique in its organisation as a full tonary (with each chant fully written out), but based on the ancient psalmody of the *invitorium*. Just the beginning started with the “Plagis protus”, not with its “Autentus”, as if the notator had difficulties to organise the well-known formulas according to the Carolingian *oktoechos*. As a whole fourteen ways of psalmody are documented here, and not just eight (E-Mn 289, f.122v-126v). Only where the scribe could recognise formulas of Carolingian psalmody, it was classified at the margin (“plagis proti, autentus depterus, plagis depteri, autentus tritus, autentus tetrardus, plagis depteri”). But none of these fourteen ways show a strong resemblance with the Hebrew psalmodic cantillation which was once the backbone of the Christian recitation of psalms and biblical odes.

<sup>12</sup> Richard D. Flender, ‘Parallels between the Notation of Ovadiah ha-Ger and a Psalmodic Cantillation transmitted in the Oral Tradition of the Jews of Djerba’, in *Convegno internazionale di Studi «Giovanni – Obadiah» 2004*, pp. 225-29 (transcription of the clausulas p. 227).

<sup>13</sup> Peter Wagner, *Einführung in die gregorianischen Melodien*, 3 vols. 2: *Neumenkunde: Paläographie des liturgischen Gesanges* (Leipzig: Breitkopf und Härtel, 1912). Oliver Strunk, ‘A First Look at Byzantine Psalmody’, in *Essays on Music in the Byzantine World* (New York: Norton, 1977), pp. 37-39.

Norman Golb identified in his English translation the exact compilation of biblical verses, and Flender emphasised the symmetrical structure with respect to the less symmetrical structure of psalm verses: Jeremiah 17. 7, Proverbs 3. 5, Prov. 3. 6, Prov. 3. 13, Job 5. 17. What might have interested a Christian in this arrangement, are the beatitudes or makarismoï which were usually referred to the blessing formula used by Jesus Christ during his Sermon of the Mount. Here it is compiled by verses taken from the Tanakh which has 46 of them, especially within the poetic parts of it like Job (5. 17), the Proverbs (which has eleven), the psalter (even twenty-seven), Isaiah (Is. 3. 10; 30. 18; 32. 20; 56. 2), or Qohelet (Ecc. 10:17).

It is not clear, whether the whole page was meant as one *piuṭ* as a kind of Tanakh beatitudes, although the verses are bound together here by the same recitative pattern.<sup>14</sup> Christian psalmody was used for psalm recitation as well as for the recitation of biblical odes (also known as “canticles”), but these verses were not part of it, even if Eric Werner might be right, that the homiletic poems of Greek canon hymnography made over these odes (first collected in the *tropologion*, later sometimes notated in the *heirmologion*) were likely influenced by the Hebrew genre *shiba‘ta*, even if it had just seven stanzas and not nine. But Proverbs, Job, and the psalter were understood as the poetic parts of the Hebrew Bible, perfectly suitable for a melodic recitation known as cantillation of the Tanakh, while the book of Jeremiah had been composed partly in prose and partly as poetry.<sup>15</sup>

It is possible that Ovadiah did not compile these verses as one poem or *piuṭ*, but that he simply notated the incipits of those parts of the Hebrew Bible which could be recited by the use of these patterns. Such a use of notation would not document him as a poet composing an own melody (probably even Gregorian or Italian), but as someone who used Norman neumes to memorise the way of recitation used for beatitudes. If not in a way which existed already before the destruction of temple (which encouraged early fieldwork of Jewish communities on Djerba), then at least according to the Qaraite way, after Qaraite Jews left Baghdad to settle down in the more tolerant Fatimid caliphate which had moved from Tunisia to Egypt.

If one accepts Flender’s verification of Adler’s transcription that the emphasised clef dalet means a kind of fa (which Ovadiah also used alone on two Genizah fragments with musical transcriptions), one might also compare it to the notational habit that diastematic notation in Southern Italy was often written with just one line which was usually on F (more Beneventan scribes than the scribe of Palermo who used several lines scratched on the folio’s surface without any use of ink). It does include the possibility that the tetrachord was divided by three different intervals (the smallest between gimel and dalet), and that temporary changes to another non-diatonic *genus* was not just possible, but also likely.

In case of this recitation pattern, it is not identical with cantillation patterns as they are known from the living tradition today. But they were very likely something very simple which was nothing that any ḥazan would ever write down, but Ovadiah did it coming from his outsider point of view that corresponds to scholars who would like to study a former tradition of the past unfamiliar to their period. Although it is possible that Ovadiah learnt this tradition in Jewish communities of Italy, Syria, Baghdad or Cairo, it could be well

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<sup>14</sup> One might object that the custodes indicate a continuation which would also mean that the last verse is not conclusive, and the piece continued on the next folio which is missing (the verse from Job is definitely not conclusive). But a custos can also simply indicate that the recitation has to be continued with the next verse which is only true for the change between the second and the third line.

<sup>15</sup> Ivo Fasiori, *La scuola poetica ebraica di Oria nel secolo IX - Inni per lo Shabbat di Amittai ben Shefatiah*. (Cassano delle Murge: Messaggi, 2012), p. 24.

understood as a certain conservative attitude coming from those Ḳaraite circles with those he had obviously moved during his whole pilgrimage. According to the synagogal tradition there was a difference from psalmody with respect to more elaborated cantillation. Within the Ḳaraite tradition this system was organised by a system of hand signs (*cheironomia*) called «ṭa‘amim» whose oldest source was a *prophetologion* signed by Moshe ben Asher in 896.<sup>16</sup>

Anyway this third and simple example might be very useful to start a reconstruction of those melodies notated in Norman neumes by Ovadiah with respect to the question of clef identification.

Since the ambitus of the *melos* did not correspond to that octave which was presumably represented by the alphabetic clefs, it was obviously used to represent certain elements of the traditional tone system used by those ḥazanim transcribed by Ovadiah. The same problematic as it might exist with Christian neumes can be also observed by Jewish scholars today who use Western staff notation to transcribe ḥazanot whose modal intonation was very unlikely the equal tempered one represented by staff. Already accidentals used by Leo Levi to transcribe ḥazanot of Syria into modern staff notation, one can deduce that a slightly lower intonation of fret *sigah* (סג׳׳׳) on its place (ג׳) obviously could cause a temporary attraction of the next lower degree (ב׳) towards the cadence formula leading to gimel.<sup>17</sup> The Persian name «sigah» likely reveals the key to Ovadiah’s numeral system, since it means “the third place”, represented by the third letter of the Hebrew alphabet: ג. In that case the “first place” (ס) would be fret «rast» whose maḳam was also used during cantillation. The mode rast was already acknowledged by medieval musicians as one of the main maḳamot, often also as the “first” maḳam or *naḡām* (the Arabic term «maqām» established rather late about 1400).<sup>18</sup> If this interpretation of the letters was correct, Norman notation and the Beneventan F-line corresponding to the one of dalet was used in the same way like Byzantine notation was used during the hyphos reform of the 18th century, when Panagiotes Halacoğlu’s student Kyrillos Maramarinos identified the Ottoman *parde segah* with the *deveros phthongos*, but due to its ambitus (the octave over *perde rast*) and the low intonation of the *phthongos* it was rather perceived as “echos mesos tetartos” than as the diatonic melos of “echos plagios deveros”.<sup>19</sup>

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<sup>16</sup> According to Joachim Braun the main sources of the *ṭa‘amim* are the Cairo Codex by Moshe ben Asher and the Aleppo Codex by Moshe’s son Aaron: Joachim Braun, ‘Jüdische Musik, Mittelalter, Die nahöstliche synagogale Musik von den Anfängen bis zum 10. Jahrhundert’, in *MGG Online*, ed. Laurenz Lütteken (Kassel etc.: 2016): <https://www.mgg-online.com/mgg/stable/28995>. See also the introduction into the living tradition and listen to current and historical fieldwork: <http://www.pizmonim.com/taamim.php> (accessed 21.11.2020).

<sup>17</sup> Related to the practice of *cheironomia* (*ṭa‘amim*) during cantillation is the dominance of *maḳam sigah*.

<sup>18</sup> As an example for a traditional Sephardic intonation changing between the second (ב׳) and the third place (ג׳) also coming from a Ḳaraite background, is the purim song in the interpretation by Gabriel Shrem who was born in Cairo: <http://www.pizmonim.com/book.php?recording=1440>. Here the transcription by Abraham Zvi Idelsohn: <http://www.pizmonim.com/book.php?manuscript=6560>. Other traditional ḥazanim with different backgrounds are documented there as well, also a *ṭab‘*-version: <http://www.pizmonim.com/book.php?recording=2055>.

<sup>19</sup> In his monographic study Kyriakos Kalaitzides proved that Phanariotes always chose this *phthongos* for *perde segah* without any exception since the late Byzantine transcription of Persian music, see his comparative schedule: Kyriakos Kalaitzidis, *Post-Byzantine music manuscripts as a source for Oriental secular music (15th to early 19th century)*, transl. by Kiriaki Koubaroulis et al. (Würzburg: Ergon, 2012), pp. 332-39.

The discussion is simply, what was the common reference system among the musicians of the field (also across religious borders, since ḥazanīm often adapted to various traditions, whatever might be the ideological expectation of ethnomusicologists within their own background)? It should also be taken into consideration that communities in a diaspora situation feel insecure within a new environment (especially if there is a Western environment which has only superficial knowledge of musical modality), while on the opposite, a competition between different modal traditions usually encourages traditional singers to stay within the idiom of the own tradition (since only a musician who sticks to the own tradition, is interesting from the outsider point of view of another tradition) concerning experiments which go beyond the internalised borders.

In case of Ovadiah, the choice of Hebrew letters did hardly mean that the letter gimel represented a Phrygian church tone with the usual temperament used by Norman cantors who transcribed a similar tune around staff with just one coloured line for F fa. But familiar knowledge with certain ornaments used in neumatic notation was definitely Ovadiah's cognitive approach doing his transcription, even if he used Hebrew letters to make a difference between the modal system of synagogal chant and the Norman way to sing monodic *oktoechos* chant in an Italian church.

### ***The melodic structure of «Ya'eda' mah» and the question of genus change***

In case of Ovadiah we have only scarce information, but already dealing with those letter clefs used by him, and by putting behind them a question mark, one might investigate further the Friedlander-Adler hypothesis or any other of the hypotheses established by Avenary or Werner.

*Barukh ha-Gever* was the last piece, because it was found on the verso side of the second fragment identified as Ovadiah's hand with respect to the reading direction going through a book written in Hebrew script. For this reason the recto side did probably only show the end of another chant, whose ambitus was lower and descended far beyond the modal degree represented by 'alef.

*Ya'eda' mah* is a very simple and short extract of chant, but highly interesting due to its final ending in a lower register. It confirms that the letter dalet (ד) must be in rather medial position within the tone system like between F fa and a re.<sup>20</sup>

In case that dalet was a kind of F fa, the upper register was the tetrachord between D re and G sol (ד—ג), while the lower register was organised as another tetrachord connected to the upper one (between bet and two steps below 'alef). This was obviously not a biblical cantillation like in the first example, but rather a *piuṭ* tune, concerning the Ḳaraite tradition more likely used in a para-liturgical context. Concerning the Ḳaraite communities who had been evacuated from Cairo until 1977, Jehoash Hirshberg observed that some singers changed to *hijaz* (הג'סד) intonation during a diatonic *melos* (not only, but especially in the lower register). His informants regarded it nevertheless as the same way of recitation or mode. Even if some singers used *hijaz* and others not, it was perceived as the same.<sup>21</sup>

<sup>20</sup> The *mese* as a Greek concept was also known to al-Kindi starting from the middle chord of the 'Ud (since al-Kindi's 'Ud had only four chords, it was not the highest, but the next a fourth lower). Owen Wright, "[Al-Kindi's Braid](#)", *Bulletin of the School of Oriental and African Studies*, 69,1 (2006), 1–32.

<sup>21</sup> Example 1 and 3 compare three different versions and their perception as "idiolects" of one and the same song: Jehoash Hirshberg, 'The Role of Music in the Renewed Self-Identity of Karaite Jewish Refugee Communities from Cairo', *Yearbook for Traditional Music*, 21 (1989), 36–56 (pp. 49–51). doi:



The second example was definitely not a recitation or even cantillation, its *melos* has a lot of ornamental aspects and it has also a transition as a moment of surprise, even if the end of the first line does prepare it. Even in case that there was no change of *genus* between both tetrachords, they both established a melodic frame of a minor seventh organised in *triphonia* (conjunct tetrachords). The lowest modal degree in each tetrachord fulfilled the function of a cadential note.

### ***The complex reconstruction of the notated Adler fragment***

With these two examples and with Norman Golb's complete reconstruction of the song text which was missing in many parts of Ovadiah's fragment of the Elkan Nathan Adler collection (and as a whole not decipherable without any proper knowledge of this poem), now preserved at the Jewish Theological Seminary of New York, one might be prepared for its reconstruction which is much more complex than the other pieces or extracts given by the Cambridge fragment. Royal MacDonald's transcription was very well made and uses the most complete reconstruction of the text. Unfortunately, the second page of his reconstruction was not published in the proceedings.<sup>22</sup> Since Royal MacDonald followed into the footsteps of Eric Werner (ⴌ = G) the resulting *melos* was a kind of minor mode.<sup>23</sup>

The musical reconstruction of the Adler fragment has already a long history of research since its first publication by Arthur Friedlander in "The Musical Times" during March 1921 which also helped to awake a common interest for the Cairo Genizah, even beyond experts of Hebrew studies.<sup>24</sup> Each reading has produced many implausible solutions and also evident mistakes. Ovadiah's inversion of the *virga* due to a confusion between left to right and the right to left direction also provoked that some notational signs had been misread as a change of the horizontal position of the dalet clef, because the inverted virga was sometimes mistaken for the Hebrew letter dalet.<sup>25</sup> Thus, further publications will follow until there is a truly satisfactory reading which is quite a challenge.

Nevertheless, Friedlander's beginning despite of his short publication had been significant, also due to very profound insights by Dom Beyssac who was quoted extensively. He immediately spotted the strophic structure and the repetition of certain neume groups which is probably something which makes Ovadiah's transcription particularly interesting, since he did not write down the melody once before adding just the text of the other stanzas. Instead he notated precisely, how the melody was adapted to the prosodic structure of each stanza. On the other hand, the difficult charge to read the worn out surface and to fill the numerous holes in the fragment became possible thanks to six stanzas written out by Ovadiah. They allow to adjust the missing parts according to the preceding custodes, or to find the line of the dalet clef which is missing in most of the lines. Since the real challenge was the text,

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<sup>22</sup> Golb, *Convegno internazionale di Studi «Giovanni – Obadiah» Oppido Lucano, 2004*, pp. 275-77. The whole version was published online with the English translation of the Ovadiah scrolls by Norman Golb: "The Autograph Memoirs of Obadiah the Proselyte of Oppido Lucano, and the Epistle of Barukh b. Isaac of Aleppo", Script of 2004, last five pages: <https://oi.uchicago.edu/research/individual-scholarship/autograph-memoirs-obadiah-proselyte-oppido-lucano-and-epistle-barukh>.

<sup>23</sup> Two realisations in minor, one with modal ornaments and a modern one on piano can be listened from here: <https://www.jewish-music.huji.ac.il/content/mi-al-har-horev-manuscripts-obadiah-proselyte>.

<sup>24</sup> It caused a rich correspondence between essays published by Hanoch Avenary, Sándor Scheibe / Kilián Szigeti, Eric Werner, Israel Adler, Richard Flender, Norman Golb and Royal MacDonald.

<sup>25</sup> There is in fact one by the end of the last row on the recto page, but it encouraged readers to find more.

Arthur Friedlander just transcribed the first verse whose text was complete, while the text beginning of the conclusion was lost.

The main tonal problem is the final conclusion on the verso side, also because there is no visible clef, just a line which can only be studied by consulting the original, because the published facsimilia have not a sufficient resolution to understand the exact height. Nevertheless, there are other criteria like the usual ambitus of the melos and the function of the modal degree (♮) which was already identified as the first place which is the fret *rast*. Like all the other sections this one ends on the second place represented by the bet clef (♮), which was already used as cadential degree with the *melos* of *maqam sigah* in the example about the beatitudes of the Tanakh. Here it could be a cadential degree within the *melos* of a kind of *maqam rast*, but I would not like to dare such a classification which should be done by a traditional *hazan*. Nevertheless, I am convinced that the solution of this modal problem is extremely simple: the cadence using the words «ke mosheh» will also do the final conclusion, but more likely sung over the syllables «haleluiah», probably in the version as it was sung over the word «adonay».

Concerning the *melos*, it is also well-known within the Christian context, especially in the way it was used to design a very ancient anti-cherouvikon for Maundy Thursday arranging this *melos* over the text Τοῦ δείπνου σου τοῦ μυστικοῦ or its Latin version «Cene tue mirabili». The latter version was the heart called *ingressum* of an Ambrosian celebration on Maundy Thursday known as «In cena Domini». Within the books of the Constantinopolitan cathedral rite, this *melos* was either classified enharmonic “echos plagios tetartos” or as “mesos tetartos”, but on the triphonon (the tetrachord between dalet and ’alef).<sup>26</sup> Although the *melos* documented by Ovadiah did not open on the *phthongos* of dalet, the common pattern was a nucleus between dalet and bet, which only touched the final degree at the beginning and at the end.

«Mi’al har horev» was a para-liturgical *pizmon* which could have been celebrated during the feasts of *Shavu’ot* (the prototype of Christian Pentecost) or *Simhat Torah* (celebration of the Torah). The text is longer and more complex than those of the other samples by Ovadiah, every stanza was concluded by a refrain «ke mosheh». It could have been of Italian-Romaniote origin as well as Constantinopolitan.

The very modest contribution which had been so far missing, is a transcription which preserves all the agogic information given by the Norman neumes and to discuss as well rather unique aspects of how this notation was used by the scribe Ovadiah.

Liquescent forms (for *pes* and *flexa*, they were called *epiphonus* and *cephalicus*) were originally used for the pronunciation of syllables ending with liquida as voiced consonants, but during the 12th century and under impact of the contemporary form of florid organum they developed an ornamental quality as *plica* within melismata. This is also evident in Ovadiah’s way to use them, there is a phonetic as well as an ornamental use of them.

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<sup>26</sup> Neil Moran dedicated a whole essay about it also with a comparative analysis including Kondakarian notation: Neil K. Moran, ‘Wechselbeziehungen zwischen dem lateinischen, byzantinischen und slavischen Kirchengesang im frühen und hohen Mittelalter: Das Cherubikon für Gründonnerstag ΤΟΥ ΔΕΙΠΝΟΥ ΣΟΥ’, *Ostkirchliche Studien*, 56 (2007), 155–70. The delicate detail is that the text treated also the “traitor Judas”. The narration that Jesus was betrayed by someone of the inner circle of the apostles, was not against Judaism (they were all Jews), but the Judas motive was definitely abused in a propagandistic way within a Christian exegetic context.

A study of these details has to recognise the different shapes used for each neume. There are three shapes of *flexa* (one descending step), for instance:

1. asymmetric shape with an outward punctum on the lower modal degree (long ending)
2. asymmetric shape with an inward punctum on the lower modal degree (liquescent ending)
3. simple rectangular shape (short ending)

The liquescent *flexa*—also called “cephalicus”—reveals something about the pronunciation of the letters lamed (ל), mem (מ), both liquida, but also he (ה), when it follows a vowel. It was used for the final ’alef in «yel’» (here the neumes reveal the correct transliteration of the text), or like in «**l**imed», «**h**ok» and «**bashamaim**» (fig. 7).



Fig. 7: Four cases, how Ovadia used the *cephalicus* (US-NYjts ENA 4096b)

For the pronunciation of the final he (ה), he also used a liquescent shape of the neume *torculus* (an ascending step followed by descending one) like in «hara’**ah**» (fig. 8). In this case the modal degrees as a movement between two close *phthongi* are ג-ה-ג like E-F-E. The last step is pronounced with he with the formants of the vowel a indicated by its niqud. The same *torculus* was used with the word «**adonay**».



Fig. 8: The liquescent *torculus* used for the pronunciation of «hara’**ah**» (recto)

The liquida continuation of the vowel was sometimes also pronounced with an ascending step and notated with the liquescent shape of a *pes* (ascending step) which was called “epiphonus”, like used with the word «’**alaikh**» (fig. 9). There was only a slight difference to the usual *pes* which was the shape a *plica* as it was used in contemporary forms of polyphony, where the liquescent form also generated a kind of ornament used with an ascending or descending step. Later, during the 13th century, the *plica* shape of square notation had strokes on both sides, the one at the right side which indicated the last melodic step pronounced with the voiced consonant was longer. Concerning time, the *plica* always

escaped the time organised in modal rhythm by its concept of being a *fractio modi* (“a break off the [rhythmic] way”).

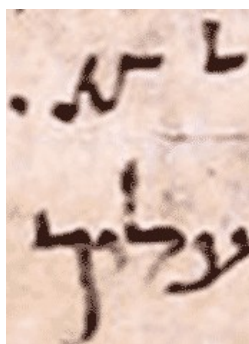


Fig. 9: The *plica*-shaped *epiphonus* used for the pronunciation of «‘**al**aikh» (verso)

Ovadia made here no exception, he also used liquescent *torculus* and *epiphonus* within melismata, where was no consonant ending of a semivowel. Here it was obviously meant as a vocal articulation of sound, very likely causing an incision within the melisma like the one on the second syllable of «ḥ**orev**» or «**orekh**», the letter is the continuation of the melisma at the beginning of the last line (fig. 10).



Fig. 10: Ascending *plica* and liquescent *torculus* used as ornamental articulation of melismata (recto, verso)

Ovadia used only once a conventional ornament used in Western plainchant and it is a kind of *tristropa* or *strophici* which he used at the melisma on «el**h**aelohim» (fig. 11). Since there is no living tradition of medieval plainchant, such an ornament is either completely ignored or has been re-invented (for instance, sung like a microtonal oscillation on the same note similar to the ornament *homalon* used by Orthodox psaltes).

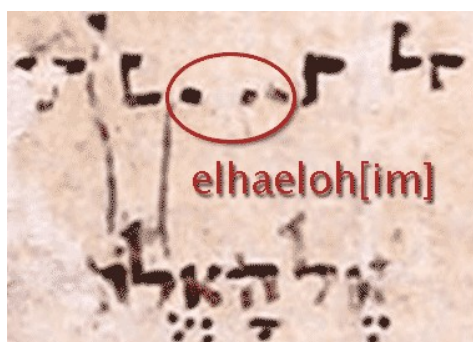


Fig. 11: *tristropa* used within a melisma on «el**h**aelohim» (verso)

Apart from that, Ovadia rarely used ornamental neumes of Western plainchant in his transcription of para-liturgical *piuṭim*, although it was obviously a genre performed by an experienced singer like in case of «Ṷa’eda’ mah». It does not necessarily mean a lack of

ornaments (quite unlikely), but as an educated cantor Ovadiah might have felt that many of them cannot be properly transcribed by a translation into a common ornament used by Christian cantors in a Norman monastery.

At this point, we just arrive at the most interesting aspect of Ovadiah's use of Norman notation, where he dared to go beyond the conventions of this notation, and that means beyond the border of his cognitive approach, since the musician Ovadiah, educated as a cantor at an Italian monastery, did obviously very well understand, that there were details which cannot be notated by sticking to the common notational habits. Ovadiah often used lines to indicate, which neumes belong to which syllable and by doing so, one can understand that he first wrote the text and then the notation. This was nothing special, and contemporary Aquitanian cantors used even lines to indicate, how certain melismata of florid organum had to be coordinated with the voice of the cantus, based on a traditional tune augmented by the other voice. But apart from that, there is an additional use of horizontal lines which does re-connect *puncti* and *virgae* besides, that the separation was unavoidable to coordinate these signs with certain syllables of the text (fig. 12).

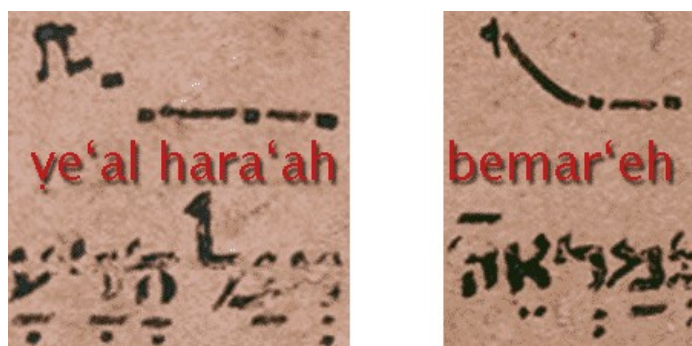


Fig. 12: Reconnecting syllables (recto)

It proves that Ovadiah was quite creative in his use of notation—even in a very individual way that was never used by any other notator before or after him. That makes it not an easy charge for readers today to find out, what was the meaning of the horizontal lines. But since we are used to digital annotations of pitch height, we do know that this is actually the natural way, how the voice articulates melodies—even if the cognition separates waves into little elements qualified as different degrees of a mode, and even if a glissando like indicated with the ascending third over «bemar'eh» was nothing really unusual. Was this the way the syllables were bound together, or was it simply a time unit, so that the syllables like «bemar'eh» or (even against the separation of words) «ye'al ha-» have to be performed within one beat—more or less in a hemiolic way?

Even if there might be no-one who will be able to answer such a difficult question, these observations are meant as a source of inspiration for a musician or even a ḥazan who is interested to study the history of this particular Karaite tradition documented by Ovadiah. I should be honest about the fact that Norman notation of the 12th century is in no way connected with the current concept of “Gregorian chant”. There is no risk to get “contaminated”, as long as one relies in those details on the current knowledge of a living tradition. Nevertheless, who is able to read all these details by following the medium of notation as it was chosen by Ovadiah, is also able to study how the text of different stanzas was adapted to one and the same melodic model and can also understand its potential to adapt to the words and their meaning.

Sometimes Ovadiah filled more notes in, if there was a greater number of syllables within a verse, sometimes he even changed the grouping of the neumes, by rephrasing the well-known patterns of the model—like right at the beginning of the fifth stanza «mizot torah» where the main emphasis is on the second syllable of torah (fig. 13).

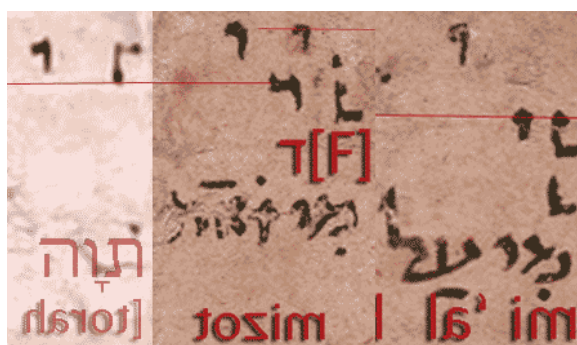


Fig. 13: Comparison of the beginning of the first and the fifth stanza (recto)

As can be seen here, I just inverted the Latin transliteration that it follows the direction of Hebrew script. Thus, I created a method to annotate the facsimile, and part of this annotation was also a horizontal line which had to bind together all the signs on the position of the dalet clef.

The unreadable text, as far as it could be reconstructed from other sources was also added in Hebrew script, but in a transparent way which allowed an independent reading of the fragment, or at least a verification of the vowels as far as the punctuation was still visible (fig. 14-15). Thus, the transcription and edition was prepared (fig. 16-18), but it also helps readers to follow my reading of the fragment and to encourage own readings.

## Conclusion

The Ovadiah scroll is an amazing document within the fragments of the Cairo Genizah. It documents first of all the successful integration of Giovan of Oppido Lucano as Ovadiah of Cairo within a (presumably) Karaite community of the metropole. The Cairo Genizah also has documents which are regarded as contributions of his son who did obviously follow his father in his profession as scribe. Nevertheless, so far no further documents are known, where another scribe tried to document Sephardic chant by the use of Western neumatic notation.

With respect that conversion to another religion is a historical subject which is usually treated in a rather ideological way depending on the background of the scholar who is studying it, also studies of the Ovadiah scrolls can often tell about certain prejudices or at least preconceptions of the researcher. Ovadiah's autobiographical writing documents violence of Western crusaders in Italy, the persecution of Karaite Jews in Baghdad and their way to move into the more tolerant Fatimid caliphate of Cairo. Due to the crusades, they had no chance to settle down in the Patriarchate of Jerusalem, many of them also moved from Constantinople to Cairo, as long as this was possible. Ovadiah also documented that a recommendation letter written by an important Rabbi was enough to encourage Sephardic communities to receive a convert and stranger like him with hospitality despite of many risks, and to care for him—even under difficult circumstances.

Concerning ideological preconceptions, the author of this contribution makes no exception here, but wishes to invite interested readers to study Western plainchant notation simply as a

biographical aspect of the Norman Giovan who was forced during the 12th century to move away from his first identity in order to establish a second one as the Sephardic scribe Ovadiah of Cairo. With his exceptional talent he created a valuable document of Tanakh/Mikra cantillation as the musical basis of *piuṭim* poetry which allows editors to study also the musical aspects of medieval musical traditions around the synagogues of Cairo. At the same time, it is also a great methodological challenge which requires an internationally organised interdisciplinary research.

Appendix

Adler fragment

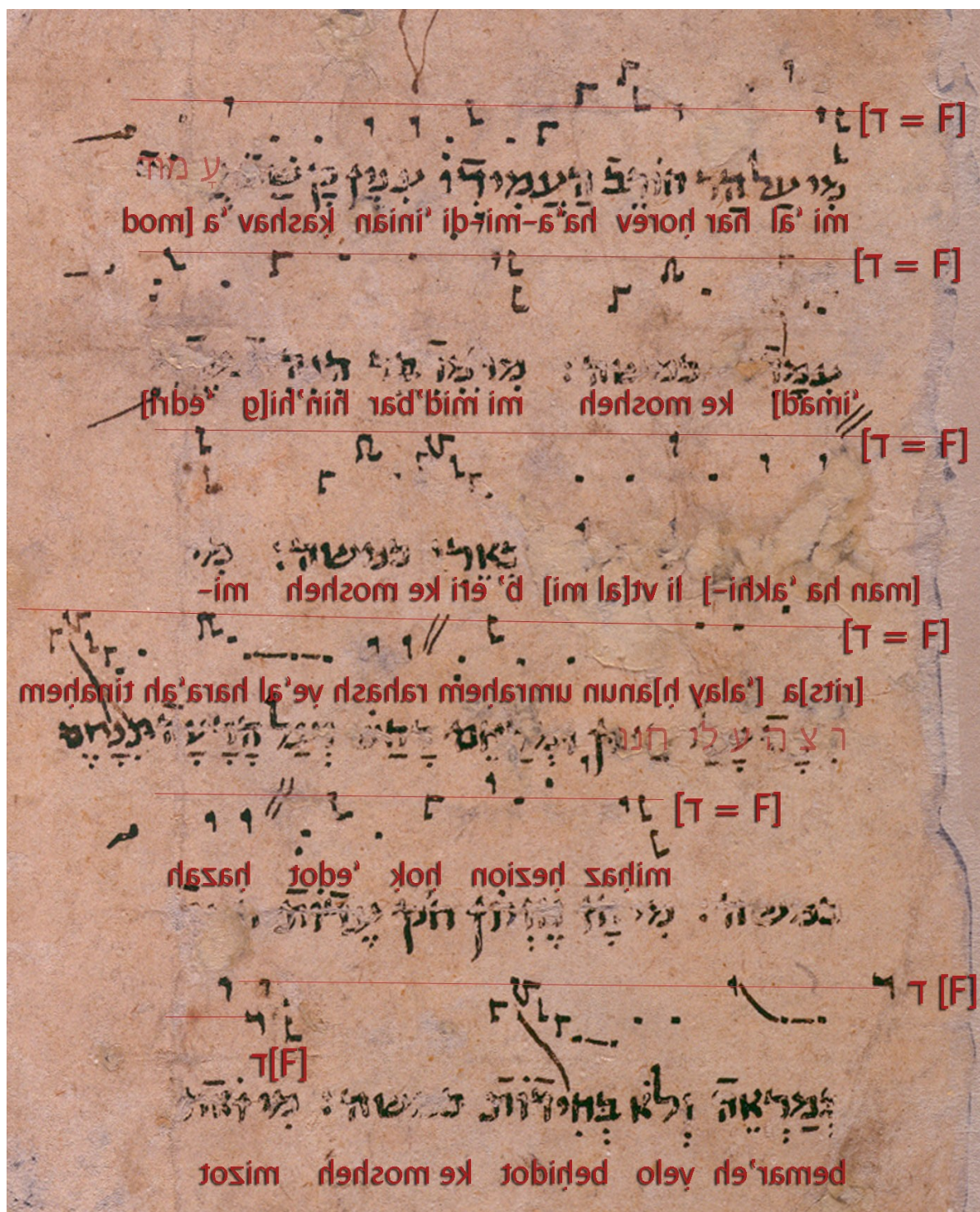


Fig. 14: The annotated Adler fragment (US-NYjts ENA 4096b recto)



Fig. 15: The annotated Adler fragment (US-NYjts ENA 4096b verso)

*Transcription of the piut «Mi'al har horev»*

mi- 'al har horev ha'a midi

'inian kashav 'a [mod 'i- mad] ke mosheh

mi mid'bar hin'hi[g 'edri

man ha'akhi]li vt[almi] b'e- ri ke mosheh

mi- [rits]a ['alay h]anun umrahem

rahash ve'al hara'ah tina- hem ke mosheh

Fig. 16: Transcription of verse 1-3

mi-ḥaz ḥezion ḥoḳ 'edot

ḥazan bema'eh velo be-ḥi-dot ke mosheh

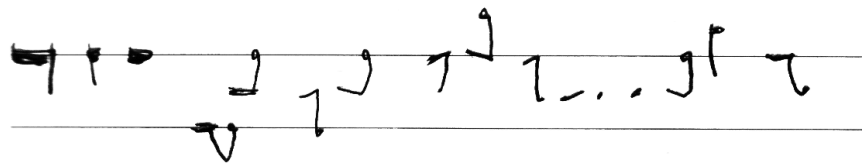
mizot torah limed yeshinan

zakhah yaiavo betoḥ he'a-nan ke mosheh

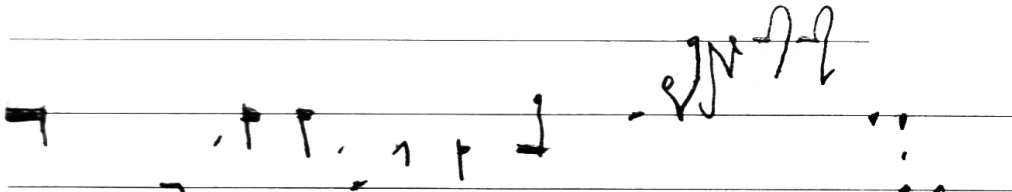
[mi]ḳam arba'im yom basha-ma-im

ḳoiam belo lehem vel ma-im ke mosheh

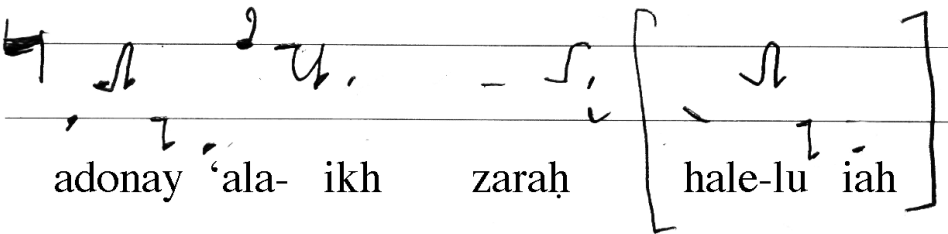
Fig. 17: Transcription of verse 4-6



[vaiakšhev ha'am] el- ha- elo- h[im]



'ada- ti kumi kivah ore- kh kevod



adonay 'ala- ikh zarah [hale-lu'iah]

Fig. 18: Transcription of the conclusion

## Sources

### *Notated fragments of the Ovadiah scrolls (Megilat Obadiah)*

All known sources of the Megilat Obadiah have been made available with an edition of the Hebrew text and Norman Golb's English translation by Gary A. Rendsburg and Peter M. Shamah:

<https://johannes-obadiah.org> (last access: 30 November 2020)

**GB-Cu T-S:** Cambridge, University Libraries, Taylor-Schechter collection:

<http://cudl.lib.cam.ac.uk/collections/genizah/>

Ms. **T-S K5.41:** Fragment with Norman neumes («Barukh ha-gever», «Ya'eda' mah») (about 1130): <http://cudl.lib.cam.ac.uk/view/MS-TS-K-00005-00041>

**US-NYjts, ENA:** New York, Jewish Theological Seminary of America, Elkan Nathan Adler collection

Convolute of fragments **ENA 4096:** Fragment **4096b** with the eulogy of Moses («Mi'al har horev») and Norman neumes is missing at the Friedberg Genizah Project:

<https://johannes-obadiah.org/navigator.php?Manuscript=Obadiah%20Musical%20Compositions&PageNum=1>

### *Western plainchant*

**E-Mn 289:** Madrid, Biblioteca nacional, Ms. 289:

Gradual (Libellum structure with Troper-Proser, Sequentiary, Offertorial and Tonary) of Palermo (about 1150): <http://bdh.bne.es/bnearch/detalle/3301405>

**F-MOf H159:** Montpellier, Bibliothèque interuniversitaire, Faculté de Médecin, ms. H.159: Antiphonary tonary missal of St. Benigne noted with neumes and William of Volpiano's letter system (about 997), some folios in colour:

[https://manuscrits.biu-montpellier.fr/vignettem.php?ETG=OR&TYPE\[\]=NA&ETT=OR&ETM=OR&BASE=manuf](https://manuscrits.biu-montpellier.fr/vignettem.php?ETG=OR&TYPE[]=NA&ETT=OR&ETM=OR&BASE=manuf)

## Glossary

**canon poetry:** A troparic genre of nine stanzas composed to the complex metre of the ode. The order and number of odes was called canon and referred to their melodic model known as *heirmos* (εἰρμός). Hence, the notated chant book had the models and was called *heirmologion*.

**cantillation:** Melodic elaborated form of recitation used for the poetic parts of the *tanakh* (song of songs, Job, psalter, Isaiah, part of Jeremiah, Kohelet, Proverbs, Esther etc.), and model for *piuṭim*.

**cheironomia:** The use of hand signs to direct the choir. These signs indicated melodic phrases, were used in the synagogue, but also in the churches of West and East Rome.

**cordal poetry:** Andalusian poetry (genres like the multilingual *zajāl*, or the *muwashshaḥā'*).

**custos:** “Guard” or “key holder” which indicates the next note by the end of the line.

**genus:** The “change of genus” (ἡ μεταβολή κατὰ γένος) means a (temporary) change from the diatonic to chromatic (a kind of *hijaz*) or enharmonic *genus* and vice versa.

**ḥazanim:** Cantors in a synagogue (sg. *ḥazan*).

**ḥazanot:** Musical settings of poetry celebrated by the *ḥazan*.

**invitatorium:** Antiphon / refrain at the beginning of the matutin (preceding three nocturns) to recite psalm 94 («Venite exultemus») with elaborated *psalmody* organised in three sections. The *invitatorium* is also called «Super venite» and its many ways of recitation are regarded as a very ancient layer of Western plainchant.

**kontakion:** Syriac poetry which became a Byzantine genre of Greek hymnography under Romanos the Melode during the 6th century. There are about 44 *idiomela*—among them 14 melodic models which had been used to compose ca. 700 *kontakia-prosomoia*.

**maḳam:** Melodic mode (Arab. *maqām*) of religious and court chant in the Orient (developed in Sufi brotherhoods and at the courts of the Eastern caliphates in Baghdad and Cairo).

**melos:** The *melos* (τὸ μέλος) is a Byzantine sub-category for *echos* (ὁ ἦχος) and refers to a particular modal melody and its formulaic patterns (intonation, accentuation, cadential endings). According to these patterns one can analyse a hierarchy of modal degrees: (1) *base degrees* (sometimes sung by *isokrates*), (2) *cadential degrees* and (3) the *final degree* (*finalis*).

**miḳra / tanakh:** Hebrew Bible.

**oktoechos:** The *oktōēchos* (ὁ ὀκτώηχος) refers to the eight mode system (“eightfold echos”) used in all monotheist religions of the first millenium according to Eric Werner. The number refers to liturgical cycles like the eight days of the week or the week dedicated to one echos through cycles of eight weeks. It developed out of synagogal chant, was cultivated in Greek hymnody of Palestine, and imitated in Constantinople, Rome, Georgia and Armenia. It was a source of inspiration for Carolingian cantors who created the *tonary*.

**payṭanim:** Poets of Hebrew chant, either used in a liturgical or para-liturgical context.

**piuṭim:** General category of Hebrew poetry organised in acrostics (later also with rhyme / assonances), its musical aspect exists, but must be reconstructed from the living tradition.

**pizmonim:** Hebrew poetry employing refrains (corresponding to the Byzantine *ephymnion*).

**plica:** Ornament used against rhythmical patterns. It developed out of liquescent neumes in the context of 12th-century polyphony.

**psalmody:** Recitation of the *psalter* and the *cantica* (Biblical odes).

**phthongos:** Memorial place for a *dynamic* element of the tone system (ὁ φθόγγος, *phthongus*) as defined by a fret (Ottoman *perde*) of an instrument or by a syllable of solfeggio or an *echema*.

**ṭab‘:** Melodic mode in Andalusia in analogy to *maḳam* (used in the school of Ziryab and Ibn Bayya between Córdoba and the 12th-century Taifa courts).

**ṭa‘amim:** A system of *cheironomia* used for the formulas of *tanakh cantillation*.

**tonary:** The earliest Carolingian chant book which organised the modal classification of Gregorian chant (*a posteriori*) and introduced eight formulas of simple *psalmody* related to each the eight modes.