Tiberian Hebrew

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Tiberian vocalization

The **Tiberian vocalization** (or **Tiberian pointing**, **Tiberian niqqud**; Hebrew: ניקוד טברני) is a system of diacritics devised by the Masoretes to add to the consonantal Masoretic text of the Hebrew Bible; this system soon became used to vocalize other texts as well. The Tiberian vocalization marks vowels, stress, and makes finer distinctions of consonant quality and length, and also serves as punctuation. While the Tiberian system was devised for Tiberian Hebrew, it has become the dominant system

Closeup of Aleppo Codex, Joshua 1:1

for vocalizing all Jewish varieties of Hebrew, having long since eclipsed the Babylonian and Palestinian systems.
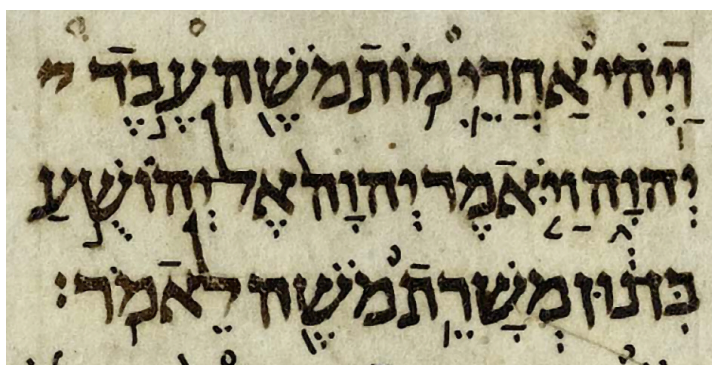
Consonant diacritics

The sin dot distinguishes between the two values of שׁ. A dagesh indicates a consonant is geminate or unspirantized, while a raphe indicates spirantization. The mappiq indicates that ה is consonantal rather than silent in syllable-coda position.

Vowel diacritics

The seven cardinal vowel qualities of Tiberian Hebrew are indicated straightforwardly by distinct diacritics:

niqqud with א	אַ	אֶ	אֵ	אִ	אָ	אֹ	אֻ	אוּ
name	patah	segol	tzere	hiriq	qamatz	holam	qubutz	shuruq
value	/a/	/ɛ/	/e/	/i/	/ɔ/	/o/	/u/	

The diacritics qubutz and shuruq both represent /u/, but shuruq is used when the text uses full spelling (with waw as a mater lectionis). Each of these vowel phonemes could be allophonically lengthened; occasionally this length is marked with metheg. (In this function metheg also can indirectly indicate when a following shva is vocal.)

The ultrashort vowels are slightly more complicated. There were two graphemes corresponding to the vowel /ă/, attested by alternations in manuscripts like אֲרִיךְ~אֲרִיךְ, וָאֶשְׁמְעָה~וָאֶשְׁמְעָה.[1] In addition, one of these graphemes could also be silent:

niqqud with א	אְ	אֲ	אֱ	אֳ
name	shva	hataf patah	hataf segol	hataf qamatz
value	/ă/, ∅	/ă/	/ĕ/	/ŏ/

Shva was used both to indicate lack of a vowel (*quiescent šwa*, *shva nah*) and as another symbol to represent the phoneme /ă/ (*mobile šwa*, *shva na*), the latter also represented by hataf patah.[1][2] The phoneme /ă/ had a number of allophones; /ă/ had to be written with shva rather than hataf patah when not pronounced as [ă].[3] Before a laryngeal-pharyngeal, mobile šwa was pronounced as a ultrashort copy of the following vowel, e.g. וּבְקְעָה [uvɔqɔ̆ʕɔ], and as [ĭ] preceding /j/, e.g. תְּדַמְיֻוּנִי /θăðammĭjuni/.[1] Use of ḥataf vowels was considered mandatory under gutturals but optional under other letters, and varies considerably among manuscripts.[4] This is referenced specifically by medieval grammarians:

> If one argues that the *dalet* of 'Modecai' (and other letters in other words) has hatef qames, tell him, 'but this sign is only a device used by some scribes to warn that the consonants should be pronounced fully, and not slurred over'.
>
> —Abu al-Faraj Harun, *Hidāyat al-Qāri* (*Horayat Ha-Qore*), quoted in Yeivin (1980:283–284)

The names of the vowel diacritics are iconic and show some variation:

> The names of the vowels are mostly taken from the form and action of the mouth in producing the various sounds, as פַּתַח opening; צֵרֵי a wide parting (of the mouth), also שֶׁבֶר) breaking, parting (cf. the Arab, kasr); חִירֶק (also חִרֶק) narrow opening; חֹולֶם closing, according to others fullness, i.e. of the mouth (also מְלֹא פוּם fullness of the mouth). קָמֶץ also denotes a slighter, as שׁוּרֶק and קִבּוּץ (also קבוּץ פוּם) a firmer, compression or contraction of the mouth. Segôl (סְגוֹל bunch of grapes) takes its name from its form. So שָׁלֹשׁ נְקֻדּוֹת (three points) is another name for Qibbúṣ. Moreover the names were mostly so formed (but only later), that the sound of each vowel is heard in the first syllable (קָמֶץ for קָמֶץ, פַּתַח for פַּתַח, צֵרֵי for צֵרִי); in order to carry this out consistently some even write Sägôl, Qomeṣ-ḥatûf, Qûbbûṣ.
>
> —Wilhelm Gesenius, Gesenius' Hebrew Grammar, §8*d*

Cantillation

Cantillation serves both to mark stress and as punctuation. Metheg may mark secondary stress. Maqqaf conjoins words into one stress unit, which normally takes only one cantillation mark on the final word in the unit.

References

[1] Blau (2010:105–106)

[2] Blau (2010:117–118)

[3] Blau (2010:118)

[4] Yeivin (1980:283)

Bibliography

- Blau, Joshua (2010). *Phonology and Morphology of Biblical Hebrew*. Winona Lake, Indiana: Eisenbrauns. ISBN 1-57506-129-5.
- Sáenz-Badillos, Angel (1993). *A History of the Hebrew Language*. Cambridge University Press. ISBN 0-521-55634-1.
- Yeivin, Israel (1980). *Introduction to the Tiberian Masorah*. Scholars Press. ISBN 0-89130-373-1.

Tiberian Hebrew

Tiberian Hebrew is the canonical pronunciation of the Hebrew Bible or Tanakh and related documents. This traditional medieval pronunciation dating back to at least Second Temple times was committed to writing by Masoretic scholars based in the Jewish community of Tiberias c. 750-950 CE, in the form of the Tiberian vocalization. This written form employed diacritics added to the Hebrew letters: vowel signs and consonant diacritics (nequdot) and the so-called accents (two related systems of
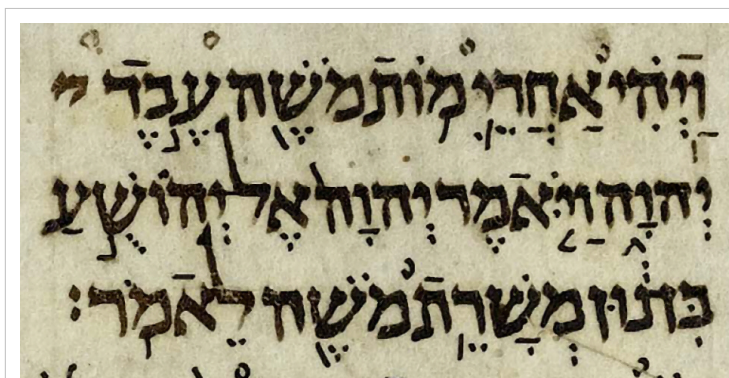
Closeup of Aleppo Codex, Joshua 1:1

cantillation signs or te'amim), which together with the marginal notes (masora magna and masora parva) make up the Tiberian apparatus. (Though the written vowels and accents only came into use ca. 750 CE, the oral tradition they reflect is many centuries older, with ancient roots.) Although not in common use today, the Tiberian pronunciation of Hebrew is considered by textual scholars to be the most exact and proper pronunciation of the language as it preserves all of the original Semitic consonantal and vowel sounds of Ancient Hebrew.

Sources

The usual Hebrew Grammar Books do not teach Tiberian Hebrew as described by the early grammarians. The prevalent view in some of these grammars is the use of David Qimchi's system of division of the graphic signs into "short" and "long" vowels. The values assigned to the Tiberian vowel signs reveals a Sephardi tradition of pronunciation (the dual quality of qames (אָ) as /a/, /o/; the pronunciation of simple *sheva* (אְ) as /ĕ/).

The phonology of Tiberian Hebrew can be gleaned by the collation of various sources:

Page from Aleppo Codex, Deuteronomy

- The Aleppo Codex of the Bible (and other ancient manuscripts of the Tanakh, cited in the margins of early codices), which actually preserves direct evidence of the application of these rules in the Hebrew Bible in a graphic manner, e.g. the widespread use of chateph vowels where one would expect simple *sheva*, clarifying the color of the vowel thus pronounced under certain circumstances. Most prominent, the use of chateph chireq in five words under a consonant which follows a guttural vocalized with regular chireq, as described by Israel Yeivin. Even the anomalous use of the rafé sign over other letters which do not belong to בגדכפ"ת or ה"א.

- The explicit statements found in books of grammar near the 10th and 11th Centuries C.E., such as: The *Sefer haQoloth* of Moshe ben Asher (published by N. Allony), *Diqduqé hata'amim* of Aaron ben Moses ben Asher; the anonymous works entitled *Horayath haQoré* (G. Khan and Ilan Eldar attribute it to the Karaite Abu Alfaraj Harun), the *Treatise on the Schwa* (published by Kurt Levy from a Genizah fragment in 1936), and *Ma'amar haschewa* (published from Genizah material by Allony); the works of medieval Sephardi grammarians, such as Abraham Ibn Ezra, Judah ben David Hayyuj. In the last two, it is evident that the chain of transmission is already breaking down, or interpreted under the influence of their local tradition.

- Ancient manuscripts which preserve other similar dialects of Hebrew or Palestinian Aramaic, but vocalized in Tiberian signs in a "vulgar" manner, which reveal a phonetic spelling, rather than a phonemic spelling. This is the case of the so called "Pseudo-Ben Naphtali" or "Palestinian-Sephardi" vocalized manuscripts. These confirm some of the rules enumerated below, for example, the pronunciation of *sheva* as /ĭ/ before consonantal yod, as in /bĭji/ בְיִ.

- Other vocalization traditions such as: the vocalization of the Land of Israel; and, to a lesser extent, the Babylonian vocalization. Each community (Palestinian, Tiberian, and Babylonian) developed systems of notation of pronunciation phenomena in each dialect, and some of them are common among these traditions. In one it is graphically represented, while in some other, we have to rely on other sources for explicit statements.

- The transcriptions of the Biblical text made by the members of the Karaite community into Arabic characters, and vocalized with Tiberian signs, help us get a glimpse of the pronunciation of Tiberian Hebrew. This is especially

true with regards to syllable structure, and vowel length (which is marked in Arabic by matres lectionis, and the sign sukun).

- Various oral traditions, especially the oral tradition of Yemenite Hebrew pronunciation, and the Karaite tradition. Both have preserved old features which correspond to Tiberian tradition, such as the pronunciation of schewa according to its proximity to gutturals or yod.

Phonology

Consonants

Tiberian Hebrew has 22 consonantal phonemes represented by 22 letters. The Shin with dot on the left (שׁ) was pronounced the same as the letter Samekh. The letters בגדכפ״ת had two values each – plosive and fricative.

		Labial	Interdental	Alveolar		Palatal	Velar	Uvular	Pharyngeal	Glottal
				Plain	Emphatic					
Nasal		m		n						
Stop	Voiceless	p		t	tˤ		k	q		ʔ
	Voiced	b		d			ɡ			
Fricative	Voiceless	f	θ	s	sˤ	ʃ	x		ħ	h
	Voiced	v	ð	z			ɣ		ʕ	
Trill				r						
Approximant		w	l	j						

The most salient characteristics of the Tiberian Hebrew consonantal pronunciation are:

- Waw "ו" conjunctive was read, before פמ״ב, as וּ /ʔu/, rather than וְ /wu/ (as is the case in some eastern reading traditions).

- The threefold pronunciation of Resh "ר". Even though there is no agreement as to how it was pronounced, the rules of distribution of such pronunciation is given in *Horayath haQoré*:

    a) "Normal" Resh /ʀ/ pronounced thus (according to Eldar, as a uvular sound /ʀ/) in all other instances (except for the circumstances described below). Example: אוֹר /ʔoːʀ/

    b) The "peculiar" resh /r/ before or after Lamed or Nun, any of the three being vocalized with simple *sheva*; and Resh after Zayin, Daleth, Sin / Samekh, Taw, Tzadi, Teth, any of them punctuated with simple *sheva*. Example: יִשְׂרָאֵל /jisrɔːˈʲeːl/, עָרְלָה /ʕɔrˈlɔː/. Given the proximity of a dental consonant, it is likely that this form of resh was pronounced as an alveolar trill, like resh in Sephardi Hebrew.

    c) There is still another pronunciation, affected by the addition of a dagesh in the Resh in certain words in the Bible, which indicates it was doubled /ʀː/. Example: הַרְאִיתֶם /hɐʀːˈïʔiˈθɛːm/ As can be seen, this pronunciation has to do with the progressive increase in length of this consonant. It was preserved only by the population of Ma'azya which is in Tiberias.

- A possible threefold pronunciation of Taw. There are three words in the Torah, Prophets and Writings of which is said that "the Taw is pronounced harder than usual". It is said that this pronunciation was half way between the soft Taw /θ/ and the hard Taw /t/. Example: וַיְשִׂימֶהָ תֵל /vɐjsiːˈmɛːhɔθ teːl/

Vowels

Tiberian Hebrew phonemic vowels[1]

	Front	Back
Close	i	u
Close-mid	e	o
Open-mid	ɛ	ɔ
Open		a
Reduced	ă ɔ̆ (ɛ̆)[1]	

1. marginal

The vowel qualities /a e i ɔ o u/ have phonemic status: viz. אָשֵׁם הוּא אָשֹׁם אָשֵׁם (Lev. 5:19) and אָשֵׁם 'guilty', אִם 'when' and אֵם 'mother'.[2] /ɛ/ has phonemic value in final stressed position: רֹעֶה רֵעִי רָעָה, מִקְנֶה מִקְנָה, קָנֶה קָנָה קְנֵה קְנֹה, but in other positions it may reflect loss of the opposition /a : i/.[2] By the Tiberian time, all short vowels in stressed syllables had lengthened, making vowel length allophonic.[3][4] Vowels in open or stressed syllables had allophonic length (e.g. /a/} in יְרַחֵם, which was previously short).[5][6]

the Tiberian tradition possesses three reduced (ultrashort, hatuf) vowels /ă ɔ̆ ɛ̆/ of which {IPA has questionable phonemicity.[7][8][9] /ă/ under a non-guttural letter was pronounced as a ultrashort copy of the following vowel before a guttural, e.g. וּבְקָעָה [uvɔqɔ̆ˈʕɔ], and as [ĭ] preceding /j/, e.g. תְדַמְּיוּנִי [θăðammĭˈjuni], but was always pronounced as [ă] under gutturals, e.g. חֲיִי [ħăˈji].[10][11]

Stress

Tiberian Hebrew has phonemic stress, e.g. בָּנוּ /bɔˈnu/ 'they built' vs. בָּנוּ /ˈbɔnu/ 'in us'; stress is most commonly ultimate, less commonly penultimate, and antepenultimate stress exists marginally, e.g. הָאֹהֱלָה /hɔˈʔohĕlɔ/ 'into the tent'.[12][13]

Phonotactics

As described above, vowel length was dependent on syllable structure. Open syllables must take long or ultrashort vowels, stressed closed syllables take long vowels, and unstressed closed syllables take short vowels. Traditional Hebrew philology considers ultrashort vowels not to constitute syllable nuclei.

Orthography

transliteration	ʾ	b	g	d	h	w	z	ḥ	ṭ	y	k	l	m	n	s	ʿ	p	ṣ	q	r	š, ś	t
letter	א	ב	ג	ד	ה	ו	ז	ח	ט	י	כך	ל	מם	נן	ס	ע	פף	צץ	ק	ר	ש	ת
pronunciation	[ʔ]	[b] [v]	[g] [ɣ]	[d] [ð]	[h]	[w]	[z]	[ħ]	[tˤ]	[j]	[k] [x]	[l]	[m]	[n]	[s]	[ʕ]	[p] [f]	[sˤ]	[q]	[r]	[ʃ] [s]	[t] [θ]

niqqud with א	אַ	אֶ	אֵ	אִ	אָ	אֹ	אֻ	אוּ
name	patah	segol	tzere	hiriq	qamatz	holam	qubutz	shuruq
value	/a/	/ɛ/	/e/	/i/	/ɔ/	/o/	/u/	

niqqud with א	אְ	אֲ	אֱ	אֳ
name	shva	hataf patah	hataf segol	hataf qamatz
value	/ă/, ∅	/ă/	/ɛ̆/	/ɔ̆/

The simple *sheva* sign changes its pronunciation depending on its position in the word (mobile/vocal or quiescent/zero), as well as due to its proximity to certain consonants.

In the examples given below, it has been preferred to show one found precisely in the Bible which represents each phenomenon in a graphic manner (i.e. a chateph vowel), although these rules still apply when there is only simple *sheva* (depending on the manuscript or edition used).

When the simple *sheva* appears in any of the following positions, it is regarded as mobile (na):

- At the beginning of a word. This includes the *sheva* (originally the first of the word) following the attached particles bi-,ki-,li- and u- and preceded by *metheg* (the vertical line placed to the left of the vowel sign, which stands for either secondary stress, or its lengthening). Examples: וּזֲהַב / ʔuːzĕˈhaːv/ Genesis 2:12; בְּסֶבָךְ /ˈbiːsĕvɔx/ Psalms 74:5. But is not pronounced if there is no *metheg*, that is, they form a closed syllable.

- The *sheva* following these three vowels /e/, /ɔ/, /o/, except for known types of closed syllables (and preceded or not, by metheg). Examples: נֵלֲכָה-נָּא /ˌneːlĕxɔˈnːɔː/ Exodus 3:18; אֵלֲכָה נָא /ˈʔeːlĕxɔː ˈnɔː/ Exodus 4:18.

- The second of two adjacent *sheva*s, when both appear under different consonants. Examples: אֶכְתֲבֶנּוּ /ʔɛxtĕˈvɛːnːuː/ Jeremiah 31:33; וְאֶשְׁקֲלָה-לּוֹ /vɔːʔɛʃqĕlɔˈlːoː/ Jeremiah 32:9 (except for at the end of a word, אָמַרְתֲ /ɔːˈmɛːrt/).

- The *sheva* under the first of two identical consonants, preceded by metheg. Examples: בְּחַצֲצֹן /bĕˌħaːsˤĕˈsˤoːn/ Gen. 14:17; צָלֲלוּ /sˤɔːlĕˈluː/ Exodus: 15:10.

- The *sheva* under a consonant with dagesh forte or lene. Examples: סֻבֲּלוֹ /suɓɓɔ̆ˈloː/ Isaiah 9:3; אֶשְׁתֲלֶנּוּ /ʔɛʃtĕˈlɛːnːuː/ Ezekiel 17:23.

- The *sheva* under a consonant which expects gemination, but is not marked thus, for example, the one found under ר. And sometimes even מ when preceded by the article. Examples: מְבָרֲכֶיךָ /mĕvɔːʀĕˈxɛːxɔː/ Genesis 12:3; הַמֲדַבְּרִים /haːmĕðɐɓɓĕˈʀiːm/ 2 Chronicles 33:18.

- In case a quiescent *sheva* was followed either by a guttural or yodh, it would turn into mobile according to the rules given below, if preceded by a metheg. Ancient manuscripts support this view. Examples: נִבֲהָל /niːvɔ̆ˈhoːl/ Proverbs 28:22; שִׁבֲעַת /ʃiːvĕˈʕaːθ/ Job 1:3.

- Any *sheva* with the sign metheg attached to it, would change an ultrashort vowel to a short, or normal length vowel. For this, only ancient, reliable manuscripts can give us a clear picture, since, with time, later vocalizers added to the number of methegs found in the Bible.

The gutturals (אהח"ע), and yodh (י), affect the pronunciation of the *sheva* preceding them. The allophones of the phoneme /ă/ follow these two rules:

- It would change its sound to imitate that of the following guttural. וּקֲהָת /ʔuːqɔ̆ˈhɔːθ/ Numbers 3:17; וְנִזֲרְעָה /vĕnizrɔ̆ˈʕɔː/ Numbers 5:28.

- It would be pronounced as *ḥireq* before consonantal *yodh*. Examples: יִרֲמְיָהוּ /jiʀmĭˈjɔːhuː/ Jeremiah 21:1; עֲנִיָּן /ʕiːnĭˈjɔːn/ in Maimonides' autograph in his commentary to the Mishnah.[14]

It must be said that, even though there are no special signs apart /ĕ/, /ă/, /ŏ/ to denote the full range of furtive vowels, these remaining four (/u/, /i/, /e/, /o/) are represented by simple *sheva* (Chateph chireq (אֱ) in the Aleppo Codex is a scribal oddity, and certainly not regular in Hebrew manuscripts with Tiberian vocalization).

All other cases should be treated as zero vowel (quiescent, nah), including the double final *sheva* (double initial *sheva* does not exist in this Hebrew dialect), and the *sheva* in the word שְׁתַּיִם /ʃˈtɐːjim/, read by the Tiberian Masoretes as אֶשְׁתַּיִם /ʔɛʃˈtɐːjim/. This last case has similitudes with phenomena occurring in the Samaritan Pronunciation and the Phoenician language.

Depending on the school of pronunciation (and relying on musical grounds, perhaps), the metheg sign served to change some closed syllables into open ones, and therefore, changing the vowel from short to long, and the quiescent *sheva*, into a mobile one.

Notes

[1] Blau (2010:105–106, 115–119)

[2] Blau (2010:111–112)

[3] Steiner (1997:149)

[4] In fact, first all stressed vowels were lengthened in pause, see Janssens (1982:58–59). This can be seen by forms like Tiberian כַּף /kaf/ < */kaf/, pausal כָּף /kɔf/ < */kɔːf/ < */kaːf/ < */kaf/. The shift in Tiberian Hebrew of */aː/ > *{{IPA|ɔː/} occurred after this lengthening, but before the loss of phonemicity of length (since words like ירחם with allophonically long {{IPA|[aː]} don't show this shift).

[5] Blau (2010:82, 110)

[6] This is attested to by the testimony of Rabbi Joseph Qimḥi (12th century) and by medieval Arabic transcriptions, see Janssens (1982:54–56). There is also possible evidence from the cantillation marks' behavior and Babylonian pataḥ, see Blau (2010:82).

[7] Blau (2010:117–118)

[8] Sáenz-Badillos (1993:110)

[9] See אֳנִי /ˈŏni/ 'ships' אֲנִי /ăni/ 'I', חֳלִי /ħŏli/ 'sickness' חֲלִי /ħăli/ 'ornament', עֲלִי /ʕăli/ 'ascend!' (Num 21:17) and בַּעֲלִי /baʕăli/ '(with the) pestle' (Prov 27:22). Blau (2010:117–118) /ĕ/ alternates with /ă/ frequently and rarely contrasts with it, e.g. אֱדוֹם {{IPA|ʔɛ̆ðom/} 'Edom' versus אֲדֹמִי /ʔăðomi/ 'Edomite'. Blau (2010:117–118) /ŏ/ is clearly phonemic but bears minimal functional load. Sáenz-Badillos (1993:110) /ă/ is written both with *mobile šwa* <ְ> and *hataf patah* <ֲ>. Blau (2010:117)

[10] Yeivin (1980:281–282)

[11] Blau (2010:105–106)

[12] Blau (2010:143–144)

[13] In fact, it is not clear that a reduced vowel should be considered as comprising a whole syllable. Note for example that the rule whereby a word's stress shifts to a preceding open syllable to avoid being adjacent to another stressed syllable skips over ultrashort vowels, e.g. עִם־יוֹרְדֵי בוֹר {{IPA|ʕim-ˈjorăðe vor/} 'with those who go down into the pit' מְטֹעֲנֵי חָרֶב /măˈtˤoʕăne ˈħɔrɛv/ 'pierced with a sword'. See Blau (2010:143–144)

[14] These two rules, as well as the rule that *metheg* changes *sheva* from an ultrashort to a normal vowel, are recorded by Solomon Almoli in his *Halichot Sheva* (Constantinople 1519), though he states that these differences are dying out and that in most places vocal *sheva* is pronounced like *segol*. In Oriental communities such as the Syrians, these rules continued to be recorded by grammarians into the 1900s (e.g. Sethon, Menasheh, *Kelale Diqduq ha-qeriah*, Aleppo 1914), though they were not normally reflected in actual pronunciation. The rules about *yodh* and *metheg*, though not the rule about gutturals, is still observed by the Spanish and Portuguese Jews of Amsterdam: Rodrigues Pereira, Martin, *'Hochmat Shelomoh*.

References

Bibliography

- Bar-Asher, M. (1998). *Scripta Hierosolymitana Volume XXXVII Studies in Mishnaic Hebrew*.
- Blau, Joshua (2010). *Phonology and Morphology of Biblical Hebrew*. Winona Lake, Indiana: Eisenbrauns. ISBN 1-57506-129-5.
- Dotan, A. (1967). *The Diqduqe Hatte'amim of Aharon ben Moshe ben Asher*.
- Eldar, I. (1994). *The Art of Correct Reading of the Bible*.
- Ginsburg, C.D. (1897). *Introduction to the Massoretico-Critical Edition of the Hebrew Bible* (http://www. archive.org/details/introductionofma00ginsuoft).
- Golomb, D. M. (1987). *Working with no Data: Semitic and Egyptian Studies presented to Thomas O. Lambdin*.
- Hayyim, Z. B. (1954). *Studies in the Traditions of the Hebrew Language*.
- Malone, Joseph L. (1993). *Tiberian Hebrew phonology*. Winona Lake, IN: Eisenbrauns.
- Sáenz-Badillos, Angel (1993). *A History of the Hebrew Language*. Cambridge University Press. ISBN 0-521-55634-1.
- Steiner, Richard C. (1997), "Ancient Hebrew", in Hetzron, Robert, *The Semitic Languages*, Routledge, pp. 145–173, ISBN 0-415-05767-1
- Yeivin, Israel (1980). *Introduction to the Tiberian Masorah*. Scholars Press. ISBN 0-89130-373-1.

Tiberias

Tiberias	
— **Municipality of Israel** —	
Hebrew transcription(s)	
• **Hebrew**	טְבֶרְיָה
• **ISO 259**	Ṭberya
• **Also spelled**	Tverya (official)
Arabic transcription(s)	
• **Arabic**	طبرية

Logo

Tiberias

Coordinates: 32°47′47.76″N 35°32′8.58″E	
District	North
Founded	c. 20 CE
Government	
• **Type**	City (from 1948)
• **Mayor**	Zohar Oved
Area	
• **Total**	10872 dunams (10.872 km^2 or 4.198 sq mi)
Population (2009)[1]	
• **Total**	41,300
Name meaning	City of Tiberius
Website	www.tiberias.muni.il [2]

Tiberias (🔊 /taɪˈbɪəriəs/; Hebrew: טְבֶרְיָה, **Tverya**, **Tiveria** (audio); Greek:**Τιβεριάς** *Tiberiás*, Modern Greek:Τιβεριάδα *Tiveriáda*) is a city on the western shore of the Sea of Galilee (also called the Kinneret), Lower Galilee, Israel. Established in 20 CE, it was named in honour of the emperor Tiberius.[3]

Tiberias has been venerated in Judaism since the middle of the 2nd century CE[4] and since the 16th century has been considered one of Judaism's Four Holy Cities, along with Jerusalem, Hebron and Safed.[5] In the 2nd-10th centuries, Tiberias was the largest Jewish city in the Galilee and the political and religious hub of the Jews of Palestine. Tiberias has historically been known for its hot springs, believed to cure skin and other ailments, for thousands of years.[6]

History

Jewish and Roman period

Tiberias was founded sometime around 20 CE in Herodian Tetrarchy of Galilee and Peraea by the Roman Jewish client king Herod Antipas, son of Herod the Great. Herod Antopas made it the capital of his realm in the Galilee.[7] Tiberias had a Jewish majority, living alongside a heterogeneous population.[7] It was named in honor of the Roman Emperor Tiberius. There is a legend that Tiberias was built on the site of the Israelite village of *Rakkat*, mentioned in the Book of Joshua (Joshua 19:35).[7] A discussion of Tiberias as *Rakkat* appears in the Talmud.[8] In *The Antiquities of the Jews*, the Roman-Jewish historian Josephus states that a village with hot springs named Emmaus was located near Tiberias.[3] This location is repeated in *The Wars of the Jews*.[9]

Leaning tower of Tiberias

In the days of Antipas, the more religious (as opposed to Hellenized) Jews refused to settle there; the presence of a cemetery rendered the site ritually unclean. Antipas settled many non-Jews there from rural Galilee and other parts of his domains in order to populate his new capital, and built a palace on the acropolis.[10] The prestige of Tiberias was so great that the sea of Galilee soon came to be named the sea of Tiberias; however, what would now be called Jewish zealots continued to call it 'Yam Ha-Kinerett', its traditional name.[10] The city was governed by a city council of 600 with a committee of 10 until 44 CE when a Roman Procurator was set over the city after the death of Agrippa I.[10]

Under the Roman Empire, the city was known by its Greek name **Τιβεριάς** (*Tiberiás*, Modern Greek Τιβεριάδα *Tiveriáda*), an adaptation of the taw-suffixed Semitic form that preserved its feminine grammatical gender. In 61 CE Agrippa II annexed the city to his kingdom whose capital was Caesarea Phillippi.[11] During the First Jewish–Roman War Josephus Flavius took control of the city and destroyed Herod's palace, but was able to stop the city from being pillaged by his Jewish army.[10][12] Where most other cities in the Province of Iudaea were razed, Tiberias was spared because its inhabitants remained loyal to Rome, after Josephus Flavius had surrendered the city to the Roman emperor Vespasian.[10][13] It became a mixed city after the fall of Jerusalem in 70 CE; with Judea subdued, the southern Jewish population migrated to Galilee.[14][15]

There is no direct indication Tiberias, as well as the rest of Galilee, took part in the Bar Kokhba Revolt of 132-136 CE, hence continuing to exist despite the economic decline due to the war. Following the expulsion of all Jews from Jerusalem after 135 CE, Tiberias and its neighbor Sepphoris became the major Jewish centres.

In 145 CE, Rabbi Shimon bar Yochai "cleansed the city of ritual impurity allowing Jews to settle in the city in numbers."[11] The Sanhedrin, the Jewish court, also fled from Jerusalem during the Great Jewish Revolt against the Roman Empire, and after several moves eventually settled in Tiberias in about 150 CE.[10][15] It was to be its final meeting place before its disbanding in the early Byzantine period. From the time when Yochanan bar Nafcha (d. 279) settled in Tiberias, the city became the focus of Jewish religious scholarship in the land. The Mishnah along with the Jerusalem Talmud, (the written discussions of generations of rabbis in the Land of Israel − primarily in the academies of Tiberias and Caesarea), was probably compiled in Tiberias by Rabbi Judah haNasi in around 200 CE.[15] The 13 synagogues served the spiritual needs of a growing Jewish population.[10]

Remains of Crusader gate

Byzantine rule

In the 6th century Tiberias was still the seat of Jewish religious learning. In light of this, Bishop Simeon of Beth Arsham urged the Christians of Palaestina to seize the leaders of Judaism in Tiberias, to put them to the rack, and to compel them to command the Jewish king, Dhu Nuwas, to desist from persecuting the Christians in Najran.[16]

In 614, Tiberias was the site, where during the final Jewish revolt against the Byzantine Empire, parts of the Jewish population supported the Persian invaders; the Jewish rebels were financed by Benjamin of Tiberias, a man of immense wealth; according to Christian sources, during the revolt Christians were massacred and churches destroyed. In 628, the Byzantine army returned to Tiberias upon the surrender of Jewish rebels. A year later, influenced by radical Christian monks, Emperor Heraclius instigated a wide-scale slaughter of the Jews, which practically emptied Gelilee of most its Jewish population, with survivors fleeing to Egypt.

Arab rule

Tiberias, or Tabariyyah in Arab transcription, was conquered by (the Arab commander) Shurahbil in the "year 13" (634 CE) by capitulation; one half of the houses and churches were to belong to the Muslims, the other half to the Christians."[17] Since 636 CE, Tiberias served as the regional capital, until Bet Shean took its place, following the Rashidun conquest. The Caliphate allowed 70 Jewish families from Tiberias to form the core of a renewed Jewish presence in Jerusalem and the importance of Tiberias to Jewish life declined.[11] The caliphs of the Umayyad Dynasty built one of its square-plan palaces on the waterfront to the north of Tiberias, at Khirbat al-Minya. Tiberias was revitalised in 749, after Bet Shean was destroyed in an earthquake.[11] An imposing mosque, 90 metres long by 78 metres wide, resembling the Great Mosque of Damascus, was raised at the foot of Mount Berenice next to a Byzantine church, to the south of the city, as the eighth century ushered in Tiberias's golden age, when the multicultural city may have been the most tolerant of the Middle East.[18] Jewish scholarship flourished from the beginning of the 8th century to the end of the 10th., when the oral traditions of ancient Hebrew, still in use today, were codified. One of the leading members of the Tiberian masoretic community was Aaron ben Moses ben Asher, who refined the oral tradition now known as Tiberian Hebrew. Ben Asher is also credited with putting the finishing touches on the Aleppo Codex, the oldest existing manuscript of the Hebrew scriptures.

The Arab geographer al-Muqaddasi writing in 985, describes Tiberias as a hedonistic city afflicted by heat:-'For two months they dance; for two months they gobble; for two months they swat; for two months they go about naked; for two months they play thje reed flute; and for two months they wallow in the mud.[18] As "the capital of Jordan Province, and a city in the Valley of Canaan...The town is narrow, hot in summer and unhealthy...There are here eight natural hot baths, where no fuel need be used, and numberless basins besides of boiling water. The mosque is large and fine, and stands in the market-place. Its floor is laid in pebbles, set on stone drums, placed close one to another." According to Muqaddesi, those who suffered from scab or ulcers, and other such diseases came to Tiberias to bath in the hot springs for three days. "Afterwards they dip in another spring which is cold, whereupon...they become cured."[19]

Remains of Roman theater

In 1033 Tiberias was again destroyed by an earthquake.[11] A further earthquake in 1066 toppled the great mosque.[20]

Nasir-i Khusrou visited Tiberias in 1047, and describes a city with a "strong wall" which begins at the border of the lake and goes all around the town except on the water-side. Furthermore, he describes

Hamat Tiberias synagogue floor

"numberless buildings erected in the very water, for the bed of the lake in this part is rock; and they have built pleasure houses that are supported on columns of marble, rising up out of the water. The lake is very full of fish. [] The Friday Mosque is in the midst of the town. At the gate of the mosque is a spring, over which they have built a hot bath. [] On the western side of the town is a mosque known as the Jasmine Mosque (Masjid-i-Yasmin). It is a fine building and in the middle part rises a great platform (dukkan), where they have their Mihrabs (or prayer-niches). All round those they have set jasmine-shrubs, from which the mosque derives its name."[21]

Crusader period

During the First Crusade it was occupied by the Franks, soon after the capture of Jerusalem and it was given in fief to Tancred, who made it his capital of the Principality of Galilee in the Kingdom of Jerusalem; the region was sometimes called the Principality of Tiberias, or the Tiberiad.[22] In 1099 the original site of the city was abandoned, and settlement shifted north to the present location.[11] St. Peter's Church, originally built by the Crusaders, is still standing today, although the building has been altered and reconstructed over the years.

At the beginning of the 12th century the Jewish community of Tiberias numbered about 50 families; and at that time the best manuscripts of the Torah were said to be found there.[16] In the 12th-century, the city was the subject of negative undertones in Islamic tradition. A *hadith* recorded by Ibn Asakir of Damascus (d. 1176) names Tiberias as one of the "four cities of hell."[23] This could have been reflecting the fact that at the time, the town had a notable non-Muslim population.[24]

In 1187, Saladin ordered his son al-Afdal to send an envoy to Count Raymond of Tripoli requesting safe passage through his fiefdom of Galilee and Tiberias. Raymond was obliged to grant the request under the terms of his treaty with Saladin. Saladin's force left Caesarea Philippi to engage the fighting force of the Knights Templar. The Templar force was destroyed in the encounter. Saladin then besieged Tiberias; after six days the town fell. On July 4, 1187 Saladin defeated the Crusaders coming to relieve Tiberias at the Battle of Hattin, 10 km outside the city.[25]

Rabbi Moshe ben Maimon, (Maimonides), a leading Jewish legal scholar, philosopher and physician of his period, died in 1204 in Egypt and was later buried in Tiberias, now one of the city's important pilgrimage sites.

Tomb of the Rambam, Tiberias

Yakut, writing in the 1220s, described Tiberias as a small town, long and narrow. He also describes the "hot salt springs, over which they have built Hammams which use no fuel.

Mamluk rule

In 1265 the Crusaders were driven from the city by the Mamluks, who ruled Tiberias until the Ottoman conquest in 1516.[11]

Ottoman era

Tiberias harbor

<table>
<tr><td colspan="3" align="center">Old Yishuv</td></tr>
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	Old Yishuv	
	Jewish life in the Land of Israel before Modern Zionism	
Key figures		
	Joseph Nasi • Levi ben Jacob • Haim Abulafia • Yehuda he-Hasid Haim Farhi • Menachem Mendel • Jacob Saphir	
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As the Ottoman Empire expanded along the southern Mediterranean coast under sultan Selim I, the *Reyes Católicos* (Catholic Monarchs) began establishing Inquisition commissions. Many *Conversos*, (*Marranos* and *Moriscos*) and Sephardi Jews fled in fear to the Ottoman provinces, settling at first in Constantinople, Salonika, Sarajevo, Sofia and Anatolia. The Sultan encouraged them to settle in Palestine.[11][26][27] In 1558, a Portuguese-born marrano, Doña Gracia, was granted tax collecting rights in Tiberias and its surrounding villages by Suleiman the Magnificent. She envisaged the town becoming a refuge for Jews and obtained a permit to establish Jewish autonomy there.[28] In 1561 her nephew Joseph Nasi, Lord of Tiberias,[29] encouraged Jews to settle in Tiberias.[30] Securing a *firman* from the Sultan, he and Joseph ben Adruth rebuilt the city walls and lay the groundwork for a textile (silk) industry, planting mulberry trees and urging craftsmen to move there.[30] Plans were made for Jews to move from the Papal States, but when the Ottomans and the Republic of Venice went to war, the plan was abandoned.[30] No Christians or Jews were mentioned in the Ottoman registers of 1525, 1533, 1548, 1553 and 1572.[31] The registers in 1596 recorded the population to consist of 50 Muslim families and 4 bachelors.[32]

In 1624, when the Sultan recognized Fakhr-al-Din II as Lord of Arabistan (from Aleppo to the borders of Egypt),[33] the Druze leader made Tiberias his capital.[11] The 1660 destruction of Tiberias by the Druze resulted in abandonment of the city by its Jewish community,[34][35] Unlike Tiberias, the nearby city of Safed recovered its destruction in 1660,[36] and wasn't entirely abandoned,[37] remaining an important Jewish center in the Galilee.

In the 1720s, the Bedouin ruler Dhaher al-Omar, fortified the town and signed an agreement with the neighboring Bedouin tribes to prevent looting. Accounts from that time tell of the great admiration people had for Dhaher,

especially his war against bandits on the roads. Richard Pococke, who visited Tiberias in 1727, witnessed the building of a fort to the north of the city, and the strengthening of the old walls, attributing it to a dispute with the pasha (ruler) of Damascus.[38] In the 1740, Tiberias was under the autonomous rule of Dhaher. Under Dhaher's patronage, Jewish families were encouraged to settle in Tiberias.[39] He invited Chaim Abulafia of Smyrna to rebuild the Jewish community.[40] The synagogue he built still stands.[41][42]

Under instructions from the Ottoman Porte, Suleyman Pasha of Damascus laid siege to Tiberias in 1742, with the intention of eliminating Dhaher. However, the siege was unsuccessful. In the following year, Suleyman set out to repeat the attempt with even greater reinforcements, but he died en route.[43]

In 1775, Ahmed el-Jazzar "the Butcher", brought peace to the region with an iron fist.[11] In 1780, many Polish Jews settled in the town.[40] During the 18th and 19th centuries it received an influx of rabbis who re-established it as a center for Jewish learning.

Six hundred people, including nearly 500 Jews,[40] died when the town was devastated by the 1837 Galilee earthquake.[11] An American expedition found Tiberias still in a state of disrepair in 1847/1848.[44]

In 1842 there were about 4,000 inhabitants, around a third of whom were Jews, the rest being Turks and a few Christians.[45] In 1850 Tiberias contained three synagogues which served the Sephardi community, which consisted of 80 families, and the Ashkenazim, all

View of Tiberas, 1862

Poles and Russians, numbering about 100 families. It was reported that the Jewish inhabitants of Tiberias enjoyed more peace and security than those of Safed.[40]

In 1863 it is recorded that the Christian and Muslim elements made up three-quarters of the population (2,000 to 4,000).[46] In 1901, the Jews of Tiberias numbered about 2,000 in a total population of 3,600.[16] By 1912 the population reached 6,500. This included 4,500 Jews, 1,600 Muslims and the rest Christians.[47]

In 1885, a Scottish doctor and minister, David Watt Torrance, opened a mission hospital in Tiberias that accepted patients of all races and religions.[48] In 1894, it moved to larger premises at Beit abu Shamnel abu Hannah. In 1923 his son, Dr. Herbert Watt Torrance, was appointed head of the hospital. After the establishment of the State of Israel, it became a maternity hospital supervised by the Israeli Department of Health. After its closure in 1959, the building became a guesthouse. In 1999, it was renovated and reopened as the Scots Hotel.[49][50]

British Mandate

Initially the relationship between Arabs and Jews in Tiberias was good, with few incidents occurring in the Nebi Musa riots and the disturbances throughout Palestine in 1929.[11]

The landscape of the modern town was shaped by the great flood of Nov. 11, 1934. Deforestation on the slopes above the town combined with the fact that the city had been built as a series of closely packed houses and buildings - usually sharing walls - built in narrow

Tiberias, 1920s
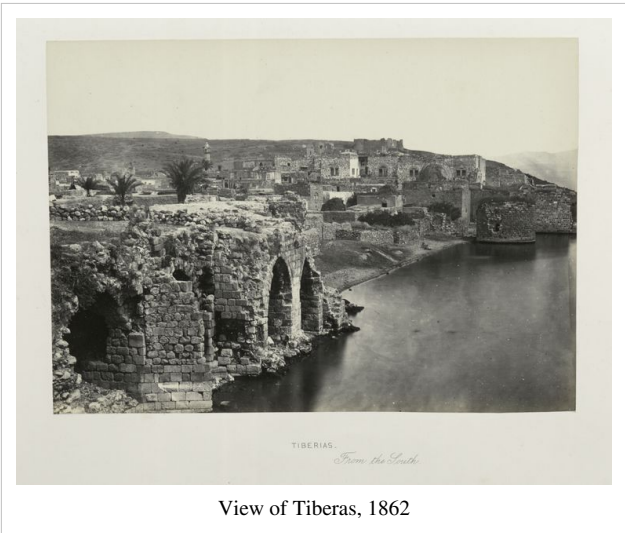
roads paralleling and closely hugging the shore of the lake. Flood waters carrying mud, stones, and boulders rushed down the slopes and filled the streets and buildings with water so rapidly that many people did not have time to escape, The loss of life and property was great. The city rebuilt on the slopes and the British Mandatory government planted the Scottish Forest on the slopes above the town to hold the soil and prevent similar disasters from recurring. A new seawall was constructed, moving the shoreline several yards out form the former shore.[51][52]

In October 1938 Arab militants murdered 20 Jews in Tiberias during the 1936-1939 Arab revolt in Palestine.[53]

According to British census data, the population of Tiberias was 4427 Jews, 2096 Muslims, 422 Christians, 5 others in 1922;[54] 5381 Jews, 2645 Muslims, 565 Christians, 10 others in 1931;[55] and 6000 Jews, 4540 Muslims, 760 Christians, 10 others in 1945.[56]

Between the April 8–9, 1948, sporadic shooting broke out between the Jewish and Arab neighbourhoods of Tiberias. On April 10, the Haganah launched a mortar barrage, killing some Arab residents.[57] The local National Committee refused the offer of the Arab Liberation Army to take over defense of the city, but a small contingent of outside irregulars moved in.[57] During April 10–17, the Haganah attacked the city and refused to negotiate a truce, while the British refused to intervene.[57] The Arab population (6,000 residents or 47.5% of the population) was evacuated under British military protection on 18 April 1948.[57][58] No order to expel the population had been given to the Jewish forces and the evacuation seems to have surprised them.[57]

Hamei Tveriya hot springs and spa

Widespread looting of the Arab areas by the Jewish population had to be suppressed by force by the Haganah and Jewish police, who killed or injured several looters.[57]

Modern Israel

The city of Tiberias became almost entirely Jewish since 1948. Many Sephardic and Mizrahi Jews settled in the city, following the Jewish exodus from Arab countries in late 1940s and the early 1950s. Over time, government housing was built to accommodate much of the new population, like in many other developing towns. Over time, the city came to rely on tourism, becoming a major Galilean center for Christian pilgrims and internal Israeli tourism. The ancient cemetery of Tiberias and its old synagogues are also drawing religious Jewish pilgrims during religious holidays.

Tiberias consists a small port on the shores of the Galilee lake for both fishing and tourist acitivities. Since 1990s, the importance of the port for fishing was gradually decreasing, with the decline of the Tiberias lake level, due to continuing droughts and increased pumping of fresh water from the lake. It is expected that the lake of Tiberias will regain its original level (almost 6 meters higher than today), with the full operational capacity of Israeli desalination facilities by 2014.

Urban renewal and preservation

Ancient and medieval Tiberias was destroyed by a series of devastating earthquakes, and much of what was built after the major earthquake of 1837 was destroyed or badly damaged in the great flood of 1934. Houses in the newer parts of town, uphill from the waterfront, survived. During 1949, 606 houses, comprising almost all of the built-up area of the old quarter other than religious buildings, was demolished over the objections of local Jews who owned about half the houses.[59] Wide-scale development began after the

Beachfront of modern Tiberias

Six-Day War, with the construction of a waterfront promenade, open parkland, shopping streets, restaurants and modern hotels. Carefully preserved were several churches, including one with foundations dating from the Crusader period, the city's two Ottoman-era mosques, and several ancient synagogues.[60] The city's old masonry buildings constructed of local black basalt with white limestone windows and trim have been designated historic landmarks. Also preserved are parts of the ancient wall, the Ottoman-era citadel, historic hotels, Christian pilgrim hostels, convents and schools.

Archaeology

A 2,000 year-old Roman theatre was discovered 15 meters below ground near Mount Bernike in the Tiberias hills. It seated over 7,000 people.[61] Excavations on the shore unearthed a rare coin with the image of Jesus on one side and the Greek words "Jesus the Messiah King of Kings" on the other. It belongs to a series of coins issued in Constantinople to commemorate the First Millennium of Jesus' birth. Such coins have surfaced in neighboring countries, such as Turkey, but this is the first one found in Israel. It is believed to have been brought to Tiberias by Christian pilgrims.[62]

In 2004, excavations in Tiberias conducted by the Israel Antiquities Authority uncovered a structure dating to the 3rd century CE that may have been the seat of the Sanhedrin. At the time it was called Beit Hava'ad.[63]

Geography and climate

Tiberias is located between the shore and the slopes of Sea of Galilee, between the elevation of -200 to 200 meters. Tiberias has a climate that borders a Hot-summer Mediterranean climate (koppen Csa) and a Hot Semi-arid climate (koppen BSh) with an annual precipitation of about 400 mm (15.75 in) The summers in Tiberias are very hot with an average maximum temperature of 36C (97F) and average minimum temperature of 21C (70F) in July and August. The winters are mild with temperatures ranging from 18C to 8C (65F and 46F). Extremes have ranged from 0 to 46C (32F to 115F).

Ganim municipal beach, Tiberias

Earthquakes

Tiberias has been severely damaged by earthquakes since antiquity. Earthquakes are known to have occurred in 30, 33, 115, 306, 363, 419, 447, 631-32 (aftershocks continued for a month), 1033, 1182, 1202, 1546, 1759, 1837, 1927 and 1943.[64] See Galilee earthquake of 1837, Galilee earthquake of 363, and Near East earthquake of 1759.

Tomb of Rabbi Meir Baal HaNess

Sports

Hapoel Tiberias represented the city in the top division of football for several seasons in the 1960s and 1980s, but eventually dropped into the regional leagues and folded due to financial difficulties. Following Hapoel's demise, a new club, Ironi Tiberias, was established, which currently plays in Liga Alef. 6 Nations Championship and Heineken Cup winner Jamie Heaslip was born in Tiberias.

The Tiberias Marathon is an annual road race held along the Sea of Galilee in Israel with a field in recent years of approximately 1000 competitors.The course follows an out-and-back format around the southern tip of the sea, and was run concurrently with a 10k race along an abbreviated version of the same route. In 2010 the 10k race was moved to the afternoon before the marathon. At Approximately 200 metres below sea level, This is the lowest course in the world.

Twin towns — sister cities

Tiberias is twinned with:

• 🇦🇷 Córdoba, Argentina	• 🇺🇸 Milwaukee, Wisconsin, United States
• 🇫🇷 Montpellier, France, since 1983[65]	• 🇺🇸 Tulsa, Oklahoma, United States
• 🇩🇪 Worms, Germany, since 1986	• 🇺🇸 Great Neck Plaza, New York, United States, since 2002
• 🇪🇸 Tudela, Navarre, Spain	• 🇺🇸 Saint Paul, Minnesota, United States
• 🇺🇸 Allentown, Pennsylvania, United States, since 1996	• 🇨🇳 Wuxi, People's Republic of China, since 2007
	• 🇫🇷 Saint-Raphael, France, since 2007

Notable residents

- Daher el-Omar
- Moshe Peretz
- Rabbi Meir
- Jamie Heaslip

References

[1] "Table 3 - Population of Localities Numbering Above 2,000 Residents and Other Rural Population" (http://www.cbs.gov.il/population/ new_2010/table3.pdf). Israel Central Bureau of Statistics. 2010-06-30. . Retrieved 2010-10-31.

[2] http://www.tiberias.muni.il/

[3] Josephus, *Antiquities of the Jews* XVIII.2.3

[4] *The Sunday at home* (http://books.google.com/books?id=aqZHAAAAYAAJ&pg=PA805). Religious Tract Society. 1861. p. 805. . Retrieved 17 October 2010. "Tiberias is esteemed a holy city by Israel's children, and has been so dignified ever since the middle of the second century."

[5] Jewish Encyclopedia: Tiberias (http://www.jewishencyclopedia.com/view.jsp?artid=32&letter=P#176#ixzz0RkYTWcVv)

[6] Israel Travel: Tiberias, [[Ha'aretz (http://www.haaretz.com/hasen/spages/967796.html)]]

[7] Jewish Encyclopedia (http://www.jewishencyclopedia.com/view.jsp?artid=205&letter=T)

[8] Babylonian Talmud, Tractate Megillah 5b

[9] Josephus, Flavius The Jewish Wars Translator William Whiston, Book 4 chapter 1 para 3

[10] Mercer Dictionary of the Bible Edited by Watson E. Mills, Roger Aubrey Bullard, Mercer University Press, (1998) ISBN 0-86554-373-9 p 917

[11] Winter, Dave (1999) *Israel Handbook: With the Palestinian Authority Areas* Footprint Travel Guides, ISBN 1-900949-48-2, pp 660-661

[12] Crossan, John Dominic (1999) Birth of Christianity: Discovering What Happened in the Years Immediately After the Execution of Christ Continuum International Publishing Group, ISBN 0-567-08668-2 p 232

[13] The Land and the Book: Or, Biblical Illustrations Drawn from the Manners and Customs, the Scenes and Scenery, of the Holy Land By William McClure Thomson Published by Harper & brothers, (1860) p 72

[14] Safrai Zeev (1994) *The Economy of Roman Palestine* Routledge, ISBN 0-415-10243-X p 199

[15] Biblical Researches in Palestine, Mount Sinai and Arabia Petraea: A Journal of Travels in the Year 1838 By Edward Robinson, Eli Smith Published by Crocker & Brewster, 1841 p 269

[16] Jewish Encyclopedia: Tiberias (http://www.jewishencyclopedia.com/view.jsp?artid=205&letter=T#ixzz0RkgRIUUe)

[17] Le Strange, Guy: *Palestine under the Moslems.* London, 1890. p. 340

[18] Nir Hasson, 'In excavation of ancient mosque, volunteers dig up Israeli city's Golden Age,' (http://www.haaretz.com/news/national/in-excavation-of-ancient-mosque-volunteers-dig-up-israeli-city-s-golden-age.premium-1.458874) at Haaretz, 17 August 2012.

[19] Muk. p.161 and 185, quoted in Le Strange, Guy: *Palestine under the Moslems.* London, 1890, p. 334-7

[20] Nir Hasson,[Nir Hasson, 'In excavation of ancient mosque, volunteers dig up Israeli city's Golden Age,' (http://www.haaretz.com/news/national/in-excavation-of-ancient-mosque-volunteers-dig-up-israeli-city-s-golden-age.premium-1.458874) at Haaretz, 17 August 2012.

[21] Le Strange, Guy: *Palestine under the Moslems.* London, 1890. p. 336-7

[22] Richard, Jean (1999) *The Crusades c. 1071-c 1291*, Cambridge University Press, ISBN 0-521-62369-3 p 71

[23] Angeliki E. Laiou; Roy P. Mottahedeh (2001). *The Crusades from the perspective of Byzantium and the Muslim world* (http://books.google.com/books?id=YTAhPw3SjxIC&pg=PA63). Dumbarton Oaks. p. 63. ISBN 978-0-88402-277-0. . Retrieved 17 October 2010. "This hadith is also found in the bibliographical work of the Damascene Ibn 'Asakir (d. 571/1176), although slightly modified: the four cities of paradise are Mecca, Medina, Jerusalem and Damascus; and the four cities of hell are Constantinople, Tabariyya, Antioch and San'a.""

[24] Moshe Gil (1997). *A history of Palestine, 634-1099* (http://books.google.com/books?id=M0wUKoMJeccC&pg=PA175). Cambridge University Press. p. 175; ft. 49. ISBN 978-0-521-59984-9. . Retrieved 17 October 2010.

[25] Wilson, John Francis. (2004) Caesarea Philippi: Banias, the Lost City of Pan I.B.Tauris, ISBN 1-85043-440-9 p 148

[26] Toby Green (2007) *Inquisition; The Reign of Fear* Macmillan Press ISBN 978-1-4050-8873-2 pp xv-xix

[27] Alfassa.com (http://www.alfassa.com/contributions.pdf) Sephardic Contributions to the Development of the State of Israel, Shelomo Alfassá

[28] Schaick, Tzvi. Who is Dona Gracia? (http://www.donagracia.com/DonaGracia/DonaHouse/english/donagratzia.htm), The House of Dona Gracia Museum.

[29] Naomi E. Pasachoff, Robert J. Littman, *A Concise History of the Jewish People*, Lanham, Rowman & Littlefield, 2005, p.163

[30] Benjamin Lee Gordon, *New Judea: Jewish Life in Modern Palestine and Egypt*, Manchester, New Hampshire, Ayer Publishing, 1977, p.209

[31] Lewis, Bernard (1954), Studies in the Ottoman archives--I, *Bulletin of the School of Oriental and African Studies, University of London*, Vol. 16, pp 469-501.

[32] Hütteroth, Wolf-Dieter and Kamal Abdulfattah (1977), Historical Geography of Palestine, Transjordan and Southern Syria in the Late 16th Century. Erlanger Geographische Arbeiten, Sonderband 5. Erlangen, Germany: Vorstand der Fränkischen Geographischen Gesellschaft. p. 188.

[33] The Druze of the Levant (http://www.angelfire.com/az/rescon/mgcdruze.html)

[34] Joel Rappel, History of Eretz Israel from Prehistory up to 1882 (1980), Vol.2, p.531. 'In 1662 Sabbathai Sevi arrived to Jerusalem. It was the time when the Jewish settlements of Galilee were destroyed by the Druze: Tiberias was completely desolate and only a few of former Safed residents had returned..."

[35] Barnay, Y. The Jews in Palestine in the eighteenth century: under the patronage of the Istanbul Committee of Officials for Palestine (University of Alabama Press 1992) ISBN 978-0-8173-0572-7 p. 149

[36] Sidney Mendelssohn. *The Jews of Asia: especially in the sixteenth and seventeenth century.* (1920) p.241. "Long before the culmination of Sabbathai's mad career, Safed had been destroyed by the Arabs and the Jews had suffered severely, while in the same year (1660) there was a great fire in Constantinople in which they endured heavy losses..."

[37] Gershom Gerhard Scholem (1976-01-01). *Sabbatai Sevi: The Mystical Messiah, 1626-1676.* Princeton University Press. p. 368. ISBN 978-0-691-01809-6. "In Safed, too, the [Sabbatai] movement gathered strength during the autumn of 1665. The reports about the utter destruction, in 1662 [*sic*], of the Jewish settlement there seem greatly exaggerated, and the conclusions based on them are false. ... Rosanes' account of the destruction of the Safed community is based on a misunderstanding of his sources; the community declined in numbers but continued to exist."

[38] Richard Pococke: *A General Collection of the Best and Most Interesting Voyages and Travels in All Parts of the World: Many of which are Now First Translated Into English ; Digested on a New Plan* By John Pinkerton by Longman, Hurst, Rees, and Orme, 1811 A Description of the East and Some other Countries (http://books.google.com/books?id=wY4qAAAAMAAJ&printsec=frontcover&source=gbs_summary_r&cad=0#PPA460,M1), p. 460

[39] Moammar, Tawfiq (1990), *Zahir Al Omar*, Al Hakim Printing Press, Nazareth, page 70

[40] Joseph Schwarz. Descriptive Geography and Brief Historical Sketch of Palestine (http://www.jewish-history.com/palestine/tiberias. html), 1850

[41] The Jews in Palestine in the eighteenth century: under the patronage of the Istanbul Committee of Officials for Palestine, Y. Barnay, translated by Naomi Goldblum, University of Alabama Press, 1992, p. 15, 16

[42] The Jews: their history, culture, and religion, Louis Finkelstein, Edition: 3 Harper, New York, 1960, p. 659

[43] Amnon Cohen (1975). *Palestine in the 18th Century*. Magnes Press. pp. 34–36. ISBN 1-59045-955-5.

[44] *Narrative of the United States' Expedition to the River Jordan and the Dead Sea* By William Francis Lynch, Lee and Blanchard, (1850) p. 154

[45] The Penny cyclopædia of the Society for the Diffusion of Useful Knowledge: v. 1-27, Volume 23 (http://books.google.co.uk/ books?id=gC1QXYDYMg0C&pg=PA471&dq=southern+syria+jews&hl=en&ei=E59gTIysOYX-OYDrlL0J&sa=X&oi=book_result& ct=result&resnum=3&ved=0CD4Q6AEwAg#v=onepage&q=southern syria jews&f=false), C. Knight, 1842.

[46] Smith, William (1863) *A Dictionary of the Bible: Comprising Its Antiquities, Biography, and Natural History* Little, Brown, p 149

[47] Catholic Encyclopedia: Tiberias (http://www.newadvent.org/cathen/14716a.htm)

[48] Tiberias - Walking with the sages in Tiberias (http://info.jpost.com/C001/Demo/gal/isr_guide/north/tiberias.html)

[49] "Torrance Collection" (http://134.36.1.31/dserve.exe?&dsqIni=Dserve.ini&dsqApp=Archive&dsqCmd=show.tcl&dsqDb=Catalog& dsqPos=61&dsqSearch=(Level='Fonds')). *Archive Services Online Catalogue*. University of Dundee. . Retrieved 10 October 2011.

[50] "The Scots Hotel- History" (http://www.inisrael.com/scotshotels/history.html). The Scots Hotel. . Retrieved 10 October 2011.

[51] Mandated landscape: British imperial rule in Palestine, 1929-1948, Roza El-Eini, Routledge, 2006p. 250

[52] The Changing Land: Between the Jordan and the Sea: Aerial Photographs from 1917 to the Present, Benjamin Z. Kedar, Wayne State University Press, 2000, p. 198

[53] "United Nations Information System on the Question of Palestine" (http://www.indiana.edu/~league/1938.htm) (.JPG). *United Nations Information System on the Question of Palestine*. . Retrieved 2007-11-29.

[54] 1922 census

[55] 1931 census

[56] Village Statistics, 1945

[57] Benny Morris (2004) p183-185

[58] Harry Levin, 'Jerusalem Embattled - A diary of a city under siege.' Cassel, 1997. ISBN 0-304-33765-X. Page 81: ' Extraordinary news from Tiberias. The whole Arab population has fled. Last night the Haganah blew up the Arab bands' headquarters there; this morning the Jews woke up to see a panic flight in progress. By tonight not one of the 6,000 Arabs remained.' (19 April).

[59] Arnon Golan, The Politics of Wartime Demolition and Human Landscape Transformation, *War in History*, vol 9 (2002), pp431–445.

[60] http://www.haaretz.com/hasen/spages/1137820.html Old Tiberias synagogue to regain its former glory Haaretz

[61] 2,000 year-old amphitheater (http://haaretz.com/hasen/spages/1115642.html)

[62] Jesus coins (http://www.mfa.gov.il/MFA/Israel+beyond+politics/Coin of Jesus found in Ancient Tiberias Excavation Nov 2004)

[63] Researchers say Tiberias basilica may have housed Sanhedrin (http://www.haaretz.com/print-edition/news/ researchers-say-tiberias-basilica-may-have-housed-sanhedrin-1.117483)

[64] A crack in the earth: a journey up Israel's Rift Valley By Haim Watzman, Macmillan, 2007, p. 161

[65] Choose your family, [[Haaretz (http://www.haaretz.com/hasen/spages/901391.html)]]

External links

- City council website (http://www.tiberias.muni.il) **(Hebrew)** Municipality Site in English (http://www. tiberias.muni.il/OpenningEng.asp)

- Place To Visit in Tiberias (http://www.govisitisrael.com/tiberias/135/) (English)

- Tiberias - City of Treasures: The official website of the Tiberias Excavation Project (http://www. tiberiasexcavation.com/)

- Hamat Tiberias National Park (http://my-country-israel.com/en/North_Kineret/ Park-Hamat_Tiberias_National_Park.aspx): description, photo gallery

- Nefesh B'Nefesh Community Guide for Tiveria-Tiberias, Israel (http://www.nbn.org.il/component/content/ article/1820-tiveria.html)

Niqqud

Niqqud
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Other diacritics	cantillation, geresh, gershayim
Example	
וַיֹּאמֶר אֱלֹהִים יִקָּווּ הַמַּיִם	

Gen. 1:9, And God said, "Let the waters be collected". Letters in black, niqqud in red, cantillation in blue[1]
Niqqud articles
Shva · Hiriq · Zeire · Segol · Patach · Kamatz · Holam · Dagesh · Mappiq · Shuruk · Kubutz · Rafe · Sin/Shin Dot

In Hebrew orthography, **niqqud** or **nikkud** (Hebrew: נִקּוּד, Modern *nikud* Tiberian *niqqûḏ* ; "dotting, pointing" or Hebrew: נְקֻדּוֹת, Modern *nekudot* Tiberian *nəquddôṯ* ; "dots") is a system of diacritical signs used to represent vowels or distinguish between alternative pronunciations of letters of the Hebrew alphabet. Several such diacritical systems were developed in the Early Middle Ages. The most widespread system, and the only one still used to a significant degree today, was created by the Masoretes of Tiberias in the second half of the first millennium CE in the Land of Israel (see Masoretic Text, Tiberian Hebrew). Text written with niqqud is called *ktiv menuqad*.

Niqqud marks are small compared to consonants, so they can be added without retranscribing texts whose writers did not anticipate them.

In modern Israeli orthography *niqqud* is seldom used, except in specialised texts such as dictionaries, poetry, or texts for children or for new immigrants. For purposes of disambiguation, a system of spelling without niqqud, known in Hebrew as *ktiv maleh* (Hebrew: כתיב מלא), literally "full spelling", has developed. This was formally standardised in the *Rules for Spelling without Niqqud* (כללי הכתיב חסר הניקוד) enacted by the Academy of the Hebrew Language in 1996.[2]

Among those who do not speak Hebrew, niqqud are the sometimes unnamed focus of controversy regarding the interpretation of the name written with the Tetragrammaton—written as יְהֹוָה in Hebrew. The interpretation affects discussion of the authentic ancient pronunciation of the name whose other conventional English forms are "Jehovah" and "Yahweh".

Demonstration

This table uses the consonants ב, ח or שׁ, where appropriate, to demonstrate where the niqqud is placed in relation to the consonant it is pronounced *after*. Any other consonants shown are actually part of the vowel. Note that there is some variation among different traditions in exactly how some vowel points are pronounced. The table below shows how most Israelis would pronounce them, but the classic Ashkenazi pronunciation, for example, differs in several respects.

> *This demonstration is known to work in Internet Explorer and Mozilla browsers in at least some circumstances, but in most other Windows browsers the niqqud do not properly combine with the consonants. It works very well when "dir=rtl" is added in the HTML source. This is because, currently, the Windows text display engine does not combine the niqqud automatically. Except as noted, the vowel pointings should appear directly beneath the consonants and the accompanying "vowel letter" consonants for the mālê (long) forms appear after.*

> *Note concerning IPA: the transcription symbols are linked to the articles about the sounds they represent. The diacritic ˘ (breve) indicates a short vowel; the triangular colon symbol ː indicates that the vowel is long.*

Symbol	Type	Common name	Alternate names	Scientific name	Hebrew	IPA	Transliteration	Comments	
בְ	**Israeli**	Sh'va	*sheva*	*shva*	שְׁוָא	[ę] or Ø	ə, e, ', or nothing	In modern Hebrew, shva represents either /e/ or Ø, regardless of its traditional classification as shva naḥ (שווא נח) or shva na (שווא נע), see the following table for examples:	
	Tiberian			*šəwâ*	שְׁוָא	[ĕ] [ɛ̆] [ĕ] [ĭ] [ɔ̆] [ŏ] [ŭ]			
חֱ	**Israeli**	Reduced segol	*hataf segol*	*ḥataf seggol*	חֲטֶף סֶגּוֹל	[ę]	e	–	
	Tiberian			*ḥăṭep̄ səḡôl*	חֲטֶף סֶגּוֹל	[ɛ̆]	ĕ	–	
חֲ	**Israeli**	Reduced patach	*hataf patah*	*ḥataf pataḥ*	חֲטֶף פַּתַח	[a]	a	–	
	Tiberian			*ḥăṭep̄ páṯaḥ*	חֲטֶף פַּתַח	[ă]	ă	–	
חֳ	**Israeli**	Reduced kamatz	*hataf kamats*	*ḥataf kamats*	חֲטֶף קָמָץ	[ǫ]	o	–	
	Tiberian			*ḥăṭep̄ qāmeṣ*	חֲטֶף קָמֶץ	[ɔ̆]	ŏ	–	
בִ	**Israeli**	Hiriq	*hiriq*	*ḥirik*	חִירִיק	[i]	i	Usually promoted to Hiriq Malei in Israeli writing for the sake of disambiguation.	
	Tiberian			*ḥîreq*	חִירֶק	[i] or [i:])	i or í	–	
בִי	**Israeli**	Hiriq malei	*hiriq yod*	*ḥirik male*	חִירִיק מָלֵא	[i]	i	–	
	Tiberian			*ḥîreq mālê*	חִירֶק מָלֵא	[i:]	î	–	
בֵ	**Israeli**	Zeire	*tsere, tzeirei*	*tsere*	צֵירֵי	[ę]	e	–	
	Tiberian			*ṣērê*	צֵרֶי	[e:]	ē	–	

Pronunciation of shva in modern Hebrew

	Occurrences of shva denoting the vowel /e/)	Occurrences of shva denoting Ø (absence of a vowel)
shva naḥ*	קִמַטְתָ [kiˈmatęt] הִתְמוֹטַטְתָ [hitmọˈtatęt]	קִפַלְתָ [kiˈpalt] הִתְקַפַלְתָ [hitkaˈpalt]
shva na	שָׂדְדוּ [ʃadęˈdu] לְאַט [lęˈat]	שָׂרְדוּ [sarˈdu] זְמַן [zman]

*All shvas in the words "קִמַטְתָ" and "הִתְמוֹטַטְתָ", also those marked under the letter tet ("ט"), are shva naḥ.

בֵי ,בֵה ,בֵא	**Israeli**	Zeire malei	*tsere yod, tzeirei yod*	*tsere male*	צֵירֵי מָלֵא	[ẹ]	e	More commonly *ei* (IPA [ei]).
	Tiberian			*ṣērê mālê*	צֵרֵי מָלֵא	[eː]	ê	–
בֶּ	**Israeli**	Segol	*segol*	*seggol*	סֶגּוֹל	[ẹ]	e	–
	Tiberian			*səḡôl*	סֶגּוֹל	[ɛ] or [ɛː]	e or é	–
בֶי ,בֶה ,בֶא	**Israeli**	Segol malei	*segol yod*	*seggol male*	סֶגּוֹל מָלֵא	[ẹ]	e	With succeeding yod, it is more commonly *ei* (IPA [ẹi])
	Tiberian			*səḡôl mālê*	סֶגּוֹל מָלֵא	[ɛː]	ê	–
בַ	**Israeli**	Patach	*patah*	*patah*	פַּתַח	[a]	a	A patach on a letters ה, ע, ח at the end of a word is sounded *before* the letter, and not behind. Thus, נֹחַ (Noah) is pronounced /ˈno.ax/. This only occurs at the ends of words and only with patach and ע, ח, and ה (that is, ה with a dot (mappiq) in it). This is sometimes called a *patach ganuv*, or "stolen" patach (more formally, "furtive patach"), since the sound "steals" an imaginary epenthetic consonant to make the extra syllable.
	Tiberian			*pátaḥ*	פַּתַח	[ɐ] or [ɐː]	a or á	–
בַה ,בַא	**Israeli**	Patach malei	*patah yod*	*patah male*	פַּתַח מָלֵא	[a]	a	–
	Tiberian			*pátaḥ mālê*	פַּתַח מָלֵא	[ɐː]	â	–
בָ	**Israeli**	Kamatz gadol	*kamats*	*kamats gadol*	קָמֵץ גָּדוֹל	[a]	a	–
	Tiberian			*qāmeṣ gāḏôl*	קָמֵץ גָּדוֹל	[ɔː]	ā	–
בָה ,בָא	**Israeli**	Kamatz malei	*kamats he*	*kamats male*	קָמֵץ מָלֵא	[a]	a	comm
	Tiberian			*qāmeṣ mālê*	קָמֵץ מָלֵא	[ɔː]	â	–
בָ	**Israeli**	Kamatz katan	*kamats hatuf*	*kamats katan*	קָמֵץ קָטָן	[ǫ]	o	Usually promoted to Holam Malei in Israeli writing for the sake of disambiguation. Also, not to be confused with Hataf Kamatz.
	Tiberian			*qāmeṣ qāṭān*	קָמֵץ קָטָן	[ɔ]		–

בֹ	**Israeli**	Holam	*holam*	ẖolam	חוֹלָם	[ǫ]	o	Usually promoted to Holam Malei in Israeli writing for the sake of disambiguation. The holam is written above the consonant on the left corner, or slightly to the left of (i.e., after) it at the top.	
	Tiberian			ẖōlem	חֹלֶם	[oː]	ō	comm	
בוּ, בֹה, בֹא	**Israeli**	Holam malei	*holam male*	ẖolam male	חוֹלָם מָלֵא	[ǫ]	o	The holam is written in the normal position relative to the main consonant (above and slightly to the left), which places it directly over the vav.	
	Tiberian			ẖōlem mālê	חֹלֶם מָלֵא	[oː]	ô	–	
בֻ	**Israeli**	Kubutz	*kubuts*	kubbuts	קֻבּוּץ	[u]	u	Usually promoted to Shuruk in Israeli writing for the sake of disambiguation.	
	Tiberian			qibbûṣ	קֻבּוּץ	[u] or [uː]	u or ú		
בוּ, בוּה, בוּא	**Israeli**	Shuruk	*shuruk*	shuruk	שׁוּרוּק	[u]	u	The shuruk is written after the consonant it applies to (the consonant after which the vowel /u/ is pronounced). The dot in the shuruk is identical to a dagesh, thus shuruq and vav with a dagesh are indistinguishable. (see below).	
	Tiberian			šûreq	שׁוּרֶק	[uː]	û	–	

בּ	Israeli	Dagesh	*dagesh*	*dagesh*	דָּגֵשׁ	*varied*	*varied*	Not a vowel, "dagesh" refers to two distinct grammatical entities:	
								1. "dagesh kal", which designates the plosive (as opposed to fricative) variant of any of the letters בגדכפת (in earlier forms of Hebrew this distinction was allophonic; in Israeli Hebrew ג, ד and ת with or without dagesh kal are acoustically and phonologically indistinguishable, whereas plosive and fricative variants of ב, כ and פ are sometimes allophonic and sometimes distinct phonemes (e.g., אִפֵּר /iˈper/ *applied make up* vs. אִפֵר /iˈfer/ *tipped ash*),	
								2. "dagesh ḥazak", which designates gemination (prolonged pronunciation) of consonants, but which, although represented in most cases when transliterated according to standards of the Academy of the Hebrew Language,[3] is acoustically and phonologically non existent in Modern Hebrew (except occasionally in dramatic or comical recitations, in some loanwords—such as a few Arabic profanities—and pronunciations exaggerated for the sake of disambiguation).	The guttural consonants (אהחע) and resh (ר) are not marked with a dagesh, although the letter he (ה) (and rarely א) may appear with a *mappiq* (which is written the same way as dagesh) at the end of a word to indicate that the letter does not signify a vowel but is consonantal.
								For most letters the dagesh is written within the glyph, near the middle if possible, but the exact position varies from letter to letter (some letters do not have an open area in the middle, and in these cases it is written usually beside the letter, as with yod).	To the resulting form, there can still be added a niqqud diacritic designating a vowel.
בּ	**Tiberian**		*dāḡēš*		דָּגֵשׁ				

בֿ	**Israeli**	Rafe	*rafe*				רָפֶא Not used in Hebrew. Still occasionally seen in Yiddish (actually more often as the spelling becomes more standardized, embracing YIVO rules) to distinguish פ /p/ from פֿ /f/ (note that this letter is always pronounced [f] when in the final position, with the exception of loanwords—שׁוֹפּ, foreign names—פִילִיפּ— and some slang—חָרַפּ). Some ancient manuscripts have a dagesh or a rafe on nearly every letter. It is also used to indicate that a letter like ה or א is silent. In the particularly strange case of the Ten Commandments, which have two different traditions for their Cantillations which many texts write together, there are cases of a single letter with both a dagesh and a rafe, if it is hard in one reading and soft in the other.	
	Tiberian						Niqqud, but not a vowel. Used as an "anti-dagesh", to show that a בגדכפת letter is soft and not hard, or (sometimes) that a consonant is single and not double, or that a letter like ה or א is completely silent	
שׁ	**Israeli**	Shin dot	*shin dot*	*šin dot*	שִׁי"ן, שִׁי"ן יְמָנִית or יְמִינִית, "right Shin"	[ʃ]	š/sh	Niqqud, but not a vowel (except when inadequate typefaces merge the holam of a letter before the shin with the shin dot). The dot for shin is written over the right (first) branch of the letter. It is usually transcribed "sh".	
	Tiberian								
שׂ	**Israeli**	Sin dot	*sin dot*	*śin dot*	שִׂי"ן, שִׂי"ן שְׂמָאלִית, "left Sin"	[s]	ś/s	Niqqud, but not a vowel (except when inadequate typefaces merge the holam of the sin with the sin dot). The dot for sin is written over the left (third) branch of the letter	
	Tiberian							Some linguistic evidence indicates that it was originally IPA [ɬ], though poetry and acrostics show that it has been pronounced /s/ since quite ancient times).	

Keyboard

Both consonants and niqqud can be typed from virtual graphical keyboards available on the World Wide Web, or by methods integrated into particular operating systems.

Microsoft Windows

- Using the standard Hebrew keyboard layout, the typist can enter niqqud by pressing CapsLock, placing the cursor after the consonant letter, and then pressing Shift and one of the keys in the chart below.
- The user can configure the registry to allow use of the Alt key with the numeric plus key to type the hexadecimal Unicode value.[4]
- The user can use the Microsoft Keyboard Layout Creator to produce a custom keyboard layout, or can download a layout produced by another party.[5]

Linux

In GTK+ Linux systems, niqqud can be entered by pressing ctrl+shift+u followed by the appropriate 4 digit Unicode.

Macintosh

Using the Hebrew keyboard layout in Mac OS X, the typist can enter niqqud by pressing the Option key together with a number on the top row of the keyboard. Other combinations such as sofit and hataf can also be entered by pressing either the Shift key and a number, or by pressing the Shift key, Option key, and a number at the same time.[6][7]

Niqqud input					
Input (Windows)	Key (Windows)	Input (MacOS X)	Unicode	Type	Result
~	~ ;	0	05B0	Sh'va	O [1]
1	! 1	3	05B1	Reduced Segol	O [1]
2	@ 2	1	05B2	Reduced Patach	O [1]
3	# 3	2	05B3	Reduced Kamatz	O [1]
4	$ 4 ₪	4	05B4	Hiriq	O [1]
5	% 5	5	05B5	Zeire	O [1]
6	^ 6	9	05B6	Segol	O [1]
7	& 7	6	05B7	Patach	O [1]

Niqqud input					
Input (Windows)	Key (Windows)	Input (MacOS X)	Unicode	Type	Result
8	* 8	7	05B8	Kamatz	O [1]
9	(9	A	05C2	Sin dot (left)	שׂ [2]
0	) 0	M	05C1	Shin dot (right)	שׁ [2]
–	_ - -	=	05B9	Holam	O [1]

= [3]	+ =	,	05BC	Dagesh or Mappiq	⊙ [1]
		U	05BC	Shuruk	◾ [4]
\	| \	8	05BB	Kubutz	O [1]

Notes:

- [1] The letter "מ" represents any Hebrew consonant.
- [2] For sin-dot and shin-dot, the letter "שׁ" (sin/shin) is used.
- [3] The dagesh, mappiq, and shuruk have different uses, but the same graphical representation, and hence are input in the same manner.
- [4] For shuruk, the letter "ו" (vav) is used since it can only be used with that letter.
- A rafe can be input by inserting the corresponding Unicode character, either explicitly or via a customized keyboard layout.

SIL International have developed another standard, which is based on Tiro, but adds the Niqqud along the home keys.[8] Linux comes with "Israel - Biblical Hebrew (Tiro)" as a standard layout. With this layout, niqqud can be typed without pressing the Caps Lock key.

Bibliography

- The Academy Grammar Committee; ed. Ronit Gadish, Einat Gonen, Barak Dan (2006) (in Hebrew). *Leshonenu La'am. Academy Decisions: Grammar*. Jerusalem: The Academy of the Hebrew Language. ISSN 0024-1091.
- 🌐 Gesenius' Hebrew Grammar, especially §7, §8, §9
- Netzer, Nisan (1976) (in Hebrew). *Haniqqud halakha lema'ase*. Israel: Massada.

External links

- Interactive Niqqud Lesson [9]

References

[1] Cantillation
[2] *Rules for Spelling without Niqqud* (http://hebrew-academy.huji.ac.il/decision4.html)
[3] Transliteration standards from November 2006 (http://hebrew-academy.huji.ac.il/hahlatot/TheTranscription/Documents/taatiq2007.pdf)
[4] http://www.fileformat.info/tip/microsoft/enter_unicode.htm
[5] http://msdn.microsoft.com/en-us/goglobal/bb964665.aspx
[6] http://manuals.info.apple.com/Apple_Support_Area/Manuals/software/0307978AHEBRLKITUM.PDF
[7] comprehensive guide (http://manuals.info.apple.com/Apple_Support_Area/Manuals/software/0307978AHEBRLKITUM.PDF)
[8] (http://www.sbl-site.org/Fonts/BiblicalHebrewTiroManual.pdf)
[9] http://www.makorehebrew.com/lesson/plan/1440/Vowels

Cantillation

cantillation			
Sof passuk		paseq	
etnahta		segol	
shalshelet		zaqef qatan	
zaqef gadol		tipeha	
revia		zarqa	
pashta		yetiv	
tevir		geresh	
geresh muqdam		gershayim	
qarney para		telisha gedola	
pazer		atnah hafukh	
munach		mahapakh	
merkha		merkha kefula	
darga		qadma	
telisha qetana		yerah ben yomo	
ole		iluy	
dehi		zinor	

Cantillation is the ritual chanting of readings from the Hebrew Bible in synagogue services. The chants are written and notated in accordance with the special signs or marks printed in the Masoretic text of the Hebrew Bible (or Tanakh) to complement the letters

Genesis 1:9: *God said, "Let the waters be collected."*
Letters in black, **vowel points** and **d'geshim** (gemination marks) in red, **cantillation** in blue.

and vowel points. These marks are known in English as *accents* and in Hebrew as המקרא טעמי *ta ʿamei ha-mikra* or just טעמים *te ʿamim*. Some of these signs were also sometimes used in medieval manuscripts of the Mishnah. The musical motifs associated with the signs are known in Hebrew as *niggun* or *neginot* (not to be confused with Hasidic nigun) and in Yiddish as טראָפ **trop**: the equivalent word *trope* is sometimes used in English with the same meaning.

A primary purpose of the cantillation signs is to guide the chanting of the sacred texts during public worship. Very roughly speaking, each word of text has a cantillation mark at its primary accent and associated with that mark is a musical phrase that tells how to sing that word. The reality is more complex, with some words having two or no marks and the musical meaning of some marks dependent upon context. There are different sets of musical phrases associated with different sections of the Bible. The music varies with different Jewish traditions and individual cantorial styles.

The cantillation signs also provide information on the syntactical structure of the text and some say they are a commentary on the text itself, highlighting important ideas musically. The tropes are not random strings but follow a set and describable grammar. The very word *ta'am* means "taste" or "sense", the point being that the pauses and intonation denoted by the accents (with or without formal musical rendition) bring out the sense of the passage.

There are two systems of cantillation marks in the Tanakh. One is used in the twenty-one prose books, while the other appears in the three poetical books of Psalms, Proverbs and Job. Except where otherwise stated, this article describes the "prose" system.

The current system of cantillation notes has its historical roots in the Tiberian masorah. The cantillation signs are included in Unicode as characters 0591 through 05AF in the Hebrew alphabet block.

The names of the cantillation signs are not quite the same as between the Ashkenazi, Sephardi, Italian and Yemenite traditions; for example Sephardim use *qadma* to mean what Ashkenazim call *pashta*, and *azla* to mean what Ashkenazim call *qadma*. In this article, as in almost all Hebrew grammars, the Ashkenazi terminology is used. The names in other traditions are shown in the table below.

Functions of cantillation signs

The cantillation signs serve three functions:

Functions

Function	Description
Syntax	They divide biblical verses into smaller units of meaning, a function which also gives them a limited but sometimes important role as a source for exegesis. This function is accomplished through the use of various conjunctive signs (which indicate that words should be connected in a single phrase) and especially a hierarchy of dividing signs of various strength which divide each verse into smaller phrases. The function of the disjunctive cantillation signs may be roughly compared to modern punctuation signs such as periods, commas, semicolons, etc.
Phonetics	Most of the cantillation signs indicate the specific syllable where the stress (accent) falls in the pronunciation of a word.
Music	The cantillation signs have musical value: reading the Hebrew Bible with cantillation becomes a musical chant, where the music itself serves as a tool to emphasise the proper accentuation and syntax (as mentioned previously).

Syntax

In general, each word in the Tanach has one cantillation sign. This may be either a *disjunctive*, showing a division between that and the following word, or a *conjunctive*, joining the two words (like a slur in music). Thus, disjunctives divide a verse into phrases, and within each phrase all the words except the last carry conjunctives. (There are two types of exception to the rule about words having only one sign. A group of words joined by hyphens is regarded as one word so they only have one accent between them. Conversely, a long word may have two, e.g. a disjunctive on the stressed syllable and the related conjunctive two syllables before in place of *meteg*.)

The disjunctives are traditionally divided into four levels, with lower level disjunctives marking less important breaks.

1. The first level, known as "Emperors", includes *sof pasuq / siluq*, marking the end of the verse, and *atnach / etnachta*, marking the middle.
2. The second level is known as "Kings". The usual second level disjunctive is *zaqef qaton* (when on its own, this becomes *zaqef gadol*). This is replaced by *tifcha* when in the immediate neighbourhood of *sof pasuq* or *atnach*. A stronger second level disjunctive, used in very long verses, is *segol*: when it occurs on its own, this may be replaced by *shalshelet*.
3. The third level is known as "Dukes". The usual third level disjunctive is *revia*. For musical reasons, this is replaced by *zarqa* when in the vicinity of *segol*, by *pashta* or *yetiv* when in the vicinity of *zakef*, and by *tevir* when in the vicinity of *tifcha*.
4. The fourth level is known as "Counts". These are found mainly in longer verses, and tend to cluster near the beginning of a half-verse: for this reason their musical realisation is usually more elaborate than that of higher level disjunctives. They are *pazer*, *geresh*, *gershayim*, *telishah gedolah*, *munach legarmeh* and *qarne farah*.

The general conjunctive is *munach*. Depending on which disjunctive follows, this may be replaced by *mercha*, *mahpach*, *darga*, *qadma*, *telisha qetannah* or *yerach ben yomo*.

One other symbol is *mercha kefulah*, double mercha. There is some argument about whether this is another conjunctive or an occasional replacement for *tevir*.

Disjunctives have a function somewhat similar to punctuation in Western languages. *Sof pasuq* could be thought of as a full stop, *atnach* as a semi-colon, second level disjunctives as commas and third level disjunctives as commas or unmarked. Where two words are syntactically bound together (for example, *pene ha-mayim*, "the face of the waters"), the first invariably carries a conjunctive.

The cantillation signs are often an important aid in the interpretation of a passage. For example, the words *qol qore bamidbar panu derekh YHWH* (Isaiah 40-3 [1]) is translated in the Authorised Version as "The voice of him that crieth in the wilderness, Prepare ye the way of the LORD". As the word *qore* takes the high-level disjunctive *zaqef qaton* this meaning is discouraged by the cantillation marks. Accordingly the New Revised Standard Version translates "A voice cries out: 'In the wilderness prepare the way of the LORD, ...'" while the New Jewish Publication Society Version has "A voice rings out: 'Clear in the desert a road for the LORD'."

Phonetics

Most cantillation signs are written on the consonant of the stressed syllable of a word. This also shows where the most important note of the musical motif should go.

A few signs always go on the first or last consonant of a word. This may have been for musical reasons, or it may be to distinguish them from other accents of similar shape. For example *pashta*, which goes on the last consonant, otherwise looks like *qadma*, which goes on the stressed syllable.

Some signs are written (and sung) differently when the word is not stressed on its last syllable. *Pashta* on a word of this kind is doubled, one going on the stressed syllable and the other on the last consonant. *Geresh* is doubled unless it occurs on a non-finally-stressed word or follows *qadma* (to form the *qadma ve-azla* phrase).

Music

Cantillation signs guide the reader in applying a chant to Biblical readings. This chant is technically regarded as a ritualized form of speech intonation rather than as a musical exercise like the singing of metrical hymns: for this reason Jews always speak of *saying* or *reading* a passage rather than of *singing* it. (In Yiddish the word is *leynen* 'read', derived from Latin *legere*, giving rise to the Jewish English verb "to leyn".)

The musical value of the cantillation signs serves the same function for Jews worldwide, but the specific tunes vary between different communities. The most common tunes today are as follows.

- Among Ashkenazi Jews:
  - The Polish-Lithuanian melody, used by Ashkenazic descendants of eastern European Jews, is the most common tune in the world today, both in Israel and the diaspora.
  - The Ashkenazic melodies from central and western European Jewry are used far less today than before the Holocaust, but still survive in some communities, especially in Great Britain. They are of interest because a very similar melody was notated by Johann Reuchlin as in use in Germany in his day (15th-16th century, C.E.).
- Among Sephardi and Mizrahi Jews:
  - The "Jerusalem Sephardic" (*Sepharadi-Yerushalmi*) melody is the one most widely used today in Israel, and is also used in some Sephardic communities in the diaspora.
  - The Greek/Turkish/Balkan, Syrian and Egyptian melodies are related to the Jerusalem Sephardic melody. They are more sparingly used in Israel today, but are still heard in the Diaspora, especially in America.
  - There are two Iraqi melodies, one close to the Syrian melody and traditionally used in Baghdad (and sometimes in Israel), and another more distinctive melody originating in Mosul and generally used in the Iraqi Jewish diaspora.[2]
  - The Moroccan melody is used widely by Jews of Moroccan descent, both in Israel and in the diaspora, especially France. It subdivides into a Spanish-Moroccan melody, used in the northern coastal strip, and an Arab-Moroccan melody, used in the interior of the country, with some local variations.
  - The Spanish and Portuguese melody is in common use in the Spanish and Portuguese Sephardi communities of Livorno, Gibraltar, the Netherlands, England, Canada, USA and other places in the Americas. It is closely related to the Spanish-Moroccan melody.
- Italian melodies are still used in Italy, as well as in one Italian synagogue in Jerusalem, one in Istanbul, and one in New York City. These vary greatly locally: for example the melody used in Rome resembles the Spanish and Portuguese melody rather than those used in northern Italy.
- The Yemenite melody can also be heard in Israel today.
- There has been an attempted reconstruction of the original melody by Suzanne Haïk-Vantoura, on the basis of the shapes and positions of the marks and without any reference to existing melodies, as described in her book and LP's *La musique de la Bible révélée*.

Traditional melodies

Ashkenazic melodies

In the Ashkenazic musical tradition for cantillation, each of the local geographical customs includes a total of *six* major and numerous minor separate melodies for cantillation:

- Torah and Haftarot (3 melodies)

  - 1. Torah (general melody for the whole year) Example
  - 2. Torah - special melody for Rosh Hashanah and Yom Kippur. You may hear the reading at Torahplace [3]. This tune is also employed on Simhat Torah in various degrees (depending on the specific community). Echoes of it can also be heard for certain verses in the Torah reading for fast days in some communities.

    - There are a number of variants employed for special sections, such as those for the *Aseret haDibrot* (Ten Commandments),*Az Yashir* (Song of the Sea), and the list of Masa'ot.
    - In all Torah modes, there is a "coda" motif that is used for the last few words of each reading, irrespective of the cantillation signs.
    - There is a special coda used at the end of each of the five books of the Torah that leads to the traditional exclamation of "Hazak Hazak V'Nithazek!" (Be strong be strong so we are strengthened).
  - 3. Haftarot Example

    - In the haftarah mode, there is also a "coda" motif. In the Western Ashkenazic mode, this is applied to the end of every verse. A different coda is used at the end of the haftarah, modulating from minor to major to introduce the following blessing.
- The Five Megillot (3 melodies are employed for these five scrolls)

  - 4. Esther - a light, joyous tune used for the *Megillat Esther* on Purim. There are also additional musical customs, such as saying the word סוס (horse) with a neighing sound, not indicated by the cantillation.
  - 5. Lamentations - a mournful tune. Echoes of it can also be heard for certain verses in Esther and in the Torah reading preceding the Ninth of Av. The Haftarot preceding and during the Ninth of Av also use this melody, when read in nonHasidic shuls. Example
  - 6. The three remaining scrolls are publicly read within Ashkenazic communities during the three pilgrimage festivals. All are read in the same melody, which may be considered the "general" melody for the *megillot*: the Song of Songs on Passover; Ruth on Shavuot; Ecclesiastes on Sukkot.

The Ashkenazic tradition preserves no melody for the special cantillation notes of Psalms, Proverbs, and Job, which were not publicly read in the synagogue by European Jews. However, the Ashkenazic yeshiva known as Aderet Eliyahu, or (more informally) *Zilberman's*, in the Old City of Jerusalem, uses an adaptation of the Syrian cantillation-melody for these books, and this is becoming more popular among other Ashkenazim as well.

Sephardic and Eastern melodies

At the beginning of the twentieth century there was a single Ottoman-Sephardic tradition covering Turkey, Syria, Palestine and Egypt.[4] Today the Jerusalem-Sephardic, Syrian, Egyptian and Baghdadi melodies recognisably belong to a single family. For example, in these traditions the Torah reading is always or almost always in Maqam Sigah. There are some variations, among individual readers as well as among communities: for example the Egyptian melody is related to the more elaborate and cantorial form of the Syrian melody. The Karaite tradition, being based on the Egyptian, also forms part of this group.[5]

Another recognisable family consists of the Iraqi (Mosul and Iraqi diaspora), Spanish-Moroccan and Spanish and Portuguese melodies. The probable reason for the occurrence of similar melodies at opposite ends of the Arab world is that they represent the remains of an old Arab-Jewish tradition not overlaid by the later Ottoman-Sephardic tradition that spread to the countries in between. There may also have been some convergence between the London

Spanish and Portuguese and Iraqi melodies during British rule in India and the British Mandate of Mesopotamia.

The Jews of North Africa, the Middle East, Central Asia and Yemen all had local musical traditions for cantillation. When these Jewish communities emigrated (mostly to Israel) during the twentieth century, they brought their musical traditions with them. But as the immigrants themselves grew older, many particular national melodies began to be forgotten, or to become assimilated into the "Jerusalem Sephardic" melting-pot.

As with the Ashkenazim, there is one tune for Torah readings and a different tune for haftarot. Spanish and Portuguese Jews have a special tune for the Ten Commandments when read according to the *ta'am elyon*, known as "High Na'um", which is also used for some other words and passages which it is desired to emphasize.[6] Other communities, such as the Syrian Jews, observe the differences between the two sets of cantillation marks for the Ten Commandments but have no special melody for *ta'am 'elyon*. There is no special tune for Rosh Hashanah and Yom Kippur in any Sephardic tradition. As with Ashkenazim, the normal musical value of cantillation signs is replaced by a "coda" motif at the end of each Torah reading and of each haftarah verse (though there is no special coda for the end of the haftarah), suggesting a common origin for the Sephardi and Ashkenazi chants.

Eastern Jewish communities have no liturgical tradition of reading Ecclesiastes, and there is no public liturgical reading of Song of Songs on Passover, though brief extracts may be read after the morning service during the first half of Nisan. (Individuals may read it after the Passover Seder, and many communities recite it every Friday night.) There are specialized tunes for Song of Songs, Ruth, Esther and Lamentations. The prose passages at the beginning and end of the book of Job may be read either to the tune of Song of Songs or to that of Ruth, depending on the community. The Ruth tune is generally the "default" tune for any book of the Ketuvim (Hagiographa) that does not have a tune of its own.

Unlike the Ashkenazic tradition, the eastern traditions, in particular that of the Syrian Jews, include melodies for the special cantillation of Psalms, Proverbs and the poetic parts of Job. In many eastern communities, Proverbs is read on the six Sabbaths between Passover and Shavuot, Job on the Ninth of Av, and Psalms are read on a great many occasions. The cantillation melody for Psalms can also vary depending on the occasion. The Spanish and Portuguese Jews have no tradition for the rendering of the Psalms according to the cantillation marks, but the melody used for several psalms in the evening service is noticeably similar to that of Syrian psalm cantillation, and may represent the remnants of such a tradition.

Yemenite melodies

Yemenite cantillation has a total of eight distinctive motifs, falling within four main patterns:

- *molikh* ('moving') used for the conjunctives and some minor disjunctives
- *mafsiq* ('dividing') for most third level disjunctives
- *ma'amid* ('pausing') for most second level disjunctives; and
- the patterns of etnaḥa and silluq (sof pasuq).

This is true equally of the system used for the Torah and the systems used for the other books. It appears to be a relic of the Babylonian system, which also recognised only eight types of disjunctive and no conjunctives.

Learning melodies

Some communities had a simplified melody for the Torah, used in teaching it to children, as distinct from the mode used in synagogue. (This should not be confused with the *lernen steiger* used for studying the Mishnah and Talmud.) For example, the Yemenite community teaches a simplified melody for children, to be used both in school and when they are called to read the sixth aliyah.[7] The simplified melody is also used for the reading of the Targum, which is generally performed by a young boy.

Conversely, the Syrian community knows two types of Torah cantillation, a simpler one for general use and a more elaborate one used by professional hazzanim. It is probable that the simpler melody was originally a teaching mode.

Today however it is the mode in general use, and is also an ancestor of the "Jerusalem-Sephardic" melody.

Some communities had a simplified melody for the Prophets, distinct from that used in reading the Haftarah: the distinction is mentioned in one medieval Sephardic source.[8]

Names and shapes of the ta'amim

Names in different traditions

The following table shows the names of the ta'amim in the Ashkenazi, Sephardi, Italian and Yemenite traditions together with their Unicode symbols. The following points should be noted.

- Cantillation marks are rarely supported in many default Hebrew fonts. They should display however on Windows with one of those fonts installed:

  Times New Roman, Arial, Gisha, Microsoft Sans Serif, Code2000, Courier New, Ezra SIL

- The following default Hebrew fonts are not displaying these marks :

  David, Miriam, Rod, FrankRuehl (as well as *serif, sans-serif, monospaced* unless they are configured manually)

- The mark for U+05AA (*yerach ben yomo* or *galgal*) should not be drawn with the bottom vertical tick used in the mark drawn for U+05A2 (*atnach hafukh*), however some fonts draw these marks identically.

	Ashkenazi	**Sephardi**	**Italian**	**Yemenite**
בֻ֮ U+05BD	סוֹף פָּסֽוּק Sof pasuq/ silluq	סוֹף פָּסֽוּק Sof pasuq	סוֹף פָּסֽוּק Sof pasuq	סְלֽוּק Silluq
בֻ֑ U+0591	אֶתְנַחְתָּא Etnaḥta	אַתְנָח Atnaḥ	אַתְנָח Atnaḥ	אֶתְנָחָא Etnaḥa
בֻ֒ U+0592	סֶגּוֹל Segol	סְגוֹלְתָּא Segolta	שָׁרֵי Shere	
בֻ֓ U+0593	שַׁלְשֶׁלֶת Shalshelet	שַׁלְשֶׁלֶת Shalshelet	שַׁלְשֶׁלֶת Shalshelet	שִׁישְׁלָא Shishla
בֻ֔ U+0594	זָקֵף קָטָן Zaqef qatan	זָקֵף קָטוֹן Zaqef qaton	זָקֵף קָטוֹן Zaqef qaton	זָקֵף קָטוֹן Zaqef qaton
בֻ֕ U+0595	זָקֵף גָּדוֹל Zaqef gadol	זָקֵף גָּדוֹל Zaqef gadol	זָקֵף גָּדוֹל Zaqef gadol	זָקֵף גָּדוֹל Zaqef gadol
בֻ֖ U+0596	טִפְחָא Tifcha	טַרְחָא Tarḥa	טַרְחָא Tarḥa	נְטוּיָה Netuyah
בֻ֗ U+0597	רְבִ֗יעַ Revia/revi'i	רְבִ֗יעַ Revia	רְבִ֗יעַ Revia	רְבִ֗יעַ Revia

בֿ U+05AE[9]	זַרְקָא֮ Zarqa	זַרְקָא֮ Zarqa	זַרְקָא֮ Zarqa	צִנּוֹר֮ Tzinnor
בֿ U+0599	פַּשְׁטָא֙ Pashta	קַדְמָא֙ Qadma	פַּשְׁטָא֙ Pashta	אַזְלָא֙ Azla
בֿבֿ U+0599 U+05A8	שְׁנֵי פַּשְׁטִין֙ Shene pashtin/pashtayim	תְּרֵי קַדְמִין֙ Tere qadmin	שְׁנֵי פַּשְׁטִין֙ (Shene) pashtin	
בֿ U+059A	יְתִיב֚ Yetiv	יְתִיב֚ Yetiv	שׁוֹפָר יְתִיב֚ Shofar yetiv	יְתִיב֚ Yetiv
בֿ U+059B	תְּבִיר֛ Tevir	תְּבִיר֛ Tevir	תְּבִיר֛ Tevir	תַּבְרָא֛ Tavra
בֿ U+05A1	פָּזֵר֡ Pazer	פָּזֵר גָּדֹול֡ Pazer gadol	פָּזֵר גָּדֹול֡ Pazer gadol	
בֿ U+059F	קַרְנֵי פָרָה֟ Qarne farah/ pazer gadol	קַרְנֵי פָרָה֟ Qarne farah	קַרְנֵי פָרָה֟ Qarne farah	קַרְנֵי פָרָה֟ Qarne farah
בֿ U+05A0	תְּלִישָׁא גְדוֹלָה֠ Telisha gedolah	תִּרְצָה֠ Tirtzah/Talsha	תַּלְשָׁא֠ Talsha	תְּלִישָׁא גְדוֹלָה֠ Telisha gedolah
בֿ U+059C	גֵּרֵשׁ֜ Geresh/azla	גְּרִישׁ֜ Gerish	גֵּרֵשׁ֜ Geresh/azla	טָרֵס֜ Tares
בֿ U+059E	גֵּרְשַׁ֞יִם Gershayim	שְׁנֵי גְרִישִׁין֞ Shene gerishin	שְׁנֵי גְרִישִׁין֞ Shene gerishin	טַרְסִין֞ Tarsin
בֿ U+05A3	מוּנַח לְגַרְמֵהו֣ Munach legarmeh	פָּסֵק֣ Paseq	לְגַרְמֵהו֣ Legarmeh	
בֿ U+05A5	מֵרְכָא֥ Mercha	מַאֲרִיךְ֥ Maarich	מַאֲרִיךְ֥ Maarich	מַאַרְכָא֥ Maarcha
בֿ U+05A3	מוּנַח֣ Munach	שׁוֹפָר הוֹלֵךְ֣ Shofar holech	שׁוֹפָר עִלּוּי֣ Shofar illui	
בֿ U+05A4	מַהְפָּךְ֤ Mahpach	(שׁוֹפָר) מְהֻפָּךְ֤ (Shofar) mehuppach	שׁוֹפָר הָפוּךְ֤ Shofar hafuch	מְהֻפָּךְ֤ Mehuppach

בֱּ U+05A7	דַּרְגָּ֧א Darga	דַּרְגָּ֧א Darga	דַּרְגָּ֧א Darga	דַּרְגָּ֧א Darga
בֱּ U+05A8	קַדְמָ֨א Qadma	אַזְלָ֨א Azla	קַדְמָ֨א Qadma	
בֱּ U+05A9	תְּלִישָׁא קְטַנָּֽה Telisha qetannah	תַּלְשָׁ֩א Talsha/Talsa/Tilsa	תַּרְסָ֩א Tarsa	תְּלִישָׁא קְטַנָּֽה Telisha qetannah
בֱּ U+05A6	מֶרְכָא כְּפוּלָה Mercha kefulah	תְּרֵי טַעֲמֵ֦י Tere ta'ame	תְּרֵין חוּטְרִין Teren ḥutrin	
בֱּ U+05AA	יֶרַח בֶּן יוֹמ֪וֹ Yerach ben yomo/ galgal	יֶרַח בֶּן יוֹמ֪וֹ Yeraḥ ben yomo	יֶרַח בֶּן יוֹמ֪וֹ Yerach ben yomo	יֶרַח בֶּן יוֹמ֪וֹ Yeraḥ ben yomo

The following additional symbols are found in the three poetical books: their names do not differ among the various traditions.

Symbol in Unicode	Hebrew name in Unicode
	Anglicized name (Israeli Hebrew)
בֱּ U+059D	גֶּרֶשׁ מוּקְדָּ֝ם *geresh muqdam*
בֱּ U+05A2	אתנח הפוך *atnach hafukh*
בֱּ U+05AB	עוֹלֶ֫ה *ole*
בֱּ U+05AC	עָלוּ֬י *iluy*
בֱּ U+05AD	דחי *dehi*
בֱּ U+0598 [9]	צִנּוֹרִ֘ת *zarqa* (should be *tsinnorit*)

Zarqa tables

For learning purposes, the *ta'amim* are arranged in a traditional order of recitation called a "*zarqa* table", showing both the names and the symbols themselves. These tables are often printed at the end of a Chumash (Hebrew Pentateuch).

The order of recitation bears some relation to the groups in which the signs are likely to occur in a typical Biblical verse, but differs in detail between different communities. Below are traditional Ashkenazi and Sephardi orders, though variations are found in both communities.

Ashkenazic

Sephardic

Meanings of the names

Azla: "Going away", because it is often the end of the phrase 'Qadma ve'Azla'.

Darga: "Trill" from its sound, or "step" from its shape.

Etnachta/Athnach: "Pause, rest" because it is the pause in the middle of a verse.

Geresh: "Expulsion, driving out". Reason not clear.

Gershayim: Double Geresh, from its appearance.

Mahpach: "Turning round". In old manuscripts, it was written like a U on its side, hence like someone doing a U turn. In printed books, it has a V shape, possibly because that was easier for the early printers to make. In Eastern communities it is called *shofar mehuppach*, "reversed horn", because it faces the other way from *shofar holech* (*munach*)

Mercha: "Lengthener", because it prolongs the melody of the word that follows. In modern usage it sometimes means "comma", but this usage is taken from the cantillation sign.

Mercha-kefulah: Kefulah means "double", because it looks like two merchas together. There are only five in the whole Torah: Gen. 27:25, Ex. 5:15, Lev. 10:1, Num. 14:3, Num. 32:42.

Munach: "Resting", because the shape is a horn lying on its side. (In Eastern communities it is called *shofar holech*, horn going forward.) *Munach legarmeh* (*munach* on its own) is a disjunctive, used mainly before *revia*, but occasionally before a pazer. It may be distinguished from ordinary *munach* by the dividing line (*pesiq*) following the word.

Pashta: "Stretching out", because its shape is leaning forward (or in reference to a hand signal).

Pazer: "Lavish" or "strew", because it has so many notes.

Qadma: "To progress, advance." It always occurs at the beginning of a phrase (often before other conjunctives) and its shape is leaning forward. In particular it is the first member of the *Qadma ve-Azla* pair.

Revia: "A quarter", either because it has four short notes as well as the main one, or because it splits the half verse from the start to *etnachta* (or *etnachta* to the end) into quarters (as it ranks below *zaqef*, the main division within the half verse). The square or diamond shape of the symbol is coincidence: in most manuscripts, it is simply a point. Another possibility is that it was regarded as occupying the fourth level in the hierarchy.[10]

Segol: "Bunch of grapes" (from its shape, which looks like a bunch of grapes).

Shalshelet: "Chain", either from its appearance or because it is a long chain of notes. There are only four in the whole Torah: Gen. 19:16, 24:12, 39:8; Lev. 8:23.

Sof Pasuq: "End of verse": it is the last note of every verse. It is sometimes called *silluq* (taking leave).

Telisha Qetannah/Gedolah: "Detached" because they are never linked to the following note as one musical phrase; Qetannah = small (short); Gedolah = big (long).[11]

Tevir: "Broken", because it represents a break in reading (in some traditions there is a big jump down in pitch between the first and second notes).

Tifcha: "Diagonal", or "hand-breadth". In old manuscripts, it was written as a straight diagonal line. In printed books, it is curved, apparently to make it a mirror image of Mercha, with which it is usually paired (the two together could be regarded as forming a slur). The name "tifcha" may be an allusion to a hand signal.[12]

Yetiv: "Resting" or "sitting", because it may be followed by a short pause, or more probably because the shape is like a horn sitting up. (In the Italian tradition, it is called *shofar yetiv*, sitting horn.)

Zaqef Qaton/Gadol: "Upright" (from their shape, or in allusion to a hand signal); Qaton = small (short); Gadol = big (long).

Zarqa: "Scatterer", because it is like a scattering of notes.

- Numbers 35:5 (in Parshat Mas'ei) has two notes found nowhere else in the Torah:

Qarne Farah: "Horns of a cow" (from its shape), sometimes called *pazer gadol*.

Yerach ben Yomo: "Moon one day old" (because it looks like a crescent moon), sometimes called *galgal* (circle).

Sequences

The rules governing the sequence of cantillation marks are as follows.

1. A verse is divided into two half verses, the first ending with, and governed by, *etnachta*, and the second ending with, and governed by, *sof pasuq*. A very short verse may have no *etnachta* and be governed by *sof pasuq* alone.
2. A half verse may be divided into two or more phrases marked off by second-level disjunctives.
3. A second-level phrase may be divided into two or more sub-phrases marked off by third-level disjunctives.
4. A third-level phrase may be divided into two or more sub-phrases marked off by fourth-level disjunctives.
5. The last subdivision within a phrase must always be constituted by a disjunctive one level down, chosen to fit the disjunctive governing the phrase and called (in the Table below) its "near companion". Thus, a disjunctive may be preceded by a disjunctive of its own or a higher level, or by its near companion, but not by any other disjunctive of a lower level than its own.
6. The other subdivisions within a phrase are constituted by the "default" disjunctive for the next lower level (the "remote companion").
7. Any disjunctive may or may not be preceded by one or more conjunctives, varying with the disjunctive in question.
8. A disjunctive constituting a phrase on its own (i.e. not preceded by either a near companion or a conjunctive) may be substituted by a stronger disjunctive of the same level, called in the Table the "equivalent isolated disjunctive".

Main disjunctive	Preceding conjunctive(s)	Nearest preceding lower level disjunctive ("near companion")	Other lower level disjunctives ("remote companion")	Equivalent isolated disjunctive
First level disjunctives				
Sof pasuq	Mercha	Tifcha	Zaqef qaton	
Etnachta	Munach	Tifcha	Zaqef qaton	
Second level disjunctives				
Segolta	Munach	Zarqa	Revia	Shalshelet
Zaqef qaton	Munach	Pashta	Revia	Zaqef gadol
Tifcha	Mercha; Darga Mercha-kefulah	Tevir	Revia	
Third level disjunctives				
Revia	Munach; Darga Munach	Munach legarmeh	Geresh, Telishah gedolah, Pazer	
Zarqa	Munach (occasionally Mercha)	Geresh/Azla/Gershayim	Telisha gedolah, Pazer	
Pashta	Mahpach; Qadma Mahpach	Geresh/Azla/Gershayim	Telisha gedolah, Pazer	Yetiv
Tevir	Mercha or Darga; Qadma Mercha or Qadma Darga	Geresh/Azla/Gershayim	Telisha gedolah, Pazer	
Fourth level disjunctives				
Geresh/Azla	Qadma; Telishah qetannah Qadma			Gershayim
Telisha gedolah	Munach			

Pazer	Munach
Qarne farah	Yerach ben yomo

Groups

The following sequences are commonly found.

First level phrases

(Mercha) Tifcha (Mercha) Sof-Pasuq: The group that occurs at the end of each *pasuq* (verse), and always includes the Sof-Pasuq at the very minimum. Either or both of the Mercha's may be omitted.

(Mercha) Tifcha (Munach) Etnachta: one of the most common groups, but can only appear once in each *pasuq*. Tifcha can appear without a Mercha, but Mercha cannot appear without a Tifcha (or other following disjunctive). Etnachta can appear without a Munach, but Munach cannot appear without an Etnachta (or other following disjunctive). Munach-Etnachta can appear without a Mercha-Tifcha, but a Mercha-Tifcha cannot appear without a Munach-Etnachta (or Etnachta on its own).

Second level phrases

(Mahpach) Pashta (Munach) Zaqef Qaton: one of the most common groups. Pashta can appear without a Mahpach, but a Mahpach cannot appear without a Pashta. Alternatively, *Yetiv* can appear on its own in place of Pashta. Zaqef Qaton can appear without a Munach, but a Munach cannot appear without a Qaton (or other following disjunctive). The Munach-Zaqef Katon sequence can appear without the Mahpach-Pashta, but the Mahpach-Pashta cannot appear without the Zaqef Katon.

Zaqef Gadol: Not a part of a group, as it replaces a Zaqef Qaton sequence.

(Munach) Zarqa (Munach) Segol: Zarqa is only ever found before Segol; a Munach may precede either one.

Shalshelet: Not a part of a group, as it replaces a Segol sequence. Occurs only four times in the Torah, and always at the beginning of a verse.[13]

Third level phrases

Munach | Munach Revia: The following combinations occur: Revia on its own; Munach Revia; Darga Munach Revia; Munach-with-Pesiq Revia; Munach-with-Pesiq Munach Revia. (Munach with Pesiq is a disjunctive, separate from Munach proper, and also known as *Munach legarmeh*, munach on its own.)

Darga Tevir: Tevir is found either alone or preceded by Darga or Mercha. Darga occasionally precedes other combinations (e.g. Darga Munach Revia).

Mercha Kefula: Occasionally preceded by Darga, but usually on its own. Occurs only five times in the Torah, and once in Haftarah. Its function appears to be similar to Tevir.

Fourth level phrases

Qadma v'Azla: This pair is known as such when found together, and may precede a Mahpach, a Revia group or a Tevir group. A Qadma can also be found without an Azla before a Mahpach, and an Azla without a Qadma is known as Azla-Geresh or simply Geresh. Gershayim on its own fulfils the same function as Qadma v'Azla, in that it can precede either a Mahpach, a Revia group or a Tevir group.

Pazer: Not considered part of a group, but usually followed by a Telisha Qetannah or a Telisha Gedolah. It may be preceded by one or more Munachs.

Telisha Qetannah/Gedolah: Not considered a part of a group, usually appears individually, sometimes after a Pazer. It often precedes Qadma.

Yerach ben Yomo Qarnei Farah: The rarest group of all. Occurs only once in the whole Torah, in the parashah Masey, on the words *alpayim b'ammah* (two thousand cubits). It is equivalent to Munach Pazer.

History

Three systems of Hebrew punctuation (including vowels and cantillation symbols) have been used: the Babylonian, the Palestinian and the Tiberian, only the last of which is used today.

Babylonian system

Babylonian Biblical manuscripts from the Geonic period contain no cantillation marks in the current sense, but small Hebrew letters are used to mark significant divisions within a verse. Up to eight different letters are found, depending on the importance of the break and where it occurs in the verse: these correspond roughly to the disjunctives of the Tiberian system. For example, in some manuscripts the letter *tav*, for *tevir* (break), does duty for both Tiberian *tevir* and *zaqef*.[14] In general there are no symbols for the conjunctives, though some late manuscripts use the Tiberian symbols for these. There is also no equivalent for low-grade disjunctives such as *telishah gedolah*: these are generally replaced by the equivalent of *zaqef* or *revia*.

Nothing is known of the musical realization of these marks, but it seems likely that, if any of these signs was associated with a musical motif, the motif was applied not to the individual word but to the whole phrase ending with that break. (A somewhat similar system is used in manuscripts of the Qur'an to guide the reader in fitting the chant to the verse: see *Qur'an reading*.)

This system is reflected in the cantillation practices of the Yemenite Jews, who now use the Tiberian symbols, but tend to have musical motifs only for the disjunctives and render the conjunctives in a monotone. It is notable that the Yemenites have only eight disjunctive motifs, thus clearly reflecting the Babylonian notation. The same is true of the Karaite mode for the haftarah; while in the Sephardi haftarah modes different disjunctives often have the same or closely similar motifs, reducing the total number of effective motifs to something like the same number.

Palestinian system

The Babylonian system, as mentioned above, is mainly concerned with showing breaks in the verse. Early Palestinian manuscripts, by contrast, are mainly concerned with showing phrases: for example the *tifcha-etnachta*, *zarqa-segolta* and *pashta-zaqef* sequences, with or without intervening unaccented words. These sequences are generally linked by a series of dots, beginning or ending with a dash or a dot in a different place to show which sequence is meant. Unaccented words (which in the Tiberian system carry conjunctives) are generally shown by a dot following the word, as if to link it to the following word. There are separate symbols for more elaborate tropes like *pazer* and *telisha gedolah*.

The manuscripts are extremely fragmentary, no two of them following quite the same conventions, and these marks may represent the individual reader's aide-memoire rather than a formal system of punctuation (for example, vowel signs are often used only where the word would otherwise be ambiguous). In one manuscript, presumably of somewhat later date than the others, there are separate marks for different conjunctives, actually outnumbering those in the Tiberian system (for example, *munach* before *etnachta* has a different sign from *munach* before *zaqef*), and the overall system approaches the Tiberian in comprehensiveness. In some other manuscripts, in particular those containing Targumim rather than original text, the Tiberian symbols have been added by a later hand. In general, it may be observed that the Palestinian and Tiberian systems are far more closely related to each other than either is to the Babylonian.

This system of phrasing is reflected in the Sephardic cantillation modes, in which the conjunctives (and to some extent the "near companions" such as *tifcha*, *pashta* and *zarqa*) are rendered as flourishes leading into the motif of the following disjunctive rather than as motifs in their own right.

The somewhat inconsistent use of dots above and below the words as disjunctives is closely similar to that found in Syriac texts.[15] Kahle[16] also notes some similarity with the punctuation of Samaritan Hebrew.

Tiberian system

By the tenth century C.E., the chant in use in Palestine had clearly become more complex, both because of the existence of *pazer*, *geresh* and *telisha* motifs in longer verses and because the realization of a phrase ending with a given type of break varied according to the number of words and syllables in the phrase. The Tiberian Masoretes therefore decided to invent a comprehensive notation with a symbol on each word, to replace the fragmentary systems previously in use. In particular it was necessary to invent a range of different conjunctive accents to show how to introduce and elaborate the main motif in longer phrases. (For example, *tevir* is preceded by *mercha*, a short flourish, in shorter phrases but by *darga*, a more elaborate run of notes, in longer phrases.) The system they devised is the one in use today, and is found in Biblical manuscripts such as the Aleppo Codex. A Masoretic treatise called *Diqduqe ha-te'amim* (precise rules of the accents) by Aaron ben Moses ben Asher survives, though both the names and the classification of the accents differ somewhat from those of the present day.

As the accents were (and are) not shown on a Torah scroll, it was found necessary to have a person making hand signals to the reader to show the tune, as in the Byzantine system of neumes. This system of cheironomy survives in some communities to the present day, notably in Italy. It is speculated that both the shapes and the names of some of the accents (e.g. *tifcha*, literally "hand-breadth") may refer to the hand signals rather than to the syntactical functions or melodies denoted by them. Today in most communities there is no system of hand signals and the reader learns the melody of each reading in advance.

The Tiberian system spread quickly and was accepted in all communities by the 13th century. Each community re-interpreted its reading tradition so as to allocate one short musical motif to each symbol: this process has gone furthest in the Western Ashkenazi and Ottoman (Jerusalem-Sephardi, Syrian etc.) traditions. Learning the accents and their musical rendition is now an important part of the preparations for a bar mitzvah, as this is the first occasion on which a person reads from the Torah in public.

In the early period of the Reform movement there was a move to abandon the system of cantillation and give Scriptural readings in normal speech (in Hebrew or in the vernacular). In recent decades, however, traditional cantillation has been restored in many communities.

Psalms, Proverbs and Job

The system of cantillation signs used throughout the Tanakh is replaced by a very different system for these three poetic books. Many of the signs may *appear* the same or similar at first glance, but most of them serve entirely different functions in these three books. (Only a few signs have functions similar to what they do in the rest of the Tanakh.) The short narratives at the beginning and end of Job use the "regular" system, but the bulk of the book (the poetry) uses the special system. For this reason, these three books are referred to as *sifrei emet* (Books of Truth), the word *emet* meaning "truth", but also being an acronym for the first letters of the three books (Iyov, Mishle, Tehillim).

A verse may be divided into one, two or three stichs. A one-stich verse is divided by *dehi*, which looks like *tifcha* but is under the last letter of the word. In a two-stich verse, the first stich ends with *atnach*. In a three-stich verse, the first stich ends with *oleh ve-yored*, which looks like *mahpach* (above the word) followed by *tifcha*, on either the same word or two consecutive words, and the second stich ends with *atnach*.

Major disjunctives within a stich are *revia qaton* (immediately before *oleh ve-yored*), *revia gadol* (elsewhere) and *tzinnor* (which looks like *zarqa*). The last stich may be divided by *revia megurash*, which looks like *geresh* combined with *revia*.

Minor disjunctives are *pazer gadol*, *shalshelet gedolah*, *azla legarmeh* (looking like *qadma*) and *mehuppach legarmeh* (looking like *mahpach*): all of these except *pazer* are followed by a *pesiq*. *Mehuppach* without a *pesiq* sometimes occurs at the beginning of a stich.

All other accents are conjunctives.

Mishnah

Some old manuscripts of the Mishnah include cantillation marks similar to those in the Bible. There is no surviving system for the musical rendition of these.

Today many communities have a special tune for the Mishnaic passage "Bammeh madlikin" in the Friday night service. Otherwise, there is often a customary intonation used in the study of Mishnah or Talmud, somewhat similar to an Arabic maqam, but this is not reduced to a precise system like that for the Biblical books. Recordings have been made for Israeli national archives, and Frank Alvarez-Pereyre has published a book-length study of the Syrian tradition of Mishnah reading on the basis of these recordings.

Notes

[1]   http://kjv.biblebrowser.com/isaiah/40-3.htm

[2]   Specimens of both may be found on http://hazzan.qpon.co.il/Front/Multimedia/albom.asp?mBoundary=11371&aType=3.It is possible that the Mosul melody represents the older Iraqi tradition and that the Baghdad melody was imported from Syria following the appointment of Chief Rabbi Sadka Bekhor Hussein in 1743.

[3]   http://www.torahplace.com

[4]   The tables in the Jewish Encyclopedia article on cantillation sets out a single melody for "Syria and Egypt".

[5]   http://www.orahsaddiqim.org/Liturgy/Cantillation.shtml and recordings by Moshe Dabbah on http://pizmonim.org/.

[6]   These are listed in Rodrigues Pereira, *'Hochmat Shelomo*.

[7]   http://yemenite.org/shishi/shishi.htm

[8]   The article on "Cantillation" in the Jewish Encyclopedia shows tunes for "Prophets (other readings)" for both the Western Sephardi and the Baghdadi traditions.

[9]   *Zarqa/tsinnor* and *tsinnorit* marks are wrongly named in Unicode. To encode a *zarqa/tsinnor*, use Unicode "HEBREW ACCENT ZINOR" (U+05AE), and to encode a *tsinnorit* use "HEBREW ACCENT ZARQA" (U+0598). See Unicode Technical Note #27: "Known Anomalies in Unicode Character Names" (http://www.unicode.org/notes/tn27/), and specially Appendix A (http://www.unicode.org/notes/tn27/#Appendix_A) inside it.

[10] In the normal grammatical account it is a third-level disjunctive. But it would become fourth level if one regarded *etnachta* as occupying a separate level from *sof pasuq*, or *segol/shalshelet* as on a level of their own intermediate between *etnachta* and *zaqef qaton*.

[11] In the Sephardic tradition, both are equally referred to as *talsha* and the melodies are frequently confused. When it is desired to refer unambiguously to *telisha qetannah* (the conjunctive), terms such as *talsa* or *tilsa* are used, on the analogy with the distinction between the letters *shin* and *sin* (the *sin* has a dot on the left and *telisha qetannah* appears on the left of the word); another term used for both accents is *tirtzah*. Which term is used for which accent varies among communities and even among individuals.

[12] In Sephardic and Oriental communities it is called *tarḥa*, meaning "dragging" or "effort". Hence the proverbial phrase "after *tarḥa*, *atnaḥ*", after effort comes rest: see the series of puns in the poem on pp. 99-100, *Shir u-Shbaḥah Hallel ve-Zimrah* (http://pizmonim.org/text/PAGE 99-II.pdf).

[13] http://www.divreinavon.com/pdf/Shalshelet1.pdf Symbolic Interpretation of the Shalshelet

[14] In more than one tradition, the melodic outline of *darga tevir* is similar to that of *(mahpach) pashta zaqef qaton*, though their syntactical functions are not quite the same.

[15] Segal, J. B., *The Diacritical Point and the Accents in Syriac*: Oxford 1953, repr. 2003 ISBN 1-59333-032-4, ISBN 978-1-59333-032-3.

[16] *Masoreten des Westens*.

References

Bibliography

Grammar and masorah

- 🌐 Gesenius' Hebrew Grammar, §15
- Dotan, Aaron, ed. (1979) [1963], *Sefer diqduqe ha-te'amim le-rabbi Aharon Ben-Moshe Ben-Asher*, Jerusalem: Hebrew University, earlier edition *Leipzig* (http://hebrewbooks.org/38509), Hebrew books.org.
- ha-Naqdan, Moshe (1822) [1847], *Darche ha-Niqqud ve-ha-neginot* (http://hebrewbooks.org/38534), Hanover: Hebrew books.org, earlier edition *Vilna* (http://hebrewbooks.org/24792).
- bar Kalonymus, Yosef (1886) [1485], Berliner, A, ed. (in Hebrew and German), *Ta'ame eme"t baḥaruzim* (http://hebrewbooks.org/38690), Berlin: Hebrew books.org, a medieval poem setting out the rules for the three poetical books; original in *Maḥzor of Casal Maggiore*.
- ben Bil'am, Judah (1859) [1556], *Sha'ar ta'ame sheloshah sifre eme"t* (http://hebrewbooks.org/35317), Amsterdam: Hebrew books.org, original from Paris.
- Heidenheim, Wolf (1808) (in Hebrew), *Sefer Mishpete ha-Ta'amim* (http://hebrewbooks.org/7218), Rödelheim: Hebrew books.org.
- Wickes, William (1887), *A Treatise on the Accentuation of the Twenty-One so-called Prose Books of the Old Testament*, Oxford.
- Ginsburg, Christian David (1897), *Introduction to the Massoretico-Critical Edition of the Hebrew Bible*, Trinitarian Bible Society.
- Kahle, Paul E (1966) [1913], *Masoreten des Ostens: Die Altesten Punktierten Handschriften des Alten Testaments und der Targume*.
- ———————— (2005) [1927], *Masoreten des Westens*.
- Yeivin, Israel (1980), *Introduction to the Tiberian Masorah*, trans. EJ Revell, Scholars Press, ISBN 0-89130-373-1.
- Breuer, Mordechai (1981) (in Hebrew), *Ta'amei hammiqra be-21 sefarim uvesifrei emet*, Jerusalem.

Music (general and comparative)

- "Jewish Music", *Grove Dictionary of Music*.
- Idelsohn, Abraham Zevi (1917), *Phonographierte Gesänge und Aussprachsproben des Hebräischen der jemenitischen, persischen und syrischen Juden*, Vienna.
- ———————— (1923), "Thesaurus of Oriental Hebrew Melodies" (http://aleph500.huji.ac.il/nnl/dig/books/bk001768379.html), **II: Songs of the Babylonian Jews**, Jerusalem, Berlin and Vienna: Huji also in *Hebrew* (http://aleph500.huji.ac.il/nnl/dig/books/bk001174870.html).
- ———————— (1929), *Jewish Music in its Historical Development*, New York.

Polish/Lithuanian melody

- Neeman, JL (1955) (in Hebrew), *The Tunes of the Bible ― Musical Principles of the Biblical Accentuation*, Tel Aviv.
- Binder, AW (1959), *Biblical Chant*, New York.
- Jacobson, Joshua (2002), *Chanting the Hebrew Bible: the art of cantillation*.
- Portnoy, Marshall; Wolff, Josée (2008) [2000], *The Art of Torah Cantillation ― A Step-by-step Guide to Chanting Torah* (http://www.urjbooksandmusic.com/product.php?productid=152) (2nd ed.), URJ, ISBN 978-0-8074-0734-9, with CD.
- ——————————————————; Wolff, Josée (2002), *The Art of Cantillation ― A Step-by-step Guide to Chanting Haftarot and M'gillot*, **2**, URJ, ISBN 978-0-8074-0756-1.

- Kohn, S, *Learn to Lein: A Step-by-Step Tutorial Program for Developing Requisite Torah-Reading Skills*, ISBN 1-58330-913-6.

Other melodies

- Ridler, Vivian, ed. (5725/1965), *Book of Prayer of the Spanish and Portuguese Jews' Congregation, London*, **1**, Oxford: Oxford Univ. Press (since reprinted): the parashah and haftarah melodies are set out at the end of the volume.
- Sharvit, U (1982), *Yuval*, pp. 179–210.
- Alvarez-Pereyre, Frank (1990), *La Transmission Orale de la Mishnah. Une méthode d'analyse appliquée à la tradition d'Alep*, Jerusalem.
- Rodrigues Pereira, Martin (1994), *Hochmat Shelomoh (Wisdom of Solomon): Torah Cantillations according to the Spanish and Portuguese Custom*, New York, ISBN 0-933676-37-9.
- Tunkel, Victor (2004), *The Music of the Hebrew Bible — The Western Ashkenazi Tradition*, ISBN 978-0-9531104-8-3.
- Smith, Chani (2004), *Learn to Leyn, The Cantillation of the Hebrew Bible*, London (with CD: western Ashkenazic melody).
- The Western Ashkenazi melody is also set out in the Hertz, *Chumash*.

External links

Textual resources

- Hebrew Cantillation Marks And Their Encoding (http://hhr-m.userweb.mwn.de/teamim/): gives full tables with the Unicode equivalent for each cantillation mark
- Mechon Mamre (http://www.mechon-mamre.org/) has the full text of the Tanakh with cantillation marks in Unicode here (http://www.mechon-mamre.org/c/ct/c0.htm) (which may be downloaded for free).
- Western Ashkenazi Torah mode, notated by Salomon Sulzer (http://www.shulmusic.org/sheetmusic/sulzer/sulz_99.htm)
- Torah Cantillation Analytics (http://www.torah-cantillation-analytics.nationalfinder.com/) A guide to the exegesis of Torah Oral Law, by Zalman Z. Fisher

Wikimedia cantillation projects (recordings)

Wikimedia Commons: Free content audio recordings of cantillation at the Wikimedia Commons are listed at **category:Cantillation** and/or **category:Jewish cantillation**.

The recordings held at the **Commons** are organized by the **Vayavinu Bamikra Project** at **Wikisource** in the following languages:

- **Hebrew** (currently lists thousands of recordings of *aliyot*, *haftarot*, and *megillot*)
- **English**

Other cantillation recordings

Torah and Haftarah readings

- Chant the Bible (http://www.koltor.com) Interactive courses. Includes studio recording of the yearly cycle, and high holy day chants in Lita or Avery/Binder melodies (commercial products, available as CD but not as download).
- Leining Master - MP3 recordings of the entire Torah, Haftarot, and Megillot on an MP3 CD (http://www.judaicapress.com/Leining-Master-MP3-CD.html) or available as a full download (http://www.judaicapress.com/Leining-Master-Full-Download.html) by Rabbi Jeremy Wieder. Also available as individual parsha + haftara downloads (http://www.judaicapress.com/Leining-Master-Individual-Parsha-Downloads-Ashkenazic.html) or maftir + haftara downloads (http://www.judaicapress.com/Leining-Master-Weekly-Maftir-and-Haftara-Downloads-Ashkenazic.html), or in a free streaming version (http://www.yutorah.org/searchResults.cfm?types=ALL&length=ALL&publication=ALL&categories=ALL&teacher=ALL&masechta=ALL&fromDaf=&toDaf=&series=4022&dates=ALL&language=ALL&keywords=&submitType=advanced) at the YU Torah (http://www.yutorah.org/) website. Choice of Ashkenazic or Sephardic pronunciation.
- Navigating the Bible (http://bible.ort.org) - Free listening to entire Torah and Haftarot (Polish-Lithuanian melody, Israeli pronunciation) along with text, translation, transliteration, and background information on the texts being read (for beginners and advanced). Available as CD or free downloads.
- Kol Kore (http://www.kolkore.com) - The Torah and haftarot are available in this Israeli program in four different formats: Jerusalem Sephardic; Moroccan; and Polish-Lithuanian melody with Ashkenazic *or* Israeli pronunciation (commercial product, available as CD-ROM or as download for payment).
- Darga (http://www.darga.org/eng/index.asp) (commercial products, available as CD or as download for payment).
- Chadish Media (http://www.chadishmedia.com/) (commercial products: CD, tape or download for payment).
- Torah For Me (http://www.torahforme.com) - Free listening and download of MP3 recordings of Reading (with Polish-Lithuanian melody) - Torah, Prophets, and Writings (including Sephardic traditional reading of Tehilim and Iyov).
- Bar-mitzva.com (http://www.bar-mitzva.com/tmikrae.asp) - Includes recordings of all Parashiyot and Haftarot, in Polish-Lithuanian, Sephardic, and Moroccan melodies (free download).
- Shevile ha-Tanach (http://www.daat.ac.il/daat/olam_hatanah/index.asp) - Text and commentaries of all Biblical books, with links to recordings in Jerusalem-Sephardic, Polish-Lithuanian, Moroccan and Syrian melodies (free downloads).
- Dave Curtis (http://www.davecurtis.net/haph/haphnote.html) Western Ashkenazic Torah and Haftarah melodies as chanted in British synagogues.
- Esther Hugenholtz (http://www.estherhugenholtz.com/leyning.htm) Dutch Ashkenazi melody
- Chabad Melody (http://www.beverlyhillschabad.com/torah-reading/TORAH-MENU.HTM) read by the Lubavitcher Rebbe's Torah Reader

Five Megillot

- Leining Master (http://www.yutorah.org/searchResults.cfm?types=ALL&length=ALL&publication=ALL& categories=ALL&teacher=ALL&masechta=ALL&fromDaf=&toDaf=&series=4022&dates=ALL& language=ALL&keywords=&submitType=advanced)
- Cantor Rabinovicz (http://www.613.org/speakers/pinchas.html) (at bottom of list; missing Kohelet).
- Virtual Cantor (http://www.virtualcantor.com/) - contains MP3 recordings of all five *megillot* with Esther in two versions (normal tempo and slower learning speed). Free to listen, MP3 disk may be purchased.
- "Potpourri for Purim" (http://jnul.huji.ac.il/dl/music/purim/purim_eng.htm#kipur) Melodies for Megillat Ester in several traditions

High Holidays Torah melody (Ashkenazic tradition)

- Leining Master (http://www.yutorah.org/searchResults.cfm?types=ALL&length=ALL&publication=ALL& categories=ALL&teacher=ALL&masechta=ALL&fromDaf=&toDaf=&series=4022&dates=ALL& language=ALL&keywords=&submitType=advanced)
- Torah Place (http://www.Torahplace.com)
- Virtual Cantor (http://www.virtualcantor.com/)
- 613.org (http://613.org/speakers/dolgin.html) (at bottom of list).

Sephardic and eastern traditions

- Sephardic Pizmonim Project (http://www.pizmonim.org) - Syrian (and some Egyptian) melodies
- Congregation Shaare Shalom Torah reading project (http://shaareshalom.com/?page_id=9) - Torah, recorded in Syrian melody
- Tehillim on CD-Rom (http://www.jewishsoftware.com/products/333.asp) - Rabbi Shimon Alouf (Psalms, Syrian tradition). Hear free samples at Torah To Go (http://torahtogo.com/tehillim.asp)
- Egyptian haftarah recordings (http://www.ahaba.org/browsemedia.asp?id=6)
- Iraqi melodies for selected passages (http://hazzan.qpon.co.il/Front/Multimedia/albom. asp?mBoundary=11371&aType=3) (Hebrew language site)
- Spanish and Portuguese Torah and Haftarah melodies, Amsterdam style (http://www.chazzanut-esnoga.org/ Miscellaneous/Neginoth/parasha_and_haftarah.htm)
- Spanish and Portuguese Torah and Haftarah melodies, London style: recording (http://www.sephardim.org/ liturgy/)
- Spanish and Portuguese Torah melody, London style: musical notation only (http://utne.nvg.org/j/parasha/ taamim_london.html) (includes instructions for downloading musical notation font)
- Torat Hashem Temimah (http://www.tht.co.il/default.asp) Torah reading in Moroccan style (clips and CDs; Hebrew language site)
- Torat Emet (http://www.toratemet.net/21292/Lire_La_Torah_Paracha_Taamim) - Comparing North African melodies (French language site)

Italian tradition

- Parashiyot and haftarot in Italian melody (http://www.archivio-torah.it/HTM/indiceaudio.htm)

Torah readings from different parts of Italy are recorded in the CD *Italian Jewish Musical Traditions from the Leo Levi Collection (1954–1961)* (Anthology of Music Traditions in Israel, 14, edited by Edwin Seroussi).

Yemenite tradition

- Yemenite melody (http://www.chayas.com/kriah.asf)
- Temani.net (http://www.temani.net/music/tora/tora.htm) Yemenite melody, including Targum (Hebrew language site)
- Samples including Targum and Saadia's Arabic version (http://www.nosachteiman.co.il/?CategoryID=584& ArticleID=1739&Page=1) (Hebrew language site)

Mechanical Cantillation (computer speech synthesis)

- Trope Trainer (http://www.kinnor.com) - Trainer for Torah, Haftarot, Megillot in a variety of digital voices, melodies, and pronunciations (commercial product).

Recordings of the cantillation notes

- Ellie's Torah Trope Tutor (http://www.ellietorah.com/) - Trainer
- Chanting the Bible (http://www.acs.ucalgary.ca/~elsegal/Cantillation/Chanting.html)
- Interactive Torah and Haftarah trope lessons (http://learntrope.com)

Samples from various traditions

- Mafseek Publications (http://users.bestweb.net/~mafseek/) (Helen Chuckrow)
- Taamim (http://www.taamim.org) Introduction and samples in Polish-Lithuanian, Baghdadi and Spanish/Portuguese styles

Cantillation in the Mishnah

- Online Treasury of Talmudic Manuscripts (http://jnul.huji.ac.il/dl/talmud/intro_eng.htm) - Website provides full images of Mishnah manuscripts, some of which include partial cantillation.

Organizations

- Renanot (http://www.renanot.co.il/) - The Institute for Jewish Music
- Jewish Oral Traditions Research Center (http://www.hum.huji.ac.il/masorot/) (Hebrew University)
- The National Sound Archives (http://jnul.huji.ac.il/eng/music.html) at the Jewish National and University Library.

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