

# Glossary of palaeographical concepts

## Hebrew Palaeography Album

The method of palaeographical description applied in the Hebrew Palaeography Album (HebrewPal) is a fruit of many years of teaching Hebrew Palaeography at the Ecole Pratique des Hautes Etudes, PSL, Paris. The method takes the form of a checklist which is designed to guide the scholar through the study of a palaeographical unit, as briefly described in “Petit guide de description des écritures hébraïques: identifier la main du scribe”, see (<http://www.hebrewmanuscript.com/images/petit-guide-de-description-des-ecritures-hebraïques-bwb.pdf>). It relies on the careful visual observation of well-defined, salient features of the writing and does not involve any precise measurements of the letters. It should be noted that it is not a statistical method which would calculate decisions about the manuscript’s date, place, or scribe on the basis of a majority from the sum of the checklist’s answers. It is rather a way to guide the reader towards a precise observation of the features of the script and handwriting. In this way, it guides towards the correct identification of those of the features which provide pertinent information allowing for a typological attribution. Writing is analyzed both as a final graphic product and as a dynamic process, a sum of gestures and ad hoc decisions taken by its scribe. The method is inspired by the groundbreaking reflection on Hebrew script by Colette Sirat (in particular, by *Ecriture et Civilisation*, 1976) and by the guidelines for forensic handwriting analysis created for the contemporary Latin script by Marie-Jeanne Seyden (*Standard Handwriting Objective Evaluation (SHOE) Method*, 1998).

The list of basic terms and concepts below is a preliminary step for the use of this method. This nomenclature is intended to be as simple and intuitive as possible, while describing a rich array of graphic features.

## 1. General

**Palaeography** Study of historical scripts and handwritings

**Digital Palaeography** Study of historical scripts and handwritings supported by digital technologies

**Computational Palaeography** Study of historical scripts and handwritings enrolling mathematics and artificial intelligence and modelling

**Item** In Hebrew Palaeography Album (HebrewPal), a book, document, or inscription under consideration

**Palaeographical Unit** Item or part of item written/copied by one individual scribe (see Handwriting/Hand)

**Graphic element** All the visual components of an item: letters, punctuation, decorations, diagrams, and any other graphic devices, such as abbreviations, divine names, justification, or tagin

**Handwriting or Hand** Actual written result of the work of an individual scribe: it is highly personal and contains features unique to the scribe

**Script** Ideal model the scribe ‘has in mind’. This model is acquired through education and/or observation of exemplars. Script is a typological entity: individual hands/scribes active in the same place, time, and institutional, educational, or social context usually share the same script

**Scribe** The person who copied/wrote the item (book, document, inscription) (see Hand). Also called Copyist or Scriptor

## 2. Script typology

**Script Type** The sum of the pertinent characteristics shared by hands/scribes educated and operating in a similar geographical and chronological context. Large typological entities of the Hebrew script are: **Oriental**, **Yemenite**, **Sephardi**, **Italian**, **Ashkenazi** and **Byzantine**. In each type, finer local variations or sub-types can be defined.

Examples (square mode)

Oriental



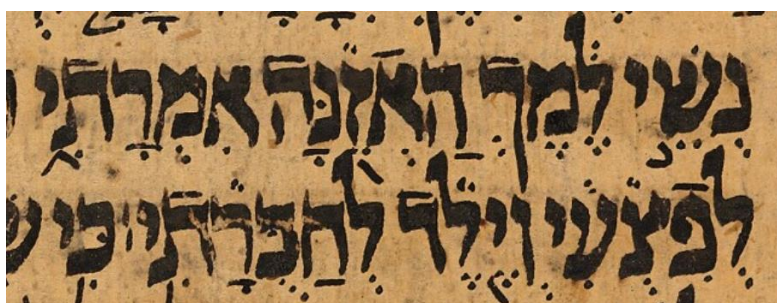
(Evr I B3)

Sephardi



(Ken. 7)

Yemenite



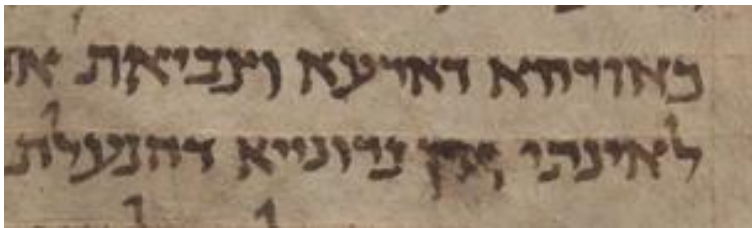
(Opp. Add. 4° 97A)

## Italian



(Karlsruhe 3)

## Byzantine



(T-S 16.374)

## Ashkenazi

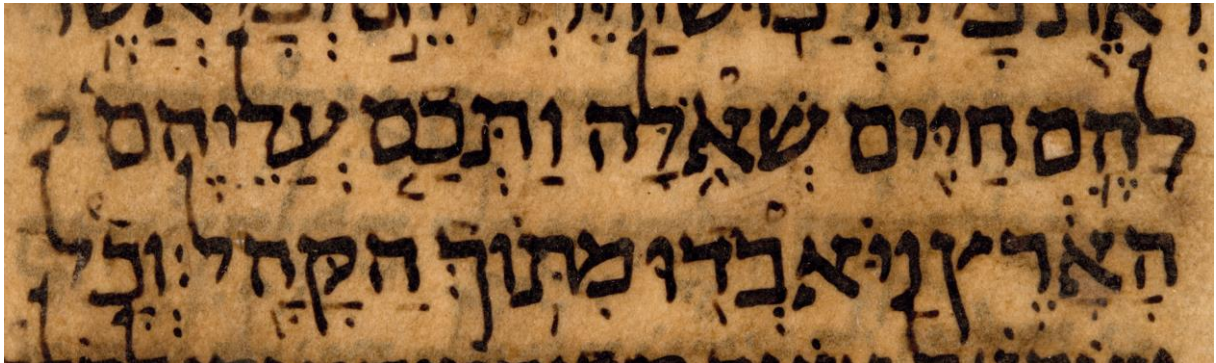


(Mich. 617)

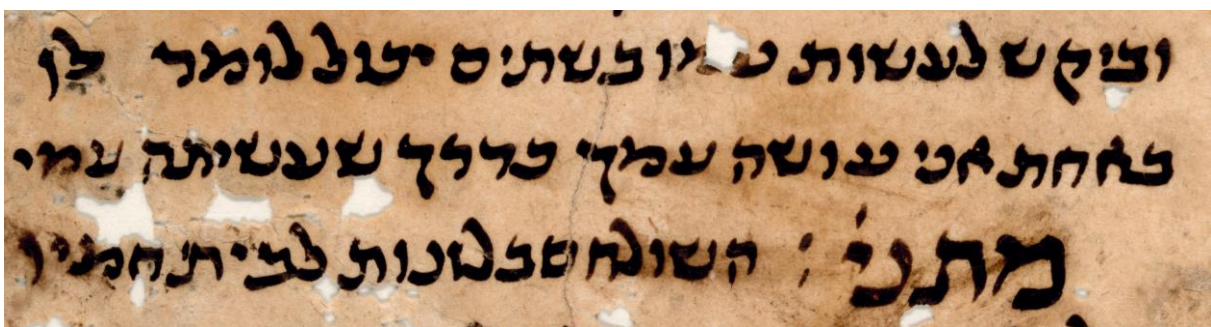


**Script Mode** Graphic variants of the script within its type. The basic modes, attested in the Middle Ages across all the types, are **square** and **non-square** (the latter variably described as semi-square, semi-cursive, Rabbinic, or, in Hebrew, בינוני, “in-between”). In some typological groups, **cursive** mode is also found.

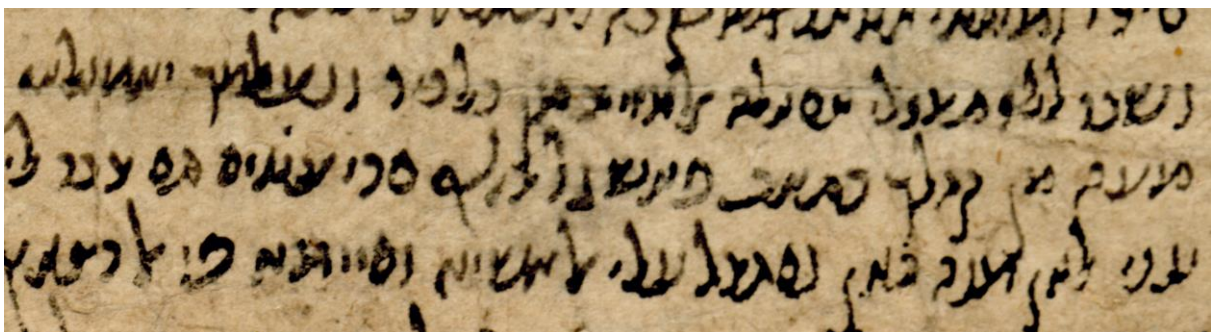
Example (Oriental script)



Halper 15 Oriental square



Halper 125 Oriental non-square

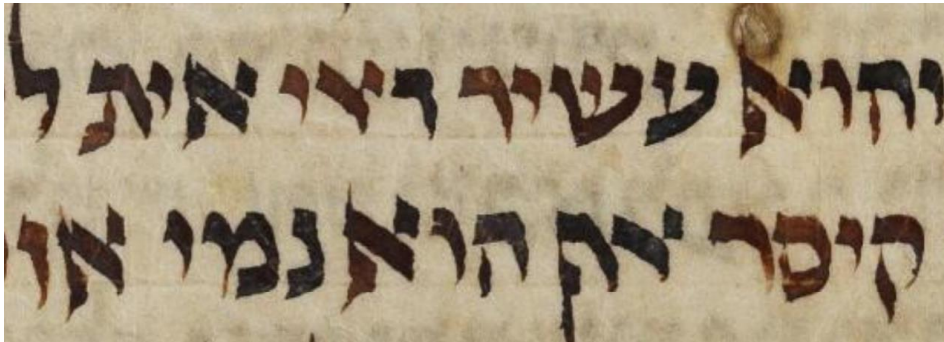


Halper 389 Maghrebi (Oriental) cursive

**Script quality** Aesthetic category defining the quality of the final product of the scribe's work. The quality depends on the scribe's training and individual skills but also on the destination of the item. The useful categories describing quality are: **calligraphic**, **careless**, **current**, **monumental**, and **untrained**.

Example: Ashkenazi---Square:

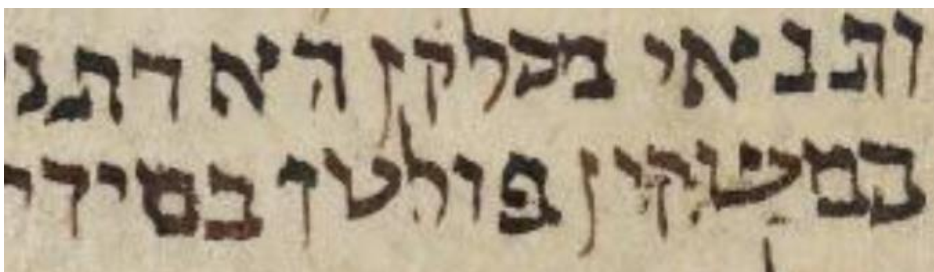
Calligraphic



Current



Untrained



Three different scribes of Florence, BNC, MS Magl. II. I. 7, 8 and 9



**Script Function** Genre of the copied text and its destination. The function may influence scribal practices, graphic devices, and the final aspect of the item. The most frequent definitions of the function are: **bookhand**, **display**, **documentary**, and **informal**.

**Script Style** Like any other artefact, writing is influenced by and reflects the fashion, tastes, and visual models of the scribe's direct environment, education, and his/her social, religious, or professional group. The most frequent styles found in the Hebrew scripts are: **drop-shaped**, **gothic**, **merchants'**, **mudejar**, **notarial**, **chancery**, **rotunda**, **scholars'**, etc.

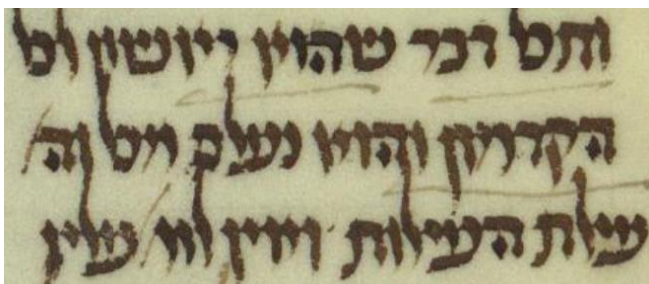
Examples:

Drop-shaped



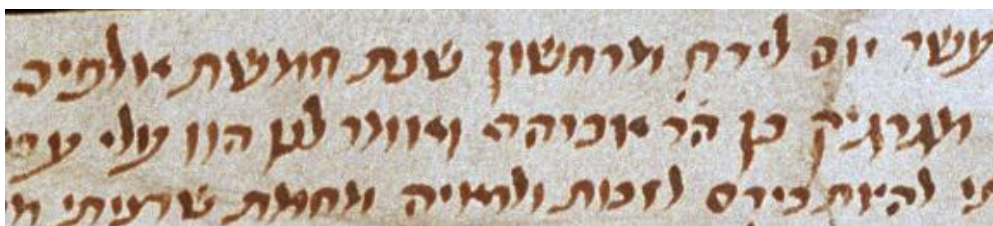
Oxford, MS Opp. 776 fol 21r, 1471

Gothic



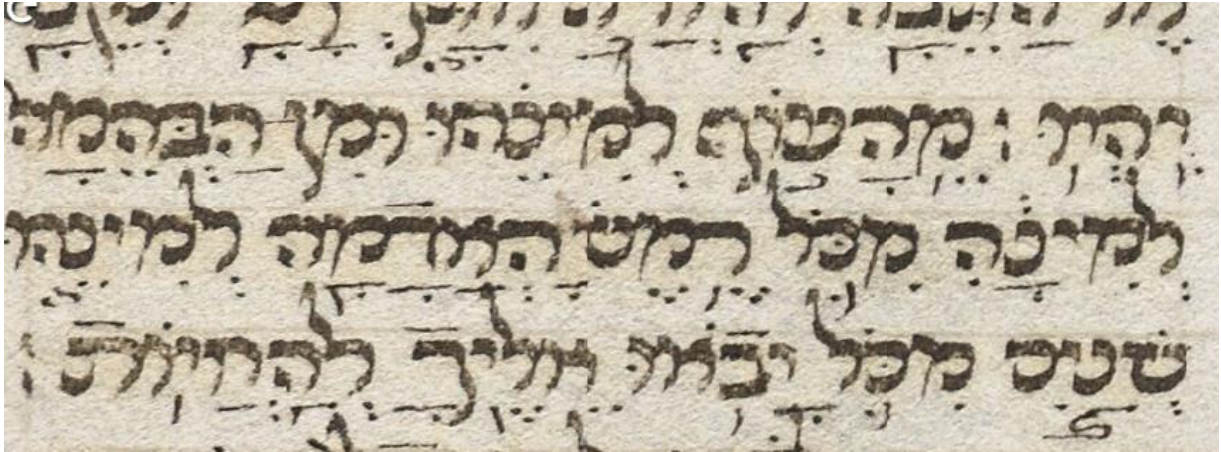
Jerusalem, NLI Heb 38° 6330, 1367 (Ashkenazi---Non-square)

Notarial



WAM 6810, Norwich, 1260 (legal document) (Ashkenazi---Non-square)

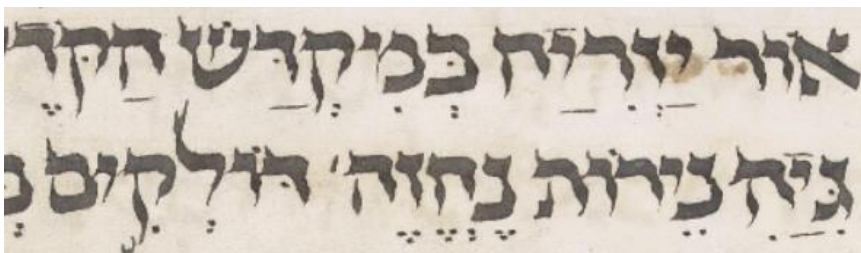
## Rotunda



Oxford, MS Can. Or. 13v, 1468 (Italian---Non-square)

**Typological definition** Formal categorisation of a Palaeographical Unit or a script sample according to the five categories of type, mode, quality, function, and style.

Example:



**Script Type:** Ashkenazi

**Script Mode:** Square

**Script Quality:** Calligraphic

**Script Function:** Display

**Script Style:** Gothic



### 3. Script and Handwriting: Global characteristics

**Form of a letter** Finished, static shape of a letter as it looks, its structure and components (also called Morphology)

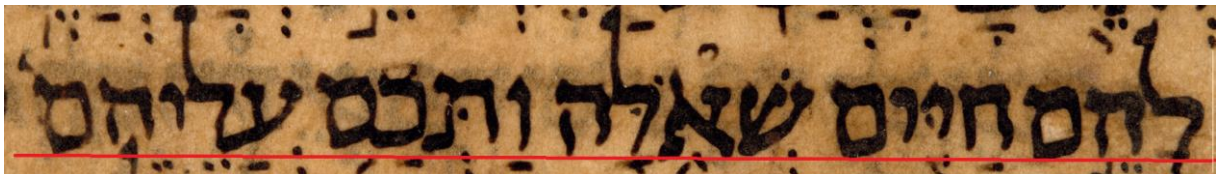
**Morphology of a letter** see **Form of the letter**

**Ductus** Dynamic way of tracing a given letter: the number and direction of the individual movements of the writing implement and the visible strokes it left on the writing surface, and the way they are connected within a letter and within a word

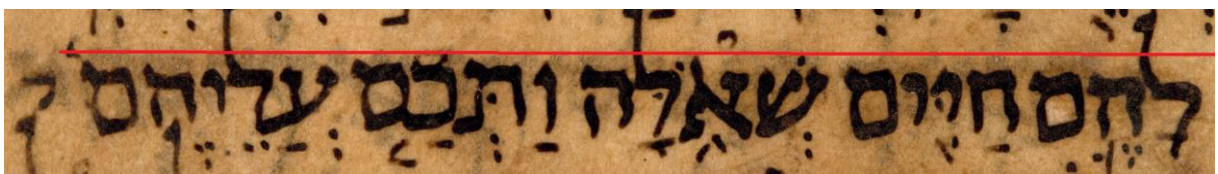
**Allograph** Different form and ductus of the same letter in the same palaeographical unit or sample

**Line of writing** Imaginary line above and below the body of the letters in a written line, excluding any descenders and ascenders

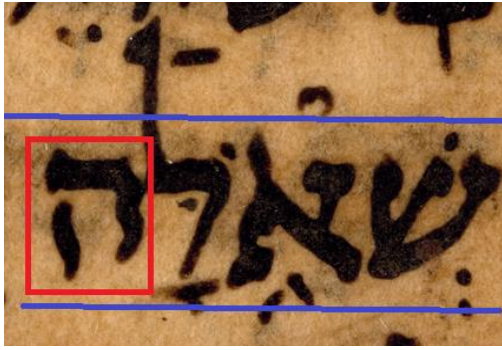
**Baseline** Imaginary line below the body of the letters in a line, excluding the descenders



**Headline** Imaginary line along the top of the body of the letters in a line, excluding the ascenders



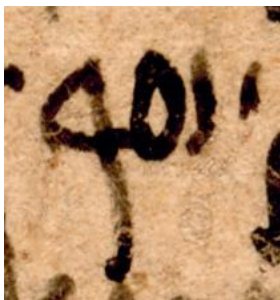
**Body of the letter** Part of the letter (or whole letter) included within the line of writing, between the headline and the baseline



**Angle of writing** Position of the nib of the writing implement for individual letters with respect to the line of writing



**Ligature** Linking of two or more letters, tracing them without lifting the writing implement. This may result in the change of the shape of the letters, including the addition of the linking strokes



**Nexus** Type of ligature in which the original shapes and number of strokes of the letters are changed so that the letters form a new coherent hybrid symbol (e.g. *aleph-lamed*)



**Biting** A letter (here *aleph*) loses its left-hand component and uses the following letter as a 'support' (also called fusion)

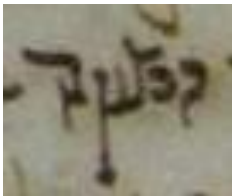


**Fusion** see **Biting**

**Nesting** Horizontally longer letters (usually those with bases or feet) underline the following or preceding letters



**Overarching** Elements of tall letters hang over and shelter the following or preceding letters



**Shading (chiaroscuro)** Contrast between thick strokes traced with the full width of the writing implement and thin strokes and hairlines traced with the nib's edge



**Meshunnah** Letter whose shape is altered according to a special mystical scribal tradition. Alterations include twirled, bent and curved letters as well as the addition of large tagin (see Tag). Used mainly in certain traditions of Torah scrolls, modified letters (*otiyot meshunnot*) also appear in some codices

Example: *ṭeth lefufa* (curled *ṭeth*) with five tagin (Bologna, Rot. 2)



**Density** Ratio of the written (“black”) to unwritten (“white”) space in a sample. It can be evaluated by a number of measures: the number of written lines vertically in an agreed measure (e.g. 5 cm); the number of signs horizontally in an agreed measure (e.g. 5 cm); the proportional distance between the lines in respect of the height of the line of writing; the distance between the letters in a word in respect of the width of a stroke (usually, the width of a *vav*); the distance between the words in respect of the width of an average letter (usually, the width of a *he*); the relationship and juncture of the strokes and components within a letter; and the presence/absence of ligatures.

**Rapidity** Speed of writing by a scribe. It can be evaluated by a series of features: the reduction of spaces between letter components and strokes; the complete or partial reduction of the horizontal elements in favour of the verticality; the elimination of all or some additional components; the reduction of the number of visible strokes and invisible hand movements necessary to trace a letter; and the presence of ligatures.

## 4. Letter Components

### 4.1 Basic letter components

**Basic letter components** Parts of the letter which form its main structure

**Upper horizontal bar** Horizontal stroke in the upper part of the letter



**Base** Horizontal stroke in the lower part of the letter

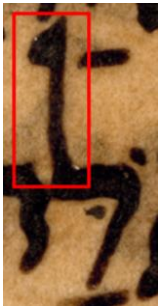




**Downstroke** Vertical stroke traced from the headline to the baseline



**Ascender** Part of the letter which ascends above the headline (in *lamed*, also called a mast)



**Descender** Part of a letter which descends below the baseline



**Stem** Descender which constitutes the main axis of such letters as *gimel*, *zayin*, *nun* and *şade*



**Arm** Slanted or vertical lateral stroke of the letters *ṭeth*, *mem*, *‘ayin*, and *shin* (subcategorized as left and right arms), and the right-hand part of the *aleph* and *ṣade*



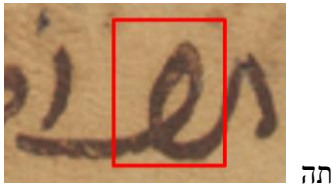
**Middle stroke** Stroke placed between the left and right arms of the letter *shin/sin*



**Lobe** The rounded part of the *qoph*, *mem*, *resh* or *tav* situated within the line of writing



**Loop** Letter or letter component traced as a curving or folding line which forms a closed or partly-closed curve or circle within itself



**Chevron** Right-hand component of non-square *aleph*: a figure composed of two slanted strokes, resembling a V turned horizontally



**Branch** Part of the V-shaped chevron of the non-square *aleph* (upper and lower branch)



## 4.2 Additional letter components

**Additional letter components** Parts of the letter the presence or absence of which does not affect its basic structure

**Approach stroke** Very thin and short stroke traced by the scribe as a preparation stroke from which he pulls a horizontal stroke. Also called *Attaque de plume*.



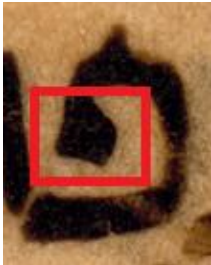
**Serif** Small stroke added to the basic letter component (e.g. upper horizontal bar) once the component had been traced



**Foot** Short horizontal stroke added to the downstrokes of some letters (*aleph, tav*)



**Nose** Part on the left of the letter *pe* in most types of the Hebrew script



**Head** A short horizontal, slanted, or lozenge-shaped stroke on the top of the downstroke of the letters *gimel, zayin, vav, yod, and nun*





**Hook** Curved or sharp upper extremity of the *vav* or *yod*



**Roof** Additional short horizontal, slanted, or diamond-shaped stroke on the top of the downstrokes, stems, or arms of *aleph*, *ṭeth*, *‘ayin*, *ṣade*, *shin*, and *tav* (on left-hand downstroke for *tav*)



**Flag** Short stroke added to the ascender of the *lamed*



**Tag plural Tagin** (Lit. “crowns”) Additional strokes added to the letters of some Torah scrolls as a part of an ancient scribal-mystical tradition. Some manuscripts contain tagin on the top of all the letters *שעטנז* "גץ and a special roof of *heth*. These tagin take the form of tiny versions of the letter zayin and are placed on these letters in groups of three. Another tradition contains tagin, usually large and of varying shapes, as well as *meshunnot* (“altered”) forms of any letter of the Hebrew alphabet in specific Biblical verses.



Wolfenbüttel, Cod. Guelf. 148, Torah scroll with tagin and meshunnot (here nun)

## 5. Letter Features

**Letter Features** Graphic characteristics of the components

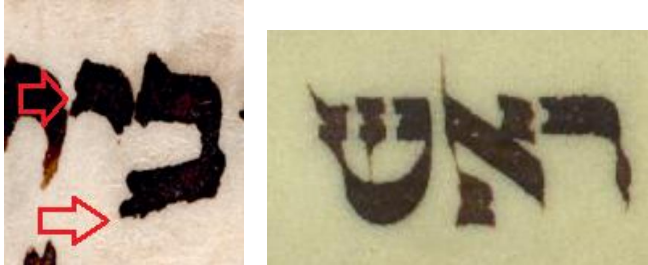
**Hairline** Very thin line/stroke traced with the edge of the nib of the writing implement

**Thick line** Line/stroke traced with the full width of the nib of the writing implement<sup>s</sup>

**Bifurcation** The extremity of a stroke splits into two parts which go in opposite directions



**Fish-tail bifurcation** Special kind of bifurcation in Ashkenazi Gothic script resembling a tail of a fish



**Puzzle letters** A letter is decoratively inserted within its neighbours. It often combines nesting with a change of the size or shape of the inserted letter



**Tail** An upwards or downwards turn of a stroke. It can be found in the downstrokes of *gimel*, *daleth*, *zayin*, *ṭeth*, final *mem*, *samekh*, and *shin/sin*



(*zayin*)

## 5.1 Downstrokes

straight



slanted (leaning to the right/left)



curved (open to the right/left)



rounded



wavy



thickening





thinning



broken



wedge-shaped



with a knee



with a drop



## 5.2 Upper horizontal bar

straight



convex (rounded)



concave



slanted



### 5.3 Base

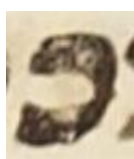
straight



convex



concave (rounded)



slanted



with a spur



*nun*



*gimel*



*beth*

## 5.4 Serif

single



multiple



two serifs on the left arm and one on the right arm of *ṭeth*



two serifs on the top of *lamed*

pointing upwards



pointing downwards





straight



triangular



thin hairline



**5.5 Foot**

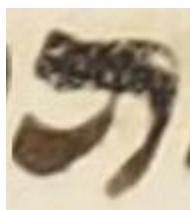
straight



slanted



rounded



turning left



turning right



with a spur



## 5.6 Flag

double



placed centrally



placed to the left



placed to the right



straight



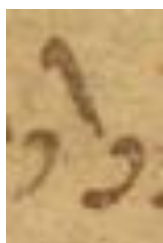
circle



hairline



rounded hook



diamond-shaped

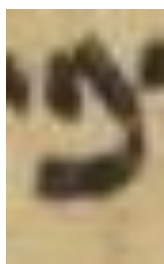


## 5.7 Nose

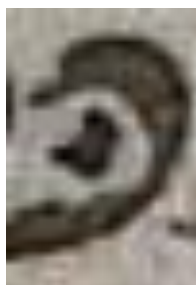
large



small



detached





straight



slanted



rounded



wavy



turning right



turning left



## 5.8 Roof

placed centrally



placed to the left



placed to the right



straight



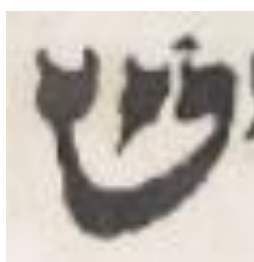
slanted



diamond-shaped



rounded



concave



## 5.9 Head

placed centrally



(*nun*)

placed to the right



(*nun*)

placed to the left



(*nun*)

straight



(*vav*)

slanted



(*zayin*)

rounded



dot-shaped





concave



(*gimel*)

diamond-shaped



(*zayin*)

## 6 Meeting point (juncture) between the strokes in a letter

detached



(*mem*)

cross-shaped



angular



rounded

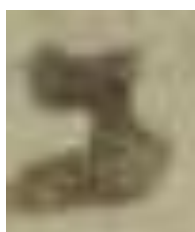


loop-shaped



(*tav shin*)

with a butt



with a bottle neck

