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Script, History of Development

Dated Hebrew manuscripts and Genizah documents such as deeds, letters, *Ketubbot* or *Giṭṭin*, as well as inscriptions made on various kinds of materials, are authentic evidence for the state of Hebrew script in the period covered by this entry. Copied by professional scribes, written by scholars, or penned by laymen, these remnants reflect the types, modes, and styles of written texts that were produced in this period. Inspired by cultural phenomena and by various styles of calligraphy, such as those coming from the surrounding Islamic and Christian cultures, the evolution of medieval Hebrew script was intimately connected with Jewish cultural and spiritual life.

The 19th-century study of Hebrew paleography examined the changes in script throughout the ages by classifying it according to geocultural entities and graphical groups. Renewed by Malachi Beit-Arié in the latter part of the 20th century, contemporary Hebrew paleography divides the regional types of writing into two broad branches—the 'Islamic' branch, which includes the Oriental, Sephardic, and Yemenite types of script; and the 'Christian' branch, which includes the Italian, Ashkenazic, and Byzantine types (Beit-Arié 1993:37–78). The Oriental type was employed in the East: in Palestine, Iraq, Persia, Uzbekistan, Armenia, Egypt, and eastern Turkey. Some of its features can already be found in the Dead Sea Scrolls—evidence that the roots of the Oriental script lie in the ancient script that was in use during the 1st millennium. The Oriental script adopted some characteristics of Arabic calligraphy, mainly due to the similar technique of employing a reed calamus as a pen. Writing with a reed contributed to the distinctive texture formed from letters drawn by homogenous wide strokes, ending always with some tags or heads. Departing from the same characteristics

as its Oriental ancestor, the Yemenite type, employed only in Yemen, became a distinct type only in the 13th century. The widespread Sephardic type, contrary to its name, was not limited to the Iberian peninsula. Imported to the Maghreb by immigrants from the Middle East, it made its way to the Iberian peninsula, Provence and Languedoc, to the southern parts of Italy, and to Sicily. At the end of the 14th century, when Sephardic Jews settled in the northern parts of Italy, the Sephardic script became one of the main scripts in use there. The Sephardic script was transported to western Turkey and the Balkans by Jews expelled from Spain and Portugal. There it served the local scribes in addition to their regular scripts. The Sephardic script revealed some Oriental characteristics at first but gradually abandoned them and developed into a distinctive script.

In the so-called 'Christian' branch of Hebrew script, the Ashkenazic type was used in various western European countries, mainly in Germany, northern France, and England. Exported by emigrants from those countries to the northern parts of Italy, it became employed there alongside the Sephardic script. Inspired by Gothic Latin, the Ashkenazic script is characterized by its elegant impression and unique calligraphic texture. The use of a flexible quill contributed to the fine decorations adorning its letters, such as hairlines (Engel and Beit-Arié forthcoming) and shading (the contrast between wide horizontal lines and thin verticals; Engel 1999:397–398). The Italian type, which crystallized as a unique script around the 13th century, was mainly in use in central and northern Italy. Its first writing tool was the reed, though the quill gradually came into use as well. A distinctive Byzantine type evolved mainly in western Turkey and the Balkan regions. Influenced by the various cultures of the Byzantine Empire, the Byzantine type displays contrasting features that might have served as a bridge between the two broad branches of script—the Islamic and the Christian.

According to graphical criteria, each of the geo-cultural script types is divided into three principal modes: square, semi-cursive, and cursive; and four secondary modes: proto-square, cursivized, semi-square, and proto-semi-cursive (Engel 1999:367–369). When it diverged from the Aramaic script, the 'Jewish' (or 'Assyrian') script was also named מרובע *merubbaʿ* 'square'.

The term 'square' in the Middle-Ages referred to letters made in a square pattern, demonstrating features such as erect vertical lines, horizontals that are leveled with the drawn line, and a right-angled connection between horizontals and verticals. Letters of the cursive mode—in Hebrew רהוט *rahuṭ*—are executed by minimizing the scribe's hand lifting from the writing surface. Letters minimize their basic components, rendering a crowded texture with joint letters. Beit-Arié (1987:11–12) revived the Hebrew term כתב בינוני *ketab benoni*, that had already been assigned to the semi-cursive script by Maimonides, in reference to a middle mode between the square and the cursive. Lacking the squarish pattern, the lines of its letters are more inclined and curved than those of the square.

The proto-square mode was the common script of the pre-10th-century era. It preceded the square and functioned as a primordial script for all medieval geo-cultural types. By the 10th century, the newly developed square script moved towards two formal modes—semi-cursive and cursive. Thus, in a unique process that lasted one or two centuries, Hebrew script, in all its geographical regions, developed two transitional modes—semi-square and proto-semi-cursive—linking between the square script and the two primary formal non-square modes.

The semi-square and the proto-semi-cursive lack the pattern of the square but do not yet display the distinctive features of the semi-cursive. The cursivized mode created another route of evolution, linking the proto-square mode with the cursive on the one hand, and with the semi-cursive on the other. The cursivized mode manifests letters lacking some of their basic components. Their lines are fluent, producing some fusions of two letters.
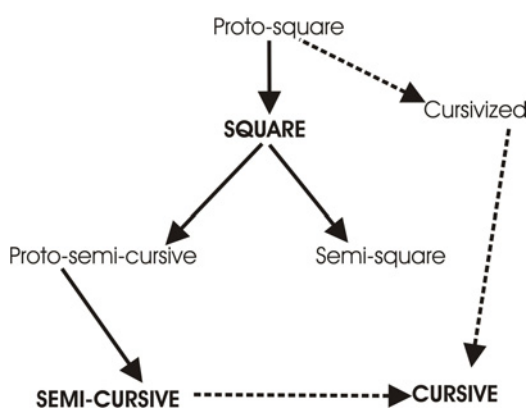

Figure 1b. The evolution of the modes

THE PROTO-SQUARE SCRIPT UP TO THE 10TH CENTURY

With the exception of the scrolls from Qumran and some of the findings from Wadi Murabbaʿat, very few fragments written with pen and ink on papyrus, gvil (animal hide), or parchment have survived from before the 10th century (the Roman, Byzantine, and early Muslim periods). Additional inscriptions have been found inlayed in mosaics, or carved, engraved or painted on limestone, basalt or marble. Most of the stone texts originate in Eretz Israel, while the Hebrew and Aramaic papyri and a few fragments on gvil were discovered in the Egyptian desert. Among the oldest material found in the Cairo Genizah are individual sheets containing biblical, halakhic, liturgical, and other Hebrew texts—invaluable aids in tracing the development of Hebrew script in the 8th–9th centuries. These texts, most of them on rough parchment, are vocalized using the ancient Babylonian system or the Palestinian system that preceded the spread of Tiberian pointing. Along with poetic compositions written on palimpsests over 6th-century Greek, Latin, Palestinian Syriac, and other texts, these reflect writing traditions that antedate the 10th century. While it still exhibits characteristics of earlier styles, and is not too far removed from the script of the 6th–7th centuries, its affinity with the elegant square script of Oriental manuscripts of the 10th–11th centuries is unmistakable, though it does not contain clear square script.

Features of the proto-square script Figure 2. Dense texture composed of small letters and small spaces between words and lines. The lines of the letters are of uniform thickness, with no

Figure 1a. Scripts' types and modes

Figure 2. Cambridge, University Library MS T-S NS 308.25. Oriental proto-square script, the 9th century

Figure 3. St. Petersburg, National Library MS EBP II B17 fol. 169v. Biblical square script, 929 A.D.

shading. There are random ornamental characteristics, such as stylized tags on the horizontal lines and a decorative curl of the verticals. The ʾalef slants to the right, and its left leg's base is composed of a thin stroke. The head of the nun, typical to all other short horizontals (like gimmel or vav), is shaped like a triangle. The mem has a sharp pointed top. The pe has a small horizontal roof. The base of the shin is pointed.

1. Growth and Transition: 10th–11th Centuries

The square writing known from the monumental biblical codices of the 10th–11th centuries is one of the derivatives of the proto-square. Owing to the new development of the Masorah in Egypt and Palestine, it emerged toward the 10th century as a new, impressive writing, manifesting a new stage in Oriental script. Though sharing similar morphological features, the calligraphic script of non-biblical manuscripts lacks the meticulous forming of the biblical script.

Features of the Oriental biblical square Figure 3. The pattern of the letter is square; length is equal to width. The angle between length and width is close to a right angle. The large interior of the letter accentuates the uniformity of the strokes' width and emphasizes the arches made in several letters, such as ṭet, or in the left

leg of the ʾalef. Vertical and horizontal lines are made by the same width of the stroke, without shading (the contrast between wide horizontals and thin verticals). Vertical lines are made by erect strokes ending in a curve. Attached to the horizontal lines are broad heavy tags. Short horizontal lines are shaped like a triangle. Base lines are slightly inclined. Descenders such as final nun are short, terminating in a curve.

At their inception, around the 10th century, the biblical and the non-biblical square scripts were the dominant way of writing. Nevertheless, the 10th–11th century was the period of origin for many of the Oriental script styles. Towards the 11th century, due to the shift in writing materials and the growing need for more practical writings, the necessity of flexible modes increased. While trying to adapt to the new requirements, the Oriental script relinquished the stiffness of the square. As a consequence, development of the non-square calligraphic scripts was accelerated, and the use of common careless writings became widespread. While in the 10th century the use of the square script, in all textual types, whether religious or secular, was practically universal, by the middle of the 11th century the shift to the semi-square and the proto-semi-cursive modes was almost complete.

Figure 4. Oriental semi-square script

Figure 5. Oriental cursivized mode

Figure 6. Sephardic square script in the Maghreb

Combining a morphological mixture of the square and the semi-cursive, the semi-square lacks the pattern of the former but does not yet display the distinctive characteristics of the latter. Tags and heads of the horizontal lines are still bold but they are no longer connected to the line.

In a similar process leading toward a quicker way of writing, an Oriental cursivized mode emerged in the Babylonian academies, antedating the cursivized mode known later in 12th-century Egypt and Palestine.

The Oriental script—in all its modes—carried on the massive waves of Babylonian emigrations to the Maghreb, brought with it a local script that would subsequently be defined as the Sephardic script.

Indeed, during the 'growth period' of the 10th–11th centuries, all known remnants of Sephardic writings bear many Oriental features.

The first evidence of a calligraphic Sephardic square script is found in a Bible copied in the Orient by a Sephardic scribe in 994 (Figure 7).

Like the Maghrebic script, this script, too, combines Oriental features (e.g., the triangle shape of short horizontals; Engel 1999:397–398) with features that would later characterize the classical square Sephardic (e.g., straight horizontal lines lacking any tags).

Beginning in the 10th–11th centuries, the inflexible lines and stiff writing technique of the Sephardic square script gave way to a more pliant mode of writing. The square pattern gradually became more compressed, omitting calamus strokes (Engel 1999:397–398) and tags, and turning the letter into a more flexible form. As in the case of the square script, remnants of these Sephardic transitional forms of script are also of Maghrebic origin. Documentary materials from the 11th century, written in North Africa and Sicily, demonstrate the same morphological modifications that occurred in the Oriental script, turning the Sephardic square into the semi-square and the proto-semi-cursive. Beginning with the 11th century, a shift toward a western orientation occurred in the Hebrew script in Christian Catalonia. Documented in bilingual Latin-Hebrew documents, this orientation was manifested in a Sephardic proto-semi-cursive script marked by features of Ashkenazic script. Towards the end of the 11th century, however, due to the intensive impact of Arabic cultural influence in the northern Iberian peninsula, this script adopted characteristics of the script previously used under Muslim rule, thus unifying all styles of the Sephardic script into the Andalusian type.

The Andalusian Sephardic proto-semi-cursive can be observed in the handwriting of Yosef ben Yiṣḥaq ibn Aviṭur, a Sephardic poet who emigrated from Spain at the end of the 10th century and lived in Egypt and in Palestine (Figure 8).

Figure 7. St. Petersburg, National Library MS EBP II B 115, fol. 1r. Calligraphic Sephardic square script, 994 A.D.

Figure 8. Oxford, Bodleian Library MS Heb. d 42, fol. 45r. Sephardic proto-semi-cursive script, Egypt 11th century

Features of the Sephardic proto-semi-cursive (Figure 8): Letters are made in simple straight calamus strokes. Some letters are closer in their morphology to the cursive (like the *gimmel* and *mem*, which are made in a single calamus stroke). Some are closer to the semi-cursive, like the *ʾalef*. While some of the horizontals retain features of the semi-square, like the tags of the *daleth*, bases are made in a long stroke towards the next letter as made in the cursive script (the *ʿayin* for example).

In the 11th century, the Italian and Byzantine scripts still preserved the anachronistic mode of the proto-square. Dated manuscripts copied in Apulia at the end of the 11th century prove the existence of the proto-square script in southern Italy, and a *ketubba* written in Greece in 1022 (MS Cambridge, University Library

T-S 16.374) documents the proto-square mode employed in a Byzantine territory.

Known historical connections between Palestinian and southern-Italian scholars explain the affinity of the Italian proto-square of the 11th century with the Oriental script of the 9th century, but these connections cannot explain the gap of two hundred years between them.

Neither in Italy nor in Greece does this script reveal any regional features. However, in a different way, the 10th–11th-century square mode is discernible in letters written in Jerusalem in 1048 by Ṭoviyya ben Moshe Ha-ʾavel, a Byzantine immigrant in Palestine, indicating an exclusive square Byzantine mode (Figure 10).

Bearing some resemblance to the Oriental non-biblical square script of the 11th century, this script is written in small characters displaying bold tags on their horizontals. The tags in this script are more angular and, combined with strong shading, they provide a spikier impression that lacks the softness of the Oriental square.
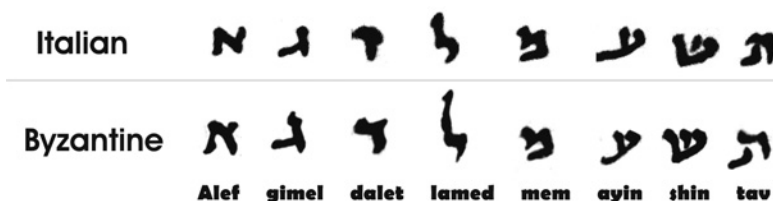

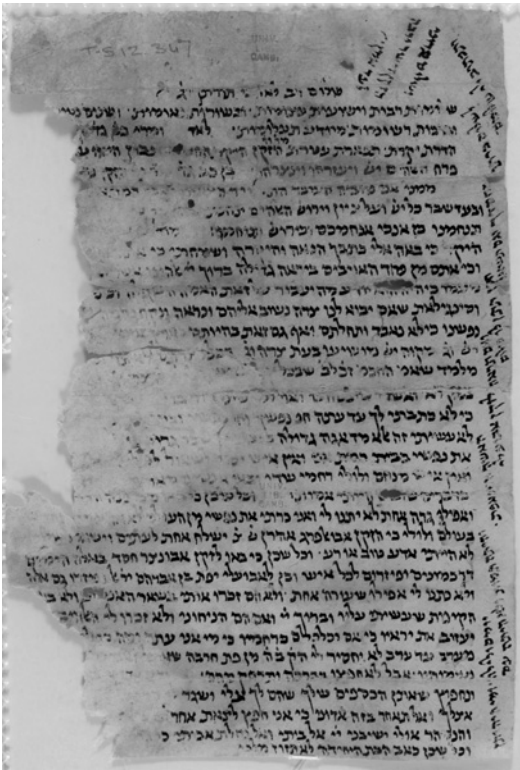Figure 9. Proto-square script of the 11th century

Figure 10. Cambridge, University Library MS T-S 12.347 Byzantine square script of the 11th century, Jerusalem? 1048

2. The Crystallization of Script Styles: 12th–14th Centuries

In the second half of the 11th century, the Oriental square script began to vanish, marking a decline of the Oriental as a scribal hand. Square writing is scarce in manuscripts written later than the 11th century. Mainly in Egypt and Palestine, most of the square writings dated to the 12th century or later exhibit the individual features of the scribe rather than conventional cal-ligraphic square script. Nevertheless, at about the same time, the semi-cursive mode manifested itself in a new formal script. Probably replacing a cursive mode, most semi-cursive writings from the 13th century onwards were written in current or careless handwritings. The semi-cursive mode appears in three styles. Classified according to the shape of the ʾalef, they are named the K, N, and Y styles, respectively (Figures 11–13).

The K style is the direct continuation of the proto-semi-cursive. The ʾalef's left leg becomes shortened, whereas the joint of the two right legs descends toward the center of the left leg.

More than the K style, the N style of the 12th century retains the features of cursivized letters. Displaying the instable scripts of this period, the N style is characterized by having many variants of the same letter.

The Y style is the last of the three to be developed, reflecting a mutual interaction with the Sephardic semi-cursive script.

Each with its own features, these three styles share the same essential nature of the Oriental script: uniform stroke-width, with tags added to the horizontal lines. Nevertheless, the inconsistent and unconnected tags added to the horizontal lines in the transitional modes transform, in the semi-cursive, into an integral part of the horizontal line. Hence, the script's appearance is affected by those undulating, softer, and more harmonized horizontal lines.

Toward the 13th century, both the K and the N styles changed to become calligraphic scripts, mostly known in representative manuscripts from Persia and its environs (Figure 14).

Sephardic. The 13th century was a period of increasing social and cultural activity within the Sephardic communities. It was at this time, with the fading of the Oriental traces in the square script, that a unique, fully formed

proto-semi-cursive   **semi-cursive**

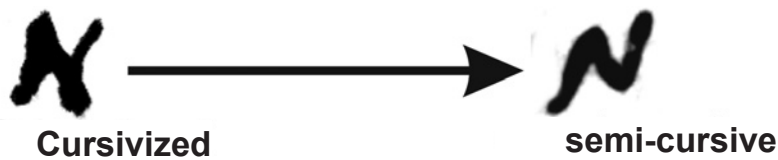Figure 11. The K style ʾalef

Figure 12. The N style ʾalef
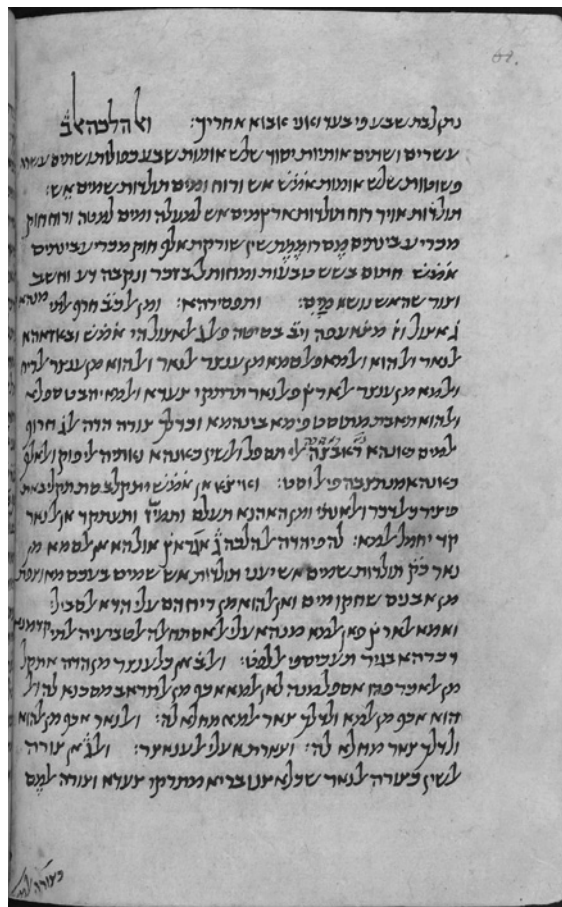

Figure 13. The Y style ʾalef

Figure 14. Oxford, Bodleian Library MS Poc. 256, fol. 31v. Oriental semi-cursive
script of the 13th century, Baghdad 1262

Sephardic script developed (Figure 15). Owing to the Oriental origin of the Sephardic script, the similarity between the Oriental square and the Sephardic square still remained. However, a clear distinction between the two is expressed in the quality of the letter's basic lines and in their additives.

While the line of the Oriental letters is mainly characterized by its tags and heads, the thinner lines of the Sephardic letters are tightly stretched, virtually lacking any additional elements. The Sephardic letters do not retain the square proportion. Letters are more oblong and their inner space is larger.

The crystallization of the semi-cursive began concurrently with that of the square.

Demonstrated in a Grammar manuscript, this representative script shows a full-fledged Sephardic semi-cursive with letters made of inclined, curved, and undulating strokes (Figure 16). A combination of curved horizontals with oblique verticals contributes to a harmonized texture.

Distinct from that of the Oriental semi-cursive, the Sephardic ʾalef merges the two upper arms into a single protruding oblique arm. The semi-cursive ʾalef, similarly to the Y Oriental style, lifts the two right arms to the top of the letter (see Figure 13).

Figure 16. Jerusalem, National Library MS Yah. Ms Heb. 1, fol. 35v. Sephardic semi-cursive script, 1225

Figure 15. New York, Jewish Theological Seminary MS L44a, fol, 100v. Sephardic square script, Toledo 1241

Ashkenazic. The earliest appearance of the Ashkenazic script in dated manuscripts is from the end of the 12th century. A talmudic manuscript copied in 1177 (MS Firenze Biblioteca Nazionale II-I-7) and contemporary remnants of tombstones in Germany, display features of a proto-square Ashkenazic script, resembling that of the Oriental proto-script of the 9th century and the Italian proto-square script of the 11th century. Only in the 13th century did the Ashkenazic script crystallize into a full-fledged square writing. The calligraphy of the Ashkenazic script reached its peak in the final third of the 13th century, when Gothic art—in architecture, sculpture, and other arts—flourished in Germany and in France (Figure 17).

Features of the Ashkenazic square script. Large letters exhibiting a large space inside the letter, juxtaposed with relatively thin contours. Bold horizontal calamus strokes contrasting thin verticals usually created droplet shapes. Tags and serifs adorn the horizontals, and the even verticals of the 12th century develop into undulating strokes.

At the beginning of the 13th century, the development of the Ashkenazic square was marked by a clear distinction between two major styles—French and German—manifested in various modes and styles.

Displaying a homogenous appearance, letters of the German style are strictly made in an elongated squarish pattern, with stretched lines and a large space inside the letter. Letters of the French style exhibit a wavering, unsteady appearance. They have a wider pattern in which most lines are inclined, soft, and undulating.

The basic appearance of the 13th-century Ashkenazic square is maintained in the 14th-century script as well. But, probably due to the expulsions of the Jews from France, the elegant German style remained the sole regional style from the 14th century onwards.

The progress of the Ashkenazic script towards a semi-cursive formal mode began in the proto-semi-cursive of the early 13th century (Figure 19).

Manifesting a mixture of semi-cursive features with cursive ones, letters of this script are made by fluent calamus strokes devoid of any decorative elements.

The impact of non-Jewish scripts on each of the local medieval Hebrew script types is evident, but the most striking resemblance is that between the Ashkenazic script and the Latin Gothic scripts (Sirat 1976:16–17). From as early as the 13th century, the Ashkenazic calligraphic semi-cursive displays some Latin Gothic features and gradually develops a similar texture to that of the Latin. There are several techniques of employing Gothic features in the semi-cursive script, including small internal spaces and a compressed vertical pattern of letters, and heavy shading, all resulting in a general increase in the blackness of the texture (Figure 20).

Figure 17. Jerusalem, National Library MS Heb. 4° 781/1 fol 27v. Ashkenazic square script of the 13th century, Germany? 1272

Figure 18. German and French styles

Shin   Pe   Ayin   Mem   Lamed   He   Gimel   Alef

Figure 19. Ashkenazic proto-semi-cursive of the 13th century

משתירופר   memoria

Figure 20. Ashkenazic semi-cursive and Gothic Latin in France

Figure 21. Karlsruhe, Badische Landesbibliothek MS Cod. Reuchlin 3 fol. 63r, Italian square script of the 12th century, Italy? 1105/6

That being said, whereas Gothic features are conspicuous in the semi-cursive, the square still retains its traditional character and features.

Italian. There are only few Italian manuscripts dated to the 12th century. However, Genizah fragments as well as datable manuscripts indicate that three Italian modes are to be found in the Italian script of the 12th century. The square and the cursivized are the two derivatives of the 11th-century Italian proto-square. Shortly after the square, also in the 12th century, the semi-square also emerged.

The small compact letters of the proto-square are replaced in the square by large, impressive square letters. The uniform lines of the former's letters are replaced by higher nuanced lines, contrasted by shading and adorned by decorative elements.

More than 200 Jewish families lived in Rome in the 13th century, contributing to the accelerated development of Italian script. Most known Italian manuscripts of this period were copied there. Those manuscripts manifest various modes and styles of script, reflecting the highly dynamic development of the Italian script. The semi-square of the 12th century gained a new prestige and became the formal calligraphic script of the period. The Italian scribes who, until the end of the 13th century, used the reed calamus, started to write with a quill, which served to accentuate the decorative elements of letters. The large number of modes and styles of script assembled in Rome during the 13th century enable us to isolate individual styles in the handwritings of the Roman scribes. Individualistic features are seen, for example, in the semi-square handwriting of Paula bat Abraham, a scholar and professional woman scribe (Figure 22).

Yemenite. A few letters written in Aden in the 12th century, together with a manuscript of a grammatical work copied there in 1144 (MS St. Petersburg, National Library EBP-AP 4562) reflect features of Oriental script, indicating the likelihood that a distinct Yemenite script was still unknown in this period. A talmudic manuscript copied in 1222 is the first dated manuscript demonstrating a distinct Yemenite script.

As in the Oriental script, the use of a reed in this script creates wide, uniform, and soft strokes, curved verticals, and bold tags. The wide tendency of the writing is accentuated by the morphology of the ʾalef. While moving horizontally, the ʾalef's middle leg serves as a base for the two small legs; the left one joins the base at its left end and the right one on its right end (Figure 23).

Towards the end of the 13th century, the Yemenite script crystallized into its classic square form. This script continued to be employed alongside some other square styles and variants, as the most widespread Yemenite style.

Features of the Yemenite classic style (Figure 24). Wide homogenous calamus strokes and small interiors of the letters generate a dark, crowded texture. Letters have a right-angled stance. Their pattern is rectangular. The straight horizontal lines lack tags and have the same width as the verticals. Significant features of individual letters are the X-like shape of the ʾalef and the twisted vertical of the *zayin*.
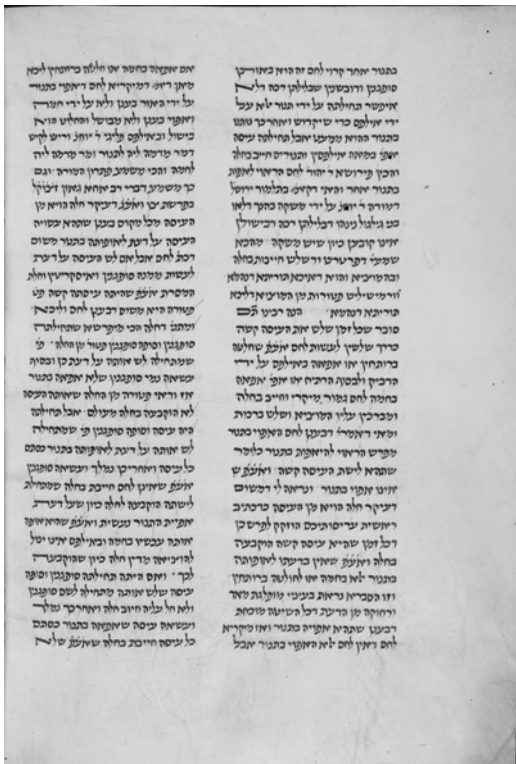
Figure 22. Oxford, Bodleian Library MS Can. Or. 89, fol. 252v. Paula bat Abraham, Rome? 1293

Figure 23. Berlin, Staatbibliotheck, MS Or. Qu. 568. fol. 186v. Yemenite script of the 13th century, Yemen 1222
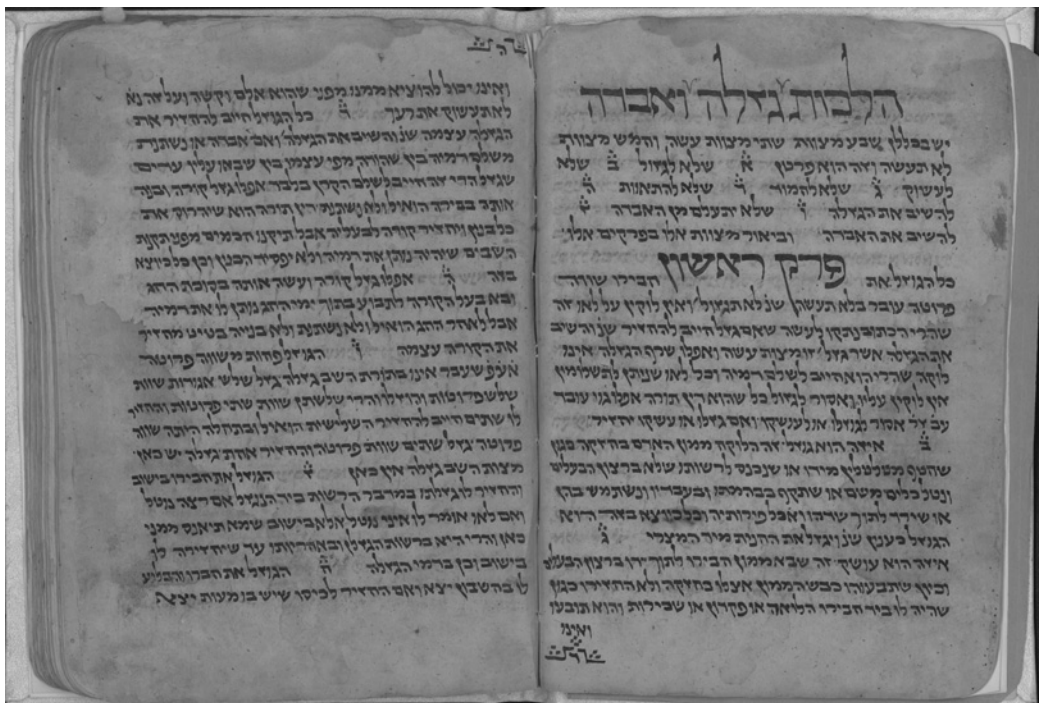

Figure 24. Jerusalem, National Library MS Yah. Ms. Heb. 6, fol. 10v. Classic Yemenite script, al-Tawilah 1359

3. Decline Versus Progress: 15th–16th centuries

Oriental. Apart from the isolated square Oriental script employed by distinctive groups such as the Karaite scribes, the square that was still in use in the 15th century is a careless execution by unprofessional hands. This square preserves some morphological features of the calligraphic early square but lacks its harmonized rhythm.

The lines that compose this script's letters are not as vivid, intense, or fleshy as the lines of the older Oriental script. There is no shading, and almost no adornments to the basic lines of the letters. The regular size of all letters, their uniform stance on the base line, and the unstable shapes for each letter hamper the harmony and rhythm of the texture.

The gradual decline of the calligraphic Oriental square script, which had already begun in the 12th century, was probably an incentive for the emergence of distinct regional modes. Originating as early as the 13th century, these reached their peak in the 15th century. While most of the Oriental non-square styles from the 13th century onwards were written in a current or careless semi-cursive, the N style that commenced in the mid-13th century as a distinctive style, ultimately became a prominent script, functioning in the 14th–15th centuries as the calligraphic book script, mainly in Persia and its environs, see Figure 26. This script developed a close affinity with the square, replacing it as the formal mode of most Oriental books.

In lieu of the stretched square lines, the endings of these letters are inclined or undulating. Tags are noticed more clearly. One should remark the correlation between the ʾalef and the other letters in the line; while all letters in the line are made in erect vertical lines, the ʾalef is inclined to the right, exhibiting a contrast to the right-angled stance of all other letters.

This new N style became a dominant script in Egypt as well, highly employed by Karaite scribes. The semi-cursive Y style of the 15th century was preserved only in Syrian manu-
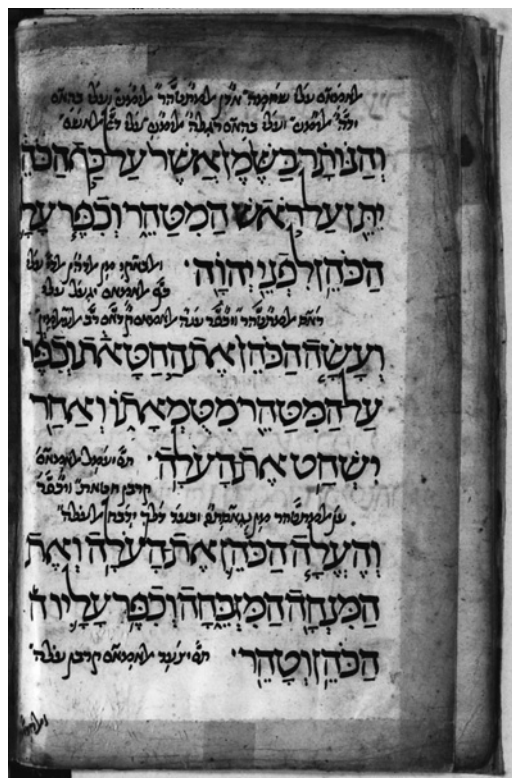

Figure 25. Paris, Bibliothèque Nationale de France MS hèbr. 282, fol. 9v. Oriental square script of the 16th century, Jerusalem 1514
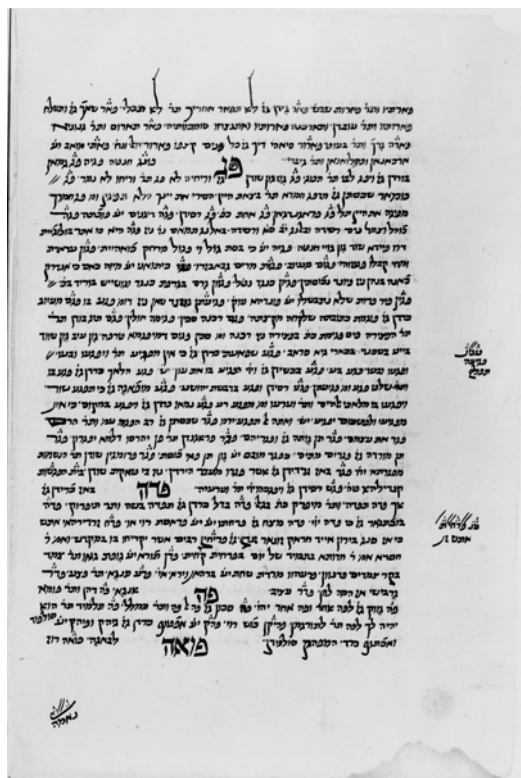

Figure 26. Jerusalem, Ben-Zvi Institute MS 4562, fol. 79v. The calligraphic N style, Persia 1494

scripts. Like the two other styles, it adapted features of the square in order to be used as a book-hand script.

Sephardic. Both the square and the non-square Sephardic scripts had deteriorated in their calligraphic quality by the end of the 15th century. Current writings lacking the accuracy of the calligraphical letters became frequent, introducing new, non-homogenous, and irregular styles of script. The square script was no longer a harmonized script. Its letters lack the squarish pattern, horizontal lines are not stretched, and irregular shapes dominate the vertical as well as the oblique lines. Uneven spacing between letters, parts of letters exceeding the baseline, and exaggeration of line-length are a few examples of the impoverished calligraphy of the Sephardic semi-cursive at the end of the 15th century and into the 16th century. Notwithstanding, the increasing number of Sephardic immigrants in 15th-century northern Italy contributed to a new Sephardic style of both square and semi-cursive modes that owe their characteristics to the adoption of Italian and Ashkenazic features. This Sephardic style is well represented by the distinguished Renaissance scribe Abraham ben Mordechai Farrisol. Combining Sephardic square letters with Italian semi-cursive and Ashkenazic initials on the same page, his manuscripts are an example of the diversity of Jewish culture in northern Italy of the 15th and 16th centuries.

The artistic expression of his letters is manifested by a sharpened reed. The twisted calamus strokes convert the verticals from thin delicate lines into a thick additive (see the bottom of the *lamed*) (Figure 27).

Unlike other regional types of script, the Sephardic script is the only one to have developed a real fluency in its cursive script, probably due to the influence of Arabic calligraphy. There are two patterns of cursiveness: 'separated' and 'joint'. The former emerged before the latter, being manifested already in the 11th century, when morphological modifications of some proto-square letters, such as *'alef, he, qof*, and *tav*, developed into cursive.

The joint pattern, in which one letter is connected to the next, became, in the 14th–15th centuries, the best-known Sephardic cursive.

The Sephardic cursive script abounds with connections between letters and demonstrates a high level of simplification of the parts of various letters and the omission of calamus strokes. The texture of the script is dense and many of its letters are frequently joined together, either
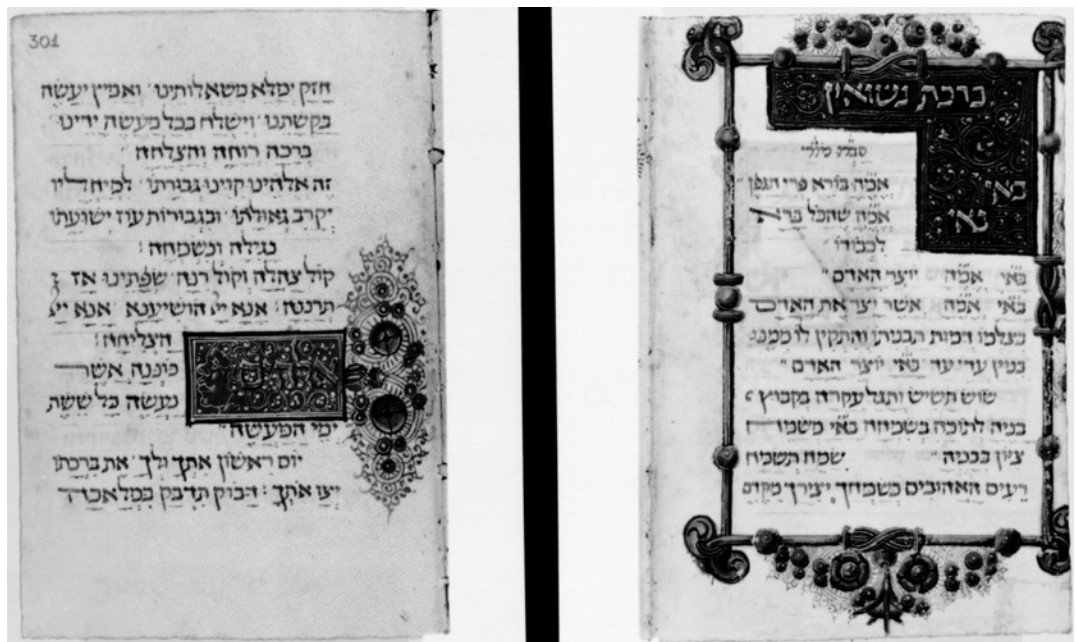
Figure 27. Jerusalem, National Library MS Heb. 8° 5492, fols. 301r, 305 v. Sephardic square script in Italy (Abraham ben Mordechai Farrisol), Mantua 1480

alef   tav   kof
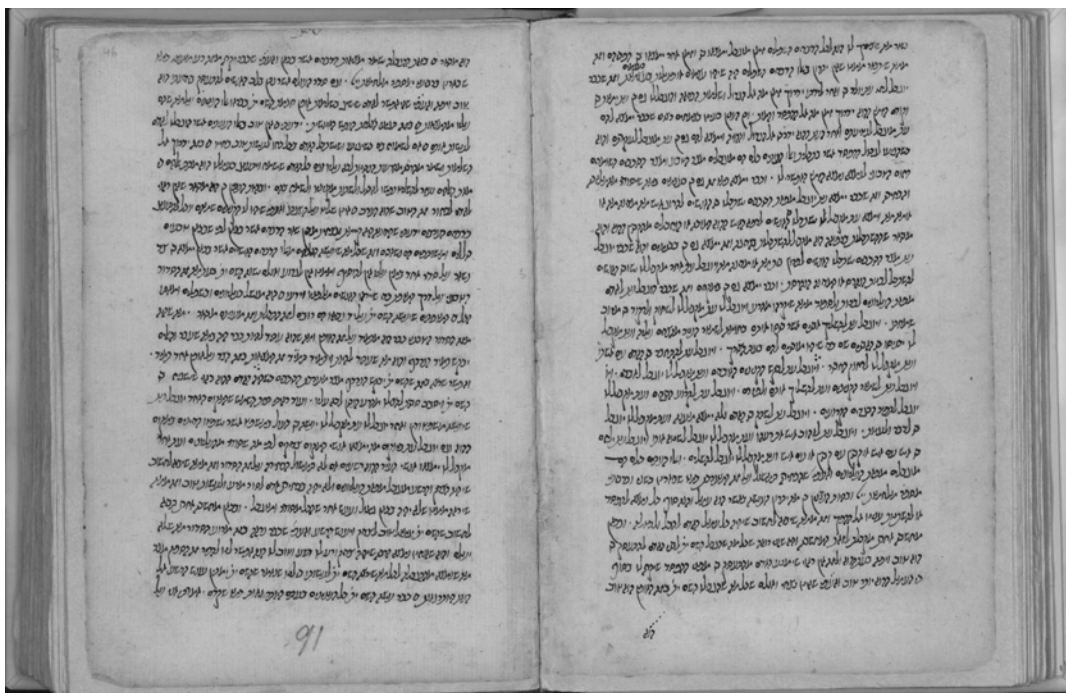
Figure 28. Sephardic cursive letters

Figure 29. Jerusalem, National Library MS Heb. 8° 931, fol. 45v. Sephardic joint cursive, 1406

by ligatures, in which two or more parts of several letters make a new form, or by connecting a part of a letter to that of the following letter. The ’*alef* is made of two connected curved components, by a single calamus stroke.

Ashkenazic. While the Ashkenazic semi-cursive script of the 15th–16th centuries preserved its calligraphic appearance, the square Ashkenazic script was radically changed. Very few professional Ashkenazic scribes retained the aesthetic quality of the old square script. Most manuscripts of this time reveal a common square script in which letters are built mostly of bare lines, lacking many of the decorative elements.

Although the handwriting of Yiṣḥaq (Isaac) Sofer still exhibits a random use of the droplet shape, his letters are composed of short plain verticals with minimal use of hairlines to adorn the horizontals (Figure 30).

The end of the 14th century witnessed the accelerated progress of cursiveness in the Ashkenazic script. Abandoning shading, the lines of the current 13th-century script became thinner, undulating, and more flexible, enlarging the broad movement of the horizontals. Several letters, such as *gimmel* and final *mem*, formed a cursive shape (Figure 31).

Concurrent with the evolution of the current mode commenced a new process of cursiveness in the calligraphic semi-cursive. Its texture retained calligraphic characteristics (Figure 32), but morphological changes in a few letters (such as *shin* and final *mem*) caused the development of a new semi-cursive mode—a calligraphic script that contains cursive letters. Gradually, while intensifying the resemblance to the Latin Gothic script, this calligraphic semi-cursive script developed into a cursive script.

רשיתא תשבחתא ונחמתא

דאמירן בעלמא ואמרו

אמן

מי שברך אבותינו אבהם

יצחק ויעקב הוא

ובר ר יעקב מתתיהו בן מהר

יצחק אתו ואת אשתו ואת כל

אשר לו בעבור שיתן נדב לכבור

התורה בשכר זה הקבם ישמרהו

ויצילהו מכל צרה ויבקהו וישלה

ברכה בכל מעשה ידיו ויכתבהו

בספר החיים עם כל ישראל

אמן

למבטיר

את דין המבורד

ושנון הקהל ברוד

יין המבורד לעלם ועד

Figure 30. Munich, Bayerische Statbibliothek MS Cod. Heb. 3, fol. 221v. Ashkenazic square script of the 15th century, Ulm 1459/60

Alef gimel dalet he het tet lamed me final mem zadi shin tav

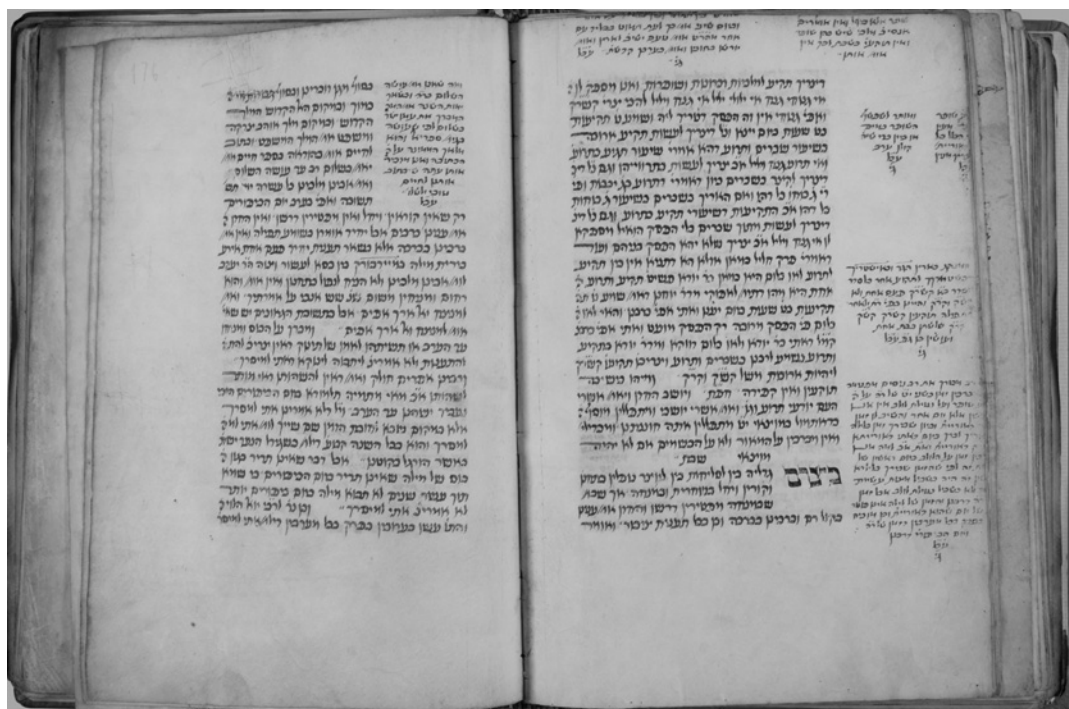Figure 31. Ashkenazic cursive of late 14th century-mid 15th century

Figure 32. Jerusalem, National Library MS Heb. 8° 4199/1, fol. 175v. Ashkenazic semi-cursive script of the 15th century, Germany? 1410

The increase in the number of cursive letters came to a climax in the cursive script of the 16th century (Figure 33). These letters are *gimmel*, final *mem, ṣadi* and *shin*. Due to a new flexibility of the texture and simplification of all letters, the cursive script became a full-fledged script, combining all the various features of a cursive script.

Italian. The two Italian modes—cursivized and semi-square—became intertwined in the 14th century, crystallizing into the calligraphic semi-cursive mode (Figure 34). Inspired by the Latin 'Rotunda', this semi-cursive script reached its calligraphic peak in the 15th century, becoming the formal Hebrew script in northern Italy, used by local scribes as well as by Sephardic or Ashkenazic immigrant scribes.

Bearing the impression of the Latin Gothic in Italy, the Italian semi-cursive letters, in contrast to the Ashkenazic ones, lack the sharpness of the northern Latin Gothic, rather being

executed with soft undulating and inclined lines. More than the 14th-century script, this semi-cursive displays heavy shading. Probably serving as the sole Italian calligraphy, the letters show affinity to the square by their straight horizontals.

The uniqeness of this script is prompted by the morphology of the ʾalef (Figure 35). The ʾalef of the 15th century loses its curved middle leg to give way to an accentuated angled thick line that serves as a base to two upper stings and as a top to two thin and inclined vertical lines.

Most likely in response to the vast development of semi-cursive, the Italian square almost completely vanished, giving way to the Ashkenazic and Sephardic square letters in use by immigrant as well as Italian scribes.

Beginning at the end of the 15th century, the tendency to write in a careless style dominated the calligraphic semi-cursive, converting the
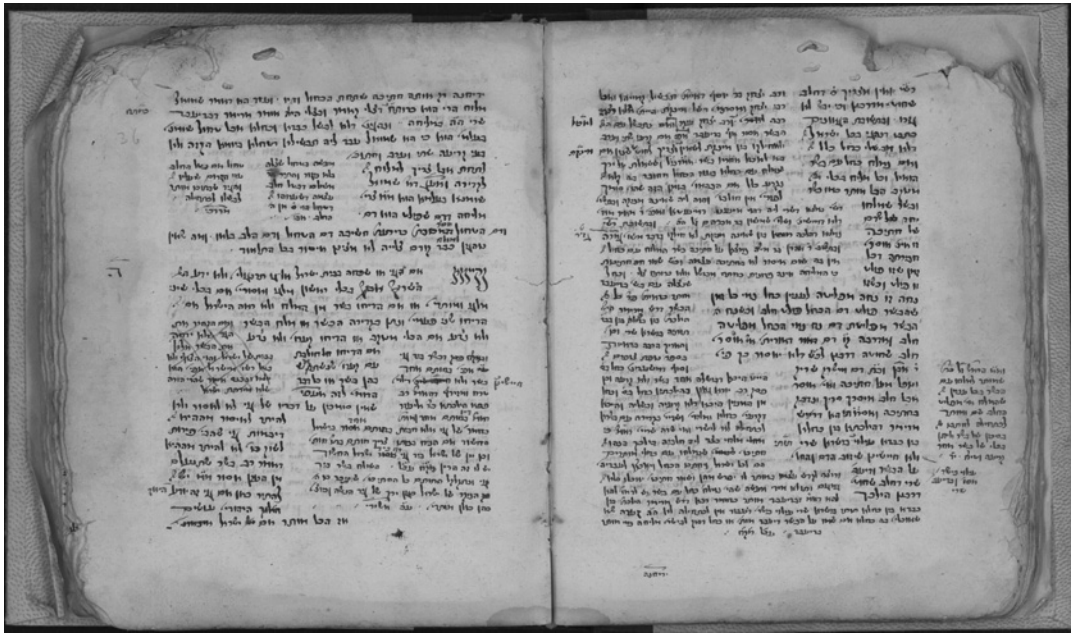
Figure 33. Jerusalem, National Library MS Heb. 8° 3626, fol. 35v. Ashkenazic cursive script of the 16th century, Germany? 1535/6
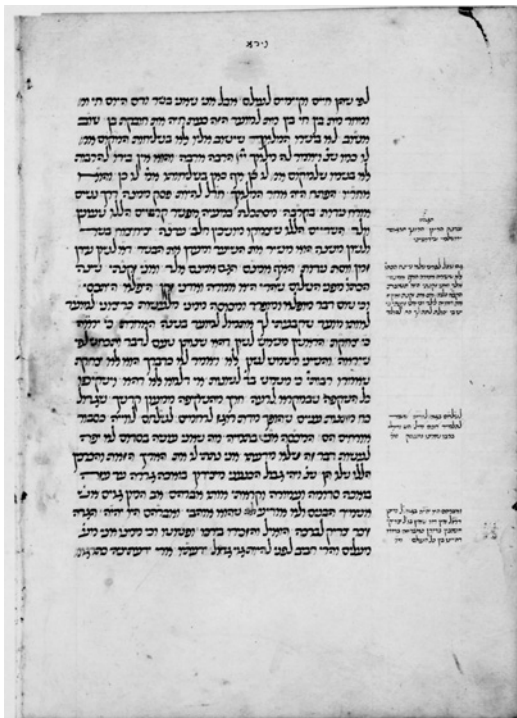

Figure 34. Jerusalem, National Library MS Heb. 8°. Italian semi-cursive script of the 15th century, Cortona 1462

elegant calligraphy of the semi-cursive into a cursive script.

The expulsion from Spain and the accelerated development of print in the 16th century may be the main reasons for the decline of the medieval Hebrew scripts. Starting at the beginning of the 16th century, the spread of the Sephardic script throughout the Ottoman Empire led to the fading of local distinctions between the various medieval scripts. Sephardic semi-cursive careless scripts, together with cursive and cursivized Ashkenazic scripts, overshadowed the distinctive script types of the Middle Ages. Yet, provincial and remote centers such as Yemen and Persia retained their medieval character. In the same vein, the eclectic Byzantine script was also preserved. Several variants of the square and semi-cursive Byzantine modes continued to be employed in countries of the Byzantine Empire after the 15th century as well.

From all the medieval script styles, it is the Ashkenazic cursive script that has continued its development up to the present day. Furthermore, Ashkenazic square letters as well as Sephardic square letters are the source for many fonts in modern Hebrew typography.

alef of the 14th century   **alef of the 15th century**

Figure 35. Italian semi-cursive ʾ*alef*

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Seals and Bullae

A seal is an object, usually made of stone, which has been designed and fashioned by a craftsman with carved shapes and/or letters. The mark of the seal, called a *bulla*, is its impression on a piece of tin, generally used to seal documents. Seals and bullae are known to have been in use throughout the ancient Near East from the 3rd millennium B.C.E., both in Egypt and in Mesopotamia. The main use of the seals was to authorize legal documents. Their presence represented the testimony and agreement of the seal's owner to the contents of a written document.

The number of bullae that have been preserved is greater than that of the seals that produced them, but condition of the former, pressed into relatively soft materials, is usually worse than that of the latter, which were carved in various kinds of stone. Moreover, most of the findings have come to scholars by means of the antiquities market, a problematic situation for two reasons: (1) the antiquities business is rife with forgeries; (2) it is impossible to ascertain the provenance (location and archeological stratum) where the seals and bullae were found. Evaluation of the seals and bullae that come into our possession is based on the small minority of findings which have been discovered in scientifically controlled excavations.

We know of Hebrew seals dated as early as the 8th century B.C.E. Early seals bore both