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The Calligrapher’s Materials, Methods, and Tools

To make beautiful writing, you must possess — in addition to knowledge and
talent — the materials and tools, such as pen, paper, and ink. Each of these means has
its own special importance in producing beautiful writing and material harmony.

— MAHMUD BEDREDDIN TAZIR (1893–1952)²⁶

Muslim calligraphers occupied the apex of a pyramid of specialized labor and trade
connections. Beyond the years of training and practice required to master the varied Arabic
scripts, calligraphers also devoted long hours to producing the pens, inks, and colorants
required for their art, or to modifying and refining materials for particular purposes
and effects. Those tools, supplies, and equipment that calligraphers did not themselves
produce drew on the skills of myriad artisans, such as smiths, cutlers, paper makers, gold
beaters, gilders, wire drawers, ceramicists, and makers of pen cases. In addition to the
pens, which were usually perishable, a calligrapher’s basic tool kit contained a penknife,
a small flat slab known as a maktas (Ar. mas'at) on which the pen would be positioned for
cutting, and paper scissors (FIG. 2).

Many of the tools assembled in this exhibition incorporate precious metals and
exotic substances from distant lands and seas. These materials demonstrate not only
the prosperity that individual calligraphers could attain, but also the network of trade
relations that connected calligraphers to coral and pearl divers, elephant hunters, and
tortoise trappers. Less picturesque, but more substantial, was the trade throughout
the Middle East in papers, inks, and pen reeds. By the 1800s, European-manufactured
papers and steel products had made significant inroads into Middle Eastern markets.

Once the writing had been completed for a work of calligraphy, the skills and talents
of yet another rank of artists and artisans were brought into play. After the calligrapher’s
ink had dried, a manuscript folio, qīf‘a, leha, or practice sheet, might be further
embellished with illumination or ornamental borders. The work of painters, gilders, and
leather workers was needed for the various bindings required for manuscripts and albums.
Usually the calligrapher, illuminator, painter, and bookbinder were separate specialists,
but depending on individual talent, economic status, and the diversification of
labor in a given time and place, these tasks might also be performed by one and the
same artist."
If calligraphers were often skilled at crafts other than writing, it is equally true that many craftsmen practiced calligraphy as a hobby or sideline and collected works of calligraphy by masters. In Muslim society, calligraphy was considered a worthwhile and ennobling pursuit for all classes. By way of example, one practice exercise (ṣiyah mashaq) is the work of a Qajar aristocrat, Firuz Mirza Nusrat al-Dawla, an uncle of Nasir al-Din Shah (fig. 54). A man of many talents besides the art of calligraphy, Firuz Mirza was a gifted musician, the author of a Persian-English dictionary and a text on world geography, and he served as governor of Fars (in southern Iran) from 1835 to 1855. Whether artists of high merit, government scribes, talented amateurs, or collectors and connoisseurs, a wide spectrum of Islamic society took up the pen, following the words of 'Ali b. Abi Talib: "Learn proficiency in writing, O man of good breeding! For what is writing if not an embellishment of the well-bred? If you are rich, your writing will be an adornment; if you are poor, it is the best way to earn a living."

The specialized knowledge needed to become a calligrapher was imparted personally from master to apprentice as part of the "chain" (A. silsilah) of transmission that connected successive generations of calligraphers. It is not surprising, however, that these writers also wrote about their teachers, their training, and the practical and esoteric aspects of being a calligrapher. Album prefaces, biographical dictionaries, and treatises devoted to the art of calligraphy comprise a significant literature that assembles the experience of generations of calligraphers regarding mundane aspects of the art, such as sound materials, preferred practices, and proper technique. Grounded in a system that fuses aesthetics and piety, these texts are also replete with admonitions for righteous behavior and references to mystical practices. Inherently repetitive, calligraphers’ treatises draw on sacred texts, popular lore, and proverbs to propagate a cosmology centered on the word and the writing of words.18

Calligraphers’ treatises reveal not only the allusive world in which these artists operated, but also their physical environment; the world of the senses. Calligraphers, like other artists, developed heightened sensitivities to the properties of the materials with which they worked. They discourse, for example, on the various textures that could be produced depending on how a paper is sized and burnished, how to influence the viscosity or adhesive qualities of inks, and how to produce desirable degrees of opacity or translucency and harmonious combinations of media, materials, and tools.

Beyond the fundamental “how-to” directions, these treatises open a window onto the intimacy between the calligrapher and the instruments of his art. The Persian calligrapher Sultan Ali Mashhadi, advises that the mafqa “must be clear and clean, so as to reflect your face.” Writing in the early 1900s, Mahmud Bedreddin Yazici counsels calligraphers planning to burnish a sheet of paper that they should first rub both paper and burnisher over their heads to absorb body oil as a lubricant. The different parts of a knife blade are named as if it were a living creature: the cutting edge is the mouth, the tip is the nose, and the back is the spine. Most thoroughly anthropomorphized is the pen itself: the writing edge is the tongue, and if the pen is badly cut, it cries out in pain.19
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Calligraphers’ tools form a tactile link with the artists themselves. Implements such as pens, knives, mutes, and scissors connect the visual art form with its handmade origin. It is a privilege to hold calligraphers’ tools, to feel their heft and balance, to note how beautifully they conform to the shape of the hand, how readily they respond to movement of the fingers. Eyes cannot completely grasp the qualities of these instruments, for they were designed for the hand first, and the eye second. One can best appreciate the accelerating spirals carved into the handle of a penknife by turning the ivory shaft in the hand. As beautiful as the juxtaposition of colors and materials in a knife handle may appear, it is quite another experience to feel the different temperatures of metal, ivory, and ebony. Opening a pair of scissors or lifting the lid of an inkwell, one sometimes finds decoration in unexpected places. Surely working with these tools — for example, feeling and hearing the perfect meshing of scissor blades slicing cleanly through paper — was an experience of another magnitude altogether.

This section will approach the world of the Muslim calligrapher from the perspective of the materials and tools of his art, as well as the products of the crafts and industries that supported his efforts. The discussion has been arranged according to a practical chronology: first, preparatory activities, and second, finishing activities. Given the sacred character of Arabic calligraphy as the primary vehicle for the preservation and dissemination of the divine revelation, it follows that the artists and artisans whose works appear here were linked by something more profound than commercial interests. By participating in the culture of calligraphy, they were consciously engaged in a moral universe — a universe, according to early Muslim exegetes, that was brought into existence by God’s creation of the pen.

Preparation

PENS
The first verses revealed to the Prophet Muhammad by the angel Gabriel mention the pen: “Read, for your Lord is most beneficent, Who taught by the pen, Taught man what he did not know” (6:1—5). This and other enigmatic references to the pen in the Qur’an inspired Muslim exegetes, historians, and poets to develop a rich literature that greatly elaborated the symbolism of the pen as the primordial agent of creation.20

The type of pen referred to in the Qur’an is probably the hollow reed, suggested by the use of the Arabic word אָלָמָן, derived from the Latin word for reed, calamus (Fig. 3). As the array of Arabic scripts developed over the centuries, the reed pen could be modified in a number of ways. The nib might be cut from the thicker end (the part of the reed nearer to the water as it grew in the marsh), or the thinner end, depending on the width of the script desired. The length to which the reed should be cut depended on the hand of the calligrapher and whether he intended to write fast or slow, and with a light or heavy stroke. Most importantly, the nib could be angled so that the horizontal and vertical strokes varied in thickness.21
Because there were limits to the versatility of the slender reed, calligraphers pressed different materials into service to meet the expanded range and function of calligraphy within Islamic cultures. Pens for larger (T. ṭelī; A./P. jali) scripts were fashioned from the thicker cane of bamboo plants or were carved from wood. Steel pens, introduced toward the end of the 1800s, produced a regular, fine line. But for most of the history of Islamic calligraphy, the traditional pen has been made out of reeds gathered from marshy banks. Reed pens were objects of trade across the entire Muslim world. A certain connoisseurship developed concerning the source of the reeds. Opinions varied, with most calligraphers preferring to use reeds cultivated in the coastal lands of the Persian Gulf, but others praising the qualities of reeds harvested from the banks of the Nile or the shores of the Caspian Sea.

Although it enjoyed primordial stature as an agent of creation, the reed pen favored by Muslim calligraphers was ephemeral, its lifespan measured in mere decades. Before it could be used for writing, a freshly harvested reed required preparation. First the pith had to be removed from the center; then the reed had to be tempered or matured to harden its fibers. The traditional Ottoman practice required burial for up to four years in a constantly moist environment.

Ideally, the seasoned reed is relatively straight and narrow and perfectly balanced between firmness and flexibility. If the reed is too firm, the ink will not flow easily. Of greater concern for the calligrapher, however, is an overly soft pen; it allows the ink to flow too freely; it will not flex consistently in vertical and horizontal directions; and it will wear down quickly, making it necessary to recut the nib frequently.

The successful cutting of the nib, or “opening of the pen,” was essential to the character of the writing. Several actions are involved in this operation. First the reed was shaved down at the writing end until the cavity of the reed was oval rather than circular. The circumference of the oval was further shaved to produce a projecting tip to form the nib. When carved to its desired width and thinned until it responded well to pressure, the nib was split in a line parallel to the body of the pen. This split allowed the nib to control the ink as the calligrapher wrote. Ottoman calligraphers sometimes referred to the shaped end of the reed as the mouth of the pen, and the nib as the tongue. With these operations completed, the pen was ready for cutting the writing edge — a critical action done in a single stroke.

The tapering scripts that dominated Islamic calligraphy from the 900s onward required that the nib be cut at an oblique slant. Because the act of cutting determined the quality of writing, a certain anxiety attended the operation, and calligraphers describe in detail the cutting of the nib on a diagonal, repeating the advice and admonitions of earlier masters. Cutting the tip of the pen to the perfect slant was an example of nasīb, or an initiation into mystical orders. Techniques and materials aside, the ability to cut a pen straight and true required that the pen cutter be straight and true of character. Masters who felt they had fallen from grace were heard to complain: “I have lost the cut of the pen.”
MAKTAS

The calligrapher had a number of tools to assist him in cutting the reed pen. The Arabic word maktā (T. maks), meaning “place to cut,” describes the small rectangular slab on which to lay the pen. Sometimes referred to as the “cushion” (T. yakt) of the pen, a maktā, in its simplest form, need be nothing more elaborate than the fingernail of the left thumb or a hard, dry piece of reed. Many writers, however, recommended working on a flat surface to make a precise cut. To hold the pen securely for the cut, maktas often feature a small groove or trough, sometimes called the “nest,” “bed,” or “home” of the pen.

Many calligraphers delighted in and were able to afford maktas whose materials and manufacture far exceeded their functional requirements. Ivory, bone, horn, tortoishell, steel, and gold were employed singly or in combination to fashion maktas of surpassing elegance to the eye and hand. To protect the edge of the penknife from dulling, maktas made of steel need a panel of a softer material fixed where the nib of the pen would be positioned for cutting.

The steel maktas in FIG. 4 have panels of bone, tortoishell, or ivory. Here, the two smaller maktas are radiant with gold decoration, the dark steel serving as a perfect foil

for the burnish.
The Arabic slab on the pen, a reflection of the left-acting on a feature of the pen. Materials and tortoiseshell, surpassing wood, would be perfect foil for the brighter metal. The technique of overlaying steel with gold was widely practiced in the period from the 1600s through 1800s and appears in the examples illustrated here on a variety of objects, including makta, knives, scissors, and pen cases. Overlay involved several steps. First, the surface of the steel was roughened by scratching transverse lines into it with a sharp, short-edged knife. Next, the design was drawn by laying an extremely thin gold wire onto the roughened surface. The wire was then hammered with the peen of a pointed hammer. The final step was burnishing with a polished agate. Where the gold wire was used densely, as for the nest and sunburst on the right-hand makta, the burnished area appears like solid gold.7

The makta made of steel and tortoiseshell, by comparison, has a restrained, almost severe, elegance. The steel is unpatterned except for openwork: a multilobed palmette billows from the top of the makta, and a pear shape, enclosing the word or name “Ahmad,” lightens the lower edge. Tortoiseshell has long been a highly coveted material for decorative work and was particularly in vogue in the Ottoman world from the 1500s through the 1800s. The hawksbill turtle, whose natural habitat was the coral reefs of warm oceans,

FIGURE 5
Makta, Turkey, 1700s–1800s, elephant ivory and walrus tusk, lengths range from 7.4 to 5.2 inches (18.7 to 13.2 cm).
was the preferred source of tortoiseshell, and it was assiduously hunted and traded. Although difficult to obtain, tortoiseshell was a versatile material: it was easy to carve and, once heated (usually by immersion in hot water), it was easy to shape.

Wonderfully smooth and virtually without grain, elephant ivory was considered the superior surface on which to cut a reed pen. Many of the most beautiful makats are fashioned entirely of ivory (fig. 5). Dense and heavy with a rich, subtle color, ivory can take detailed carving or simply a lustrous polish. That ivory is a perfect medium for carving was a mixed blessing. On the negative side, ivory is soft enough that a calligrapher might accidentally gouge the surface with the penknife. Yazir offers instruction for removing scratches and scrapes from ivory by rubbing it with a roughened cloth and olive oil.78

As these makats illustrate, the artistic offerings offered by ivory outweighed its drawbacks. An artist could work with a relatively free hand in ivory to create complex decorative schemes and fine openwork. The wide makat (second from right) is the least accomplished in the group in terms of its design and carving, but it demonstrates that even a lesser artist could execute complicated curves and lively openwork in ivory. With three grooves for the nest, it seems this makat permitted the carving of several pens at once. Two makats at the left are highly sophisticated in design and execution. Their decoration is carved in multiple levels of relief, and the two ridges that create the nest are daringly undercut. On both, the openwork forms a delicate web at the lowest level of relief. They bear the signatures of Fikri (third from the left) and Dede (left). The stark simplicity of the smallest makat in this group is somewhat exaggerated by the loss of its finial. Gilded inscriptions float against a grill of openwork, giving the name of the artist (Kasim) at the bottom, and invoking at the top the spiritual leader of the Mevlevi Sufi order.

The upper inscription (Ya harrat-i Mevlana) refers to the poet Jalal al-Din Rumi (d. 1273), who founded the Mevlevi Sufi order. The small makat offers a very schematic depiction of the dervish turban placed on a low table. In a Mevlevi lodge (T. tekke), the turban on its table occupies a central position, for it symbolizes the presence of Mevlana (“Our teacher”). In using the makat, the calligrapher would place his pen in the nest with the writing end pointing toward the turban. The pen would thus be facing the symbol of the Sufi sheikh as it was opened. In this respect, the person cutting the reed pen adopted an axial relationship to the Sufi sheikh’s symbol, which became an object of his contemplation. This axial relationship was akin to the architecture and ritual choreography of the Mevlevi semahanes, spaces for Mevlevi ritual sema, where the place designated for the Sufi sheikh was permanently marked by the presence of a “sheepskin” (T. port) on axis with the prayer niche (A. mihrab) but at the opposite side of the room. Mevlevi dervishes entered the space set before the post for sema—the sheikh standing or sitting on the sheepskin—and began their ritual before him.79

The close-up image in fig. 6 presents a more detailed and less abstract representation of the Mevlevi turban and table. This makat (second from left) is carved from walrus ivory, a less tractable material. Various tusks and bones could be substituted for ivory,
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