

The Significance of Yellow Dyed Warps in Cairene Rugs and a Group of Ottoman Court Prayer Rugs

Cairene ve Osmanlı Saray Halı Grubunda Görülen Sarı Renkli Çözgüsünün Anlamı

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ÖZET

Seljuk, Holbein ve Osmanlı Uşak halıları gibi Türk halılarında görünen çözgüler, genelde doğal rengi olan beyaz ya da kırmızı boyalıdır. Fakat "S" bükümlü ve asimetrik düğümlü olan Kahire halıları ve altın, gümüş telleriyle süslenmiş Osmanlı Saray seccade grubunda, sarıya boyalı çözgüler kullanılmaktadır. Sarıya boyalı çözgü kullanılmış olan başka halılar ise, aynı teknik özelliklerini taşıyan Memluk halılarıdır. Çözgülerinde kullanılan sarı boya maddelerinin menşesini incelediğimizde, Memluklerin, Akdeniz'de kolayca bulunabilen *boyacı sumacı* bitkilerinden çıkan *Fisetin* boya maddesinin dışında, İran, Afganistan ve Kuzey Pakistan, Hindistan bölgelerinden elde edilen *Iran Larkuspur* bitkilerinden çıkan *Quercetin*, *Isorhamnetin* ve *Kempferol* boya maddesi ile özel boyanmış yünleri, ya da boya bitkilerini özel olarak Mısır'a getirdiklerini anlıyoruz. Kahire ve Osmanlı Saray Seccadelerindeki sarı çözgülerin ise, Doğu Akdeniz ve Güneybatı Asya'da yetişen meşe ağacından çıkan *Tannin* boya maddesi ile boyandığı ortaya çıkmıştır. Bununla birlikte, tarihsel kaynakları incelediğimizde, dokuma çözgülerini sarıya boyamanın nedeni olarak, halının değerini arttırmak amacıyla, çok değerli olan altın ve gümüş telleri yerine, çözgüyü sarı rengine boyatarak halıya kullanmış oldukları düşünülmektedir. Doğu'daki altın telleri kullanma geleneğinden kaynaklanmış olan bu kültür, Türkler ve Moğolların İslam ülkelerine yayıl-

maları ile birlikte Memluklere geçtiğini ve Sultan I. Selim'in Mısır'ı zapt ettikten sonra, bu geleneğin Osmanlılar tarafından da devam ettirildiğini söyleyebiliriz.

Anahtar Kelimeler: (TR) Sarı renkli çözgüsü, Kahire halıları, Osmanlı saray halıları, Memluk halıları.

Keywords: Yellow dyed warps, Cairene rugs, Ottoman court prayer rugs, Mamluk carpets.

Generally Turkish carpets, including Seljuk, Holbein and Ottoman Uşak Carpets, are woven with white warps, which is the natural color of wool, or with red-dyed warps. However, so-called "Cairene" carpets and a group of Ottoman court prayer rugs have yellow-dyed woolen warps, instead of natural un-dyed white or red-dyed warps. Cairene carpets are made with "s"-spun yarns and have extraordinarily dense asymmetrical (Senneh) knotting. In addition to wool, cotton yarns are also used for the white knots, and silk sometimes makes an appearance in the warp as well. Pastel colors and extremely complex designs are predominant in these carpets. After the conquest of the Mamluk Dynasty by the Ottomans under Sultan Selim I. in 1517, these Cairene carpets began to be woven with Ottoman floral designs, but reflecting the typical color palette and weaving techniques of Mamluk carpets in Cairo, or possibly in Istanbul. (Photo 1, 2.) We learn from the book of *Ehl-i Hiref* that Persian and Egyptian weavers were taken to Istanbul after the conquest of Tabriz (1514) and Cairo (1517), and worked for the Otto-

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man court.¹ The *Narh Defteri* (registration book) of 1640 mentions that carpet weavers and wool were brought from Cairo to the Ottoman court after the Ottoman conquest of Egypt, and the Mamluk style of carpets began to be woven in Anatolia.²



Photo 1. Cairene carpet, 16th century (The Museum of Turkish and Islamic Art, inv. no. 153)



Photo 2. Yellow dyed warp of the Cairene carpet, 16th century (The Museum of Turkish and Islamic Art, inv. no. 153)

Mamluk carpets are characterized by yellow-dyed woolen warps, S-spun yarns, Asymmetrical knotting open to the left and subdivided designs incorporating geometric elements, stars and octagonal medallions within combinations of radial details. General-

ly, Mamluk carpets were made in Cairene workshops from approximately 1450 to 1550, although they were formerly attributed to Damascus or the Maghreb, North Africa. Actually, the carpet industry developed in Egypt from the 10th to the 13th centuries. The excellent carpets, fine kilims, big tents and curtains that were sought everywhere in the world were woven in Egyptian cities like El-Behnesa, Asyut, Dimyat and Ihmim, and exported to other countries³. However, no sources have been found to show whether or not these carpets were the same as Mamluk carpets. (Photo 3, 4.)



Photo 3. Mamluk carpet, the first half of the 16th century (The Textile Museum, Washington D.C., inv. no. R.16.2.2)



Photo 4. Yellow dyed warp of the Mamluk carpet, the first half of the 16th century (The Textile Museum, Washington D.C., inv. no. R.16.2.2)

¹ H. Uzunçarşılı, "Osmanlı Sarayı'nda Ehl-i Hiref Defteri". *Türk Tarih Kurum Bergeler, Türk Tarih Bergeleri Dergisi*, cilt XI, 1981-1986, sayı 15, Ankara, 1986, s. 57-58; A. Refik, *On Altıncı Asırda İstanbul Hayatı*, İstanbul, 1988, s. 133.

² M. S. Kütükoğlu, *Osmanlılarda Narh Müessesesi ve 1640 tarihli Narh Defteri*, İstanbul, 1983, s.70, 177.

³ R. B. Serjeant, *Islamic Textiles: Material for a History up to the Mongol Conquest*, Beirut: Librairie du Liban, 1972, p. 156.

As for Ottoman court carpets, there are 41 Ottoman court prayer rugs in the collection of the Textile Department at the Topkapı Palace Museum. These rugs are mostly made with “s” spun silk or wool yarns and woven with asymmetrical knotting. They are very high quality and woven with a high knot density, and have brilliant colors, often boldly enhanced with brocaded metal thread, and extremely varied designs. The issue of their age has been discussed for a long time, but thanks to extensive research using dye analysis, most of these carpets have been dated to the late 16th or early 17th century.⁴

In the Topkapı collection, there are 18 prayer rugs which are enhanced with metallic or silver threads, have yellow-dyed warps, and are woven with asymmetrical knotting.⁵ (13/ 2040, 2009, 2162, 2018, 2021, 2035, 2019, 2013, 2161, 2042, 2163, 2017, 2033, 2028, 2160, 2039, 2011 and 2008) (Photo 5, 6, 7, 8.) In addition to these, there are carpets on which fringes of yellow dyed silks are attached on the edge. (13/2030, 2032) (Photo 9, 10.) Those carpets are not enhanced with metal threads and have red, white or blue warps, and asymmetrical or sometimes symmetrical (Gördes) knotting. We can also see additional yellow selvages in some Ottoman textiles (Photo 11). Why did weavers of Mamluk, Cairene and Ottoman court carpets use yellow (and sometimes yellow-blue, or green) dyed warp, instead of red-dyed or natural white, in those carpets? I theorize that there must be a special meaning to it.

It is known that silk was used in China as long as six thousand years ago. Since the third century, silk fabrics had been exported to the Middle East, Mediterranean and European countries via the Silk Road. For a long time, China was the only place where silkworms were domesticated and silk fabric was made. China maintained an embargo against the export of silkworms and the means to produce silk. Today, the color of silk cocoons is generally white, but this was not always the case: originally cocoons were not white but instead came in colors such as yellow, pink or light green. We can surmise that this yellow

colored silk was used for weaving textiles. However, under the old process of silk production, colored cocoons, which contain a lot of colors in the ceresin substance on the surface of the cocoon, change their color to white when they are boiled and bleached. This could be the reason why there is very little historical information about yellow colored cocoons. Due to today’s technical advances, these golden cocoons can keep their color and are used not only in China, Japan and South Asia, but also in Europe.



Photo 5. Ottoman court prayer rug, 16th century (Topkapı Palace Museum, TSM 13/2040)



Photo 6. Yellow dyed warp of the Ottoman court prayer rug, 16th century (Topkapı Palace Museum, TSM 13/2040)

⁴ See: N. Enez, *Topkapı Sarayı Müzesi'nde Bulunan Halı-Seccade Grubunun Boyarmadde Analizleri Temel Alınarak Dokundukları Yer ve Dönemin Saptanması* (unpublished doktor thesis), İstanbul: Marmara University, 1988; *ibid.*, "Dye Research on the Prayer Rugs of the Topkapı Collection", *Oriental Carpet & Textile Studies*, vol. 5, no. 2, *The Salting Carpet*, California, 1999, p. 31-32; T. Kurtulus, *Topkapı Sarayı'ndaki Halı Seccadelerden Bir Gurubun İncelenmesi*, (unpublished master thesis, İstanbul: Mimar Sinan Üniversitesi Sosyal Bilimler Enstitüsü, 2001; *Turkish Carpets from the 13th-18th centuries*, İstanbul, 1996, pl. XIV-XV.

⁵ *The Topkapı Sarayı Museum*, 1987, pp. 40, 130-146.



Photo 7. Ottoman court prayer rug, 16th century (Topkapı Palace Museum, TSM 13/2162)



Photo 8. Yellow dyed warp of the Ottoman court prayer rug, 16th century (Topkapı Palace Museum, TSM 13/2162)



Photo 9. Ottoman court prayer rug, 16th century (Topkapı Palace Museum, TSM. 13/2032)



Photo 10. Yellow dyed fringe of the Ottoman court prayer rug, 16th century (Topkapı Palace Museum, TSM 13/2032)

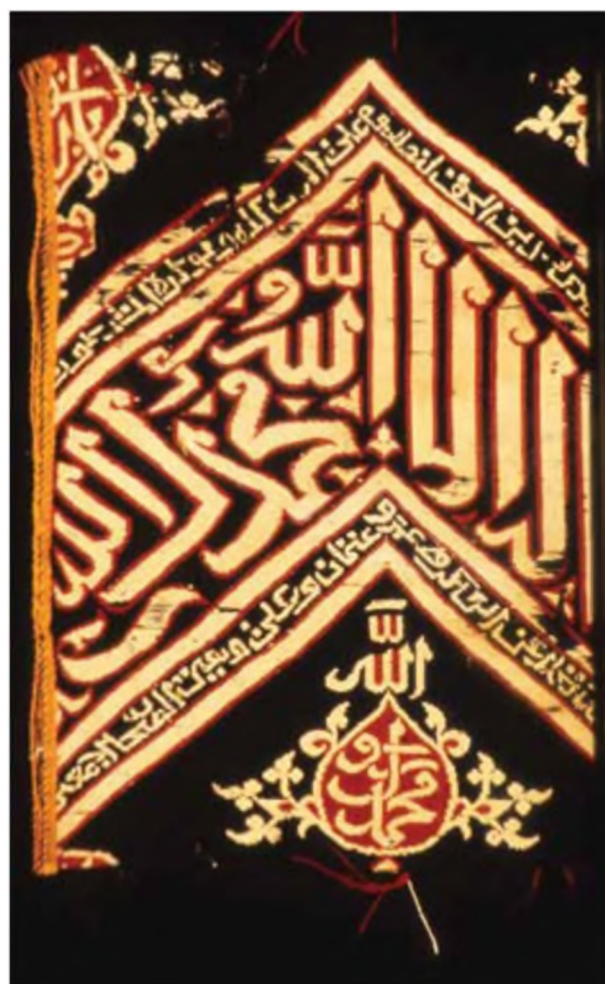


Photo 11. Kaaba textile fragment, Ottoman period, 16th century (Topkapı Palace Museum, TSM. 24/343)

In the Islamic period, we know that the Sassanian kings especially favored the color yellow, since it was the color of the sun. Silk cloth was a luxury item and had very great value, especially if it were gold-colored. Fabrics and garments made of silk were decorated and embroidered with golden and silver threads.⁶ Fatimid fabrics generally seem to have a

⁶ See: R.B.Serjeant, *Islamic Textiles: Material for a History up to the Mongol Conquest*, Beirut: Librairie du Liban, 1972.

golden yellow background. We know that yellow warps were used in both Byzantine and Far Eastern textiles.⁷ The Mamluks have also attributed importance to yellow and have used this color in their textiles, caftans, flags and tents (Photo 12).



Photo 12. Detail from the silk tunic coat excavated in Jabbal Adda, Upper Egypt, late 14th century. (The Museum of Islamic Art, Cairo, inv. no. 23903)

The reason for using a yellow warp in carpets may be that the weavers might have been attempting to imitate the expensive Eastern fabrics woven with gold and silver threads.⁸ Before the 13th century, saffron was used both for dyeing textiles, as well as paper and official documents, yellow.⁹ Saffron was very valuable and was cultivated in the south of Syria and in the south of Iran, including in Hamedan and Isfahan, and in Azerbaijan, Mecca and Yemen. In addition to saffron, agates from the Makri region in eastern Yemen were used to make a dye known as “el-Ceze” in southern Arabia, or by another name, “el-Uruk” (veins); this substance was widely used to dye textiles and clothes yellow.¹⁰ But it is thought that these dye sources were not used in carpets because they were unstable and not suitable for use on wool.¹¹

From the 9th - 10th centuries, Turkic people from Central Asia penetrated western Islamic countries

and settled in Iran, Syria, east Anatolia and Egypt, fleeing the Mongol advance. In Central Asia, there were artisans from the conquered northern Chinese territories as well as from the eastern Iranian world who worked together with local craftsmen for the Mongol court.¹² They brought with them the weaving techniques and decorative repertoires of their countries. According to several sources, during that period in the Iranian city of Kirman, silks with embroidery of gold or silver thread were woven by women; in Yezd, Mosul, Tabriz and Gilan, the silk industry and silk weaving was thriving, and the wool industry was developing in Tabaristan and Anatolia.¹³ In particular, Mosul developed into an important weaving center, especially for cotton weaving, because of its damp climate, productivity in the area, and the existence of successful and experienced artisans in the city. During the reign of Meliksah (r. 1072-1092), one of the Seljuk sultans, a covering that remained from the Ghaznavids period (963-1187) was brought to the Kaaba in Mecca by Salar- Horasan, the governor who was given the duty of Commander of the Pilgrimage (Emir ul-hac). This covering had been made of golden silk at the order of the Gaznavid sultan, Mahmud bin Shebuktekin, and his name was inscribed on it.¹⁴ The artisans in Turkmenistan or Central Asia continued to weave under the control of the Mongol Yuan State (1271-1368) for the Mamluk and European markets. The gorgeous silk textiles that belong to al-Nāsir Nāsir al-Din al-Hasan (1347-51, 1354-61) show the height of Mamluk art (Photo 8).

Considering it from several angles, the reason for using yellow warps in Mamluk carpets might be that the warps were used in place of golden gilded threads to show luxury and preciousness. It is possible to believe that these yellow colored warps have also been applied in the carpets traditionally defined as “Cairene” carpets, and in a group of Ottoman court prayer rugs, for the same reasons.

⁷ See: L. von Wilckens, *Mittelalterliche Seidenstoffe*, Berlin: Staatliche Museen zu Berlin, Kunstgewerbemuseum, 1992; *Soieries et autres de l'Antiquite au XVI. siecle* (catalogue), Paris: Musee National du Moyen Age Thermes de Cluny, 2004.

⁸ *Exhibition Islamic Art*, Ministry of Culture, U.A.R., 1969, p. 251.

⁹ A. Bakır, ‘Ortaçağ İslam Dünyasında Dokuma Sanayi’, *Belleten*, cilt: LXIV, S.241, Ankara: Türk Tarih Kurumu, 2001, s. 818.

¹⁰ *Ibid.*, s. 820.

¹¹ H. Böhmer, *Koek Boya*, Würzburg, 2002, pp. 158-159.

¹² J. Watt / A. Wardwell, *When Silk Was Gold*, New York, 1997, p. 128.

¹³ B. Spuler, *Iran Mogolları*, (translation: Cemal Köprülü), Ankara, 1957, s. 475.

¹⁴ A. Ocak, *Selçukların Dini Siyaseti (1040-1092)*, İstanbul: Tarih ve Tabiat Vakfı Yayını, 2004, s. 204.



Photo 13. Detail from the Mamluk Mahmil tent, belonged to al-Aḥaf Qansūh al- Gauri (906/1501-922/1516), 16th century (Topkapı Palace Museum, TSM. 13/263)



Photo 14. Detail from the Mamluk textile, 14th century, (Topkapı Palace Museum, TSM. 13/1689)

In order to clarify the meaning of a yellow dyed warp, a color analysis of the yellow warp, weft and pile in the five Mamluk carpets at the Museum für Angewandte Kunst, Vienna (T8345, T8346, T8332, T8382, T8348), pile in the Mamluk carpet at the Textile Museum, Washington D.C., (Inv.1945.49.1) and an analysis of samples from the Mamluk Mahmil tent (TSM. 31/263) at the Topkapı Palace Museum, that belonged to al-Aḥaf Qānsuh al- Gauri (906/1501-922/1516) was carried out by Dr. Harald Böhmer and Prof. Dr. Recep Karadağ at the Marmara University Natural Dyes Laboratory, during the time I was doing research for my Ph.D. on Mamluk Carpets¹⁵.

To determine whether the dye color used in the Ottoman court prayer rugs was the same as in Mamluk carpets, an analysis of samples from the Ottoman rugs (TSM. 13/2008 and 13/2035) at the Topkapı Palace Museum was carried out by Prof. Dr. Karadağ at the DATU (Natural Dyes Research and Development Laboratory / Doğal Boya Araştırma ve Geliştirme Laboratuvarı). DATU is one of the world's most advanced laboratories on the research and development of natural dyes, and was established by the Turkish Cultural Foundation, at which I am currently working, with generous support from the Turkish design and manufacturing brand *Armaggan*. We collaborate with museums around the world and provide the opportunity to analyze dye materials.

Results of Analysis: Examples at the Österreichisches Museum für Angewandte Kunst, Vienna

T8345 (warp, yellow) Fisetin, Cotinus coggygia (Dyer's Sumac)

T8345 (weft, yellow) Quercetin Isorhamnetin Kempferol Delphinium semibarbatum (Persian Larkspur)

T8345 (knot, dark green) Quercetin Isorhamnetin Kempferol Delphinium semibarbatum (Persian Larkspur)

T8346 (warp, yellow) Fisetin, Cotinus coggygia (Dyer's Sumac)

T8346 (weft, yellow) Quercetin Isorhamnetin Kempferol Delphinium semibarbatum (Persian Larkspur)

T8346 (knot, orange yellow) Fisetin, Cotinus coggygia (Dyer's Sumac)

T8332 (warp, orange yellow) Fisetin, Cotinus coggygia (Dyer's Sumac)

T8332 (knot, dark green) Fisetin, Cotinus coggygia (Dyer's Sumac) Indigo, Indigofera tinctoria

T8382 (warp, green-yellow) Quercetin Isorhamnetin Kempferol Delphinium semibarbatum (Persian Larkspur)

T8382 (weft, golden yellow) Quercetin Isorhamnetin Kempferol Delphinium semibarbatum (Persian Larkspur)

T8382 (knot, green) Quercetin Isorhamnetin Kempferol, Delphinium semibarbatum (Persian Larkspur) Indigo, Indigofera tinctoria

T8348 (warp, yellow) Quercetin Isorhamnetin Kempferol Delphinium semibarbatum (Persian Larkspur)

T8348 (knot, light yellow) Quercetin Isorhamnetin Kempferol Delphinium semibarbatum (Persian Larkspur)

Results of Analysis: the Mamluk Mahmil Tent, Topkapı Palace Museum (TSM 31/ 263)

Golden yellow warp Quercetin Isorhamnetin Kempferol Delphinium semibarbatum (Persian Larkspur)

Result of Analysis: the Textile Museum, Washington D.C., (inv.no. 1965.49.1)

Yellow knot 1 Fisetin + X¹⁶, Fisetin, Cotinus coggygia (Dyer's Sumac)

Yellow knot 2 Fisetin + X, Fisetin, Cotinus coggygia (Dyer's Sumac)

Result of Analysis: the Ottoman Court Carpet, Topkapı Palace Museum (TSM. 13/2008, 13/2035)

TSM 13/2008 (warp) Tannins, Quercus boissieri (Dyer's Oak)

TSM 13/2040 (warp) Tannins, Quercus boissieri (Dyer's Oak)

According to the test results from Mamluk carpets and textiles, of 16 warps, wefts and pile yellow colored thread samples, seven were *Fisetin* dye, and the remaining nine were shown to have been

¹⁵ S. Okumura, *The Influence of Turkic Culture on Mamluk Carpets*, Istanbul: Organization of Islamic Conference Research Centre for Islamic History, Art and Culture, 2007, pp. 47-53.

¹⁶ X- it could not be proven what dye substance was used for the dye.

dyed with *Quercetin*, *Isorhamnetin* and *Kempferol* dye substances. The *Fisetin* substance is the dye basis of *Dyer's Sumac* and was traded in the Mediterranean region and Europe¹⁷. As for the substances *Quercetin*, *Isorhamnetin* and *Kempferol*, the plant that provided the dyeing subject came from *Iran Larkuspur*, and it grows in the mountains of Iran, Afghanistan, northern Pakistan and India¹⁸. It is surprising to come across the substances *Quercetin*, *Isorhamnetin* and *Kempferol* in Mamluk carpets, which are geographically remote from their sources. This plant must have been specially imported into Egypt because it didn't grow in that country. In the Geniza documents, it is written that warp threads for fabrics, presumably silks with sufficient twist which is strong enough to act as warp, could not be purchased in Egypt but from other places.¹⁹ This information makes us think that weavers might have brought not only the plant but also the dyed warps threads themselves from Central Asia, including from Iran, Afghanistan and northern Pakistan. After all, it is possible that carpet weavers being brought from that region, continued to use imported yellow dye material. In addition, they used it in combination with the local dye *Fisetin*.

When we see the dye analysis results from Ottoman court prayer rugs, both of the samples of yellow warps show that they were dyed with *Tannins* dye substance. *Tannin* is the dye basis of *Dyer's Oak*, and can be found in the *Quercus infectoria* of some species of oak in the Eastern Mediterranean areas of Turkey and adjacent areas of Southwestern Asia. According to the dye analysis, done by Prof. Karadağ in the DATU, most of yellow colored threads in the Ottoman textiles belonging to the 16th century were dyed with *Tannins*.²⁰

All evidence suggests that the yellow colored warp was very important and used to add a resemblance to precious golden threads. There is no doubt that the yellow warp was one aspect of Turkmen and Mongol cultures, which was brought into Egypt when Turkic people migrated into the Mamluk territories. It had been absorbed and was developed in the Mamluk Dynasty, which the Kipchak Turks had founded. This cultural use of yellow warps became a tradition and was carried on among Turkic weavers. It continued to be used in Cairene carpets and Ottoman court prayer

rugs, using dye materials which can be found in Anatolia. This tradition can also be seen in some Turkmen carpets until the 19th century.

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¹⁷ Böhmer 2002, p. 154.

¹⁸ *ibid*, p. 185.

¹⁹ A. Muthesius, *Studies in Byzantine and Islamic Silk Weavings*. London: the Pindar Press, 1995, p. 124.

²⁰ I would like to thank to Prof. Dr. Recep Karadağ for this information.