33

Journal Homepage: http://journal.richt.ir/mbp/
P-ISSN: 2645-5048 & E-ISSN: 2645-5706
Parseh Journal of Archaeological Studies || Vol. 9 || No. 33 || 2025 ||

Identification of the Waq Tree in the Luster Tiles of Takht Suleiman

Negar Kafili[1], **Gholamreza Rahmani**[2]

Type of Article: **Research**
Pp: 329-349
Received: 2024/10/13; Revised: 2024/12/09; Accepted: 2024/12/30
https://doi.org/10.61882/PJAS.841.1097

Abstract

Pottery has long been one of the key mediums for expressing cultural elements in Iran. The decorative motifs used in this art form are deeply rooted in Iranian culture, literature, religion, and political contexts, immortalized through the innovative creativity of Iranian artists. Among these motifs, the "Waq Tree" or "Talking Tree" stands out as one of the most prominent decorative elements, particularly gaining attention during the Ilkhanid period. This motif, which combines natural, imaginative, and mythical elements, was employed in the luster tiles of Takht-e Soleyman and reflects a profound connection between humans, nature, and animals. This study aims to address why this motif was prominently featured and executed by artists during the early Ilkhanid rule at Abaqa Khan's palace in Takht-e Soleyman. It seeks to explore both visual representations of the examples and their associated cultural foundations. Using a descriptive, analytical, and historical approach, supported by imaging of historical samples, this research concludes that the painters of Takht-e Soleyman's luster tiles depicted wild animals such as deer, gazelles, and rabbits instead of humans—who are typically central to illustrations of the Talking Tree. The choice of wild animals over human figures may reflect the nature-oriented tendencies of the Seljuks and Mongols. This selection also highlights the influence of Mongol culture on Iranian art—a culture that introduced animal anthropomorphism as a prominent element in literature and art. The Waq Tree, rooted in Iranian and global folklore, symbolizes a deep connection between humans, nature, and living beings. This mythological concept is intertwined with ideas such as the sanctity of nature and the bond between the human world and the natural world. The depiction of this motif on Takht-e Soleyman's luster tiles demonstrates the artists' efforts to convey these concepts, which were innovatively reimagined during the Ilkhanid era.

Keywords: Waq Tree, Luster Tile, Takht-e Soleyman Lusterware, Takht-e Soleyman Pottery, Iranian Pottery.

Parseh Journal of Archaeological Studies (PJAS)
Journal of Archeology Department of Archeology Research Institute, Cultural Heritage and Tourism Research Institute (RICHT), Tehran, Iran

Publisher: *Cultural Heritage and Tourism Research Institute (RICHT).*

1. Assistant Professor, Department of Islamic Art, Faculty of Conservation and Restoration, Iran University of Art, Tehran, Iran (Corresponding Author).
Email: negar.kafili@art.ac.ir
3. Assistant Professor, Research Center for Conservation of Cultural Relics, Research Institute for Cultural Heritage and Tourism (RICHT), Tehran, Iran.

Citations: Kafili, N. & Rahmani, G., (2025). "Identification of the Waq Tree in the Luster Tiles of Takht Suleiman". *Parseh J Archaeol Stud.,* 9(33): 329-349. https://doi.org/10.61882/PJAS.841.1097
Homepage of this Article: https://journal.richt.ir/mbp/article-1-1097-en.html

Introduction

The Waq motif represents the sixth fundamental principle of Persian painting (Negargari), officially introduced into Iranian book illustration from the 12th century CE (Qazi Ahmad Monshi Qomi, 1987: 132). This motif features an intertwining of vegetal elements with human and animal masks, frequently appearing in manuscript margins, book covers, and single-page illustrations.

In historical and literary texts, the meaning of the Waq Tree motif has evolved based on geographical interpretations, yet its origins trace back to the mythical tree in the "Waq Waq Islands" (Azhand, 2009: 5). This legendary tree, deeply rooted in Persian folklore, gradually found its way into Islamic art and culture, influencing decorative patterns and artistic themes. As noted earlier, the Waq motif is one of the seven core principles of Persian miniature painting, characterized by the fusion of plant elements with anthropomorphic and zoomorphic figures, a style that became widespread in Persian art from the 12th century CE onward.

Additionally, this motif appears in Persian carpet weaving, particularly in the Safavid period, where it is incorporated into Mihrab designs, symbolizing the Tree of Life (Abdollahi Nagani *et al.,* 2016). This association reflects a profound connection between art and spiritual symbolism. One of the most significant platforms for the depiction of the Waq motif was lusterware ceramics, specifically in the luster tiles of Takht-e Soleyman, where the motif is beautifully integrated into arabesque (Islimi) and floral (Khatai) patterns. The central research question of this study investigates why and how the Waq motif was depicted on luster tiles. The primary objective is to explore the cultural foundations of the Waq motif in luster tiles and to identify its various representations in the luster tiles of Takht-e Soleyman. sources were used in the present study. The first group includes sources related to the speaking tree (Wāq tree). These comprise ancient texts on the Wāq Islands, including multiple manuscripts of al-Masālik wa al-Mamālik, with authors such as Ibn Faqih and Mustawfi, which discuss the history of the Wāq tree and its mythological roots. Additionally, early texts provide detailed descriptions of various aspects of this legendary element. Contemporary writings on the Wāq tree focus on its nature, history, and mythological origins, as well as its connections with ancient tales and legends. Some studies also examine Wāq tree motifs in visual arts, including painting, carpet weaving, ceramics, and metalwork (Azhand, 2021; Taheri, 2011; Takhti & Afhami, 2011; Deyanti, 2020; Alhadi, 2000; Kamandlou & Rajabi, 2015).

The second group of sources addresses Takht-e Soleyman, exploring its archaeological aspects and cultural significance. Many sources trace the history of Takht-e Soleyman from the pre-Islamic period through various historical eras, and provide comprehensive information on discovered structures, including kilns and lusterware ceramics, along

with catalogues of unearthed artifacts (Huff, 2002; Huff, 2019; Tomoko, 1997; Schmidt, 1997; Naumann, 1995; Sarfaraz, 1968; Khakzad, 2008). These studies also discuss historical transformations, including the neglect of the site after the 5th century AH and its renewed attention during the Ilkhanid period (Beyg-Mohamadpour & Hajizadeh Bastani, 2021; Amanollahi, 2015), reflecting political and social changes in Iran. Some sources focus on the typology of Takht-e Soleyman ceramics (Kafili *et al.,* 2024), providing comprehensive analyses of all ceramic materials from the site. A subset of these sources addresses lusterware ceramics, which are diverse and examine different dimensions of this craft, typically including historical context, production techniques, and examples of Iranian ceramics. Relevant chapters offer detailed information on characteristics, manufacturing stages, and the cultural and artistic influences of Islamic-era Iranian ceramics, including production methods for glazes and the origins of luster tiles, as well as iconography and formal analysis of their motifs. Many articles emphasize decorative and aesthetic aspects, with less focus on historical, social, or economic dimensions of luster tile production (Watson, 1975; Kiani & Karimi, 1985; Sedighian & Haj Naseri, 2016; Mirshafiei & Mohammadzadeh, 2015; Allen, 2014). Only one study has conducted a typological analysis of lusterware motifs in Takht-e Soleyman, examining the visual characteristics of different motif types in four sections (Kafili, 2023). The distinguishing feature of the present study is that none of the previous sources specifically focus on the Wāq tree motif in Takht-e Soleyman tiles, making this research the first dedicated study on this topic.

Research Methodology: According to the research objectives, this study is fundamental in nature, and based on its method and content, it employs a combined descriptive–analytical and historical approach. Data collection methods include both library-based and fieldwork research.

The library studies encompass a wide range of scholarly and historical sources—books and academic articles in the fields of art, history, and geography, as well as archaeological documentation, historical reports, and research projects available in both domestic and international databases concerning the Takht-e Soleyman archaeological site.

The fieldwork component was conducted through on-site observation and photographic documentation. For this purpose, the researcher personally visited the Takht-e Soleyman World Heritage site, where the selected artefacts were observed, photographed, examined, and analyzed.

The statistical population of this study comprises all ceramic tiles preserved in the pottery storage collection of the Takht-e Soleyman World Heritage site, amounting to approximately 1,400 fragments, most of which are in a broken or incomplete condition.

The statistical sample consists of all tiles depicting the motif of the Waqwaq tree, which total fifteen tiles selected from the broader corpus for detailed analysis.

The Tree of Waqwaq in the Cultural Context

In ancient literary and historical texts, discussions concerning the Tree of Waqwaq can be traced and interpreted in relation to its geographical context. A general survey reveals that the semantic formation of this mythical tree results from the intersection of diverse cultural reflections and transformations that generated multiple layers of meaning. Consequently, information surrounding the Waqwaq tree lacks uniformity across sources. One of the earliest geographers to mention the Island of Waqwaq was Ibn Khordadbeh, who in his work Al-Masālik wa al-Mamālik ("Routes and Kingdoms") described: "In the East of China lies the land of Waqwaq, where gold is abundant; its inhabitants make chains for dogs and collars for monkeys out of gold, and from there garments woven with gold thread are brought for sale; there is also fine ebony in Waqwaq" (Al-Hadi, 2000: 15). In the geographical treatise Hudūd al-'Ālam min al-Maghrib ilā al-Mashriq (372 AH/982 CE), it is recorded: "Waqwaq is a province of China, its land rich in gold mines. They adorn their dogs with golden collars, and their chiefs wear necklaces of gold, though at great cost. The people are dark-skinned and unclothed; it is a hot, barren land, and its chief city is Maqīs, a small town and a trading post for merchants" (Anonymous, 1961: 60). Other early Islamic geographers such as Istakhri, Ibn Hawqal, al-Mas'udi, Mostowfi, and others also provided accounts of the geographical position of the Island of Waqwaq. Al-Mas'udi, referring to its proximity to the coast of present-day Mozambique, wrote: "The lands of Sofala and Waqwaq are among the remotest parts of the country of Zanj" (Masʿūdī, 1995, vol. 1: 424). Istakhri similarly noted a connection between China and Waqwaq: "It lies upon the surrounding ocean at the limit of China and the land of Waqwaq". (Al-Hadi, 2000: 16) Ibn al-Faqih mentioned both "Waqwaq al-Sīn" (Waqwaq of China) and "Waqwaq al-Yaman" (Waqwaq of Yemen). Some scholars have interpreted the human-shaped fruit of the Waqwaq tree as a metaphor for the coconut or other similar fruits. Others have suggested that the term "Waqwaq" derives from the tribe of black people "Pakpak" (rendered in Arabic as Fakfak) in Sumatra, or perhaps from the name of a local tree, Bkuwong, or Wak-wak in Madagascar (Mosaheb, 1995).

In The Thousand and One Nights (Hezaro Yek Shab) (night 806), in the tale of Hasan of Basra and Nūr al-Nisā, Shahrzad recounts the story of Hasan's wife being trapped on the Island of Waqwaq: "You will never reach the islands of Waqwaq, even if the flying jinn and the moving stars were at your command, for between you and the islands lie seven vast valleys, seven endless seas, and seven lofty mountains. I adjure you by God,

abandon this thought and cast not yourself into peril". (Tasuji Tabrizi, 2004: 1850). In Al-Masālik wa al-Mamālik, the seas of Waqwaq are named as the Indian Sea, Sea of Zanj, Abyssinian Sea, and the Persian Gulf. To summarise, Islamic authors of the medieval period generally described Waqwaq as one or several islands inhabited by dark-skinned people speaking their own language, where gold was abundant, and trees bore fruit shaped like human heads. Both the tree and its fruit were known as Waqwaq or Waq-Waq. European scholars later associated the name with various islands or archipelagos across the Indian Ocean and the Pacific, most often with Madagascar and Sumatra, though some extended it as far as eastern Africa, Borneo, Japan, and the Philippines (Takhti & Afhami, 2011). According to Wilkinson (1907: 67). some traditions even linked Waqwaq to Japan, where dog-headed people were said to dwell, the name "Wok Wok" being a Chinese phonetic form. Others described the Waqwaq as islands in the Chinese Sea, home to trees whose fruits resembled human faces and emitted the sound "waq waq" when ripened or stirred by the wind—hence the name (Azhan , 2021: 163).

These myths exist in several versions. In one, the tree bears the heads of the sons of Adam upon its branches, which cry "Waq! Waq!" at sunrise and sunset, chanting hymns to the Creator. In other narratives, the tree's female-shaped fruits, uttering the cry "Waqwaq", symbolise omens or portents of evil (Taheri, 2011: 47). The concept of Waqwaq is thus always intertwined with anthropomorphic and phytomorphic imagery—a fusion of the human, animal, and vegetal. Scholars generally interpret the term "Waqwaq" primarily as referring to the Tree of Waqwaq.

According to Dehkhoda's Lexicon, "Waqwaq is the name of a marvellous tree in India that blooms in the morning and sheds its leaves at night; its leaves are in the form of human figures. When day approaches, its leaves tremble; at night they fall. Another source calls it a Chinese tree resembling walnut or cucumber, whose fruit bears human faces, and when ripe, utters several cries of 'waq waq' before splitting open; the people of the Chinese islands take augury from this sound. 'Waq' or 'Waq-Waq' is also said to be the name of a bird, and even the croak of a frog". (Dehkhoda, s.v. Waqwaq: 4955). Similarly, Moein's Persian Dictionary explains: "The name Waqwaq (or Waqwaq) has been applied to several regions. The Tree of Waqwaq, whose earliest mention appears in ancient Chinese texts, is regarded as part of that nation's mythology; its fruits are said to take the form of human beings". (Moein, 1973: 2185)

The mythical tree appears under various spellings—Waqwaq, Waqwaq, Wak Wak, etc. Khalaf Tabrizi (1063 AH, 1171) describes it as "a fabulous tree which blooms in the morning and withers at dusk; its fruit is said to take the form of humans and animals and to speak."In Hudūd al-'Ālam min al-Maghrib ilā al-Mashriq, animals are described and named symbolically; there, the frog is called Waq. Himyari recounts stories of

Waqwaq-speaking women growing upon trees, a tale also repeated by Zohri. Likewise, the Jahān-nāmeh (Book of the World) tells of a plant shaped like a human that dies once cut from its tree (Al-Hadi, 2000: 17). Persian literary and mythological sources also preserve this legend. Ferdowsi's Shahnameh narrates Alexander's encounter with this wondrous tree (Ghashghaei & Mohammadzadeh, 2022). From a genealogical perspective of the Waqwaq motif, one must consider its central element—the tree. Since ancient times, Iranians have attributed profound spiritual and cosmological significance to trees, grounded in religious and ritual beliefs. In ancient Iran, the tree was venerated as the axis of the universe, and given its vital connection to human existence, many cultures regarded it as sacred. The human–tree relationship reached such depth that in some traditions, humans were believed to be born from trees, while in other imagery, trees grew from the bodies of humans (Taheri, 2011: 44). Among texts closer to Iranian culture, besides the Shahnameh, the Qur'an also makes reference to symbolic trees. The "Tree of Zaqqum" (Shajarat al-Zaqqum), growing at the depths of Hell, is described as the infernal counterpart to the celestial "Tree of Sidrat al-Muntahā". Its fruits, shaped like the heads of devils, are the food of the damned (Takhti & Afhami, 2011).

The Qur'an mentions this tree in three verses—Sūrat al-Ṣāffāt 62–66, Sūrat al-Dukhān 43, and Sūrat al-Wāqi'ah 52—describing its fruit as "like the heads of devils," which boil in the stomachs of sinners like molten metal, who then drink scalding water as punishment (Diyanti, 2020: 426). From the concepts and sources discussed, it can be concluded that the Tree of Waqwaq is a mythical tree bearing human- and animal-headed fruits, mentioned across both Eastern and Western texts with varied symbolic meanings.

Representation of the Waqwaq Motif in the Luster Tiles of Takht-e Soleyman

Today, Takht-e Soleyman is recognised as a significant historical site, situated along the route from Bijar to Shahin Dezh, approximately 30 kilometres northeast of Takab, in the southeastern part of West Azerbaijan Province, Iran, at 40°36′ N latitude and 30°45′ E longitude. Historically, the site was set within a verdant landscape at an altitude of 2,000 metres above sea level, on the slopes of the Balkash Mountains, with the 3332-metre peak of Belqis rising prominently nearby (Khakzad, 2008).

Takht-e Soleyman, historically referred to as Shiz and Ganjak in earlier sources, is believed by archaeologists to correspond to the location of the Azar Gushnasp Fire Temple. Archaeological excavations at the site indicate that the region was inhabited from the mid-first millennium BCE, during the Achaemenid period. At that time, Takht-e Soleyman comprised a small village with simple and irregular houses built from rubble stone and mud mortar atop a hill located northwest of the Takht-e Soleyman lake.

Fig. 1: Geographical location of Takht-e Soleyman (Khakzad, 2008: 13).

This settlement persisted for a considerable period, but, due to unknown reasons, was suddenly abandoned and remained uninhabited for decades (Huff, 1989: 2).

During the Parthian period, the site was reoccupied. Although archaeological findings from this era are limited, the circular layout of the settlement reflects Parthian urban design principles (Sarfaraz, 1968: 26). Additional evidence suggests that Takht-e Soleyman corresponds to the ancient Ganjak or Shiz, considered among the major urban centers of Parthian Azerbaijan. A small fortress was constructed on the northern shore of the lake, from which a semi-tower and surrounding walls remain. Later, during the Sasanian era, with the establishment of palatial complexes and the Azar Gushnasp Fire Temple, the site gained heightened significance as a religious and cultural center (Huff, 2002).

The modern name Takht-e Soleyman is of relatively recent origin. Some sources attempt to link it to the Sasanian city of Ganzak, though this remains speculative (Schmidt, 1997, Vol. 1: 183). Islamic geographers and historians consistently identified the site as Shiz (Ganjak = Ganjak) of the Sasanian period (Jackson, 2009, Vol. 1: 144). During the Ilkhanid period, it was known by names such as Sturiq, Safuriq, Saquriq, and Sturoq, and it appears that the designation Takht-e Soleyman became common only after the 7th century AH. Mustawfi is the only historian to mention the site as Sturiq or Saqurliq, reflecting the Mongol nomenclature (Mostawfi, 1957, Vol. 1: 64, 70). Following the Arab invasion, the site's name changed from Ganjak to Shiz. After a relatively long period of decline, Abaqa Khan (r. 1265–1282 CE), the second Ilkhanid ruler, undertook renovations, transforming the Sasanian structures into a royal residence. Under Abaqa Khan, Takht-e Soleyman served as a summer capital, and political and social activities resumed (Huff, 1989).

Archaeological surveys of Abaqa Khan's palace have yielded approximately 5,400 tile fragments, excluding a small number of complete museum specimens. These tiles display remarkable variety in shape and motif, including: luxurious gilt luster tiles (Zarrinfam), lapis and turquoise tiles, raised-relief gilded tiles, geometric tiles, monochrome examples, and some brick-tile combinations. The most famous and highly valued tiles are the Zarrinfam tiles, characterized by glossy, golden-luster glazes. The complexity of the manufacturing process renders these tiles exceptionally rare and prestigious, with artistic motifs further enhancing their value (Mirshafiei & Mohammadzadeh, 2015: 60).

According to Sedighian and Haj Naseri, the original name of these bichromatic luster ceramics was "double-fired pottery", and later scholars translated the term luster ware as Zarrinfam; historically, Iranian potters from the 6th to 8th centuries AH referred to them as "Liqa" (Sedighian & Haj Naseri, 2016: 38). Chemical analyses of similar examples from other sites indicate that the golden coloration derives from a mixture of silver and copper oxides. Initially, vessels were glazed and fired, after which designs were applied on the cooled glaze using a blend of sulfur, silver oxide, copper oxide, and yellow or red ochre. Subsequently, vessels were immersed in vinegar and refired in a reduced-temperature kiln under a CO-monoxide atmosphere, allowing the ochre pigment to gradually separate while leaving a metallic sheen on the surface (Allen, 2004: 12; Kiani & Karimi, 1985 : 43).

Tiles from Takht-e Soleyman are primarily classified into three forms: star-shaped (kawkabi), cross-shaped, and square (pishbor). With the establishment of the Ilkhanid dynasty, extensive reconstruction and architectural innovation took place, introducing new standards in architecture, calligraphy, ceramics, and other arts.

Examination of the Zarrinfam motifs identifies five main categories: human, animal, vegetal, geometric, and epigraphic designs. Notably, the Waqwaq tree motif appears within the Zarrinfam ceramics. From the 3rd century AH onwards, Iranian artists became acquainted with the Waqwaq islands and their legendary tree, whose fruit resembled human faces. Reports from travelers, merchants, and geographers inspired artists' curiosity, and by the Seljuk period, this motif gradually entered Iranian decorative arts (Azhand , 2014: 178).

An extant example illustrating this is a lidded vessel preserved in the British Museum, known as the "Vaso Vescovali" (Fig. 2). According to J. Allen, this vessel was manufactured in northeastern Iran around 1200 AH/600 CE at the Qal'eh Ayyar Bala, and portions of it were inlaid with silver (Ferrier, 1995: 108). The vessel's decoration features circular frames with the twelve zodiac symbols alongside human and animal motifs, exemplifying the integration of cosmology, narrative, and iconography in luster-ware art.

Fig. 2: The Waq motif on the inlaid lidded vessel, known as " Vaso Vescovali," circa 600 AH, British Museum (Source: URL1).

The Wāq Wāq tree motif appears in several metalwork examples alongside zodiacal symbols. Phyllis Ackerman, discussing the history of the speaking tree motif in Iranian painting, traces its eternal forms to cosmic symbolism. Referring to a manuscript preserved in the National Library of Paris, produced in 790 AH/1388 CE, she notes that the Wāq Wāq tree was decorated with a single-bull figure (moon deity) and deer heads (together symbolizing the lunar aspect), with a lion at the center, blending moon-trees and sun-trees in its depiction (Pope & Ackerman, 2008: 10). With the Mongol invasion of Iran, and the subsequent increase in cultural exchange with Southeast Asia, depictions of the Wāq Wāq motif became more prevalent (Ibid : 179). In addition, the relationship between zoomorphic imagery and the Wāq tree in Mongol culture, which reflects a holistic worldview in which all living beings are interconnected, often placed composite creatures alongside the tree in artistic depictions. In Takht-e Soleyman luster tiles, this relationship manifests in animals depicted adjacent to the Wāq tree, enhancing both visual appeal and conveying the cultural and religious beliefs of the period.

Figure 3 shows a luster tile fragment from Takht-e Soleyman, where the terminations of arabesques merge into animal forms.

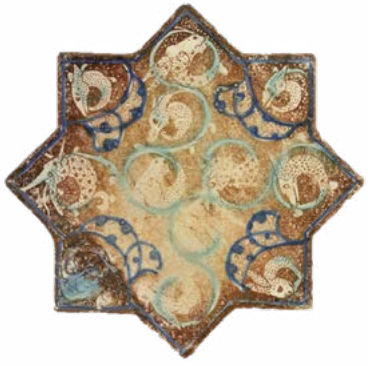

Fig. 3: Luster tile featuring the Waq tree motif, possibly from Takht-e Soleyman, approximately 21 cm, Inventory No. (M.68.22.8), Kahn's Fund Art Museum.

While some questions remain regarding the authenticity of certain tiles, those studied here, preserved in the Takht-e Soleyman World Heritage ceramic collection, display clear examples of this motif. Among the collection, 15 tile fragments were identified with the Wāq motif, although most were broken or damaged. Identification relied on the motif's position relative to arabesques and geometric patterns, the depiction of animal heads without full bodies, and its alignment with the Wāq tree, allowing accurate coding of the motif in the research.The following images illustrate examples of this motif on the lustreware tiles of Takht-e Soleyman.

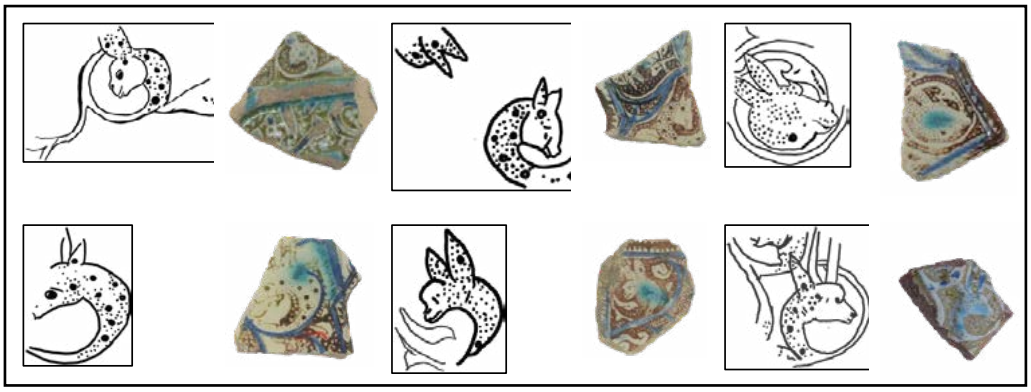

Fig. 4: Images and line drawings of the Waq tree motif, luster tiles associated with Takht-e Soleyman, Takht-e Soleyman Global Complex Ceramic Repository, (Photographer: Author, 2024), (documented on 16–22/6/1401).

Compositions. As with other luster-tile depictions, these animals are often decorated with small dots, occasionally larger ones (Fig. 5).

Fig. 5: Animal decorations on luster tiles featuring the Waq tree motif, Takht-e Soleyman, (Photographer and Designer: Author, 2024).

In some examples, animals appear interwoven with early arabesque scrolls, filling the tile surface in a harmonious and dynamic composition. Tiles appear pre-divided by the designer into circular or interlaced sections, with arabesques in eight-pointed frames leading to animal busts in a creative and unified layout (Fig. 6).

Animals appear to emerge from plant stems as flowering elements, with intertwined arabesques and geometric patterns. If arabesques are interpreted as tree branches and geometric floral patterns as abstract blossoms, the overall composition displays fluid,

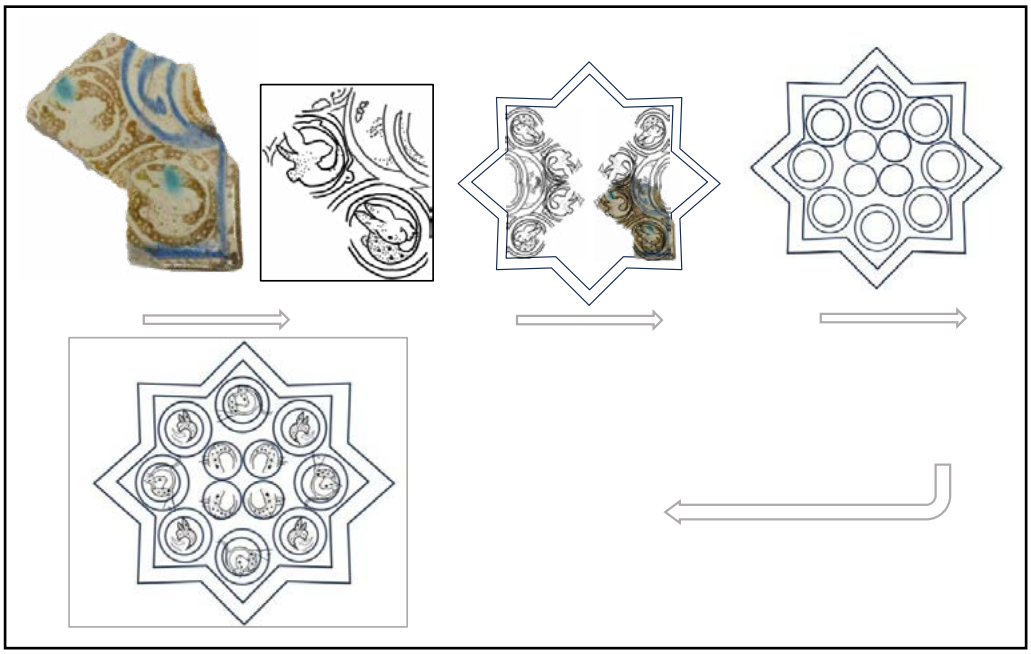

Fig. 6: Linear analysis and redesign of the rotation of arabesque motifs and composition of the Waq motifs, luster tile, Takht-e Soleyman, (Photographer and Designer: Author, 2024).

spiral-like movements culminating in animal heads. Figure 7 illustrates Wāq motifs with stylized floral elements, including abstract lotus designs, harmoniously integrated with arabesques.

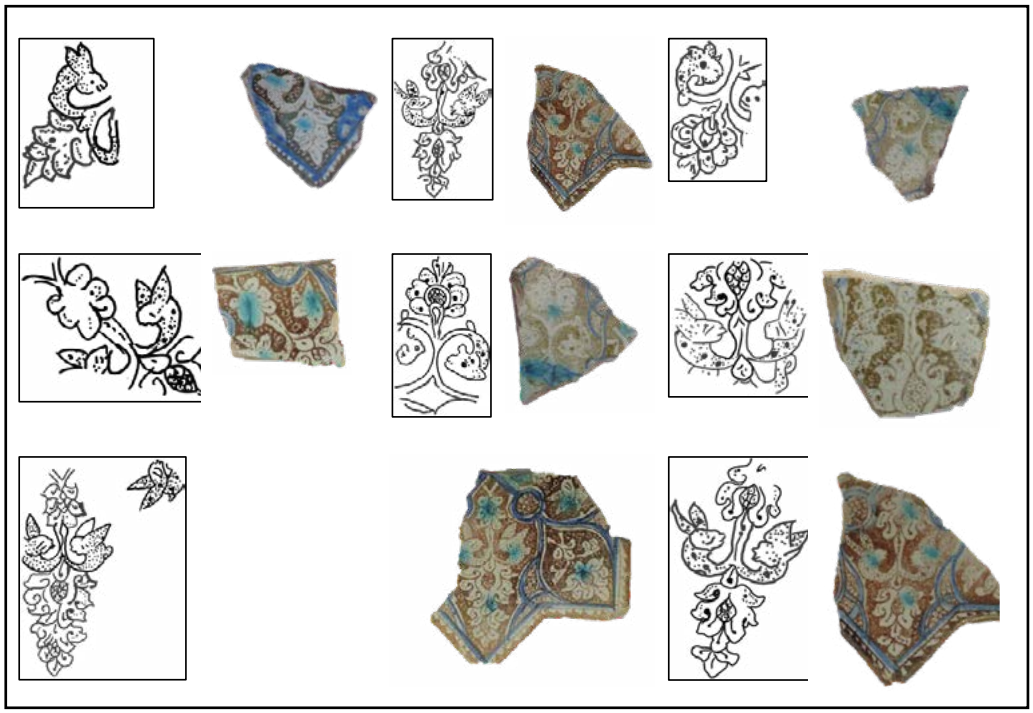

Fig. 7: Images and line drawings of the Waq tree motif among Khatayi flowers, luster tiles, Takht-e Soleyman, (Photographer and Designer: Author, 2024).

In these tiles, animals appear to grow from plant stems, creating a balanced visual composition, often arranged along perpendicular axes with four vegetal stems and four pairs of opposing animals, reaching the corners of eight-pointed stars, forming a complex, harmonious design (Fig. 8).

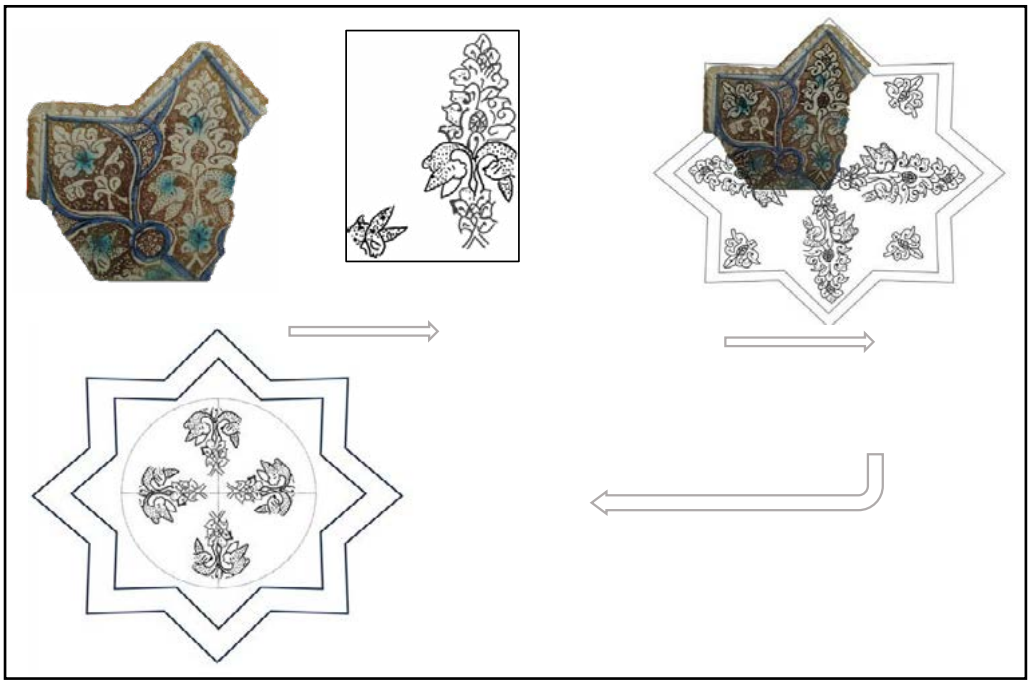

Fig. 8: Linear analysis and redesign of the composition of the Waq motifs among Khatayi flowers, luster tile, Takht-e Soleyman, (Photographer and Designer: Author, 2024).

The Wāq motif is integrated within a dense, circular composition of abstract vegetal elements, with opposing animals serving as guardians within the ornamental framework. The artist achieved a sense of depth and realism by carefully rendering anatomy and movement, giving the animals lifelike presence.

In most surviving Wāq tree examples, the human figure was initially associated with the tree; however, in the Takht-e Soleyman luster tiles, the adjunct elements are primarily animals, such as rabbits, deer, and gazelles, reflecting the artists' focus. The motif may have been inspired by early Ilkhanid exposure to late Seljuk literary and scientific sources, under Iranian cultural influence. For instance, the Shahnameh of Ferdowsi narrates Alexander encountering a strange tree at the end of the world, with male and female voices predicting his fate (Ghashghaei, 2022) Thus, Alexander pauses to observe the tree until a voice rises from it. Alexander asks his guide about the meaning of this voice. The guide responds:

"What can Alexander accomplish in the world,
Who has benefited from his virtues?
When his year of kingship reaches seventy,
He must depart from the great throne."

Then another leaf of the tree addresses Alexander, saying:

"Do not be overwhelmed by abundance,
Why would you burden your soul?
You are meant to travel the world;
Harming others and ruling is your task.
Do not linger here for too long;
Do not make the day narrow and confined for yourself."

Alexander is deeply disturbed by the tree's words and asks his guide to inquire whether he will see his fate in Rome and whether he will see his mother alive again. The tree seemingly replies:

"Thus spoke the tree to the king:
Shorten your day and prepare yourself.
Neither your mother nor your relatives will be seen in Rome,
Nor the veiled faces of that land.
Death will come from others, not late;
Stars, crown, and throne will weary you."
(Ferdowsi, 1968).

The description of this tree in the Shahnameh reflects the antiquity of this motif in Iranian literature. This same narrative was later illustrated in the Shahnameh-ye Demot, depicting Alexander conversing with a tree bearing fruits shaped like human heads. After the Mongol invasion of Iran in the 7th century AH, extensive transformations occurred in Iranian art and culture. The Mongols, influenced by shamanic and Buddhist beliefs, introduced new visual elements into Iranian art. One of these elements was zoomorphism, which found expression in manuscripts, metalwork, ceramics, and architecture. This feature is particularly evident in the paintings of Ilkhanid manuscripts and the decorative motifs of luster-glazed (zarrin-fam) tiles.

One of the most important symbols of zoomorphism in this period is the Wāq motif, rooted in Iranian and Far Eastern mythological traditions, and represented in luster-glazed tiles as a combination of humans with plants or mythological animals. The origin of this motif may be related to astronomy and the study of stars and celestial bodies, which has long been a field of interest for Iranians and reached its peak during the Seljuk period.

Surviving works from Turkic textual sources and travelers' reports suggest that the Turks, like the Mongols, were also interested in worshipping manifestations of nature and held beliefs in magic and sorcery—beliefs largely based on superstition and ritual practices. During this period, Khwaja Nasir al-Din Tusi, aware of Hulagu Khan's interest in astronomical science, obtained permission to establish the Maragheh Observatory. This observatory marked the beginning of the greatest scientific movement in Iran following the Mongol invasion.

As a result, the twelve-animal calendar became widespread in Iran during the Mongol period. In this twelve-animal calendar, as its name suggests, each year was named after one of twelve animals. Abu Nasr Badr al-Din Farahi Sanjari (Segzi) organized them in his book Nisab al-Subyan (Farahi, 1970). Sources also point to the existence of this calendar among the Seljuk Turks. Kashgari, regarding the wisdom of the names of each year in the twelve-animal calendar among the Turks, writes: "The Turks believe that each of these years has its own wisdom, and they interpret omens accordingly" (Kashgari, 1954: 290). Khwaja Nasir al-Din Tusi, in the first chapter of his Zij, writes: "The chronology used by our kings [i.e., the Ilkhans] is the Qita (Khita) and Turkic calendar…"; however, according to him, the Chinese-Uighur calendar was not prevalent among Iranians during Hulagu Khan's reign (Abdollahi, 1987: 322).

In this calendar, each year was named after an animal, forming a twelve-year cycle. These twelve animals, in order, were: rat, ox, leopard, rabbit, whale, snake, horse, sheep, monkey, rooster, dog, and pig. During the Ilkhanid period, the astrological characteristics associated with the animal of the year attracted the attention of both rulers and the public. Among these, the rabbit, ox, sheep, snake, horse, and dog corresponded to shared constellations. The twelve-animal calendar heightened the influence of astrology, directing attention to the prediction of auspicious and inauspicious events in the year assigned to each animal, and fostering the spread of superstitious beliefs associated with the characteristics of that animal.

The twelve-animal calendar is not merely a calendrical system but also an integral part of cultural and historical identity. The interplay of constellation-based astrology and the prevalence of the twelve-animal calendar during the Ilkhanid era, combined with the practice of zoomorphic representation, contributed to the incorporation of these motifs into many artistic works, especially luster-glazed tiles. The resemblance of some of these motifs to astronomical illustrations and treatises such as Suwar al-Kawakib, coupled with the widespread interest in astronomy and astrology during the Ilkhanid period, encourages a discursive and sociological approach to interpreting these motifs, considering the beliefs and concepts of the society that produced them.

It appears that the zoomorphic Wāq motif in Mongol-era art reflects a synthesis of Iranian, Chinese, and Mongolian traditions. The Wāq in luster-glazed tiles of this period is a prominent example of these influences, rooted in Iranian mythology while intertwined with Mongolian and shamanistic beliefs. These motifs possess not only aesthetic value but also provide a window into the philosophical and symbolic thought of Ilkhanid art. Further study of these works can offer a deeper understanding of the developments in Islamic art during the medieval period.

Moreover, the invention of the Wāq motif in painting may have arisen from religious

or legal necessities, related to the restrictions on depicting human and animal figures in Iranian painting, which had been somewhat softened with the Seljuk period, prior to the Ilkhanid presence. At the same time, humans sought to record events in their environment, drawing inspiration from their social, cultural, and geographic surroundings, ultimately creating symbolic imagery. As a result, this period witnessed abundant depictions of humans and animals, with the Wāq tree taking on a symbolic and idealized form. It may also represent a realistic translation of surrounding natural animals within the constraints and demands of political, social, and cultural circumstances.

Conclusion

Symbolic illustration throughout history has continually evolved under the influence of ideological, cultural, and political transformations brought about by successive regimes. Artists, responding to these shifts, created designs that reflected their era's dominant intellectual and spiritual tendencies. The zoomorphic motifs on the lustreware tiles of Takht-e Soleyman represent a synthesis of Iranian mythological heritage, Mongol belief systems, and celestial symbolism.

The depiction of the Vaq tree motif on these tiles bears a close connection to the descriptions found in Ferdowsi's Shahnameh, where composite and mythical creatures are portrayed as cosmic and heroic emblems. Iranian artists, since the third century AH (9th century CE), became familiar through literary sources with the legendary Vaq tree—a mythical tree whose fruits were shaped like human and animal heads. From the Seljuk period onward, this theme captured their imagination, leading to innovative, fantastical representations in art.

During the Mongol period, Iranian art underwent profound transformation. One of its defining features was the widespread incorporation of zoomorphism—the blending of human and animal characteristics across artistic media such as manuscript illustration, pottery, metalwork, and even architecture. The Ilkhanids, who adhered to the twelve-animal zodiac system, integrated animals not only as decorative or symbolic figures but also as elements of their cosmic and spiritual worldview. Their fascination with astronomy and celestial cycles found expression in artistic motifs, and the Vaq tree can be interpreted as a visual manifestation of these cosmological and mythological inclinations.

From an aesthetic perspective, these works display remarkable technical precision and a mastery of compositional balance. The delicate integration of animal and vegetal forms yields a complex visual rhythm that captivates the viewer. The presence of the Vaq tree motif on the lustreware tiles of Takht-e Soleyman, excavated from the palace of Abaqa Khan, provides credible historical evidence that this motif achieved official

recognition and was repeatedly depicted in the royal winter residence of the Ilkhanid ruler.

Notably, the choice of animals—deer, hare, and gazelle—aligns perfectly with the nature-oriented sensibilities of the Mongols, reflecting their preference for naturalistic and mythological imagery. The highly imaginative and skillful renderings of the Vaq tree on these lustre tiles attest to the creative ingenuity and technical expertise of Iranian artists, who continuously sought novel designs to satisfy the refined aesthetic demands of their patrons.

An analysis of these examples—possibly among the earliest official representations of the Vaq tree within a royal architectural context—reveals its integration amidst arabesque scrolls, khatai blossoms and leaves, and within star-shaped eight-pointed frames, where it is depicted with exceptional elegance and compositional harmony. What stands out most, however, is the visual dominance of animal masks—here identified as key features of the Vaq tree motif—recognized among the seven principal ornamental patterns in the history of Persian miniature and decorative arts.

It appears that with the Mongol invasions of the 13th century, the art and culture of Iran and the broader Islamic world came under the influence of nomadic and Buddhist traditions. The Mongols, possessing a rich legacy of zoomorphic art, transmitted this aesthetic to the conquered lands, thus laying the foundation for new hybrid artistic styles. Within the Ilkhanid period, several key factors—political patronage, cultural synthesis, and cosmological symbolism—contributed to the renewed prominence and reinterpretation of the Vaq tree motif in Iranian art

Acknowledgments

In this section, we express our sincere gratitude to the Scientific and Artistic Cooperation with Society Group of Iran University of Art, the Faculty of Conservation and Restoration of Iran University of Art, and the Cultural Heritage and Tourism Research Institute for providing the necessary conditions to carry out this project and granting access to the case study samples utilized in this research.

Author Contributions

The research methodology is based on the study's objectives, which are fundamental in nature. In terms of its essence and approach, it combines descriptive-analytical and historical methods. Data collection techniques include both library-based and fieldwork approaches. Library research encompasses artistic, historical, geographical books and articles, research projects, and archaeological documentation as well as historical reports, documents, and information available about the Takht-e Soleyman historical site from domestic and international databases. Fieldwork involves observation through

photography. To this end, the researcher visited the Takht-e Soleyman historical site to observe, photograph, analyze, and examine the samples.

The statistical population of the study includes all ceramic tiles stored in the pottery repository of the World Heritage site of Takht-e Soleyman, totaling approximately 1,400 pieces, which were available as broken fragments. Sampling was conducted using convenience and judgmental sampling methods and included all tiles featuring tree motifs, amounting to 15 tiles.

Conflict of Interest

The research in question is part of a study opportunity plan conducted by the first author at the Iran University of Art in and the Research Institute of Cultural Heritage and Tourism. This research was carried out at the Conservation and Restoration Research Center within the framework of the Persian Luster Ceramics Pioneer Project.

References

- *Qur'an*. Translated by: Mohammad Ali Ansari, (2022). Tehran: Astan Quds Razavi Publications.

- Abdollahi Nāghāni, S., (2016). "The Reflection of the Tree of Life in Islamic Arts (Case Study: The Mihrab of Sheikh Lotfollah Mosque and a Mihrab Rug from Kashan)". *2nd Annual Conference on Architectural, Urban, and Urban Management Studies,* Tehran (in Persian).

- Azhand, Y., (2009). "Vaq, Sixth Principles of Persian Painting". *Journal of Fine Arts: Visual Arts,* 1(38): 5-14. https://dor.isc.ac/dor/20.1001.1.22286039.1388.1.38.1.0 (in Persian)

- Azhand, Y., (2021). *Seven Decorative Principles of Iranian Art.* Tehran: Peykar. (in Persian)

- Allen, J. W., (2014). *Islamic Pottery.* Translated by: M. Shayestehfar. Tehran: Institute for Islamic Art Studies. (in Persian)

- Amanollahi, H., (2015). "A Review of the Historical, Cultural, and Research Background of the Archaeological Site of Takht-e Soleyman". *Āthar,* 36: 3–20.

- Anonymous., (1961). *Hudūd al-'Ālam min al-Mashriq ilā al-Maghrib.* Edited by Manouchehr Sotoudeh. Tehran: University of Tehran. (in Persian)

- Al-Hādī, Y., (2000). "Revisiting the Land of Vāq: Muslim Geographers on the Location of This Island". Translated by: Jahanbakhsh Juyā. *Ā'ine-ye Mīrāth,* 10–11: 16–18. (in Persian)

- Beyg-Mohammadpour, M. & Hajizadeh-Bastani, K., (2021). "Takht-e Soleyman through Time: " Historical Developments during the Islamic Period Based on Historical

Sources". *Historical Sciences Research,* 13 (2): 27–47. https://doi.org/10.22059/jhss.2021.324488.473416 (in Persian)

- Carboni, S. & Qamar, A., (2003). "Takht-i Sulaiman and Tilework in the Ilkhanid Period". In: *Heilbrunn Timeline of Art History*. New York: Metropolitan Museum of Art.

- Dehkhodā, A. A., (1994). *Dehkhoda Dictionary*. Tehran: Ruzaneh. (in Persian)

- Diyānti, S., (2020). "Socio-Cultural Factors of the Safavid and Qajar Eras Influencing the Vāq-vāq Motif in Carpets". *9th Conference on Management and Humanities Research in Iran:* 420–438. (in Persian)

- Ferahi, Abu-N., (1970). *Nisab al-Sabyan.* edited by: Mohammad Javad Mashkoor, Tehran: Islamic Scientific Assembly and Ashrafi Publications. (in persian)

- Ferdowsi., (1968). *Shahnameh*. Edited by: Jules Mohl. Tehran: Elmi va Farhangi. (in Persian)

- Ferrier, R. W., (1995). *The Arts of Persia*. Translated by Parviz Marzban, Tehran: Farzan Rooz Publishing and Research.in persian)

- Huff, D., (1989). "Takht-e Soleyman". In: *Cities of Iran,* edited by Mohammad Yousef Kiani, translated by: F. Najd-Semii. Tehran: Jihad-e Daneshgahi. (in Persian)

- Huff, D., (2002). "TAḴT-E SOLAYMĀN". *Encyclopaedia Iranica*. https://www.iranicaonline.org/articles/takt-e-solayman/

- Huff, D., (2006). "The Ilkhanid Palace at Takht-i Sulayman: Excavation Results », in: L. Komaroff, ed., *Beyond the Legacy of Genghis Khan.* Leiden / Boston, Brill: 94-110. https://doi.org/10.4000/abstractairanica.29332

- Ghashghaei, P. & Mohammadi, M., (2022). "An Iconological Analysis of the Transformation of the Image of Alexander and the Talking Tree from the Ilkhanid to the Safavid Period". *Rahpouyeh-e Honarhā-ye Sanā'i,* 14: 81–93. https://doi.org/10.22034/rac.2023.560735.1028 (in Persian)

- Ibn Ḥawqal., (1966). *Ṣūrat al-Arḍ (The Face of the Earth)*. Translated by Ja'far Sha'ar. Tehran: Bongāh-e Tarjomeh va Nashr-e Ketāb. (in Persian)

- Istakhri., (1981). *Al-Masālik wa'l-Mamālik (Routes and Realms)*. Edited by Iraj Afshar. Tehran: Bongāh-e Tarjomeh va Nashr-e Ketāb. (in Persian)

- Jackson, A. V. W., (2009). *Persia Past and Present*. Translated by: M. Amiri and F. Badra'i. Tehran: Elmi va Farhangi. (in Persian)

- Javadi, S. M., (2005). "The Twelve-Animal Calendar and Its Use in Historical Artworks". *History in the Mirror of Research* 6 (2): 57–74. (in Persian)

- Kafili, N., (2023). *Typology of Lustre-painted Pottery Patterns from Takht-e Soleyman*. Research project, University of Art, Tehran, and Research Institute of Cultural Heritage and Tourism. (in Persian)

- Kafili, N., Alimirzaei, F. & Garakhani, S., (2022). "Typology of Tiles in the UNESCO World Heritage Site of Takht-e Suleyman". *KCR*, 5 (3) :29-46. http://journal.richt.ir/kcr/article-1-66-en.html (in Persian)

- Kāshghari, M., (1954). *Dīwān Lughat al-Turk*. Istanbul: Dar al-Khilafa al-'Aliyya Press. (in Persian)

- Kamandlou, H. & Rajabi, M. A., (2015). "Inscriptions and the Talking Tree in Khurasan Metalwork (6th–7th/12th–13th Centuries)". *Khorasan-e Bozorg Research Journal,* 20: 52–73. (in Persian)

- Khākzād, M. R., (2013). *Shiz (Takht-e Soleyman and the Fire Temple of Āzar Gushnasp).* Tehran: Peyāb Tarh Consulting Engineers. (in Persian)

- Khalaf Tabrizi, n.d. *Borhān-e Qāte*. Edited by: Mohammad Abbasi. Tehran: Kalāleh-ye Khāvar. (in Persian)

- Kiani, M. Y. & Karimi, F., (1985). *The Art of Islamic Period Pottery in Iran*. Tehran: Iranian Center for Archaeology. (in Persian)

- Mas'udi, 'A-ibn H., (1995). *Murūj al-Dhahab wa Ma'ād(in Persian)in al-Jawhar (The Meadows of Gold and Mines of Gems)*. Translated by Abu al-Qasem Payandeh. Tehran: Elmi va Farhangi. (in Persian)

- Mirshafi'i, M. & Mohammadzadeh, M., (2015). "The Composition of Iranian Lustre Glaze Based on the Treatise Jawāhernāmeh-ye Nezāmi". *Fine Arts: Visual Arts,* 20: 59–66. https://doi.org/10.22059/jfava.2015.55445 (in Persian)

- Moein, M., (1973). *Persian Dictionary*. Vol. 6. Tehran: Amir Kabir. (in Persian)

- Mosahhab, Gh., (1995). The Persian Encyclopedia (Pocket Edition). Tehran. (in Persian)

- Mostowfi, H., (1957). *Nuzhat al-Qulub*. Tehran: Tahuri. (in Persian)

- Naumann, R., (2003). *The Ruins of Takht-e Soleyman and Zendan-e Soleyman*. Translated by F. Najd-Semii. Tehran: Iranian Cultural Heritage Organization. (in Persian)

- Pope, A. U., Ackerman, Ph. & Schroeder, E., (2001). *Masterpieces of Persian Art*. Translated by Parviz Natel Khanlari. Tehran: Elmi va Farhangi. (in Persian)

- Qāzi, A. M. Q., (1987). *Golestān-e Honar*. Edited by: Soheili-Khansari. Tehran: Manouchehri. (in Persian)

- Rashid al-Din Fazlullah Hamadani. (1994). *Collected Works*. Vol. 4. Edited by: Mohammad Roshan and Mostafa Mousavi. Tehran: Alborz .(in Persian)

- Sarfaraz, A. A. & Kiani, M. Y. (1968). *Takht-e Soleyman*. Tabriz: Institute of History and Culture of Iran. (in Persian)

- Schmidt, E. F., (1997). *Flight over Ancient Cities of Iran*. Translated by: Arman Shishegar, Tehran: Iranian Cultural Heritage Organization.(in Persian)

- Sedighian, H. & Haj-Naseri, P., (2020). "Lustreware Pottery of the Middle Islamic Centuries and Its Production Centers in Iran". *Journal of Islamic Era Archaeological Studies,* 1: https://doi.org/10.22080/jiar.2020.3088 (in Persian)

- Taheri, A., (2011). "The Sacred Tree, the Talking Tree, and the Process of Forming the Vāq Tree". *Bāgh-e Nazar,* 19: 43–54. https://www.bagh-sj.com/article_719_en.html (in Persian)

- Takhti, M. & Afhami, R., (2011). "The Image and Concepts of the Talking Tree in Persian Carpets". *Goljam,* 18: 49–70. https://dor.isc.ac/dor/20.1001.1.20082738.1390.7.18.4.4 (in Persian)

- Takhti, M. & Afhami, R., (2013). "The Transformation of Renaming in Vāq-vāq Carpets". *Art Research,* 1 (2): 81–88. (in Persian)

- Tasuji Tabrizi, A., (2004). *One Thousand and One Nights*. Tehran: Hermes. (in Persian)

- Tomoko, M., (1997). The Ilkhanid Phase of Takht-i Sulaiman. Thesis. Advisor: P. P. Soucek (n83186563) Institution IFA/NYU. https://openpublishing.psu.edu/ahd/content/ilkhanid-phase-takht-i-sulaiman

- Watson, O., (2012). *Persian Lustreware*. Translated by: Shokouh Zakeri. Tehran: Soroush. (in Persian)

- Watson, O., (1977). *Persian lustre tiles of the 13th and 14th century*. university of London.

- Watson, O., (1985). *Persian Lustreware*. Boston: Faber & Faber.

- Wilkinson Gibb, E. J., (1907). *A history of Ottoman poetry*. Vol. 1, Luzac Press.

- URL1: British Museum. (n.d.). Vase with Wāq motif: https://www.britishmuseum.org/collection/object/W_1950-0725-1

نشانی پایگاه نشریه: http://journal.richt.ir/mbp
P. ISSN: 2645-5048 & E. ISSN: 2645-5706
فصلنامهٔ علمی مطالعات باستان‌شناسی پارسه || شمارهٔ ۳۳ || سال نهم || ۱۴۰۴ ||

بازشناسی درخت واق در کاشی‌های زرین‌فام تخت‌سلیمان

نگار کفیلی[I]، غلامرضا رحمانی[II]

نوع مقاله: پژوهشی
صص: ۳۴۹ - ۳۲۹
تاریخ دریافت: ۱۴۰۳/۰۷/۲۲؛ تاریخ بازنگری: ۱۴۰۳/۰۹/۱۹؛ تاریخ پذیرش: ۱۴۰۳/۱۰/۱۱
شناسهٔ دیجیتال (DOI): https://doi.org/10.61882/PJAS.841.1097

چکیده

سفالگری از دیرباز یکی از بسترهای مهم تجلی عناصر فرهنگی ایران بوده است. نقش‌مایه‌های تزئینی به‌کاررفته در این هنر، ریشه در فرهنگ، ادبیات، مذهب و اقتضائات سیاسی داشته و با خلاقیت هنرمندان ایرانی به شیوه‌هایی نوآورانه جاودانه شده‌اند. در این‌میان، نقش‌مایهٔ درخت واق یا درخت سخنگو، یکی از برجسته‌ترین عناصر تزئینی است که به‌ویژه در دورهٔ ایلخانی موردتوجه هنرمندان قرار گرفته است. این نقش‌مایه که ترکیبی از عناصر طبیعی، تخیلی و اسطوره‌ای است، در کاشی‌های زرین‌فام تخت‌سلیمان به‌کار رفته و بازتاب‌دهندهٔ پیوند عمیق میان انسان، طبیعت و حیوانات است. پاسخ‌گویی به این پرسش که چرا در اوایل حکومت ایخانی در کاخ «آباقاخان» در تخت‌سلیمان این نقش‌مای موردتوجه و اجرا هنرمندان بوده، مورد هدف این پژوهش بوده و سعی‌شده است ضمن معرفی تصویری نمونه‌ها به زیرساخت‌های فرهنگی مرتبط نیز پرداخته شود. پژوهش حاضر با رویکردی توصیفی، تحلیلی و تاریخی و با استفاده از تصویربرداری از نمونه‌های تاریخی به این نتیجه دست یافته است که نقاشان کاشی‌های زرین‌فام تخت‌سلیمان، به‌جای ترسیم انسان -که معمولاً در نقاشی‌های مرتبط با درخت سخنگو محوریت داشته است- حیوانات غیراهلی نظیر: گوزن، آهو و خرگوش را به تصویر کشیده‌اند. انتخاب حیوانات وحشی به‌جای انسان می‌تواند بازتاب‌دهندهٔ گرایش طبیعت‌گرایانهٔ سلجوقیان و مغولان باشد. این انتخاب هم‌چنین نشان‌دهندهٔ تأثیر فرهنگ مغول بر هنر ایرانی است؛ فرهنگی که حیوان‌ریخت‌انگاری را به‌عنوان یکی از عناصر برجستهٔ خود وارد ادبیات و هنر کرده بود. درخت واق که ریشه در فرهنگ عامیانهٔ ایران و جهان دارد، نمادی از ارتباط عمیق میان انسان، طبیعت و موجودات زنده است. این مفهوم اسطوره‌ای با مفاهیمی چون قداست طبیعت و پیوند جهان انسانی با جهان طبیعی گره‌خورده است. بازنمایی این نقش‌مایه برروی کاشی‌های زرین‌فام تخت‌سلیمان نشان‌دهندهٔ تلاش هنرمندان برای انعکاس چنین مفاهیمی بوده است که هنرمندان دورهٔ ایلخانی آن را به شیوه‌ای نوآورانه بازآفرینی کرده‌اند.

کلیدواژگان: درخت واق، کاشی زرین‌فام، سفال زرین‌فام تخت‌سلیمان، سفال تخت‌سلیمان، سفال ایران.

I. استادیار گروه هنر اسلامی، دانشکدهٔ حفاظت و مرمت، دانشگاه هنر ایران، تهران، ایران (نویسندهٔ مسئول).
Email: negar.kafili@art.ac.ir
II. استادیار پژوهشکدهٔ حفاظت و مرمت آثار تاریخی، پژوهشگاه میراث‌فرهنگی و گردشگری، تهران، ایران.

ارجاع به مقاله: کفیلی، نگار؛ و رحمانی، غلامرضا، (۱۴۰۴). «بازشناسی درخت واق در کاشی‌های زرین‌فام تخت‌سلیمان». مطالعات باستان‌شناسی پارسه، ۹(۳۳):۳۴۹-۳۲۹. https://doi.org/10.61882/PJAS.841.1097
صفحهٔ اصلی مقاله در سامانهٔ نشریه: https://journal.richt.ir/mbp/article-1-1097-fa.html

فصلنامهٔ علمی مطالعات باستان‌شناسی پارسه
نشریهٔ پژوهشکدهٔ باستان‌شناسی، پژوهشگاه میراث‌فرهنگی و گردشگری، تهران، ایران

ناشر: پژوهشگاه میراث‌فرهنگی و گردشگری