

Original Research Article

Chronology and Typology of Wallpaper in the World until the 19th Century A. D. and the Encounter of Qajar Courtiers with it**Zahra Babaei Kale-Masihi¹** ; **Melika Yazdani²** 

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Abstract

Introduction: Wallpaper is one of the oldest and the most widely used decorations in interior architecture in the world, and it has undergone numerous changes so far. Also, besides the evolution in the methods of producing, implementing, and renovating, as well as the complexity and ambiguity of the developments related to this decoration, the sources of its evolution and production methods have been limited and scattered. At the same time, how wallpaper entered Iran, the pioneers of wallpaper in Iran, and their style of choosing types of wallpaper have been largely neglected. The questions of the present research are: «Who are the pioneers of wallpaper in the world and Iran?», «How was the Qajar courtiers' encounter with wallpaper technology?», and «In the evolution of wallpaper, what factors directed this industry to reach its present form?»

Research Method: The present research is conducted using a descriptive-analytical method, and its data collection is based on the field, library, and internet sources.

Findings: The results indicate that despite the distinct opinions of researchers, in the middle of the 15th century, the French pioneered the use of wallpaper in today's sense. The variety in design, color, implementation, and installation could transform it from a worthless product to a product that is a sign of aristocracy and luxury. Therefore, it was used in the homes of kings, courtiers, and merchants in Europe and Iran during the Qajar period. Naser al-Din Shah was the first addressee of this product in Iran. After him, the Qajar courtiers used imported wallpapers to satisfy the sense of modernity and keep pace with the global style. Another finding of the present study is the extent of the design, motif, technique, and space used for wallpaper in Vasigh Ansari's House, which has turned this collection into a wallpaper treasure of the Qajar period.

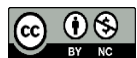
Conclusion: China (due to the invention of paper and its various uses) and France (due to inventions and progress in wallpaper production until the 19th century) can be considered the founders of wallpaper. Concerning the coincidence of the Era of Naser al-Din Shah with the popularity of wallpaper in the Victorian period, it can be said that the use of wallpaper in Iran by the Qajar court is a reflection of global taste and the political-social conditions of this era.

Keywords

Qajar Architectural Decoration, Wallpaper, Velvet Paper, Marbled Paper, Flock

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Introduction and Problem Definition

The history of wallpaper production probably begins with the first human motivation to decorate the living environment. This thought has been one of the most essential elements for the expansion of architectural decorations. The history of wall decoration goes back to wall painting (Mural) inside caves around 40 to 30 thousand years ago. The trend of diversity in decorating and expressing various concepts on the walls of buildings throughout history necessitated the use of multiple tools, materials, and techniques of art of stone, brick, stucco, tile, wood, mirror, glass, etc., which has faced significant changes so far. Today, wall coverings have brought about a vast transformation in interior decoration, of which wallpaper is one of the most important. Wallpaper in the Western world started with single sheets using block prints and other simple printing techniques. Gradually, with the change from single sheets to roll papers and the invention of the printing machine, today's wallpaper emerged and evolved. These types of wall coverings, which entered Iran during the Qajar period, were actually the continuation of the previous decorations with a new appearance on paper and fabric, which were added to the decorations of this time with the expansion of trade relations between the Qajar people and Europe. Wallpaper chronology is not merely about having access to the history of paper, the evolution of patterns, and decorative designs on paper, but rather presenting a unified and complex process of human technological ingenuity over the centuries. Also, examining this history and the way societies deal with this innovation leads to a better understanding of the process of change in utilization patterns and tastes of different groups of societies. This research aims to investigate the historical course and evolution of wallpapers from the beginning to the time of their arrival in Iran during the Qajar period and seeks to answer the following questions: «Who are the pioneers of wallpaper in the world and Iran?», «How did Qajar era Iranians encounter wallpaper technology?», «In the evolution of wallpaper, what factors led this industry to reach its present form?» In this regard, the history of wallpaper and its evolution trend will be examined first. Then, the types of wallpaper will be identified and classified. In the end, the influential factors in the introduction of wallpaper to Iran and Qajar palaces and houses decorated with wallpaper will also be examined.

Research Method

The basis and method of the present research are descriptive, and the results are presented based on observational data (textual and visual) and content analysis. Considering the focus of this research on the expansion of knowledge in wallpaper history and technology in the world and its search in the style of the Iranian court during the Qajar period, this research is developmental from the point of view of the aim, and the data analysis has been done qualitatively. The study community of this research consists of the available Qajar period wallpapers in three palaces (Golestan Palace in Tehran, Shahrestanak Palace in Tehran, and Baqcheh Jooq Palace in Maku) and three houses (Vasigh Ansari House in Isfahan, Ameri's House in Kashan, and Sartip Sedehi's House in Khomeinishahr of Isfahan). The required data has been collected using a combined method including documentary (library and internet resources) and field methods along with photographing the wallpapers.

Research Background

Wallpaper has been the focus of researchers from various perspectives. Regarding the origin of wallpaper in the world, several viewpoints do not confirm a specific date. «Sanborn» (1905), in the book entitled «Old Time Wallpapers» considers wallpaper to be an invention of the Eastern world (China and Japan). He introduced the first American wallpapers. «Sugden and Edmondson» (1926), in the book entitled «A History of English Wallpaper 1509-1914», consider the emergence of the first wallpapers to be in the late 14th century. «Hammers» (1962) also, in her thesis entitled «A Brief History of Wallpaper» and «Hoskin» (2005), in her article entitled «The Papered Wall», mentioned the technique of block printing, marbled papers, velvet papers, etc., and believed that the first wallpapers appeared in France at the end of the 15th century. «Kelly» (2015), in the research entitled «Toward a history of Canadian wallpaper use» related to the history of Canadian wallpaper (1860-1935 A.D.), considers the first wallpaper to be associated with the 17th century around Western Europe. «Wu» (2018), in her doctoral dissertation entitled «Chinese wallpaper, global histories, and material culture», considered China as the origin of wallpaper and introduced Chinese wallpaper as the mother culture of world wallpaper. In Iran, there are few studies related to wallpaper. Places with wallpaper, especially Vasigh Ansari's House, was a popular subject of researchers such as «Barekat» (1999), in a paper entitled «Study, recognition, and restoration plan of Colonel Vasigh Ansari's House», «Karimi and Holakuie» (2007), in a paper entitled «Technological investigation of paper wall coverings of Vasigh Ansari's House in Isfahan», and «Noghani Behmiri» (2008), in a research entitled «Technology and Pathology of wallpaper and fabrics of Vasigh Ansari's House», with a conservation-restoration approach, which also briefly mentioned the history of wallpaper. «Monjezi» (2015) has a brief look at the history of wallpaper in her thesis «Compilation of the principles of wallpaper design in accordance with Iranian culture based on the Tabriz carpet». «Hashemi Hosseinabadi» (2011), in her thesis entitled «Coexistence of arrays in the decorations of Vasigh Ansari's House in Isfahan», «Mesine Asl» (2015), in her thesis entitled «Wallpaper design based on the paintings of Sardar Maku's Palace», and «Babaei» (2021), in the thesis entitled «The Comparative Study of Wall Textile and Wallpaper Patterns in Qajar Houses», looked at Qajar wallpapers from the point of view of designs and patterns. «Babaei, Yazdani, Zamani, and Jokar» (2022) in the article entitled «The Status of Fabric and Paper Coverings on the Architectural Arrays of the Qajar Period in the House of Vasigh Ansari in Isfahan», have introduced and categorized the wallpapers and fabrics of the Vasigh Ansari's House with a descriptive-analytical approach. It seems that the studies in the field of wallpaper in Iran have been mostly focused on archeology or examining the designs and patterns in the houses of Isfahan. Accordingly, the present study, focusing on the chronology of wallpaper in the world, examines the types of wallpaper and the encounter of Qajar era courtiers with this product.

The Origin of Wallpaper in the World

Wallpaper is a kind of wall decoration to cover the surface deformations, prevent the penetration of insects and dust, increase the strength of the wall, and, most importantly, decorate the interior of the building (Kelly, 2015). The invention of these coverings brought a vast evolution in the history of art and architecture in the world. It can be said that its main origin is the time of the discovery of the first paper in the world. Based on some discoveries (1933 A.D.) in Xinjiang, China, it was believed for a long time that «Ts'ai Lun» discovered paper in 105 A.D. (Porter, 2010, 30); however, by finding some pieces of paper in

«Shaanxi» and «Gansu», archaeologists have estimated the date of paper production in China to the second century B.C. (Eliot & Rose, 2009, 99). The art of papermaking was transferred to Iran in the middle of the 2nd century A.H. by the captives of Chinese papermakers in the war between the Abbasids and China (Mayel Heravi, 1993, 16). After that, the Islamic lands were the suppliers of the paper needed by Europe until this technique reached France (Kargar & Sarikhani, 2011, 174). After being exported to Europe, paper made in Eastern countries was sold in a new industrial form with a different application under the name of wallpaper. It seems that the first trace of these modern wall coverings was seen centuries ago in the architectural decorations of Iran and the world, such as wall painting, Pateh works¹, Canvas-Marouflage murals², and curtain making in the decoration of houses and palaces. In medieval Europe, the first class of society installed large patterned curtains (Tapestry) on the walls of their houses, which served as insulation in addition to the decorative aspect; however, the semi-prosperous and poor class, who could not afford these curtains, either because of the high price or lack of availability, turned to wallpaper. If the wall hangings are considered the origin of today's wallpaper, the viewpoint of «Castro» is worthy of consideration. He considered the first wallpaper to be from the beginning of the 13th century in Europe in the houses of religious people, which were made with the theme of religious icons (Monjezi, 2015). Although «Sugden and Edmondson» also attribute wallpaper to religious people, they consider the time of the emergence of the first samples to be at the end of the 14th century, which was reproduced by printing with wooden blocks on cloth or paper (Sugden & Edmondson, 1926, 99). From the 15th century onwards, paper was an essential medium for publishing text and images (Wisse, 2005, 13). According to «Hammers», this industry was created at the end of the 15th century. She considers the history of the use of wallpaper to be indeterminate. Still, she writes that in 1481, Louis XI ordered fifty large rolls of paper with the design of blue angels to Bourdichon painters. Hammers also considers the French engraver Papillon Sr to be the creator of modern wallpaper because she first designed repetitive motifs in 1675 in such a way that they continued from one sheet to another. This method has been used in making wallpapers yet (Hammers, 1962), while «Kelly» believes that wallpaper emerged around 1650 in Western Europe (Kelly, 2015). The disagreement among different researchers regarding the origin of wallpaper is inevitable. Of course, the organic structure of paper, its vulnerability to environmental factors, and its fragility have caused the oldest samples of available wallpaper to be from the 18th century (Hoskin, 2005, 6). Up until the early 19th century, the wallpaper industry made a significant advancement, but then it declined, and wall painting became popular. At this time, producers improved this declining industry by diversifying their motifs and increasing quality. The invention of wallpaper glue by «Sichel» in 1888 A.D. (Garner, 2020) was a development that changed the method of installing paper on a wooden frame or canvas to sticking directly on the wall (Hammers, 1962).

Typology of Wallpaper throughout History until the Qajar Era

With the popularity of paper wall coverings and the widespread use of them by European people, small and large workshops around the world started mass production. With the passage of time and during the development of this newly-established industry, various

tools and facilities were created by the manufacturers to attract and satisfy the taste of customers and surpass the competitors. The historical, geographical, and cultural developments in the evolution of wallpaper led to the production of various coverings. Accordingly, it seems that to understand the exact evolution of what has happened in the past of this industry, the separation of wallpapers from different aspects should be taken into consideration. Therefore, in this research, wallpaper up to the 19th century will be examined in terms of theme, format, size, and construction technique (Diagram 1).

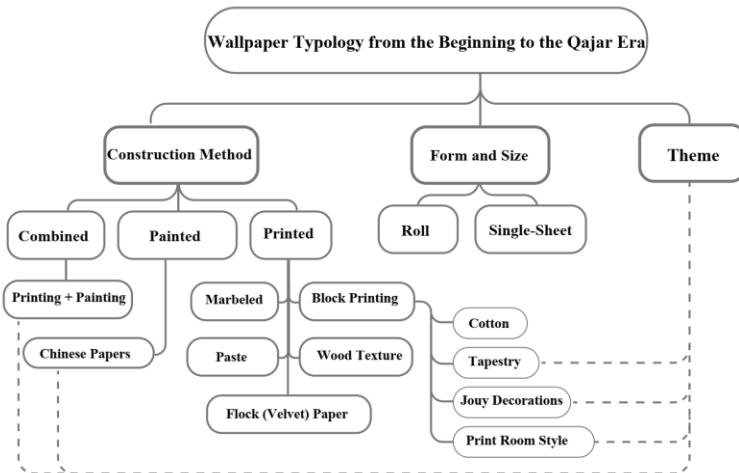


Diagram 1. Wallpaper typology from the beginning to the Qajar era. Source: Authors.

1. Classification of Wallpaper Based on Theme: Themes can reflect society's taste based on culture, geography, time, special events, essential things in life, place, etc. It should be considered that the theme of wallpapers until the 19th century was very dependent on the way of making and performing wallpaper, culture and the order of the audience. In fact, the themes of the wallpapers, which were usually printed or directly painted, have a lot to do with the execution method and the type of wallpaper. Therefore, the theme is considered an inseparable part of the technique and includes tapestry papers, Jouy decorations, Print Room style papers, Chinese papers, etc., which will be thoroughly discussed in the categorization of wallpaper based on the construction technique.

2. Classification of Wallpaper Based on Form and Size: One of the components to distinguish types of wallpaper is their size, which is categorized into single sheets and rolls.

1-2. Single-Sheet Wallpaper: The background of wallpaper or wall hangings in France is considered to belong to the survivors of the «Domino» style (Sugden & Edmondson, 1926, 27). Dominoes were printed or manually colored sheets depicting religious scenes (Wisse, 2005, 13). These early single-sheet papers, apart from the design, were also varied in use, and they were sometimes used to decorate the walls or ceiling. On the other hand, the same papers decorated furniture, boxes, books, closets, chests, etc. (Hoskin, 2005, 6) and prevented the entry of insects and dust (Kelly, 2015). According to Papillon, single-sheet papers did not have much value at first, so they were used to decorate the houses of the poorer classes in the suburbs of Paris; however, as they became popular, they were used in all the luxurious houses of Paris until the end of the 17th century (Wisse, 2005, 14 & 15).

2-2. Roll Type Wallpaper: Joining single sheets together before printing provided the basis for the emergence of wallpaper as an independent industry. Single sheets were rolled in England in early 1693 A.D. (Kelly, 2015), and the first wallpaper printing machine was invented in 1785 A.D. by «Oberkampf» in France (Garner, 2020). From another point of view, the French «Robert» first built a small machine in 1799 that produced long papers, and later, it was completed in England. In 1839, the wallpaper printing machine made by «Potter» and «Ross» (Sugden & Edmondson, 1926, 123, 125 & 221) was recorded as an invention in the cotton printing company located in Darwen, «Lancashire» (<https://vam.ac.uk> Access date 16.4. 2023.). The mentioned machine included four colors, and instead of a block, a roller was used to transfer the design onto the paper. This machine was able to produce 400 rolls of paper per day. The eight-color printing machine was introduced in the 1850s, and the twenty-color printing machine was introduced in 1874 (Garner, 2020). In general, long papers that were first manually printed (Fig 1) and then patterned by a printing machine and whose installation was different from that of single sheets are called rolled wallpaper. In fact, the history of this type of paper goes back to the «Bourdichon» rolled wallpaper (1481) and Louis XI is considered the pioneer of its use (Hammers, 1962).

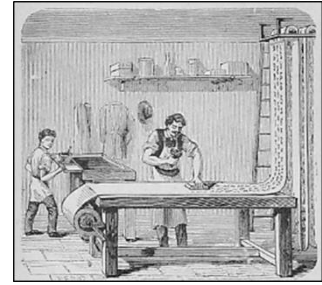


Fig 1. Simulation of block printing on rolled papers.
Source:
<https://thevictorianemporium.com>
Access date 27.2.2023.

3. Classification of Wallpaper Based on Construction Method: At the end of the 17th century, the emerging wallpaper industry had a variety of production methods, including wooden blocks, manual painting, stencils, and a combination of them (Hammers, 1962). Accordingly, wallpapers are categorized into three groups: Printed paper, painted paper, and mixed paper.

1-3. Printed Papers: In the late 17th century, there were various types of printed and colored papers that met the high demand of society at that time. In addition to the wallpapers that were made using the technique of printing with wooden blocks, Marbled, Tapestry, Cotton, Paste, and Flock or Velvet Papers were printed manually.

1-1-3. Printed Papers Using Wooden Blocks: Printing with wooden blocks, which was the simplest form of printing, was invented by Chinese people. Probably, «Basmehkari» (block printing) is equivalent to this print in Iran (Hani Tabaei, 1999, 9). In the block printing process for the production of wallpapers, multi-colored patterns were required to use several blocks. Each color was printed separately; then, the paper was hung to dry before the next color was printed. This problematic process required considerable skill; for example, a process with 30 different blocks and 15 colors might take four weeks. Due to the time-consuming nature of this printing, only the rich could afford wallpaper. Illustrations were drawn by Papillon that show the tools and the process of producing the simplest wallpaper (Fig 2) as well as its installation on the wall (Fig 3). Figure 3 suggests that to install the papers after polishing the wall and marking it, the sheets were installed one by one, and the edges were complemented with margin papers to hide the unevenness. At this time, margins were usually scrolls of flowers and foliage, but later, the design of curtains and stucco became popular. They were printed on one sheet at the same time and separated during installation. Another way to install paper was to fix it on fiber canvas and

place it on the wall (Wisse, 2005, 17). However, the first method of wallpaper installation was the direct method using nails, and over time, papers were installed directly on canvas and later on stucco (Sugden & Edmondson, 1926, 17). Until 1840 A.D. (before the invention of the wallpaper printing machine), all wallpapers were produced using the block printing method (<https://vam.ac.uk> Access date 16.4. 2023) (Fig 1). This type of printing evolved significantly over time and created various papers that included the same method but different themes. The design of the papers ranged from simple motifs that were repeated in succession to motifs with unique and remarkable themes. Among them are cotton papers, tapestries, Jouy decorations, and Basmeh-style papers. A brief description of each feature is provided in the following section.



Fig 2. Papillon's drawing of the stages of wallpaper production. 1. Tools needed in the printing process. 2. Mixing the paint, preparing the tool, and using it on the block. 3. Print the sheets, hang them to dry. 4. Dehumidification and arrangement of printed papers. Source: Wisse, 2005, 17.



Fig 3. Papillon's drawing of the process of installing paper on the wall. Source: Wisse, 2005, 17.

1-1-1-3. Printing Papers Known as Cotton Papers: Cotton papers included motifs taken from textiles. These motifs comprised realistic or abstract flowers and motifs modelled on Indian Chintz. Prolonged sanctions on the import of Indian Chintz strengthened the imitation motivation for Europeans to print their designs on paper rather than cloth (Wisse, 2005, 19). Therefore, one of the influential factors in the evolution of wallpaper has been its continuous interaction with textiles.

2-1-1-3. Tapestry Papers: There was a more desirable type of printed paper, where several papers completed a single image, and by adding more scenes, the ability to expand the image endlessly was provided. The subject of these papers was architecture, imitation of Chinese

papers, and tapestries, and probably that is why this name knows them. One of the tapestry papers with the theme of the landscape from the middle 18th century was found in a house in the Canton of Fribourg (Fig 4). This wallpaper, consisting of eight separate sheets, depicts a hunting scene and can be considered as the background of Panorama papers that came to the market around 1800 A.D. (Wisse, 2005, 17).



Fig 4. Tapestry paper. A house in the Canton of Fribourg, Switzerland. 1742-43.
Source: Wisse, 2005, 18.



Fig 5. Wallpaper with Toile de Jouy design.
Source: Hammers, 1962.

3-1-1-3. Jouy Decorations: The French «Jean Baptiste Reveillon» designed «Jouy Decorations» on wallpaper in harmony with the atmospheric fabrics (Hammers, 1962). The term «Toile de Jouy» is used for a type of printed cotton fabric produced in England and France. These fabrics were made for the first time in the Jouy factory, which was set up in 1760 by Oberkampf (the inventor of the wallpaper printing machine). Their designs were printed only with wooden blocks, but since 1770, the use of copper plates has also been common (<https://britannica.com> Access date 18.12.2022). The Jouy decorations were monochromatic (purple, red, blue, green, and brown) and were printed on plain linen. The motifs of the majority of Jouy papers and fabrics still produced are pastoral, historical, and romantic scenes (Hammers, 1962). Figure 5 is an example of Jouy decoration on wallpaper.

4-1-1-3. Papers in the Style of Print Room: With the development of woodblock printing in the 18th century, various designs such as roses, cloves, architecture, and landscapes were printed in different colors and styles. According to Fig 6, available at Doddington Hall (<https://vam.ac.uk> Access date 16.4. 2023), it can be inferred that one of the popular styles at this time is the images of various landscapes in frames with flowers and insects. The idea of the landscape inside the frame was probably inspired by the printing rooms that were common in Iran and Europe. In Fig 7, a part of the decorations of the Moshir-al-Molk House in Isfahan can be seen, with painted scenes or different pictures placed on the wall, around which are decorated with decorative motifs.

2-1-3. Printed Papers Imitating the Texture of Wood: In a number of interiors left from the second half of the 16th century A.D., the wall, ceiling, and even furniture, etc., are decorated with papers imitating the texture of wood or woodcarvings (Wisse, 2005, 10, 11, & 13).



Fig 6. Wallpaper similar to the printing room, Doddington Hall, 1760.
Source: <https://vam.ac.uk> Access date 16.4. 2023.



Fig 7. A part of the decorations of Moshir-al-Molk House in Isfahan.
Source: Authors.

3-1-3. Marbled Printed Papers: In the late 16th century, papers were produced in France with designs similar to marble (Garner, 2020), which were probably influenced by the art of the East and Iran. It is said that the domino designs that were printed on small papers were copies of the marbled designs that came from Iran to Europe as covers and linings of books and boxes. These sheets were neither painted manually nor with a block because the marble technique was achieved by floating colors on the surface of the water and transferring them to special paper sheets (Sugden & Edmondson, 1926, 28). In Fig. 8, a part of the private theater of a palace can be seen, which shows the use of wallpaper with a marbled design. The main surfaces are covered with two-tone marbled paper, and the floral margins and fabric-like bands on the columns were probably printed by blocks and then cut and installed, creating a visual error.

4-1-3. Printed Papers Known as Paste Papers: Another type of wallpaper is paste paper. The first samples of this paper date back to the 17th century and were made in two ways (Wisse, 2005, 19): a. Paste papers with random designs in which two sheets of paper of the same size are covered with a thin layer of glue, after drawing on it, glueing them together and mixing colors, special effects were created. b. Brilliant paste papers, in which the motif was created in a mixture of isinglass and starch, then shiny powder was sprinkled on it. The same method in the 15th century in Iran, it is known as «Zarafshan», in such a way that gold powder was applied on paper. Therefore, «Zarafshan» can be considered as the background of European brilliant papers (Porter, 2010, 73).

5-1-3. Printed Papers Known as Flock (Velvet) Paper: «Flock»³ is a technique in the textile industry that «Francois» introduced in France around 1620 A.D. (Hammers, 1962). In this style, first, the surface of the fabric is covered with an adhesive, then short fibers (usually viscose) are glued vertically to the surface of the fabric by the machine, and in this way, a texture similar to Velvet or Suede is created. If the adhesive is put on the fabric in a specific pattern, only in the sticky areas will a pattern be made on the fabric (Tavanaei, 1992, 146-147). In 1634, Lanier, applied colored wool to dyed paper instead of fabric and became the inventor of flock paper. Finding this type of wallpaper in the houses of the rich is proof that they are more expensive than other printed papers (<https://vam.ac.uk> Access date 16.4. 2023). Flock-style wallpapers were found in Vasigh Ansari's House in Isfahan (Fig 9).

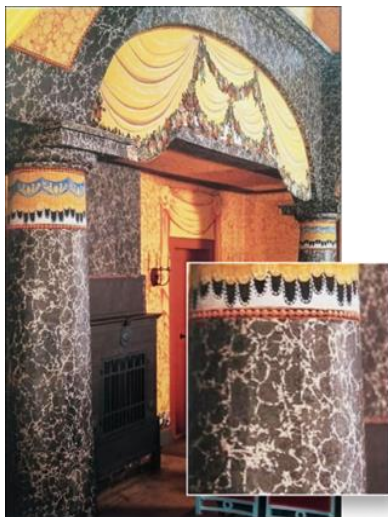


Fig 8. Part of the Kochberg Castle theater complex near Weimar. 1790. Source: Wisse, 2005, 20.



Fig 9. Flock wallpaper, Vasigh Ansari's House, Isfahan. Source: Authors.

2-3. Painted Papers: Painted wallpapers were probably the continuation of painting on the wall or canvas, which only changed the substrate of the creation of the work because they were painted manually and directly, and the printing process had no place in the creation of these works. Chinese wallpapers are among this category, which is different from European ones due to the type of background, execution technique, and theme (<https://vam.ac.uk> Access date 16.4. 2023).

1-2-3. Chinese Wallpaper: Because of the invention of paper by Chinese, it is often assumed that they were also the first users of wallpaper; however, according to researchers, neither the Chinese nor the Japanese were the first users of wallpaper (Sanborn, 1905, 2). Despite this, the influence of Chinese papers in the wallpaper industry cannot be ignored. «Hammers» believes that the trade of large and popular Chinese paper by Dutch and Portuguese merchants took place from the middle 16th century (Hammers, 1962); however, «Wu» discusses that Chinese wallpapers were imported from China to Europe by the European East India companies (Wells-Cole, 2005, 25) along with products such as tea, silk, and other luxury goods in the late 17th century. Concerning the patterns of these papers,

he also believes that the Chinese artist has created a Chinese-European product by combining images, materials, and techniques derived from the traditions of Chinese pictorial culture with a Western decorative format (Wu, 2018). Unlike European papers, Chinese papers were painted on silk and did not have repeated scenes. Their themes fall into two main categories. The first group represented the daily life activities of Chinese people (Fig 10.a). The second group depicts birds in a landscape of trees and bushes with the utmost elegance and beauty (Fig 10. b.) (<https://vam.ac.uk> Access date 16.4. 2023). Each of these papers was probably used to cover the walls of one room. «Sugden» believes that the Chinese used wallpaper with architectural designs for ritual purposes (Sugden & Edmondson, 1926, 99); however, according to «Wu», despite the designs borrowed from the Chinese visual culture, the use of wallpapers was not recorded in the history of China, because they were only produced for export to Europe (Wu, 2018). The time-consuming process of production and the different ways of installing Chinese papers were factors that made them more expensive than European ones. They were one of the most popular items among British clients during the 18th and 19th centuries and were used as the centerpiece of the magnificent royal houses in Europe, thus having a significant influence on European decorative traditions. From the point of view of «Clifford», «the interesting issue about these products was their widespread influence against the few that were produced» (Wu, 2018). In the early 1800s in Europe, wall paintings or full-wall pictures were introduced (Wisse, 2005, 17). It seems that the popularity of Chinese papers has strengthened the motivation to imitate these papers in Europeans and led to the production of so-called panorama papers. The technique of making European panoramic papers is a combination of block printing and painting. Since a large number of wooden blocks were necessary for a landscape and its engraving was expensive, some landscapes and margins were painted directly on paper. The invention of machine printing gradually reduced its enormous costs in the mid-19th century (Hammers, 1962).

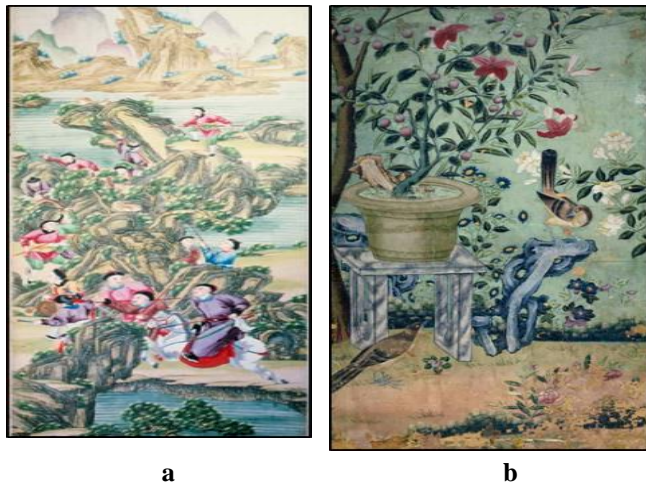


Fig 10. a. Chinese wallpaper with the theme «Daily Activity», 1790-1800 A.D. **b.** Chinese wallpaper with the theme «Plants and Birds», 1750-1800 A.D. Source: <https://vam.ac.uk> Access date 16.4. 2023.

3-3. Combined Papers: Continuous progress in the wallpaper industry led to the expansion of production and demand for its use. The increase in competitors forced the artisans of this field to produce more attractive designs; however, the limitation in printing methods required them to use the combined techniques of manual printing, painting, and machine printing.

The encounter of Qajar Era Iranians with the Emergence of Wallpaper

The murals (wall paintings) in each period expressed the events of the time, such as progress, change, victory, and decline, which stood out in the expression of the culture of the time. The architectural decorations of the Qajar period are one of the most important documents left over from these changes because of the arrival of modernity in Iran in the Qajar era, and its consequences also affected Iranian art and culture. «Mirza Melkum Khan», the most prominent character of the modernist, expresses his idea about the acquisition of Western civilization (modern discourse): «It is one of the qualifications for the evolution of the society and the creator of human happiness and prosperity. Therefore, it is a condition of wisdom to accept the tradition of European civilization wholeheartedly and to adapt our intellectual direction to the evolution of history and the spirit of the times» (Ajudani, 2003, 282-283). The main and central elements of this discourse include the three main concepts of «Constitutionalism»⁴, «Archaist Nationalism»⁵, and «Secularism»⁶ (Ashraf Nazari, 2009). At the beginning of the Qajar period, Iran became one of the most backward countries in Asia due to its geographical location and distance from developing centers. The existing conditions prompted Naser al-Din Shah to change the structure of the government when he returned from his trip to Europe to raise Iran to the status of a civilized country (Serena, 1984, 75). Therefore, he can be considered one of the most important pioneers of modernity in Iran. The reign of Naser al-Din Shah (1896-1848) coincided with the era of Queen Victoria⁷ and major cultural, economic, and technological changes in England (Briggs, 1984, 130-134). Naser al-Din Shah's friendly trips to foreign and non-Muslim lands, which was considered a great action from the point of view of «Curzon»⁸ (Curzon, 2001, 530), was one of the important factors in the change and innovation of the style of Iranians. As a powerful king, Naser al-Din Shah supported various arts. His contact with the Western world had a significant impact on the many innovations of his era (Avery, Hambly, & Melville, 2010, 157). The reflection of these international connections was the acceptance of the production and use of new forms of art and culture in society. Simultaneously with the expansion of relations with Western governments and the acceptance of European culture by the king and the court, the people also tried to improve or modernize by imitating them (Shamim, 2008, 172). Among the other important cultural phenomena that had an effective role in changing the taste of Qajar Iranians was the emergence of the press into the cultural space of the society (Shariat Panahi, 1993, 122) and the entry of the photography industry into Iran. All these developments led to the presence of Western architectural elements in the Qajar era. They made their impact on the royal buildings first and then public and religious buildings (Sajadzadeh, Daryaei, Ebrahimi, & Mesri, 2016). The common architectural decorations in most of the buildings of this period that the researchers reported included stuccowork, tilework, brickwork, paintings, wooden decorations, glass decorations, and stone decorations (Sheikhi & Dehghan Manshadi, 2022; Zakerzadeh & Ghorbaninia, 2022). In addition to the mentioned cases, the use of fabric and wallpaper as a commercial-imported product or an exquisite and rare gift found its place in a limited number of Qajar Iranian palaces and houses. The high price of wallpaper, which was considered a luxury product, was an obstacle for the general public of Iran to access it. Only a certain class of society at that time, including the king, government leaders, and merchants, found the possibility of obtaining and using it. Among the surviving places from the Qajar period, where fabric and wallpaper can be seen in some of their decorations, the Golestan Palace, Bagcheh Jug Palace in Maku, Vasigh Ansari's House in Isfahan, Sartip Sadehi House in Khomeinishahr, Ameri House in Kashan, and Shahrestank Palace can be

mentioned. As can be seen in Table 1, in addition to Naser al-Din Shah, the owners of other buildings, who were mainly courtiers, politicians, and rich people, are considered pioneers of using wallpaper in Iran. By covering the walls of the Almas Hall (Diamond Hall) with imported wallpapers, Naser al-Din Shah increased the types of decorations related to architecture in Iran. There is no documentary evidence related to the time of installing the wallpapers in Almas Hall and its manufacturer. What can be seen now are papers in three different designs, with warm colors and mostly red (Fig 11.a). «Heshmati», the restorer of this building, believes that the entire space is covered with a type of French wallpaper, which was damaged during the restoration in the 1960s. Two other paper designs that were close to the original design were selected and installed on the walls (Babaei, Yazdani, Zamani & Jokar, 2022); however, the opinion of «Zoka» is slightly different. He reported (A decade before the restoration of the palace) the existence of different types of wallpaper in this place and said: «The walls are covered with different types of foreign wallpaper» (Zoka, 1970, 282). The design of the original papers, which shows abstract motifs similar to the saffron flower with two dark shades and a loop of ears of wheat in its background, can be seen in Fig 11.a. The design of two other wallpapers that Zoka and Heshmati probably suggested, is presented in Figs 11. b and 11. c.

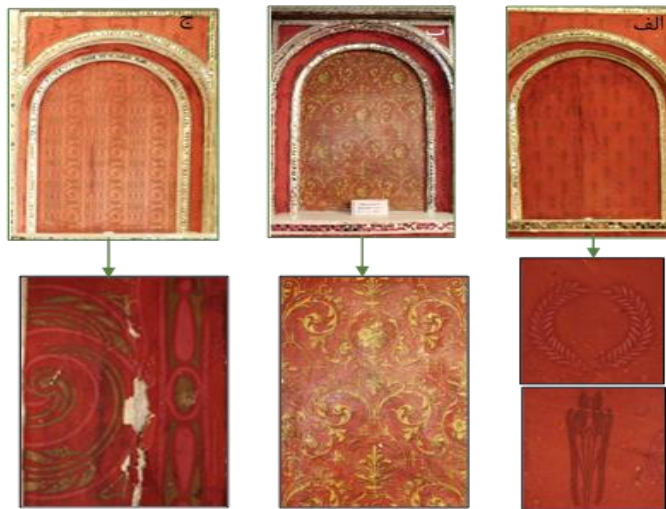










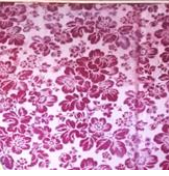



Fig 11. Almas Hall Wallpapers. Golestan palace. **a.** A part of the wallpaper with the pattern of two wheat ears and an abstract plant design. **b & c.** Wallpapers placed on original paper. Probably Pahlavi. Source: Salehieh Yazdi, 2020 (Personal Archive).

Table 1. Pioneers of Using Wallpaper in Iran. Source: Authors.

No.	Image of part of the building	Wallpaper Image	Motif	Description
1				The first pioneer of wallpaper in Iran / French wallpaper with a red background.
Tehran, Golestan Palace/Almas Hall of Naser al-Din Shah Qajar				
2				Citation based on the photo of the wallpaper in this place / Simple European motifs
Tehran, Shahrestanak Palace/ of Naser al-Din Shah Qajar				

No.	Image of part of the building	Wallpaper Image	Motif	Description
3				Covering the ceiling and walls of the Shahneshtin (Alcove) room (dining room) and the margin of the halls with wallpaper/metal, flock and cotton sheets /probably imported from India.
Isfahan, Vasigh Ansari's House / Moshir al-Molk Ansari				
4				Covering the plinths of one of the halls / simple European motifs plated with Gold that has changed color today / probably imported from Russia
Kashan, Ameri's House / Mirza Hossein Khan Saham al-Saltaneh				
5				Covering the ceiling of the spring house hall and hall of Mirrors with Russian wallpaper/plant and animal motifs.
Khomeinishahr, Isfahan, Sartip Sedehi's House / Mohammad Hossein Amini Sedehi				
6				Complete coverage of the museum room and reception/plant motifs.
Maku, Baqcheh Jooq Palace/ Sardar of Maku				

Another noteworthy point is the unique variety of design and motifs of the wall coverings of some houses, including the Vasigh Ansari's House. The wall coverings of this house, which belongs to «Moshir al-Molk Ansari», the vizier of «Zel al-Sultan», are fabric and paper. The extent of the design and pattern in this place shows the popularity, importance, and prevalence of this product among the courtiers of the Qajar period, so that wallpaper can be considered one of the new decorations in the interior architecture of this period. Mythological motifs compatible with Wayang theater motifs are a different expression of the motifs of the fabric and wallpapers of this building, which describe the story of Arjuna from the book «Mahabharata» (Fig 12). Another wall fabric shows that they were woven in 1299 A.H. by order of Naqshine company during the reign of Zel al-Sultan in Isfahan (Fig 13) (Babaei et al., 2022).



Fig 12. The wall fabric of the side room in Vasigh Ansari's House with the theme of «Wayang Theater». Source: Authors.



Fig 13. A part of a wall fabric with an inscription, 1299, «Motif of Hazrat Wala Zal al-Sultan Ruhana Fadaho».

«نقشینه حضرت والا ظل السلطان روحنا فداه»
(In Persian)«

Source: Authors.



a

b

c

Fig 14. Samples of wallpapers in the Vasigh Ansari's House in Isfahan. **a.** The ceiling of the dining room and side room. Multicolored printing, **b.** Dining Hall. Motifs of metal sheet on paper, **c.** Side room, multicolored print on gold background. Source: Authors.

In addition to the various fabric coverings of Vasigh Ansari's House, its paper coverings are also attractive. These wallpapers are installed in the social space of the dining room. As shown in Fig 14, their design and color are mainly European style (14a) with Jasmine, Paeonia, Bellflower, and Begonia flowers, and the production method of some of them is the use of unique gold-colored metal sheets (14.b. & c.), which has not been seen in any of the previous wallpaper categories; therefore, it can be considered as a completely customized and unique product for the owner of Vasigh Ansari's House. Also, the high variety of materials (fabric and paper), the way of execution of patterns (block and machine printing) and the thematic variety of motifs (plant, geometric, figure, narrative, signature, and date) is another reason for their customization. In the Ameri's House in Kashan, the wallpaper covers the plinth space of one of the halls and has simple European motifs. These motifs, which are plated with Gold, are now green in color. These papers were imported from Russia by carpet traders who were close to «Saham al-Saltaneh Ameri» (the ruler of Kashan) (Babaei, 2020). Three groups of wallpaper motifs can be seen in Baqcheh Joq Palace in Maku: a. The geometric framing of the surface in the form of diagonal squares has a special place in Islamic geometry drawings (Fig 15), b. European frames that can also be seen in Qajar tiles. J. Bouquets of pink flowers filling the entire area (Table 1, Row 6).



Fig 15. a. A part of Baqcheh Jooq Hall in Maku with wallpaper. **b.** Wallpaper with diagonal square design and six-pointed star.
Source:
https://upload.wikimedia.org/Baghche_joogh Access date (19.10.2023)

Among the buildings of the Qajar period, Golestan Palace is known as the origin of wallpaper used in Iran. Still, Vasigh Ansari's House can be considered one of the most diverse samples of wallpaper. Although the Ameri's House indicates the most limited use of wallpaper, using the method of plating with Gold in drawing patterns has turned it into a unique sample. Baqcheh Jooq Palace in Maku also has the most significant number of surface-filling motifs in the form of flower bouquets and frames. It is the only sample whose wallpaper surfaces are covered with the diagonal square geometric design, which is somewhat indicative of Islamic geometry drawings. As seen in Diagram 2, each of the studied buildings has a unique feature compared to the others. Based on the comparison of the data from Diagram 2 and Table 1, the themes and features of the wallpapers, which were emerging Western images in architectural decorations, can be categorized into four groups: a. All kinds of natural and abstract flowers on light and dark backgrounds next to birds and insects. b. Placement of plant motifs within geometric frames (reminding the frames in tile paintings of this period). c. Geometric motifs or mono-motifs at regular intervals on the background. d. Various frames filling the entire surface.

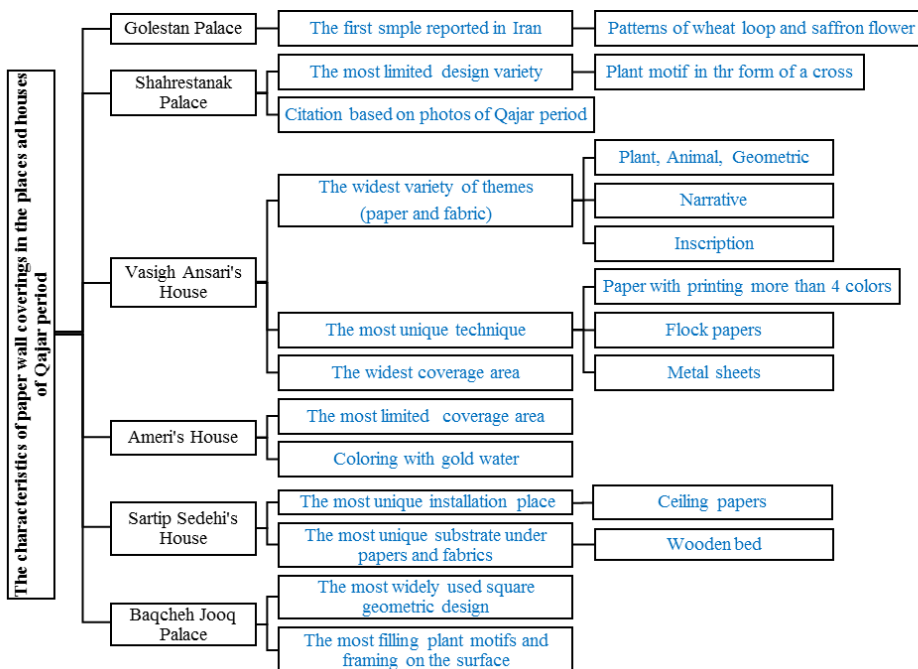


Diagram 2. Comparing the features of wallpapers in the palaces and court houses of the Qajar period. Source: Authors.

Results and Discussion

In terms of the emergence of wallpaper in European societies and different social classes as the clients of this product, it can be said that wallpaper in the world was an alternative to expensive wall hangings and appeared by the lower class of society in order to prepare and use copied and cheaper samples. In contrast, wallpapers in Iran during the Qajar period were a luxury product that synchronized the court with the Western perspective. From another point of view, the absence of a document or a report about the use of wallpaper in the Qajar period's public houses shows that the high price of wall coverings was probably an obstacle to their public use. At first, the wallpapers were single sheets that were not only used to decorate the wall but also decorated all the home accessories. These papers had simple designs. Over time, repetitive designs emerged, and installing them on the wall became necessary to create a continuous large pattern. Despite the rolling of papers and the prosperity of this industry, the use of block printing continued; however, the prolongation of the block printing process was a factor in increasing their prices. A product that was once made for people with low incomes was now considered a luxury item that even the middle classes of society could not use. After over a century (18th century A.D.), important events happened in this industry, one of which was the invention of the wallpaper printing machine in 1758. In 1836, at the same time as the Victorian era, wallpapers and wall coverings became the most essential element in interior decoration, and wall coverings became available to everyone. In fact, the reason for its spread was the invention of mass production techniques and the abolition of the wallpaper tax in 1836 A.D., which was established 124 years ago during the reign of Queen Anne⁹ and was a significant obstacle to the widespread use of wallpaper by all people except the rich (Parissien, 1995, 192). In 25 years, the invention of four, eight, and twenty color printing machines led to a decrease in the price of wallpaper, the withdrawal of this product from the monopoly of the rich, and its availability to the public. Table 2 shows the development process and critical historical events in the wallpaper industry.

Table 2. Significant events in the evolution of wallpaper in the world and Iran. Source: Authors.

No.	Wallpaper chronology from the beginning to the 19 th century	Date/ A.D.
1	Rice sheets were installed on the wall by the Chinese.	B.C.200
2	The technique of using patterned linen fabrics on the wall spread in the Middle East.	8 th century
3	Religious icons were printed or painted on the wall by a wooden block.	Early 13 th century
4	50 portable paper rolls with angel motifs were ordered by Louis XI.	1481
5	Single sheets were created to prevent the penetration of dust and insects into the building and to decorate walls and furniture.	Late 15 th century
6	Domino papers with marble, cloud and wind designs were invented in France.	1599
7	Chinese wallpapers were imported to Europe.	16-17 century
8	Flock fabrics were introduced by Francois in France.	1620
9	Colored flock papers were invented by Lanier.	1634
10	Constant and repetitive motifs on single sheets were invented by Papillon.	1675
11	Single sheets were used in England in the form of roll.	1693

No.	Wallpaper chronology from the beginning to the 19 th century	Date/ A.D.
12	Wallpaper was installed directly on the wall.	second half of the 18 th century
13	The first wallpaper printing machine was invented in France by Oberkampf.	1785
14	In France, Robert designed a process to produce endless rolls.	1798
15	In England, machines were made to produce endless long paper in continuous rolls.	1807
16	The 4-color wallpaper roller printing machine was invented in England.	1839
17	An 8-color wallpaper printing machine was invented.	1850
18	The invention of annealing colors increased the variety of colors and reduced the price of wallpaper colors.	1856
19	A 20-color wallpaper printing machine was invented.	1874
20	Wallpaper was imported to Iran by Naser al-Din Shah.	second half of the 19 th century
21	Jeffery and his colleagues invented sanitary wallpaper called «Sleeping Beauty» with the feature of being washable and arsenic-free.	1880s
22	Wallpaper glue was invented by Sichel.	1888
23	The first washable wallpaper, especially for kindergartens, was illustrated and produced by «Greenway» ¹⁰ .	1893
24	«Golden age of wallpaper»: Mechanical silk machines made it possible to produce all kinds of wallpaper.	1920s

What can be seen in the above table shows the process of wallpaper production until its globalization of more than two thousand years, which has not been discussed in a comprehensive source so far. Wallpaper, which had become a universal style in the 19th century, entered Iran at the same time as the rule of Naser al-Din Shah Qajar and his successive trips to foreign countries and was used along with other decorations of Golestan Palace, then found its place among the aristocracy. The encounter of the Qajar era courtiers with this new covering can be considered an influential cultural event and a reflection of the political and social conditions of this period; however, the available samples of Qajar did not have the variety of categories of the world-wide wallpapers that were introduced earlier. Also, the small number of existing Qajar samples in Iran indicates that at a time when the use of wallpaper became common in the world and all classes of society with different tastes could use it, in Iran, its use has been merely considered as one of the signs of modernity and distinguishing the wealthy from other classes of society.

Conclusion

According to the findings of this research, wallpaper is not an individual invention but the result of several successive developments in different parts of the world. Also, due to the lack of surviving samples and places from this period, it is not possible to consider a specific time and place as the time of the beginning of its production and use because wallpaper has evolved over time and through many processes and has changed into its present form. Despite this, the Chinese are known to have provided the first idea behind the formation of wallpaper, and the French had a significant impact on the processes done in wallpaper production up to the 19th century. According to the findings, it seems that the coincidence of the Victorian era (which was the peak of the popularity and development of wallpaper)

with the era of Naser al-Din Shah motivated the modernist king of Iran to import wallpaper. In fact, the use of wallpaper in the buildings belonging to the Qajar court reflects the approach towards global style and the political-social conditions of that period because the king and the courtiers pioneered the use of wallpaper despite the diverse and typical architectural decorations derived from Iranian culture. They even used red and yellow tones in the selection of colors. They ordered patterns and frames common in Europe, which is not far from expectations because these papers were ordered from countries such as India, Russia, and France. The peak of this companionship and diversity can be seen in the Vasigh Ansari's House. in Isfahan, which includes the highest level of diversity among the samples studied in this research. The reason is probably the socio-cultural characteristics of the landlord, who has established broader connections with the world due to his business.

Author Contributions

In the preparation of this article, the research and data collection was done by author 2, and both authors conducted the data analysis. Authors 1 and 2 have also made detailed and final modifications. This manuscript was written with the equal participation of the authors. All authors discussed the results and reviewed and approved the final draft of the manuscript.

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Conflict of Interest

The author (s) declare that there are no potential conflicts of interest related to this research, in writing, and publication of this article

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Appendix

1. «Pateh» is a type of canvas for transferring decorations such as plastering (stuccoworking) and painting to the wall (Soleymani & Shishehbori, 2017).
2. «Fabric wall painting» in the history of Iran is a subcategory of fabric wall covering techniques in architectural decorations, which is pasted on the wall after painting on the canvas fabric (Hamzavi, 2021).
3. «Flock»: The waste material of the woolen fabric industry that was turned into powder; <https://vam.ac.uk> Access date (16.4. 2023).
4. All citizens are in the position of a nation versus a system called the government (Ashraf Nazari, 2009).
5. Nationalism along with paying attention to the glory of ancient Iran.
6. A kind of ontology of religion and the world, meaning the world versus the hereafter of Westernism (Ashraf Nazari, 2009).
7. The era of Queen Victoria (Alexandrina Victoria, 1819-1901), the Victorian era, the peak of the industrial revolution and the era of great social, economic, and technological changes in Britain.
8. Lord George Nathaniel Curzon arrived in Iran in 1889 as a reporter for the Times newspaper.
9. Queen Anne (1714-1665), Queen of England, Scotland, and Ireland.
10. Catherine Greenaway (1846-1901), English Victorian artist who became famous for illustrating children's books.

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