

## **BEYOND BEAUTY: A LOOK AT THE DAMASK ROSE'S ORIGIN, HISTORY AND GEOGRAPHICAL SPREAD**

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### **ABSTRACT**

From its captivating fragrance to its symbolic presence in ancient rituals, the Damask rose boasts a rich history that transcends its undeniable beauty. This article embarks on a global exploration of *Rosa damascena*, tracing its origins in the Middle East to its widespread cultivation across continents. We delve into the scientific mysteries surrounding its genetic makeup, potentially linked to ancient roses. The article explores the rose's cultural significance throughout history, from its connection to love and divinity in Mesopotamia to its role in Egyptian funerary practices. We then embark on a geographical journey, examining the role of trade routes, human migration, and influential figures in propelling the rose's spread to Europe, Asia, and North Africa. Morocco serves as a compelling case study, highlighting the unique integration of the Damask rose into local customs and festivals, culminating in the renowned Rose Valley and its annual celebration. Finally, the article explores the role of advancements in transportation in solidifying the Damask rose's status as a globally cultivated and appreciated plant. This comprehensive analysis unveils the Damask rose as a powerful symbol of the enduring connection between humankind and the plant world, its significance blossoming across cultures and throughout time.

**Keywords:** Damask rose, *Rosa damascena* Mill, global spread, cultural significance, historical cultivation.

### **HISTORICAL ROOTS OF ROSA DAMASCENA**

#### *Origins and Early Cultivation Practices*

*Rosa damascena* weaves a rich tapestry through its inseparable link with botany and millennia-old culture. The earliest historical traces and ancient accounts point to its emergence in Damascus, Syria, around 300 A.D., associated with the proselyting of St. Frumentius of Phoenicia (Widrechner, 1981). This assertion is firmly supported by writings dating back millennia, such as those of Aristotle and Hippocrates, which attest to the use of roses for medicinal and aromatic purposes in this locality (Gonsalves, 2010).

Advanced research in plant genomics has been meticulously conducted to delve into the genetic foundations of *Rosa damascena* (Kole, 2011). Through detailed analyses of its DNA, scientists have illuminated the close genetic connections it shares with wild rose species indigenous to the Middle East (Smulders et al., 2011). Noteworthy historical mentions by botanical authorities and esteemed writers, such as Al-Dinawari, an Arab botanist from the 9th century, further affirm the existence of cultivated roses around Damascus, hinting at the presence of the Damascus rose in the region for numerous centuries. Despite the captivating nature of *Rosa damascena*, unraveling its precise ancestors remains enigmatic.

Molecular evidence plays a pivotal role in substantiating the hypothesis that *Rosa gallica* and *Rosa phoenicia* serve as potential parents of *Rosa damascena* (Bendahmane et al., 2013; Nagar et al., 2007; Panahi, 2023). This evidence encompasses various molecular proofs: Genetic markers and phylogenetic analysis reveal the considerable genetic similarity between *Rosa damascena* and its putative parent species, *Rosa gallica*, and *Rosa phoenicia* (Bruneau et al., 2007). Microsatellite markers have been instrumental in discerning shared alleles and genetic variants between *Rosa damascena* and its putative parent species, providing compelling molecular evidence of their genetic relatedness (Babaei et al., 2007; Smulders et al., 2011). Single nucleotide polymorphisms (SNPs) and genome-wide association studies (GWAS) further consolidate their genetic connection by identifying genomic regions harboring genes linked to key traits shared between the Damascus rose and its putative parent species (Schulz et al., 2016; Venkatesha et al., 2022).

Gene expression profiling has yielded valuable insights into shared regulatory networks and functional pathways between *Rosa damascena* and its putative parent species (Liu et al., 2023). Analysis of gene expression profiles associated with flower development, fragrance biosynthesis, and stress response has unveiled striking similarities, lending further support to their close genetic relationship (Rao et al., 2006). These molecular proofs play a crucial role in elucidating the genetic origins and evolutionary history of the Damascus rose, shedding light on its hybrid nature and genetic diversity.

Early cultivation practices have been integral to the propagation and preservation of *Rosa damascena*, adding another layer to the intricate tapestry of its history, while the exact origin remains debated, evidence suggests cultivation likely began in the Middle East, with regions like

Iran being strong contenders, possibly as early as Roman times (Wrensch, 1992). Historical records suggest a rich heritage of horticultural expertise in the region of Damask (Dirani & Ahmad, 2016). These early practices likely involved selective breeding and propagation techniques aimed at enhancing desirable traits, such as fragrance, color, and bloom size, in cultivated roses. The cultivation of *Rosa damascena* may have contributed to the enrichment of local biodiversity and cultural landscapes, as well as the development of trade routes and economies centered around the Damascus rose (P. K. Pal & Singh, 2013). Understanding the early cultivation practices associated with *Rosa damascena* provides valuable insights into human-plant interactions and the historical significance of this iconic rose species (Conan & Kress, 2007).

### ***Cultural and symbolic significance in ancient civilizations***

Recent scientific research has shed new light on the cultural and symbolic significance of *Rosa damascena* in ancient civilizations, revealing its profound influence on human societies across history (Afsari Sardari et al., 2019; Başer, 2017). Through multidisciplinary approaches combining archaeology, anthropology, and molecular biology, scientists have unraveled the intricate connections between the Damascus rose and various aspects of ancient cultures (Becic et al., 2013). In ancient Mesopotamia, for example, textual and archaeological evidence suggests that roses, including *Rosa damascena*, held symbolic significance in religious rituals, art, and literature. Recent genetic studies have provided insights into the domestication and cultivation of roses in this region, elucidating the role of *Rosa damascena* in ancient Mesopotamian societies as a symbol of beauty, fertility, and divine connection (Agaoglu, 2000; Başer, 2017).

Furthermore, scientific investigations have revealed the widespread cultivation and utilization of *Rosa damascena* in ancient Egypt, where the rose was revered for its aromatic properties and therapeutic benefits (Alizadeh & Fattahi, 2021; Tzoneva-Tyutyulkova, n.d.). Recent botanical analyses of ancient Egyptian artifacts, including perfumes, ointments, and floral decorations, have identified traces of *Rosa damascena*, underscoring its integral role in religious ceremonies, funerary practices, and daily life (De La Haye, 2020; Dugan, 2011). Moreover, genomic studies have traced the genetic lineage of *Rosa damascena* in ancient Egypt, providing insights into the cultivation techniques and trade networks that facilitated the spread of this revered plant throughout the Mediterranean region (P. K. Pal, 2013; Rusanov et al., 2020).

In addition to its tangible uses, recent research has highlighted the symbolic significance of *Rosa damascena* in ancient Greek and Roman civilizations, where the rose was associated with love, beauty, and luxury (Kumbaric, 2013; Shinwari & Shinwari, 2003). Archaeological excavations of ancient Greek and Roman sites have unearthed artifacts adorned with rose motifs, while literary sources from these civilizations abound with references to the mythical origins and cultural significance of the rose (Kumbaric, 2013; Widrlechner, 1981). Scientific analyses of ancient

botanical remains and artworks have provided evidence of the cultivation and hybridization of roses, including *Rosa damascena*, in gardens, palaces, and public spaces, reflecting their status as symbols of power, prestige, and aesthetic refinement (Segal & Alen, 2020). Overall, recent scientific research has deepened our understanding of the cultural and symbolic significance of *Rosa damascena* in ancient civilizations, illuminating its multifaceted roles in shaping human beliefs, practices, and expressions of beauty and spirituality throughout history (Özçelik, 2018).

## **THE GEOGRAPHICAL SPREAD OF *ROSA DAMASCENA***

### ***Rosa damascena across the Middle East***

Following its initial appearance in the region of Damascus, *Rosa damascena*, spread across the Middle East. Commercial exchanges played a fundamental role in this propagation (Rusanov et al., 2020). Trade caravans, traversing the commercial routes connecting Damascus to various regions of the Middle East, frequently carried rose plants, petals, or derivatives of this flower (Yusuf, 1996). These trade routes greatly contributed to the geographical expansion of *Rosa damascena* cultivation in broader areas, including Iran, Anatolia, and other parts of the Levant (Bayram, 2020). Simultaneously, human migration movements constituted another crucial factor in the diffusion of the Damascus Rose (Mostafavi et al., 2021). Population displacements, encompassing artisans, merchants, farmers, and even conquerors, transmitted knowledge regarding rose cultivation and horticultural practices associated with this flower (Aubaile, 2012). This transmission of knowledge facilitated the expansion of *Rosa damascena* cultivation to new regions of the Middle East.

Within this dissemination, prominent historical figures played a significant role. Among them were scholars, botanists, horticulturists, and renowned poets (Khaleghi & Khadivi, 2020). These personalities contributed to the preservation and promotion of rose culture through their writings, observations, and dissemination efforts. Names such as Ibn al-Baitar, a renowned Andalusian pharmacologist and botanist, documented and participated in the propagation of roses, including *Rosa damascena*, through their botanical and pharmaceutical works (Ghazanfar, 2011; Saad et al., 2017). Thus, the diffusion of *Rosa damascena* across the Middle East was accomplished through a complex network involving commercial exchanges, population movements, and the influence of notable figures who shared their knowledge and experiences on the cultivation of this iconic rose (Conan & Kress, 2007). This diffusion greatly contributed to the integration of Damascus Rose culture into the Middle East's daily life and botanical culture.

### ***European Encounters with Rosa damascena***

The introduction of *Rosa damascena* to Europe was shaped by a mosaic of historical events and influential figures (Raymond et al., 2018). The Crusades between the 11th and 13th centuries

marked the beginning of this diffusion (Labban & Thallaj, 2020). These religious and military expeditions to the Middle East opened avenues for cultural, commercial, and botanical exchanges between Europe and the Middle East (Conan & Kress, 2007; Wrensch, 1992). The returns from the Crusades brought back personalities like Jacques de Vitry, a bishop and writer, who documented his botanical discoveries during his journey to the East (Arias & Ramón-Laca, 2005; Ramon-Laca, 2003). Simultaneously, intellectuals such as Albertus Magnus, a philosopher and naturalist from the 13th century, played a crucial role (Wöllmer, 2013). Their translation and dissemination of Arabic and Greek botanical works significantly contributed to the acquisition of knowledge about plants, including the Damascus Rose, by a wider European audience. Botanical gardens, like the one founded in Padua in 1545, became hubs for the cultivation and study of these new plants (Rakow & Lee, 2015), while scientists such as Leonhart Fuchs, a German botanist from the 16th century, contributed to broadening the appreciation and understanding of *Rosa damascena* (Chen, 2020).

The Renaissance period was also marked by explorers such as Pierre Belon, a French naturalist from the 16th century, who brought back exotic plants, including *Rosa damascena*, during their travels and exchanges with the Middle East (Pouryan, 2022). These introductions were essential in initiating the cultivation and appreciation of *Rosa damascena* in Europe, where it became an iconic plant, valued for its distinctive fragrance and beauty. After its introduction to Europe, the propagation of *Rosa damascena* spread to other parts of the world through historical trade routes such as the Silk Road. These routes facilitated its transfer to distant regions in Asia and Africa, contributing to its global expansion (Redwan et al., 2020, El Malahi et al., 2024c).

### ***Rosa damascena in Asia: Traditions and Trade***

The odyssey of *Rosa damascena* across Asia, shaped by commercial exchanges and military conquests, was marked by prominent figures who influenced its route (Bowe, 2004; Pouryan, 2022). After its initial emergence, the spread of *Rosa damascena* across Asia continued mainly through commercial exchanges and military conquests (Damania, 2010). Al-Idrisi, a 12th-century Arab geographer and cartographer, played a crucial role in mapping and understanding the trade routes between the East and the West, shedding crucial light on the routes through which *Rosa damascena* spread (Jarzombek, 2023). Ancient trade routes, notably the famous Silk Road, played a crucial role in expanding this rose to various Asian regions (Liu, 2010). Commercial caravans, facilitators of East-West exchanges, transported valuable goods, including plants, perfumes, and horticultural knowledge (Timor, 2011). These routes allowed the Damascus Rose to extend into Central Asia, including present-day territories such as Turkmenistan, Uzbekistan, and Afghanistan (Golden, 2011).

Additionally, Tamerlane, the 14th-century Mongol conqueror, expanded his empire in Central Asia, fostering the expansion of rose cultivation in the regions he conquered (Ansari, 2011). Military conquests and territorial expansions also played a prominent role in the diffusion of this iconic rose (Nagel, 2021). In parallel, the Venetian explorer Marco Polo, who traveled the trade routes between Europe and Asia in the 13th century, reported fascinating accounts of Eastern cultures and riches, possibly including those related to *Rosa damascena* (Ellena, 2022). Furthermore, cultural exchanges, royal marriages, and commercial interests also contributed to the spread of *Rosa damascena* culture in other parts of Asia, although these influences proved to be later and less widespread than in regions close to the Middle East (Agnoletti et al., 2023). The significant footprint of these remarkable events has left its mark on the journey of *Rosa damascena*, each contributing distinctively to its flourishing across Asia (Radanova, 2023). This has elevated this flower into a major symbol of the cultural and botanical richness of the continent.

### ***Rosa damascena's Journey to North Africa***

The spread of *Rosa damascena* to North Africa was shaped by a series of historical events and prominent figures that played a crucial role in its propagation (Hussen, 2023). Around the 8th century, Mediterranean trade routes served as vital channels, facilitating the transport of this rose to North Africa (Abulafia, 2003). This commercial flow thrived due to dynamic exchanges between Mediterranean ports, enabling the transfer of plants, horticultural knowledge, and cultures (Rotelli, 2023). By the 9th century, Ibn Wahshiyya, an Arab scholar and alchemist, contributed to disseminating horticultural knowledge in the Mediterranean region, possibly including *Rosa damascena* (Kuipers, 2020). His writings played a crucial role in the transmission of agricultural practices.

During the 13th century, pilgrimages heavily influenced the propagation of *Rosa damascena* in North Africa (Volpato et al., 2012). Pilgrimage routes served as vectors for the transmission of knowledge, cultures, and plants (Caspi-Fluger et al., 2012; Wilson, 1995). This period saw the work of Ibn al-Baitar, an Andalusian pharmacologist and botanist, whose studies documented the medicinal properties of plants, including those of *Rosa damascena*, thereby facilitating its dissemination (Başer et al., 2012; Saad et al., 2017). These events, spanning from the 8th to the 13th century, played a major role in the introduction and spread of *Rosa damascena* in North Africa, making this flower a distinctive element of the region's cultural and botanical richness.

The dissemination of *Rosa damascena* in Morocco has followed a rich and varied path, enriched by a diversity of historical channels (Midaoui et al., 2011; Zrira, 2017). Ancient trade routes, notably the famous Gold Route, carved crucial paths for the introduction of this rose into the country (Charlesworth, 2016). Originally intended for the trade of spices and luxury textiles, these routes served as vehicles for the transportation of plants and horticultural knowledge, thus



facilitating the establishment of *Rosa damascena* in the region (De Carolis, 2017). The precise arrival of this rose remains partially documented, although its introduction is estimated to have occurred during the era of Muslim dynasties, notably under the reigns of the Almoravids and Almohads in the Middle Ages (Eddouks et al., 2017). These dynasties greatly contributed to the rise of this culture. Diplomatic ties and alliances with other Mediterranean regions facilitated the importation of plants, including this rose, while introducing innovative horticultural practices (Tzvetkova & Smart, 2023).

The history of *Rosa damascena* in Morocco has become deeply rooted in customs and rituals. Royal gardens, symbols of finesse and sophistication, have been centers for the dissemination of this floral culture (Boudaia et al., 2024; El Malahi, al., 2024a; El Malahi, et al., 2024b; El Malahi et al., 2025; Nadia et al., 2023; Zrira, 2017). These spaces have housed gardens where *Rosa damascena* was cultivated for its exquisite fragrance and decorative allure (Conan & Kress, 2007; B. P. Pal, 1987; Panda, 2005). The mountainous regions of Morocco, notably the Atlas Mountains, have offered natural environments conducive to the cultivation of *Rosa damascena* (Hachi et al., 2022). The varied topography and favorable climate of these areas have encouraged the growth and blooming of this iconic rose, creating hubs of culture renowned for the production of rose oil (Baser & Arslan, 2014). The growing interest in the cultivation of *Rosa damascena* in Morocco stems from its distinctive aromatic properties, exploited in medical, cosmetic, and perfumery fields. Spaces dedicated to this culture have developed, notably in the region of Kelaat M'Gouna, nestled in the heart of the Rose Valley, where ideal climatic conditions have fostered the flourishing of this iconic flower (Bertini et al., 2023). Various individuals and communities have played a crucial role in the introduction and growth of *Rosa damascena* culture in Morocco. Local Berber tribes, pioneers in rose cultivation in the Kelaat M'Gouna region, have significantly contributed to promoting this practice (Zamani-Farahani & Fox, 2018). Concurrently, the Muslim Almohad dynasty stimulated the expansion of this culture in the Middle Atlas region (Hamdaoui & Bsibis, 2021). Over the centuries, rose cultivation and distillation techniques have been perfected, propelling the growth of the rose oil industry in Morocco (Henry & Springborg, 2010). This industry recognized nationally and internationally, has made the Rose Valley a major hub for the production of exceptional rose oil.

Annual festivals, showcasing the culture and industry of *Rosa damascena*, have been established in the Kelaat M'Gouna region, attracting national and international visitors (Benidir, 2021; Ettazarini, 2011). The annual rose festivals in Kelaat M'Gouna, serve as a vibrant homage to a centuries-old heritage closely intertwined with Moroccan identity and culture (Zrira, 2017). These celebrations trace their origins to local traditions that have long honored the Damask rose through rituals, songs, and dances. From there, the festival has progressively evolved into one of the most significant events on the Moroccan cultural calendar. Initiated by the Ministry of Agriculture,

Maritime Fisheries, Rural Development, and Water and Forests, this year marking its 59th anniversary, the festival has gained international prominence since 2012 (Zrira, 2017). This expansion has been marked by the participation of foreign businesses specializing in rose water distillation, thus solidifying its global reputation. This recognition has transcended the borders of Kelaat M'Gouna to touch surrounding villages and even cities across Morocco.

The pinnacle of this radiance occurred in 2014 when the Rose Valley was designated a "Global Geopark" by UNESCO, becoming the sole region in Morocco to receive this prestigious distinction. This designation not only enhanced the region's international recognition but also highlighted its commitment to preserving its rich geological and cultural heritage. In this spirit, the Kelaat M'Gouna Rose Festival is firmly committed to sustainable development. Beyond its economic and cultural significance, it positions itself as a key player in preserving the natural ecosystem of the Rose Valley. It promotes environmentally friendly agricultural practices and encourages ethical management of the value chain, ensuring the sustainability of this centuries-old tradition while preserving the essence of the valley itself.

Thus, these festivals are not merely annual celebrations but living testimonies to history, culture, and commitment to a sustainable future. They symbolize the harmonious convergence between ancient traditions and modern aspirations, making Kelaat M'Gouna a beacon of balanced and resilient development, where the beauty and cultural richness of the region are preserved and celebrated with passion.

These events have played a pivotal role in promoting this culture in Morocco and raising awareness of its multiple applications (Biermayr-Jenzano et al., 2014). Today, the cultivation of *Rosa damascena* remains an iconic element of Moroccan heritage, contributing to the local economy and enhancing the tourist appeal of the Kelaat M'Gouna region (Zamani-Farahani & Fox, 2018).

### ***Fragrance, Commerce, and Globalization***

The emergence of international transportation networks during the 15th and 16th centuries opened pathways for the global propagation of *Rosa damascena* (Altman et al., 2022; Leus et al., 2018). These advancements were catalyzed by commercial exchanges and exploration voyages led by personalities such as botanists, explorers, and sailors (Dugan, 2011; Ishtiaq et al., 2016). These key actors transported and introduced *Rosa damascena* to various regions of the world during their expeditions (De, 2017). Furthermore, the advent of modern transportation, including steamships, railways, and airplanes, accelerated the global dissemination of *Rosa damascena* (Palairret, 1999). These advancements facilitated the rapid and efficient spread of this plant across multiple continents. International trade, the development of tourism, and human migrations also contributed to this expansion, broadening its cultivation and appreciation in different regions due to its unique aromatic properties and exceptional beauty (Mustafa et al., 2015).



Today, *Rosa damascena* remains a highly valued plant, cultivated and appreciated in many parts of the world for its distinctive aromatic qualities (Hegde et al., 2022). The dissemination of this iconic rose is part of an ancient history, fueled by the evolution of transportation means and cultural, commercial, and human exchanges (Dugan, 2011). Its cultivation not only pays homage to its history but also affirms its relevance and timeless appeal in the diversity of cultures across the globe (Hussen, 2023).

The spread of *Rosa damascena* across regions and empires is represented in Figure 1 below.

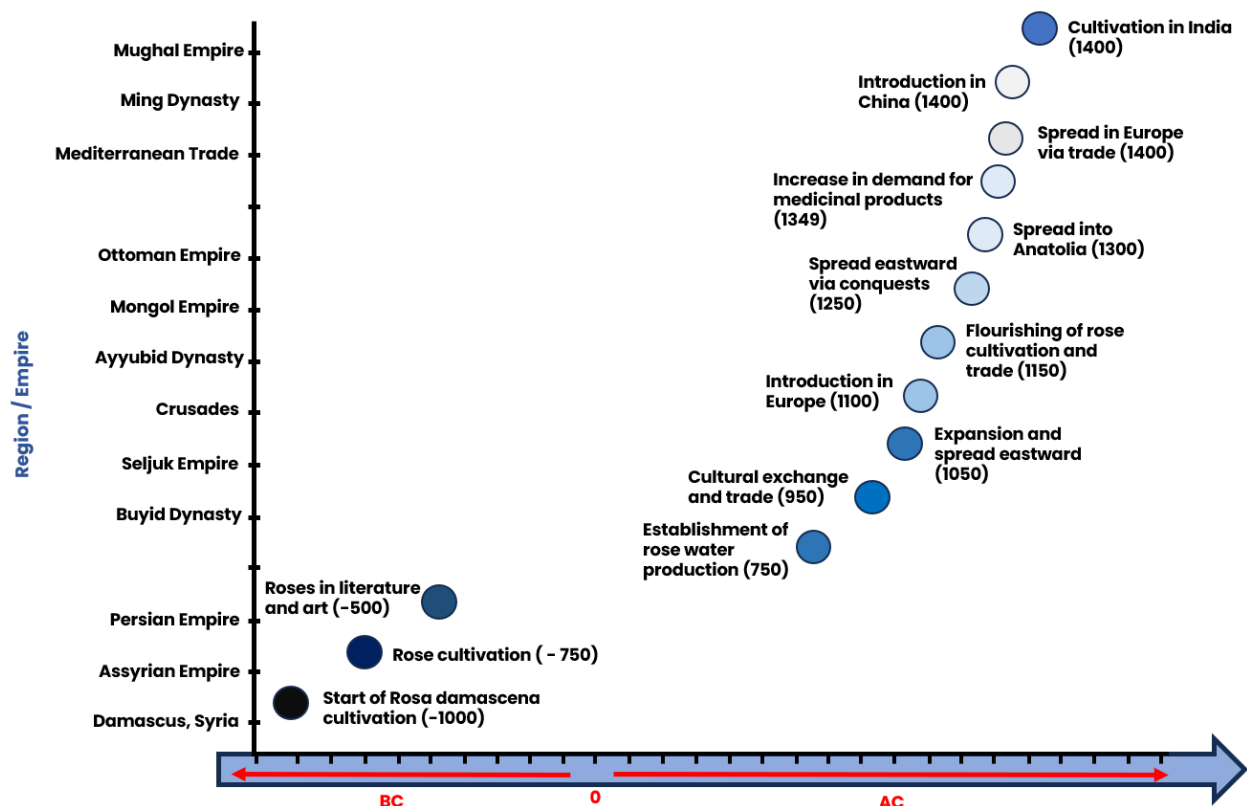


Fig. 1: Detailed Timeline of the Spread of *Rosa damascena*

## CONCLUSION

The Damask rose transcends its undeniable beauty, boasting a rich tapestry woven from history, science, and cultural significance. This exploration has unraveled the mysteries surrounding its genetic makeup, potentially linked to ancient rose species. We traced its captivating journey from the Middle East to continents beyond, propelled by trade routes, human migration, and influential figures. Morocco serves as a captivating case study, highlighting the unique integration of the Damask rose into local customs and festivals. The renowned Rose Valley and its annual celebration exemplify the deep-rooted connection between this iconic flower and Moroccan

culture. Advancements in transportation solidified the Damask rose's status as a globally cultivated and appreciated plant. This captivating exploration reveals the Damask rose as a powerful symbol of the enduring connection between humankind and the plant world. Its significance blossoms across cultures and throughout time, standing as a testament to the intricate tapestry woven by human interaction with the natural world.

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