# Historical and chemical fingerprinting of the Royal story of the perfume.

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***Abstract*—The Mughals had a strong preference for perfumes and other perfumery ingredients. And the development of perfumery in Mughal times was interwoven with gender agency, branding technology, and patronage by the emperors. The main aim of the research paper is to address the historical accounts that give a deep dive into knowledge about the discovery of iter-i- jahagiri and the contrasting claims of Nurjahan and her mother, Asmat Begam. By encompassing the accounts Tuzk-e-Jahangiri, Niccolao Manucci's Storia do Mogor, and Abu'l-Fazl's Ain-i-Akbari, this study claims that rose attar was institutionalized through imperial branding, which is sophisticated technological transfer from Persia further the research explores into the historiographical debate regarding the inclusion of female technical expertise and the transformation of fragrance into a tool of imperial soft power.**

***Index Terms*—Itr-i-Jahangiri, Mughal, Rose, Nurjahan, Asmat Begam.**

## I. INTRODUCTION

The Mughal Court operates as a center of sensory refinement and fragrance plays a pivotal role in ritual, diplomacy, and personal identity. Abul Fazal says Emperor Akbar is fond of perfume. Abul Fazl that the imperial kitchen areas were elaborately equipped for all kinds of techniques that might be needed in the process of drying, extracting, fermenting, distilling, and straining. Akbar had taken a keen interest in the making of perfume and encouraged it, said Abul Fazl, "from religious motives," and the court hall of his palace was "continually scented with ambergris, aloewood, and compositions according to ancient recipes, or mixtures invented by his Majesty." The chronicler listed thirty-four different types of perfumes together with their current prices and included detailed recipes for the preparation of some of the most popular fragrances at court, including among them those made from ambar, camphor, zabad (civet), chuwa (aloe), and sandalwood. Indian expertise of making cosmetics and perfume is nearly 3000 years old but mughal time is considered the "Golden Age" of Indian perfumery culture because of Indian science and flowers abundance fusion with Persian distillation techniques with indigenous floral. Central to the mughal era is the legend of Itr-i-Jahangiri, a scent that symbolizes the pinnacle of royal influence on the fragrance industry.[1,2]

## II. HISTORICAL NARRATIVE OF DISCOVERY

"There are many versions of this story; I sing them all. This is the prettiest, but it's not quite accurate." — Jester in Once Upon a Mattress

In the article, "Once Upon an Adaptation: How Stories Change Over Time," by Emily White, the transformation of "The Princess and the Pea," written by Hans Christian Andersen in 1835, from a simple fairytale to something more complicated and eventually to something with the message of "ultimately, the aristocracy deserved the disdain and ostracism the protagonist exhibited," is presented.[3] Also, "The Finding of the Itr-i-Jahangiri (the finding of the Jahangiri Perfume) as the story of the discovery of the perfume, has been told in different eras with differing settings and meanings. In fact, the goal and purpose of stories are affected by time and personal motives.

First, we shall study the story in Jahangir's memoirs.
"This ‘itr’ is a discovery which was made during my reign through the efforts of the mother of Nur-Jahan Begum.When she was making rose-water a scum formed on the surface of the dishes into which the hot rose-water was poured from the jugs. She collected this scum little by little; when much rosewater was obtained a sensible portion of the scum was collected. It is of such strength in perfume that if one drop be rubbed on the palm it scents a whole assembly, and it appears as if many red rosebuds had bloomed at once. There is no other scent of equal excellence to it. It restores hearts that have gone and brings back withered souls. In reward for that invention, I presented a string of pearls to the inventress. Sallma Sultan Begam (may the lights of God be on her tomb) was present, and she gave this oil the name of ' 'itr-i-Jahangiri.’’’[4]
The second story is described by Niccolao Mannuchi in his work “Storio do Mogor”. It is an important account of Aurangzeb's reign and later reign of ShanJahan.

“She ordered all the reservoirs, both in the garden and in the palace, to be filled with rose-water, prohibiting anyone from washing his hands in these reservoirs. It happened
that she went to sleep near one of the tanks. At early dawn she rose, and as she was anxious that no one should foul the water in these tanks, she went at once to see if there had been any defilement. She noticed on the top of the water a film of oil. At this she flew into a passion, suspecting someone had thrown fat into this tank. She was curious to know what it could be that had dirtied the water, so she ordered someone to pass a hand over the oil referred to. Smelling it, she found it had a very sweet smell. Two or three times she smelt it, and each time was aware of the same smell; hence she concluded that the said oil had formed from the rose-water like dew, much pleased at having acquired such an excellent perfume; she quickly rubbed some on her clothes, and went off to em-brace the king. He was asleep, but on being roused he was lost in admiration at such a fine perfume, while Nur Jahan recounted to him the story. It was thus that the secret of the essence of roses was discovered in Hindustan.”[5]

Third story described by the colonial writer Frederic Shobai in his text The world in miniature: Hindoostan this story comes up with some correction in Mannuchi’s story.

“The discovery of that incomparable perfume, the attar of roses, is ascribed to Noor Mahl, the consort of the emperor Jehangir, called, for her exquisite beauty, Noor Jelian, or the Light of the World. This princess had not only the largest baths, but even whole canals, filled with rose-water, that, when she walked abroad, she might enjoy its fragrance. One fine morning, walking with the emperor along such a canal, in Ills magnificent gardens near Sirinagur, in Cashmere, she observed a fine scum floating on the surface. Curiosity induced her to take up some of it, which was found to yield an odour far surpassing that of rose-water. She caused it to be minutely examined; and the native chemists produced from it that essence which is now so universally celebrated for its unrivalled scent and high price the name of Atyr Jehangir, in honour of the emperor, and diffused the use of it throughout all Hindoostan.”[6]

## III. OSMOLOGY OF STORY OF FRAGRANCE

Here check the upper stories on the ground of fragrance chemistry.
The discovery of itr-i-Jahangiri also conveys a sense of serendipitous elements rather than a scientific approach. Actually, Serendipity has played a crucial role in science. The majority of the most important and revolutionary discoveries in biology and medicine have a serendipitous element in them.[7]
A few examples are the discovery of penicillin, heparin, Dramamine, X-rays, the Gram staining technique, the pancreas's role in diabetes, and the anesthetic effects of ether and nitrous oxide.[8]
Emperor Jahangir in his memoir describes the process of creating Iter i Jahagiri for the creation of iter i jahagiri perfume mainly involved three phases.

Phase(i) Hydro-Distillation (The Deg and Bhapka System)

According to P.K Gode Deg and Bhapka System came from Persia to Kannauj (perfume capital of India). In this process first we arrange the parts of Deg bapka.[9]

- Deg The large copper vessel used in the distillation process is called a deg. In Kannauj, the

artisans who make these degs have also been involved in this trade for generations. In the perfume industry, the prosperity of perfume manufacturers is measured by the number of degs they own.

- Bapka This is a long-necked, round-bottomed vessel (similar to a carafe, but larger), connected to the condenser with the help of a pipe. It is where the aromatic vapors are collected.
- Choga This is a hollow bamboo pipe. It is bound with cords to prevent steam from condensing inside. One end is inserted into the condenser and the other into the still. Both ends are sealed with clay.
- Gacchi This is a tank-like structure made of solid cement, filled with water. The condenser is placed inside it to keep it cool and to condense the aromatic vapors coming from the still. The condenser structure is built slightly lower than the still and furnace assembly.

Firstly Rosa Damascena petals are filled in Deg and placed on a furnace.Due to heating Deg (copper vassale) in a copper still (Deg), steam breaks the microscopic glandular trichomes of the petals, releasing volatile aromatic compounds. Through Co-Distillation, these oil molecules are carried by steam at 100°C into a condenser.[10]

Phase(ii) Decantation

The specific gravity of the oil obtained by the above process is 0.848 to 0.880 which is lower than water density (1.0). Therefore Rose oil floats on water. Perfume artisans in Kannauj separate this oil from water by hand. Rose oil is non polar that's why it doesn't mix with water.[11]

Phase(iii) Stearoptene

In the context of sophresiology, the reason why ‘itr-iJahangiri' received global acclaim was because of the presence of a large amount of Stearoptene (wax material) present in the ‘scum.’ These waxes work as natural fixatives, which retain the extremely volatile molecules of Citronellol and Geraniol. This is how the fragrance is slowly released and doesn’t evaporate in an instant, thus answering how “one drop scents the whole assembly.”[12]

## IV. CHEMICAL FINGERPRINT OF THE STORY OF FRAGRANCE

Table - chemical profile of rose oil[13]

| Chemical composition | Olfactory role. | Percentage | Physical properties |
|---|---|---|---|
| Citronellol | primary notes of the fragrance. | 30- 55% | Due to High volatile character an immediate burst of scent. |
| Geraniol | Herbarious sweet smell | 15% – 25% | Gives heart of the rose scent. |
| Nerol | Sweet smell with Lemony touch | 5% – 10% | Increase Luminance effect of rose oil |
| Phenylethyl Alcohol | Honey like texture | 1% – 3% | Generally remain in rose water; higher concentration in oil signifies superior extraction. |
| Rose Stearoptene | waxy saturated hydrocarbons,Odorless | 15% – 20% | Solidifies at room temperature and has a |

| | | | |
|---|---|---|---|
| | | | significant role for formation of scum. |
| Rose Oxide | Intense, spicy, and green | < 1%. | Despite the low amount, it defines the "natural" smell of fresh roses. |

## V. THE PSYCHOLOGICAL DIMENSION (OSPHRESIOLOGY)

Previously Mughal used rose water which contains nearly 0.5% and iter-i-jahagiri is pure rose essential oil which is 2000 times stronger than rose water.

Jahangir describes iter-i-jahagiri as a fragrance of "restores hearts" and "brings back withered souls." In modern osphresiology, this connects to the Limbic System. According to Aromachology, inhaling rose oil activates the release of endorphins.[14] The complex chemical of the Damask rose, used by the Mughals, has been scientifically proven to lower cortisol levels. This explains the "soul-restoring" effect noted in the Tuzk.

## VI. THE GEOPOLITICAL DIMENSION:

Asmat Begum was the daughter of Mirza Ala-ud-Daula Aqa Mulla. Asmat Begum was married to the Persian noble, Mirza Ghiyas Beg, the youngest son of Khvajeh Mohammad-Sharif, a Persian noble of Tehran and a vizier to the governor of Khorasan.[15] Therefore, Asmat Begum was from Tehran (Iran), and this is not far from the city of Shiraz (a port city in Iran), which was famous at that time for the distillation of rosewater and wine. Manucci mentions it (Shiraz) in his Storia do Mogor.

“Finally, at the end of fifteen days' travel, we arrived at the town of Xjras (Shiraz), where we stayed for thirty days,consequently they make a great deal of wine, which is exported to all parts of India.In this region there is no deficiency of food produced, of oranges, of lemons, nor, above all, of roses, which they distil,and the rose-water is forwarded in boxes to all parts.”[16]

When Mannuchi transferred the credit of perfume discovery Asmat Begam to Nurjahan he also described persian connection of Nurjahan.

“I came to know for a certainty that she was the daughter of a Persian who arrived from Persia a He brought with him his wife, who was enceinte. On the way, near the fortress of Candar (Qandahar), she was delivered of a child, and one of the merchants lent him an ass on which to convey the woman in that state of distress. The child that was born in this miserable plight came to be this most famous queen (Nur Jahan). Through her influence the court of the Great Mogul was filled with great nobles from Persia.”[17]

According to P.K gode Persia had great expertise in rose water distillation from ancient times.

"The art of Distillation the rose had its origin in Persia· According to Ibn Khaldun about 810-817 in the reign of the Caliph Mamoun. The province of Farsistan was compelled to provide annually a tribute of 30000 bottles of rose water to the treasury at Bagdad. Istakhri ("Livre des Campagne’s." pg.73) refers to the considerable production of rose-water throughout the province of Farsistan. which was exported to China, India, Egypt, Spain and Morocco. The principal seats of manufacture were at Duscher (the Firozabad of today) between Shiraz and the coast. where the rose-industry is still in existence”[18]

For obtaining rose water, the Deg bapka process was discovered by Avicenna in the eleventh century. Avicenna was first to derive the attar of flowers from distillation and used steam distillation to produce essential oils such as rose essence.[19]

While Frederic Shobori gives a special touch to Mannichi's story by adding a native chemist who gives a technological support of queen desire.

## VII. A HISTORICAL DEBATE ON GENDER AND ERASURE

Mughal Women's pursuit of pleasure was epitomized in their experiments with the making of perfume, a mix of science and sensuality relying as much upon the olfactory tastes of the emperor as upon the technological skills of his staff. Of Jahangir's time, Pelsaert noted that women studied "night and day how to make exciting perfumes," some of which were derived from the red falanja seed.[20]

The credit for discovering this perfume should be given to Nur Jahan instead of Asmat Begam. Ellison Banks Findly argued that a memoir of Jahangir story circulated widely, but in time the discovery was falsely attributed to Nur Jahan rather than to her mother. Manucci, the main beneficiary of this misattribution. After Manucci many historians narrate the same story with little change.[21]

## VIII. THE BRANDING ASPECT

Nurjahan beauty with the brain images made by the historian and discovery of otto of roses used as Soft Power of royal family. The naming of the perfume has been analyzed by historians as a brilliant move in Imperial Branding. Asmat Begam and Noorjahan both engaged in international business and they import many stuffs from Persia. Both women are active in marketing of clothes, jewellery and perfumes and also they participate in Meena bazar.

Naming the fragrance after the Emperor transformed the royal household into a symbol of the commercial product, which represented the "Jahangiri Era". This is the Branding of Sovereignty: Abu'l-Fazl's records in the Ain-i-Akbari indicate that the Mughal state wanted to present itself as a "Perfumed Court." Historians argue that the Itr-i-Jahangiri was not a luxury but meant to stake a claim to indicate. It also supported the political Legitimacy of Mughals.

## IX. CONCLUSION

Jahagir's story clearly shows that Nur Jahan was not the inventor of perfume. However, Shobri may have mentioned a "chemist" in his account to hide inaccuracies of Mannichi's story. This way, the technical details could be attributed to him. Tuzk-e-Jahangiri certainly gives credit to Asat Begam who discovered the rose attar in India. However, this story has several technical errors. The royal account ignores many practical aspects of making Attar. Making rose Attar is not possible for an untrained person to do, especially since this perfume was sold at a high price in the market in the name of Jahangir. This story is only partly acceptable regarding Asmat Begum. Manucci, in his work Storia do Mogor, mentions the presence of many Iranian scholars at the Mughal court. Some of these scholars would have been experts in distillation of flowers. Thus, Asmat Begum likely made the'itr-i-Jahangiri'with their help. Manucci's story does not stand up to scientific examination because obtaining rose oil requires a temperature above 100°C, which cannot be reached with flowing water.

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