

**Research Report for**  
**Historical Study of Attars and essence making in**  
**Kannauj**

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***By***

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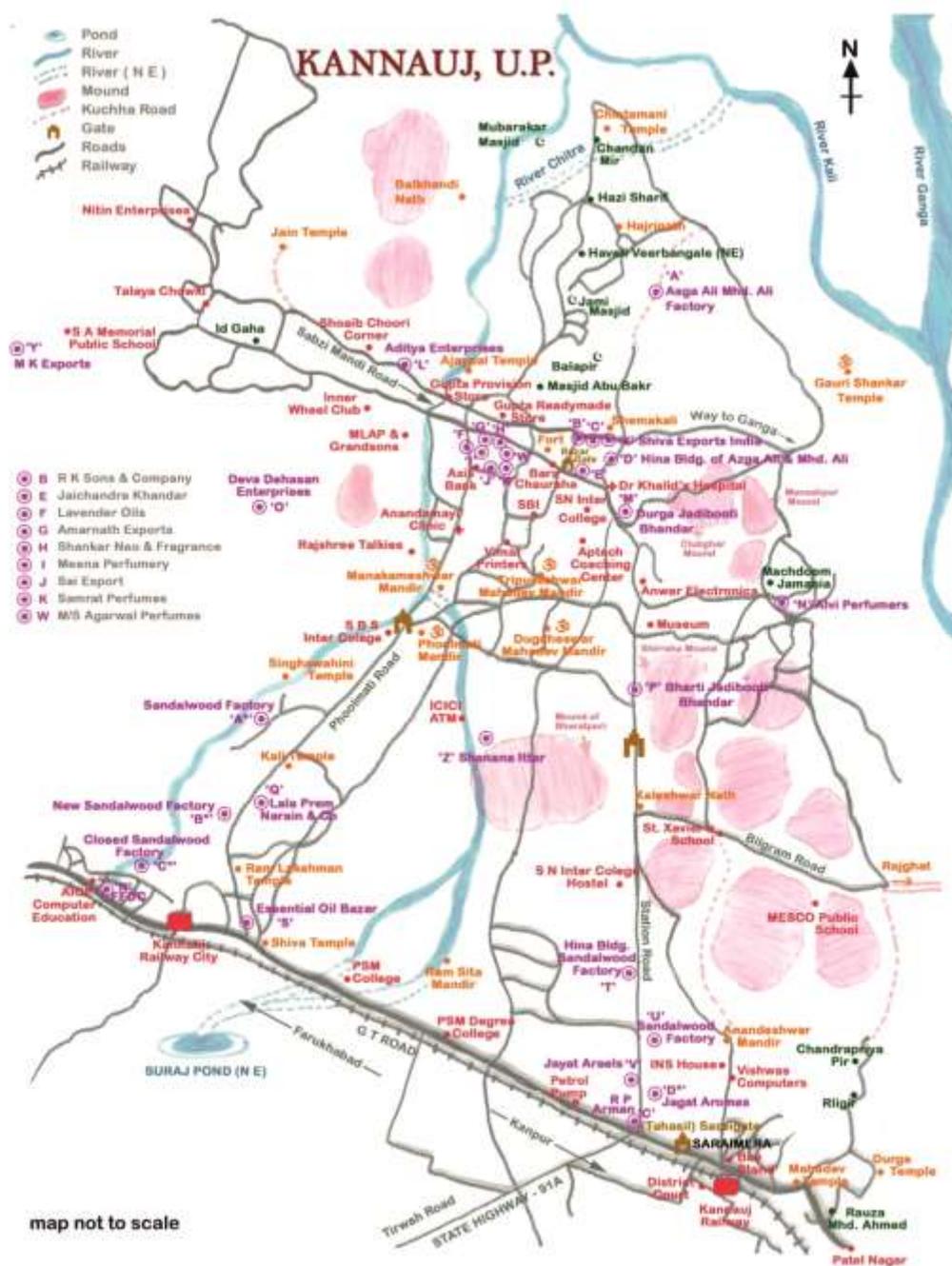
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# 1. MAP OF KANNAUJ'S ATTAR INDUSTRY SITES

## HISTORICAL STUDY OF ATTAR AND ESSENCE MAKING IN KANNAUJ

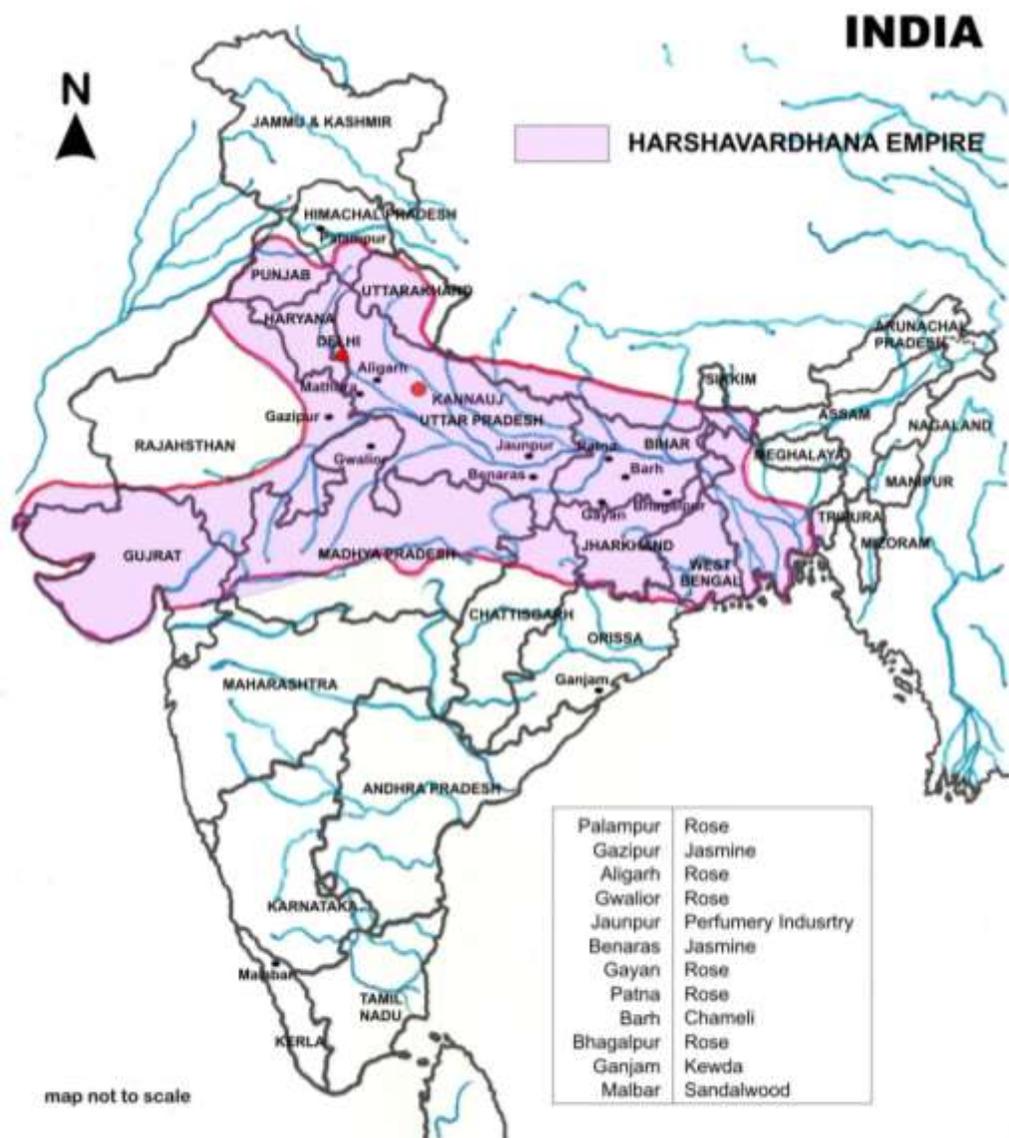


Submitted by **Dr. Mrs. Jyoti Marwah** | Drafted by **Dhanashree Patil**

### References

Map reference from Government Archaeological Museum, Kannauj & Google Maps

## 2. MAP OF HARSHAVARDHAN'S EMPIRE



**Submitted by Dr. Mrs. Jyoti Marwah | Drafted by Dhanashree Patil**

### References

Studies in Indian Cultural History - P K Gode  
 Perfume through the ages - Roy Genders  
 Opportunities in India Traditional Fragrances and Attar for SS - Nadeem Akbar & SV Shukla 1996  
 Map reference from Government Archaeological Museum, Kannauj & Google Maps

### 3. Political History of Kannauj intertwined with its aromatic culture

#### 3.1. Kannauj: Legendary beginnings till today

Absence of political history in Sanskrit Literature has been a sad omission making it difficult to chronicle the history of kings and the dynasties that they left behind or the lands that they controlled by invasions and expansion. Though the Ramayana, the Mahabharata and the Puranas contain abundant information on the social and religious life of the people. It is interesting to see how the ancient Hindus had great liking for synonyms and so their cities bore several names. This is perhaps most appropriate in the case of Kannauj.

The most commonly recognized name in literature and on inscriptions has been Kanyakubja. Ramayana of Valmiki describes the foundation of Kanyabuja. The story relating to it may have no historical significance but it indicates the antiquity of both the city and its name. The story relates to the king Kusa hence the city was called Kusathala also because 'kusa grass' used for sacrificial fires grew here, in abundance. Kusa had four sons Kusanabha, Kusambha, Asurtaraja and Vasu and each of them founded a place in their name.

Kusanabha founded Mahodaya meaning 'high prosperity' as is found mentioned in Valmiki Ramayana as 'Kusanabhas tu dharmatama puram cakre Mahodayam'(1) Kanyakubja and Mahodaya have been names of the same city as is reflected in Hemacandra's Abhidhanacintamani (2) and Halayudha's Abhidhanaratnamala (3) and other lexicons. This can also be compared with Kusagarapura for the old city of Rajagriha. According to Yuan Chwang the city derived its name from the excellent fragrant grass in the region. Samuel Beal says in the Life of Yuan Chwang that according to Yuan Chwang the city of Kusumpura (Keu-su-mo-pu-lo) or 'the city of flowers' was the original name and then It came to be called Kanyakubja. Although he refers to Pataliputra by the same name.

King Kusa had been blessed with hundred beautiful daughters by a celestial maiden Ghritaci. Vayu the wind God being enamoured by their beauty proposed to marry them all but on refusal he cursed them into 'hunchbacked maidens' (kanyanam kubjatvam) and so

the city got its name as Kanyakubja or 'a city of hunchbacked maidens'. This finds mention in the Valmiki Ramayana

*'Yad Vayuna ca tah kanyah tatra kubjkrita pura,*

*Kanyakubjamiti khyatam tatah prabhriti tat puram.'*(4)

*"Kasasthalam Kanyakubjam" occurs in Abhidhana-samgraha (5),*

*Sabdakalpadruma (6), Harsacarita (7) and Mahabharata (8)*

The title of Kanyakubja was not restricted to the city only but extended to the neighbouring territory or even to the kingdom of which it was to be the epicenter according to Yuan Chwang the name Ka-no-ku-she in other words Kanyakubja stands for the capital and the country which he has described as 4000 li in circuit (9). The Barah copper plate indicates that the period around 836 A.D. both the names Mahodaya and Kanyakubja were used mahodaya was used for the capital city and Kanyakubja for the province of the kingdom referred to as bhukti. The extent of the empire is referred to in Rashid-ud-din's Jami-ud-Tawarik which designates Kannauj to the Madhyadesh or the middle lands. Bhava Brihaspati dated 1169 A.D. mentions that Kanyakubja Visaya included Beneras (9)

In Kanyakubjam Mahakavya on page 194 reference is made to 'Kannojam kila kanyabubja nagaram sa rajadhani pura'

Gadhipura or Gadinagara were other names in early times as Gadhi was a celebrated and legendary ruler and the city was given his name. The name appears on the Gwalior Sasbahu inscription. 'Mahodayam Gadhipuram' finds mention in Kesava's Kalpadrukosa (10) and Kalhana's Rajtarangini (11) Hemchandra's Abhidhanacintamani describes the city as 'Kanyakubjam Gadhipuram Kausam Kusathalam ca tat'(12) signifying residence or possession of Kusa the king and the revered grass.

Muslim writers have referred to it as Qannauj as seen in *Tabaqat –i-Akbari* (13). While translating *Tabaqat - i-Nasiri* Raverty refers it to as Kinnauj. Fa – hian translates it as Ka-nao-yior Kanoyi and Thomas Watters is of the opinion that probably that was the name in use by the natives. Vincent Smith records that the use of Kannauj is ancient being in use ‘fifteen hundred years ago’. However it is true that Prakrit transliteration used by Rajasekhara in the beginning of the 9<sup>th</sup> century A.D. Kannaujja was in use.

Yuan Chwang has referred to Kannauj as a wealthy and prosperous state and that the dwellings were decorated with ‘flowers of the season’, ‘fruits and flowers were abundant’ and ‘people wore garlands on their bodies’. He has praised the people of ‘Mid India’ probably meaning Kannauj and the adjacent territories at the time of Harsha. He says that Kannauj was the centre of culture, crafts, power, politics, riches and religion to be coveted by the the conquerors of medieval India. It fell from its position of ‘Ultimate Thule’ with the repeated aggression and conquest by Mamud Ghazni and Mohammad Ghori. Today, an insignificant city it has had the most envious positions of importance in the past.

#### 4. Kannauj in British India – neglect: purposeful or consequential

District of Farukhabad in British India's United Provinces and later in Uttar Pradesh has been a part of the Kanpur division lying between latitude 26 degrees 46' N and 27 degrees 43' N and between longitude 79 degrees 7' E and 80 degrees 2'E. It was bounded in the north by Badaun and Shahjahanpur, on the East by Hardoi, to the south about 60 kms away by Kannauj and west by Etah and Mainpuri. Being of prime significance the district had been a region of strategic importance. It had been one of the few cities that had played a noteworthy part in the political life of India from ancient to British times. The district had experienced hectic missionary activity and till today there are a number of missionary school and churches in Farukhabad.

However in Kannauj there appears to be an obvious absence of Christian population and churches are conspicuous by their absence. This has raised many questions as to why and how the city Kannauj being prosperous and positioned along the Grand Trunk Road at a strategic intersection between the north, south, east and west apparently attracted minimal missionary activity to lure Christians. There were four distinct phases of British missionary and religious activities. Why and how did Kannauj remained to be in a disconnect with the missionaries? In a discussion with Dr. P N Tandon former principal of PP College it was further ascertained that there were no pre independence church structures in Kannauj except for a school with a small church called the Hope Academy which had probably started after independence. He informed that Govardhan Kannaujia a centenarian and freedom fighter who lives in Tirwa today has sufficient oral history to communicate on the freedom struggle and the contribution of Kannauj to it.

Farrukhabad consisted of two towns Farukhabad and Fatehgarh separated by a nominal distance of 5 km. For the British Fatehgarh was an important military station as had been the headquarters of the Governor Generals agent since 1802 when Wellesley had forced upon the Nawab Wazir of Avadh the Subsidiary Alliance of 1801 by which the Nawab had ceded Gorakhpur, Rohilkhand and the Lower Doab comprising of the territories between the Ganga and the Jumna. The Nawab was required to provide subsidy permanently for the

cost of maintaining the company's troops stationed in Avadh. Earlier though in 1772 by the treaty of Beneras Warren Hastings had agreed to lend British troops whenever the Nawab Wazir of Avadh required them. As a result two brigades were posted in Avadh, one was a permanent brigade at Cawnpore and the other was a temporary brigade stationed at Fatehgarh. Kannauj fell enroute between Cawnpore and Fatehgarh along the Grand Trunk Road. Appeals by the Nawab in 1781 and 1784 for withdrawal of the temporary brigade were of no avail and went unheeded. In 1818 a gun carriage factory was established there.

This remains unexplained, as British interest in Avadh was phenomenal and its position moved from being maintained as a buffer state by Warren Hastings entering into a subsidiary alliance by Wellesley by which residents and agents were posted there and finally outright annexation by Dalhousie. Nawab Wajid Ali Shah discharged all his troops in 1856 and the British Resident took control as the Chief Commissioner. Farukhabad had been witnessing disturbances even before the start of the Meerut uprising in 1857. Within 4 days of the start of the Meerut uprising when the news reached Fatehgarh, apprehending trouble in the trans-gangetic parganas Colonel Smith of the 10<sup>th</sup> regiment urged by the Aligarh Police station marched along the GT Road and sacked the police stations of Indian recruits. They had been challenged by the Avadh freedom fighters but the movement collapsed by Sept 1857. However Kannauj being closer to Kanpur and Lucknow witnessed hectic activity and severe fighting during the 1857 uprising.

The history of Kannauj since ancient times has been of tremendous interest to researchers for a number of reasons. However it has eluded the attention of many to consider the absence of Christian activity in a region which was of military and economic significance. It had achieved excellence in indigenous perfumery under the Mughals and acquired international repute for the same. So why did this not interest the British or was it in British interest to destroy the industry so that European industry could replace it, as their interest is reported in the Francis Buchanan's Patna- Gaya Report of 1811-12 published by the Behar and Orissa Research Society. It is worth considering that after this report was published, by the renewal of the Charter Act of 1813 the British East India Company

permitted missionaries a free entry. Till then the focus of the company was trade and commerce.

Francis Buchanan has traced in detail the various processes of perfumery and also records the availability of the raw materials for feeding the industry. Monetary assessment and value of the cost of raw material as well as the end product is also analyzed by him in this report. Hence the question arises, was it a purposeful neglect of the region and so missionaries were not sent to Kannauj? When proselytizing activity touched every nook and corner of the country and particularly in Farrukhabad, Cawnpore and Lucknow why Kannauj was spared? What could be the reason and seeking an answer for the same can be interesting history.

From ancient to medieval times Kannauj was envy of every ruler and each one vied to control it. It had witnessed the rise and fall of mighty empires, ruling dynasties from the Guptas to the Muslim conquest. The Puranas and Mahabharata have given a fabulous account of the region called Panchala comprising of what can be referred to as Bareilly, Badaun and Farrukhabad. The region had figured tenth in the list of sixteen premier states of the mahajanpadas during Mahavira's and Buddha's times. Buddha had preached here in Kannauj on the north bank of the Ganga. Geographer Klaudios Ptolemy had referred to the city as Kanagora or Kanogiza though disputed by Rama Shankar Tripathi who holds a variant view. Fa-Hien had referred to the city as Ki-jou-I and Huien-Tsang gave it the name Ka-no-ku-she meaning Kanyakubja. The importance of Kannauj since ancient times was probably due to the strategic advantage of the city, for it stood on a cliff on the right bank of the Ganga and Ganges was the highway of commerce and communication. Thus Kannauj was a convenient centre for river traffic in the upper Doab region. Cunningham has observed "the situation is a commanding one and before the use of the cannon the height alone must have made Kannauj a strong and important position." It may be noted that Harshavardhan had succeeded in bringing nearly the whole of the Gangetic Plain under his yoke for which he had increased his military strength. Ganges was the highway of traffic to link the country from Bengal to 'Mid India' and therefore necessary for commerce and prosperity of the

Kingdom of Kannauj. Therefore in Harsha's view Kannauj was to secure a place of pre-eminence in the vast Gangetic belt.

In medieval times it was a region of interest to Ghazni, Ghoris, Slave Dynasty, Khaljis, Sayyids and the Mughals. Varanasi and Kanyakubja under the Gahadavalas was a prosperous kingdom. Farukhabad between Aligarh and Kanpur was founded by Muhammad Khan Bangash in 1714 in honour of his master Farrukhsiyar. He then acquired a large Jagir of about 75,000 square miles and his influence extended to make him the Governor of Allahabad and Malwa.

Dalhousie had started a general movement of troops from Bengal towards the west as he was apprehensive of a conspiracy among the Indian troops. The headquarters of the Bengal Artillery was shifted from Calcutta to Meerut. He had requested the home authorities to increase the number of British troops in India so as to reduce the possibilities of a revolt by the Indian troops. Three fifth of the soldiers who served in the 63<sup>rd</sup> infantry regiment of the Bengal army were from Avadh. Avadh was looked upon as a 'nursery of soldiers'. As servants of the British these soldiers were treated with contempt. When Avadh was annexed the soldiers were disbanded being left to lead miserable lives and many converted to become highway robbers.

The region was of particular interest to the British as Clive, Wellesley and Dalhousie, had important stakes in the area. For a number of other reason Kannauj seems to have lost its prime position of importance and one wonders could it have been done purposefully, this is all the more obvious by the absence of Christianity in the city. Importance of Kannauj may have vanished as the importance of water highway and road transit was negated and replaced by a number of other works of public utility such as railways and telegraph. More than anything else this had helped to modernize India. Dalhousie opened the first railway line in India and set up the first electric telegraph wire. Thus railways and Telegraph played a crucial role not only in the defense of the Indian Empire but encouraged British investment in India. In the interest of British traders and manufacturers Dalhousie's

followed the policy of free trade. Strategic railway lines were constructed at a huge cost to the Indian revenues but it helped English capitalist to make huge profits. Telegraph linked the various parts of India and this was a great help to the English during the uprising of 1857. Having created the public works department Dalhousie had undertaken several works of great magnitude such as the Grand Trunk Road, The Ganges Canal and The Bari Doab Canal, yet Kannauj was of little value or consequence?

It becomes important to analyze and critically evaluated the circumstances and reasons for the gradual neglect of an age old industry in Kannauj during the British rule. The study attempts, probably for the first time, to look at the close association between the two communities- Hindus and Muslims who due to their economic activity wrapped around attar making were closely knit together. This probably enhanced the apprehensions of the British who permitted decay through neglect, decline and destruction of the industry. They probably desired restricted entry into the city and for some reason hesitated to establish their religious centre and schools to promote Christianity. This question needs to be assessed and understood by an independent study on the impact of British rule, freedom movement and contributions by local kannaujias and the muslim artisans on this generations old economic activity.

While speaking of the persons by whom commerce was conducted, Buchanan states in his Patna-Gaya Report (Vol. 11 p689) 'The Gandhi deal in Rose water, perfumed oils and essence, tooth powder and finer kinds of implements used for smoking. They have capital from 100 to 1000 Rs. The perfumes are also retailed by those who make them' He further says on p631 'those who distil perfume complain that the business is overstocked and the prices have of late been much reduced, but they still seem high and dependence cannot be place on what they say, no two of them agree on their account but they are in easy circumstances'.

Dr. Sadgopal feels that Buchanan's detailed survey of Perfumery industry as recorded in the report reflects the European interest in Indian Perfumery at the time of British advent into

India. It was because of this very interest in the Indian Perfumery that India lost her world market. This indicates that the interest was with the intention to destroy the indigenous industry and build their own on its ruin. In his article titled 'An update survey of Indian Perfumery Industry' in the Indian Soap Journal of July-Sept 1943 he says "European Nations began seriously entering the domain of perfumes also. A time came when France and Germany captured all the markets for their aromatics and today we find India the cradle of Perfume Industry, as one of the biggest consumer of foreign perfumes. While Europe made rapid advances with the help of modern scientific knowledge, India lost for- ever that which it had treasured so successfully for centuries past."

The British advent into India was for trade however they seemed to have had no interest in this product of immense economic value as it was an indigenous industry and like others of its kind it too faced extinction at their behest. Hence, we can presume that it was an intentional effort to degrade the industry and establish their own in Europe. The saving grace was that the city of Kannauj remained to be a city of amicable Hindus and Muslim who had been spared the scrooge of 'divide and rule' policy of the British.

## 5. The History of Aromatics

Thus the attar culture of India has been around much before the industrial revolution. It was the source of rich commercial and trading benefits for the historic towns of Kannauj, Benaras, Ghazipur, Jaunpur, Patna, Barh<sup>1</sup> and the surrounding regions of the states of Awadh, Bihar and Orissa. These cities had grown in importance due to perfumery trade in ancient and medieval India as they were strategically positioned on the Uttarapatha (the Northern road) and were connected with the Dakshinapath (the Southern road). This contributed to the tremendous inland trade and tourist traffic. This link and locational advantage gave them additional commercial and trade benefits when they established contact and communication with the Silk Road. The Grand Trunk Road revived their importance during the British period. Shah Nama of Firdousi (1030AD) mentions big centres of perfumery industry at Kannauj, Jaunpur and Gazipur.

The Silk Road which comprised of a number of ancient trade routes stretching across central Asia to Europe evokes exotic images of camel trains (caravans) laden with not only bales of fine Chinese silk but also spices and perfumes across desert and oases in bustling markets with travelers buying and selling goods. Frances Wood in his recent work<sup>2</sup> covers in detail, with unpublished photographs, this hectic activity along the Silk Road.

Susan Whitfield has interestingly recounted the lives of some people along the Silk Road<sup>3</sup> to portray their activities during the 5<sup>th</sup> -10<sup>th</sup> century A.D.<sup>4</sup> by reconstructing the lives of a number of characters only to sample the diversity along the Silk Road. These accounts ascertain the transfer of knowledge of aromatic substances and medicines from India to

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<sup>1</sup> A town and subdivision of Patna District of Bihar

<sup>2</sup> 'The Silk Road: Two Thousand Years in the Heart of Asia'

<sup>3</sup> A network of roads along which merchants, mercenaries and monks traveled. The word was coined by a German Baron Ferdinand Richthofen in the 19<sup>th</sup> century.

<sup>4</sup> Chinese silk dating 1500 BC has been found in Bactria (Afghanistan). 10<sup>th</sup> century AD maritime trade routes connecting India with Guangzhou (Canton) had become the focus. Already since 2<sup>nd</sup> century BC, Greek and Roman caravans sailed from the Red Sea to India forming the spice route. Later, Arabs and Persians continued the trade. By 6<sup>th</sup> and 9<sup>th</sup> century, Southern China was extensively colonized.

China and China to India along with other traded commodities. By way of an example in The Merchant's Tale Nanaivandak's a merchant from Samarkand has recounted his experience in a bazaar near Samarkand where people spoke 10 languages and haggled over spices and other luxuries. The smells were so strong that they 'dazzled' the senses. Also in the Soldiers' Tale, Seg Lhaton, a Tibetan soldier who had survived 20 years of fighting with the Chinese for mastery on the Silk Road uproots some licorice<sup>5</sup> to take back home for his grandchildren as he was unsure whether his son would be as lucky as him to survive<sup>6</sup>. He has even mentioned the collection of willow and juniper tree wood<sup>7</sup>. The monk's tale is even more interesting as a Kashmiri monk called Chudda used to practice medicine in the Silk Road town of Dunhuang for nearly 15 years<sup>8</sup>. He was an herbalists and practiced medicine with piles of dried flora and fauna placed on a cloth in front of him to treat travelers and townspeople. Offerings of incense and fruit were made to Buddha along with prayers for recovery and wellbeing. The drugs and traditional medicine on sale came from far and wide - India, Arabia, Greece, Tibet.

The widow Ah-Long's Tale<sup>9</sup> has described how during her illness she prayed to the star God Rahu<sup>10</sup> to strengthen her spirits and to overcome her illness. She has recounted how when she was young she suffered from acute colic pains and her father would give her ground turmeric roots<sup>11</sup> which had to be forced down her throat. She got so used to it that she began taking it as a prophylactic before heavy meals. At the time of her labour pains, she was given powdered seeds of balsam flowers and her mother-in-law burnt charms (in India called 'bhaisajyani' - using plants and herbs for magical curative powers to keep ghosts and evil away) under her bed. After the birth, the monk-doctor prescribed an Indian drug

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<sup>5</sup> Mulathi in Hindi

<sup>6</sup> His son, too, was in military service on the Silk Road.

<sup>7</sup> Whitfield Susan, *Life Along the Silk Road*, John Murray, London, 1999 p.75

<sup>8</sup> Whitfield Susan, *Life Along the Silk Road*, John Murray, London, 1999 pp.113-118

<sup>9</sup> Whitfield Susan, *Life Along the Silk Road*, John Murray, London, 1999 pp. 174-183

<sup>10</sup> According to Indian mythology also, Rahu as an immortal being has been assigned a place in the stellar sphere and is normally portrayed with a dragon's head.

<sup>11</sup> Haldi and Ambe harad (wild turmeric) used till today in India for internal as well as external medication. Recent research has indicated medicinal uses of the leaves which are equally aromatic.

citragandha that was a mixture containing wine, pine resin and licorice<sup>12</sup>. A sample of this drug had been sent to China in 8th century by an Indian king.

Christopher McMahon a horticulturist from California on his several visits to India, in 1996 had recorded the existence of 650 perfumery units in Kannauj, however today the figure could be anything between 350- 250 units (big and small). Kannauj has been the nations 'Khushboo' city. For India attars remain to be a valued product as in it lies the history of aromatics which is as compelling and alluring as the world of modern day essential oils.

Evidenced from archaeo-botany, ethno-botany, study of material culture, scripts, inscriptions, seals and work by archaeologists like Ernest Mackay and John Marshall and later by Rovesti a rich world of fayence vessels for expensive perfumes, incenses, powders and pastes since ancient times has been recovered from Mohenjo-Daro.

Sacred texts, classics, literature, travelogues and accounts by traders abound with reference to this aromatic and luxurious lifestyle of the kings and queens celebrating life and death and also in the worship of Gods. This love for aromatics persists even today.

It is well known that Man has used aromatic plants with medicinal value ever since the Stone Age; in fact the early humans rubbed strong smelling herbs on their bodies to repel insects and to hide their human scent from animals that they feared or hunted. It is interesting to note that foul odours and not fragrant ones led to the development of herbal healing. This unique understanding by early humans resulted from the use of aromatic and medicinal herbs to mask the stench of rotting meats. Thus the popularity of culinary herbs as flavour enhancers today was incidental due to their food preservation attributes.

*Ancients by their instinct knew the effect of aroma ingredients of plants on the Mind and the Body.* They also adorned themselves with sweet smelling herbs hence they sampled these herbs on the number of effects that were generated in terms of relaxation, upliftment or for energizing. Extracts of aromatic plants have been used for thousands of

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<sup>12</sup> Whitfield Susan, Life Along the Silk Road, John Murray, London, 1999 pp. 201-202

years as flavours and fragrance in medicine, perfumery, cosmetics and religious ablutions and for culinary delights.

For India the ancient aromatic culture of attars or ittarz was once associated with the ruling and royal classes. It was the prized preserve of the Kings, Queens and the Aristocracy. Common man could not even dream of it as it was an expensive and exclusive commodity to be provided for the elite. In fact Indian perfumery is age old and dates back to the period of the Indus Valley Civilization. Indians had understood the effect of fire on medicinal aromatic plants including spices. In India, fire, fragrant smoke, fragrant waters have played an important role in religious ablutions, sacrificial fires, medicine, havanas, homas and agnihotras.

An archaeological expedition led by Dr. Paolo Rovesti to the Indus Valley in 1975 excavated a terracotta distillation equipment at Taxila. There was enough evidence of perfumery as some perfume-containers were also excavated alongside. These artifacts find mention in the Rovesti records of 1977 and are an all- important documentation to indicate that the art of distillation was known to the people of Indus valley. They are at display at the Karachi Museum.

An inference can be made that the Arab Avicenna who is credited with the discovery of distillation process<sup>13</sup> may have merely re-discovered the art and in specific to rose water distillation. He is known to have translated 'Charaka Samhita' into Arabic which he titled as 'Sharak Indiana'.

Irfan Habib in his analysis in Technology in Medieval India c.650-1750AD reports that P. C. Ray's History of Hindu Chemistry by its citation of Sanskrit text on distillation suggests an early medieval date which was further reinforced by archaeological excavations of ancient stills from Taxilla by John Marshall and A. Ghosh and later by Raymond Allchin who unearthed stills from Shaikhan Dheri (Charsadda, NWFP, Pakistan). They have been titled by Needham as Gandhara stills dating to 150 BC—150 AD. He also suggests that probably

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<sup>13</sup> Roy Genders, Perfume Through The Ages, Putnam & Sons, p101.

modifications were introduced in Italy in 12<sup>th</sup> century by addition of the Moore's Head, as a water container was added in the main still, which had a concave spoon like inverted roof with an annular rim for collection of the distillate.

Man-made fragrances have been natural in the form of incense and ointments. During the reign of the Egyptian pharaoh Khufu, builder of the great pyramid (2700 B.C.), papyrus manuscripts record the use of fragrant herbs, oils, perfumes, temple incense and healing salves of fragrant resins.

For the Indian sub-continent it can be said that even before Aryans could lay down written records, the people of Indus valley had developed the art of obtaining aromatic waters or synthesizing several plant extracts for various reasons which were later adopted by Vaidis and Hakims for medicine. The development of perfumery continued to evolve during the Vedic period as mentioned in Ayurveda. Ramayana and Mahabharata also mention perfumes, cosmetics and incense. Bhagavat Geeta describes the use of sandal wood and rose water being sprayed at the Swayamvara of Draupadi. Nagarjuna, a scholar of South India in 100 BC has written a treatise on incense candles.

In ancient times, the art of making 'attars' and 'floral waters' had become well established particularly during the Gupta period. In fact 'Jalyeaya Aaswan' meaning water distillation finds mention in Charaka Samhita.

Modern science has understood key aromatic components in spices, flowers and other herbs for their flavours and fragrance. They are obtained as essential oils, oleo-resins, absolutes, and can be isolated by value addition as individual compounds, components or chemicals. These essential oils contain anti-microbial compounds which on one hand act as food preservers and on the other hand prevent disease by attacking the disease causing micro-organisms. They are anti-oxidant, antiseptic, anti-inflammatory and much more as a matter of fact they are almost all curative. However fragrance has been the reason for its extensive use in perfumery in various forms either as vaporizers, diffusers, and incense

burners to perfume chambers, pot-pourris for lending fragrance to clothes, ornate containers as fire altars, aromatic baths and cosmetics.

## 6. The Indian Aromatic Experience

*“The degree of excellence and refinement of cosmetics and fragrances at any given period of civilization remains to be the index of the cultural development of that period”* observed Dr. P. K. Gode, an Indologist of repute from Bhandarkar Oriental Research Institute (BORI) Pune in the state of Maharashtra in India, in his book titled Studies in Cultural History of India. The above mentioned observation explains the intrinsic relationship between aromatic culture and its role in evolving civilizations. Gradually, with the development of civilization, needs of men and women underwent a change and the art of manufacturing became sophisticated, compelling manufacturers in the field of cosmetics and fragrances to cater to the refined tastes of their consumers. The widespread use of perfumes had led to the rise of a specialized class of artisans who took to the manufacture and trade in cosmetics and perfumery as their occupation. Perfumers stamps or mudrika called ‘Gandhikanama’ of 2<sup>nd</sup> B.C. which were made of copper, have been found at Kosambi (a prosperous city between 390 BC till 600 AD), establishes the fact that aromatic culture was well advanced and contributed substantially to the economy.

### 6.1. Gandhashastra: The Indian Science of Odour

Gandhashastra was a well-established science and art using fragrance to make cosmetics which focused on the methods and the uses of aromatic ingredients (Gandhadravya) thus making it an integral part of the Indian Materia Medica. This is justified by P.K. Gode in his works titled Studies in Cultural History of India vol. I. The Indian Gandhashastra or the science of odour is part of Indian medical science or Ayurveda. Consequently, the history of every aromatic ingredient (Gandhadravya) is part of the Indian Materia Medica, hence Dr. P. K. Gode has used the term Gandhashastra to mean ‘science of cosmetics and perfumery’ and ‘gandhayukti’ as ‘art of preparing different cosmetics and perfumery’.

Today, the study of Indian Materia Medica is closely associated with the history of pharmacology and is of supreme value for the reconstruction of history of Indian culture. This work highlights the contribution of Indian Gandhashastra as being in no way secondary to the cosmetics and perfumery culture of Egypt, Babylonia, Greece or Rome.

The history of cosmetics and perfumery can be accurately reconstructed by a comprehensive understanding of the history of all aromatic ingredients, used in the manufacture of cosmetics and perfumes. It needs to be clarified here that science of synthesizing aroma chemicals is a twentieth century development, however in this work, the word fragrance refers to natural fragrant extracts from plants and in some cases material of animal origin. As many of these ingredients have medicinal value, they find mention in Indian medical treatises like 'Charak Samhita' and 'Shushruta Samhita'<sup>14</sup>. These treatises form the very backbone of ancient Indian medical practices.

The Vedic literature of India dating from around 2000 BC lists over seven hundred substances, including cinnamon, spikenard (*'jatamansih'*), ginger (*'shringara'*), myrrh, coriander and sandalwood. The manner, in which it is written, reflects a spiritual and philosophical outlook in which human beings are seen as part of nature and the handling of herbs a sacred task. Vedas codified their use for both liturgical<sup>15</sup> and therapeutic<sup>16</sup> purposes. Benzoin - which is used for pharmaceutical preparations, food flavours and fragrances has been a valued substance for incense in temples since ancient times. It is not surprising that across the globe, as mentioned earlier there is commonality in the use of these herbs.

Two treatises – 'Gandhasara' of Gangadhara and 'Gandhavada' (Anonymous) with a commentary in Marathi, composed sometime between 1200-1600 AD with a commentary in Marathi, based on earlier text, some of which are partly extinct today<sup>17</sup>, were accidentally

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<sup>14</sup> Ancient Indian treatises and first written evidence on Ayurveda by Charaka and Sushruta; also known as two pillars of Ayurveda

<sup>15</sup> pertaining to public worship

<sup>16</sup> treating or curing of disease

<sup>17</sup> MS found in the 'raddi' collection of Bhandarkar Oriental Research Institute, Pune. Folios 1-27a

recovered by Dr. P.K. Gode. The texts are not mentioned but it has been inferred that these treatises belong to the same period of time as Varahmira's 'Brahtsamhita'<sup>18</sup> (500 AD), 'Agni Purana' (between 800 to 900 AD)<sup>19</sup> and Someswara's 'Manasollasa' (1130 AD)<sup>20</sup>. Gandhasara records sixty-four verses on preparation of 'dhoops' and 'gandhajal' of five sorts.

The Gandhayukti<sup>21</sup> section of the Brahtsamhita provides material on the history of ancient Indian cosmetics. The word 'gandhayukti' means the art and science of cosmetics and perfumery and literally means a 'combination of perfumes'. Vatsayana in Kama Sutra refers to it as one of the sixty-four subsidiary arts connected with erotic.

The chemical processes employed in the manufacture of perfumes are mentioned as (a) decoctions (b) heating (c) mixing (d) fumigation (e) sprinkling (f) powdering. However, purification of the ingredients and blending one liquid with another and saturation of powder with a liquid is referred to in Agni Purana<sup>22</sup>.

Use of aromatic ingredients was an integral part of all customary practices for social, religious and medicinal purposes. Varahmira in Brahtsamhita describes various fragrances in cosmetics and a close study will reveal liberal use of spices, flowers, roots and barks in the making of hair-bath<sup>23</sup>, hair oil<sup>24</sup>, perfumes<sup>25</sup>, mouth perfumes<sup>26</sup>, bath powders<sup>27</sup>,

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comprises the 'Gandhasara' and folios 27b-49 comprise the 'Gandhavada' with commentary in Marathi written in the same hand.

<sup>18</sup> Brahtsamhita's section on gandhayukti (chapter LXXVI) mainly deals with making of cosmetics with aromatic substances

<sup>19</sup> Agni Purana – As per Dr. R. C. Hazra's Puranic records, Dhaka 1940, it was compiled some time during 9<sup>th</sup> century.

<sup>20</sup> Manasollasa – it illustrates the use of incense in sacred and secular sphere of Hindu life in early Medieval India.

<sup>21</sup> Chapter 77 (37 verses), pp. 386-389 – Calcutta, 1865 Edition

<sup>22</sup> In chapter CCXXIV.20-21<sup>22</sup>

<sup>23</sup> Scented waters containing cassia bark, costus, spikenard, nalika etc.

<sup>24</sup> Containing Champaka, costus, cassia bark, manjishtha, in sesame oil

<sup>25</sup> Containing patra, turuska, vala, sandalwood, jasmine flower, jaiphal, cassia bark and tagara etc.

<sup>26</sup> Containing nutmeg, musk, camphor, and scent of parijat flowers sprinkled with juice of mango fruits and honey. Although Agni Purana has mentioned cardamom and sugandha-patra also

<sup>27</sup> Valeria, cassia bark, aguru, bignonia, nakha and musk.

incense<sup>28</sup> for religious worship, talcum powder<sup>29</sup> called 'putvasa', hair-dye or 'murdhaja- raga'<sup>30</sup> for hair dressing, hair shaving, tooth-sticks or danta-kastha<sup>31</sup> and tambula<sup>32</sup>. Flowers were used for making various kinds of unguents anulepana and saundaranjana and abhyaijena<sup>33</sup> for anointing the body.

A glossary entirely devoted to the aromatic ingredients, 'Gandhadravya' is found in chapter 3 of the treatise on 'Gandhashastra', by Gangadhara. Several aromatic ingredients in the manufacture of cosmetics and perfumes have been classified in different 'vargas' or classes ---leaves such as basil, flowers such as saffron, fruits such as pepper, barks such as cinnamon, woods such as sandalwood, roots such as Nutgrass, Exudations such as Camphor and organic products of animal origin such as Musk /honey /nakh.

## 6.2. Traditional Aromatics

The Indian sub-continent appears to be the oldest centre where it was customary to use extracts from plants and so the extraction techniques developed as aromatic(s) played an important role in the religious and socio-cultural life of Indians. Even before the Aryans laid down written records the people of Indus Valley Civilization had developed the art of distillation as explained in the foregoing section. The development of perfumery and aromatics continued during the Vedic period. The classic literature of Ayurveda mentions attar of Rose and calamus. This indicates that distillation of rose and other attars was known in the Vedic Period.

Vedic (one example in Ayurveda mentions medication administered by the sense of smell called '**vamanopaya**') and post vedic literature (Brahmanas, Sutras, Aranayakas, Upanishadas, Vedangas, Jataka stories and Buddhist sacred text) gives an intense account

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<sup>28</sup> Dhoopa contain satpuspa, kunduruka, sandalwood fumigated with jagari etc.

<sup>29</sup> Cassia bark, small cardamoms. Musk, camphor etc.

<sup>30</sup> Repelling odor of iron and acid in the hair dye is removed by a wash with afore said hair bath and scented dyes.

<sup>31</sup> Bilva, sirisa, ficus religiosa, plaksha, karanja, arjuna, sala, devdaru etc.

<sup>32</sup> Lime, areca nut, beetle leaf along with clove and nutmeg; katechu is only referred to in later medical Samhitas.

<sup>33</sup> All three are various types of oils for anointing the body.

of use of aromatic formulations for anointment with sandalwood being an important component. Periplus and Pliny accounts are also a valuable source for this information. The luxury of the Mauryan period is well known and Artha Shastra describes the splendor of aromatics as Sect II.11 highlights the demand for aromatic woods for various reasons mentioning 16 varieties of Sandalwood. This luxury continued unabated through the Sunga-Satavahana period. Mahabharata mentions the extensive use of aromatic resins, musk and sandalwood. From the Kusanas to the advent of the Guptas and epics by Asvaghosa and Vatsyana's Kamasutra and Saundarananda there is a mention of trade in aromatics for use as unguents (pipesangavilepanamhi), for fumigation of apparels (vasonganakacidavasayacca), as requisites for bath (ayojayatsnana-vidhim tathanya) and fragrant flower garlands (jagranthuranyah surabhihsrajasya).

Most of the plant material mentioned in these texts finds its place in the making of attars. Brhatsamhita LXXVI 26 mentions sarvatobhadra scent made from nakha, tagara, and olibanum (turuska) mixed in equal quantities and treated with mace camphor musk and guda. Brhatsamhita also mention an incense kopacchada made from benzoin, musta, nakha, bdellium, srisarja, camphor in honey.

Agnipurān gives a list of 21 drugs, aromatic woods and resins. They are nakha (unguis odoratus), costus (kushta), Ghana (root of cyprus), nard, benzoin, saffron, shellac (laksa), sandalwood, agallocham (aloes, nidada), pine resin, devakastha (Pinus devadaru), bdellium (guggula), srinivasaka (resin of pinus longifolia), camphor, myrrh, olibanum (kandaruku), sarjarasa (resin of vatica robusta). Agnipuran mentions that any two substances when mixed with honey give an incense (pinyaka) particularly Nakha with sandalwood. Incense tablets (gandha-vatika) in Lalitavistara, perfumed pills (gutki) in Agnipuran, fragrant unguents (gatrānulepani), fragrant cosmetics (varti), ointments (varnaka) and fragrant oils (vilepana) (also finds mention in Amarakosa).

In Amarakosa II.6. P123-132 there is a mention of various denominations of aromatic woods sometimes it unable to quote the source of origin yet it is valuable for a detailed

understanding of aromatics. It gives four names to the sandal of ancient India (gandhsara, malayaja, bhadrasri, candana) also the best sandalwood has three names (tailaparnika, gosirsa, harichandan) and red sandalwood has five names (tilaparni, patranga, ranjana, raktachandan) Amarakosa interestingly describes a bath which is a procedure using perfumes in different formulations for --cleansing, perfuming, chaffing, rubbing, kneading, cleaning and restoration of body perfume after a bath. It mentions a perfume yaksakadama compounded from camphor, agallochum, musk, and kakkola.

### 6.3. Aromatics and Plant Life

Referring to these 'aromatic ingredients' it must be appreciated that *“There are not many places in the world that have such a rich contribution to the Cultural History as that of India,”* and have resulted in a fascinating understanding of India’s esoteric aromatic culture with medicinal undertones writes Christopher McMahon in a letter addressed Dr. Maheshwari in March 1996. These aromatic plant materials have a unique history behind them. He goes on to say that *“One cannot talk about the plants of India without studying their religious, social, economic and medicinal significance, so understanding them and appreciating them becomes a truly inspiring adventure.”* Christopher McMahon had visited Kannauj between 1994-96 and he further extrapolates in the White Lotus Newsletter on his blog that *“the continued existence and use of these plants over several millennium has a powerful conscience and sub -conscience influence on the Indian mind and are associated with ... healing ... and highest spiritual aspirations ... for people who sustain themselves by this direct inter-action with nature have ... respect and veneration because they know that from these plants come their food, medicine, clothes, and all other necessities and conveniences of life.”* This understanding is the result of a deep study of sacred texts, epics, travelogues and biographies of rulers through ancient and medieval periods of Indian History.

History records the use of valuable plant material in the life of man since earliest times. Excavated early Harappan settlement sites at Kunal<sup>34</sup> and five **altars** or Hawana-Kunds at Sanghol<sup>35</sup> are a rare source of information on the use of botanical products in the performance of fire sacrifice during this period. The routes of this supreme Vedic ritual using plant products unearthed at Sanghol have been traced back to the Harappan Civilization at Kalibangan that is another 2000 years ago. At Sanghol, the whole complex of fire-altars was built in two phases. The altars of the earlier phase contained “*ashy material and loose soil, containing wood charcoal pieces, charred grains, seeds and fruit remains*”<sup>36</sup>. The other altars contain “*seals, sealings in Brahmi script, motifs such as Dharma-Chakra, Sri-Vatsa, Vedi and other artifacts*”<sup>37</sup> thus it goes beyond dispute that fire sacrifice was ritualized for which botanical material was used as an offering into the fire. Inclusion of herbal medicines in the offerings is evidenced by the fruit and seed remains of avla, haritaki, jaiphal, holy basil, black pepper and phok (ephedra). A few nuts of Nagarmotha (Cyprus) which are regarded as sacred in ritual have also been identified. The woods of chandana, deodar, cinnamomun, pipal, palash, kaith have also been evidenced to have been used as fuel for the fire. Importance of these sacred fires is explained later in the next section

#### 6.4. Aromatic Baths

The bath as an institution has a long history. The process involves soaking the body in water or some other aqueous matter such as steam, milk or mud. It has cleaning and curative purposes and sometimes religious or mystical implications. Archaeological sites and remains from ancient Egypt and the Indus Valley excavation of the Great Bath indicate provisions for hamam and sauna both as special bath areas, signifying bathing to be an important activity as a classical antiquity. People of the Indus Valley believed that the aromatic baths kept evils away and thereby, made the human body disease free.

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<sup>34</sup> Dated 3000 BC to 2500 BC

<sup>35</sup> Locally known as Uncha-Pind is situated 40 kilometers west of Chandigarh

<sup>36</sup> K. S. Saraswat, author of a paper titled ‘*On the remains of botanical material used in fire sacrifice...at Sanghol, Punjab (Kushana period)*’.

<sup>37</sup> As per K. S. Saraswat, op. cit

King Somesvara in his 13<sup>th</sup> century treatise, *Manasollasa* devotes four chapters to perfumes and cosmetics and emphasizes the importance of daily bath. The royal bath as described<sup>38</sup> has special reference to the apartment for the royal bath, the attendants performing the massage and the perfumed oil to be used for it. The procedure for making the oil for massage and unguents for cleaning the body is described in detail.

## 7. Historical Significance of Kannauj

The Indian Attar industry is concentrated in and around the towns and villages of North Indian district of Kannauj which lies between 27° 5' north latitude and from 79° 55' east longitudes has strong geographical advantages in its favor being situated on the banks of river Ganges and another four rivers in its neighborhood. The industry is agro based and has probably grown in importance as it is opportunity based with appropriate geographical indicators. It had links with the silk route as an arm of the route descended to Kutch through the region in and around Delhi and Kannauj. Another connection was the Grand Trunk Road linking East to West and promoting traveller's movement gave an ideal opportunity to promote goods through Assam along the silk route. The water route that emerged in importance and after the geographical discoveries in the 16<sup>th</sup> and 17<sup>th</sup> century was also significant in promoting trading of goods manufactured in Kannauj. The Ganga was the channel of transportation as the products from Kannauj were sent downstream to Calcutta for trade with the Far East and West Asia.

The art of making of 'attars' and 'floral waters' was well established during the Gupta period. Kannauj<sup>39</sup> became the biggest centre in aromatic trade and has gone down in history as its ruler Harshawardhan for the first time had imposed a tax on vetiver grass (khus). 'Khus' probably grew wild as a forest product but had economic value. The seventh century Sanskrit poet Vanabhata who was the court laureate of King Harsha, has given a vivid description of the use of incense in the marriage ceremony of Rajyashree who was married to King Grahvarman of Kannauj. Huien Tsang mentions trade in aromatics in his

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<sup>38</sup> Somesvara, *Manasollasa*, vol. II, pp. 81-83.

<sup>39</sup>The oldest known name of Kannauj is 'Mahodaya Shri' because of its grandeur and prosperity. The city was also known as Gandhipur, Kushahasthali, Kanyakubja, Kusumpur, Shahabad and Zafrabad during later periods.

travelogues. Bana Bhatta's *Kadambari* and Harshacarita and Hiuen Tsang's accounts pen a detailed account of the use of scented sandalwood waters. However, the 'Gandhi-kan' on the seals that were in use, about 2000 years ago, indicate that the state had recognized the rights of the makers of attars even before Harshawardhan as mentioned earlier. Assam in this period and the preceding centuries was an important source for sandalwood as is revealed by the gifts sent by the king of Assam to Harsh through Hamsavega<sup>40</sup>. King Harsha anointed his body with unguents and sandalwood paste before a battle<sup>41</sup>. The possibility of the link with the Silk Road becomes double fold as Harshavardhan's kingdom extended from East to West and the trade in aromatics from Kannauj could have channeled through Assam and through the Mathura.

Trading was done along the Ganga as the river was used to send the goods downstream to Calcutta from where they were exported to other countries. It was therefore logical for all these manufacturing units to possess outlets at Calcutta.

Under the Mughals, centers developed at Ghazipur, Jaunpur and particularly Kannauj, attars manufactured at the 'Gandhi-an mohalla' of Kannauj, used to be sent to Delhi for Emperor's use. Under Jahangir, an official was appointed named as 'khushbu-daroga'<sup>42</sup> to supervise and arrange for the proper supply of attars. The account on royal perfumery is given in the 'Regulations of the Perfume Office of Akbar' in *Ain-i-Akbari*. It states that being exceptionally fond of perfumes the 'His Majesty' wanted his chamber scented with flowers and fumigated with preparations of ambergris, lignum aloes in gold and silver censers. His body and hair were constantly perfumed with 'odoriferous ointments'. Some of these compositions were *sentowk* (an aphrodisiac), *argehjuh* (cooling), *gul kameh*, *ruh-afzah* (for censers), *owpteneh* (to wash hands), *Abyer Mayeh* (an aphrodisiac) and much more<sup>43</sup>. Abul Fazl lists natural perfumes used in the making of these formulations, some of animal origin

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<sup>40</sup> Banabhatta translated by EP Cowell and PW Thomas, *Harshacarita*, Global Vision Publishing House Delhi 2004, p271

<sup>41</sup> Banabhatta translated by EP Cowell and PW Thomas, *Harshacarita*, Global Vision Publishing House Delhi 2004, p273,284

<sup>42</sup> As mentioned in *Tuzk-i-Janhangiri*

<sup>43</sup> Gladwin's translation Vol. 1, *Ain-I-Akbari* pp. 65-75.

and some were of plant origin<sup>44</sup>. Today, when the spices cost so little it seems unbelievable that once they were a royal luxury and men were willing to risk their lives to obtain them. The fame of Indian spices is older than the recorded history. Even before Greece and Rome rose to fame, Indian spices had reached Mesopotamia, Arabia and Egypt. Spices had lured sea-farers to Indian shores trading sheep, cows and slaves for ginger, mace and pepper. During the middle ages, a pound of ginger was worth a sheep, a pound of mace worth three sheep or half a cow. Pepper the most valuable spice of all, was counted in individual peppercorns and a sack of pepper was worth a man.

The historic city of Kannauj is a quaint little city in the north of the Grand Trunk Road with major sites of historical and religious significance. "It is one of the few cities that have played a noteworthy part in the political life of ancient India" remarked Rama Shanker Tripathi in his writings in History of Kannauj (To the Muslim Conquest). He says we further learn from Yuan Chwang (Huein Tsang) that the original name of the city was Kusumpura (Keu-su-mo-pu-lo) or 'the city of flowers' and then came to be called Kanyakubja or a 'city of hunchbacked maidens.'<sup>45</sup>. This city had grown in strength and size under Hashavardhan in 7<sup>th</sup> century A.D. when its frontiers extended from the west to the east of Hindoosthan to become an empire and Kannauj was the capital. This was important for Harsha as Ganges was the traffic route linking the country and it was but natural for continued growth in commercial prosperity that Kannauj should be supreme over the Indo- Gangetic plain<sup>46</sup>. Though prosperity and importance of Kannauj had grown during the time of Maukharis but under Harsha it became a premier city to 'supplant' Pataliputra the older city since the time of Buddha<sup>47</sup>. *"There were one hundred Buddhist monasteries ... the Deva temples amounted to more than two hundred ... the city was strongly defended by quadrangular walls, broad and high ... There were beautiful gardens and tanks of clear water ... The thoroughfares narrow tortuous passages ... The shops are on the highways and booths (inns) line the*

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44 Gode PK. Studies in Indian Cultural History Vol.1 VVRI Hoshiarpur p19.

<sup>45</sup> Rama Shankar Tripathi, History of Kanauj to the Moslem Conquest, 1989, pp 1.

<sup>46</sup> Rama Shankar Tripathi, History of Kanauj to the Moslem Conquest, 1989, pp 130.

<sup>47</sup> Rama Shankar Tripathi, History of Kanauj to the Moslem Conquest, 1989, pp 147.

*roads*"<sup>48</sup>. The wealth and prosperity of Harsha's Kannauj was seen in their refined appearance and silk attire while 'fruit and flowers were abundant'<sup>49</sup>. Sultan Mahmaud Ghazni in 1018 brought irretrievable loss to Kannauj when moving through Bulandshehar and Mathura he plundered the city to nothingness, with seven forts destroyed in a day, 10,000 temples of antiquity razed to the ground and 'infidels' massacred.

Kannauj today is home to innumerable historic sites of religious sentiments of the Hindus and Muslim without any traceable intrusion by the British. Nurtured by five rivers --Kali, Chitra, Chamba, Yamuna and Ganga.

One of the chief towns in the Doab region Kannauj connected with Allahabad, Benaras and Calcutta along this waterway<sup>50</sup>. The link with Ganjam (Kongoda) in Orissa, the Kewra producing land can also be visualized as it lay in the pilgrim's route and Harsha had invaded the region in 643 A.D. not without reason<sup>51</sup>.

Today south of the city, along Tirwa road, Kannauj is expanding and developing probably in the making of a new Kannauj. Sites of historical and religious significance are the Suraj Kund which is non-existent today, Murari Devi Mandir, Padma sati Mandir, Sandoha Devi, Sitala Devi, Sarai Gate, Andeshwar Mandir, Mukdam Jamia, Bala Pir, Phoolmati Devi, Jain Mandir, Jagannath Baba Ghat, Raja Jaichand Khandahar, Lakhan Tila, Fatehpur Jamia and much more as seen in the attached social map. These sites are inter-spaced with residential areas, 200 plus Attar manufacturing units, allied Agarbatti (incense sticks) and dhoop manufacturing units, 22 sandalwood oil distilleries (closed today) and the bazaar specially designed to sell these perfumery products.

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<sup>48</sup> Watters, I, p 340, 147; Beal, I, p 207, 206, 73, 74

<sup>49</sup> Watters, I p 340; Beal, I p 207

<sup>50</sup> Rama Shankar Tripathi, History of Kannauj pp 292-293, 324-325

<sup>51</sup> Rama Shankar Tripathi, History of Kannauj pp 106, 127

## 7.1. Historicity of Attars

For Kannauj the history of this aromatic culture is rooted in the secret techniques of the families who have been involved in designing these products since centuries. Each family has had a unique formula which has been maintained as a well-guarded secret.

The art of making of 'attars' and 'floral waters' was well established during the Gupta period. Kannauj<sup>52</sup> became the biggest centre in aromatic trade and has gone down in history as its ruler Harshawardhan for the first time had imposed a tax on vetiver grass (*khus*). 'Khus' probably grew wild as a forest product but had economic value. The seventh century Sanskrit poet Vanabhata who was the court laureate of King Harsha, has given a vivid description of the use of incense in the marriage ceremony of Rajyashree who was married to King Grahvarman of Kannauj. Hiuen Tsang mentions trade in aromatics in his travelogues. Bana Bhatta Kadambari and Harsacarita and Hiuen Tsang's accounts pen a detailed account of the use of scented sandalwood waters. However, the 'Gandhi-kan' on the seals that were in use, about 2000 years ago, indicate that the state had recognized the rights of the makers of attars even before Harshawardhan as mentioned earlier. Assam in this period and the preceding centuries was an important source for sandalwood as is revealed by the gifts sent by the king of Assam to Harsh through Hamsavega<sup>53</sup>. King Harsha anointed his body with unguents and sandalwood paste before a battle<sup>54</sup>. The possibility of the link with the Silk Road becomes double fold as Harshavardhan's kingdom extended from East to West and the trade in aromatics from Kannauj could have channeled through Assam and through the Mathura.

Trading was done along the Ganga as the river was used to send the goods downstream to Calcutta from where they were exported to other countries. It was therefore logical for all these manufacturing units to possess outlets at Calcutta.

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<sup>52</sup>The oldest known name of Kannauj is 'Mahodaya Shri' because of its grandeur and prosperity. The city was also known as Gandhipur, Kushahasthali, Kanyakubja, Kusumpur, Shahabad and Zafrabad during later periods.

<sup>53</sup> Banabhata translated by EP Cowell and PW Thomas, Harshacarita, Global Vision Publishing House Delhi 2004, p271

<sup>54</sup> Banabhata translated by EP Cowell and PW Thomas, Harshacarita, Global Vision Publishing House Delhi 2004, p273,284

Under the Mughals, centers developed at Ghazipur, Jaunpur and particularly Kannauj. Also, during the Mughal period, attar manufactured at the 'Gandhian mohalla' of Kannauj, used to be sent to Delhi for Emperor's use. Under Jahangir, an official was appointed named as 'khushbu-daroga' who would supervise and arrange for the proper supply of attar

## 7.2. Reported and Documented History of Attar Making

Kannauj reminisces the past history of aromatics in its produce called 'attars' manufactured by materials sourced from plant and animal origins. This knowledge is the result of a progressive understanding of the effect of heat on plants which resulted in aromatic pastes and unguents used by man for cooling the body, decorating it or to camouflage the human scent for protection from wild animals. So Kannauj remains to be the result of this evolution, unique to India as the processes of hydro-distillation and dry-distillation were probably known to India even before the 17<sup>th</sup> century industrial revolution. Kannauj remains to tell the tale of this evolution.

In medieval times in India, the deg-bhapka distillation led to making of 'attars'. Attar means smoke, wind, odour and essence. Herbal medicinal concoctions were made by 'vaid's' and 'hakims' to treat ailments. The attar industry was and is a cottage industry. The equipment cost is low and traditional. The cost of attars varies from Rs. 500 to 1,00,000 a kilogram.

A report by Francis Buchanan in the Patna-Gaya report of 1811-1812 AD which was published by Behar and Orissa Research Society highlights the economic value of perfumery trade of India. He reports, "Those who distil perfumes complain that business is overstocked and that the prices have of late been much reduced; but they still seem high and no dependence can be placed on what they say, no two of them agreeing in their account but they are in easy circumstances." It is interesting to note how vividly Buchanan records the entire process of distillation in terms of the materials used and volume of charge required for a single process, capacity of various containers, amount of material obtained and the selling and cost price of the oils and water extract. It records "atur of roses is sandalwood impregnated in this manner which according to its quality sells at Rs. 1

to 2 for a rupee weight while the real essential oil of Roses costs 50 Rs. at Patna. The sandal oil seems to extract the whole perfume from the rose-water as it passes into the recipient.” What is surprising and interesting is how with changing times preferences change and value of goods increases manifold due to these preferences. Today scarcity of sandal wood has killed the attar industry and if rose attar sells at Rs. 1,30,000 a kg. Rose essential oil sells at 10-12 lakh a kg.

He also reports on the essence of Motia, Majmua (lost in traditional use today), Kewda (Pandanus Odoratissimus L. mainly growing in the Ganjum Dist.of Orissa) and Jasmine scented sesame oil. There can be no distillation of flower perfumes without flower gardens and Buchanan records the presence of Rose gardens in Patna and Barh and that most of the gardens belong to the persons who make oil.

Jasmine scented sesame oil, once an exported commodity is no longer known but it would be worth looking into the process of manufacturing it as recorded by Buchanan. The process of making this product was unique to India. He gives in detail the entire process with minute details regarding the amount of sesame seeds and flowers of first quality or withered flowers of second quality which would give two different qualities in the product. There after he also traces the variation in the selling price of the products with profit margins in each case. Buchanan’s survey of the perfumery industry with the advent of British indicates European interest in the Indian Perfumery industry. There after European nations began entering the domain of perfumery and India which was the fountain head of perfumery has been converted to become the biggest consumer of foreign perfumes. “France and Germany captured all the markets for their aromatics ... while Europe made rapid advances with the help of modern scientific knowledge, India lost even that much which it treasured so successfully for centuries past” says Dr. Sadgopal<sup>55</sup> (Procedure for making Jasmine scented sesame oil in the next section on Aromatic Heritage).

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<sup>55</sup> Dr. Sadgopal, “An update survey of Indian Perfumery Industry” in Indian Soap Journal July-Sept 1943

## 8. Gandhadravaya

*“Of all the senses”, writes Dr. McKenzie in his Study of Smells “none surely is so mysterious as that of smell ... the nature ... the emanations that stir it to activity is still unknown ... its effects upon the psyche are both wide and deep, at once obvious and subtle.”*

### 8.1. Understanding Attars and Gandhadravaya

Gandhasara by Gangadhara gives a glossary devoted to Aromatic ingredients (Gandhadravaya) classified into different vargas or class a reference to this has been made earlier. It is reinforced here as Attars in Aromatherapy find a special place based on an understanding of these classifications

- ✿ Leaves-Basil etc.
- ✿ Flowers-Saffron, Champaka.
- ✿ Fruits- Poppy, Nutmeg, Cardemon
- ✿ Barks-Bark of cinnamon tree etc.
- ✿ Woods- Sandal wood
- ✿ Roots - Nagarmotha.Vala, Jatamassi etc.
- ✿ Exudation from plant -- Camphor etc.
- ✿ Organic products- Musk, Honey etc.
- ✿ Leaves-Basil etc.

This eight fold classification is the essence of the modern understanding of perfumery which visualizes the effects of essential oils on the individual and is therapeutic .

Parts of a plant play a specific role in impacting the individual

- ✿ Flowers → sedating and relaxing
- ✿ Resins and barks → heating and make body fluids move.
- ✿ Leaves → cooling and close to the haemoglobin structure
- ✿ Roots → grounding and help develop confidence
- ✿ Fruits → growth oriented and produce an expanding and stimulating effect.

🌿 Exudations → spiritual attainment

Attars are the older cousin of essential oils. They are a finished aromatic product and can be scientifically explained as a hydro-distillate of flowers and /or herbs and spices/baked earth fixed on sandalwood oil. Some are obtained by dry distillation called Chhoya/Nakh Chhoya for making loban a highly aromatic extract. Various oils when fixed on sandalwood have a greater stability and lower volatility. This is because maturing and blending is procedural as the product thus obtained is well synergized.

Attars and essential oils have a profound effect on the mind and body. Historical understanding of Gandhdravya and its identification with Essential oils of flowers, leaves, roots, barks and fruits is important in perfumery. These components have similar role to play in the making of Attar. Essential oils are blended for a synergistic effect likewise attars are the result of understanding the blending and maturing of several spices or flowers for the end product.

The by-product of attar industry is called 'Gadd' and is highly fragrant. It is used to make incense sticks, dhoop cones, havana and yagna material, hookka incense. Rose water, gulkand and essences for beverages are also allied industries.

## 8.2. Spices in Attars

The importance of volatile oils of spices in fragrance and as flavors is not overestimated.

Use of spices in attars occupies a very important place in the attar industry. Hina, Shamama or Khus are unique products which are very intricately woven with the history of Kannauj. The products designed by each of the varied manufacturing units may vary in the final composition but a wide variety of spices are the base for the making these products. The process is very specific for the making of this special product and can be found only in Kannauj and nowhere else in the world. The combination of spices differs in view of the

product being designed however a particular formulation of Hina may combine nearly forty spices for the end product. The technique will be discussed in the following section.

### 8.3. Leaves and Herbs in Attars

Besides spices and flowers many herbs are valued for their leaves, tubers wood for the making of attars. They are equally valuable in the making of an end product. Basil, Capoor, turmeric, mint and Patchouli for leaves and Jatamassi, Kapur-Kacheri, Costus for its tubers, Agar, sandalwood and cedar wood are valued by the industry for their fragrant and medicinal components.

### 8.4. Flowers in perfumes

Literature supports the practice of worshipping plants by highlighting the comfort generated in the forests by their aromatic flowers which exude fragrance into the surrounding areas. Fragrance and flowers are inseparable. Flowers have been essential part of all religious practices as worship of deities was never complete without flowers. Ancient literature of our country has dealt with flowers as it has been mentioned in other parts of this work. Flowers of jatamasih, kinsukas, sadmapushpa, kundarika, puskara, abja and ashoka find their repeated mention in Vedic and post-Vedic literature. Flowering plants are also depicted on architectural structures during the Buddhist period and thereafter. Paintings of various eras also depict flowers like lotus, kimshukas, ashoka and champaka. Rose, Hina, Kewara, Moulashri and Bela (jasmine) attars have been the favourites of users in the past and even today.

In his studies in the History of Indian Cosmetics and Perfumery, Prof. P. K. Gode outlines the chronology of rose flower, rose water and rose attar from 2000 BC in which he has traced the import of rose to India from Farsistan in Persia between 810 and 817 AD. He also gives a list of some variety of rose cultivation in India on the basis of the work done by Dr. Birbal Sahni at Lucknow University and Prof. Hsu Jen of China who had made an inquiry on this topic in 1944. Fifty-seven varieties of Chinese roses were listed of which some important one can be named as Himalayan Musk Rose, cabbage rose, tea rose etc. It must also be

mentioned here that *'European gardens had depended upon Oriental species of roses for breeding stock for many generations'*<sup>56</sup>.

Gode in his paper on History of Mendi or Heena in Studies in Indian Cultural History Vol 1 has alluded to the extensive use of Heena leaves and flowers in Egypt, Persia and India. He mentions that the attar of mendi flowers is called Hina. I mention that in the Marathi Dictionary Sabdakosa by Dave and Karve we are informed that henna plant is identical to mendi. He has indicated how Heena finds mention in Brewer's dictionary, New Encyclopaedia (T.C.&E.C. Jack. London) and Shorter Oxford English Dictionary. Mendi or heena find mention in Hobson-Jobson ( by Yule and Burnell, London 1903). According to Gode, Nithyanathasiddha in his Rasaratnakara in Chap6 p.49 mentions decoction of the leaves of mendi though it does not spell as mehndi. He further explains that Susrutasaṃhita in Chap 25 of Cikitsasthana refers to a plant called 'madyantika' which is used for making fragrant unguents which is worthy of kings. Gode goes on to explain that according to Dallana this is identical to mendi which was well known during his days ( around 1100 AD). He further indicates that Thakoresaheb of Gondal had referred to the addition of Heena in The Indian Materia Medica in his History of Aryan Medical science (London 1896). In Ain-i-Akbari (AD 1590) Abul Fazl records the Regulations of the Perfume Office and on pages 65-75 draws a list of flowers in which Heena finds mention and is described as containing 'high colour' being procured from 'byaneh' a suba of Agra. Heena blossoms are known for their powerful fragrance.

### 8.5. Flowers in Spiritual Pursuits

Flowers have been revered and Hindu mythology clearly allocates a reverential position to flowers in relationship with Gods and Goddesses. The five heavens each are presided over by a different God; that of Brahma is on Mount Meru and those of Vishnu, Shiva, Kubera and Indra are on the summits of Himalayan Mountains which are the abode of aromatic flowers. The flowers specific to the regions are used to please the Gods. "Nowhere on earth

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<sup>56</sup> P. K. Gode, Studies in Indian Cultural History, Vol. I, pp. 33-34.

are more plants with scented attractions to be found than in India and the people make finest use of them.” says Roy Genders in his book *Perfume through the Ages*. It is on Mount Meru that the blue flowered champaka, which is in fact unknown on earth, is supposed to be found. Although it has the fragrance of the yellow *Michelia Champaka Linn.*, the real champak is a low evergreen tree bearing pale yellow funnel shaped flowers with a jasmine like scent that are used for the making of expensive perfumes<sup>57</sup>. A deeper study of Champa and Jasmine will reveal similar use of all.

The use of fragrant oil of Champaka<sup>58</sup> is referred to in Subhasitaratnabhandagara for the practice of Abhayanga<sup>59</sup>.

Sanskrit anthologies contain many **anyoktis** on Champaka tree and its fragrant flower, which shows the popularity of the flower in the ancient Indian folklore. Thus, this flower has given aroma to Indian life and literature through the centuries<sup>60</sup>.

This reference to Champaka in Amarkosa<sup>61</sup> corroborates with Brahtsamhita. The name gandhaphali is used for champakalika in Brahtsamhita. Assuming that gandhakali stands for champakalika, it can be inferred that preparation of perfumes was even before the times of Amarkosa. However, it has been established that Champaka flowers have been used as aromatic ingredients for more than 1500 years.

Indian mythology indicates that in Indra's Garden of Paradise, the flowers not only enchant the senses of those who breathe their aroma but have the power to grant them every wish. Kama, the God of love of Indian mythology, is always depicted with the Cupid's bow and five arrows, each of which is tipped with the blossom of a fragrant flower and pierce the through the five senses. One of the flowers is the Jasmine.

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<sup>57</sup> Navine, A. K., *Flowering Plants of western India*, London, 1817, p7

<sup>58</sup> Also known as Champa (Hindi) or Champkah (Sanskrit); see chronology in Appendix 1.

<sup>59</sup> Smearing the body with oil or unguent by ladies in ancient India

<sup>60</sup> In the description of Gandhamadan forest described in Aranayakapraavan of Mahabharata – Critical Edition BORI, 3,155.44.

<sup>61</sup> Refers to Champaka as Champeya

The essence of Jasmine<sup>62</sup> which the Hindus are known to make well is the most popular of all Indian perfumes and is mostly produced around Gazipur which is situated on the left bank of the Ganges above Benares<sup>63</sup>. To ensure salvation every Hindu desires to visit it at least once in his or her life time and also to be cremated on a pile of fragrant sandalwood there. This is thought to bring salvation sure beyond all doubt. To extract the essence in the traditional way, the flowers are placed in stills with twice their weight of water and exposed to the air. Next day, the otto<sup>64</sup> appears on the surface and is removed by skimming. More flowers are then added and the process is repeated until the entire crop has been harvested.

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<sup>62</sup> *Jasminium Sambac Linn.*, Bela or Mogra in Hindi

<sup>63</sup> Roy Genders, *Perfumes through the Ages*, G. P. Putnam Sons, NY p109

<sup>64</sup> Also formerly ottar or otter; an altered form of Attar – according to Shorter Oxford English Dictionary

## 9. The Ancient Technique of Extraction in India

We have seen how since ancient times Kannauj<sup>65</sup> had become the biggest centre for rich trade inland and maritime trade in aromatic products as described by the seventh century Sanskrit poet Vanabhatta who was the court laureate of King Harsha. Under the Mughals, centers developed at Ghazipur, Jaunpur, Patna, Gwalior and particularly Kannauj. Attar manufactured at the 'Gandhian mohalla' of Kannauj, used to be sent to Delhi for Emperor's use. Under Jahangir, an official was appointed named as 'khushbu-daroga<sup>66</sup>' who would supervise and arrange for the proper use of attars.

Today also the farmers from the districts around Kannauj namely Aligarh, Etah, Farukhabad and Mainpuri grow flowers and supply their crops to Kannauj for the attar industry. Rose has been obtained from Hathras and Aligarh, Khus from Bharatpur in Rajasthan, Chameli from Chandoli in Jaunpur district and Raat Rani from in and around Bijnor. Kannauj abounds in Mentha (*menthe arvensis*), Palmarosa (*cymbopogon martini*), Citronella (*cymbopogon winterianus*), Lemon grass (*cymbopogon flexuosus*), Patchouli (*Pogostemon patchouli*), Tulsi (*Ocimum basilicum*), Rose (*Rosa damacena*), German Chamomile (*matricaria chamomile*), Marigold or Genda (*Tagetes spp*), Bela or jasmine (*jasmine sambac*), Hina or mehndi (*Lavsonia inermis*)<sup>67</sup>. These are the raw material for feeding the attar industry in Kannauj. The equipment used in the making of attars is based on two distinct methodologies-- Hydro distillation and Dry Distillation.

### 9.1. Classification of Attars

Attars are classified on the basis of flowers or other raw material use—gulab, moulshri, kewra, motia, gulhina, chameli, kadam, khus, henna or mitti(mud). Except for Hina and Shamama rest of the attars are made from a single floral or plant material or from baked

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<sup>65</sup> The oldest known name of Kannauj is 'Mahodaya Shri' because of its grandeur and prosperity. The city was also known as Gandhipur, Kushahasthali, Kanyakubja, Kusumpur, Shahabad and Zafrabad during later periods.

<sup>66</sup> As mentioned in Tuzk-i-Janhangiri

<sup>67</sup> Application for Geographical Indication of goods, Registration and Protection Act 1999 UP Export Commissioners report

earth referred to as 'mitti ka attar'. Hina attar is a compound of several floral and herbal materials such as oakmoss, sugandhi mantra, laurel berry, cypriol, Indian Valerian, jattamansi, hydichium spicatum, and attars of gulab, kewra, motia, gulhina and chameli. A superior quality of Hina may also contain saffron, ambergris, musk and agarwood oil and is known as Shamama.

Indeed single odour attars are produced but a wide spectrum of attar fragrances can be produced with additional blending of several other flowers, herbs and spices. Also obtained in this process are rose water which is the most popular and other water extracts which are being used in the making of cosmetics and other personal products. Sweetened rose petals called 'Gulukund' has been a popular food item made and marketed by Kannauj as the rose from the region has curative properties and is an excellent mouth freshener. Agarbatti, Dhooops, additive food flavours and food extracts have also found a market.

## 9.2. Hydro Distillation

Traditionally Copper has been used as the main structural material for it is malleable, easy to repair and a good conductor of heat. The equipment used in this industry are designed and fabricated in and around Kannauj and Farrukhabad districts of the state of Uttar Pradesh in India.

Today it's largely substituted by steel but the end product differs in quality, colour and finish for instance Khus extracted in a copper vessel is alluring green in colour and when extracted in steel vessels is an unattractive brown.

### 9.2.1. Design and Components are as follows:

1. '**Deg**' or still are **copper stills** which are directly heated and range in varying capacity from 10-160 kilos of floral/herbal materials.
2. The lid of the still is called '**Sarpos**' and is also made of copper having openings for connections to one or two receivers.

3. **'Bhapka'** or Receiver is a peculiar feature of attars distillation as there is no separate condenser, this acts as a condenser and the receiving vessel. The unique odour of attars is obtained by condensing vapours into the base material mainly sandalwood oil pre-loaded into the Bhapka. The receiver is also made of copper which is round bottomed with a long neck and connects with the Deg via a connecting pipe like structure called a **chonga**.
4. **'Chonga'** or Bamboo condenser is a hollow bamboo pipe wrapped with twine for insulation so that the steam does not condense while in transit. It is uniquely designed to fit into the sarpos and is sealed there with multani mitti (Fuller's earth) and at the other end it fits into the mouth of the receiver and is once again sealed with multani mitti.
5. The sarpos is sealed with a special clay called **'Chikni mitti'** available in the region around Kannauj.
6. The joints connecting the chonga with the sarpos and the chonga are rendered airtight with a special clay called **'Multani mitti'**
7. Furnace or a Traditional **'Bhatti'** is fuelled with wood, dried plant residue or coal. The fires are manually controlled, as and when the heat needs to be increased or reduced semi-skilled workers called **'dighaas'** do so with their understanding and experience.
8. Cooling water tanks or **'Gachchi'** is a place where the Bhapka is kept for cooling the distillate obtained from the Deg. The tank is at a lower level and more often than not sunk into the ground.
9. Leather bottles or **'Kuppi'** are containers made from leather obtained from animal skin due to their semi-permeability. These bottles are used for removing moisture from the attars thus separating water from the attars.

### 9.2.2. The Process

The art of making 'attar' revolves around fixing the aroma of flowers on sandalwood oil. Attars are manufactured in 'degs' in which the plant charge is placed. These are direct fire-heated stills and their capacities can range from 10 to 160 kilos of floral or herbal material and the lid of the still is called 'sarpos' which is made up of copper having opening for one or two receivers. The receiver is called 'bhapka', which acts as a condenser. This receiver is

built of copper<sup>68</sup>, is round in shape and has a long neck. The still and the 'bhapka' are connected with a '*chonga*' which is a hollow bamboo pipe<sup>69</sup> wrapped with twine for insulation. The receiver contains the base material on which the aromas are fixed and is kept in a small water tank for condensation. The mouth of the receiver is sealed with a coarse cloth. The still is heated from below by lighting a fire and the temperature and speed of distillation is controlled by regulating the fire. Managing the still is a highly skilled job and the operator called '*dighaa*' by experience can match the boiling in the still and condensation in the receiver. When the desired quantity of vapours has condensed, the technique involved requires the use of a wet cloth around the body of the still for temporary pause in distillation. Likewise a '*dighaa*' can control the speed of distillation. The mixture of oil and water received in the condenser-cum-receiver is separated by the simple principle of removing water from an opening at the bottom and oil, which is lighter than water, remains at the top.

Traditionally, leather bottles were used for storage because by the principle of osmosis, evaporation of moisture from the leather membrane would behind quality attar free of water content. The 'attar' industry survives till today in Kannauj.

### 9.3. Dry Distillation --- Chhoya

'Chhoya' distillation or 'Nakh Chhoya' distillation is unique to Kannauj---The technique of extraction is slow and the equipment looks more like a clay toy. This process is only used in India for distilling Nakh which is sea shell and Frankinsence (Loban) for making aromatic extracts which in turn is used to give the final finish to Shamama attar. World-wide this process is employed for extracting only three oils---- Cad oil, Birch oil or Nakh oil and Kannauj in India has the unique distinction of distilling Nakh or sea shells (animal origin).

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<sup>68</sup> Copper was used as the main structural material because it is malleable and easy to repair, it is a good conductor of heat and no specialized welding equipment is required to repair worn-out or damaged copper vessels.

<sup>69</sup> As there is no fixed distance between the still and the receiver, bamboo pipes were used to connect them. The bamboo pipe could be shortened and was cheap and easily replaceable.

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Dry distillation does not find favour with manufacturers hence it is on the verge of extinction. Reasons are obvious in nature as natural plant material is in short supply due to de-forestation and infrastructural development. Also stringent environment laws have made availability of material a matter of concern. It is an expensive process and not economically viable. Most of the manufacturing houses have decided to discontinue the process and the equipment remains to be a museum piece with them.

#### 9.4. Procedure for making of

##### 9.4.1. Mitti-ka-Attar (the fragrance of earth)

The attar is specific to Kannauj and it is believed that it is the special clay from its ponds which gives it the unique fragrance in this attar. The fragrance is similar to the first smell of rain on earth which is very refreshing to the brain and the soul. The hot summer months are exhausting for mankind making the heart yearn for the coolness of the heavens to descend in the form of rain. The first shower is welcome as it heralds this bliss and nurtures the senses with the smell of wet earth. Kannauj has a well evolved process to make such an attar.

The clay from the ponds is modeled into cakes of 6-8 inches. They are dried and baked for the attar industry in the adjoining villages. Once the cakes are ready for the industry they are transported in tractors to the factory in the morning. Before the cakes arrive the stills are prepared. This preparation begins early in the morning as the 'Degs' having cooled in the night have to be emptied by removing the previous days 'Gaad'. The receiver is disconnected from the Deg and taken to be placed in the room nearby from where another receiver is brought, which could be containing the previous days extract. In case greater enrichment of the oil is required, this can continue for a month till the required concentration of attar has been achieved.

The water and the oil in the Bhapka is separated by an opening at the bottom. Oil being lighter than water rises above and the water is removed from the receiver. This water is

again added to the Deg for fresh clay distillation. Now the Bhapka is ready for collection of additional distillate.

When all the stills are ready, with Degs emptied, snake coils of Chikni mitti placed on each Deg, water baths empty, Chongas cleaned and placed in position, a small fire is lit at the corner of the room. The workers then begin transporting the cakes of clay to each still. The technique here is slightly at a variant to the other charge material for water is not immediately added to the Deg. This will result in loss of the fragrance, which has to be captured very minutely, so the Degs are covered with the Sarpos (lid) which has one opening, for the Chonga (bamboo connector) but before attaching the chonga, a hollow container with a pipe which fits into this opening in the Sarpos is placed. Water is poured into the deg using this container. The container is withdrawn and in a swift movement the Chonga is attached in this opening.

Now the Deg is ready to be fired and in a parallel movement all the stills are heated. Simultaneously another worker goes around sealing the joints in the Deg and the Chonga with Multani Mitti (Fuller's earth). The water baths are also filled with fresh water. The process now becomes fully operational.

As the steam in the Deg builds up and the pressure increases, sometimes steam from a joint begins to escape. The fire is reduced and the still is cooled by pouring water over it. Then more Multani Mitti is pasted at the joint. The workers are experienced enough to understand when the heating needs to be reduced or when it needs to be increased. This can be done by reducing the fire and wrapping a wet cloth around the deg.

The process continues for 7-8 hours and in a day two cycles are completed. The material from the Deg is removed the next day and the fresh cycle will begin in the same way as explained above.

### 9.4.2. Jasmine Scented Sesame Oil

This was in existence and imported at one time to the Far East but is lost in tradition. It needs to be remembered and recollected for its one time ascendancy. In my younger days I remember a proverb 'Chhachhunder ke sir me chameli ka tel' (to mean---how can a mole appreciate the fragrance of Jasmine oil) thus indicating that its use was the prerogative of the elite. Gradually with passing time the product disappeared from the market. Gradually the quality so declined that it was looked down upon as the elite stopped using the product. Francis Buchanan has described the making of Jasmine scented sesame oil by the workmen at Barh, in his Patna Gaya report of 1811-12 published by the Behar and Orissa Research Society.

Instead of distilling oil impregnated on expressed oil in this method sesame seeds are impregnated with the fragrance and then crushed and extracted. The method is cumbersome but easy. It begins with the flowering season of Jasmine Grandiflorum. 75 kg of Chameli is divided into two parts and every day as many flowers that is possible is added to the first part of the seeds. However before doing so the flowers of the previous day are picked and added to the other half of the seeds. The season lasts for three months and by the time the season ends the quantity of flowers added may be equal to the weight of the seeds. The first half of the seeds impregnated with fresh flowers is of superior quality and the other half is of an inferior quality and therefore will sell at a lower rate. The seeds are then crushed and squeezed in the mill. Each part of the seeds gives 10 kg oil. To each part of the oil additional 80 kg sesame oil is added and is then ready for retail.

## 10. Methodology of Research

In a historical and social mapping exercise study was made of the location of the resources linked to the attar industry, factories of sandalwood/ attars, physical infrastructure of roads leading to the heritage structures, temples, ponds, mounds, railway lines, havelis, and social infrastructure like the essential oil market, settlement areas, schools and colleges.

Following the Time Line technique to gather data, information on major events affecting the political, socio-economic, cultural, agricultural, health or education system, the elders were made to sit together on the farms of FFDC, Hina Building and at Tandon perfumeries to recollect events of the last four to five decades. The discussions were relaxed and the chronology was understood to explain how Kannauj, Lucknow, Benaras, Gazipur had contributed to the Attar Industry and the last 50 years were critical in witnessing the downgrading of the industry in Kannauj. Nagarmotha distillation was the prime initiative of Jagat Aromas in Kannauj in the 1970s and the technique was later disclosed to the market due to a split in the family business in the 1990s. The World Wars were a strong contributory factor in the escalation of the attar market as England's requirement for sandalwood was being met by the industry in Kannauj. Reported by Subhash Gupta in an interview, a deal was struck between Benichand Moolchand and the British for a free gift by the British of a distillation plant in return for sandalwood oil. Though the steel plant was brought to Kannauj it was never set up to become operational and even today lies abandoned on the streets of Kannauj.

Transect Walk with Manoj Awasthi and our Photographer Manoj Agnihotri was helpful in identifying the activity in the essential market where the former operates in synthetic aroma chemicals for the industry in Kannauj. In contrast to a previous visit to the same market fifteen years back I found that many shops had closed business and many had changed the nature of their business. I had then seen neatly laid out small shops with small doors and windows, on either side of the road, all looking almost the same with 'gaddis' for the seller and attars arranged on the three sides of the seller at a hands distance, for easy reach to the meet the customers demand for the desired attar. The shops were small but

beyond the shop each one maintained a mansion with huge courtyards. The 'galli' which has catered to the attar demand is still quite fascinating. It remains to be as narrow and inaccessible by a vehicle as what it may have been several decades back. There are no pavements only 'nallahs' on both sides of the 'Galli' with a step created by the shopkeeper to enter his shop. The history of this region is the probable explanation for small entrances that one has to double up to enter the shop. I also remember being told not to venture out to the city after dark as region was dacoit infested. It was quite scary. However, now the shops are larger with an easy access. The market is by and large selling aerosols and synthetic formulations and surprisingly there are buyers. I looked around for pure attar on Sandalwood and I was disappointed not to find it anywhere in the market. However walking down the road at the other end of the market we neared a huge fort like structure of Khatri Perfumers where we were assured of pure attars fixed on Sandalwood oil. The prices were phenomenal but I experienced a sense of relief that there remains a ray of hope for the revival of this industry. Green perfumery from India may create a demand in the global market.

Most interesting was a visit to the museum just off the essential oil market. It is at present housed in a residence of a well-wisher but we were informed that a new structure on the highway is ready for the museum and very soon it should be shifting there. It housed some phenomenally beautiful sculptures acquired from Kannauj and Koshambi. These were found locally by the people while digging for agriculture or for renovation of their homes. It is interesting how archaeology has scope and field of work below the entire city of Kannauj. Some pictures of mounds dug by people for building their huts indicate the existence of brick work below the mounds.

We came across closed and idle 22 sandalwood distillation units where the chimneys stood as silent spectators to this dying culture. Looking at these I transgressed into a comparative analysis between what I had witnessed in Mumbai during the 1982 mill strike. It was a collapse of a large network of system which provided livelihood and socio-economic benefits to many. Then ensued a debate and a long struggle for acquisition of this land by

the powerful. Industry having collapsed those affected demanded compensation and it was given. This was Mumbai so people had a voice. What compensation can the people of Kannauj expect with the collapse of a well-entrenched livelihood in attar manufacture no one knows what happened to those rendered jobless after sandalwood was not available for extraction parallel to death of Verappan In Karnataka. The towering chimneys of the mills still dot the skyline of Mumbai and some effort has been made in resurrecting them with architectural modifications. The chimneys in Kannauj may just get pulled down in the absence of Sandal wood availability. This would be most unfortunate as no trace of their existence will remain to remind the future generations of this thriving industry of the past. In 1997 when I visited Kannauj for the first time for a course in Field Distillation and Extraction of Essential Oils at FFDC I visited the sandalwood industry in the neighbourhood- Ayushman Refineries for Natural Oils. It was a thrilling experience to see the logs of wood being chopped into smaller sections and the final aromatic distillate. The saw after extraction was still very aromatic and all the trainees brought back some of it to use as a face pack. It was saddening to see the unit closed this time and the chimney was no longer place.

The unfortunate closure of 22 sandalwood oil extraction units in Kannauj is the biggest misfortune for a country like India. A region with extensive availability of land and varied climatic and geographical features is wanting in a vision for the future. After 65 years of independence we have allowed huge investments to be lost. In conclusion it can be said that the sandalwood units are idle or closed for ever. Indian supremacy in sandalwood oil is forsaken as we are in no position to harvest sandalwood. A blanket ban without progressive solutions is not the answer to the problem. A solution must be found.

Substituting Sandalwood oil with cheap base material like Di-Octyl Phthalate (DOP), Di-Ethyl Phthalate (DEP) and liquid paraffin is the cause for diluting the exotic effects of attars which traditional users can identify quickly. Today the market for Tobacco, Pan Masala, and Gutka requires attar as a flavouring product. Unfortunately, quality is secondary and of no concern and consequence in business as long as it is cheap and affordable for the masses.

## 11. Sandalwood in Attars

*In praise and nostalgia for Sandalwood these lines tell the story of an irretrievable loss*

*'You gave us life and aroused kings from their stupor,  
So they bathed in fresh sandalwood water and applied paste to their war  
equipment as a ritual.*

*Yes, we were very wasteful and thoughtless in our use of a valuable  
natural resource,*

*So we suffer the consequence and have none for use today or tomorrow.*

*Now we compete with nature with tissue culture, hybrid plants or clones*

*Till how long will we continue with this endless competition?*

*Not for eternity I am sure!!!!'*

Indian Perfumers create products called Attars from a natural blend of flowers, herbs and spices which when fixed on Sandalwood oil has a long lasting aromatic experience with medicinal benefits. It is valued for its trace elements as well. Sandalwood is valued for its properties as a natural fixative. In the world of perfumery it is reputed as an ambassador of fragrance. In the process of distillation, condensation, blending and maturing sandalwood absorbs and fixes the fragrance of flowers and other aromatic charges to create an exotic product. Inscriptional evidence also supports the use and value of plant natural aromas e.g. the Paharpur copper plate inscription of AD 478-479 and the Deopara inscriptions, particularly highlight the use of sandalwood. However it is interesting to note that even in 1794 Captain Edward Moor records in the glossary at the end of his narrative that "attar is an exquisite perfume from roses ... so very difficult to procure the pure attar in India even, is rarely seen and perhaps not even one part in five hundred of what is exported is pure and genuine" as reported by P.K. Gode in Studies in Indian Cultural History. The consumers continue to clamor for quality attars of the past.

A walk across the fields and the Ganga Bridge added substantially to the changing city and district scenario. Gopal Saini's farms growing and supplying raw material such as fresh flowers and herbage for attar making was a refreshing retreat from the city hussle and bussle of Mumbai. The air was fresh with the holy touch of Ganga. The air mingled with the aroma of roses, jasmine, marigold and fresh herbage which could not be identified independently. Small children were picking the rose for making attars and 'gulkund' which is a fibrous preserve of rose petals in sugar. It has medicinal properties but mainly used to sweeten 'pan' or betel leaf usually eaten after meals to aid digestion. Gopal informed how his father was a farmer and even after doing his Masters in Hindi he decided to take care of his farm. Changing climatic conditions are a threat to his crops but the harmony on his farm is his happiness. He also has experienced the demand from buyers for material without the use of pesticides and fertilisers. He relented that land use is fast undergoing change as people have shifted to growing potatoes as several multinationals making wafers including Uncle Chips have opened cold storages on the site. They are evening planning to slice the potatoes here now. The farmers are happy as they are getting instant money for their produce.

Uncontrolled and astounding sand lifting was seen all along the five km drive around the city of Kannauj and along the Ganga. We then walked for some distance to reach the Ganga Bridge. We positioned ourselves on the bridge for a good fifteen minutes and began counting the tractors carrying sand to and fro. It was a hectic activity and within the time we were there we traced fifteen tractors on an average one per minute. This is the sacred Ganga being rendered bare and stripped so shamelessly. I pray the revenge should not be as devastating as Mumbai's Mithi River in 2005.

Historical Transect was done to make a small beginning by detailing the local history to trace the sociological trends in understanding technological changes, crop patterns,

forestry management growth of the city (planned or unplanned) and demographical detail. Still photography and video filming was done to record the images of the procedures, inferences and conclusions drawn during this quest to view the historical significance of a culture of an intrinsic value. Hoping that these photographs can be the reference point for further research and help to find emerging trends for future research.

The film traces the procedure in the making of Mitti ka attar, Shamama and Mehndi ka attar. Shoots were done at the blacksmith's karkhana making/repairing the vessels for the industry. Baking of mitti cakes, rich plant foliage around the Ganga and the allied industry of incense and dhoop were all captured in our shots for the film and still photography.

The data thus collected also involved a survey of the prevailing manufacturing houses involved in attar making today. The survey was conducted to access the number of processes which existed earlier and have gradually increased / decreased / altered with the passage of time. Interviews, questionnaires, case studies, group discussions were done.

A film of the attar making process was shot at Pragati Aromas with the kind permission of Shri Pushpraj Jain. In an interview he also informed that he has kept pace with new developments in the perfumery industry and has advanced facilities in other parts of the country. However he informed that where ever and whenever possible he makes efforts to combine old with new ideas and this was seen at his factory in Kannauj. A very creative and interesting innovation was the use of an old coal engine for generating steam for several steam jacketed boilers holding the charge for extraction. It was remarkable.

Visits were undertaken to interesting facilities and leading perfumery houses at Kannauj and Lucknow which resulted in enlightening interviews, questionnaires and discussions. Interviews with Atul Jain and Pushparaj Jain of Pragati Aromas, J.N. Kapur of Jagat Aromas, Akhilesh Pathak of Munnalal and sons, Rajasthan Essential Oils, Abhay Tandon of Khatri Perfumers at Khatri Bhawan, Mullikk Saheb of S. Md Yaqub Md Ayub, Asgar Ali Mohammed Ali, Subhash Gupta of Beni Prasad Mool Chand and Sunil Gupta also of BPMC made it clear that all these firms have been operational since the early 1800s. Views of a number of

entrepreneurs and those in academics and research such as, Principal Director FFDC Shakti Shukla and Head Quality Control Nadeem Akbar of Fragrance and Flavours Development Centre initiated the process of looking at the attar culture of the past and the present, critically. There is no parallel to Kannauj culture even if the manufacturers of Kannauj have ancillary units in Aligarh in Uttar Pradesh for Rose or in Orissa for Kewara or in the south of India.

Information obtained from those interviewed along with literature survey, articles, letters, reports, records of manufacturing houses and assessment by foreign visitors to established the historical connect between aromatic culture and their dependence on substances/ raw materials such as aromatic woods, resins, roots, flowers, leaves (of plant origin) and others like musk and nakh or moluscs of animal origin.

## 12. Conclusions

A city with a population of one lakh has nearly half its inhabitants directly or indirectly linked with attar or perfumery products still remains to be the perfume city of India. It needs intervention for revival of this unique product in the global market. The city has grown to become a district in 1997.

Asgar Ali Mohammad Ali, the acclaimed perfumers for more than one and a half centuries in Lucknow since 1837 with their factory in Kannauj, Aligarh, Indrachi in Orissa have only memories to live with as their business closed in 1981. The visit to Hina Building in Kannauj was nostalgic for the entire family as they together reminisced their days of glory all over the world as Mr Istifa Khan exported attars to the European world in 1920s and Istifa Manzil was constructed at Madina which is a hotel today. Mohammad Ajmal and their sons Mohammad Rashid and Mr Salim informed that their shop in Chowk, Lucknow had been inaugurated by the Nizam of Hyderabad and how they designed attars with titles in honour of people such as Marhub Usmania or Nizam Nadan Mast. Mr Salim is a leading lawyer of Kannauj and his brother is a Unani doctor in the city. They have a small perfumery shop just outside their house in Kannauj named differently as Mohammad Aslam perfumers. A visit to their factory site along the same road was a sad witness of the days gone by. A huge factory area lay idle with bricked walls as it has been caught up in a court case for the last thirty years. As we photographed the dilapidated structure from outside a tall middle aged man came charging at us not to photograph the structure as it remains to be disputed. We managed one photograph but thereafter withdrew from the site. People around informed us that it was a very prosperous set up in the past and costly equipment inside is in an idle and degenerate condition. It was saddening but true.

What is even more interesting is the fact that in the long history of Modern India under the British not a single city had remained untouched by the proselytizing activity and Farrukhabad was a missionary stronghold. It remains to be unexplained as to why the

missionaries failed to reach Kannauj? This city of Hindu and Muslim brotherhood does not house even a single pre independence church structure or a gurdwara. I was informed that lately a Sikh family has shifted to Kannauj and made a gurdwara at their residence.

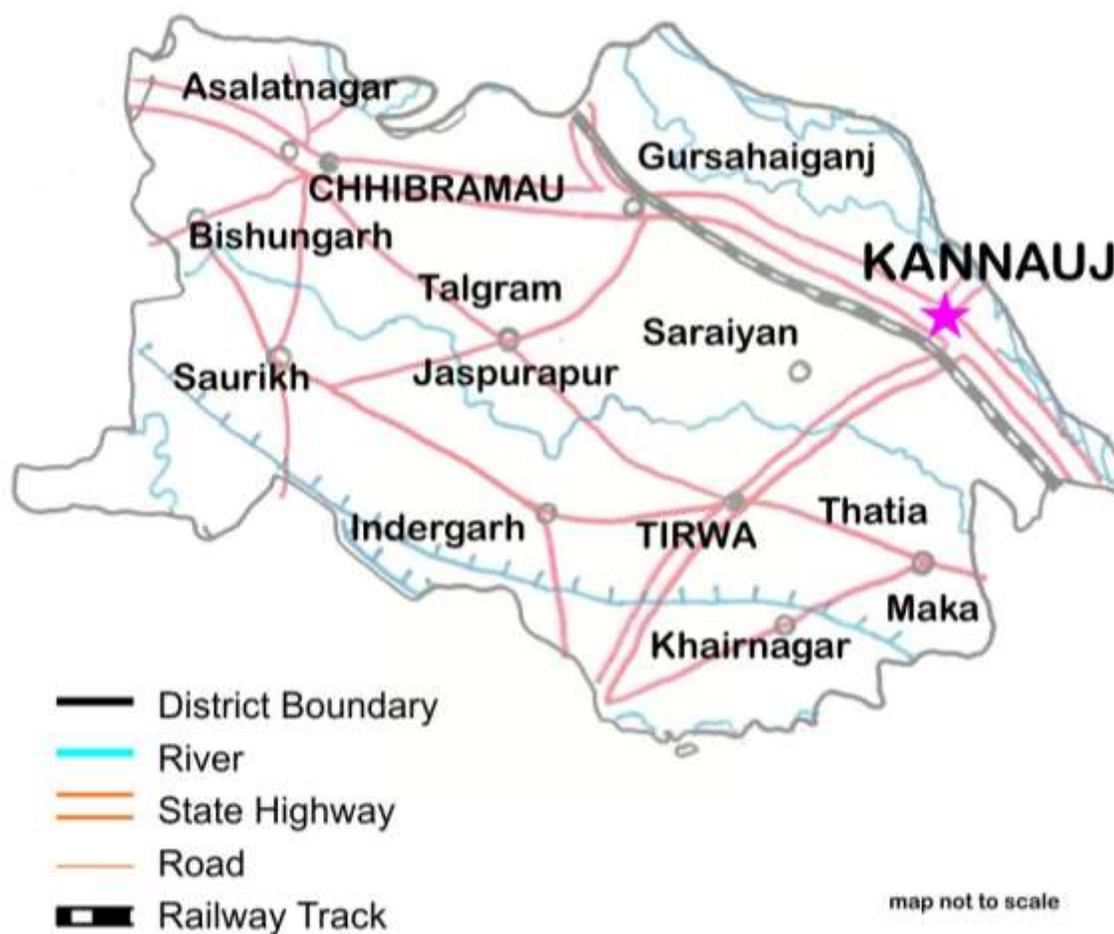
We must accept that fragrance and aromas occupy a central role in the evolution of humanity and are very intricately woven with the culture of any society for various religious, social and medicinal practices. A terracotta vaporizer of the mature Harappan period is a prized possession of National Museum, Delhi. This is an 8x10 inch artifact which finds a striking technical and structural similarity with an artifact retrieved from a site in Syria. Both these artifacts are, in turn, precursors to the vaporizers used today. The techniques remains to be the same of placing a small fire at the bottom of the vaporizer which heats the aromatic ingredients placed in a cup like section at the top of the vaporizer. This gently leads to the release of fragrance from the ingredients and as essential oils are volatile, the aroma is released into the atmosphere to exude fragrance into the surroundings.

The most important deliberation in this work is the fact that the use of essential oils and aroma ingredients had been the prerogative of the rich and the more fortunate as is indicated throughout this work. However, with the increased availability of this plant produce and its use in daily consumption products by man, it has become a product of mass consumption. The only fear that can overtake man is its adulteration and scarcity in the future without adopting sustainable methods of conservation and production.

It will be a small but first ever attempt at making a historical and social survey of the city for understanding the aromatic culture of India in its cradle. An effort has also been made to adopt other communication techniques by digitization of the attar making process and mapping the changes seen in the city in time and space. There has been an obvious disconnect in efforts to trace the changes in the city periodically but it is better late than never to do so now. In the face of growing technological advancements-- in the extraction processes and other methods of value addition, fresh insights and studies are necessary for

immortalizing the traditional attar industry of Kannauj and as Harshvardhan's capital, a city that stands for the Indian tradition in perfumery.

## 13. Map of New Kannauj growing along the Tirwa Road



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