Research Report for

Historical Study of Attars and essence making in Kannauj

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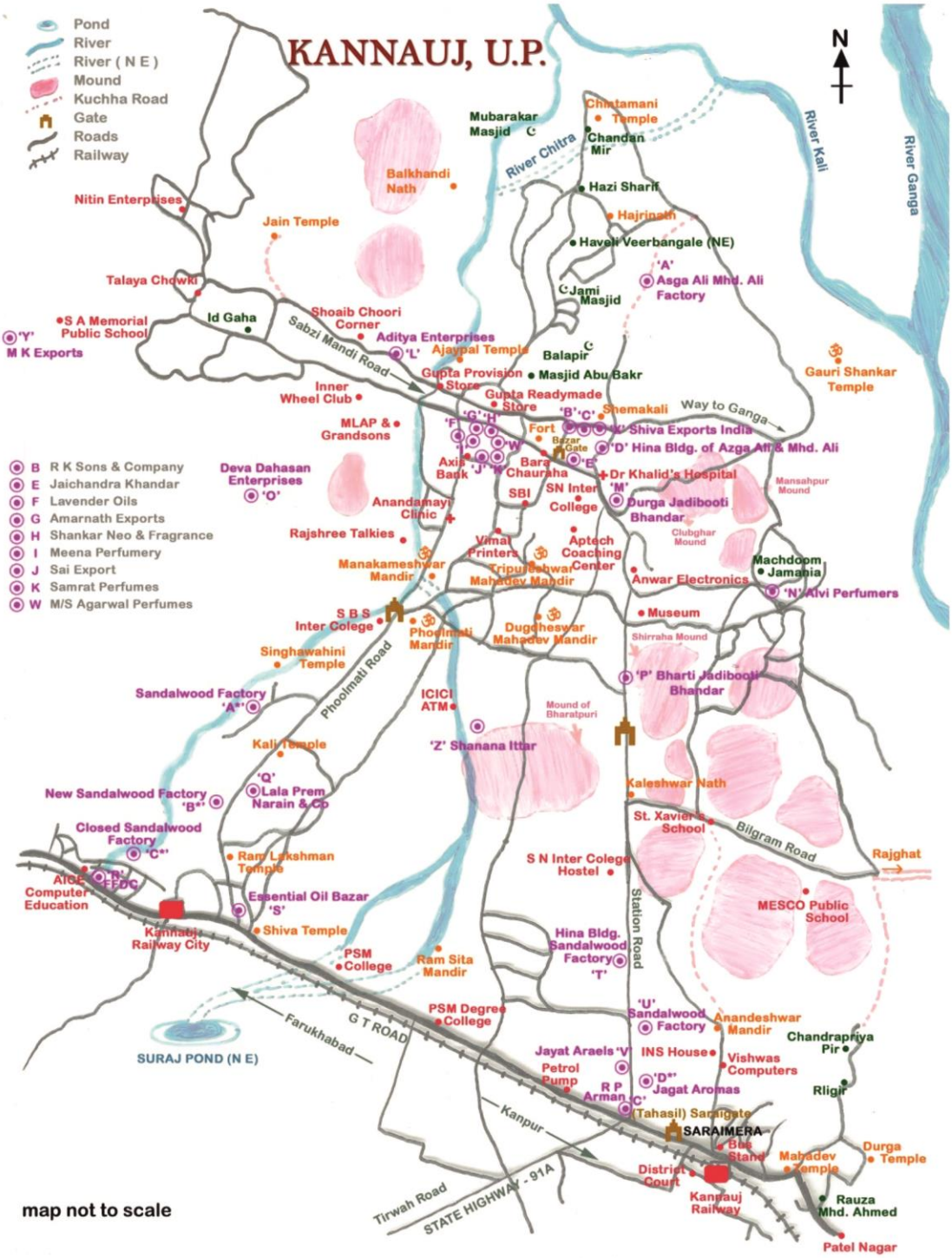
HISTORICAL STUDY OF ATTAR AND ESSENCE MAKING IN KANNAUJ



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

References

Map reference from Government Archaeological Museum, Kannauj & Google Maps

SYNOPSIS

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[1] 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.

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 Frances Wood in his recent work[2] covers in detail, with unpublished photographs, this hectic activity along the Silk Road.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[3] to portray their activities during the 5th -10th century A.D.[4] 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 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

[1] A town and subdivision of Patna District of Bihar

[2] 'The Silk Road: Two Thousand Years in the Heart of Asia'

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

[4] Chinese silk dating 1500 BC has been found in Bactria (Afghanistan). 10th century AD maritime trade routes connecting India with Guangzhou (Canton) had become the focus. Already since 2nd 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 6th and 9th century, Southern China was extensively colonized.

licorice[5] to take back home for his grand- children as he was unsure whether his son would be as lucky as him to survive[6]. He has even mentioned the collection of willow and juniper tree wood[7]. 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[8]. 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-Longs' Tale[9] has described how during her illness she prayed to the star God Rahu[10] 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[11] 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 citragandha that was a mixture containing wine, pine resin and licorice[12]. 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. However, I have matured to value attars, realizing that in it lies the history of aromatics which is as compelling and alluring as the world of essential oils.

As per Basic Chemicals, Pharmaceuticals and Cosmetics Export Promotion Council 2005-6 and 2006-7 export of Attars Indian perfumes of all grades was Rs.

[5] Mulathi in Hindi
[6] His son, too, was in military service on the Silk Road.
[7] Whitfield Susan, Life Along the Silk Road, John Murray, London, 1999 p.75
[8] Whitfield Susan, Life Along the Silk Road, John Murray, London, 1999 pp.113-118
[9] Whitfield Susan, Life Along the Silk Road, John Murray, London, 1999 pp. 174-183
[10] 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.
[11] 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.
[12] Whitfield Susan, Life Along the Silk Road, John Murray, London, 1999 pp. 201-202

641,50,614 and Rs.553,45,198 to 35 countries but when put together with other perfumery compounds (not containing spirit items) it was Rs. 5128,66,308 and Rs. 6638,70,534 to 72 countries.

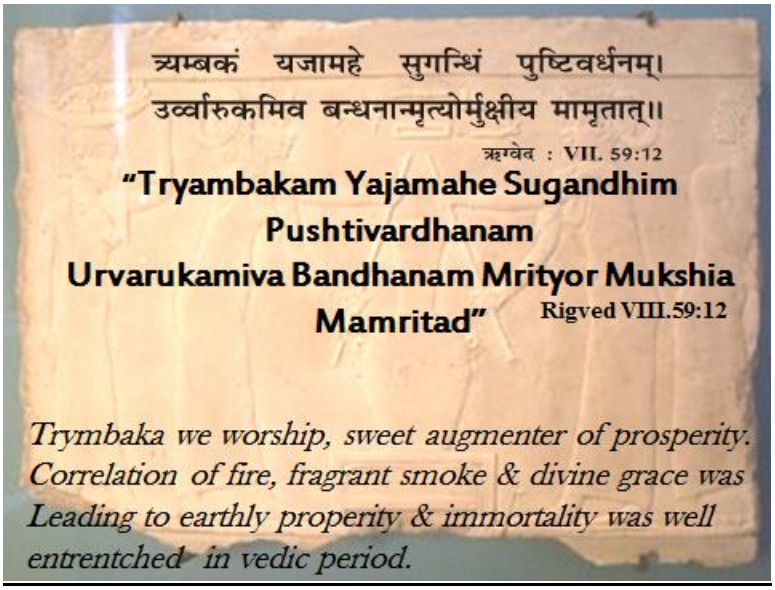
Evidenced from archaeo-botany, ethno-botany, study of material culture, scripts, inscriptions, seals and work by archaeologists like Ernest Mackay and John Marshall and later by Rovesti a rich world of fayence vessels for expensive perfumes, incenses, powders and pastes since ancient times has been recovered 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, up-liftment or for energizing. Extracts of aromatic plants have been used for thousands of 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. This recitation from the Rig Veda is of consequence to establish the above mentioned importance of aromatic culture and its practice by Indians



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[13] 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 modifications were introduced in Italy in 12th 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.

[13] Roy Genders, Perfume Through The Ages, Putnam & Sons, p101.

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 Vaids 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.

1. Introduction to Aromatics

"*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 2nd 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.

1.1. 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 (Gandhdravya) 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 (Gandhdravya) 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[14]'. 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[15] and therapeutic[16] 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[17], were accidently recovered by Dr. P.K. Gode. The texts are not mentioned but it has been inferred that these

[14] Ancient Indian treatises and first written evidence on Ayurveda by Charaka and Sushrata; also known as two pillars of Ayurveda

[15] pertaining to public worship

[16] treating or curing of disease

[17] MS found in the 'raddi' collection of Bhandarkar Oriental Research Institute, Pune. Folios 1-27a comprises the 'Gandhasara' and folios 27b-49 comprise the 'Gandhavada' with commentary in Marathi written in the same hand.

treatises belong to the same period of time as Varahmira's 'Brahtsamhita'[18] (500 AD), 'Agni Purana' (between 800 to 900 AD)[19] and Someswara's 'Manasollasa' (1130 AD)[20]. Gandhasara records sixty-four verses on preparation of 'dhoops' and 'gandhajal' of five sorts.

The Gandhayukti[21] 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[22].

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[23], hair oil[24], perfumes[25], mouth perfumes[26], bath powders[27], incense[28] for religious worship, talcum powder[29] called `putvasa', hair-dye or `murdhaja-

[18] Brahtsamhita's section on gandhayukti (chapter LXXVI) mainly deals with making of cosmetics with aromatic substances

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

[20] Manasollasa – it illustrates the use of incense in sacred and secular sphere of Hindu life in early Medieval India.

[21] Chapter 77 (37 verses), pp. 386-389 – Calcutta, 1865 Edition

[22] In chapter CCXXIV.20-21[22]

[23] Scented waters containing cassia bark, costus, spikenard, nalika etc.

[24] Containing Champaka, costus, cassia bark, manjishtha, in sesame oil

[25] Containing patra, turuska, vala, sandalwood, jasmine flower, jaiphal, cassia bark and tagara etc.

[26] 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

[27] Valeria, cassia bark, aguru, bignonia,nakha and musk.

[28] Dhoopa contain satpuspa, kunduruka, sandalwood fumigated with jagari etc.

[29] Cassia bark, small cardamoms. Musk, camphor etc.

raga'[30] for hair dressing, hair shaving, tooth-sticks or danta-kastha[31] and tambula[32]. Flowers were used for making various kinds of unguents anulepana and saundaranjana and abhyaijena[33] 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.

1.2. 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 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

[30] Repelling odor of iron and acid in the hair dye is removed by a wash with afore said hair bath and scented dyes.
[31] Bilva, sirisa, ficus religiosa, plaksha, karanja, arjuna, sala, devdaru etc.
[32] Lime, areca nut, beetle leaf along with clove and nutmeg; katechu is only referred to in later medical Samhitas.
[33] All three are various types of oils for anointing the body.

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 Vatsayanas Kamasutra and Saundarananda there is a mention of trade in aromatics for use as unguents (pipesangavilepanamhi), for fumigation of apparels (vasonganakacida-vasayacca), 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.

Agnipuran 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 (kundaruku), 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 ungents (gatranulepani), fragrant cosmetics (varti), ointments (varnaka) and fragrant oils (vilepana) find mention in Amarakosa.

In Amarakosa II.6. P123-132 is devoted to various denominations of aromatic woods sometimes it betrays their 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.

1.3. 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. Agnihotri 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 between1994-96 and he further extrapolates 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[34] and five **altars** or Hawana-Kunds at

[34] Dated 3000 BC to 2500 BC

Sanghol[35] 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*[36]." The other altars contain "*seals, sealings in Brahmi script, motifs such as Dharma-Chakra, Sri-Vatsa, Vedi and other artifacts*"[37] 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

1.4. 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.

[35] Locally known as Uncha-Pind is situated 40 kilometers west of Chandigarh

[36] K. S. Saraswat, author of a paper titled '*On the remains of botanical material used in fire sacrifice…at Sanghol, Punjab (Kushana period)'.*

[37] As per K. S. Saraswat, op. cit

King Somesvara in his 13th century treatise, Manaollasa devotes four chapters to perfumes and cosmetics and emphasizes the importance of daily bath. The royal bath as described[38] 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.

2. 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 270 5' north latitude and from 790 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 16th and 17th 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. Kannauj39 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 Vanabhatta 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

[38] Somesvara, Manasollasa, vol. II, pp. 81-83.

[39]The oldest known name of Kannuj 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 Bhatts 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 preceeding centuries was an important source for sandalwood as is revealed by the gifts sent by the king of Assam to Harsh through Hamsavega40. King Harsha anointed his body with unguents and sandalwood paste before a battle41. The possibility of the link with the Silk Road becomes double fold as Hashshavadhan'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[42]' 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), *argehjeh* (cooling), *gul kameh*, *ruh-afzah* (for censers), *owpteneh* (to wash hands), *Abyer Mayeh* (an aphrodisiac) and much more[43]. Abul Fazl lists natural perfumes used in the making of these formulations, some of animal origin

[40] Banabhatta translated by EP Cowell and PW Thomas, Harshacarita, Global Vision Publishing House Delhi 2004, p271

[41] Banabhatta translated by EP Cowell and PW Thomas, Harshacarita, Global Vision Publishing House Delhi 2004, p273,284

[42] As mentioned in Tuzk-i-Janhangiri

[43] Gladwin's translation Vol. 1, Ain-I-Akbari pp. 65-75.

and some were of plant origin[44]. 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.'[45]. This city had grown in strength and size under Hashavardhan in 7th 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[46]. 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[47]. "*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*

44 Gode PK. Studies in Indian Cultural History Vol.1 VVRI Hoshiarpur p19.
[45] Rama Shankar Tripathi, History of Kanauj to the Moslem Conquest, 1989, pp 1.
[46] Rama Shankar Tripathi, History of Kanauj to the Moslem Conquest, 1989, pp 130.
[47] Rama Shankar Tripathi, History of Kanauj to the Moslem Conquest, 1989, pp 147.

roads"[48]. The wealth and prosperity of Harsha's Kannauj was seen in their refined appearance and silk attire while 'fruit and flowers were abundant'[49]. 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[50]. 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[51].

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.

[48] Watters,I,p 340, 147; Beal,I, p 207,206,73,74
[49] Watters, I p340; Beal,I p207
[50] Rama Shankar Tripathi, History of Kannauj pp292-293, 324-325
[51] Rama Shankar Tripathi, History of Kannauj pp106,127

2.1. 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[52] 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 Vanabhatta 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 travelogues. Bana Bhatts 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 preceeding centuries was an important source for sandalwood as is revealed by the gifts sent by the king of Assam to Harsh through Hamsavega[53]. King Harsha anointed his body with unguents and sandalwood paste before a battle[54]. The possibility of the link with the Silk Road becomes double fold as Hashshavadhan'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.

[52]The oldest known name of Kannuj 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.

[53] Banabhatta translated by EP Cowell and PW Thomas, Harshacarita, Global Vision Publishing House Delhi 2004, p271

[54] Banabhatta 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

2.2. 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 17th 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 `*vaids*' 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[55] (Procedure for making Jasmine scented sesame oil in the next section on Aromatic Heritage).

[55] Dr. Sadgopal, "An update survey of Indian Perfumery Industry" in Indian Soap Journal July-Sept 1943

3. Gandhadravya

"*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*."

Understanding Attars and Gandhadravya

Gandhasara by Gangadhara gives a glossary devoted to Aromatic ingredients (Gandhadravya) 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.

3.1. 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.

3.2. 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.

3.3. 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, Kewara, Moulashri and Bela (jasmine) attars have been the favourites of users in the past and those 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*'[56].

3.4. 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 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[57]. A deeper study of Champa and Jasmine will reveal similar use of all.

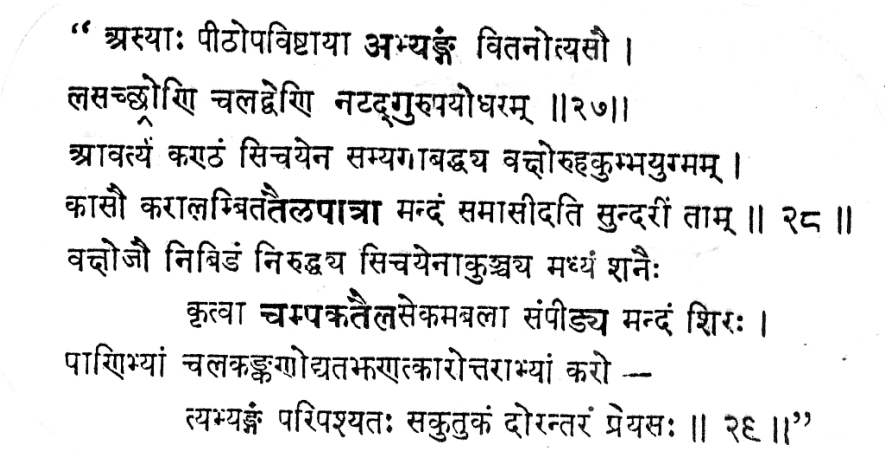
"चाम्पेयश्चम्पकः प्रोक्तो हेमपुष्पश्च स स्मृतः ।
एतस्य कलिका गन्धफलीति कथिता बुधैः ॥" (भा.प्र.)

"चम्पकः कटुकस्तिक्तः कषायो मधुरो हिमः ।
विषकृमिहरः कृच्छ्रकफवातास्रपित्तहृत् ॥" (भा.प्र.)

" चम्पकः कथितः शीतो वीर्येऽतिकटुको रसे ।
हृद्यः सुगन्धिर्विषहा कफपित्तविनाशनः ॥" (ध.नि.) [58]

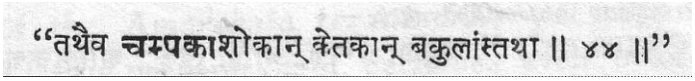
[56] P. K. Gode, Studies in Indian Cultural History, Vol. I, pp. 33-34.
[57] Navine, A. K., Flowering Plants of western India, London, 1817, p7
[58] As mentioned in Indian medicinal Plants (Kottakal)

The use of fragrant oil of Champaka[59] is referred to in Subhasitaratnabhandagara for the practice of Abhayanga[60].



" अस्याः पीठोपविष्टाया **अभ्यङ्गं** वितनोत्यसौ ।
लसच्छ्रोणि चलद्वेणि नटद्गुरुपयोधरम् ॥२७॥
आवर्त्यं कण्ठं सिचयेन सम्यगाबद्ध्य वक्षोरुहकुम्भयुग्मम् ।
कासौ करालम्बिततैलपात्रा मन्दं समासीदति सुन्दरीं ताम् ॥ २८ ॥
वक्षोजौ निबिडं निरुद्ध्य सिचयेनाकुञ्च्य मध्यं शनैः
कृत्वा **चम्पकतैल**सेकमबला संपीड्य मन्दं शिरः ।
पाणिभ्यां चलकङ्कणोद्यतझणत्कारोत्तराभ्यां करो —
त्यभ्यङ्गं परिपश्यतः सकुतुकं दोरन्तरं प्रेयसः ॥ २९ ॥"

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[61].



"तथैव **चम्पक**काशोकान् केतकान् बकुलांस्तथा ॥ ४४ ॥"

(As well as the Champka, Asoka, Ketaka and Bakula trees.)

This reference to Champaka in Amarkosa[62] 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.

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59 Also known as Champa (Hindi) or Champkah (Sanskrit); see chronology in Appendix 1.

60 Smearing the body with oil or unguent by ladies in ancient India

61 In the description of Gandhamadan forest described in Aranayakapravan of Mahabharata – Critical Edition BORI, 3,155.44.

62 Refers to Champaka as Champeya

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**.**

"मालती कफपित्तास्यरुक्पाकव्रणकुष्ठजित् ।
चक्षुष्यो मुकुळस्तस्यास्तत्पुष्पं कफपित्तजित् ॥
सुगन्धि च मनोज्ञं च सर्वश्रेष्ठतमं मतम् ।" (ध.नि.)

(Malati has the medicinal properties to remove (heal) the disorders of kapha, pitta, swelling of the mouth, and its disease, wounds and even kushtha (leprosy). Its blooming buds (leaves) heal disorders of eyes; its flowers heal kapha and pitta. It is fragrant and attracts the mind. It is deemed to be the best of all.)

"मालती शीततिक्ता स्यात् कफघ्नी मुखपाकनुत् ।
कुड्मळं नेत्ररोगघ्नं व्रणविस्फोटकुष्ठनुत् ॥" (रा.नि.)

(Malati is cool, bitter and heals the Kapha dosha; it drives away the swelling in the mouth; its leaves kill the eye disorders; it is also used for driving away the pains of a wound, a sore or symptoms of leprosy.)

'जातीयुगं तिक्तमुष्णं तुवरं लघु दोषजित् ।
शिरोक्षिमुखदन्तार्तिविषकुष्ठानिलाम्रजित् ॥" (भा.प्र.) [63]

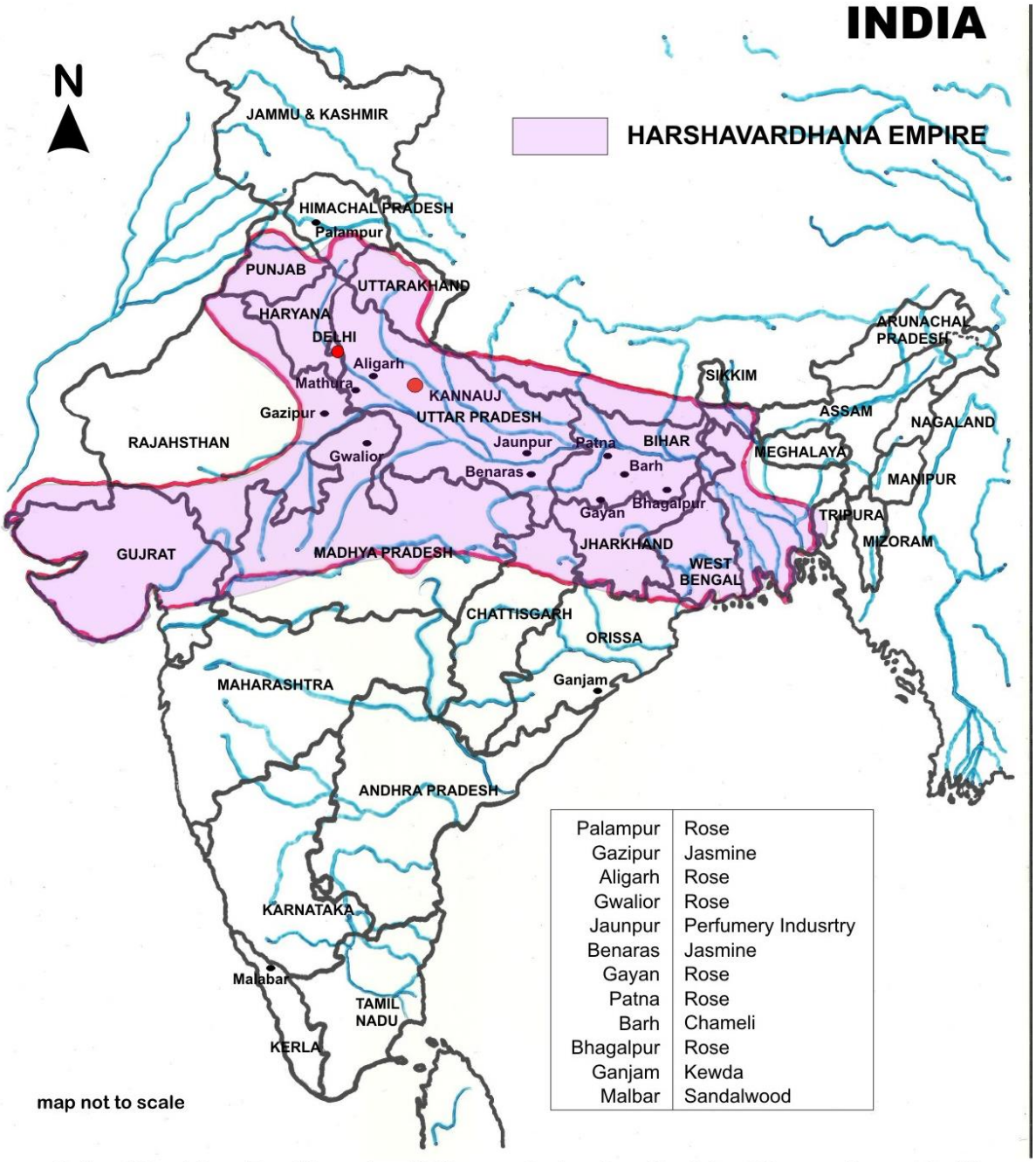
(Jatiyuga (plant) is bitter, hot, tuvarm; it is light and is a solution to many disorders of the head, eyes, mouth and teeth. It heals leprosy, wounds, vayu-doshas and removes toxins and pain.)

The essence of Jasmine[64] 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[65]. 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

[63] As mentioned in Indian Medicinal Plants (Kotakkal).
[64] *Jasminium Sambac Linn.*, Bela or Mogra in Hindi
[65] Roy Genders, Perfumes through the Ages, G. P. Putnam Sons, NY p109

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[66] 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.

[66] Also formerly ottar or otter; an altered form of Attar – according to Shorter Oxford English Dictionary



Palampur	Rose
Gazipur	Jasmine
Aligarh	Rose
Gwalior	Rose
Jaunpur	Perfumery Indusrtry
Benaras	Jasmine
Gayan	Rose
Patna	Rose
Barh	Chameli
Bhagalpur	Rose
Ganjam	Kewda
Malbar	Sandalwood

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
Oppurtunities in India Traditional Fragrences and Attar for SS - Nadeem Akbar & SV Shukla 1996
Map reference from Government Archaeological Museum, Kannauj & Google Maps

4. The Ancient Technique of Extraction in India

We have seen how since ancient times Kannauj[67] 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[68]' who would supervise and arrange for the proper use of attars.

Today also the farmers from the districts around Kannauj namely Aligarh, Etah, Farukkhabad 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)[69].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.

4.1. 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

[67] The oldest known name of Kannuj 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.

[68] As mentioned in Tuzk-i-Janhangiri

[69] 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 know 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, Dhoops, additive food flavours and food extracts have also found a market.

4.2. 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.

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.

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[70], 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[71] 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.

4.3. 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). Dry distillation does not find favour with manufacturers hence it is on the verge of

[70] 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.

[71] 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.

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.

4.4. Procedure for making of

4.4.1. Mitti-ka-Attar (the fragrance of earth)

The attar is specific to Kannauj and it is believed that it is the special clay from it's 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 connecter) 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 when the fresh cycle will begin in the same way as explained above.

4.4.2.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 ascendency. In my younger days I remember a proverb 'Chhachhunder ke sir me chameli ka tel' 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 and 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 will give 10 kg oil. To each part of the oil 80 kg sesame oil is added and is then ready for retail.

5. Methodology of Research

In a historical and social mapping exercise depiction 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. Quality is of no consequence as long as it is cheap and affordable to the masses.

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 is 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 of animal origin.

6. 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 down the same road was a sad witness of the days gone by. A huge factory area lay idle with bricked walls as it is 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 dead structure as it was 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 is lying inside in a 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 there was not a single city untouched by the proselytizing activity of the missionaries and Farrukhabad was their stronghold. Then how was it that they failed to reach Kannauj?

It remains to be a city only of the Hindus and Muslim brother-ren with not a single church or a gurudwara. I was informed that lately a Sikh family has shifted to Kannauj and made a gurudwara 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 use. The only fear that can overtake man is its adulteration and scarcity in the future.

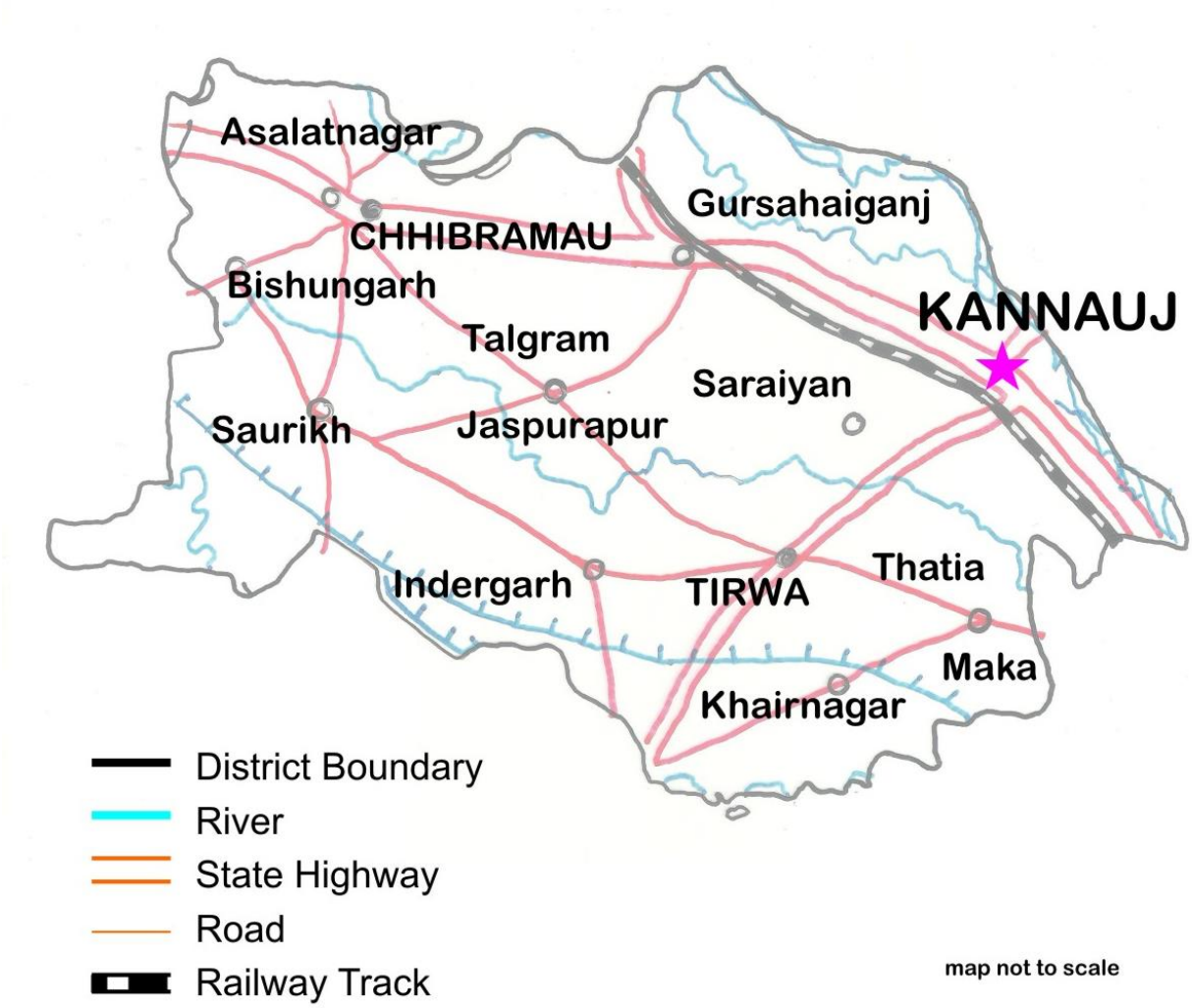
It will be a small but first ever attempt at making a historical and social survey of the city for understanding the aromatic culture of India in its cradle. An effort has also been made to adopt other communication techniques by digitization the attar making process and mapping the changes seen in the city over a long period of time. 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, the city stands for the Indian tradition of perfumery.

Ode to Sandalwood

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!!!!!

JYOTI MARWAH



New Kannauj growing along the Tirwa Road

7. Reference and Bibliography

1. Dictionary of Indian Raw Materials and Industrial Products Vol.1-12, CISR (Publications and Information Directorate)
2. Christopher Mc'Mahon, 1996 Co Project Opportunities in Indian Traditional Fragrances and Attars for SSI's by Nadeem Akbar, SV Shukla, FFDC Kannauj India
3. Attars of India—A Unique Aroma, Perfume and Flavourist Vol.16 1991 by JN Kapoor
4. Aromatic India by Christopher Mc'Mahon 1996
5. Cosmetics and Coiffure in Ancient India Chapter VI Journal of the Indian Society of Oriental Art, Dr. Motichandra Vol. VIII 1940
6. The Wealth of India (A Dictionary of Indian Raw Materials in Industrial Products, Vol. 1-12, CISR (Information and Publication Department)
7. Irina Bokova Director General UNESCO, 'Striking the right balance between modernity and heritage is complicated. We try to find the balance', The Idea Exchange, The Indian Express, Nov 25, 2012
8. *Atharva Veda – Hymns of Atharva Veda,* Bloomfield, 1897.
9. Bulchand, Sarada, *Sense of Smell*, National Book Trust, India, 2002.
10. Castleman, Michael, *The New Healing Herbs*, Bantam Books, 2002.
11. Dahanulkar, S., Thatte, U., *Ayurveda Unravelled,* National Book Trust, Delhi,
12. Genders, Roy, *Perfume through the Ages*, G. P. Putnam's Sons, New York
13. Gode P. K., *Studies in Indian Cultural History, vol. 1*, VVRI, Hoshiarpur, 1961
14. Gode, P. K., *Indian Science of Cosmetics and Perfumery,* International Perfumer, 1951, no.3
15. Gunther, E., *Essential Oils, Vol. 1-6*, Robert E. Krieger Publishing Company, Inc., Malabar, Florida, 1972.
16. Jose Joseph, Jayalakshmi R. *Medicinal and Aromatic Plants: Essential Oils and Pharmaceutical Uses,* Discovery Publishing House, New Delhi, 2005.
17. Kapoor, J.N. *Attars of India-A Unique Aroma*, Perfumer & Flavourist, Vol.16, Allured Publishing Corp., 1991.
18. Kirtikar, K. R. and B. D. Basu, *Indian Medicinal Plants*, Vol. 1-4, Lalit Mohan, Allahabad, 1916(IInd Edition E. Blatter, J. F. Caius & K. S. Mahaskar, 1935)
19. Kochhar, Rajesh, *The Vedic People – Their History and Geopgraphy,* Orient Longman, 2002
20. Lal, B. B., *Saraswati Flows On – The Continuity of Indian Culture,* Aryan Books International, New Delhi, 2002
21. Marwah, Jyoti, *Aromatherapy Rooted In Ancient Indian Culture*, Minor Research Project, University of Mumbai 2004 (Unpublished)
22. Marwah, Jyoti, *MAP'ing India's Past from the Spice Age to Age of Spice-Oil,* presented at IAS, IHCS, ISPQS Annual Conference, SIAACM, Tripunithura, Kerala, 2002.
23. McMahon Christopher, *Attars of Kannauj*, *The International Journal of Aromatherapy*, vol. 7. No. 4, 1996

24. Nagar Shantilal, *Botanical and Medicinal Plants as depicted in Ancient text, Art and Archaeology*, B.R. publishing 2000
25. Pruthi J. S., *Spices and Condiments*, National Book Trust, Delhi
26. Raichur, Pratima, *Absolute Beauty Through the Ancient Secrets of Ayurveda*, Mapin Publishing, 1997
27. Ray, Priyadaranjan, *Medicine- As it evolved in Ancient and Medieval India*, Indian Journal Hist. Sci., Vol 5, No., 1970
28. Reader's Digest *Magic and Medicine of Plants*, Readers Digest Association, London, 1990
29. *The Holy Vedas: Rig Veda, Yajur Veda, Sama Veda, Atharva Ved*, Bibek Debroy and Dipavali Debroy. Reprint. New Delhi, B.R., 2001
30. Rovesti Paolo, Dr. *Rovesti Records, Indus Valley,* 1977
31. Sadgopal, Dr., *"An update survey of Indian Perfumery Industry"* in Indian Soap Journal July-Sept 1943
32. Sahni Birbal, *The Himalayan Uplift since the Advent of Man: Its Cult Historical Significance*, Current Science, Vol. 5(1), 1936.
33. Sharma, P.V. *Dhanvantarinighantu*, Chaukhamba Orientalia, Varanasi, 1982.
34. Shastri, Ajay Mitra, Varahmira's India: Ancient Indian Heritage, Vol. 1 & 2, Motilal Banarsidas, Delhi, 1996.
35. Shukla, Shakti V. et al., *'Retrospects and Prospects of Aromatherapy in India'*, XIII, PAFAI Seminar, Aurangabad, 1997
36. Srivastav, Chanchala, *Emerging trends of palaeo-ethnobotanical investigations at Ancient Ahirua-Rajarampur, and Siyapur, district Kannauj, U.P.*, National Seminar on Archaeology of the Ganga plain, Lucknow, 2004.
37. Trivedi, Raghu Prasad, *Dhanvantari Charak Chikitsank*, Dhanvantari Karyalaya, Aligarh, 1955.
38. Udwadia, Farokh Erach, *Man and Medicine, A History*, Oxford University Press, 2001
39. Vaidya, C. V., *Epic India*, Bombay 1933, p139
40. Varahamira, *Bharhut Samhita*, Book III, Section II: translatiom and transliteration by Ajay Mitra Shastri – India as seen in The Brhatsamhita of Varahmira, Motilal Banarsidas, Delhi, 1982.
41. Varier Vaidyaratnam, *Indian Medicinal Plants: A Compendium of 500 Species*, vol. 1-5, Orient Longman 1995
42. Vishnu-Mittre, *Wild plants in Indian Folk-life-A Historical perspective*, In: Glimpses of Indian Ethno-botany (Jain S.K. Ed), Oxford and IBH Publishing Company Pvt. Ltd., 1981.
43. Whitfield, Susan, *Life Along The Silk Road*, John Murray, London, 1999.
44. Yule & Burnell, *New Indian Antiquary*, vol. VIII (1946)
45. *Charaka Samhita, Vol. V*, Gulabkunverba Ayurvedic Society, Jamnagar, India, 1949.
46. Christopher, M., *'Incense in India'*, The Incense, Journal, 2001.
47. Davies, Patricia, *Aromatherapy A-Z, Vermillon, 2005*

48. Finnermore, H. *The Essential Oils*, Ernest Benn Ltd., London, 1926.
49. Lawless Julia, *Encyclopedia of Essential Oils*, Element Books Ltd, Australia 1995
50. Marwah, Jyoti, *Aromatherapy Rooted In Ancient Indian Culture*, Minor Research Project, University of Mumbai 2004 (Unpublished)
51. Marwah J & Marwah S, *Common Man and Essential Oils*, Proceedings NIMAP-CIMAP 2002
52. Marwah, J & Marwah, S, *Essential Oils in the Prevention of Spread of Contagious and Infectious Diseases*, Proceedings IWSA National Conference, Pune 2001
53. Miller, Dr. Light, Dr. Bryan Miller, *Ayurveda & Aromatherapy*, Motilal Banarsidas, New Delhi 1998
54. Oil Technology Research Institute, Hyderabad, *Curcuma Longa and its effects on human pathogen*, EOAI Conference, 2001, Agra.
55. Banabhatta, Trans. by EP Cowell, PW Thomas Ed.RP Shastri, The Harsacharita, Global Vision Publishing House, Delhi, 2004.
56. National Institute of Rural Development, Hyderabad, Development Methods and Techniques,2010
57. Tripathi Rama Shankar, History of Kannauj to the Moslem Conquest, Motilal Banarsidas,1989
58. Kale M.R.(Ed) The Ratnavali of Harsa Deva,Reprint 2011 Motilal Banarsidas.
59. Mishra S.M. Yasovarman of Kannauj Abhinav Publications, New Delhi 1977

8. Photo Gallery of Kannauj

Entrance gates to the city at the two main arterial entries to the city made in 1944. Another one called the Bazaar Gate at the entry to Attar market and to the factory of Asgar Ali Mohammad Ali one of the greatest perfumers in North India was made in 1941. This goes to indicate a period of high economic activity in terms of exports for Indian business and the economic strains faced by England due to the two wars.

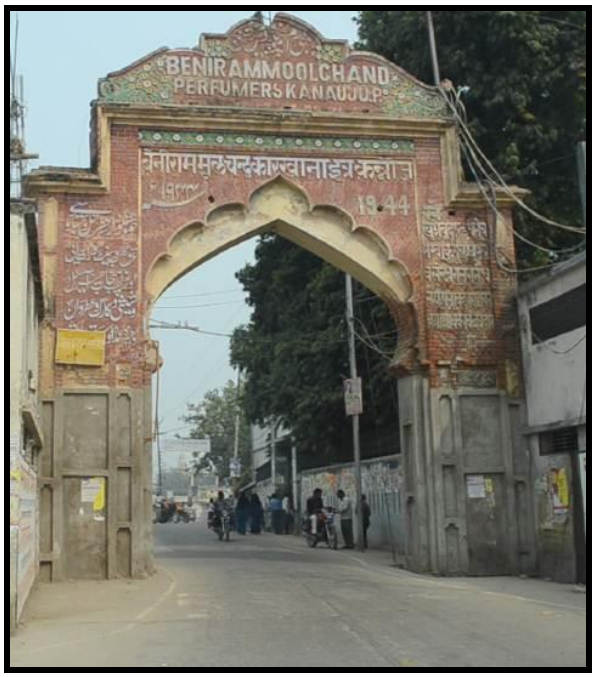


Photo : Jyoti Marwah

The City Today

The question is who does not want development today --- is it the people themselves or the Government? All the leading manufacturing unit owners have sent their children for higher studies either abroad or to Mumbai and Delhi. They also have advanced industrial facilities in Mumbai and other places in the south, yet they maintain their old links with the traditional practice in Kannauj a city with minimal attributes of a growing or developing city. So the answer is that they **do** gain out of it.

Attar Bazaar

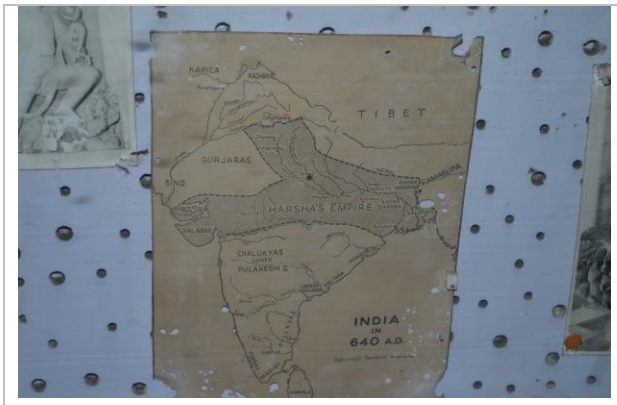
Narrow lane leading to the factory of Md Yusuf Md.

Attar Bottles at the Factory

A remarkable old Fort like Factory of The Tandons in the Attar Bazaar

Inside Syam Sunder Bhawan Civet cat and musk deer to welcome the visitors

Agarbatti (incense sticks) and Dhoop Factory—The raw material and the finished product- Women are paid Rs.16 per Kg and can make up to 2 kg in a day



The Museum

On display unusually beautiful sculptures excavated from the city and its suburbs by individuals in their homes while renovating

AT THE FARM

Rose for making Gulkund and attar

Shri Gopal Saini with his Rose produce for Attar Industry and allied Gulukand industry.

Mehndi flowers for Attar

Livelihood in picking flowers

The Ganga nurturing Kannauj since time immemorial is today faced with the threat of sand picking, an illegal act but a reality as seen in the picture above. What does future have in store is on every one's mind. As we see a system collapsing under its narrow vision with relentless exploitation. Ganga will return to avenge its physical abuse as did Mithi in Mumbai in the floods of 2005.

EQUIPMENT AND PROCEDURE- HYDRO DISTILLATION

Deg being prepared for Mitti ka Attar

Deg being prepared for Hina Attar

Water added thereafter

Deg is sealed with 'Chikini Mitti'

Deg is secured and made air tight

Chongas to connect the Deg and the Bhapka

Chongas fixed and made airtight with multani mitti

Bhapkas or receivers ready for condensation within the water bath

Stills fired

Bhapkas are cooled after extinguishing fire for 12 hrs. Water is separated from the oil next morning. Oil in the Bhapka is maintained for another day of fixation. Process can continue for 30days depending on the quality and richness in oil.

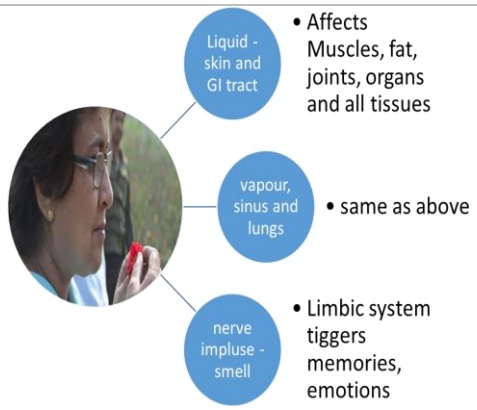
Nakh chhoya: Dry distillation of sea shells and frankincense

Asgar Ali Mohammad Ali all time favourites of Nawabs of Awadh and Hyderabad can only recollect their glorious past now. Their sprawling residence in Chowk, Lucknow (above no longer there) and present residence at Kannauj. Salim Bhai is a criminal lawyer and his brother manages the small shop outside their house in Kannauj. Also, the image of their factory closed and in a dilapidated condition in Kannauj since 1981.

Aromatic Musk at RK perfumers

At Gopal Saini's farm

Spices of Indian Fame



Healing with Fragrance

Roadside healers

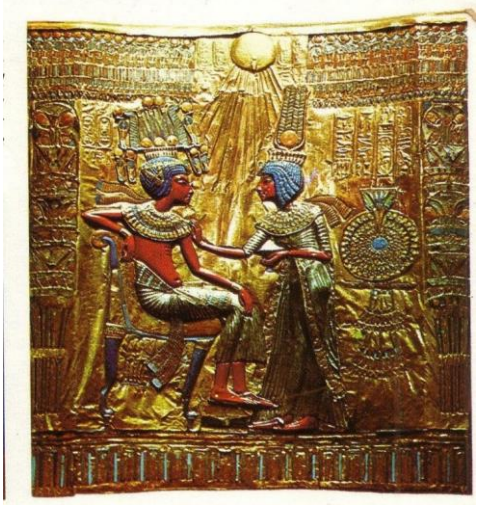
Dingy units making Attars

Plants and Man

Three Men from the Orient

Frankinsence and Myrrh

Kewda Flowers



Tuthankhaman smeared with aromatic ungents

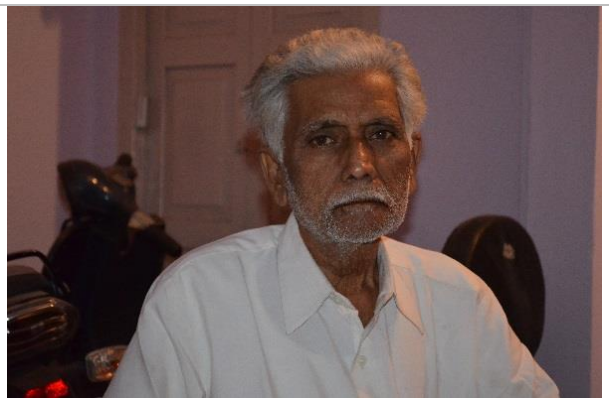
Jatamansi

SOME OF THEM WHO PROMOTED THE STUDY AND USE OF AROMATIC CULTURE

Dr. P.K. Gode

Dr. Birbal Sahani

Head Seal of Hrshavardhan



Descendents of Asgar Ali Md. Ali

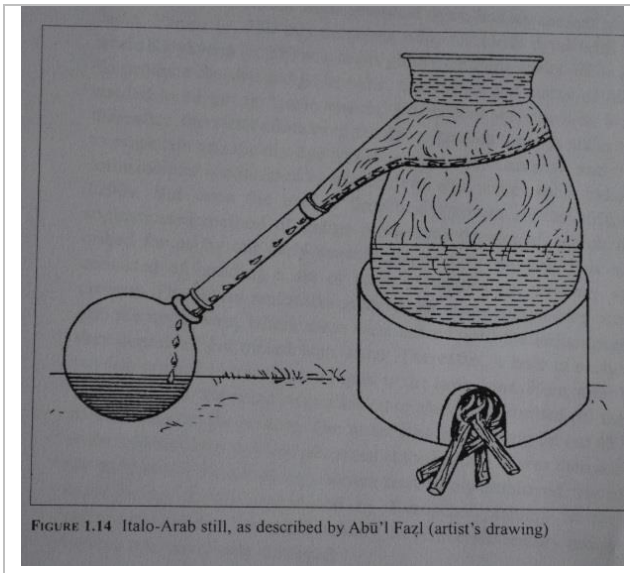
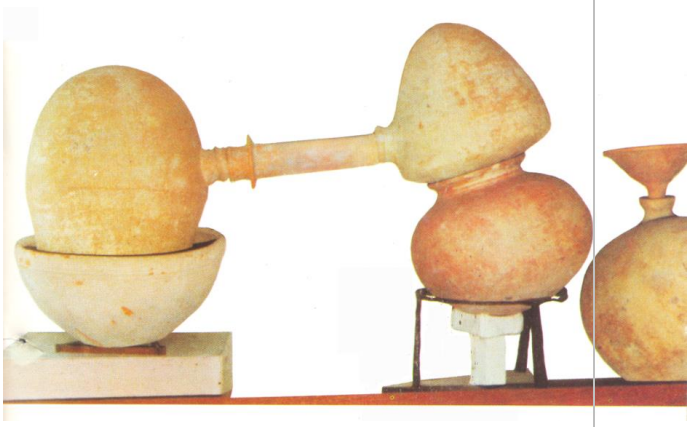


FIGURE 1.14 Italo-Arab still, as described by Abū'l Faẓl (artist's drawing)



Source: Technology in Medieval India ,

Irfan Habib

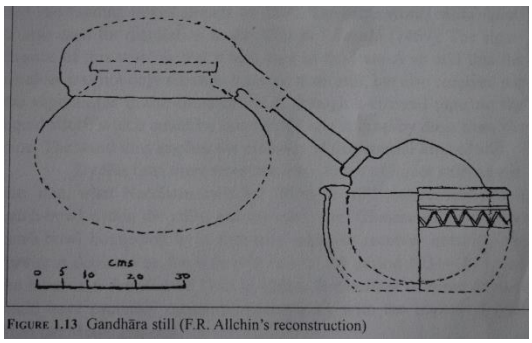


FIGURE 1.13 Gandhāra still (F.R. Allchin's reconstruction)

Source: Technology in Medieval India ,

Irfan Habib

Self sourced Deg Bhapka used by a Hakim to make unani medicine

Maintaining Equipment

Leather Bottles for purifying Attars

Washing a Deg

Tinning of Attar distillation vessels

Soldering the drain joint on the Bhapka

Inside Makarand Nagar Sandalwood Factory

Makarand nagar Sandalwood factory

Sarai Meera Factory

Ayushman Factory

Partially operational ---the only factory