CHAPTER 3
HISTORICAL BACKDROP OF LOCK INDUSTRY OF ALIGARH AND LAC INDUSTRY OF HYDERABAD

3.1: GENERAL BACKGROUND OF LOCK INDUSTRY OF ALIGARH

3.1.1: Historical Background of Aligarh

The present district of Aligarh, year 2001 (in the state of Uttar Pradesh) is situated in the middle portion of Doab, or the land between the Ganga and Yamuna rivers. The principle town in the Aligarh district for the last many centuries has been its headquarters, Aligarh, 126 KM south east of Delhi. It is known till the 18th century by the earlier name of Kol. After the British occupation of Aligarh in September 1803, the present Aligarh district was formed in 1804.

Like other parts of Doab, Aligarh has a hot and dry climate. The mean temperature for December and January, the coldest months is 59F and 54 F, and for May and June, the extreme hot months, 90F and 93F in the shade. Both Akbar and Jahangir visited Kol on hunting expeditions; Jahangir clearly mentions the forest of Kol, where he killed wolves. From the study of the place-names of the district, it appears that the district was once fairly well covered by forest, thickets and grooves. The early history of the district, indeed down the 12th century A.D. is shrouded in obscurity (www.aligarhdirectory.com/history.php).

An explanation is, perhaps needed of the name of the District headquarters, Aligarh and its earlier name Kol (Koil). Kol, Muhammadgarh, Sabitgarh, Ramgarh and ‘Aligarh’ have been the different names assigned to Koil at different times. Before entering into a historical account of Aligarh, these names may be discussed with a view to facilitate a better understanding of its history.
Kol, the earliest name of Aligarh, covered not only the city, but the entire district, though its geographical limits kept changing from time to time. The origin of the name of Kol (Koil) is obscure. In some ancient texts, Kol has been referred to in the sense of a tribe or caste, name of a place or mountain and name of a sage or demon. According to Skanda Purana, Kol was a malechha tribe that wandered in the forest of the Himalayas. According to Bramhavaivasta Purana Kol was mixed caste (Varnasankar). According to Padma Purana, Kol was an aboriginal caste. Kola appears in the Siva Purana as the name of the capital of the kingdom of Saurath, which was ruled by the son of king Virath. Kolagir has been mentioned in Mahabharat as the name of a mountain in the South, which was conquered by Sahadeva on his Digvijaya (conquest of the world). Kol was also the name of a rishi (Sage) of Kushikgotra (Kushikgotra ka ek mantrakar). Kolasur appears as the name of demon, which was killed by Kahoda.

Kol has frequently been referred to in medieval sources. It occurs for the first time in the Jaj-ul Ma’ asir of Hasan Nizami and then Tabaqat –I Nasiri, in connection with its capture by Qutubuddin Aibek in 1192 A. D. Abul Fazl lists Kol among the Mahals of Sarkar Kol. The spelling in these texts as well as in all the Persian works down to the 18th century (inclusive) is Kol. In the 17th century European records, it is also spelt as Cole. But the name is now generally spelt Koil. The present town of Aligarh is the Kol (Koil) of history, though the name is now applied only to the Tahsil or sub-division, of which Aligarh is the headquarters.

The origin of the name of Koil cannot be satisfactorily determined. The current traditions and some possible derivations are recorded below, with a few comments. According to the popular tradition the name was given by Balaram,
brother of Sri Krishna, who slew here the great demon (*asura*) Kola, with the assistance of the *Ahirs*.

Hutchinson records another tradition, according to which, its earlier name was Kosam. After the name of Raja Kosambi, Kosam later on changed into Kol. This suggestion was rejected by Fuhrer as being farfetched. Kosambi is itself as well known place was Allahabad on the bank of the Yamuna.

MB / Koil 44, after mixing up both the traditions say that in the dvaparyuga, Raja Kosab of Chandrabans founded this *qasba* (township) and then it was named Koshabi. After wards, during the rule of Raja Kans of Mathura, it was included in his kingdom. A chief named Kol was deputed here on his behalf. When Sri Krishna after killing Raja Kans captured Mathura, his elder brother, Balaram, occupied this town. Thence onward the place came to be known as Kol (Siddiqi 1981: 21-23)

Aligarh is the most recent name for the 600 B.C. settlement that it was. The district was a part of Pandav kingdom (Siddiqui 1981: 29). Kol was the earliest known name of this place which has been spelt as Kol, Koil and Cole. The origin of the name Kol is debatable and obscure. Kol has been referred to in the sense of a tribe or caste, a place or mountain, *jhil* (lake), a sage or demon, capital of king of Saurath (Siddiqui 1981: 21).

The most striking feature of Koil was the Balai Qila / Upper Fort, i.e, a fort on the Great Mound (Lelyveld 1996). The accumulation of successive settlements, going back at least, as far back as the Buddhist period in the 1st century B.C.

Later from 2nd century A.D. to 9th century A.D. this area was ruled by Mauryas, Sakas, Kushans, Guptas and Gujar-Pratihars (Aziz 1989: 6). The Achal Tal (water tank) is known as one of the most ancient localities in Aligarh and dated back to the 10th century A.D. (Qureshi 1997: 32).
The early medieval period starts from 11th century A.D. In this period a considerable change has occurred in the socio-economic diversity and general ascendancy of the region (Qureshi 1997: 32). The Dors embraced this district in the 11th century A.D. Mahmud Ghazni, in 1018 A.D., made no mention of Koil in his account while the capturing of Baran (Bulandshahr) by Har Datt, father of Vikramaditya, is narrated at length (Nevill 1926: 163).

The fortress of Koil was controlled in 1194 by Qutbuddin Aibek, the Turkish slave who assimilated North India at the end of the 12th century A.D. It marked the beginning of Muslim administration in this region. The Historian Hasan Nizami described Koil as ‘one of the most celebrated fortress in India’. A tall minar was constructed by Balban which was demolished by the repressive British rulers in 1862.

From 1194 to 1526, this region was ruled by four dynasties namely, the Slaves from 1194-1290, Khilji’s from 1290-1320, Tughlaq’s from 1320-1414, and Lodhi’s from 1451-1526 (Qureshi 1997: 32).

During the Lodhi period, the Kali Masjid was constructed in Mohalla Bani Israilan and fortifications were built round the fortress at Balai Qila, with four gates whose names survive to this day, viz. Delhi Gate, Madar Gate, Turkman Gate, and Sasni Gate. A portion of the wall and gate can still be seen on the south-eastern sides of the peripheral region of the mound where a moat existed. A full-fledged settlement known as Khai Dora can be seen (Siddiqui 1981: 66).

The Mughal supremacy in this region started in 16th century A.D. Babur; the first Mughal emperor visited this place. He must have erected some buildings at Koil; however, no trace of them, except a Mohalla near the centre of the town, called Babri Mandi (market), is the only reminder of his visit (Siddiqui 1981: 68). The district remained in hands of Humayun, the successor of Babur for quite some time.
Under the rule of Emperor Akbar, Koil was the capital of a Sarkar, whose officer was Mir Mohammad Gesu, a Shia Muslim who built the Idgah in 1563. The Sarkar was divided into four dasturs (revenue circles) and 21 Mahalas (parganas). At that time this district was one of the thickly populated, very highly cultivated and in a high state of tillage (Nevill 1926: 169).

During the reign of Jahangir and Shahjhan (1605-1655), the administrative set up was same as it was in Akbar’s period. Aurangzeb, the last powerful Mughal emperor, appointed Nand Ram Jat as the army commander of Aligarh. Aurangzeb’s death in 1707 marked the beginning of the Mughal decline.

With the rise of Jats, the earlier part of 18th century, throws light on the social and political history of the district. This big revolution ultimately created a Jat kingdom and a number of Jat zamindars in the Braj region (Siddiqui 1981: 100).

The District is named after its headquarters town Aligarh which itself receives this name from the celebrated fort of Aligarh originally built in 1524 by Muhammad Khan, the governor of Koil under the Lodhies. It was rebuilt in 1717 by Sabit Khan, A Turkoman governor during the reigns of Farrukh Siyar and Muhammad Shah, and its name was changed to Sabit Garh (GoUP 1981: 1). The important construction of his time was the fort of Sabitgarh, the tomb of Allah Bakhsh (1717), reconstruction of Jama Masjid (1724), the founding of the Harduaganj market, construction of a tank which linked with the Jami Masjid of the Aligarh city through an underground channel near Nandan Cinema (Siddiqui 1981: 100).

After the Maratha incursion, in 1754 Surajmal Jat took the fort of Sabitgarh and made it his capital, changing the name to Ramgarh in 1757. In 1775 Najaf Khan, a Mughal commander, assimilated the district and sent his lieutenant, Afrasyab who laid a seize of Ramgarh Fort and got it vacated after a few months. It received its
present Appellation of Aligarh in the time of Afrasyab Khan, Who succeeded Safdar Jang, the Nawab Vizir of Avadh, in 1782 as Amir-ul-Umra (GoUP 1981: 1). But finally the fort was taken by Marathas in 1788.

The command of this region was being given to the French, Count De Biogene, by the Marathas. He formed a great cantonment (outside present Sulaiman Hall) in Aligarh in 1791, which became the headquarters of a large division of troops for European style training. After De Biogene, his trusted general Culier Perron was sent by Marathas to take his place. Perron in 1801 collected tribute from various Rajputs chiefs. He improved the bastions of the fort and enlarged the cantonment. In the year 1802, he built a garden for his residence, still known as Sahib Bagh.

At the same time the British had extended their frontiers in North India under the command of General Lake. They besieged the fort of Sasni, Bijairgarh and Kachaura in February 1803. In September 1803 British army attacked Aligarh fort and captured it. Before the British took possession, Aligarh and its surrounding countryside had declined considerably. British efforts to improve the situation, notably construction of Gangas canal in 1840 were of dubious value.

The consolidation of British rule and fall of the Mughals was a prelude to some great tempest which came in the form of Mutiny of 1857. The news of this revolt reached Aligarh on 12th May 1857. The first freedom fighter was a Brahmin. After this the men broke into open mutiny and compelled the British civil residents to quit Aligarh. On 29th of May it was again occupied by British. On 30th June the Muslims of Koil raised up the green flag to relegate Britishers to the city gate. A new Panchayats was established by Subedar Mohammad Ghaus Khan with Nasimullah Khan In charge of the city, Mahbub Khan the Tehsildar and Hasan Khan the Kotwal (Nevill 1926: 185). The attempts of this mutiny eventually failed.
After the cataclysm of 1857, India was in a state of traditions from medievalism to modernism. British, held Muslims responsible for the revolt and they were the target of victimization and to reduce them to the lowest ebb of degradation. As a result, the Muslims resisted the British. They did not embrace Western education and had confined themselves to their shells.

The second half of the 19th century was the most critical period in the history of Indian Muslims. They were steeped in ignorance, conservatism, traditionalism and superstitions. The community lost all the vitally, vigour and the creative force of a living nation. At this critical juncture Sir Syed Ahmad Khan, a judge appeared on the social horizon of India. With the help of his colleagues he started the Mohammadan Anglo Oriental College in 1877 at Aligarh which developed into the Aligarh Muslim University in 1920 (Muhammad 1999: 9). The main aspects of Aligarh movement were social reforms. This renaissance had changed the course of the Muslim community.

3.1.2: **Meaning and Types of Lock**

A lock is a mechanical fastening device which may be used on a door, vehicle, or container, restricting access to the area or property enclosed. Commonly, it can be released by using a key or combination.

Locks may be entirely mechanical, or electromechanical. They may be operated by turning some form of removable key, by keying or dialing in a combination which directly or via electromechanical means operates the lock, with some form of magnetic or other card reader, or by moving a part on a safety lock intended to prevent accidental operation rather than to prevent unauthorized access.

There are various types of lock, some are as follows:
- 5 Lever lock
- Bicycle lock
- Cam lock
- Child safety lock
- Combination lock
- Cruciform (or Zeiss) lock
- Cylinder lock
- Deadbolt
- Disc tumbler lock
- Electronic lock
- Electric strike
- Magnetic lock
- Keycard lock
- Lever tumbler lock
- Chubb detector lock
- Protector lock
- Magnetic keyed lock
- Pad lock
- Pin tumbler lock
- Rim lock
- Tubular pin tumbler lock
- Time lock
- Turner lock
- Wafer tumbler lock
- Warded lock
3.1.3: **History of Lock Industry in Aligarh and Work Process**

There are different interpretations regarding the origin of the lock industry in Aligarh. Jain provided one interpretation regarding its origin, whereas, Nevill provided a different interpretation as follows.

The History of lock manufacturing in Aligarh is interesting. Almost 125 years ago, in 1870, a gentleman from England established a firm Johnson and Company to import locks from England for sale in Aligarh. In 1890, Johnson and Company started the normal production of locks on a small scale by cutting the sheets and manufacturing it with the process of molding. Besides England, the locks made of sheet metal began to be imported from Germany for its sale in Aligarh. In 1930, Johnson and Company and some small scale units started manufacturing locks from sheet metal by duplicating German locks. These locks, which were manufactured in Aligarh, are known as Aligarh locks. In 1950, Surendra Kumar an advocate by profession and the son of a barrister started manufacturing locks in a very systematic way by importing machines and techniques and even foreign engineers. However, this globally famous lock manufacturing unit has closed down due to family dispute. In 1975 when the company collapsed, the engineer, contractors, mechanics, labourers employed in this large concern setup their own small scale lock units. And now Aligarh turns to the biggest lock-manufacturing hub of India.

It is true that from 1950 - 1975, many Muslims made significant contributions in manufacturing of locks from share metals with the help of machines. Prominent among these were Jemco and Rose lock brands, which became very popular in those

Work in metal is of considerable importance. The Aligarh Postal Workshops since their establishments in 1842 or thereabouts have served as a training ground for a large number of mechanics and have given them a sound knowledge of modern tools and appliances. With the adoption of wheeled carriages, mail-carts and bullock wagons, in place of runners on the main postal lines, Dr. Paton, then postmaster-General started the Aligarh shops, and the experiment proved more successful, almost every part of India being supplied with vehicles as well as other requirements in the shape of bags, stamps and printed forms. The workshops employed as many as 2,000 men after the Mutiny, and organised labour enabled Postal communication to be restored with great rapidity at that critical period. The operations of the workshops were largely curtailed after the opening of the railways, and the number of hands was reduced to 800 or 400, mainly carpenters, iron-workers, die-sinkers, and leather workers. At the present time the institution compresses a large printing establishment with a daily average of 325 hands, as well as the workshops proper. The latter employed some 370 persons, and the articles produced include scales, locks, letter boxes, furniture, badges and scales knives, lamps, lanterns metal notice and sign boards, mail and handcarts, bags, wallets and tarpaulins to these workshops may be traced the origin of the metal Industry of Aligarh, which is specially devotee to the production of locks in brass and iron.

There are numerous lock works in the city, as many as 27 being in existence in 1907, and others are to be founded at Iglas, Hathras and elsewhere in the district. Two firms at Aligarh employ over two hundred hands, and one is a joint stock company, Known as the pioneer lock works and general Metal Foundry, started several years
ago by Messers Johnson and Company; while the other is known as the sparking lock works. The locks are of a high quality, and are imported in very large numbers to all parts of India. Other well known firms are those of Nabi Bakhsh and karam Ilahi and of Hafiz Inayatullah and Abdullah. The output at Aligarh is estimated at about 500,000 locks per annum valued at Rs. 2,76,000. Iglas works produced locks to the value of Rs. 30,000 (Nevill 1926: 61-62). However, a real impetus to the development of the lock industry in Aligarh city came in 1926 when the Government of the country established a metal workshop to train artisans in lock making. Soon many artisans began manufacturing locks and its components at their homes with the help of their family members including children. Many families living in the adjoining villages of Aligarh city also took up this work out of their economic compulsions of insufficient income from agriculture. With this the lock industry spread to surrounding villages too. A majority of lock makers at that time were Muslims. With the partition of the country in 1947, most of Muslim master craftsmen are artisans migrated to Pakistan leaving a void and creating a slump in the lock industry. However, this situation did not continue for long. The Punjabi Hindus migrated from Pakistan to Aligarh soon realized the potential of this industry and started producing locks with the help of locally available skilled labour. The social composition of lock makers changed but production of locks on mass scale was resumed. The Government also helped the industry by offering various incentives. The industry emerged as the most important industry of the town offering employment to a large number of people and producing lock worth crores of rupees. Today locks of different types are made in Aligarh, sent to different areas in the country and exported to many countries of the world.

The lock industry in Aligarh city mainly comes under small scale and cottage sectors. A large part of it comprises household units and workshops. They are largely
unorganised and unregistered. There are some relatively big and semi unorganised units too but their number is very small. The location pattern of this industry is such that while the big units are located in the industrial Estate and on the outskirts of the city the smaller units are scattered all over the city. There is lower, a large concentration of smaller units in selected mohallas. In these units, the various processes of lock making are carried out mostly by manual method. They also employ bulk of the child labour force.

Locks are made in Aligarh both by traditional method and modern methods. The traditional method is mostly used in making heavy locks of brass and iron. Under this method the lock maker designs a lock and obtains an order from the trader. The trader while placing order also advances some amount or a loan to the lock maker to buy essential raw materials and components. The lock-maker then gives the raw material to moulder along with a model. Moulder casts all the pieces as per specification and returns them to the lock maker who then files them. The lock-maker then assembles locks with the help of other essential components like the U-shaped bar, springs, keys etc. bought from the market and delivers them to the trades. The traders get the locks finally polished and engraved with his brand name before marketing them.

The smaller locks are made in factories with modern method of production. Power presses are used for cutting, bending, making grooves, smoothing and piercing holes in locks and keys. The rusted components of locks are polished on buffing machines or given dhol or drum polishing. Generally the parts of locks that are visible and require electroplating are first polished on buffing machine and the parts which are visible given dhol or drum polishing. In case visible parts are not electroplated, they are spray painted.
The different processes of lock-making are carried out in different units. Generally, cutting bending and grooves making works are done in relatively big units with the help of power presses and the processes like buffing, electroplating, spray painting, assembling etc. are carried out in small workshop and household units. Different units specialize in different works. Factories often get the parts manufactured outside on contract basis. The contractors get the works done with the help of sub-contractors (Wahab 2001: 31-33).

3.1.4: Child Labour in Lock Industry and Health hazards

Aligarh a town of western Uttar Pradesh is famous the world over for the Muslim University and the lock industry. Aligarh’s locks have provided security to the doors of million houses and innumerable vehicles. The name of lock has become synonymous with Aligarh in such a way that if the name of Aligarh is not mentioned with the locks, customer does not feel secure (Jain 2003). The lock industry of Aligarh is over a hundred years old and is considered to be the traditional occupation of the people of Aligarh (Burra 1995: 55). Nearly about 2 lakh people are associated, directly or indirectly, with at least 5,000 lock manufacturing units. Majority of artisans in this industry are Muslims whereas ownership of big manufacturing units and business houses are both of Hindus and Muslims. Muslim artisans manufacture about 80% of the locks of Aligarh. They are labourers and produce goods for big players (Cited in Saha 2006: 216).

The structure of the lock industry can be broadly divided into three categories based on those who deal with the process of production. They are the Brand owner manufacturers, contractors and the artisans. The Brand owner manufacturers purchase raw materials and some parts of the locks in bulk. The lock manufacturing is
organized in such a way that some processes are carried out in the factory premises and the remaining parts get manufactured through the contractors or the middlemen where the final assembly takes place in the factory. While the Brand owner manufacturers are equipped with modern technology of production, the contractors or the middlemen employ artisans who are also called master craftsmen to run the manufacturing units. Though these artisans are employed regularly by the contractors, they are paid only by piece rate. The artisans in turn employ children and other workers as helpers who are also paid in piece rate. Some of the contractors own assembling and packaging units which are run by the artisans where women and children are involved in various activities. Children constitute 24% of total workforce in the lock industry. The prevalence of primitive technology is one of the important reasons for continuous influx of children into the labour force. Most of the processes in the lock industry have been traditionally carried out under home based production where by the industry has taken advantage of child labour. A large number of households are engaged in various processes of lock making assembling. Since most of the artisans are illiterate they are unaware of the trends in the market and up incurring losses. Moreover, the artisans are not in a strong bargaining position with regard to the price of the output and they have to sell the locks to the middlemen at less remunerated price. Therefore, the only way to survive in the competitive business of lock production is to rely heavily on cheap labour (Sekar 200?).

Children do polishing, electroplating, spray painting and working on hand presses. They cut different components of locks for nearly 12-14 hours a day with hand presses. Exhaustion causes accidents; many lose the tips of their fingers, which get caught in the machines.
The most hazardous job for children in the lock industry is polishing. Children who do polishing stand close to the buffing machines. The buffing machines that run on electric power have emery powder coated on bobs. While polishing the locks, they inhale emery powder with metal dust and almost all polishers suffer from respiratory disorders and tuberculosis. In the small units, about 70% of the polishers are children.

Similarly, electroplating is another extremely hazardous process in which more than 70% of workers are children below the age of 14 years. Children work with naked hands in dangerous chemicals such as potassium cyanide, sodium phosphate, sodium silicate, hydroelectric acid, sulphuric acid, sodium hydroxide, chromic acid, barium hydroxide. Children, besides being affected by the usual consequences of chemical substances, are also at risk of shocks as these substances also produce electricity and the floors are usually wet. The children have their hands in these solutions for the better part of the twelve-hour-day. Some cases of electrocution have been due to illegal electric connections obtained by some of these units from street lights.

About 50% of the workforce in the spray-painting sector of the lock industry is comprised of children. While at work, these children inhale large quantities of paint and paint thinners, leading to severe chest disorders. They suffer from breathlessness, fever, tuberculosis, bronchitis, asthma, and pneumoconiosis and from such symptoms and diseases. Work in the lock industry is dangerous and very hazardous for all employs, but is specially so for children (http://www.hum-coolie.com/on-child-labour.htm). Scientist Dr. V. K. Rao told HT that the lock manufacturing units of Aligarh use a hazardous chemicals trichloroethylene, which has already been banned in most western countries (HT Correspondents 2010b: 02).
3.2: GENERAL BACKGROUND OF LAC INDUSTRY OF HYDERABAD

3.2.1: Historical Background of Hyderabad

Hyderabad is known for its rich history, culture and architecture representing its unique characteristic of a meeting point for North and South India, and its multilingual culture, both geographically and culturally. It is known as city of Pearls. Hyderabad is also renowned for the lac bangles studded with sparkling semi-precious and artificial gemstones. Hyderabad has been a place where people of all religions have co-existed peacefully for centuries.

Hyderabad is the capital city of the Indian state of Andhra Pradesh; the city has an estimated population of 6.1 million people making it the 6th populous metropolitan in India. Hyderabad is also one of the most developed cities in the country. It is an emerging Information Technology and Bio-Technology hub of India (http://miyabhai.blogspot.com/).

History of Hyderabad dates back to almost 400 years and begins with the Qutub Shahi dynasty. Qutub Shahi kings reigned for almost 170 years from 1518 to 1687. After the siege of Golconda by Aurangzeb in 1687 there was Mughal rule in the Deccan up to 1724. In 1724 Asif Jah I defeated Mubrez Khan, the last Mughal Subedar of the Deccan and declared his independence.

Qutub Shahi kings were great builders and lovers of architecture. Important archeological monuments of this period are Charminar, Charkaman, Mecca Masjid, Toli Masjid, Golconda Fort and the Golconda Tombs. One of the greatest achievements of Muhammad Quli Shah was the founding of Hyderabad, which is today the fifth largest city in India (Khan 1986: 5).
Theories explaining the origins behind Hyderabad's name differ. A popular theory suggests that after finding the city, Muhammad Quli fell in love with and married a local Banjara girl known as Bhagamathi. He named this city after her as Bhagyanagaram. Upon her conversion to Islam, Bhagamathi changed her name to Hyder Mahal and the new city's name was correspondingly changed to match it, resulting in the name "Hyderabad (literally, "the city of Hyder")" (http://miyabhai.blogspot.com/).

Mohammad Quli was crowned king when only 15 years of age. He is best remembered as the great planner and founder of the city of Hyderabad. According to popular legend, the king was enamoured of a dancer called Bhagmati, belonging to the small village of Chichelam where the famous Charminar now stands. He founded Bhagnagar to perpetuate his love for her. Later, when the title of ‘Hyder Mahal’ was bestowed upon her, the name of the city was accordingly changed by the king to Hyderabad (Khan 1986: 30).

3.2.2: **Meaning and Types of Lac**

Lac is the scarlet resinous secretion of a number of species of insects, namely some of the species of the genera Metatachardia, Laccifer, Tachordiella, Austrotacharidia, Afrotachardina, and Tachardina of the super family Coccoidea, of which the most commonly cultivated species is Kerria lacca.

The above mentioned families are some of the 28 families of scale insects and mealy bugs comprising a large group of about 8000 described species of plant sucking insects, a few of which produce similar natural products (e.g., cochineal and crimson). Thousands of these tiny insects colonize branches of suitable host trees and secrete
the resinous pigment. The coated branches of the host trees are cut and harvested as stick lac.

The harvested stick lac is crushed and sieved to remove impurities. The sieved material is then repeatedly washed to remove insect parts and other soluble material. The resulting product is known as seed lac is used in making several products. Lac is the source of resin, wax, and dye. Lac is available in different qualities i.e. dark black, brown, and light golden the latter being the best and most expensive (http://en.wikipedia.org/wiki/Lac#Uses).

The lac is harvested predominantly for the production of shellac and lac dye, a red dye widely used in India and other Asian countries. Forms of lac, including shellac, are the only commercial resins of animal origin. As early as about 1200 BC, lac products were being used in India as plastic and decorative materials. During the 17th century, after traders had introduced lac dye and, later, shellac to Europe, lac became commercially important there. Eventually, lac products came to be used in most of the industrialized countries of the world.

The word lac is the English version of Persian and Hindi words that mean “hundred thousand,” indicating the large number of the minute insects required to produce lac. In fact, about 17,000 to 90,000 insects are needed to produce one pound of shellac.

The maximum yield of resin and dye is obtained by gathering stick lac (i.e., the twigs with their living inhabitants) in June and November. Lac dye is obtained from ground stick lac by extraction with hot water or hot sodium carbonate solution. Seed lac is the resin, freed from the lac dye. After the seed lac is melted, strained through canvas, spread, cooled, and flaked; it becomes the shellac of commerce. The palest orange lac is the most valuable (Lac 2010).
The leading producer of Lac is Jharkhand, followed by Chhattisgarh, West Bengal, Maharashtra, Bihar, Madhya Pradesh, Uttar Pradesh, Orissa and Assam states of India. Lac production is also found in Bangladesh, Myanmar, Thailand, Laos, Vietnam and parts of China. It is also found in Mexico (http://en.wikipedia.org/wiki/Lac#Uses).

Seoni located in south-central Madhya Pradesh founded in 1774. Cloth weaving, sawmilling, oil milling, and the manufacture of shellac and lac bangles are important industries. Grains, cotton, and oilseeds are the chief crops in the surrounding area, a large portion of which is forested, yielding teak, bamboo, lac and myrobalan fruit (Seoni 2010).

Reference to lac can be found in Vedas. The Atharvaveda provides a detailed account of lac, its production, and uses. Ayurveda stresses the importance of lac in medical therapies. India is one of the largest producers of lac and its principal exporter. It is widely used in food processing, textile, leather, cosmetics, varnish, and printing industries. Being bio-degradable and eco-friendly its usage is becoming highly popular (www.aiacaonline.org/pdf/lac-bangles-extended-documentation.pdf).

Commercial resin marketed in the form of amber flakes, made from the secretions of the lac insect, a tiny scale insect, Laccifer lacca. Shellac is a natural thermoplastic; that is a material that is soft and flows under pressure when heated but becomes rigid at room temperature. This property makes it useful either by itself or in combination with such fillers as flaked mica and asbestos in manufactured molding compositions, used for producing molded articles such as buttons.

Shellac is an ingredient in many products, including abrasives, sealing wax, hair sprays, and cake glazes. It was formerly used, along with fine clay or other filler,
to mold phonograph records, but, after the early 1930s, synthetic thermoplastics, particularly vinyl resins, gradually replaced it.

Alcohol solutions of shellac, also called simply shellac, are used as varnishes for priming and finishing furniture, floors, and various wood articles and as an intermediate in nitrocellulose lacquers. Alkali emulsions of shellac are used to make self-polishing waxes, stiffeners for felt hats, cements, and sealers (Shellac 2010).

Certain metallic and wood objects to which coloured and frequently opaque varnishes called lacquer are applied. The word lacquer is derived from the Portuguese word for lac, a type of resin excreted from certain insects. The lacquer of East Asia, China, Japan and Korea should not be confused with other substances to which the term is generally applied; for instance, the lac of Burma, which is the gummy deposit of an insect, *Coccus lacca*, and the various solutions of gums or resin in turpentine of which European imitations of Eastern lacquer have been and are concocted (lacquerwork 2010).

Wooden lacquer-finished whistles made in Channapatna, Karnataka, India Urushiol-based lacquers differ from most others, being slow-drying, water-based, and set by oxidation and polymerisation, rather than by evaporation alone. In order for it to set properly it requires humidity and warm temperature. The phenols oxidize and polymerize under the action of an enzyme laccase, yielding a substrate that, upon proper evaporation of its water content, is hard and fairly resistant to mechanical stress. Lacquer skills became very highly developed in India and Asia, and many highly decorated pieces were produced. The process of lacquer application in India is different from China and Japan. There are two types of lacquer: one obtained from the *T. Vernicifluum* tree and the other from an insect. In India the insect lac was once used from which a red dye was first extracted; later what was left of the insect was
grease that was used for lacquering objects. Insect lac was introduced to India from Persia (Iran). The fresh resin from the T. Vernicifluum trees causes urushiol-induced contact dermatitis and great care is required in its use. The Chinese treated the allergic reaction with shell-fish (http://en.wikipedia.org/wiki/Lacquer). Both lacquer and shellac are traditional finishes. Lacquer is more durable than shellac.

3.2.3: History of Lac Bangles Industry in Hyderabad and Work Process

The art of making bangles dates back almost 200 years but bangles remain an evergreen fashion accessory. Bangles or bangdis are decorative ornaments women of the Indian subcontinent have been wearing for ages. One of the earliest evidence of these adornments can be found on the hands and arms of the bronze figure of a dancing girl discovered in Mohenjodaro, a large city settlement of the Indus Valley civilization.

In the desert state of Rajasthan in India, the churigars (bangle makers) are scripting a story of communal amity with entire Muslim communities engaged in producing bangles, traditionally worn by Hindu married women as a symbol of marriage. In India there are different centers which specialize in the manufacture of bangles. Firozabad, in Uttar Pradesh is renowned as a centre for glass bangles. In the southern city of Hyderabad known for its pearls, cuisine, poetry and the most famous is the lacquered bangle studded with glittering and beautifully cut glass pieces of various colours. According to anthropologists bangles were treated as an accessory from the pre-Vedic era. With the introduction of ritualistic beliefs in medieval India bangles were elevated from being mere ornaments to symbols of marriage.

Like all other things ‘Indian’ there is much diversity in the material and colours used to make bangles in different parts of India. Made of glass, lacquer,
kundan, metal, beads, gold, silver, wood, baked clay and plastic and almost any material that lent itself to craftsmanship, bangles continue to be popular accessories. Because of its durability, gold bangles are preferred for everyday use, while the special glass ones are kept reserved for festivals and special occasions. Lac bangles are popular among certain communities in Rajasthan. At weddings women wear plain red and green lac bangles, without the crystal embellishments. Bangles have an important role to play in ceremonies marking important stages in a woman’s life. In the south of India, women are gifted with glass bangles of different colours in their seventh month of pregnancy. In Rajasthan and Gujarat, a couple cannot perform the last and most important ritual in their wedding without these bangles. Slender ivory chudaas in white and red are traditionally given to brides in Punjab. In recent years ivory has been replaced by lac or plastic, depending on the financial standing of the family.

In Maharashtra, green is considered an auspicious colour by married women. A few days before the wedding, a bangle seller performs the ritual of stacking the wrists of the bride and the married women present with green bangles. Far away in Bengal, married women have to wear the ‘loha’ or the iron bangle skillfully encased in gold as a sign of marriage. Besides this they wear white conch bangles known as ‘shankha’ and red lac bangles called ‘pola’. The tribal population in India too is fond of its bangles. Certain pastoral tribes in western India cover their entire hand and arms with bangles made of bone. It is amazing when you think of the big role played by these delightful ‘circles of light’ in a woman’s life and the fascinating diversity of co-existing cultures in India.

Each region of India crafts its own special bangle with materials available locally, thus the Kashmiris make the most exquisite bangles from paper mache, the
Assamese craftsmen produce bangles made of rhino horn and regions in Bengal use terracotta, Rajasthan offers brightly coloured lacquer bangles embedded with small beads and mirrors, Orissa is known for its silver work filigreed with dainty leaves, flower and star pattern. Gold bangles are commonly worn all across India irrespective of religion and region. They are perhaps one of the most beautiful examples of Indian craftsmanship, with exquisite gold bangles and bracelets filigreed, carved, gem encrusted and enameled. Despite the value of gold and silver and the variety offered by other material, glass bangles have a charm of their own. Tinkling and sparkling they offer the Indian woman a chance to incorporate them into her own personal style. Glass it is believed has descended from ceramic, the material used in the Indus Valley civilization for making bangles. Despite the passage of time bangles have adapted themselves, retained their versatility and fun aspect. Once considered a symbol of tradition and marriage, bangles are worn as universal fashion accessories (http://www.arabtimesonline.com/pdf08/oct/23/page%2026.pdf).

The word ‘Manihar’ is derived from mani (jewel) and agentive suffix har. The manihar also known as churihar, and this word is derived from churi (bangle), but they prefer to be referred by the work ‘manihar’. They are also known as Janhari or Lakhera. The manihar are found everywhere in Gangetic plains. Selling of glass bangles is the traditional occupation of the manihar community. Manihar women play an important role in economic activity of their community by visiting Muslim and Hindus families to sell glass bangles (Singh 2005: 937).

The ladies of all section of society were very fond of wearing bangles termed as ‘chura’. The craftsmen, engaged in lac industry, were known as Lakheras and Churigars. The bangles were made mainly of lac which was imported from Multan and other parts of the country. The bangles made of lac were generally worn by the
ladies of the lower classes. The ladies of affluent families preferred bracelets or ivory, manufactured by *churigars* (Gupta 1987: 65). The *Lakheras* were engaged in the manufacture of bangles of lac called *churas*, generally worn by the ladies of the lower classes. They were found throughout Rajasthan (Gupta 1987: 25).

Although, in Hyderabad the *lakheras* or *manihars* from Rajasthan remain the core community in the lac bangles sector, people from a number of other communities have also entered the sector as workers, contractors and traders. The new entrants who have increased in numbers over the past decade or so are from diverse ethnic, caste and *biradari* backgrounds, including *Syeds, Sheikhs, Mughals, Pathans, Qureshis* as well as Urdu-speaking communities other than the *lakheras* or *manihars* of Rajasthan.

Laad Bazar is located in Hyderabad right next to the historic Charminar. Situated on one of the four main roads that shoot out from the Charminar, it is sited in a very old area of Hyderabad, the capital of Andhra Pradesh. “Laad” is a term in Hindi and Urdu meaning “to love” or “to pamper” and a more fitting name would be hard to confer upon the bazar (http://www.hyderabad.org.uk/excursions/laad-bazar.html).

Laad Bazar for Hyderabadis is not just a *bazar*, but is a tradition which they have well preserved. It is as old as the history of the city itself. Its features are mutli-faceted; and its colour and charm are as fascinating as its antiquity. Also known as Hyderabad’s bridal *bazar*, Laad Bazar has much to offer a visitor right from its dazzling exterior to the pitiable constraints its inhabitants have to face. It is a place of endless movement and of different flavours. Double storeyed structures standing on either side of a narrow stretch of road framed between Charminar and the Mehboob Chowk are full of colour and buzzing with commercial activity throughout the year. The street has a number of names such as Chudi Bazar, Joda Bazar, Judwa Bazar,
Meena Bazar, Murga Bazar and so on; and each owes its allegiance to a section of it, depending on the items it sells (http://www.indiaprofile.com/heritage/hyderabad.htm).

Laad Bazar is said to have been founded by Ladi Begum, the wife of Mir Mehboob Khan, the wife of Mir Mehboob Khan, the sixth Nizam of Hyderabad. In those days, it used to be a street where the concubines of the *Nizam* lived. The tiny upper storey apartments still seem to hide the romance of their past grandeur, behind their typical little wooden shutters. These apartments are at present being used as *karkhanas* (workshops).

There is yet another story which takes its origin from the days of Qutub Shahis. According to this version, it was called Lord’s Bazar or the bazar meant for the nobility Lad Bazar being a latter day corruption. But there is little today to suggest its noble origins (http://www.indiaprofile.com/heritage/hyderabad.htm).

About 500 lac bangle *karkhanas* thrive in Mecca Masjid camp and adjoining Mitti Ka Sher, Bhawani Nagar, Talabkatta and Vattepally in Hyderabad, each *karkhana* on average employing 20-25 people.

Bangle-making is a laborious process. Glue is melted in a *kadhai* and lac powder, sourced from local markets, is mixed into it and then kneaded into loose dough. The bangle-maker then rolls the dough into a long bar. The lac bar is allowed to cool, and to make the bangle, a small lump of the bar is warmed and softened (Sivakumar 2007). The colored lac is now stuck on the end of a wooden stick. The lac (without pigment) stuck around a wooden rod is heated slowly over the *angethi*. It is simultaneously pressed with a stone or a wooden tool called *hattha* at regular intervals. When it is sufficiently warm and soft, it is wrapped with the desired color by rubbing the colored lac stick on it evenly. For this purpose the colored lac stick
also has to be warm enough and is therefore heated over the burner. After the color has been applied to the lac base it is shaped into a thin coil with the help of hattha and cut off from the plain lac rod. The coil is heated over the burner so that the ends can be joined together to form a bangle. After being joined it is slipped through a round wooden beam (with a tapering end for different sizes) and adjusted for size (www.aiacaonline.org/pdf/lac-bangles-extended-documentation.pdf).

This part of the work is done by men. Once the bangles, in various shapes and sizes, have been crafted by the men, they are embellished with shiny artificial stones, beads, and glass fragments in a riot of colourful patterns by the women. Decoration work on bangles is mainly done by the ladies. This activity is technically known as Chipai. The sequins are placed on a tin foil and heated over a burner. They are picked up one at a time and stuck on the bangle, who meticulously affixes each of these tiny pieces onto the warm, one-inch, or even less, lac base (Sivakumar 2007). The wages paid to lady workers who are engaged in Chipai work are low paid labourers. They make only traditional designs. They are not educated. They don’t apply their minds to invent new designs. They are engaged only in stereotyped work.

A basic set of bangles can be made in about 20 minutes. During the entire process, the material is repeatedly heated over coals so that it stays malleable. The melting and mixing is done on kerosene stoves. This industry is all about small money. Over 180 bangles are crafted out of a kg of lac powder bought for Rs 350. The colours cost about Rs 200 a kg and can be used for almost 1,000 bangles (Sivakumar 2007).
3.2.4: Child Labour in Lac Bangles Industry and Health Hazards

Child labour is an important part of the lac bangle industry of laad bazar. Children hired to decorate bangles made of lac, a resin from trees, in small workshops in the back streets of Hyderabad. Bangles are to be found in the bazar, behind the Charminar, the 15th century landmark of the state capital, where there nestle many small shops. In the labyrinthine streets, families live in adjacent white-washed houses. Some have lived here ever since they left their homes in Rajasthan and rural Andhra Pradesh decades ago and they still carry on their various craft traditions, including the making of bangles. The lac bangles are made at home and supplied to the shop so each shop has its own supply chain.


Ironically, while artisans are reluctant to have their children learn the craft, child labour does persist in this industry. Children from neighbouring slums are engaged as trainees and paid only commuting fare (Sivakumar 2007). Their parents preferred to send or engage them in the lac industry as they expected that their children would learn skill, which in turn would ensure employment and better income when children attain adulthood. Children sit on burlap mats, decorated the lac bangles with tiny glass beads. In their midst is a brazier. Hundreds of tiny, shining beads in many colours spill out across a griddle. Each child holds a pair of tweezers in her hands. She picks up one bead at a time and presses it firmly down onto the bangle with a swift motion of the thumb. The process takes up to three-quarters of an hour.

Dozens of bangles can be made in an afternoon and are then taken to the shops. The workers are largely illiterate and have no retirement or old-age benefits. When in need of money, the traders loan them an amount and deduct it every week from their wages. “This is a typical example of the unorganised sector (Sivakumar 2007).
The harsh reality of the beautiful bangles for which Hyderabad is famous is that they are the product of the exploited labour of women and children. Down the centuries, the lure of this product has persisted in the hearts of millions of women seeking to adorn their arms with a dazzling set of Hyderabadi bangles. There are more than 500 shops flanking either side of the world famous Charminar today selling their wares. Hyderabad is an amazing mix of the ancient and modern, embodied in one of the oldest shopping centres in the city, the laad bazar, where bangles are sold along with a large number of other goods.

Bangle production takes place both at karkhanas (small centres outside the house) as well as in homes. It is one of the hereditary occupations of many families in the old city. Generally boys are found in karkhanas, which are situated in centres such as shops, while girl workers are found in homes. By and large, the houses in the old city are very small, generally with one room or, rarely, two rooms, including a kitchen. Bathrooms are either very small or non-existent. After the daily chores are completed and food cooked for the day, many of these houses are converted in small karkhanas to produce bangles. Bangle making requires a furnace to burn constantly therefore the tiny spaces where the trade occurs are very hot and dusty. While generally well lit, rooms are filled with the smell of burning chemicals.

Child workers are involved in all steps of the production of small bangles with simple designs. There are many incidences of children burning their hands in the furnaces while shaping the bangles or embedding the stones. Both women and children complained that sitting in one place throughout the day gives them backache. Further the need to concentrate their vision on the furnaces and stones causes eye pain and other problems and can take a heavy toll on eyesight (Pande 2008).
The causes of child labour are all intrinsically interrelated such as poverty, lack of parental interest, tradition of making children learns the family skills, absence of universal compulsory primary education, lack of educational facilities, cheap labour, easily amenable, family debt, large family, the general Indian attitude toward child labour, stagnation of agriculture, ineffective legislation.

Child labour is rampant in lac industry, which is a sign of widespread poverty and illiteracy. As a result these children are being exploited by the people who achieve their selfish ends. The ILO definition of the worst forms of child labour includes work that is likely to jeopardise health and safety. The relationships between child labour and health are complex. In lac industry, very often, children work in hot, humid, in contaminated places with no ventilation. Constant exposure to flame, melting lac and dust damages their lungs and vision.

Lac bangle making process requires the heating of lac in bhatti or open flames. Exposure to fumes from fuel and heated lac is reported to cause sore and runny eyes, headaches and nasal and throat irritation. Persistent exposure to this environment, moreover, is thought to cause serious ailments, including asthma and T.B. Breathlessness was also commonly reported among children due to the fumes of lac. This work requires the use of various sources of fire and heat, without reasonable safety precautions.

Child labour is evident at all stages of bangle work, in factories, in the smaller workshops and at home. The working environment in these places is challenging even for adult workers; for children, some younger than 11 or 12 years-old, this environment is positively harmful. Lac bangle making work is highly hazardous for children and linked to vulnerability to respiratory diseases, such as asthma and T.B.
The people working in the sector are clearly aware of the dangers. A number of children as young as ten who routinely help their mothers at home by getting through a few chura after school. These children slip almost unintentionally into making lac bangles as an extension of their household chores.

The relationships between child labour and health are complex. They can be direct and indirect, static and dynamic, positive and negative, causal and spurious. Children engaged in work are exposed to a variety of hazards (e.g. dangerous machinery, falling objects, pesticides, chemicals, abusive employers) that have the potential to seriously damage their health. In addition to such health risks, the sheer exhaustion induced by physical labour can be expected to place stress on the body and provoke illness. The relationship between health and child labour has been very little explored scientifically and it is difficult to be precise the health status of the workers in general and child labour in particular and the data is not be of a high standard, but some health hazards may be inferred.

Dangerous machinery, sharp tools and toxic substances in the working environments of children affect them adversely. Regulation is difficult and work places do not meet hygienic standards. Unhygienic living and working conditions combined with malnutrition makes them vulnerable to communicable diseases as compared to their non-working counterparts. Children become thin, weak, depressed, and unhealthy and the unsafe and unhygienic working places along with poor nutrition reduce their longevity by half (www.karmayog.org/library/libartdis.asp?r=152&libid=249).

In the absence of running water or toilet facilities gastrointestinal diseases flourish and it is difficult to break the oral-faecial cycle. Providing facilities cost to employers mean that they might as well employ adult labour. Child labour is anyway often casual and poorly paid. Severe malnutrition, anaemia, hard labour, fatigue and
inadequate sleep make children more susceptible to accidents. Given that the work may cause an accident, the first concern of the employer should a difficulty arise, is to conceal the circumstances to make as little as possible of it and to come to a direct understanding with the family. The age under which the working children are more prone to accidents than the acts in the same work-situation is not clearly investigated so far.

Children at work are exposed to toxic substances. Ankylosis, spondilitis, and permanent spinal deformity have been attributed to abnormal postures, which the working children have to adapt while working. It calls for some studies to prove any interrelationship between the posture whilst working, young age of the worker, and number of years of the worker, and number of years of work and bone deformities later in life.

Being child labour has a profound adverse influence on the children’s psychological development due to deprivation of leisure, play and recreation, which are absolutely essential for healthy psychological growth. It was found through the medical practitioners of the study area that the children who have restricted social interaction, long hours of daily work suffer the inevitable crippling affect on their emotional development. However, they suggested that there is a need for in-depth study on the psychological aspects of child labour, particularly of those children who work for a long hours, from a very early age. However the symptoms of back pain and pain in limbs amongst some of the children could be directly attributed to the posture of the children at work as well as to the long, continuous working period. Similarly the attributes of breathing difficulty and pain in chest could be related to the consistent and long-term exposure to dust in polishing units (Sekar 200?).