CHAPTER: 1

Introduction
Introduction
Art is a natural instinct of expressing one’s powerful ideas/feelings/experiences/themes in different ways, which has been there since time immemorial, may be in the form of words, music, dance, sketching & painting, carving sculptures (in any media) on different media or making some other household objects including coins, reflecting values or events of the time. This natural phenomenon has been the guiding force for individuals and civilizations towards the creation of various artistic objects/crafts in day-to-day life.

1. Human Civilizations
There have been, as per the records available, about eight great ancient civilizations all over the globe. Out of which the important ones were five civilizations. One was Maya civilization during the period of pre-Columbian America, among native Americans. The post Columbian period witnessed almost the complete destruction of this civilization. However, the remains of this civilization can be found in Columbia at Serpent Mound, supposedly representing the Cosmic Power, the Kundalini. The others were Sumerian civilization (around Mesopotamia, the modern Iraq), Egypt (North Africa, the region around Nile river) and Greek civilizations and Roman civilization. For us, it was the Indus civilization around the great river Saraswati, also called Indus-Saraswati civilization, which influenced not only the art and culture on the sub-continent Aryavarta, but also the other civilizations of the world.

2. Indus Valley Civilization: Echo of the Past
Indus Valley Civilization (IVC)\(^1,2\) flourished during 3300-1900 BC, around the rivers Sindhu and Saraswati, covering the entire area expanding from the Arabian sea to the Gangetic valley in the east including whole of Punjab as far as Himalayan foothills. This civilization had the following salient features:

- The communities had been turned into large urban centers that include Harappa, Ganeriwala, Mohenjo-daro in modern day Pakistan and Dholavira, Kalibangan, Rakhigarhi, Rupar, Lothal in modern day India. In total, over 1,052 cities and settlements have been found, mainly in the general region of the Indus Rivers and their tributaries.
- A sophisticated and technologically advanced urban culture is evident in the Indus Valley Civilization making them the first urban centers in the region. The streets
of major cities were laid out in perfect grid pattern. The quality of municipal town planning suggests the knowledge of urban planning and efficient municipal governments which placed a high priority on hygiene and alternately accessibility to the means of religious ritual.

- This urban plan included the world's first known urban sanitation system. Within the city, individual or groups of homes obtained water from wells. From a room that appears to have been set aside for bathing, waste water was directed to covered drains, which lined the major streets. The systems of sewerage and drainage that were developed and used in cities throughout the Indus region were far more advanced and efficient than any found in contemporary urban sites in the Middle East.

- The advanced architecture of the Harappans is shown by their impressive dockyards, granaries, warehouses, brick platforms and protective walls. The massive walls of Indus cities most likely protected the Harappans from floods and may have dissuaded military conflicts.

- Most city dwellers appear to have been traders or artisans, who lived with others pursuing the same occupation in well-defined neighborhoods.

- Materials from distant regions were used in the cities for constructing seals, beads and other objects having different types of inscriptions, including the yet undeciphered writing system of the Indus Valley Civilization. Some of the seals were used to stamp clay on trade goods and most probably had other uses as well.

- Indus Civilization cities were remarkable for their apparent egalitarianism.

**Science**

- The people of the Indus Civilization achieved great accuracy in measuring length, mass, and time. They were among the first to develop a system of uniform weights and measures. Their smallest division, which is marked on an ivory scale found in Lothal, was approximately 1.704 mm, the smallest division ever recorded on a scale in the Bronze Age.

- Harappan engineers followed the decimal division of measurement for all practical purposes, including the measurement of mass as revealed by their hexahedron weights. These weights were in a perfect ratio of 4:2:1 with weights of 0.05, 0.1, 0.2; 0.5, 1, 2, 5; 10, 20, 50, 100, 200, and 500 units, with each unit weighing approximately 28 grams, similar to the English Imperial ounce or Greek
uncia, and smaller objects were weighed in similar ratios with the units of 0.871.
The weights and measures later used in Kautilya's Arthashastra (4th century BCE)
are the same as those used in Lothal.

- Unique Harappan inventions include an instrument which was used to measure
  whole sections of the horizon and the tidal lock. In addition, Harappans evolved
  some new techniques in metallurgy and produced copper, bronze, lead and tin.
The engineering skill of the Harappans was remarkable, especially in building
  docks after a careful study of tides, waves and currents.

- The people of the Indus Valley Civilisation, from the early Harappan periods, had
  knowledge and tradition of proto-dentistry in the early farming cultures of that
  region. In April 2006, it was announced in the scientific journal Nature that the
  oldest evidence for the drilling of human teeth in vivo (i.e., in a living person) was
  found in Mehrgarh (dating from 7,500-9,000 years ago).

- A touchstone bearing gold streaks was found in Banawali, which was probably
  used for testing the purity of gold. Such a technique is still used in some parts of
  India.

Arts and culture

- Various sculptures, seals, pottery, gold jewelry and anatomically detailed
  figurines in terracotta, bronze and steatite have been found at excavation sites.

- A number of gold, terra-cotta and stone figurines of girls in dancing poses reveal
  the presence of some dance form (fine arts), capturing the liveliness and rhythm of
  a female dancer. Sir John Marshall is known to have reacted with surprise when
  he saw the famous Indus bronze statuette of a slender-limbed dancing girl in
  Mohenjo-daro.

- Many crafts "such as shell, ivory and metal (gold & silver) working, and glazed
  steatite bead making" were used in the making of necklaces, bangles, and other
  ornaments.

- In two hoards of jewelry at Harappa and four at Mohanjo-daro, a few in silver
  jars, nearly 500 pieces of gold, almost whole range of jewelry viz. from armlet,
  bracelets to compete necklace of multiple strings of beads and gold, long girdles
  (of 3’ 4” in length, having 6 strings), including head bands with attached pendants,
  in different designs were found. There were also many smaller jewelry items like
  finger rings, earrings and hair-pins, handle mirrors and small gold cones (to be
worn behind the ears). All these items with perfection in artisanship indicated an evidence of the high skill and mastery in this art by the goldsmiths at that time. Some make-up and toiletry items the use of collyrium and a special three-in-one toiletry gadget) that were found in Harappan contexts still have similar counterparts in modern India.

- Terracotta female figurines were found (ca. 2800-2600 BCE) which had red color applied to the "manga" (on the line of hair partition).
- Seals have been found at Mohenjo-daro depicting a figure standing on its head, and another sitting cross-legged in what some call a yoga-like pose (see image, the so-called Pashupati, below).
- A harp-like instrument depicted on an Indus seal and two shell objects found at Lothal indicate the use of stringed musical instruments.

- The Harappans also made various toys and games, among them cubical dice (with one to six holes on the faces), which were found in sites like Mohenjo-Daro.
- The Indus civilization's economy appears to have depended significantly on trade, which was facilitated by major advances in transport technology. These advances included bullock carts as well as boats and sea-going craft, perhaps driven by sail, similar to those one can see on the Indus River today.
- Archaeologists have discovered a massive, dredged canal and what they regard as a docking facility at the coastal city of Lothal in western India (Gujarat state). An extensive canal network, used for irrigation, has however also been discovered by H.P. Frankfort.

- The Indus Valley Civilization area shows considerable mobility and trade and the similarities in pottery, seals, figurines, ornaments, etc., document intensive caravan trade network of N-W India with Central Asia, the Iranian plateau, coastal regions of Persia, and Mesopotamia.

- There was an extensive maritime trade network operating between the Harappan and Mesopotamian. Such long-distance sea trade became feasible with the innovative development of plank-built watercraft, equipped with a single central mast supporting a sail of woven rushes or cloth.

- The food production was largely indigenous to the Indus Valley since 8000 BC. The people of Mehrgarh used domesticated wheat and barley.

- Well over 400-600 distinct Indus writing symbols have been found on seals, small tablets, or ceramic pots and over a dozen other materials, including a
"signboard" that apparently once hung over the gate of the inner citadel of the Indus city of Dholavira.

- Typical Indus inscriptions are no more than four or five characters in length, most of which are exquisitely tiny; the longest on a single surface, which is less than 1 inch (2.54 cm) square, is 17 signs long; the longest on any object has a length of 26 symbols. The Civilization is generally characterized as a literate society on the evidence of these inscriptions. The symbols were exclusively used not only for economic transactions, but also on many ritual objects, many of which were mass-produced in molds. No parallels to these mass-produced inscriptions are known in any other early ancient civilizations.

- In a 2009 study by P. N. Rao et al. published in Science, computer scientists, comparing the pattern of symbols to various linguistic scripts and non-linguistic systems, including DNA and a computer programming language, found that the Indus script's pattern is closer to that of spoken words, supporting the hypothesis that it codes for an as-yet-unknown language.

**Religion**

- In view of the large number of figurines found in the Indus valley, it has been widely suggested that the Harappan people worshipped a Mother goddess symbolizing fertility.

- Some Indus valley seals show swastikas which are found in Indian religions such as Hinduism, Buddhism and Jainism. The symbols representing elements of Hinduism, Siva lingam have been found in the Harappan remains. One famous seal shows a figure seated in a posture reminiscent of the Lotus position and surrounded by animals was named after Pashupati (lord of cattle), an epithet of Shiva and Rudra.

- The Harappans buried their dead, however, in the late Harrapan period, they also cremated their dead and buried the ashes in burial urns, both referred to in Rigveda.

- Here it may be mentioned that the Indus valley civilization was contemporary to the Mesopotamia civilization in which the art was made in abstract modes with high degree of sophistication.

- Around 1800 BCE, signs of a gradual decline of Indus Valley Civilization (IVC) began to emerge, and by around 1700 BCE, most of the cities were abandoned.
However, many elements of the Indus Civilization could be found in later cultures. Current archaeological data suggest that the Late Harappan culture may have persisted until at least c. 1000-900 BCE. The major reason for the decline was natural disaster, climate change, tectonic event and diversion of rivers. The latest geological research is being conducted by a group led by Peter Clift, from the University of Aberdeen, to investigate how the courses of rivers have changed in this region since 8000 years ago, to test whether climate or river reorganizations are responsible for the decline of the IVC.

All these advancements at the levels of urban development with perfect town planning, indigenous food production, extensive maritime trade & major advances in transport technology supported with artisanship, canals and docking facility, \textbf{metallurgy, bronze icons, coins \\& inscriptions, seals/coinage, ornaments, whole range of jewelry} from top to bottom, fine arts, \textbf{musical string instruments}, decimal number system of mathematics, accurate measurement of mass, length and time, knowledge and tradition of \textbf{proto-dentistry} in medicine, religious ethics must have echoed a most developed \textbf{literate society}. Their traditions and knowledge in each of these fields in the past. Historians may have been silent about the source of such advancement when the people had a sophisticated lifestyle, a highly developed sense of aesthetics. The fact remains that Indian Art on the Indian subcontinent developed from much prior to the third millennium BCE (IVC) to modern times. With a gradual refinement, a strong sense of design became the characteristic of Indian art which can be observed in its modern as well as in its traditional forms.

\textbf{Vedic Period} refers to that period when the Vedic Sanskrit texts were composed in India. The society that emerged during that time was known as the Vedic society/Civilization which flourished before the Mahabharat period, on the Indus-Saraswati upto Gangetic Plains of the Indian subcontinent. This civilization laid down the foundation of Hinduism as well as the associated Indian culture. The Vedic Age was followed by the golden age of Hinduism and classical Sanskrit literature, the Maurya Empire and the Middle Kingdoms of India. Linguistically, the texts belonging to the Hindu Vedic Civilisation can be classified into the following five periods in chronological order.
• The date of creation of the Rig Veda, according to scholars/historians varies from 12000 BCE to 6000 BCE to 3000 BCE to 1500 BCE. The mid period coincided with the Indus Valley Civilization. Rig Veda has many elements that are common with the Indo-Iranian texts, both in language and in content.

• The period of the Mantra Language includes the time of the compilation of the mantra.

• The prose language of the Atharvaveda, though derived from the Rig Veda, these texts experienced wide scale changes, in terms of language at the time of reinterpretation.

• The Samhita (Commentary) Prose period during which Samaveda Samhita and the mantras of the Yajurveda were composed. This time period coincided with the early Iron Age in North-Western India and the Black and Red Ware culture. The period of Samhita Prose represents the compilation and codification of a Vedic canon. Brahmana Prose signifies the oldest Upanishads.

• Period of Sutra Language, this last phase of the Vedic Sanskrit period can be traced up to 500 BC. During this time, a major portion of the Srauta Sutras, the Grihya Sutras and some Upanishads were composed.

The Vedic Period architecture was in the form of round and square shape huts, and some tower like structures. The materials used were metals such as tin, lead, and silver, as well as copper and iron, specified in the later Vedic books, and there are also references to woven stuffs and ritual vessels. The horseshoe-shaped chaitya arch presumably had their origin in the Vedic Period. One of the most important architectural developments of the Vedic Period was the layout of the Indo-Aryan village. The chief importance of this period lies in the development of architecture as a science and the invention of types that survive in later Hindu and Buddhist architecture.

In the post-Vedic Period, the compilation of Mahabharata epic took place. The Classical Sanskrit described by Panini also emerged after this. The Vedanta and the Pali, Prakrit dialect of Buddhist scripture belong to this period.

In the epic of Ramayana Lord Rama is the manifestation of Vishnu. Valmiki originally composed this epic much before Mahabharata period. According to
legends, the Ramayana reveals richness of art, culture and architecture, in support of which two main examples may be quoted: First one, a Golden sculpture of Mother Sita was made for Ashwamedha Yagna for accompanying Rama as his wife to the Yagna, another is the golden Lankapuri which depicted magnificent example of architecture during Ramayana period.

Thus Mahabharata period ranges from 6000 B.C. to 5000 B.C. The epic was composed during this period. The great city of Dwarka fits into this scenario perfectly. Ved Vyas also described the city of golden Dwarka that it cast its radiance on the ocean for miles around it. Dwarka is a city of a gateway. It was an island, connected to the mainland by many bridges, and legend says that Krishna asked Vishwakarman, the architect of the gods, to build him a city more beautiful than any before it. The Mahabharat, Bhagwat Puran and other texts, describe the wonders of Dwarka. The most expensive and luxurious materials like precious stones, gold and silver were used as construction material.

The decline of the Vedic Civilization in India was marked by significant changes in the field of linguistics, culture and politics associated with the invasion of foreigners. The conjectural reconstruction of the art during this period remained based on the ideas of actual techniques and works of sculpture/architecture in the Vedic hymns. The real fundamental concept of Indian art began with the Vedic civilization and the Indus Valley civilization.

The new Indo- Aryan population was largely distributed in small settlements located in the plains and forests, with the disappearance of the Indus valley culture. Construction of shelters was undertaken with wood, bamboo, thatch, and later with brick. Kings and warriors were directly influenced by the simple architecture of the Aryan villages. The Dravidian style of architecture was made of pyramid shaped structure that was reflected in South Indian temples which were dependent on intricate carved stone generating a step design, having several statues of deities.

Indian art can be classified into different periods each reflecting particular religious, political and cultural developments.
- Indus period (3500 BC-1200 BC)
- Ancient, classical and golden period (1200 -1192 BC)
- Islamic ascendancy (1192-1757)
- Colonial period (1757–1947)
- Postcolonial period (1947 and after)

It may be noted that the classical period of India, during which India is estimated to have had the largest economy of the ancient and medieval world, controlled one fourth to one third of the world's wealth up to the 18th century.

History of Indian Art is as old as the Indian civilization (even much earlier than 3500 BC) and every major period of history has given India different modes of expression and newer forms of art. As India was well connected to the outside world through both sea and land routes, the influence of cultures of other lands have always been felt in the art of India. These myriad influences have enriched Indian Art over the years and in the new 21st century, one can see all these influences in Fine Arts of India. The vast scope of the Indian art intertwines the cultural history, religions and philosophies which place art production and patronage in social and cultural contexts.

This era was unique for art, architecture and literature. Indian art was constantly challenged as it rose to the peak of achieving the ideals of one philosophy in a visual form, then began a new for another. This challenge and consequent revolution in thought provided the Indian artists with reasons for innovation and creation in the process of visualizing abstract ideas reflecting the culture of the land. Each religion and philosophical system provided its own nuances, vast metaphors and similes, rich associations, wild imaginations, humanization of gods and celestial beings, characterization of people, the single purpose and ideal of life to be interpreted in art.

A thorough description has been presented in a book on History of Indian Sculpture (Ramanath Mishra, 2001). Indian art established some essential and fundamental principles with special features which were related to physical aspect representing a theme integrating human beings with the Nature alongwith its aesthetic aspects.

Though very little is left of post-Indus Indian Art, but it certainly inspired the later generations in metallic art. One can see a gradual shift towards large statues, wooden
pillars, and a very marked Greek influence on architecture. This was the time (around 326 BC) when Alexander of Macedonia had invaded India and left behind a Greek impact. The Mauryan art also shows influence of the Greeks. The Greek and other forms of European contemporary styles are seen best in the art of Gandhar and Mathura Schools. These schools which developed under the Kushans show high degree of sophistication and realism in human forms, and even eroticism often akin to the Hellenistic Art.

The subject of art in most of these cases was taken from the lives of Gautama Buddha. The earliest Indian religions to inspire major artistic monuments were Vedic and Buddhism. Though there may have been earlier wooden structures later transformed into stone structures, but there are no physical evidences for these except textual references. Soon after the Buddhists initiated the rock-cut caves, Hindus and Jains started to imitate them at Badami, Aihole, Ellora, Salsette, Elephanta, Aurangabad and Mamallapuram, Masur temples of Himachal, leading to continuous evolution of Indian rock art.

However, Buddhist Art reached its peak in the Gupta period, during which the famous rock-cut temples of Ajanta were built with walls full of Buddhist frescoes relating the stories from Jataka tales. Equally famous are the frescoes and sculptures in the cave temples of Ellora and Elephanta which probably were built later than the ones in Ajanta. These frescoes and sculptures hark back to Hindu tales and metaphors and in style. Buddhist monastery of Tabo is one of the best examples of the frescos in Himachal Pradesh.

After 6th century, one sees a revival of Hinduism and a growth of temples which primarily became centers of all forms of art. The best example of art of this period can probably be seen in the rock temples of Mahabalipuram which were built by the Pallava rulers. These show a mix of both North-Indian as well as South-Indian (Dravidian) styles.

In 711 A.D., the first Muslim conquest of Sindh and Multan ensued by Mohammed Bin Kasim. It was followed by a series of invasions, raids and attacks by rulers from outside India. After that, the important invasion was that of Mohammad Gaznavi at the beginning of eleventh century AD. From the time of Mohammad Gori in 1191, the main influence of Islam was noticed in Punjab. By 13th century, most of the
subcontinent was affected by the culture of new rulers who were non-believers of natural forces and their manifestations in the form of icons. The most of the treasures of wisdom in the form of libraries, even great educational centres, universities and temples of learning, religious institutions and culture fabrics of North India, starting from North-West, were all completely ruined by these iconoclasts. With this malicious backdrop, drastic changes took place in different fields including fine arts, music and its styles, musical instruments in which there were new additions under the new rulers. Around this time, forceful instinct of survival started in the form of the Bhakti movement in India.

At the end of 13th century, Marco Polo visited India, and in 1498 Vasco de Gama opened new trade routes. With that started the inflow of European culture to this land on large scale. In the vanguard were the traders followed by indirect invasion by military conquerors and the religious missionaries. In 1510, Portugees occupied Goa. In 1600 British founded the East India Company who later cleverly and with cruelty destroyed the remaining educational and economic fabric of the country. French settled in Pondicherry in 1675. It was the beginning of new currents in Indian culture. As the western influence grew, the effects of Christianity at the social level, education and administration level could be seen in varying degrees of depth into the life of the nation. Today, the way of life in India is guided, to a large extent, by pulls from the west. Till mid-twentieth c A.D., the condition of the country remained in a flux. Under these circumstances, there was a constant migration of people, the significant one was of Hindu scholars, poets, artists, musicians to southern areas where the iconoclastic invaders could not easily reach.

In south India, the Chola frescoes,13 dancing girls paintings, Brihadisvara Temple c. 1100 C.E. were the first Chola specimens, discovered along with the techniques used, in 1931 in India, in which a smooth batter of limestone mixture is applied over the stones, which took two to three days to set. Within that short span, such large paintings were painted with natural organic pigments. The Chola frescoes lying underneath had an ardent spirit of saivism. They probably synchronized with the completion of the temple by Rajaraja Chola the Great. Kerala has well preserved fresco or mural or wall painting in temple walls in Pundarikapuram and Ettumanoor.
The foreigners brought some new ideas into Indian Art. The Muslim Art reached its peak under the Mughal rule. The Mughal Art expanded in almost all the major forms and media that were available at the time: murals, paper paintings, miniatures, pottery, ceramic works and even prints. The Mughal style of lateral use of space and flat faces were modified in the art under contemporary Rajput dynasties. Deccan Art of Golkonda, Bijapur and Ahmadnagar also shows influences of the Mughal Art. Much later, the Sikh Art which mostly depicted the life stories of the Sikh Gurus also resembled Mughal Art in style.

However, in the Deccan, Art reached its peak probably under the Mysore Kings in Tanjore. By now the European settlers from France, Holland and England had started interfering in the politics of India. The influence of their realistic art styles with experimentation in light and shade can now be seen in the works of artists from Mysore, Tanjore, Baroda and Calcutta.

With the coming of the East India Company, India was introduced to a new form of art that was colloquially referred to as the Company School of Art. Main motive of this school was

- To discourage all type of sacred sculptures and traditional Indian art through different medium.
- To encourage only painting in the western style which could not inspire the Indian masses even during the British rule.
- To picturize India, through their paintings to be displayed in the west, in pitiable status.

Though this style remained the predominant form of art for a very long time, the opening up of Indian market to the west also exposed India to the European trends of impressionism, cubism, surrealism and abstraction. Some artists of India at this time tried to experiment with these new ideas but with the rise of nationalistic spirit in India, many Indian artists reverted back to folk art and more intensely Indian motifs, which is well known. It started with Bengal as the renaissance period for India around 1906, to protect Indian society, history, culture, literature and education. This was exactly the period when an ordinance came for the division of Bengal and a very powerful Swadeshi Movement started all over India against the British rule.
After Independence for quite some time, artists in India continued with these nationalistic and anti-European sentiments. In 21st century as India now gets integrated to the world in the age of Globalization, the artists are once again showing readiness to accept Global trends in Art. Newer forms & idioms of art and schools of art are emerging, only time will tell as which among these would survive the test of time.

3. Metal Art in India
3.1 Ancient Period
India was a boiling pot of various cultures since ancient times, witnessing numerous invasions and attacks by rulers of other regions of the world. India was always perceived as a land of bounty and enormous wealth. Thus, it attracted attention of some of the world's most notorious rulers like Alexander and the Islamic rulers.

In ancient India during Pre-Vedic era, Self-Subsistent economy was prevalent. A Family would cultivate and produce what was required for itself. Gradually, these small families came together to form small communities or tribal clans. That is when the needs of people elevated from the self-subsistence economy to barter economy where goods were exchanged between people or between various communities. People began to realize the limitations of the barter system economy mainly because two commodities were never of the same value. Certain things got preference over the others and a higher value was attached to them. This resulted in conflicts between parties or most often, there was no equal benefit accrued to one of the parties because of the transaction. That is when the need for a common commodity as a medium of exchange arose and they were the precursors of coins. The huge granaries found at the Mohenjo Daro and Harappa excavation sites corroborate to the fact that agricultural products were used a medium of exchange.

In Vedic era, the people used cows as a medium of exchange and this was evident from various ancient literary sources like the Aitreya Brahmana, the Rig Veda and the Ashtadhyayi. One passage in the Rig Veda mentions the price of the image of Indra offered on sale to be ten cows. Cows remained as a medium of exchange till the later part of the post-Vedic period. This medium was not suitable for large transactions and long-term savings etc. because required to be cared and some degree of skill in rearing.
Development of Metal Coins in post Vedic period, Ashtadhyayi of Panini mentions that the metallic pieces were stamped with symbols according to their availability. This gave rise to the need for a more stable medium of exchange- metals. The metals were cut according to a pre-defined standard weight which were weighed against different kinds of seeds for standardization, and were introduced in different regions as standard weights. Thus, first coins of Ancient India came into existence and were known as ‘Punch Marked Coins’. In this punching technique while manufacturing coins in Ancient India, the coins were cut out of metallic sheets of silver or gold and then punched with various symbols depicting various aspects of nature. Kautilya, the minister of Chandra Gupta Maurya, has referred in a passage to the counterfeiter of coins (Kootaroopakaaraka) in his Arthashastra, the book on state administration, compiled in the 4th century BC. Therein, he has listed a number of objects that were used in the manufacture of coins. Metal was first melted in crucibles (moosha) and purified with alkalis (kshara). It was then beaten into sheets on an anvil (adhikarni) with a hammer (mushtika), cut into pieces with clippers (sandansa) for adjusting weights and finally stamped with dies or punches having symbols (bimba-tanka).

Numismatic study\(^{18}\) covers the materials of which coins are made and the sources of such materials and also the forms of coins take from the point of view of weight, design and technique of manufacture. Over all, it is connected with political, administrative, social, economic, religious and cultural life of the country. Each of the coins has monetary as well as the metallic value.

Coins reflect socio-religious and mytho-religious aspects. The first one included history of India. Other one depicted Hinduism or Buddhism, sometimes with Hindu names, like Siva in his full form with his associates. Kaniska’s coins bear Buddha figures prominently\(^{19}\) which corroborates the evidence of Kaniskas conversion into Buddhism in the later period of his life. Shiva appears on the coins of Kaniska, Auviska and Vasudeva and also on Scytho- Sassanian rulers who succeeded the Kushana ruler. Gupta rulers were Brahminical Hindu worshippers so different forms of gods and goddesses appeared on the coins in that period.

Copper punch marked coins are tribal in origin, primitive in conception, shapes irregular rude in execution, and the punches are irregularly impressed. Scytho-Parthian coins are elegant in execution and refined workmanship work in Hellenic
tradition with human figure. The Indo – Parthian coins are rather clumsy in execution and crowded in design. The Silver coins of western Kshatrapas are neat regular and elegantly executed. The splendid gold coinage of Gupta period with its many types and varieties are the finest examples of Indian Art reflecting the power and magnificence of the Gupta sovereigns to a certain extent. Moreover, their gold coins also reflected the cultural life of that period. Copper coins were produced by casting from moulds and were widely circulated almost all over northern India, known in several varieties. These coins are not attributed to any particular state or ruler as they are found throughout the northern and central parts of India. These coins were in circulation from the 3rd century BC till the 3rd century AD.

Indian artisans knew the art of metalworking at least since 3300 B.C. and the exploration of metals in India started long ago. Copper and tin were considered the earliest metals used by the human beings. As the civilization advanced, the alloy of copper and tin in the form of bronze was introduced and was heavily employed in Indian metal art. Bronze images are found in ‘Matsyapurana’ which establishes the fact about the usage of bronze in ancient times as well. Indian artisans knew the art of metalworking at least since 3300 B.C. and the exploration of metals in India started long ago. Copper and tin were considered the earliest metals used by the human beings. As the civilization advanced, the alloy of copper and tin in the form of bronze was introduced and was heavily employed in Indian metal art. Bronze images are found in ‘Matsyapurana’ which establishes the fact about the usage of bronze in ancient times as well. Indian artisans knew the art of metalworking at least since 3300 B.C. and the exploration of metals in India started long ago. Copper and tin were considered the earliest metals used by the human beings. As the civilization advanced, the alloy of copper and tin in the form of bronze was introduced and was heavily employed in Indian metal art. Bronze images are found in ‘Matsyapurana’ which establishes the fact about the usage of bronze in ancient times as well. Indian artisans knew the art of metalworking at least since 3300 B.C. and the exploration of metals in India started long ago. Copper and tin were considered the earliest metals used by the human beings. As the civilization advanced, the alloy of copper and tin in the form of bronze was introduced and was heavily employed in Indian metal art. Bronze images are found in ‘Matsyapurana’ which establishes the fact about the usage of bronze in ancient times as well. Indian artisans knew the art of metalworking at least since 3300 B.C. and the exploration of metals in India started long ago. Copper and tin were considered the earliest metals used by the human beings. As the civilization advanced, the alloy of copper and tin in the form of bronze was introduced and was heavily employed in Indian metal art. Bronze images are found in ‘Matsyapurana’ which establishes the fact about the usage of bronze in ancient times as well. Indian artisans knew the art of metalworking at least since 3300 B.C. and the exploration of metals in India started long ago. Copper and tin were considered the earliest metals used by the human beings. As the civilization advanced, the alloy of copper and tin in the form of bronze was introduced and was heavily employed in Indian metal art. Bronze images are found in ‘Matsyapurana’ which establishes the fact about the usage of bronze in ancient times as well. Indian artisans knew the art of metalworking at least since 3300 B.C. and the exploration of metals in India started long ago. Copper and tin were considered the earliest metals used by the human beings. As the civilization advanced, the alloy of copper and tin in the form of bronze was introduced and was heavily employed in Indian metal art. Bronze images are found in ‘Matsyapurana’ which establishes the fact about the usage of bronze in ancient times as well. Indian artisans knew the art of metalworking at least since 3300 B.C. and the exploration of metals in India started long ago. Copper and tin were considered the earliest metals used by the human beings. As the civilization advanced, the alloy of copper and tin in the form of bronze was introduced and was heavily employed in Indian metal art. Bronze images are found in ‘Matsyapurana’ which establishes the fact about the usage of bronze in ancient times as well. Indian artisans knew the art of metalworking at least since 3300 B.C. and the exploration of metals in India started long ago. Copper and tin were considered the earliest metals used by the human beings. As the civilization advanced, the alloy of copper and tin in the form of bronze was introduced and was heavily employed in Indian metal art. Bronze images are found in ‘Matsyapurana’ which establishes the fact about the usage of bronze in ancient times as well.

The archeological research and the excavation at different places of India, has proved that Indians were the early practitioners of metal art. The archeologists had discovered several metal objects, which include a copper statuette of beautiful figurine of the dancing girl belonging to the Indus valley civilization indicates the high level of workmanship attained by ancient craftsmen. The statuette is 10.8 cm (4.25 inches) high and was cast in bronze using the cire- purdue or lost-wax process. From Kalibangan (Rajasthan), copper beads, weapons and bangles were found from excavation. Small rimmed pots and large water pots which are named as ‘Lotas’, are similar to the pots excavated from early centuries A.D and are still in demand in several parts of India.

Minars in India still stand as the example of the remarkable development of metal art in India. The Qutub Minar of South Delhi represents the Indian metal art of the fifth century A.D. The iron pillar at Mehrauli, in Delhi, which was made during the time of King Ashok, (269-232 BC) the smelting technique. Konark sun temple is another example out of many, of the durability of the old iron works in
India. The smelting process of Zinc and Copper was introduced much later by the Europeans during 1720s.

Metal ware in India may be roughly divided into religious images, domestic & decorative items and ritualistic items, made of copper, brass (Copper Zinc alloy) and bell metal (copper- tin alloy). Shaping of an object is done either by beating the bulk ingot to the appropriate shape with a hammer while heating or by pouring the molten metal into a mould, made of clay for ordinary wares, wax for more delicate images/ items. Beating process is preferred for bell metal and copper as it is supposed to make the objects more durable. Sometimes, turning process using lathe and soldering processes are also needed to complete the metal work.

Bell metal is most attractive with its soft surface and the old gold tint, and therefore used for kitchenware in cooking and dining due to its non- tarnishing quality. The bell metal- wares are produced all over India. Orissa all over, Kerala (Trivandram, Irinjalkuda & Kasargod, Payyanur in Cannanore district, Angadipuran in Palghat district, Aramula near Chengannur), Tamilnadu (Nachiarcoil & Swamimalai in Thanjavur district, Madurai, Karaikudi, Sivillipputtur in Ramanathapuram district and Chidambaram in North- Arcot), Assam (Gauhati & Sartbari), Manipur, Gujarat (Jamnagar, Wadhwan, Visanagar, Sihor & Dobhoi), Uttar Pradesh (Varanasi, Etawah, Sitapur & Moradabad), West Bengal (Bankura and Asansol), Rajasthan (Jodhpur & Jaipur), Karnataka (Bangalore, Nagamangala, Sravanvelgola in Hasan district, Udupi, Buntwal & Karkal in Mangalore district) and Delhi. However, the style and aesthetics seen in various metallic icons or items are found to differ from place to place reflecting the characteristic artisanship of the metal workers in that area. Certain ritual pieces, traditional domestic/ cooking pots such as urale, large vessels, and oil lamps are made of bell metals

Metal craft was implemented in different metals like copper, silver, gold and alloys like bronze, bell metal, white metal. The excellent craftsmanship of metal craft of India is articulated in the bronze sculptures during the Chola Period (300 B.C.-1200 AD) and the iron pillar of the King Ashok (269 B.C.-232 BC), which are still the source of wonder for both researchers and layman. During the Chola period, Tamil Nadu produced some of the world’s well praised figurative bronzes and made Indian metal art to stand apart. Following the bronze art tradition, the work was started with
ashtadhatu for making the gods' images for the temples for worship. The 'ashtadhatu' consisting of gold, silver, mercury, copper, zinc, tin, lead and brass was considered to be sacred. The 'panchadhatu', an amalgamation of copper, lead, brass, silver and gold, was also considered good for such purposes. It added a remarkable diction to Indian metal art.

3.2 Medieval Period and After

In eleventh century, the vessels of metals (copper and bronze) were exported and Punjab was the place where the Iranian metal wares were made. The excavation of Zawar (Southern Rajasthan) proved the presence of Zinc and the metal art of the period of fourteenth century also. Nasik became the centre of Copper and Brass beating during the 19th century. A remarkable development in Indian metal art happened with the introduction of 'Black Metal'. Black metal figures came into existence because of the white aluminum from which figures of deities in dancing pose were being made.

The metal art has improved its style and technique through ages. Following the trend and the demand of the metals, the design of the metal art has still been ameliorating, keeping in mind the budget and demand of the common people.

In North India, the metal crafts of Himachal Pradesh serve the religious purpose as well as the utilitarian items. As per the history, the metal craft in Himachal Pradesh grew because the courts of the Himachal kings had the craftsmen who were specialized in metal-ware in the 600 AD. The statuettes at temple entrances in Brahmaur, Chamba and the Vajreshwari Devi temple in Kangra are glaring examples of excellent craftsmanship. Even the temple doors of Vajreshwari Devi, Jwalamukhi in Kangra, Bhimkali in Sarahan and Chandika Devi in Kinnaur, Bhalaee in Chamba, Kaliwari in Shimla exhibit the Repousse technique in which the craftsmen excelled. The metalwork of Kinnaur portrays a unique fusion of Buddhism and Hinduism. Even some items that include ritual cups, daggers, kettles, jugs, prayer wheels, conch, trumpets, intricate locks of Kinnaur and Chamba, Kullu made artistic bukhari (fire place) etc. and old weapons like tops, guns, artistic swords are also made of metals. Low settees made of silver or brass are another common ritual artifact used in homes as well as temples, besides bells, incense burners, lamps, jars, flasks, tridents, fly whisks and canopies. Not only for the religious purpose, is the metal also used for
household purposes in Himachal Pradesh. The metal craft of Himachal Pradesh also has the tradition of making beautiful metal jewelry that are artistically created keeping in mind the tradition of the place. ‘Mohra’ is a unique metal art of Himachal Pradesh. Mohra denotes the metal plaques. The metal plaques exemplify deities like Lord Shiva, the Devi and other god and goddesses. ‘Newari art’ includes bronzes with beautiful reddish patina.30

Similar work of Metal Art for temples, rituals and for households including decoration is also being implemented in other state of India. The region-wise development of metal craft in India is as follows.

Craftsmen of Jammu & Kashmir are also known for richly engraved traditional household articles made out of iron and brass. Intricate floral and calligraphic patterns are embossed on copper and silver items. These items are then oxidized, which makes the design to stand out from the background. This work is known as 'naquashi'31

In Punjab’s arts and crafts, the metalworkers of Amritsar are known for their skill in various forms of casting, soldering and methods of decoration such as repoussé, pierced work, chasing, engraving on metal pots and other. These utensils are used for domestic and religious rituals purposes in the homes as well as in the temples. 'Meenkari' or enamel work on gold, is an art which is well admired in Delhi and Jaipur. This added a whole new facet to Indian jewelry art. The meenakari work was supposed to be initiated by Maharaja Man Singh I at the end of 7th century. ‘Tarkashi’ is an amalgamated style of Rajput and Mughal. This is an art of laying fine brass or copper wire carefully into incised grooves in a wooden surface. Silver and Brass inlays are done in various other ways like ‘Tainishan’ (inlay of sheet), ‘Zarnishan’ (low relief), ‘Aftabi’ (cut out designs on overlaid metal sheet) and ‘Zarbuland’ (high relief).32

Moradabad in Uttar Pradesh is world famous for its range of brass items, is acclaimed for ‘Khudai’ or metal engraving work which is done in ‘Naqashi’ style. The fine work ‘Barik kam’ of Moradabad is praised for its elegance of style and efficiency.33 A wide range of household items like pots, trays, bowls and decorative pieces are made here and are decorated with intricate etching. Electroplated brass and copper items and items made of white metal are also created in Moradabad. Banaras
in Uttar Pradesh is also known for cast sculptures of deities and household utensils made of brass and copper. The handmade domestic items like small cigarette boxes, bowls and paan-daan (box made to contain the spices, leaves and tools associated with betel chewing), ugal-daan (spittoon), ataar-daan (perfume box) are of huge demand. Some of the vastly used metal objects are surahi which is a kind of flask, Sarota which is used to cut the areca nuts, axe, spear, handmade cutlery, pen knives etc. The fish shaped handles cast in brass is a specialty of Rampur in Northern Uttar Pradesh. Among the varieties of metal art and craft of modern India, various ritual articles and water pots are noticeable like pancha-patra, tamrapatra, sinhasan, lotus and kanchantHAL. Pahaldar and Jaipuri lamps are exemplary of the great artisanship of North India.

In Rajasthan, Jaipur is the main center for brass engraving and lacquering. Items such as photo frames, bowls, plates, boxes with ethnic designs and floral patterns, hunting scenes etc are hammered or embossed on the surface. Lacquered designs either cover the entire body or a part of the item. Jaipur also known for its bronze sculptures. The art of 'Koftagari' work, is mainly practiced in Alwar and Jaipur, one metal is encrusted into another in the form of wire. Popular articles are swords, daggers and shields. In Jaipur the incising of the metal art employs three different styles that are 'Marori', 'Chicken' and 'Bichi', 'Badlas', which are a kind of zinc pot are the distinct art of Marwar in Rajasthan.

Madhya Pradesh and Bastar follows the traditional way of lost wax method which is to leave the entire body apart from the arm and head of the figure, hollow and is built up on a core. The technique of making the deities and decorating them is called 'Dhokra' which is used by the tribes of West Bengal and Orissa. Madhya Pradesh has its own tradition of traditional metal- ware including the ornate metal boxes of Bundelkhand, lamps of Sarguja, rice measure bowls and animal figurines of Raigarh, sculptures.

Chhattisgarh has incorporated the styles of past tradition as well as the developed tribal craftsmanship of Metal craft that includes different items that are part of the regular life. The main craft of ornaments are mostly handmade, made out of various materials like gold, silver, bronze and mixed metals. The bell metal craft is practiced in areas like Lalitpur, Raigarh and Sarguja of Chhattisgarh. Dhokra technique adds a
different charm to the metal crafts. An interesting characteristic of the metal crafts of Bastar is the abstract figures with long hands as well as their tribal Gods and Goddesses.\(^3\)

The brass work of Bihar is a continuation of the brass craft dome in pre-historic ages. But this form of art was at its peak during Mauryan and again during Gupta and Pala period, which has been confirmed from many archeological excavation sites like Nalanda and Rajgir. Even now artists of Bihar are very skillful in making images of god/ goddesses, utensils, iron pitchers and other household utility articles with great fineness. Silver and gold jewelry making is associated with the history of Bihar which was cornerstone of Indian history particularly during the ancient times. Particularly the craving or kundan work on silver jewelry is highly praiseworthy because it requires high degree of skill and concentration. Bihar has a rich past of highly artistic and beautiful lacquer ware craft inlaid in metallic articles.

Metal craft of Jharkhand is included in the list of well-known crafts because of the amalgamation of style, native/ folk designs, and gorgeous looks of the created items. The metal craft of Jharkhand displays a wide range of utilitarian items including decorative items and jewelries.

The metal craft of Orissa\(^4\) includes the usage of metals like Brass and Bell metals and the people of Kansari community mainly create different items out of them. Castings of brass items are practiced by the people of Ganjam. The motifs used in the decorative pieces are mainly inspired from the folk culture of Orissa. Cuttack is famous in the entire world for the unique and delicate craft of ‘tarkashi’ or well known as the silver filigree work. This art of creating items is considered one of the intricate works by the artisans who create splendid jewelries with a touch of tradition. The metal craft of Orissa has been flourishing at Puri, which is the abode of skilled craftsmen who specialise in minute metal work. Moreover, places such as Behrampur and Belguntha (in Ganjam district), Tarva (Bolangir district), Chandanpur, Phulbani, and Kantilo are well known for their specialization in producing a variety of brass and bell metal craft objects with extraordinary craftsmanship. Domestic and ritual articles are also created in the state. Kuliana in Mayurbhanj district, Kaimatin in Keonjhar district, Sadeiberni in Dhenkanal district and Haradagaria in Puri district are well admired for their superiority in Dhokra craft, which is practiced by the ‘sithulias’.
Maharashtra has also been famous in metal work in addition to the stainless steel work. There are many centres which are around Bombay, Nasik, Poona, Nagpur. Bidri ware is an ancient craft of Aurangabad, which uses zinc and copper as raw material. It also employs the intricate workmanship of pure silver, either brocaded, overlaid or inlaid on the metal surface. In the beginning, Bidri ware items were used as hookahs or paan daans, but now they are more often sold as souvenirs.

With the themes of Jain religion bronze sculptures is common in Palitana in Gujarat. Kachchh region is renowned for the silver craft and its necklaces, earrings etc. The art of making jewelry and precious stone cutting and processing is a traditional handicraft of Gujarat. Goldsmithy includes filigree-work, open-wire-work and carving with folk style. Gujarat's other paramount craft is silver and iron works, found nowhere better than in the former princely state of Saurashtra and Kachchh where descendants of the original court swordsmiths and jewelers, now make fine beetle-nut crackers, copper coated iron bells, knives and cutlery. The brass industry of Jamnagar is one of the largest in India and from Kachchh and Rajkot come the famous silver engravings and ornaments that are considered so typical of Gujarat.41

Andhra Pradesh has a rich tradition of metal craft. Sheet metal work using brass is done in Pembarti and Warangal, on plaques, containers, vases etc. From the small village of Budhiti in Srikakulam, comes elegant utensils and items made of brass and other alloys. Andhra Pradesh is famous for Bidri-ware. Pouring molten zinc and copper solution into moulds creates Bidri items. The surface of the object is then engraved in interesting designs, to created grooves. These grooves are then inlaid with silver with a polish finish. Finally the objects are oxidized, which makes the surface black and the silver inlay, thus stands out, creating a stunning contrast. Pots, hookahs, trays, bowls etc. are created using this technique.42 Silver filigree work from Andhra and Orissa is famous for its intricate designs made out thin silver wires. Objects are created with strips of silver, looped and in zigzag pattern. These strips are deftly soldered together. The delicate jali or trellis like design is achieved by using thin twisted silver wires.43

In south India, the bronze images can be placed in three categories namely:

- Chitra - images are round with limbs completely shown
• Chitrarda - figures in half relief, and
• Chitrabhasa - images painted on walls.

The South Indian Bronze images are unique and have different styles from each of the five periods i.e. the Pallava, early Chola, late Chola, Vijayanagar and the Modern. The South Indian bronze sculptures follow a canon of absolute beauty, mathematical purity and clarity of form. Thus, in a way these images represent the Indian ideal. Like all Indian images, they were emblematic evocations, not descriptions, of a deity that the worshipper had always in his heart and mind. Hence, the art of these South Indian icons does not embrace the language of any one time or any one place, but a language that can be understood universally and eternally.

In south India, the Saptamatrikas are said to be the energies or shaktis of the deities of the Hindu pantheon like Brahma, Mahesvara, Kumara, Vishnu, Varaha, Indra and Yama. The Saptamatrikas (seven mothers) was a very important religious group in India, especially in South India. Hence, they were called Brahmani, Maheshvari, Kaumari, Vasishnavi, Varahi, Indrani and Chamunda. In most of the ancient temples of South India, the sculptures of the Saptamatrikas are found. Some of them can be seen adorned in the walls and some are seen in actual worship form. All these goddesses are sculpted according to the codes of the Agamas.

According to T. A. Gopinatha Rao, a famous author of the monumental work 'Elements of Hindu Iconography', "These are the female counterparts who are armed with the same weapons, wear the same ornaments and ride the same vahanas and carry the same banners as the corresponding male Gods do. Brahmani should be sculptured like Brahma, Maheshvari like Maheshvara, Vaishnavi like Vishnu, Varahi like a short woman with angry face and bearing a plough as her weapon, Indrani like Indra and Chamunda as a terrific woman."

Ancient text of architecture and iconography says that the Saptamatrikas should be surrounded by Virabhadra and Ganesha on the left and right respectively. They are seen in this way in most of the temples of South India. As per the mythological stories, Lord Siva produced the Saptamatrikas from the flames of his mouth to help him in the war against a demon named Andhakasura. It is believed that the
Saptamatrikas swallowed all the blood, which trickled from the demon’s body and then Siva was able to kill him.

The Kailasanatha temple in Kanchipuram of Tamil Nadu district is considered as one of the oldest depictions of the Saptamatrikas. It was constructed during the Pallava age by Narasimha Varman II, better known as Rajasimha Pallava (691-728 A.D.). These Saptamatrika sculptures can be seen in most of the Chola temples in Tamil Nadu and other parts of South India.

The most outstanding image of south Indian bronze is that of Nataraja or Shiva, the lord of dance. To the Dravidian imagination, Shiva’s dance, the Tandava, is the personification of all the forces and powers of the cosmic system in operation, the movement of energy within the universe in action and destruction. This superb piece of art connotes the unity of human consciousness by depicting religion, science, and art equally the bronze images in the South Indian sculptures, thus, present a quality of everlasting nobility. The perfect tenderness of feelings in the figures, the grace and rhythm of the dancing figures, the power, life and action that is manifested, ensure their place among the masterpieces of the world.

Some regions are famous for bronze casting in Karnataka. Karkala, famous for Jain statues, and Udupi are the major centers for such works and Nagamangala is famous for bronze casting, others are known for bell metal works like Mangalore. Karnataka is the abode of a unique damascene metal work technique known as Bidri which has Iranian designs on to a metal alloy composed of lead, copper, zinc and tin, which they blackened and polished. This craftsmanship has gained a full-fledged form with the influential involvement of typical Islamic features in design and decoration. Finely crafted pieces such as hookahs, goblets, paan boxes and bangles were exquisitely embellished with interwoven creepers and floral patterns. The effect of the delicate silver filigree against the ebony toned background was scintillating.

Metal Craft of Tamil Nadu are the continuation of the ancient Indian craft, indicates a rich Indian tradition with an abundance of mythological influences. It generally employs Brass and Copper metals that are the most ancient metals of Indian culture. One of the most outstanding figures is crafted in Bronze, Ashtadhatu, and the statues of Lord Shiva dancing (Nataraja) his cosmic dance (Tandava). Some of the most
remarkable statues of Tamil Nadu have been cast from both bronze, copper and history says that the creations belong to the Chola Period. Panchaloha has been included as the raw material in carving metal statues and has become very popular among the artisans. Tenjavur district has been famous for casting bronze images of various deities in Indian tradition. Brassware from Tamil Nadu comprises of decorated traditional lamps, used in religious functions, while Kerala is famous for its polished bronze mirrors.

Craft of Kerala is the manufacturing of big Church bells. Kerala is famous for its metal artisans, in bell metal, white metal, iron, brass, copper art. Steeped in mythology, idols of deities like Shiva and Nataraj dominate the themes. An alloy of brass, tin and copper, glistening bell metals are also used to cast magnificent lamps in various shapes and sizes.

Metal craft of West Bengal is proficient creations from various metals like brass, copper, gold, silver and some alloys. The design and ethnicity of the metal crafts has been maintaining the tradition of the ancient India. The metal craft of West Bengal includes the superb creations of Dhokra craft that includes payeri (anklets), hansuli (necklace), earrings and bangles. Besides these, some of the knick-knacks made by these artisans are the Buli (piggy bank), measuring bowls of different sizes, a ceremonial finial pot (kalash), which is mounted on a wooden pole for festivals. In addition to these items, the artisans create various kinds of ritualistic objects that have immense importance in Hindu religion; these are images of gods and goddesses, birds and animals. Historically, the Dhokra Kamar tribes have been the traditional metalsmiths of West Bengal. They follow a technique of metal casting known as Dhokra, named after the tribe. Dokra system of metal casting is said to be oldest form of metal casting, technically similar to 'cire perdue' or lost wax process.

The Dokra metal craft is popular in the Tribal belts of Andhra, Orissa and Madhya Pradesh. The uniqueness of this craft form is that no two pieces are alike. Small figurines of horses, drummers, tribal deities and plaques are made here. These items are mainly made from brass scrap.

Famed for their unique artistic skills, the local artists and craftsmen of in Assam are mainly involved in designing brass and bell metal utensils. Apart from these two
metals, gold, silver and copper can also be used to make different handicrafts in Assam. However, gold and silver products were mainly used during the days of royalty.

Brass forms an important cottage industry in the Hajo region of Kamrup district, whereas bell metal products are famous in the Sarthebari region of the same district. These two are the major production centers of the state. Besides these, production centers are also located in the Titabari and Raha regions. Assamese metal handicrafts are not only available to the local people, but can also be purchased as souvenirs by tourists. In a bid to compete with changing times and demands, modern day artisans have used their innovative skills to introduce new designs and patterns to the traditional metal craft of Assam, including the ones that can be used as decoration pieces.

The objective of this study on 'Metal Art in Himachal Pradesh' is to explore the works of metal art minutely and elaborately. In Himachal Pradesh, metal work in visual art i.e. images/ icons, metallic plaques/ busts/ mohras, musical instruments, ritual, decorative and domestic articles are considered very pious, and are related with the rich cultural heritage and traditions of the country. Almost each of these artistic items has importance in Vedic and Buddhist culture. Both the traditions are followed in Himachal Pradesh. Buddhism is followed mainly in the upper areas of the state like those in Kinnaur, Lahaul- Spiti and Shimla. This diversity reflects the affluent uniqueness of the state.

The artistic metallic images are placed and worshipped in renowned temples of the area and metallic plaques/ bust/ mohras of ancient Indian rishis, gods, seers, village heroes and ancestors are placed and worshipped in the village temples as Devtas. In all the temples during every day rituals, festivals and fairs heart throbbing metallic musical instruments are used. It may be remembered that these renowned temples had played a very significant role as the centre of wisdom/ learning/ education and socio- culture- oriented activities throughout India irrespective of cast and creed, upto the eighteenth century. The most celebrated activities were timed around the main festivals which became part of life in every household of the Indian society. These festivals are celebrated almost every fortnight round the year not only in the state of Himachal Pradesh but throughout the country. The musical instruments appropriate
for the occasion make these festivals more and more happier occasions among the families and the society.

The main focus of this work is to bring out the glare of most of the works of metallic art rich in aesthetics, and having simple and rural artistic values. All these metallic art objects have contributed a great deal in expanding the flight of imagination at the individual and social levels. Beauty hidden in all these aesthetically fabricated objects gives them eternal happiness and wonderful experience to individuals and at the same time inspiration to the coming generation.

4. Outline of the Present work
The present study is outlined in nine chapters given below. First three Chapters are intended to provide a sound introduction as background for the Metal Art of Himachal Pradesh, starting with a historical background from different civilizations to the Indus- Saraswati civilization in India. Next four chapters are technical in nature. The next chapter describes the lifestyle, the status and the role of metal craftsmen in preserving & propagating the cultural heritage of the state of Himachal Pradesh and the country, throughout the world. The last chapter presents the conclusions of this work.

First Chapter- Introduction: The present chapter gives a survey which will include various important civilizations of the world. The Indus- Saraswati civilization as an echo of the past, inspired the development of Metal Art in different parts of India. The present fine arts reflect various cultural and social influences since the remotest past. Different classes of artistic metal objects like bronze images, musical instruments, domestic and ritual articles, and the places of their manufacturing in India will also be briefly described.

Second Chapter- Himachal Pradesh- An Overview: An overview of the geographical, the historical and the cultural/ religious background, in brief, of the state of Himachal Pradesh will be given. Some salient features of this Dev Bhumi Himachal will also be taken up.

Third Chapter- Metal Art of Himachal Pradesh: Since most of the ancient metal art belonging to the state are preserved in museums, traditional temples or Bauddh
temples/ monasteries, these places from the state will be listed. The essential elements of aesthetics in art have also been described for analyzing the famous works on metal art & craft of Himachal Pradesh. An outline of whole range of metallic images & mohras for worship, delicate jewelry, coins, ritual and domestic articles including the decorative items, and musical instruments will be given in this chapter.

Fourth Chapter- Sacred Sculptures: Sculptures/ Bronzes of Powers of Nature have a primitive force and appeal along with simplicity of expressions for the people of Himachal Pradesh. In view of this, the sculptures, its definition and its various linkages with aesthetics have been established in this chapter. Then different Bronze sculptures and Mohras from Vedic tradition, and those from Buddhist tradition have been discussed. These Mohras normally represent Vedic Rishis and local/ village devatas who bestowed wisdom on the human race in one form or the other.

a. The first category of these sculpture have been of Shakti like Mahisasurmardini, Maa Laxmi, Maa Kali etc. made of different metal with full aesthetic norms. The Shakti with a trishul in her hand treads a demon under her foot, as the tiger, her vahana, springs from her loins with his one fore-paw digging into her thigh while the other is placed on the trishul. In another depiction of shakti, she is a powerful Mahishasur Mardini, the whole plaque is dominated by her eight arms and the mask like face which has a tilak in the form of a third eye. The body practically merges into the demoniac buffalo. The tiger, her vahana, is seen in the comer, its face accentuating the mood. Shakti and Lord Shiva are inseparable. In metal works Lord Shiva has been depicted as Natraj. Lord Shiva also appears along with his family having Goddess Parvati, Ganesha, Kartikeya and Nandi.

b. In the depiction of Lord Krishna, incarnation of Lord Vishnu, a big cow with a chatra dominates over the various forms of Krishna as Gopal Bal, Navanita Priya and again as the Divine Flutist. The kneeling forms of Garuda and Devtas with folded hands are made especially as an offering to the Lord. The metallic statues of Ganesha have been very popular among the masses.

c. Another category belongs to Mohras of deities, particularly those worshipped in and around Kullu & Mandi. The Mohras and Busts (Masks) deities, made of silver or a suitable good metal alloy, are used for worship. These metal images represent those of Shiva, Naga, Rishis and village deities or ancestors. They are usually fixed
onto a chariot or palanquin, which may be kept in a Hindu Shrines or on special festivals, they move and lead the procession, and then in the major fairs they meet other deities/ rishis. This special meeting among deities is worth seeing and appreciating in Himachal Pradesh.

d. An important category of Bronzes is from Buddhism\textsuperscript{53} tradition. Historical texts indicate that the Kullu Valley was also an important Buddhist area during the medieval period with many monasteries, stupas and other religious sites, but these have been abandoned since long.

Several copper-based statues of Lord Buddha have been documented in Chamba District.\textsuperscript{54} A seated brass Buddha image, which is similar to the Kashmiri Seated Buddha, dated to sixth to eight century, has also been noticed where robe with several folds are visible over the arms and in the front of the chest. The right hand is placed right up against the chest. This pose is similar to the Buddha images attributed to earlier periods.

Fifth Chapter- **Musical Instruments:** The most popular/ folk (metal) musical instruments of Himachal Pradesh, will be described in this chapter, under four categories viz. string instruments (chordophones), wind instruments (aerophones), percussion instruments (membranophones) and solid percussion instruments (idiophones). The aesthetical analysis of these musical instruments with a delicate relief work, will also be given. A mention has also been made of the modern electricity driven instruments. However, the musical instruments belonging to the folk tradition play an essential role in most of the festivals, rituals ceremonies in Himachal Pradesh. These metallic instruments are found to be common in Vedic and Buddhist traditions.

Sixth Chapter- **Domestic and Ritual Articles:** Various metallic items of domestic use like kitchen-ware, dining wares, intricate locks, including the decoration items and ritual articles are discussed in this chapter. These are mostly prepared out of brass, bronze or silver, sometimes gold & silver inlaid also. Different shapes of these items may be aesthetically interesting which are fabricated depending upon the specialties of the area. Sometimes the wooden items are decorated with silver plaques containing motifs of the lotus or some lucky signs (out of six in Buddhist tradition).
Seventh Chapter- **Method and Techniques:** Various methods and techniques like metal casting through lost-wax method (both solid and hollow casting), sand casting, different types of repoussé & chasing and carving methods, to prepare metal images, Mohras and other metallic domestic & decorative items are discussed in this chapter. Other techniques used in making the metal artwork are also given.

Eight Chapter- **Contemporary Traditional Craftsmen:** The traditional Metal Craftsmen have made it possible that their art reaches the rich people as well as the poor ones, to almost every household, to each temples in the state, in the country and outside the country as well. They are the real skilled artisans who preserved the art and culture of Himachal Pradesh. Therefore, study about these craftsmen was felt essential, so that the roots of metal art become not only known but strengthened to enrich and propagate the cultural traditions of our heritage. Such a study, wherever and whatever possible, will be presented in this chapter. Results of survey/ interviews with some craftsmen based on a questioner will also be presented.

Ninth Chapter- **Conclusions:** This last chapter will present conclusions alongwith some suggestions about the Metal Arts in Himachal Pradesh.
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