INTRODUCTION

In the later part of the second quarter of the nineteenth century A.D. coins belonging to the Śaka-Kushāṇa dynasty were discovered in the Punjab. This triggered interest in the study of the Kushāṇa coinage, which was initially very casual one. Later a large number of Indo-Bactrian and Indo-Scythian coins were discovered and this actually stimulated the studies in a systematic way.

It is well known that Alexander Cunningham, rightly called the 'Father of Indian Numismatics', has made a comprehensive survey of the archeological materials, especially of coins and their geographical distribution. His twenty-three volume series of Archeological Survey of India Reports (1862-1884), his works Coins of Indo-Sacthians (1892) and Coins of Indo-Scythians (1895) are monumental and are authoritative scholarly accounts of the Kushāṇa coinage. Added to Cunningham's contributions are Coins Collecting in Northern India by Rodgers (1894), British Museum Catalogue of Coins of the Greek and Scythic Kings of Bactria and India by P. Gardner (1886) and the work of Von Sallet in Germany. Die Machfolger Alexander des Grossen in Bactrian and Indien (1879) as well as the work Indian Coins by E.J. Rapson (1897) detailing a survey of Indian numismatics including the Kushāṇa coinage. We also have the work of A. Stein
(1887) on the various types of deities appearing on Kushāṇa coins and their possible connection with Persian ethos.

We now move to the era, the early twentieth century, when several catalogues were published that facilitated critical studies in the arena of Indian numismatics. Some notable catalogues are: The Catalogue of Coins in Indian Museum, Calcutta, Vol. I, prepared by Vincent Smith, The Punjab Museum Catalogue, Vol. I, prepared by R.B. Whitehead (1914) on the coins of early foreign rulers in India. We have also Carmichael Lectures on Ancient Indian Numismatics by D.R. Bhandarkar (1921) that focussed on the socio-religious and mythological-religious aspects of the Kushāṇa coinage. R.D. Banerji's Prachin Mudra is another valuable contribution on Kushāṇa coinage. The Cambridge History of India (1922) has included two significant chapters, one by Rapson on Scythian, Parthian and Kushāṇa Kings and the other by MacDonald.

A large number of coins of the foreign rulers of ancient India including those issued by the Kushāṇas have been discovered during the excavations conducted at Taxila in the period 1912-1930 by Sir Johan Marshall.

The later half of the present century saw several scholars publishing in the Journal of the Numismatic Society of India, Indian Numismatic Chronicle and Numismatic Digest,
etc. on the numismatic materials pertaining to the Kushanas. A.S. Altekar, J.N. Banerjea, B.N. Mukherjee, P.L. Gupta and A.K. Narain are some notable Indian scholars who have contributed to the subject alongwith the European scholars such as A.L. Basham, R. Gobl, D.W. McDowell, and A.D.H. Bivar.

Despite such scholarly interest and contributions made both by the Indians as well as the Europeans, it was felt by the present investigator that much study remains to be done on the ancient Indian coinage in general, and the Kushana coinage in particular. With this in view the work on the Later Kushana coinage was undertaken in the hope that certain worthwhile conclusions and contributions could be drawn/made on the composition, nature, shape, size, denomination, embossments, scripts employed, legend types and varieties of the Later Kushana coins. The study of imitations and derivatives of the Later Kushana coins is all the more important as the features they have inherited from the early Kushanas could be confirmed and any variations could be detected. Furthermore, the still later coins viz. the tribal coins and the coins issued during the Gupta dynasty period would also have preserved/inherited some of these features of the Kushanas. Thus, the extent of imitation by various successive rulers could be studied. Also, the derivatives of the original coins could be studied
with the aim of drawing certain far reaching conclusions on the social, religious, mythological, technical and even political dimensions of the age in which they were issued. It was further felt that some information on the personality profile of the rulers could also be deduced or conjectured. Thus, the actual motivation of the present study was to possibly reconstruct the history of the period studied for a proper understanding of the culture and life-style of the rulers as well as the then society, including the skills and innovations. We now give briefly the details of the study and the results obtained as presented in the various chapters from Chapter I to Chapter VI of this thesis.

We start with Chapter I which gives the early tribal history of the Kushāṇas originally hailing from Chinese Turkestan and the manner and circumstance in which they ruled the Indian sub-continent including the North-west frontier provinces. Their dominance in the Oxus Valley, Indus Valley and the Ganges Valley is brought forth. The details of genealogy and chronology of the Kushāṇas is given in this chapter starting with Kujula Kadphises (B.C.25 - A.D.35), gaining glory with Kanishka I (A.D.78 - A.D. 101/2) and ending with Vāsudeva-III and extending even upto the rule of emperor Maśra. During the course, references are made to the coins issued by the various rulers and their
In Chapter II we study the coinage of the Later Kushāṇas. Before we move to the details of the Later Kushāṇa (beginning with Vāsudeva II) coins, we study briefly the coinage of the Early Kushāṇas. Kujula Kadphisas is known to be the one who issued the earliest Kushāṇa coins in copper. The coins were found to be bilingual - Greek on the obverse and Kharosṭhī on the reverse. Some of the coins indicate about the nomadic habits of the Kushāṇas.

From the coins of the period of Wima Kadphises came the basic theme of "the king standing sacrificing at an altar" that appeared as the royal portrait on the Later Kushāṇa coins which continued as such on the Later Kushāṇa coins as well. It also appears that Wima got such motifs embossed on the coins that would attribute divinity to himself. Some of the later coins of Wima show that he had adopted himself to the Indian ethos.

Kanishka I issued coins mostly in gold and copper and used only Greek inscriptions initially that later gave way to mid-Iranian (Bactrian) or Khotanese Śaka. Further, we notice that a number of deities bearing Iranian names have been used on the Kanishka coins. It is reported that some coins attributed to Vāśishka I have been found and his claim as a ruler after Kanishka is examined.
The next ruler Huvishka, it is observed, issued gold coins with his profile portrayed on the coins and with the inscription Shāo Nāna Shāo Oeshki Koshāṇo.

Also Kanishka II seems to have issued some coins with innovations on the obverse and on the reverse. The coins of Vāsudeva I, who was followed by Vāsudeva II, have some features of the Kanishka coins e.g. king standing in profile, sacrificing at the altar. It was found that three types of coins, differing in some details, have been issued in the period attributed to Vāsudeva I. Insofar as this study in concerned, we complete the details of coins issued by the early Kushāṇas.

We later consider, in this chapter, the coinage of the Later Kushāṇas starting with the coinage of Vāsudeva II. He is known to have caused a new arrangement of the Bactrian legend on the obverse of his (gold and copper) coins and known to have adopted only two reverse coin types with the enthroned goddess Ardoksho on one and god Śiva on the other. The details of the types and varieties in each type are presented in this chapter, including details of the Brāhmī and the Kharoshṭhī scripts used and the significance of the respective letters.

After Vāsudeva I the Kushāṇa empire started disintegrating and this researcher considered this to be a
bench mark in the history of Kushāṇa rule. This mark the beginning of the end of the Kushāṇa empire. From the time of Vāsudeva II have started our present studies and have given the nomenclature 'Late Kushāṇas' to the rulers all of whom may or may not belonged to a single imperial Kushāṇa dynasty.

Vāsudeva II happens to be the first in the line of the Later Kushāṇas after Vāsudeva I. His coins are known to have greater deterioration in monetary standard and debasement of the Greek script when compared with those of Vāsudeva I.

Kanishka III and Vāsudeva III are known to have issued coins with Brāhmī letters on their obverse. This trend appears in the later Indo-Greek earlier and later on the Gupta coinage as well. The types of coins identified as 'King in Topcoat', 'Prince in Aramor' etc., are described in this chapter along with obverse and reverse details. It is also given to understand that Vāsudeva III was the last Kushāṇa king to have issued two reverse types of gold coins. An intervening ruler Vāśishka II has been identified and designated as such by studying the coins issued by an emperor who, on the coinage, is hitherto known as Bazeshko.

Some details of types and varieties of coins issued by Vāsudeva III are given in this chapter along with the details of inscriptions on the obverse and reverse of each of the
This chapter also deals with some description of a series of coins attributed to Kanishka IV, and quite different from those issued by Kanishka III.

Mention is also made of coins bearing the name Maśra, belonging to the Kushāṇa history but distinctly different from all the Kushāṇa coins. The closeness of these coins to those coins of the early rulers, of the Gupta dynasty, say Kāchupāṇa, suggests that Maśra perhaps was (one of) the last rulers of Kushāṇa dynasty.

Chapter III has the details of the study of Kushāṇo-Sassanian (K-S) coinage. It was found that the K-S gold coins actually graduated from the gold coins of Vāsudeva III, the last of the Kushāṇas. Certain features that distinguish the K-S coins from the earlier coins such as triratna symbol have been identified. Greek legends like Shāo-Nāno Shāo Bazodeo Koshāṇo have also been identified on the coins. Over a period of time, it was found, the shape of the coins changed, the legends also got replaced, the dress worn by the Sassanian king assumed a definite Sassanian character. It was observed that the inscriptions on the Kushāṇo-Sassanian coin series underwent a gradual change. They moved from the Kushāṇa cursive script to one accompanied by Pahlavi script and then to exclusively
Pahlavi script. This chapter finally consists of details of Hormizd Type, Inaugural Type and Vaharam Types of coins.

In Chapter IV we make a study of the tribal Kushāṇa coins. These coins look similar to the Kushāṇa coins but are not exactly same in the sense that the Brāhmī words have been interpreted by scholars to be names of tribes, dynasties or clans or names of sundry chieftains. One important fact is that they form a distinct series from those of the Kushāṇas and the Kushāṇo-Sassanid rulers. A number of coins attributed to the Śhaka tribe (who ruled in the north-west India, near about Peshawar) have also been discovered that are made of debased gold and executed in a crude form.

We study in this chapter the coins, their types, their composition and other characteristics as issued by Kidāra-Kushāṇas and Kidarities who have been identified actually more as Hūṇas and less as Kushāṇas. The three groups of coins, namely, the gold coins, the silver coins and the copper coins present different embossments on the obverse and the reverse. However, it was found that the gold coins have been issued by the Kidāra-Kushāṇa chiefs and the silver coins to have been issued by the Kidarites. After a thorough study of the coins, it has been possible to conclude that the Kidarites were feudatories under the Sassanids initially
and later became independent though they acknowledged the suzerainty of the Sassanids. The decline in the quality of the Kidāra-Kushāna (gold) coinage can be identified with the decline of trade and commerce after the disruption of the Kushāna empire as a whole.

We also study in this chapter the details about Puri-Kushāna coins. Initially it appears that the Kushāna empire extended to as far as Orissa in the east. This resulted in the usage of the Kushāna coins in Orissa. However, it was found that as time went on the supply or availability of Kushāna coins gradually decreased. As a consequence, the minting of the crude imitations of Kushāna copper coins was undertaken, and such coins have been found in parts of Bengal and Bihar also apart from Orissa. A brief record of the Puri-Kushāna coins is presented thereafter in this chapter. We also read about the rise of Murunās and their supremacy in Orissa. It was found that the Murunās ruled Orissa after crushing Kanishka's influence there.

Chapter V consists of details of imitations and derivatives of the Later Kushāna coins. The emphasis here has been on imitation of Kushāna coins found from different parts of north west India. A strong Kushāna influence has been found on the coins and they are termed as imitation Kushāna coins. The details of deities on the reverse of the
Kushāṇa coins as well as the classification and varieties of the coins are also presented. It was concluded from a study of these coins that they had little political significance but were only used as currency for sometime after the reigns of Kanishka and Huvishka. The types of coins and the embossments on the obverse and reverse of these coins are described. The discovery of imitation coins made of copper and of gold shows that the copper coins must have been in circulation as currency and the gold coins were used for presentation and hoarding.

The one outstanding problem (to be solved) that arises from this study is regarding 'Kota' Coins. They are of post Kushāṇa period and are imitations of the coins of Vāsudeva period. These (copper) coins and their characteristics are yet to be studied fully by anybody to get information about them. However, we take the opportunity here to enlist them in the form of a catalogue, describing the deity types, derivative varieties and metal characteristics. The period of these coins has been found to be within A.D. 500 - A.D. 800 as suggested by Cunningham though disputed by others. These arguments are presented to justify this fact that these coins started in about 4th century A.D. and continued for quite some time.
In Chapter VI, the last chapter of this thesis, we deal with the meteorology, minting and technique of Kushāna coins. It was Wima Kadphises who had introduced Kushāna gold coins. The availability of abundant amount of gold that flowed into India on account of trade and commerce with the Romans had facilitated the introduction of gold coins. It was the demand for luxury goods from India that had induced the Romans to encourage Indo-Roman trade. The luxury goods mainly were spices and perfumes, precious stones and pearls, silk, muslin and cotton. It is interesting to note that the growth and decay of the Kushāna coinage was closely connected with the beginning, peak and fall of Indo-Roman trade that perhaps had continued till about the fourth century A.D.

The study detailed in this chapter tells us that the bi-metallic coinage of gold and copper of the Kushānas was available in a range of distinct denominations that formed the basis for a clear and logical monetary system. The influence of earlier patterns and models was fairly evident on the coins, in particular of the Roman coinage. With fast increase in price and because of paucity of available gold, there was reduction of gold content in the Kushāna coinage (dinars) at an accelerated pace.
As regards minting of coins and mint sites of the coins is concerned, Khokrakot site on the outskirts of Rohtak town yield a circular Kushāṇa coins mould of clay of 0.8" diameter discovered by V.S. Agarwal ("A Kushāṇa Coin, Mould from Rohtak' JNSI, XVI pp. 68-69) and later on a few more clay moulds of Kushāṇa gold coins were discovered by Man Mohan Kumar (Ancient Mint at Rohtak' in Numismatic Panorama ed. by K.K. Maheshwari and Biswajeet Rath, pp. 103-104). And if the genuineness of these moulds is established then we shall be in a position to say that Rohtak was an important mint site of the Kushāṇas.

We have on authority the finding of Cunningham - a gold coin of 0.85" diameter and weight 118 grains. He happened to have suggested, based on the coin legend, that the coin is of Kushāṇa king Kidāra of Kapan. Kapan was believed to be the place where the coins must have been minted. Some views on the interpretation of Kapan are given in this chapter.

In a similar manner, Atranjikhera in the Etah district of Uttar Pradesh, Naurangabad (Haryana) and Sunet in Ludhiana district of Punjab are considered to be important ancient mint sites. The discovery from Atranjikhera of multiple coin-mould of bright red colour and dark grey colour in the deeper layers is of immense interest. It appears to have a rectangular shape and has a peculiar
arrangement of feed channels. However, its authenticity seems to be in doubt. From Sunet the excavator found more than 30,000 coin moulds of the Later Kushāṇas and the Yaudheyas. This discovery proves beyond doubt that Sunet was an important mint site of the Kushāṇas and their coins continued to be minted long after rule even.

The study has revealed that no names of ancient mint sites in India have come down to us. This forces us to rely on indirect evidence and conjectures. It is not certain that the association of any symbol on the coins with a particular (mint) place could be accepted. It appears that the study of the find spots of coin moulds which were employed in the mints with the help of the technique of 'Casting' of coins could lead one to locating the ancient mint sites.

One part of this chapter is exclusively devoted to identifying and understanding the technique adopted for manufacturing of coins. From this the level of technology and the efficiency of it could be understood.

Details about the methods of casting and die-striking systems are also given in this chapter. Although opinions differ regarding the origin of the technique for die-striking, it is surmised that if the oldest coins of Indians were the result of foreign influence then the techniques for producing them were most likely of foreign origin.
Towards the end of chapter VI, the technological investigation of Kushāṇa copper coins has been presented. It was thought that measurement of specific gravity along with chemical analysis is a reliable tool to find out the purity and soundness of the coins. The chemical analysis was done with "visual wet chemical analysis method", and it revealed that the purity of copper in the Kushāṇa copper coins to be more than 97%. It was also found that a few coins of Huvishka period were of less purity and contain considerable amount of iron in them. It was felt that the presence of iron was because of improper technique employed for extraction of copper from its ore and not because of any deliberate addition of iron to copper for preparing the coins. From the specific gravity measurements of the coins of the Kushāṇa period it was found that the metal (copper) present showed lower specific gravity than that for pure copper coins.

In this chapter, the shape of the Kushāṇa coins was also studied. The earlier coins were found to be of irregular shape and coins of later Kushāṇa period show elongated structure along a certain direction. This suggests that the coins were made by sheet cutting technique after which they were die-struck. Dropping technique along with moulding was also employed for making some of the coins.
The conclusions drawn from the present study are presented separately. An Appendix is provided at this stage detailing the various views regarding the date of Kanishka's accession, and for this study A.D. 78 has been taken as the date of start of Kanishkas rule. The thesis consists 10 plates. References where found relevant and necessary have been given in the test of the thesis itself in the standard format. For our convenience catalogue has been given at the end of the each chapter. A bibliography is given at the end of the thesis.