ON THE ORIGIN AND DEVELOPMENT OF SILVER COINAGE IN INDIA*

BY

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ON July 22, 1941, I received from the Director-General of Archæology in India the eleven (actually 12) silver pieces illustrated and described here. The question that I was expected to answer was whether these were the predecessors of the later punch-marked silver coins. One glance at the weights showed that, taken as a group, they could not possibly be such predecessors, except in so far as any historically earlier bit of precious metal precedes any later one. But I was particularly intrigued by the cuneiform marks on No. 9, and asked Rao Bahadur K. N. Dikshit whether he or any of his experts had noticed anything special about that piece. In answer, he sent me a copy of his report made on the very date of his discovery, whereof the relevant portion is appended here: "1st January, 1926:—The most important discovery during this year's excavations was made on the morning of the New Year's Day when underneath a wall running east and west in the trench between sites B and C was discovered a silver vase (No. Dk. 1341) complete with lid containing jewellery, square and circular silver pieces. One of these is inscribed in cuneiform characters, thus connecting once for all, the period of the last city on this site roughly with the cuneiform world. As it is well known, the Babylonians had no regular coins but used lumps of silver and gold of definite standards known as Mana or Shekele. In the 8th Mandala of Rig Veda, Indra is asked to bring Manas of gold (Hiranyaya Mana) which conclusively proves the use of these forms of weight in India at the time when the Aryans came. The find of these rectangular and round silver pieces (the precursors of punch-marked coins of later times) with cuneiform signs is therefore of the highest importance for settling the chronology of Indian history."

My own comment on these views will appear later on. But I cannot refrain from expressing surprise and regret that this report was not made public by the authorities to whom it was submitted. The annual report for 1925–26,[1] rewritten by Mr. Ernest Mackay, states, "The find is so important that it deserves to be described in detail"[1] (89), but omits all mention of the cuneiform punches on No. 9; the vase itself is shown on Plate XLIIIc, and the contents on Plate XLII, with the piece in question shown at the bottom, though the cuneiform marks cannot be discerned clearly (due presumably to the angle of incidence of the light). No mention whatsoever has been made of the piece or of the marks on it in the imposing tomes of Marshall[2] and Mackay[3] on the subject, which is curious in view of the fact that Mackay was specially brought in as "an archæologist from outside with a first-hand knowledge of prehistoric excavations in Sumer and Western Asia"[2] (13).

The pieces sent to me fall into no less than four classes, best described separately. With the exception of the cuneiform, on No. 9, the rest only bear "incisions", which are merely chisel marks. Such of the pieces as have been cut off from larger bits are undoubtedly cut by the process of hammering on a cold chisel and then breaking off at the mark by force; the resulting fracture shows an edge that is partly smooth and partly rough. Thus the "incisions" are trial marks, perhaps marks of the end of the chisel when making other cuts.

CLASS I. No. 9 (23·4010 gm.)—The piece has been cut off at both ends by chiselling and breaking off from a larger cast silver ingot. The process of cutting described above characterizes currency in the earliest times, and still survives in some

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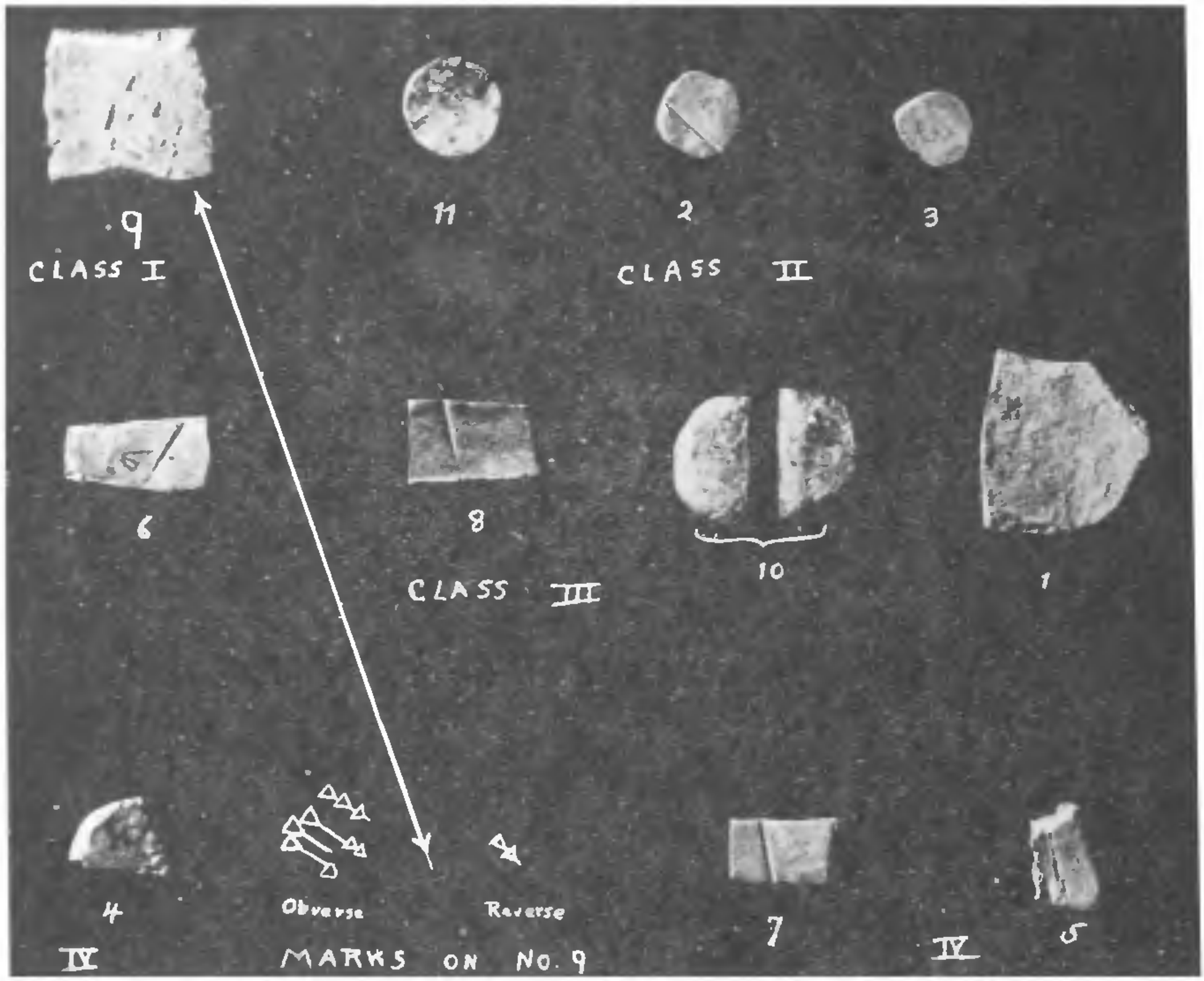
* The views expressed in this note are entirely my own and should not be taken as implicating or representing in any way the Archæological Survey of India or any of its officials. The weights of the pieces given here are as from my own observations, which differ little from the weights as taken at the Central Asian Antiquities Museum, Delhi, with one exception where the error is as much as one gram. The pieces are all "under field register No. Dk. 1341, except No. 10 which bears No. Dk. 6129, and No. 11 which bears No. 11337".

parts of the world. In parts of Burma, at least till 1897, it was the custom to take along a metal ingot when out shopping, and cut off suitable pieces to approximate weight as small change.[11] The pieces then continued to have their own independent existence.



Silver Pieces found at Mohenjo-Daro in 1926

Assyrian inscriptions mention "sealed" *minas* and *shekels* from the time of Sennacherib onwards, and these are taken by archæologists to be cast roundels, which might have resembled our Class II here. Our piece seems to be too light to be a *mina*, and is too heavy for any *shekel* within my knowledge. It is to be noted that the standards of weight varied; an accurate study, particularly of hoard material, might enable us to date the piece according to its weight-standard. The Assyrian *zuzu* continued to be known in early Christian times as a round coin of very small value, having followed the course of all coinage in debasement and lightening. The *shekel* of Josephus is about 210 grains, which is almost exactly the Mohenjo-Daro weight that amounts to four times the *kārsāpana* weight of our punch-marked coins. But this is probably insignificant, because the earlier *shekel* (= 1/3000 talent) whether Attic or Hebrew, was heavier.

The inscription on the reverse is most probably to be read as *gam* or *gur* ([4] No. 206; [5] No. 318; [6] No. 344) taken horizontally, with less probability, it would be sign No. 2, *ḫal*. The meaning is not clear when the sign stands by itself, but here it might indicate "to pour forth", perhaps the casting of the original ingot. The larger ideogram on the obverse would certainly have been taken as a mark of denomination or a numeral sign, but for the fact that three of the wedges are long. Even now it

is difficult to see what else it could indicate in view of the fact that all the wedges point in the same direction without a single cross or *u* wedge. The nearest signs to it are the *in* of Elamite inscriptions at Behistūn, and *dugud* [Barton[5] (401)]; it is certainly neither of these. I hope expert Assyriologists will forgive my amateur efforts, as also the fact that I am unable to see anything special in the signs that might permit us to date the find. The "cuneiform world" endured from at least 2500 B.C. to the Persian Empire; and we know that Alexander's conquest and the supersession of the Empire by the Seleucids did not end the use of cuneiform, inasmuch as an inscription of Antiochus Soter (280 B.C.) has been found in quite good Assyrian. Not only that, the "letters of the Ammunneer" of Philo Byblius probably refer to the Ras Shamra alphabet and would indicate that there existed people who could read cuneiform writing in very much later times, though the full bloom of the Assyrian language begins about 1400 B.C.

The primary importance of the piece, then, derives from the obvious conclusion that it was imported from the West, presumably Mesopotamia, in the way of trade. Silver deposits are not known in India within reach of the Indus Valley; it would seem likely in view of the Indus seals found in Mesopotamia that all the Indus silver was imported thence in payment for other commodities. The piece under discussion and other pieces of the find show us that we are, before the last city on the Mohenjo-Daro site, already at the beginning of a rough coinage system. A late Sanskrit word for such a cut and broken piece of silver or gold might be *kanakabhaṅgaḥ*, which is found in our lexica. But, along with the silver, the coinage system is also imported so far, because the pieces, *except Class IV*, do not conform to the general standard of weights found at Mohenjo-Daro and Harappa.

In some respects it might be possible to go further than this. There are many who assert that an intimate connection between Sanskrit and the cuneiform script must have existed, because Sanskrit is yet a "syllabic" language, our alphabets still bearing the consequent marks of intricacy; as with the cuneiform ideograms, a single Sanskrit word can mean a large number of ideologically unconnected things. Some have attempted to trace Assyrian roots and names in the Vedas, attempts originating in as well as hampered by the authors' lack of mastery over one or (as in my case) of both the languages concerned, and their disregard for the fact that we are at the dawn of modern language structure, in an age when language itself was one of mankind's rare instruments. It would, however, be possible to admit that in the very first line of the Rigveda the root *il* occurs which can be connected with the Assyrian *ilu* = god. And the cuneiform determinative *ilu* can also be read as *an*, which is the name of one of our ancient deities. But all this need not be relevant here because the root can also be taken as Dravidian, and even to-day the Brahui language is a Dravidian survival far to the north, surrounded entirely by Aryan languages. The Aryans who succeeded, perhaps ruined, the Mohenjo-Daro culture could have had their contact directly with the Assyrians in Asia Minor or Mesopotamia, as witness the Mitanni inscriptions, and the Asuras mentioned so often in the Vedas. By this, the Asura Vipracitti would be a Hittite, as citti(m) = hittim (Hebrew) seems to be a permissible equation. The Assyrian word for silver ka-as-pu might have left the Sanskrit root *kās* or *kaṣ*, to shine.

As I have said, there is no evidence that these speculations are to the point when dealing with Mohenjo-Daro.* The question might be raised, however, whether the cuneiform marks could not have been made in India. Certainly, there has been found one seal, at Ur itself, which is definitely of the Indus type but bears cuneiform marks in place of the usual linear Indus script[2] (406, 413). The evidence before us at most allows us to expect that there were some people in the Indus basin, whether indigenous or immigrants, who might know how to use cuneiform, but it could never have been a common script in India. The Sanskrit for a cuneiform seal, punch, or ideogram would be *kīlamudrā*, which is not to be found in the dictionaries, though it might conceivably occur in some obscure tantric work; Lüders,[7] however, has pointed out that the Prakrit equivalent does occur in the Niya Kharoṣṭhī

* The war has made it impossible to communicate with the leading Assyriologists. It would have been most helpful, for example, to be able to consult Hrozný's reported decipherment of proto-Hittite inscriptions on Indus seals.

tablets, where he takes it to indicate the sealed wedge-shaped documents themselves. Two Assyrian clay tablets of about the sixth century B.C. relating to the sale of two women were found in a Bombay store-room;[8] the provenance being unknown, these are probably to be taken as modern imports from some tourist's acquisition at a Mesopotamian site. Pran Nath[9] reads a wedge as *ni* on a punch-marked coin in the Thorburn collection, but this too seems doubtful to me. The one find comparable to that described here is the pot-inscription published by C. L. Fábri[10] as a Sumero-Babylonian pre-cuneiform label. But even here, the reading was contested by Heras[11] who preferred to read the complementary area on the pot itself as being typical Indus writing. So, we have before us the first, and at present the only, known cuneiform and definitely Mesopotamian writing in ancient India.

CLASS *II*.—This consists of three round pieces which have really nothing in common but their shape; they form no system of weight, and as each is manufactured by a different process, it is doubtful whether they represent coinage. There is just a chance that they were meant to find their way into a jewellery pattern, which need not, however, conflict with their interim use as coins No. 3 (2·2177 gm.) has been flattened out from a cold silver pellet or other smaller piece by means of hammer blows of considerable force, as is seen from the cracks that have developed at the edges, and the appearance of the surface. No. 11 (2·9353 gm.) is of very bright silver, but has a patch of brown lacquer-like coating that prevents a thorough examination. From its shape and general appearance, it must have been cast to size and then lightly worked over. No. 2 (4·3108 gm.) has been trimmed from a larger silver plate, the corners being neatly rounded off. The only mark it bears is the common chisel-mark or incision.

CLASS III.—This can be taken, roughly, to form a system, though the system cannot be associated clearly with any known Indus weights. The basis might, at best, be connected with the Paila coins, about which I have not at present sufficient information for a definite statement; if the coins now in the Lucknow Museum become available for study at some later date, the point could be settled. The nearest pieces in this group are too heavy for the Taxilan "long-bar" coins. It must be kept in mind that the standard is only roughly followed; but it would seem to be a foreign standard so far as can be judged from the evidence. No. 6 (2·8867 gm.) is cut and broken off from a thin plate, rather like the later punch-marked coins in appearance, but too light for the kārsāpaṇa. The sole mark is a chisel mark on the face. No. 8 (5·8353 gm.) is similarly manufactured, but with only one rough edge, one chisel mark on face. No. 10 actually happens to be two pieces made by cutting a round, fairly neat, well-filed piece almost exactly in two with a blunt cold-chisel. It is described as "broken", on the DGA's containing envelope. This might denote completion of the fracture after excavation, but the original intention of cutting the piece in two is in any case obvious. It is also clear that whoever did the cutting had had plenty of practice, inasmuch as the two pieces weigh 5·9039, 6·0720 gm.; an excellent dichotomy, considering the bluntness of the tool. Finally, No. 1 (19·4787 gm.) is apparently half of a still bigger piece, the cut edge having been made smooth. The system of weights is apparently on the scale of 1, 2, 2 + 2, the last being close to seven units, which does not coincide with the dual Indus system of increasing weights. Perhaps, the last piece should not be included here at all.

CLASS IV.—These three pieces are weighed on the Indus system, and if there be any "precursors" of the punch-marked coins in the pieces sent to me, they can only be these. These are all from one find (Dk. 1341), seem unfitted for use as jewelry without further shaping, and the weights belong approximately to the Indus Class D, being: No. 4 = 3·3576 gm., No. 7 = 3·7025 gm., No. 5 = 3·9282 gm. The first is a sector from a round piece, the second from a plate cut off after several trial attempts; the third also trimmed from a plate, but with one edge probably circular in the source. The fact that claims our attention here is that these are significantly cruder (by the *z* test) than the Mohenjo-Daro Class D weights or earlier Taxilan kārṣāpāṇas; and also significantly heavier than both by the *t* test. There are two interpretations possible: that the pieces represent purchases of silver to an approximate Class D weight; or that they were to be smoothed down at a later date to the precise weight, having had a little

margin left and in fact as little margin as possible with fairly clumsy cutting tools. If the latter explanation is accepted, the conclusion must also be taken that we are already beginning to see bits of a precious metal trimmed to a standard weight, hence the beginning of a coinage system. In any case, the coinage that came later must have originated in some such way, if this be not its immediate origin.

The later developments are quite clear. Even after the destruction of Mohenjo-Daro, which is entirely a trade city as shown by its fine weights and poor weapons, the traders persisted, and continued to use the very accurate weights of that period. The first marks were traders' marks, such as are seen on Persian sigloi, and the reverse of the punch-marked coins of the pre-Mauryan age. This is shown clearly by one coin published by the late Babu Durgā Prasād.[12] This coin is blank on one side like our Mohenjo-Daro pieces, but the other contains no less than thirteen small marks, similar in type to those known as the later "reverse" marks. For the earlier Taxila hoard I have established these marks[13] as having been regularly placed in time, with a loss of about 0·2 grain weight per mark. Moreover, the newest coinage of the earlier Taxila hoard, B.E.2, shows that if a single standard prevailed for those coins, it must have been almost exactly 54 grains at the time of issue. So, Durgā Prasād's coin, weighing (according to him; I have not been able to check the weight) 105·75 grains would have been worn down from the 108 grains double-kārṣāpāṇa, particularly as the central one of the 13 marks seems to me to be an issue mark.

My contention is that the manufacture of coins continued to be the traders' function for a long time after the Indus period; that the small marks were put on according to a system generally understood at the time by those who handled the coins most frequently. It follows from my previous work that the traders (or the Vaiśya caste) were very accurate in their workmanship, and gave good value.

At a *later* period but not later than the sixth century B.C., the Kṣatriya steps in as the king who claims the royal prerogative of stamping his own marks on the coins. The punch-marked coins then begin to have larger obverse marks, usually five in number (four for the Paila coins), and are issued with a blank reverse. The Mohenjo-Daro accuracy still persists, the trader still continues to stamp on his own small reverse marks as per his own checking system, till the Mauryan period. This ushers in coins characterized by the crescent-on-arches mark on the obverse, and the system of traders' reverse marks disappears very soon, being replaced by a single large reverse mark, such as the "Taxila mark", or some other characteristically Mauryan stamp. The superb accuracy of the weighing is also lost, and the coins have much more copper than before. Some of my critics wonder at this cruder technique, which seems unlikely to them in view of the *Arthaśāstra* and the fine sculpture, architecture, epigraphy of the Mauryan era. I prefer to form my judgment from the coins themselves. As a matter of fact, the present year in India is certainly not inferior in productive technique to any of its predecessors; but, due to pressure of increased trade and a corresponding increase of the need for coinage, along with a certain amount of hoarding caused by the war, the new rupees will be found inferior in minting to the older ones. At least, they contain more copper (an increase from $^1/_{12}$ to ½), and the varience at the time of minting[15] is, to the best of my knowledge, much greater for the George VI than for Victoria, Edward VII, or George V rupees. The parallel explanation is undoubtedly that the Mauryan conquests opened up entirely new regions; the old, limited, slow, cumbrous trading system between India and Mesopotamia must have vanished against the pressure of a rapidly increasing volume of trade in the new areas opened up in the south. At any rate, the primitive tumuli, the pāṇḍukulīs, of the southern part of the peninsula survived so late as to contain coins of Augustus, not to speak of our punch-marked coins. Not only that, in such southern hoards as I have been able to study, the proportion of Mauryan coins is very large[16] some hoards of over a thousand coins apparently consisting entirely of punch-marked coins of the later Mauryan period or their imitations. This can mean only one thing: that coinage as such was virtually unknown in the south of India before the Mauryans. In the north, we rarely get a Mauryan hoard of any considerable size unmixed with pre-Mauryan coins. The later Taxila hoard of 168 coins is purely Mauryan (excepting one coin of Diodotos),

though so crude in fabric as to be suspected as a forgery; and all but five coins are in mint condition, which indicates some unusual circumstance attending the deposit.

Thereafter, we come to the period of cast coins, which nevertheless retain some of the earlier marks. Local and transient weight systems also develop, and the unifying influence of the trader is entirely lost, probably because of the development of large kingdoms at war with each other, each with its own provincial culture and language. Indian numismatics thereafter becomes a branch of epigraphy.

Nevertheless, in closing this note, I wish to point out the necessity of studying *hoards* of coinage as a whole and for every period if we are to reconstruct the lost economic and political history of our country from our unusually meagre and conflicting records. For example, from a study of the earlier Taxila hoard, I have been able to show that the Taxilans enjoyed comparative economic stability for at least sixteen and probably twenty indictions, say two centuries or more. But a great deal more can be said from the mere structure of the hoard. Of its 1175 coins, 1059 were exactly of the type found further east with maximum density at or near the ancient Magadhan Kingdom; 79 were minute coins, the small change of the day, and might have been local; as also the 33 "long-bar" coins, not found in Magadha, which are close to being double-sigloi. Just four more coins were found in the hoard: two of Alexander, one of Philip Arrhidaios, and an unidentifiable Daric (siglos). This shows quite clearly that Taxila belonged to the Indian, Magadhan, economic sphere at a time when it is supposed to have been a part of the Persian Empire, or at least in the Persian political sphere, since the conquests made by Darius I. The balance of trade, moreover, was in favour of Taxila, the coefficient of survival for currency being ·71 for the currency so regularly imported from the east. Therefore, after Alexander's invasion had swept away the stronger tribes of the Punjab that acted as buffer states, a Magadhan conquest of Taxila was inevitable. Therewith must have followed the doubtful status of a frontier dependency to replace what had essentially been a center of exchange between two vast trade regions, and the Taxilan economic advantage must have been lost. This would explain the revolts that are referred to as having occurred at Taxila, one of which A s o k a[17]—apparently—had to quell as viceroy; and the speedy ruin of Taxila following the Mauryan conquest. But without the hoard material, we must always remain in doubt as to the true significance of our literary sources. Just as a race has to be studied by taking a fairly large sample of its representatives, so also the coins left by a vanished age must be studied by looking at their weight and chemical composition *in a group*. A single coin is just about as representative of the culture as a single individual of the race.

I am grateful for Dr. S. M. Katre's revision of the proof.

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[1] Archæological Survey of India, *Annual Report*, 1925–26, pp. 72–98.

[2] John Marshall, Editor, *Mohenjo-Daro and the Indus Civilization*, London, 1931, 3 vols.

[3] E. J. H. Mackay, *Further Excavations at Mohenjo-Daro.*

[4] J. Rosenberg, *Assyrische Sprachlehre u. Keilschriftkunde*, 2nd ed.

[5] G. A. Barton, *The Origin and Development of Babylonian Writing*, Part II, Leipzig and Baltimore, 1913.

[6] G. Howardy, *Clavis Cuneorum*, London, Leipzig, Kopenhagen, 1933.

[7] H. Lüders, *Die Śākischen Mūra*. Sitzb. Preuss. Akad. Wiss., 1919, Phil.-Hist. Klasse, pp. 734–66, particularly p. 742.

[8] Tablets at the Bhandarkar, O. R. Institute. See *JAOS*, 1920, **40**, 142–144.

[9] Pran Nath, *Indian Historical Quarterly*, 1931, **7**, Supplement, 14.

[10] C. L. Fábri, *Indian Culture*, 1936–37, **3**, 663, 673, plate.

[11] H. Heras, *Indian Historical Quarterly*, 1937, **13**, 697–703.

[12] Durgā Prasād, *Journal of the Asiatic Society of Bengal*, 1935, Numismatic Supplement No. **45**, 13, Plate 7.

[13] D. D. Kosambi, *New Indian Antiquary*, **4**, 1941.

[14] R. C. Temple, *Indian Antiquary*, 1897, **26**, 160–162, *et al.*

[15] My own observations show that the variance of the George VI (1940) rupees is not less than that of George V rupees twenty-three years in circulation, *i.e.*, of the order of three to four times the former minting variance. The legal remedy seems to have been relaxed to more than twice its former value of 1/200.

[16] From a letter of Dr. K. N. Puri, this seems also to hold for his Rairh finds in Jaipur State.

[17] *Divyāvadāna*, (ed. Cowell and Neil), p. 371 seq.