

HOW TO KILL A RHINOCEROS IN ANCIENT INDIA – AND WHY

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The Copper Hoards (CH) are composed of unique weapons and utensils cast in copper and commonly used at a certain stage in time, roughly the middle of the second millennium BC, centred in the Gaṅgā-Yamunā Doab region. The primary question is, what were the utensils used for? Other questions are whether this period also saw the authors of Vedic texts in action, and whether these priests were acquainted with – or even involved in propelling – the CH or not. Another uncertainty concerns the complete disappearance of the utensils after a seemingly short period.

The paper proposes that the CH implements were weapons used against large wild animals in the Madhyadeśa, where a large jungle separated the fugitives from the late Harappan phase, together with tribes of Vedic descent, from the prācyas, the peoples in the East. With its animals, the jungle had served as an effective barrier. But once the animals were eliminated with the help of foreign metal specialists, the Gaṅgā-Yamunā Doab could be settled and those groups formerly using western pottery could proceed eastwards towards Bihar. Among the animals, the rhinoceros posed one of the greatest dangers, and the so-called harpoon was specially designed for its elimination. This weapon was known to Vedic authors, who even called it “vajra” on rare occasions.

ETHNOGRAPHIC AND POLITICAL BACKGROUND

The second millennium BC is often referred to as the “dark period” of Indian history. Darkness extends between the last flowering of the Harappan Culture on the Indus on the one hand and the first legible literary documents of India, the texts of the Veda, on the other. A direct connection of any kind between these two ends is usually denied.

One set of scholars, mainly in the West, assumes that Harappa dissolved before the Vedic “Aryans” moved through a depopulated Indus valley into the plains of northern India. In contrast, Indian scholars often envision a gradual change from one era to the other. This idea was given wings

when the excavations at Kalibangan¹ on the Ghaggar river, the former Sarasvatī, yielded material that evidenced a kind of intermingling between late Harappans² and newcomers with Vedic habits.

One of the main arguments for a gradual fusion concerns pottery. East of the Indus Valley and west of the Ganges-Yamunā Doab, numerous pottery items from the late Harappan Culture were found that resemble the pottery from the Harappan Culture in terms of shape and firing technique. In some places, this “late Harappan pottery” is mixed with Painted Grey Ware (PGW), a type of pottery that differs greatly in terms of technique, shapes, and decorative style. This PGW was most likely the standard tableware of people of Vedic affiliation³ who mainly spoke Sanskrit.

A third group is often attributed to this aforementioned dark period. It produced a considerable quantity of elaborately cast or forged copper tools, found mainly east of the Yamunā and Ganges rivers, in places where no pottery sherds were found, or, worse, in places where so-called Ochre Coloured Pottery (henceforth OCP) was discovered, which was sparse, and supposedly of poor quality. The copper implements are often found individually and in unusual places, leading to the construction of a kind of “culture”, the Copper Hoard Culture (henceforth CHC). Its connection to the Late Harappan or PGW culture is controversial.

The tableware of the groups with Harappan traditions is clearly older than PGW. The term “late Harappan” was quite broad and is now even more broadly defined as an umbrella called “Bara-OCP complex”, named after a find-place near Rupar (Uesugi & Dangi 2017). One of the best pottery experts, A. Uesugi (2018b), found reasons to associate numinous OCP ware with the Late Harappan tradition, thus merging two strands into one.⁴ In this way, only two pottery groups remain, Bara-OCP and PGW, facing each other and linking, in a way, CHC to the late Harappans. Accordingly, there are no reasons to establish a relationship between CHC and PGW. To better understand the situation, we would need to know what the CHC objects are used for.

In 1987, Harle and Topsfield (1987: 4) summarised the situation: “The principal uncertainty about the copper hoard objects remains their use; their excessive weight and often size would point to a non-utilitarian use, ritual perhaps or as objects of exchange or status symbols.” The essence of this view was already expressed by Paul Yule (1985a: 104).

I would like to show in the following that hunting, or rather the elimination of large threatening animals, was the main task of the Copper Hoard (henceforth CH) phase, that came to an end after having achieved its aim to a considerable degree. I will argue that the activities of the CH movement were led by the Late Harappan tribes and accompanied or rather witnessed by the users of PGW, with whom were the authors of respective Vedic texts, who mention the CHC harpoon. This suggests that the consumers of both types of pottery, Bara ware and PGW, were acting as neighbours, since both their pottery spread with the progress of CH implements.

1 See Lal et al. (2020: 80ff.), with a triangular terracotta cake (*kapāla*), used for baking *puroḍāṣa*, one of them showing a drawing that blends a Harappan horned deity with the outline of a sacrificial *vedi* (Lal et al. 2020: 1233–1236; Parpola 1987: 324, “K-119A”), from the late phase of level II. I would like to thank Asko Parpola for help with the Jaiminīya sources, literature, and contacts; Johannes Beltz of the Rietberg Museum, Zürich, for permission to reproduce parts of the painting of Bishan Das, Fig. 4; Akinori Uesugi for a printable version of his map on PGW sites; and an anonymous peer for suggestions for improvement.

2 These settlements with “late Harappans” were already inhabited by Harappans in the mature Harappan phase, using the standard stone weight; cf. map in Rahmstorf 2020: 80.

3 See Uesugi 2018a; 2018b; Uesugi & Dangi 2017.

4 Uesugi (2018b: 11): “The Ochre-Coloured pottery (OCP) that have been identified in the Gaṅgā-Yamunā Doab and the western part of the Gaṅgā valley is a part of the Bara pottery sharing many elements with the latter. Thus, this early second millennium BC can be regarded as a phase of expansion of the Bara-OCP complex towards east. This expansion of the Bara-OCP complex can also be seen in the distribution pattern of the Copper Hoards.”

I will also argue that the CH implements were used to colonise the forest areas of northern central India. Harpoons were needed to eliminate dangerous animals. Thus, the exemplary harpoons, supposedly useless for practical purposes, may have played a central role in the extension of early Iron Age India.

The dangerous animals were wild bull, elephant, tiger, and rhinoceros. Apart from these mammals, the crocodile poses a danger of its own. We will deal here only with the rhinoceros, once found from Gandhara to Assam.

THE INDIAN RHINOCEROS IN THE WILD

There is a painting (Fig. 1) in a rock shelter near Robertsganj, Mirzapur, close to the Son river (Tewari 1987), which has been known since 1879 (Cockburn 1883). We see people collectively killing a rhinoceros. More than once their weapons were compared to the CH harpoons because of the barbed tips. However, the comparison was said to be inaccurate, as a true harpoon has a detachable tip and as the standard CH harpoon is blunt (Fig. 2) and therefore cannot penetrate the animal's skin. Furthermore, the location site of the rock painting is outside the distribution area of this CH instrument, which lies further north (Yule 1985a: 104). We will see that all these counterarguments can be refuted.



Figure 1 Painting on a cave wall 28 km south of Robertsganj showing a group of hunters with barbed spears thrust in a way described in the Satapathabrāhmaṇa. See Tewari 1987: 27, Fig. 2.

There are two sorts of rhinoceroses in northern India, the large *Rh. indicus* and the smaller *Rh. sondaicus*. Both have only one horn.⁵ The larger species still lives in the Terai, while the smaller species has been found in the Sunderbans, in Assam, and further south in Burma. Apart from the size, the shape of the mouth, and the number of teeth, the two families can be distinguished by the bumps on their skin. The large animal is covered from tail to neck (Fig. 3a), while the smaller one has fewer bumps, which can look square and mainly cover the skin above the thighs (Fig. 3b). The difference was known to the artists who created the seals of the Harappan

⁵ A third species with two horns (*Rh. sumatrensis*) lives in the far eastern parts, Burma, and Thailand, and is never depicted in classical India.



Figure 2 Example of a Type II harpoon head with a blunt tip, inwardly curved barbs, eyelet, and end hook, as found in the upper Doab. For the type and examples, see Yule 1985a.

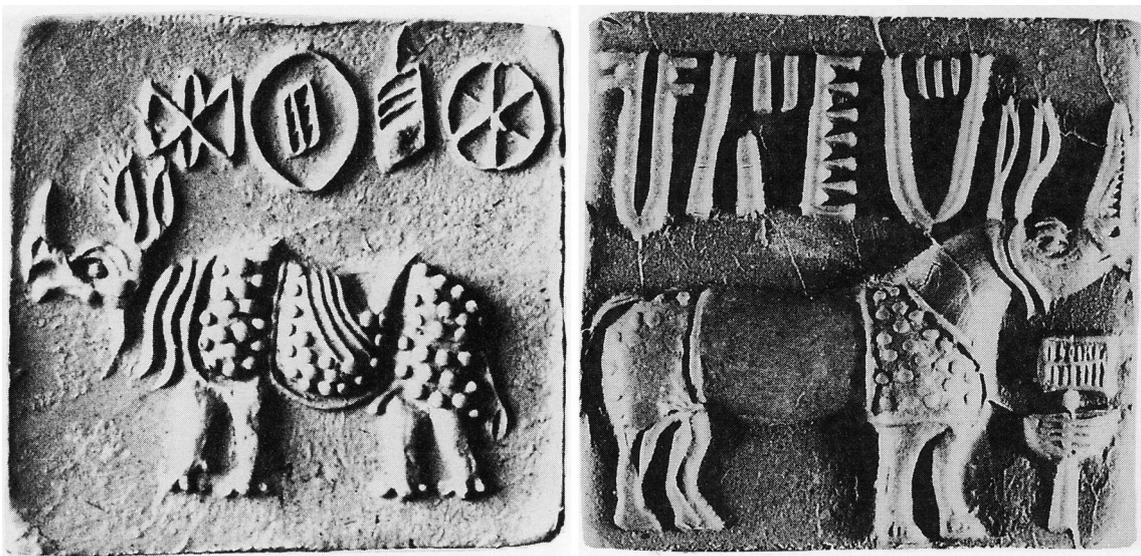


Figure 3a & 3b Seals from the Harappan Culture depicting the *Rhinoceros indicus* with incrustations up to its neck and the *Rhinoceros sondaicus*, smaller and with incrustations only above its legs; both are from Mohenjo-Daro (after Parpola 1991: 125; M-1134a, M-1135a).

Culture. The two species are also distinguished in Sanskrit. One is called *parasvat*, the other *khadga*. In an extensive Vedic list of animals that serve as scapegoats,⁶ both appear together, with the *parasvat* being associated with “impaired development” (*asamṛddhi*), while the fate of the larger *khadga* is, for good reasons, “injury” (*ārti*).

In the sixteenth century, when Babur invaded India, he saw masses of (unspecified) rhinos “in the Parashāwar and Hashtnagar jungles”, that is in Gandhara, and again he met large numbers on the Ghaghara river (Dale 2004: 362).⁷ He hunted them with bow and arrows, but bow and arrows are not the standard weapons. An illustration showing Babur hunting (Fig. 4)

6 The *pāpmano vinidhayah*, contained in Baudhāyanaśrautasūtra 2.5, edited with commentary by Kashikar (1970).

7 These and other reports on Western habitats are collected in H. Yule (1866, I: 194, “page 18”). Babur calls the river “Saru”, while Dale (2004: 362) refers to it as “Gogra”. The identification is certain when Dale (2004: 444) speaks of the confluence of the Son, Saru, and Ganges, which is just upstream of Patna. The river which is today called Ghaghara (not to be confused with Ghaggar) follows the middle line between the Gaṅgā and Gandakī.



Figure 4 Babur on horseback hunts rhinos in Gandhara on 10.12.1526, supported by hunters who attack the animal from behind. Painter Bishan Das, around 1590. Courtesy of Rietberg Museum, Zürich (acc.no. RVI 1800).

is closer to reality. Alongside Babur, we also see a helping horseman inserting a spear into the poor animal's anus. Babur knows this weak point: "They say that an arrow will easily pierce his hide in some places." Other versions of the same book leave no doubt as to what is meant by "some places", namely the unprotected rear end.⁸

My first and fundamental point is that the method of targeting the anus of the hunted animal is age-old and not confined to Ancient India. The intention certainly is to damage the intestines of the game.

The oldest evidence of this hunting technique dates to the Magdalénien (*circa* 18,000 to 12,000 BC), which produces numerous depictions of the two horned rhinoceros in France (Nougier & Robert 1957). In many cases, the body of the animal is attacked with darts. On some paintings, darts seem to have entered the anus. In one case from the cave called *Les Trois Frères*,⁹ the rhinoceros is hit in the belly and the anus, and a big undefined mass of material hangs out of the latter. The hunt for a bull from the same period found in Lascaux shows what that mass was all about (Fig. 5).¹⁰

A bull is hit, stops, and turns its head backwards, where we see that a spear has entered its anus and its bowels are hanging out. The spear has a clearly recognisable barb. In front of the animal, we see a bird on a pole and a human lying diagonally on the ground. This scene is often used as evidence of a hunting magic effected by shamans. But the picture shows something more profane: the bird and standing man are dummies. The bull has been lured into attacking the object it thought was a human. When it stands still and inspects its supposed victim, the

8 All details can be found in Rookmaaker 2024: 129–148.

9 At Montesquieu-Avantès, Ariège, 50 km NW of Andorra.

10 At Montignac, Dordogne, 135 km east of Bordeaux. Just left of this scene, a rhino is depicted.

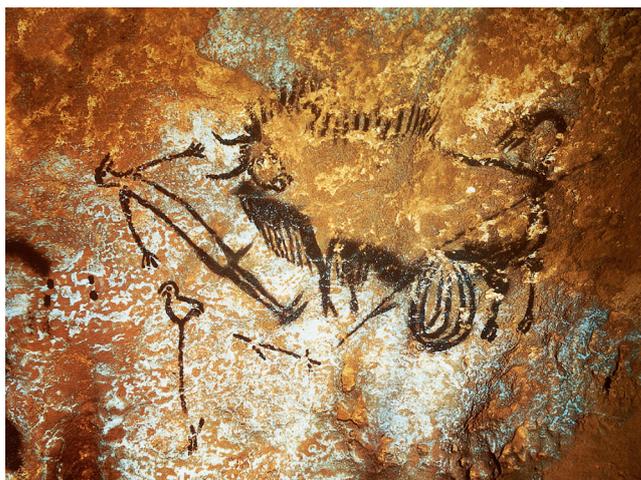


Figure 5 The end of a bison hunt, depicted in the Lascaux cave, *circa* eighteenth millennium BC. The bison is struck in the rear, its entrails hanging out. Creative Commons.

spear is thrust into its rectum. In this regard, we can return to the Mirzapur rock painting (Fig. 1). Here, too, a man is hurled through the air, whether real or fake, we do not know.¹¹

This method, pouncing to attack the intestines and genitals, could have been copied from groups of dogs, which, at least in the savannahs of Africa, attack a deer from all sides, biting the legs and the throat, while one of them jumps to the anus, runs away, and pulls out the intestines.¹²

From antiquity, I have only one depiction from Crete (Fig. 6), around 800 BC, which shows two lions attacking a bull, one from the front and a second one from behind, pulling out its intestines. Other animals painted with a straight weapon in their anus include horses in Lascaux, but similarly treated horses and bulls are also found in India (Pandey 1967).

The method of attacking an animal simultaneously from the front and from behind was also used in ancient Greece in the story of the Calydonian boar (Fig. 7).

On this vase, called the *François vase*, a man named Antaios had tried to eliminate this beast and was run over in the process. Two other heroes, Peleus and Meleager,¹³ took on the task and were assisted by two men, Polydeukes and Castor, who plunged a spear into the boar's anus. That was the end of the animal. Another vase painting from the Louvre¹⁴ shows only the hind part of the Calydonian boar, with spears hitting the back and the genitals. These examples should suffice¹⁵ to show that the killing of game by attacking from behind was known and practised for many millennia all over the ancient world.

Now we can turn to the so-called Type II harpoons (Fig. 2) and examine whether they were suitable for a similar procedure. It is obvious that the bluntness of the weapon serves a purpose:

11 Rookmaaker (2024: 117a) got everything wrong, expecting a wooden harpoon “with stone implements” from Mesolithic times.

12 This can be seen in many wildlife videos on YouTube.

13 Pinault (2022: 238–239) explains how the latter part of the name Meleagros could be traced back to an Ilr or PIE **ṛáǵ-ro-*, related to the Vedic *vajra*. This reminds of the *vajra* as described in ŚB 3.3.4.14, clearly of the same shape and nature as our “harpoon”.

14 Laconian black figure cup, *circa* 555 BC. Louvre, acc.no. E 670.

15 For more Indian material, see Bautze 2024: 180, 183.



Figure 6 Bronze shield, Tomb of the Warrior, Eleutherna, Crete, *circa* 800 BC. Courtesy of Site Museum.



Figure 7 Polydeukes and Castor attack the Calydonian boar from behind, assisted by a dog. François Vase, sixth century BC, Museo Archeologico Nazionale, Florence. Creative Commons.

the tip runs along the course of the intestine into the anus and does not get stuck anywhere in the surrounding flesh. Inside the large mammal, the flexible intestinal walls contract and fold tightly around the barbs, such that they become entangled.

A rhino usually hides in areas covered by shrubs. An animal with such a spearhead in its anus will run for its life and race into the bushes. Now comes the function of the perforation, which can always be seen on the Type II pieces. A string is attached to the shaft of the weapon. As the rhinoceros runs through the undergrowth, the shaft detaches from the head and, because it is attached to the string, acts as a kind of anchor, clinging to every bush in its path. This anchor tears out the entrails, and the animal loses blood internally and collapses.

We see that three previously questioned aspects of the spearhead give a clear picture:

- 1) the bluntness prevents the tip from getting stuck in the skin of the rectum,
- 2) the curved barbs wait for the elastic intestines to nestle around the metal, and
- 3) the perforation holds a rope that connects shaft and point.

The three parts – tip, rope, and shaft – worked together as a hook and anchor to free the animal of its guts. In addition, the size and weight of the spearhead seem to be perfect for such a heavy animal.

This explanation makes these extremely skilfully crafted objects well thought-out objects. From this I conclude that these genuine harpoons with their detachable tip are hunting tools. This would answer P. Yule’s (1985b) first and most important question: “what is the purpose?”

As soon as most of the dangerous animals were eliminated, the production of CH appliances could be discontinued. This may explain the relatively short time for which the technology was upheld. The question remains as to why nobody seems to have had a need for such killing instruments in the pre-CHC era. I suspect that the need was there, but that two conditions had to be met. First was the decision to enter a dangerous area, followed by the metallurgical means to do so successfully. We will come back to both of these later.

HARAPPA AND THE ATTITUDE TOWARDS WILD ANIMALS

Why did it require such a great effort to move east? We can look at maps showing the settlements between Indus and the Doab characterised by yielding PGW and the Bara “Late Harappan” ware.

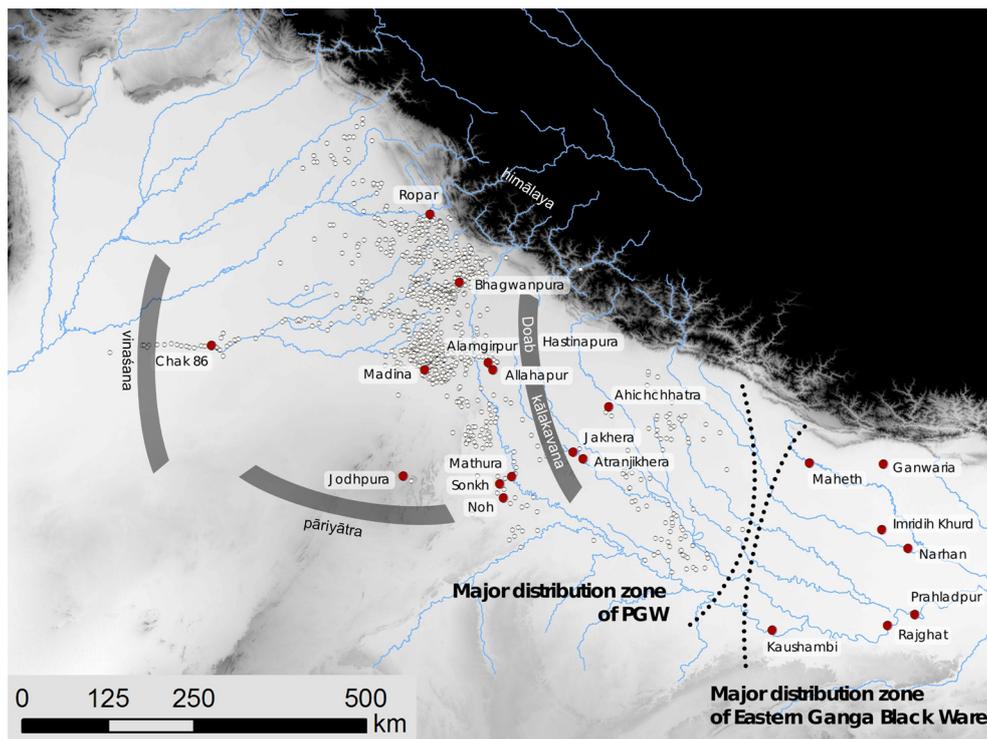


Figure 8 Map by A. Uesugi (2018b) showing Panjab and parts of present-day Uttar Pradesh as they were populated in the second millennium by people who used painted grey pottery. They amassed closer to the banks of the Yamunā and, to a lesser extent, near the Ganges. After their migration to the east, the settlement density dissipates. Superimposed on this map are the four borders of Aryāvarta, marked by the inland sea (*vinaśana*) in the west, the circular formations (*pāriyātra*), beginning with Bairāt in the south, the “black woods” (*kālakavana*) near the Yamunā in the east, and the Himalayas in the north.

The best map (Fig. 8) for PGW is found in Uesugi's (2018b) paper: we see a mass of settlements surging against the right bank of the Yamunā, against a line from Rupa down to Mathura, while the country east and north of the river looks comparatively less populated, if not empty. I call this separating line along the Yamunā the "great barrier" and assume that the many settlers west of it experienced all the negative side effects of overpopulation, growing constantly due to the influx of settlers from still further west. We see the result of the great barrier, the mass of settlements, but why are people not just moving on? They do so indeed, once they are in possession of the metal weapons of the CHC. This suggests that it was the dangerous animals that kept the settlers at bay. Such animals need woods for a habitat, and so I see a large wooded zone, starting with the Doab and extending east as far as Varanasi. Instead of crossing this jungle without the necessary equipment, it may have looked safer to keep on suffering in an overpopulated region west of the Yamunā.

Here we depend on circumstantial evidence, such as distribution maps of pottery and CHC weapons. But this is not all we can adduce. Below, we are able to add literary evidence.

After the people moved on, they established new settlements east of the Ganges. These new settlements were fewer in number than those west of the barrier, but they were larger: Hastināpura, Ahichattra, and Atrajikhera had a more urban character than Indraprastha (Lal Qila in Delhi) ever did. We believe that a new mentality was required, one that responded to a growing concern for protection from dangers known to lurk outside the settlements.



Figure 9a Four wild animals. Chimera composed of tiger (tail), rhinoceros (dotted skin), elephant (trunk), and bull (horns) on a prism. *Figure 9b* Deity in yogic posture protecting domestic animals against four wild ones. Both the prism and seal are from Mohenjo-Daro (M-571B, M-304, courtesy of Parpola 1987: 143, 382).

When it comes to attitudes towards animals, it is worth taking a look at the mature phase of Harappan Culture. There we find signs of respect and protection. The most dangerous animals are gathered on a famous seal (Fig. 9b), which shows a sacred being in a yoga posture protecting the domestic animals in the lower field. Above it, we see a rhinoceros, an elephant, a wild bull, and a leaping tiger. Three of these most dangerous herbivores (rhinoceros, bull, elephant) were cast in bronze in Daimadabad in a late Harappan context, together with a racing chariot pulled by domesticated bulls. The same four wild animals, as well as a crocodile, are depicted on a

terracotta prism (M-489). All four are united on a copper plate (Fig. 9a) to form a chimera, demonstrating the unity of the wild character hidden behind a multitude of forms.

As long as the Indus culture was in its “mature” phase, these dangerous animals appear on seals with food placed before them in small cribs. This seems to express a certain respect for these dangerous animals and for the deity in between them and the human world, who protect one from the other. A similar respect may have prevented an earlier intrusion of the “late Harappans” across the great barrier.

THE VEDIC *VAJRA*

The processing of metal was known to those priests who composed the Middle Vedic literature, that is, stanzas for the Yajurvedic Saṃhitās, Brāhmaṇas, and early Sūtras. We see that furnaces were known as *sūrmī* (Falk 2001), which the Brahmins did not tend for technical reasons but repurposed as a suitable means of scorching culprits in criminal trials. In one of the last Yajurvedic rites, the Pravargya, we are told how to make the *ukhā*, the crucible used to pour the molten metal with the help of two tongs. These are reused by the Brahmins to pour ghee and create a spectacular cloud of flames.

So far, all attempts to identify CH implements with objects mentioned in the Vedic texts have not led to credible results. All attempts to describe the Vedic *vajra*, Indra’s weapon, as something other than a club have also failed or not met with general approval. Famous is the work of Wilhelm Rau, who in 1974 favoured the CHC harpoon as the legendary *vajra*. Two years later, T.K. Das Gupta (1975) tried to argue in favour of the anthropomorphs, another CHC product. In 1993, in a kind of experimental Indology, I examined the anthropomorph and came to a negative assessment of its military value.

Despite all the contradictory evidence, Rau (1974: 40) had shown that at least a single passage of the Śatapathabrāhmaṇa (3.3.4.14) describes the *vajra* in terms that are otherwise used only for the arrow.¹⁶ This single text says that the *vajra*’s three components are a point (*anīka*), barbs (*śalya*), and a shaft (*kulmala*, *tejana*). Unless it is a clerical misconception, these terms cannot have been derived from a club.

This definition is singular, but it has a parallel in the Taittirīyasamhitā, where the *vajra* is again said to be dissembled in three parts (Rau 1974: 44–45), all of them being standard ritual paraphernalia. The first of the three items is the *sphya*, the sacrificial wooden sword, which is normally used to scratch an outline of the sacrificial compound into the ground. Its size, shape, and function can be compared to a standard harpoon head. Second comes the *ratha*, or “chariot”, and last the *yūpa*, sacrificial post, which looks similar in shape to the shaft of a harpoon.¹⁷ In addition, included somewhere within the three mentioned parts are the *antaḥśaras*, or “barbs within”, a fitting term for the barbs of the Type II model, inside the outline of the point continuing from the cutting edge. Problematic here is the *ratha*, the racing or fighting chariot. Rau does not explain how a “Streitwagen” can be linked to the harpoon. I do not see a comparison to the shape of a chariot, but to its construction, where the reins connect the pulling horses and the drivers stand in back, just like the speeding rhino pulls the anchor on

16 Rau’s examples for the arrow can be enlarged by Jaiminīparyadhiyāya 67, 14–17 (Parpola 2023: 207).

17 Cf. Jaiminīyabrāhmaṇa 2.117; 121: *khalevalā yūpa sphyāgro bhavaty aindraḥ* (“A *yūpa* with a *sphya* on top is used as the pole of a threshing round, for Indra”).

the string stuck in its back. Perhaps *ratha* is a general term for an intended *raśmi*, reins, *totum pro parte*, which would make the comparison more transparent.

If this interpretation is correct, then it follows that some Yajurvedic priests saw or heard about a rhino rushing off with the *vajra* inside its body. And they knew that this *vajra* consisted of three parts – point, string, and shaft – with the barbs being an additional element, an essential part of the pointed harpoon head.

The cited Vedic texts often turn some “real life” object into sacrificial correspondences. The priests did not hunt the wild animals themselves. In the end, when the prey was dead, the priests could claim to have supported the hunts through supportive magic acts. Given their solid self-esteem, they could even claim that the actual hunt would have come to nothing without their spiritual support.

In some other Vedic texts it is said that the *vajra* is cast in metal.¹⁸ We also learn that the metalworkers were satisfied if the object produced did not show any cracks.¹⁹ The fact that one end is heavier than the other²⁰ is not a contradiction but insignificant, as the weight of a club is distributed in exactly the same way. More characteristic is a string on the right side, which again is mentioned directly only in the ŚB (8.5.1.13; Rau 1974: 42).²¹ All our Type II harpoon points have a hole at the tenon end for a string, which was probably knotted to a part of the shaft, as hypothesised above.

All the particular details do not fit a club, which is generally considered to be the prototype of the Ṛgvedic *vájra*.²² They also have nothing to do with a slingshot, which has recently been proposed for the *vajra* by Walter Slaje (2022) with tempting arguments. The particular arrow-like *vajra* of the ŚB could also be meant in the Maitrāyaṇi (MS 3.2.10) and Kāṭhaka traditions (KS 21,2 = KapS 31.17). There we learn that the *vajra* was thrown with two arms, which did not move synchronously. For the action, the left hand held the throwing weapon away from the body (*apa-grah*) while the right arm propelled the object forward.²³ In this process the weapon was very close to the neck, a circumstance that may be addressed in the Kāṭhakam (10.10; Rau 1974: 43), where fear is expressed that the *vajra* could burn the neck (*grīvā apidhaksyati*).

On the cave painting from Robertsganj (Fig. 1), the hunters all hold the weapon up and away with the left arm to take better aim, while the right arm does the slinging, with the shaft of the harpoon touching the neck. Several visible moments coincide with the statements about the *vajra* from the ŚB quoted by Rau. The action is clearly different from throwing a club or spear with only one hand and arm.

Rau (1974: 45) concedes that the term *vajra* in Indo-European and Indo-Iranian times could “under certain circumstances (unter Umständen)” have denoted a different object in early Vedic contexts. But for the rest of the Vedic period he saw no other weapon called *vajra* that corresponded to the descriptions he had collected.²⁴ My approach is more limited in that I see a harpoon

18 Root *sic*, Rau 1974: 37, fn. 44.

19 *acchidra*, ‘without break lines’. Rau (37, fn. 43) overinterprets when he thinks of bubbles: “nicht blasig”.

20 PB 8.5.2; JB 3.295; ŚB 3.3.4. See Rau 1974: 42.

21 Jaiminiyaparyadhiyāya 75, 17 (Parpola 2023: 231) knows a recitation method called *vajrā*, which is equated with a *praṣṭi*, a ‘side horse’ ([*praṣṭi*]r *vajreti*). A sidehorse follows the main horses of a chariot on a string, just like a harpoon *vajra* follows the game on a string?

22 I ignore material where Rau sees a harpoon without good reason. The *praharaṇataḥ* in ŚB 3.3.4 (Rau 1974: 42) could only be rendered with ‘Stoßblatt’ after proving that this text too knew the “harpoon”.

23 Rau 1974: 43. Cf. *savyāpagrahano vai vajro* (MS, KS), *dakṣiṇāpraharaṇaḥ* (MS), or *dakṣiṇāvisarjanaḥ* (KS).

24 Because of this one-sidedness, Rau was attacked by Schlerath (1975) and more recently also by Slaje (2022), and both Rau and Slaje by Zimmer (2024).

with its cast copper point mentioned only in very few passages of the Śatapathabrāhmaṇa and some other Yajurvedic texts. The Brahmin authors reported what they had seen others do, but they did not participate in the actual work of casting the finished device.

We conclude this topic with the certainty that one of the most characteristic CH devices was known to the authors of the Middle Vedic period from personal observation.

THE SOURCE OF THE HARPOON

As suddenly as the Type II harpoons appeared, they also disappeared. There came a time when these devices were no longer needed. Dozens of pieces were collected as scrap in so-called hoards, perhaps to be recast into less bloodthirsty utensils. The hoards seem to imply that the places where they were found were not the places where the points were used. A notable example is the village of Ganeshpuri, Dist. Mainpuri, which recently yielded 77 objects in a heap, 47 of which were harpoons, all of them Type II (Patel 2022).

Foreign influence was expected to explain the appearance of utensils of a new type, with their own aesthetics and technical skill. Agrawal (1969: 118) considered South East Asia to be a possible source. Unlike him, I am of the opinion that an “independent origin” (i.e. a purely local invention) can be ruled out. Apart from first-class metallurgical knowledge, there are too many new ideas involved that are foreign to pre-CH spear heads, such as:

- 1) the use of a hook to extract intestines,
- 2) the usage of an eyelet to attach a string,
- 3) the usage of string and pole as an anchor, and
- 4) the use of a blunt point for a smooth immersion in soft tissue.

However, all of this finds parallels in Central Asia, first in the Seima-Turbino phase (starting *circa* 2000 BC) and then in the Karasuk culture, which follows Seima-Turbino around 1500 BC in southern China. Both are known for their skills in casting copper and tin bronze. The origins of the Seima-Turbino phenomenon are found north of the Tianshan Mountains, from where it spread to the east and west (Fig. 10). A way to the south was found by some descendants. At least the map in Grigoriev (2023: fig. 1) shows places reaching as far down as Bactria, while Pigott (2018) reflects on a rather donative role of BMAC on the development of Seima-Turbino. A scholarly description by Lin (2016: 256b) of the Karasuk spearheads sounds like meant for an Indian harpoon: “the spearheads unearthed in China have blunt tips rather than sharp tips, and were likely used as ritual objects rather than weapons.” Similarly, the Seima-Turbino nomads do not use their own pottery, but that of the local populations (Grigoriev 2023: 571a).

Some of the Seima-Turbino spearheads in Central Asia and elsewhere have sharp points, and most have a single strong hook at the end. In my opinion, this proves that the idea of pulling out the intestines was first applied to animals with permeable skin which allowed to push the point through the flanks. The single hook would get entangled with the intestines anyway, the broad two-faced blade would have created a wide opening, and the anchor would do the rest. In this respect, the anatomy of the Indian rhinoceros required adaptation. With a skin four centimetres thick an attack from the side is useless, no matter how pointed a spearhead may be.

An insignificant difference is that the Seima-Turbino spearheads end with a socket rather than a tenon. The CH preference probably results from the availability of large reeds or bamboo canes in India, which are hollow or easily hollowed out, while Central Asia is richer in wooden shafts which favour the socket.

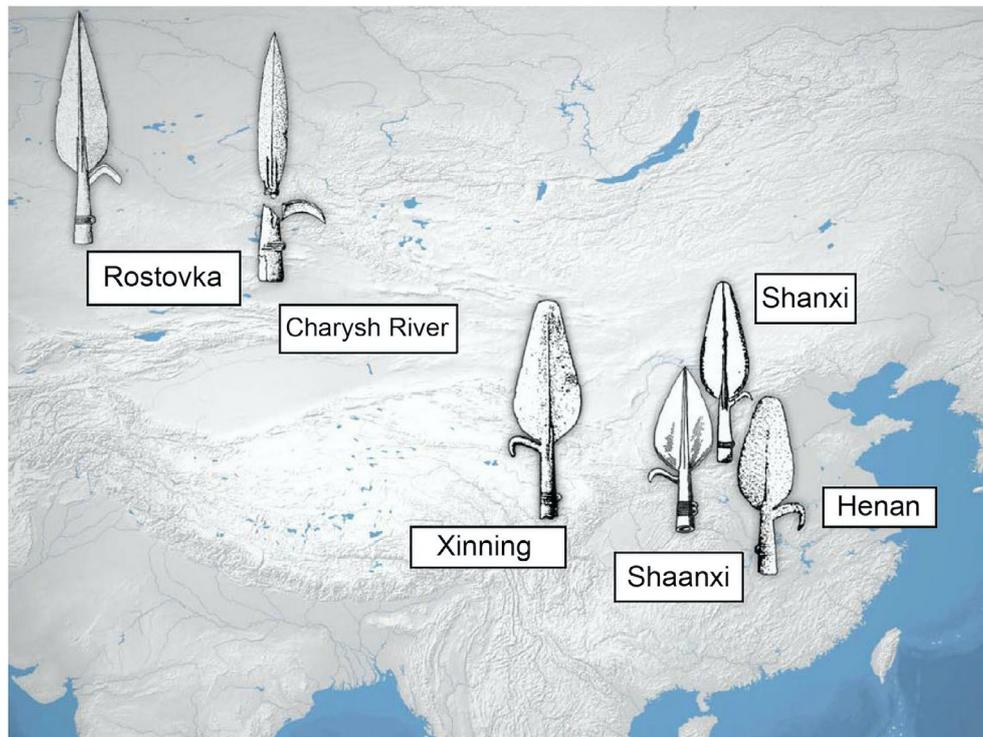


Figure 10 Selected cases of Seima-Turbino spearheads in Central Asia and southern China, displaying bluntness, hooks, and eyelets for thongs, apparently designed for a similar use as the (younger) Type II harpoons. After Rawson 2017: 379, fig. 2.

Because of the parallels with the Seima-Turbino and Karasuk objects, I suggest that the Copper Hoards should not be regarded as a culture, but appear as a phenomenon: The originators did exist, they were active, their products were in demand, their craftsmanship was outstanding, but like the creators of Seima-Turbino they have no pottery of their own, no city of their own, no graveyard of their own (cf. Pigott 2018: 139a). They seem to have disappeared along with their true metallurgical knowledge. In India, later pieces look like homemade copies on a much reduced artistic level, showing only that the particular hunting technique was maintained some time further.

Chronologically, there appears to be a contemporaneity with the Karasuk culture in south-east China, which produced the same blunt spearheads with a similar hook against the entrails. There were also rhinoceroses in this area of China at this time. I see the ideas behind the Seima-Turbino–Karasuk spearheads active in the CH harpoon and suspect an indirect drift of ideas, from specialists to casual users rather than the other way around. Together with the Middle Vedic literature, we can feel at home in the late or finishing last half of the second millennium BC. For a further chronological argument, see below.

A CHRONOLOGICAL CONSIDERATION

As shown above, Rau found only one passage in the Vedas where the *vajra* is described as being similar to an arrow in structure, tripartite with its point, barbs, and shaft, the latter called *tejana*. Maitrāyaṇiśaṃhitā (MS) 4.2.9 offers one more passage where a *tejana* alone is said to remind of a *vajra*. This shows that the author thought of a harpoon rather than an arrow, which to my

knowledge is never compared to a *vajra*. Whatever the intention, the text will be of a similar age, or slightly older, than the ŚB with its unmistakable yet singular harpoon called *vajra*. The MS passage explains why animals fit for sacrifice (*paśu*) must be “cut” (*akṣita*), and how this has to be done.

For no compelling reason, the MS passage has been interpreted as speaking of ear-marks on cattle;²⁵ yet it deals with blood matter instead, plain and simple. It says that Prajāpati, when creating the animals, feared that blood would lead to cruelty and consequently he created the animals without blood. Ears, when cut, hardly emit blood, and thus are the most unsuited body part for the topic of blood. I translate:²⁶

Prajāpati created the [sacrificial] animals, but blood he did not create. Since [originally] it was not created (*asṛṣṭa*), the name of blood is *asṛk*. He did not create blood, fearing that he would instill cruelty against the animals. It is well known (*vai*) that he who cuts commits a cruelty against animals. Since the animals were not (*a-*) mistreated (*-kṣi-ta*), they were known as imperishable (*akṣita*). This was understood as not (*an-*) cut (*-akṣ-ita*), and so the term “cut” (*akṣita*) came up. It is not so that those [sacrificial] animals which are uncut will go to the other world. Therefore, they need to be cut [or otherwise they would not die and move to heaven].

One should not cut with the shaft (*tejanī*). We know that the shaft is [part of] a *vajra*. If someone were to cut (*akṣṇuyāt*) using a shaft, he would injure (*arpayed*) the [sacrificial] animals with a *vajra*.

One should not cut animals with [an instrument made from] iron (*śyāma ayas*). Such a procedure would be cruel and not pacifying. One should place a piece of sugarcane in water overnight. This [procedure] is pleasant and pacifying.²⁷ Moreover, people say that [one should cut] with [an instrument] made from copper (*lohita ayas*), because [this method] is pleasant and pacifying.²⁸

The action behind this unique elaboration is the bleeding of animals by cutting their veins.²⁹ In principle, the cutting instrument can be made of iron or bronze, although the former material is rejected. The blood is collected in a *kamaṇḍalu*, heated, and transformed into a tasty blood sausage called *tedanā* or *tedanī*. The practice and consumption of a *tedanī* are mentioned so rarely that they were apparently temporary and soon abandoned. In the Taittirīyabrāhmaṇa (3.8.19.1–2), the blood cake was considered full of *pāpman* and was therefore offered in rituals as an offering to beings representing the underworld. The reason for consuming and offering the blood cake may have been extreme food shortages. The *kamaṇḍalu* is the standard vessel used to collect food through begging. In the present context, it is used to collect blood, as if the animal had intended to donate

25 This passage with its (unmentioned) ear-marks on cattle has been used as an argument for the practice of writing as early as the time of the Rg- and Yajurveda (Falk 1994: 264–265, § 9.2.8).

26 I disagree in a number of ways with the interpretation of this passage by Narten (1986: 205–206) and with the semantic analysis of many forms of *akṣ* and *aṣṭa* dealt with.

27 There is no rational way to cut any part of a bovine using but a piece of sugarcane. Its application is mentioned in more detail in ĀpŚS 8.4.1: While a razor (*kṣura*) is used for cutting, the sting of a porcupine or a piece of sugarcane help to keep the skin stretched, as discussed by Caland (1924: 15, fn.3). Soaking of the sugarcane will enforce its pacifying faculty (cf. *śāntir hy āpo*, KS 11.4; 24.9, etc.).

28 *prajāpatih paśūn asṛjata sā vā āsṛg evā nāsrjatāsrṣṭam vā etāt tād asnò 'srktvām krūrām paśūnām kārsyā iti vai só 'sṛg nāsrjata krūrām vā eṣā paśūnām kurute yò 'kṣnuté yād akṣitās tēnākṣitā ātha yād ānakṣitā iti śrūyānte tēnākṣitās tād āhur nā vā etām etā amūtrāgachanti yā ānakṣitā iti tasmād akṣitavyā na tejanēnākṣṇuyād vājro vai tejanām yāt tejanēnākṣṇuyād vājreṇa paśūn arpayen nā śyāmenāyasā krūrām tād āśāntam iksukāṇḍām apsū vāsayitvā tēnākṣitavyās tād dhī śivām tāñ śāntām ātho āhur lōhitenāyasēti tād dhī śivām tāñ śāntām*. MS 4.2.9. I understand the root *akṣ* of our passage as meaning ‘to cut (veins for bleeding)’; this is close to ‘stechen, ritzen, schneiden’, as suggested by W. Neisser in his *Wörterbuch zum Rgveda* (Narten 1986: 205).

29 Vājasaneyisaṃhitā 25.2 links the blood cake (*tedanā*) with the “lower throat” (*adharakaṇṭhēna*).

its blood voluntarily for religious reasons. Furthermore, this cruel act enables the animal to reach heaven. Killing by bloodletting is thus disguised as a pious act.

Two types of instruments are used. One, used for cutting, is made of iron or bronze. The other is a long stick, either the *tejanī* of a *vajra* or a sugarcane stick. The cane stick is also used for the *cuḍā* ceremony, in addition to the razor, when most of the hair on young boys' heads is removed. Caland (1924: x, fn. 26) has compiled the details. This seems to suggest that the shaft of a *vajra* harpoon could be used in a similar way as a cane to assist the man with the blade, probably to prevent the head of the cow from swinging back and forth, by holding it in position.³⁰

With regard to our topic of the *vajra*, the text conveys two things. First, cutting is described from a purely technical perspective: use copper and not iron. I associate the aversion to iron with the custom of modern Dangar shepherds, who until fifty years ago castrated their rams with knives made from freshly cut pebbles. In this way, the cutting edge was completely sterile. Iron knives were known to cause infections,³¹ as infectious germs easily accumulate on their surface. The authors of the *Maitrāyanisamhitā* did not know the diagnostic reason for this, but they may have heard enough from practitioners to know about the negative forces at work in iron.

This is the starting point for a further insight: if the authors were able to compare the effects of iron and copper, we can be sure that iron was already known at the time when composite *vajra* harpoons were manufactured. This rules out the idea that the harpoons originated in a purely Chalcolithic context. On the contrary, we must assume that this text was created around 1000 BC in northern India, when iron was already in common use.³² The end of the Bronze or Chalcolithic Age (roughly 1300 BC) therefore does not represent a *terminus ante quem* for the manufacture of the copper hoard objects. This leads us to believe that the CH phase took place towards the end of the second or beginning of the first millennium BC, when iron had become commonplace. The PGW associated with iron appeared in India around 1300 BC (Uesugi 2018a: 24), at the time when in southern China the blunt and barbed spearheads of the Karasuk culture appeared.

The passage also shows that killing and injuring animals was a dangerous business: something “unpacified” remained. It was believed that the cruelty inflicted remained attached to the object used for killing. In Vedic thinking, such negative associations always lead to poverty and illness. This could explain why the hundreds of CH objects that are still preserved were collected in certain places, not serving as scrap, even though some were broken and damaged. The hundreds of kilograms of copper could otherwise have found a good use. But objects with known negative radiation are deliberately not used outside of black magic.

THE EROTIC SIDE OF RHINO 1: THE TERM *PARASVAT*

The Vedic sources are the first to speak in comprehensible words about rhinos in India. The animal was encountered in two species, both known before to the Harappan people, as shown above. Modern zoology distinguishes between *Rh. indicus* and the *Rh. sondaicus*.³³ The Sanskrit terms are *khadga* for the larger and *parasvat* for the smaller species. It stands to reason that the *Rh. sondaicus* is the *parasvat*, as this species disappeared first from the western

30 When bleeding a cow, the Masai have one person hold its head motionless with a textile band.

31 Oral communication with the late Günther-Dietz Sontheimer.

32 See the different periods of iron use as described by Uesugi (2018a: 2), whereby the “Bara-OCP cultural complex” preceded the “North Indian Iron Age I”. The merging of the “post-urban Indus” in the west and the “Gaṅgā Chalcolithic culture” in the east could appear in a brighter light when our rhino barrier is taken into account.

33 For an early explanation, see Lüders 1942: 54, fn. 1.

regions, while the *khadga* larger species was still around. Linguistically, both terms appear to be enigmatic, with *khadga* taken as an indigenous term, pre-Indo-European; this is no wonder, since the rhinoceros is not found in the directions whence we would expect newcomers to have approached in the relevant millennia.³⁴ The term *parasvat* is a standard Pāṇinian formation, combining *paras* with a possessive *matup* suffix. But what does *paras* mean? Outside of *parasvat*, *paras* is not attested anywhere. Because of this insecurity, the animal with this name occasionally³⁵ is still taken as the wild ass, although its designation for a rhinoceros was settled by Heinrich Lüders (1942). The solution could be found in a hymn in the Atharvaveda (AV). In the three stanzas of AV 6.72 (AVP 19.27), the *parasvat* is addressed, together with the donkey and the elephant. The purpose of the composition is to provide the poet³⁶ or a client with a male organ that compares in size to the male organ of the *parasvat*, the donkey and the elephant.³⁷ There are a number of terms used in these three stanzas, all denoting the male organ (*śepa*, *arka*, *aṅga*); the most unusual is *pasas*, which has been led back to PIE **pes-ni*, related to Latin *pēnis* (EWAia II: 111). It is certainly not very daring to explain *parasvat* as a dissimulated form of **pasas-vat*.³⁸ The genital connotation is also present in RV 10.86, in the well-known Vṛṣākapi poem, which was cited, or rather performed, in the course of a marriage. Two couples are discussing which sex is more important, in general, but also when it comes to copulation. Indrāṅī holds that the female organ is the most important, while Indra opts for the counterpart. The two relevant stanzas are certainly the most sexually loaded lines in the whole collection of the Ṛgveda. Immediately following these two stanzas, the poet says that there is a killed *parasvat* stored in the compound, and there are knives and pots so that the flesh of the animal can be treated and consumed.

It seems that the festive congregation expected that the consumption of rhinoceros meat had an impact on the virility of the husband, possibly reaching dimensions addressed in the *pasas* poem of the AV. The use of parts of the rhinoceros in erotic contexts has been outlined many times (Lüders 1942; Bautze 1985), so the topic needs no elucidation here.

The Vṛṣākapi poem is a *saṃvāda* hymn, like all the others of this genre referring to sexual acts and chronologically belonging to the latest stratum of RV poetry. It starts by saying that Indra is not treated with Soma any longer. The old times are gone. The poets also complain that the marriage society is different from what the priests are used: at least these new customers try to keep up a social stratigraphy.

We see two societies mingling, one with more western ideas, sticking to Soma, and another one relishing rhino meat and preferring *surā*. The two worlds are also hinted at in stanza 20, where the desert (*dhanva*) is contrasted with the plough (*krntātram*), as if the Ṛgvedic migrants from the desert west had found a job in the east, where water has become plenty for agriculture.

34 On various names, see Parpola (2011: 11–12) explaining terms containing or resembling *gaṇḍa* as referring to the “horn” on its nose. Already on Harappan seals the animal is depicted with boils and bubbles above its shoulder and hip, and in the case of the larger *khadga* also in between, which distinguishes it from all other large game. Therefore, Tamil *kāṅṭā-mirukam* and *kaṅṭakam*, and Malayalam *kāṅṭāmr̥gam* (Parpola 2011: 12a), could as well be derived from an IAr *gaṇḍamr̥ga*, ‘animal with boils’.

35 Meulenbeld 1999 *HIML* IB: 35, fn. 526 [wild ass].

36 The AVP makes the poet speak for himself, while the AVŚ replaces every *me* with *te*, so that the magician can cite the stanzas to the advantage of a customer.

37 Stanza 2cd (≈AVP 19.27,15cd): *yāvat parasvataḥ pasas tāvat te vardhatām pasah*.

38 Lüders (1942: 56) considers *paras* < **pelos* “Falte”, referring to skin folds.

The refrain *viśvasmād indra uttarah*, “higher than anything is Indra”, reads like a last concerted action to save a tradition in a foreign ambiance.

Indrāṇī, otherwise almost non-existent, appears in this poem as a representative of a more gynocentric tradition. The poet’s sympathies lie with Indra. It seems as if two disparate groups, soon to fight each other, are trying to devise a new marriage ritual that does justice to the traditions of both sides.

THE EROTIC SIDE OF RHINO 2: THE *KHAḌGA* ON A GUPTA PERIOD GOLD COIN

Examples of the connection between rhinos and sexual ambitions may have existed since ancient times in India and China, based on a fact that is obvious to everyone: the animal has something erect on its nose.³⁹ And the principles of analogy – the basic principle in pre-modern therapy – require something erect if an erection is desired. Modern Chinese culture still adheres to this ancient idea, but something similar was also true in Ancient India. G. von Simson (1986: 217) has pointed out the connection between *śṛṅga* ‘horn’ and *śṛṅgāra* ‘erotic feeling’. I would like to add another case.

There is a gold coin from Kumāragupta that has been known since 1946 (Fig. 11). It shows the king on horseback approaching a rhinoceros and wielding a sword. Killing this animal with a sword is not easy. Therefore, we are not surprised that the sword is pointing at the animal’s anus, with the king apparently aiming at the now well-known weak spot (*marman*) in its skin. In the coin legend, the king is referred to as *khaḍgatrātā*, which can be someone who saves people from the rhinoceros (ablative *tatpuruṣa*) or saves them with the sword (instrumental *tatpuruṣa*), or it can mean ‘the saviour of the rhinoceros [land]’ (genitive *tatpuruṣa*), parallel to *rājatrātā* on the coins with the elephant rider (Browne 1997: 38).

Seemingly unrelated, the reverse side shows a naked woman. To date, she has been unanimously regarded as Gaṅgā,⁴⁰ probably because a *makara* stands next to her, holding up a lotus flower. The *makara* is the mount of Gaṅgā, but the *makara* is also the allegory of Kāmadeva, the god of love in general. I agree with B.N. Mukherjee (1955), who interpreted the rhinoceros as an allegory for Assam, Kāmarūpa, and the coin as a sign of the announcement of the reconquest of Assam by Kumāragupta. Apart from Sanjeev Kumar (2017: 326), this geopolitical explanation has found no support in Gupta numismatic research. Mukherjee also linked the *makara* with Gaṅgā and Gaṅgā with Pātaliputra, and here I differ and refer to the naked woman and argue that Gaṅgā is a deity who is never depicted naked. We can compare the true Gaṅgā with the so-called tiger-slayer coins of Kumāragupta I. There, the deity stands with her feet on a *makara* (Kumar 2017: 330). This true Gaṅgā is clothed, not naked,⁴¹ whereas our lady shows her private parts.⁴² Furthermore, the real Gaṅgā wears a halo, holds a flower in her hand, and greets a *garuḍa*, which symbolises the king. The naked lady on the rhinoceros coin, on the other hand, has no halo, stands on the ground, and stretches her hand towards the *makara*. There is

39 One of the later names for rhinos is *vadhrīnasa/vardhrīnasa* and can refer to an animal as ‘whose nose is castrated’ (i.e. whose nose has lost its horn, probably in battle).

40 See, e.g., Mukherjee 1955: 180; Altekar 1957: 198; Raven 2019: 207a.

41 Raven (2019: 207a) has the impression that “the ends of her veil-like garment can be seen between her right leg and the head of the Makara mount on certain well-preserved coins”. However, such ends do not exist and do not need to exist if the lady is regarded as Kāmarūpā rather than Gaṅgā.

42 This is considered by Raven (2019: 207a) to be “so thin clothing” that “the nipples of her breasts” and “the pubic area” are visible. In all cases where the clothing is truly transparent, some lines indicate its existence; in the case of Kāmarūpā, there are none.



Figure 11 Gold coin of Kumāragupta I (415–455 AD) issued to celebrate the reconquest of Assam. The legends read *bhartā khaḍgatrātā kumāragupto jayaty anisam – śrīmahēndrakhadgaḥ*, calling the king ‘husband, saviour’ and ‘victor’, and the land ‘Rhino of the king’.
Image: <<http://www.thaiprivatehand.com/>>.

a servant with a parasol, and all interpreters claim that this parasol is held over the naked lady. However, we see that the royal parasol is held directly over the *makara*, who is holding a lotus flower towards the woman. This means that in this case, the *makara* is the king, or rather, the king who is depicted as *makaradhvaja*, *makaraketu*, alias *kāmadeva* (*Amarakośa* 1.1,56), which explains why Kumāragupta refers to himself on the front as *bhartṛ* ‘husband’: Kāmadeva is the perfect partner for Kāmarūpā. The inscription above the naked woman reads *mahēndrakhadgaḥ*, which means that the land of the rhinos belongs to Mahendra (i.e. Kumāragupta), in a genitive construction *tatpuruṣa*.⁴³ As in the cases of coins on which we read *mahēndragaja* or *mahēndrasimha*, the coins seem to celebrate the conquest of a particular country. There may be a number of features that we do not yet understand, but it is clear that the rhino hunter who kills a *khaḍga* (that is, the ‘rhino’ ruler) with his *khaḍga* (‘sword’) and liberates the *khaḍga* (‘rhino land’) represents a highly poetic legend, which uses all sorts of *śleṣa* (‘wordplay’) and at the same time associates the rhinoceros with sexual potential and eroticism, as was done almost 2000 years earlier in the Śatarudrīya sacrifices, when a small rhinoceros was sacrificed to the feeling of love (see, e.g., *Taittirīyasamhitā* 5.5.21.1: *kāmāya parasvān*).

CONCLUSION

In sum, it has been shown that the CHC harpoon is perfect for killing a rhinoceros by impaling the animal through its rectum. The shaft is attached to the metal tip by thongs, and when it drags behind it will remove the victim’s intestines. The object has its technical roots outside India.

43 Mukherjee (1955: 181) understands *śrīmahēndrakhadga* as ‘the rhinoceros killed by Mahendra’, a grammatically daring explanation that has nothing to do with the image, while my interpretation is based on the idea that the land and the ruler share the same name. What we read is what we see: Kāmarūpā reaches out for the hand of Kāmadeva under his umbrella.

The Seima-Turbino and Karasuk cultures in Central Asia and southern China developed blunt points and hooks somewhat earlier.

Clearing the land of rhinos was considered necessary to make settlers move into *madhyadeśa*, but the move is evident in the advancement of the harpoon types from II to I, but it is also hinted at in Vedic texts dealing with *sattras* and large-scale migration. In the Mahābhārata, the relocation of tribes started with the burning of the Khāṇḍava or Kālakavana forest. The two major vying parties seem to have left traces in the newly settled area by the Bara (and OCP) ware on the one hand, and in the PGW on the other.

The preceding reluctance to move into the sparingly populated wilderness appears to be a remnant of the Harappan world. In contrast, we see epic heroes who remain untouched by such scruples. The remaining rhinos degenerate into sex idols (AV), which are eaten at weddings (RV) for analogue magic. This view of rhinos forms the background for the much later text on the rhino hunter coin of Kumāragupta I, which depicts the king as the marriage partner of Assam. As a protector against the dangers of nature, we see him killing the animal with a technique similar to that used in the CHC period, attacking its vulnerable rear quarters with his sword.

ABBREVIATIONS

ApŚS	Āpastambaśrautasūtra
BauŚS	Baudhāyanaśrautasūtra
AV	Atharvaveda
JB	Jaiminīyabrāhmaṇa
KS	Kāthakam, Kāthakasamhitā
KapS	Kaṣiṣṭhalasamhitā
MS	Maitrāyaṇisamhitā
PB	Pañcaviṃśabrāhmaṇa
ŚB	Śatapathabrāhmaṇa
ṢB	Ṣaḍviṃśabrāhmaṇa

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