
XIV

WEAPONS

The Mbh being primarily the story of a fraticidal war, describes a large number of weapons. These are classified below in homogeneous groups, i.e. according to their use in warfare.

I Piercing Weapons

1 Bow

2 Arrow

3 Quiver

Bow : the weapon par excellence was of two types -

i of wood, and

ii of horn

The bows which were in common use were dhanu (I.216. 18; II.49.9; III.41.25; IV.35.21; V.29.27; VI.14.9; VII.8.2; VIII.10.5; IX.16.1; X.8.57; XII.4.17; XIV.72. 14) and kārmuka (I.218.35; III.17.6; IV.38.46; V.19.4; VI.49.17; VII.34.23; VIII.5.68; IX.7.20; X.5.35), both wooden bows. According to Sāyaṇa kārmuka was made of the wood of the Krimuka tree (Agrawala 1963:423). Cāpa, another common bow, was probably made of the flexible bamboo cane (Calamus rotang) (III.170.4; IV. 32.19; VI.61.5; VII.13.7, 39.16; X.11.28).

The bow is also, at times, referred to as śarāsana, iṣvasana and bāṇāsana, "the seat or support of an arrow (VI.92.62; VIII.62-32; VIII.62.60).

Śārṅga, the bow made of śṛṅga or horn was unique in so far that it was associated with Kṛṣṇa and Kṛṣṇa alone ! He was Śārṅgadhanvā, 'the weilder of the horn bow' (III.120.6; X.113.9; XIV.52.6; XVI.1.10, 9.14). The Śārṅga is also often enumerated along with other characteristic weapons of his, such as the discus (cakra) and the mace (gadā) (II.41.33, 42.34; V.129.9; VI.55.105. XIV.58.22; XVI.4.44). It has an interesting history. It belonged originally to the demon Mura.

Kṛṣṇa acquired it after killing Mura at the city of Prāgjyotiṣa (V.155.6, 8-9). Kṛṣṇa's fight with Mura is described at least 3 times in the Mbh itself, as a very important landmark in his career, and is compared to two other memorable feuds, that of Indra versus Vṛtra and of Rāma versus Rāvaṇa (V.155.8-9; VIII.4.52).

The epithet 'Śārṅgadhanvā' is also once ascribed to Viṣṇu (XIII.135.120), and the Śārṅga is also once refered to as 'Vaiṣṇava dhanu' (V.155.6), but then Viṣṇu and Kṛṣṇa are not really different.

The Mbh also describes a few individual bows which laid claims to divine origins. The 'Gāṇḍīva' belonged originally to Varuṇa and was presented to Arjuna by Agni, the god of Fire, when Arjuna promised to aid him in the destruction of the Khāṇḍava forest (V.155.7). The 'Vijaya' belonged to Indra and was given to Karṇa by his teacher Paraśurāma (VIII.22.36). But according to the Udyogaparva it belonged to Rukmī who had obtained it from Druma (V.155.7). Similarly Droṇa's divine bow belonged originally to sage Aṅgīrasa (I.155.24). Arjuna, Karṇa and Droṇa were the three best bowmen of the Epic. It is therefore quite natural that their bows - personifications of their skill at archery - were ascribed divine origins. But it could also be that much of the skill of these bowmen was the result

of their superior bows - stronger, bigger, more flexible than the others and obtained from sources, foreign or indigenous, which were not easily accesible to others.

The wooden bow-staves were generally backed with gold (III.146.15; IV.53.25; VI.67.4, 96.12; VII. 98.42; VIII.7.7). Gold strips, gold wires and gold rings were also wound round the staff (VIII.62.19). The purpose was decorative and gold was chosen for its high cost, since these bows invariably belonged to important royal dignitaries. Miniature replicas of animals and insects, such as the elephant, the Lady-bird and the moth, as well as of the sun and the moon (lunates), were cut out from gold sheets and affixed to the bow-staves. So also tiny golden dots (IV.38.20-24; VII.96.3). Some of the bows were also adorned with precious stones (VII.143.11).

Hardly anything is said about the measurement of a bow. The measure of length was either an 'aratnī' or a 'kiṣku', the former being broadly equivalent to a modern cubit. Droṇa's bow was six aratnī long (I.155. 24), that of Ghoaṭotkaca exactly double, 12 aratnī long (VII.150.16), while that of Lord Śiva only 5 kiṣku long (X.18.6). These measurements do not convay much.

Very many of the bows in the Mbh are described as 'tālamātra', a characteristic epithet of Arjuna's bow (V.26.23; V.158.25; VIII.48.13). These bows were either

made of the wood of the Tāla or the Palmyra palm (Borassus flebilliformis) or else the compound 'tālamātra' simply denotes the great height of the bow, to say in rather exaggerated terms, that the bow is as tall as the Tāla palm. It must however be pointed out Tāla wood which is not very strong, but flexible and lasting, was used in making flag-staffs according to the Mbh (V.148.5; VI.16.41) and for bows according to Pāṇini and Kauṭilya.

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Arrows

An arrow was known as bāṇa (VI.50.68), śara (VI.43.41), iṣu (I.17.27), sāyaka (I.63.15-16), mārgaṇa (X.11.27), patrin (I.219.26) and patatrin (I.2.77). Viśikhā was a general term for arrows of the unfeathered variety (VI.49.29).

The best types were broad, thick and long (VII.74.7-8 ; III.24.3). A more exact statement is made as regards a rare type e.g. Arjuna's 'āñjalika' arrow, which was 3 cubits long (VIII.67.16).

An arrow comprised of three parts -

i the shaft,

ii the arrowhead,

with or without the tang,

and

iii the feathers.

The shaft was of wood or bamboo (VII.74.8), smoothened down to an even finish (IV.56.18; VI.101.18).

The arrowheads were of iron (III.170.27; IV. 38.28; VII.166.54; VII.19.12), bones (VII.164.11) and horns (VIII.154.14). Their tips and edges were rendered very sharp (III.170.31; IV.56.18). They were worked upon by metalsmiths (VII.114.40), finely polished (VII. 108.25; VIII.10.18), sharpened on stone (VII.106.41) and greased with oil (VI.81.6).

The tail-end of the shaft was fitted with gay coloured feathers of the heron (IV.53.39), the peacock (VIII.10.18) and the vulture (III.34.83). The feathers are described as varigated (I.1.127), golden (I.109.6), silvery (VI.58.44), yellow (IV.38.26) and green (IV.38. 29). They imparted speed to the arrow (VII.99.15), helped in steadying its flight (III.170.28) and provided the much needed decorative touch. Some of the arrows were also adorned with gold (VI.60.11; VII.108.18; VIII. 5.81)

A warrior's name, was at times, engraved upon his arrows (I.124.24; VII.101.46; IX.13.9; 23.58, 63). According to the dramatist Bhāsa (Pañcarātram, Act III, Vs. 18) the name was written on one of the feathers. It is, however, more likely that it was engraved upon the shaft or the arrowhead. These types were not very common in the Mbh.

It was customary to worship certain very effective arrows which were rare and valuable and therefore held in awe and respect. Karṇa had specially put aside an arrow for the explicit purpose of killing Arjuna, which he worshipped for many years (V.61.10; VIII.5.66). The Pāṇḍavas likewise worshipped with garlands and sandal-paste, an arrow of Arjuna, which finally killed Jayadratha (VIII.67.16-17).

The Mbh describes a large number of different types of arrows. They are enumerated below :

1 Prohibhited arrows were to be excluded from a 'dharma-yuddha' or a just warfare. Nine of them are listed together in two verses of the Droṇaparva (VII.11-12).

(i) Poisoned arrows were condemned as the weapon of the evil. Yet their use was not uncommon, though on a very restricted scale. Firstly very few of the warriors possessed a poisoned dart, and those who did, preserved it carefully for a crucial moment of their fighting career. Two prominent instances can be cited. When King Śala was unable to pacify sage Vāmadeva, whose fine horses he had borrowed, but was not prepared to return, he tried, as a last resort, to threaten him with a specially preserved poisoned dart (III.190.72). However, it was only a threat; actually he dared not use it. Similarly Karṇa

refused to use the most powerful arrow in his armoury, tipped with a deadly poison, the like of which no other warrior possessed, against any one but Arjuna, his cheif opponent. He had preserved and worshipped it for years (V.61.10; VIII.5.66). Thus the fact, that a Śala or a Karṇa possessed only one such arrow, while none others had even a single one, treasured it for years and even worshipped it, suggests that poisoned darts were not a part and parcel of the Mbh arsenal.

The most obvious question to follow would ofcourse be - how did only a few men come to posess them ? Were they in posession of some secret poison formulae ? If so, from where did they acquire the knowledge ? From the evidence of the Mbh it appears that none of the Epic warriors had any knowledge of poison-manufacture. Rather they acquired the poisoned-darts directly from the tribes inhabiting the forests. Karṇa's famed arrow was acquired from a Nāga cheiftain, Airāvata. None of the Indian tribals are at present known to use poisoned arrows, although many of them do make use of various herbal poisons to kill fish (cf. Chapter III 'FAUNA'). There are, however, tribes in Africa and elsewhere like the Bushmen, Ainu etc. who still use arrows tipped with various herbal and insect poisons to hunt down deer and other wild

animals. Very often the knowledge of extracting, mixing and processing various poison-formulae is a strictly gaurded secret of the tribal cheiftain and he hides his poison-pack, deep in the jungles, in the hollow of a tree or buried underground, far away from the sight of his own tribesmen (Coon 1971:81-82). No wonder then if Karna managed to acquire only a single such arrow from a tribal cheiftain. He may have paid a heavy price for it or exchanged a very precious commodity against it.

The poison used by these tribes is extracted from various sources like roots and tubers, leaves, barks, flowers and fruits of different plants and creepers, from the body of poisonous insects and rodents as well as snake poison. The poison used for Karna's arrow was definitely the deadly venom of a cobra, for the arrow is again and again described as 'sarpamukha' or 'serpant-mouthed'.

The Mbh refers to poisoned arrows in another context too, that of hunting. The Epic insists that the Kshatriya princes used only 'suddha' or pure arrows as against the 'lipta' and the 'dighdha', the poison-smeared ones, to hunt down wild animals, particularly the helpless deer (III.37.41; III.47.4; III.157.7). As noted earlier it were probably humanitarian considerations more than anything else which prevented them from using poisoned darts. If the animals were to be spared, then the human beings all the more so ! The strong opposition to the

use of these arrows in warfare, must therefore, have arisen from a feelings of great disgust at inflicting a cruel and a cowardly death upon the opponent. Even among the tribals who use poisoned darts against animals, great control is shown never to use them against their fellowmen, whether of their own tribe or an enemy tribe (Coon 1972:83). In the Mbh too, except for this prohibitiory injunction there is no direct use of these arrows.

(ii) Karṇī; 'posessed of ears i.e. projections', was as the name suggests, a barbed arrowhead. When such an arrow had to be extracted from the body, its barbed tips pulled out a huge chunk of flesh, causing great pain. But despite the prohibition Karṇī was employed in the Mbh war (VI.91.30; VII.66.70; VIII.18.3; X.10.15).

(iii) Nālīka:too, was used freely in warfare, despite the prohibition. From the name it appears to have been some kind of a tubular arrow (nālīkadaṇḍa), converging in a sharp point (VI.102.11; VII.141.22, 154.14; VIII.33.23; X.10.15). It was probably forbidden on the ground that when the point pierced through the body, the tubular tang too went in, boring an unnecessarily large hole.

(iv) Bone arrowheads : were prohibhited, probably because they tend to cause sceptic wounds. They included such varities as 'kapiśa', 'gavāsthika' and 'gajāsthika', made from the bones of a monkey, a cow and an elephant respectively.

(v) Vastaka : too, in all probability was a bone arrowhead, from the skeletal remains of a 'vasta' or 'basta', a goat in the Rgveda.

(vi) Sūcī : had either a fine needle-like point which penetrated deep into the body or else it had needle-like thorny projections on both the edges, cutting through the flesh and painful to extract.

(vii) Saṁslista : was a two-pronged arrowhead causing two wounds at a time.

(viii) Pūti : was an unclean, unpolished, rusted arrowhead, causing incurable sceptic wounds.

(ix) Jimhaga : was an arrow difficult to combat because of its crooked, zigzag course.

This concludes the list of prohibited arrows. Of the nine types mentioned, only the Karni and the Nālīka were used in actual warfare, and that too in a very restricted capacity. The others were not used at all and are mentioned only once in the entire Epic.

2 Iron arrows : were by far, the most numerous, refered to as

āyasa (VI.50.68; IX.14.3)
sarvāyasa (VII.99.21)
ayasmaya (III.170.28; VII.19.12)
ayomukha (VI.98.7; VII.166.54)
sarvapārśava (VI.76.36; IX.14.14)
adrisāramaya (III.170.49)

aśmasāramaya (VIII.66.58)

kārṣṇāyasa (VII.28.4)

śaikyāyasa (XII.99.28)

There were many different varities of iron arrows, according to their shape and their use.

(i) Nārāca : known to tradition as made of iron, were the favorite arrows of the Epic, used in their thousands (IV.38.25; VIII.22.51).

(ii) Ardhanārāca : a variety of the same class, mentioned only once, were probably only partially made of iron (VII.37.22).

Some of these iron arrowheads, used for splitting and cutting were broader and sharper than the others. They were employed with great advantage for snapping bows and bow-strings, splitting maces, javelins and other weapons and to severe the limbs of men and animals. To this group belonged :

(iii) Bhalla : of sturdy metal and the most extensively used of these arrows (V.48.15; VI.79.13, 110.25; VII.24.23, 130.16; VIII.14.4, 42.36; IX.16.31, 28.4).

(iv) Kṣura or Kṣurapra : with razor-sharp edges, as the name indicates, were a very popular variety of this group (VII.66.36, 90.28, 154.14; VIII.45.19).

(v) Ardhacandra : crescentic in shape, were specially suited to cut through something (VI.78.37; VII.

141.22, 143.17, 144.21; VIII.8.4, 39.21).

(vi) Vipāṭha : of the Kṣurapra type, were large, broad and thick, with very sharp edges and made entirely of iron (III.255.17; IV.38.26; V.47.52; VII.40.15; VIII. 33.23).

(vii) Āñjalika : was an arrow of the same class, with which Arjuna killed Karṇa. It was 3 cubits long, fitted with six feathers, imparted with a terrific speed and capable of piercing right through the vital parts (VI.58.38, 104.30; VII.37.22; 131.93; VIII.67.16).

(viii) Pradara : as the name suggests were used for splitting and tearing (VIII.54.15).

These 6 types comprise the cutting and the splitting kinds amongst the iron arrows.

Other specialized iron arrows were :

(ix) Vikarṇa : an arrowhead with barbs (VII.141.22; VIII.52.8).

(x) Vaitastikas : special types suited to fight an enemy at close quarters. Such situations were rare in Epic warfare for generally the two opposing bowmen fought each other from a distance. Special skill and training was therefore required to use the Vaitastika arrows, which were shorter in length than the others, probably only about one vitastī or 9 inches long. Thus of all warriors, only a few skilled archers could use these arrows (VII.

164.150). Their use is best illustrated when a jubilant Dhṛṣṭadyumna, his sword unsheathed, jumped into the chariot of Droṇa, who had collapsed on the seat. Just then Droṇa recovered and prepared to attack with the Vaitastika arrows, causing Dhṛṣṭadyumna to retreat in panic (VII.98.50). During his fierce fight with Saṁśaptakas, Arjuna used these arrows with great advantage, to cut down enemy soldiers immediately around him (VIII.37.16). It is difficult to say if the use of these small arrows implied the use of a smaller composite bow. Probably not, and the skill lay in shooting these small arrows from a normal-sized bow.

(xii) Anaka

and

(xiii) Kṣudraka : taking into consideration the diminutive 'ka', were probably the other two varities of small-sized arrows.

Anaka : minute and sharp-pointed caused instantaneous death. They were employed by Arjuna, along with the Vaitastikas, to mow down the Saṁśaptakas (VIII.14.15). This is the only mention of anaka arrows while the kṣudrakas occur a little more frequently (VI.114.45; VII.24.49, 85.4, 111.13, 141-46).

3 Variously Shaped Arrows : To this category belong a few types which, either due to their shape or make, derived their names from different animals.

(i) Prsatka : a popular arrow, was like the Vastaka probably made of the bones (or even horns) of a spotted deer (prsat) (IV.61.17; V.180.20; VI.81.10; VIII.19.24, 27.32; IX.16.22). According to Kālidāsa, its fore-part was made of iron (Raghuvaṁśa, canto 7, vs. 45).

(ii) Gosīrsa : mentioned only once (VII.153.23) was probably made of the horns of a cow and is comparable to the 'rurusīrsni' of the Rgveda, which was made of the horns of a Ruru deer (Date 1929:12). Horn arrowheads (visāna-śṛngas) are mentioned elsewhere in the Epic too (VII.154.14).

(iii) Sarpamukha : "Serpent-headed", was a special epithet of Karna's dreaded arrow, tipped with the deadly venom of a snake. It could burn down anything it touched, and hence is described as 'jvalanta', causing a burning sensation (V.61.10; VIII.5.66, 105).

(iv) Catakāmukha : mentioned barely once (VIII.33.23) was shaped like the beak of a sparrow (cataka).

(v) Varāhakarna : was shaped like a boar's ear, triangular and pointed (IV.38.27; VI.80.5; VII.141.22; VIII.32.65).

(vi) Vatsadanta : rather widely used, had a sharp cutting edge like a calf's tooth, and was frequently employed with Bhalla and others of the same type, for snapping and cutting (III.157.56; V.139.37; VI.114.2; VII. 88.43; VIII.33.14; IX.20.12).

(vii) Kūrmanakha : was shaped like the nail of a tortoise (IV.49.11; VII.90.35).

4 Stone-tipped Arrows ?

(i) Śilīmukha : was probably a stone-tipped arrow-head (from śilā =stone). The epithet is also applied to swords (IV.38.34), in which case it probably refers to the stone hilts, although at one place the adjective 'āyasa' (VI.110.35) suggests that metal or iron too, was used in the make of these arrows (VI.75.41, 107.33; VII. 39.24; VIII.17.55; IX.16.82; X.8.59).

5 Wooden Arrowheads

(i) Śalākā : was employed only once, by Ambaṣṭha, to kill the Cedi king. It pierced right through his ribs (VII.24.48).

A similar weapon was perhaps the

(ii) Khajākā : with which Bhīma fatally poked at Kṣemadhūrti (VIII.8.41).

Both these were arrowheads with fine points, like a writing stylus (śalākā) or a churning rod (khajākā), causing instantaneous death. On the authority of Kautilya we may take these to be made of wood (Arthaśāstra : II.18.10; Kangale 1963:151-52).

Of these 31 different types, only a few, like nāraca, bhalla, kṣurapra and ardhacandra, all iron arrows,

were the most prominent. Śilīmukha, prṣatka and vatsadanta were the other popular types.

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Quiver

A quiver was known as tūṇa, tūṇīra, iṣudhī, upāsaṅga, niṣaṅga, kalāpa and śarāvāpa.

Two types of quivers can be distinguished - a smaller, compact one, carried on the back, the other a larger, heavier one, placed in chariots and on elephants.

Tūṇa and iṣudhī belonged to the first category (I.124.21; VIII.12.55). So also, generally, kalāpa (I. 46.22), śarāvāpa (VII.28.6) and niṣaṅga (IV.55.18). These were tied to the back, on the right side to facilitate the drawing of arrows with the right hand. Iṣudhī, the old Vedic term for a quiver, is generally used in the dual, indicating that not one but two quivers were tied to the back (VIII.12.30.33.34). These smaller quivers could hold upto ten arrows (IV.38.27).

Upāsaṅga (VI.102.21; VII.87.46) and tūṇīra (VI. 50.49; VII.28.15; VIII.18.26) constituted the larger variety. They were fastened on to the war-elephants and to the interior of chariots to ensure a large and steady supply of arrows. Their numbers varied according to the choice of the warrior and the capacity of the chariot. At

one stage Karṇa asked for as many as 16 quivers (VII.2.24), while Babhruvāhana set out to fight Arjuna in a huge chariot, loaded with a hundred quivers (XIV.78.14).

A majority of the quivers must have been of wicker-work or wood, some probably covered with leather or metal on the exterior. Some of them were more expensive and ornamental, being lavishly decorated with gold (IV. 38.25). Nakula's quiver which was black in colour was either encased in leather or a sheet of iron, and its exterior was ornamented with a motif of 5 tigers (IV.38.27).

Piercing Weapons

II To the second group of piercing weapons belong a variety of spears and spear-like weapons.

1 Spears
2 Śūla and Triśūla
3 Paṭṭiśa
4 Aṅkuśa

Spears

The Mbh describes a number of spears :-

(i) Śakti : was one of the most favorite weapons of this group. Besides the bow and the arrow, it was the most formidable weapon of the chariot-warrior and was often referred to as rathaśakti (VII.31.55, 99.24, 102.92;

X.6.12).

Its blade was made of iron while the shaft was of gold (III.157.61-62; VI.45.38; VII.82.15, 90.19), often adorned with gems such as corals and beryls (VI.107.11; VII.13.75, 108.20; IX.16.37-46). Small golden bells (kiṅkiṇīs) and cloth banners (patākās) were also attached to the shaft (III.270.3; VII.81.28; VIII.10.25; IX.16. 37-46). This description is likely to appear a bit fanciful, but there are later sculptural depictions which confirm the truth of the Epic words. A long spear from Ajanta has a rectangular banner attached to the shaft at the joint with the head (Dhavalikar 1973:304), and similarly a sculpture of Pañcika, Kubera's general from Gāndhāra, shows him holding a long and a heavy spear with a bell attached to the joint of the shaft and the head

The śakti was a dreaded weapon, compared to the sceptre of Yama, the god of death, and to the black-magic chant of the Atharvaveda (VI.107.11, IX.16. 43). Some of the śaktis were endowed with divine origins. Karṇa received from Indra, in return for his armour and earrings, a special śakti, whose onslaught neither the humans nor the gods or demons could withstand (I.104.20). Karṇa employed it to kill Ghaṭotkaca who was creating havoc in the Kaurava army (VII.154.52-54). With another śakti, designed by Tvaṣṭṛā for Lord Śiva, and which was kept on

an expensive seat and worshipped with flower-garlands, sandal-paste and offerings of food and drink, Yudhiṣṭhira killed his maternal uncle Śalya (IX.16-37.46).

Some of the Śaktis were larger than the usual ones and are referred to as 'mahāśakti' (III.270.3; VI.88.4; VIII.20-29). Some others compared to a Nāgakanyā, were tipped with a deadly poison (VI.100.29; IX.9.37). There were even śaktis fitted with nooses and lassos (VII.154.54). On a few occasions, a śakti was dipped in some inflammable matter and set on fire before being hurled (V.185.5; VI.114.62; VII.154.54; VIII.20-29). These additional devices rendered the śakti all the more frightening.

The śakti was hurled by the hand with the intention of knocking the enemy dead. Many an important warriors, like Prince Uttara, succumbed to the śakti during the Mbh war (VI.45.38). In most cases, however, the śakti was cut down or blown into bits, in mid-air, by a barrage of arrows (VI.100.29, 107.11; VII.27.9, 90.19, 99.18; VIII.10.25). On the other hand, a fearless warrior like Abhimanyu even jumped up into the air and caught midway the śakti hurled at him by Śalya, and then threw it back knocking Śalya down from his chariot and killing his charioteer (VII.13.75). This was an unusual feat, equalled only by Bhīma (VII.130.27). The śakti was a long and heavy weapon, and normally it took great strength on the part of a warrior to discharge

it with speed (VII.82.15; IX.16.46), but when a śakti hit its target, it always proved fatal (VI.45.38; VII. 82.15-16; IX.16.38).

(ii) Tomara : like śakti, consisted of an iron-blade and a golden shaft (VII.140.36; VIII.8.31, 19.13, 62.38; IX.12.18), but was much less heavier, so that a warrior could discharge with great speed 7 to 14 tomaras at a time (VI.50.28, 79.34; VIII.8.24). Rarely did the attack prove fatal. The wound was generally skin-deep, which the warrior could easily ignore. Bhīma pulled out Śalya's tomara lodged in his chest, and threw it back with great vigour to kill his charioteer (IX.10.52). Satyasena's tomara cut through the left arm of Kṛṣṇa and the whip dropped from his hand, but the very next moment he was back at his job (VIII.19.12). Yudhiṣṭhira hit Karṇa on the forehead with four consequtive tomaras and for a while Karṇa seemed to collapse, but regained immediately and fought back (VIII.33.33). There are many such examples. The tomara was, however, sharp enough to pierce through the metal armour and proved fatal at least in one instance (VIII.10.28). Generally, it was cut down in mid-air by a barrage of arrows (VI.50.28; VII.28.7).

Unlike the śakti, the tomara was used not only by the car-warrior, but also by the cavalry and infantry soldiers (VI.89.33; 92.69. III.152.16). It was, however, more effective from the elephant, as well as against the

elephant (IV.31.3; VI.17.33, 44.11, 67.35, 91.45; VIII. 43.72; IX.8.25). Being smaller and lighter, it could be used with better results when hurled from a height.

(iii) Prāsa : was a light spear, employed mostly by the cavalry (VI.89.38, 101.18; VII.85.73, 140.21; VIII.17. 109, 31.12). It consisted of an iron blade and a wooden shaft, which was often decorated with gold (VI.44.25, 92. 49; VII.35.24; VIII.14.31; IX.27.49). The prāsas were used in very large numbers. At one stage of the battle, when the sky was so loaded with them, flying from one end of the battlefield to the other, that it appeared as if a horde of locusts had descended upon the earth (IX.22.45).

(iv) Ṛṣṭi : a javelin, often adorned with gold (I. 186.7; VI.92.49; VIII.14.32) was also carried by cavalry soldiers (VI.77.13; VII.140.21).

(v) Bhiṇḍipāla : was often used against the elephants along with the tomara (VI.44.14, 87.14).

(vi) Kampaṇa : (VI.53.18; VII.35.24; VIII.58.11)

(vii) Nakhara : (VI.18.17; VII.18.32; VIII.21.5)

(viii) Karpaṇa : (I.63.18)

(ix) Kunta : (VI.92.56; VII.35.25; VIII.16.10)

and

(x) Kaṇapa (I.218.24; VI.50.49; VIII.36.3)

were a few other types of spears and javelins, known to the Mbh. Of these nakhara seems to have been closely allied with the prāsa (VI.18.17; VII.85.73; VIII.14.37; XV.30.4).

(xi) Bhusundī : too, was a missile weapon, referred to frequently, but it is difficult to envisage its exact shape (I.186.7; III.167.3; VI.114.2; VII.131.34).

Of all these 11 varities, the prominent ones were the śakti for the chariot-warrior, tomara for the elephant corps and prāsa for the cavalry, the last two being carried by the infantry soldiers also.

Ṛṣṭi, the ancient Vedic javelin, carried by the Maruts in the Ṛgveda, is often mentioned but mostly in a group of weapons (VI.16.27; VII.18.33; VIII.19.25) and not individually. The same is true of the bhindipāla (VI.53.13; VII.64.45; VIII.16.29). The others are insignificant, simply enumerated a few times and always in a group.

Śūla

The śūla was an iron spike, with a very sharp-pointed head, a highly polished, shining surface which was sometimes decorated with gold (III.166.14.190.64; VI.91.59).

Originally the śūla must have been a hunting weapon. In a very suggestive simile, Arjuna boasts that he will attack Lord Śiva, disguised as a Kirāta, merely with the tapering end of his bow, as if he were an elephant hunted down with a pointed śūla (III.22.2).

The śūla was hurled by the hand like a spear, and was similarly often cut-down in mid-air by arrows or blunted with a mace (III.157.65; VI.91.59; IX.20.23-24). If a śūla

could be cut down with arrows, it is more likely that it had a wooden handle, vulnarable to cutting and splitting, attached to an iron fore-part. The use of this crude weapon in the Mbh war is very restricted. Individually it is used only a few times (III.157.52, 55, 65; VI.91.59; VII.68.13; IX.20.23-24) and is mostly enumerated in a group of weapons (VI.87.14; VII.131, 68; VIII.7.8-10; IX.20.17).

Of great interest, however, is the association of the śūla with Rākṣasas, Yakṣas, Gandharvas, and Mlecchas or else with the gods Śiva and Kārtikeya and their gaṇas (I.201.13; III.156.24, 157.55, 190.67; VII.97.39; IX.44.101; X.7.28). During the Mbh war too, it is the rākṣasas Ghaṭotkaca and Irāvanta and their followers who alone are armed with śūlas (VI.86.52, 87.6, 14, 91.59). The only two exceptions in the entire Epic are Kṛtavarmā attacking Sātyaki (IX.20.22-23) and Achyutāyu attacking Arjuna with a śūla (VII.68.13).

Triśūla

Or the trident, was a three-pronged variety of the śūla, rather rare in the Mbh. Unlike the śūla, it is weilded by the devas (I.27.43) as well as the rākṣasas (III.167.20) and unlike in later times, it is not the weapon of Śiva alone (VII.173.33), but is also associated with Kalki, the last incarnation of Viṣṇu yet to come

(III.189.4). However, it is not purely a mythical weapon, for Karṇa too was armed with it (VIII.27.34).

Paṭṭiśa

was a rather common weapon, mentioned much more frequently than the śūla (I.203.3; III.21.32; IV.31.9; VI.92.56; VII.43.14; VIII.16.9; IX.44.46; X.17.48; XIII. 112.8). In all probability it was also an iron spike, but it is almost impossible to make any further guess about its shape and size, since it is rarely used on its own, and is mostly enumerated with other weapons in a group. All one can say is that it was a weapon hurled by the hand and often blown into bits with arrows by a skilled archer (VI.109.37).

Aṅkuśa

was primarily a good for controlling the elephant (III.27.15), but it was also a weapon in the Mbh. It occurs twice along with the tomara, light spears used by the elephant-men (IV.31.3; VI.44.39). Huge aṅkuśas are also listed along with other weapons in Karṇa's bitter fight against the Pāṇḍava army (VIII.16.10). However, there is only one clear reference to an aṅkuśa being used as an effective weapon (VII.28.16). Bhagadatta hurled the powerful Vaiṣṇavāstra aiming at the chest of Arjuna

but Kṛṣṇa sheilding him, took it on his chest and converted it into a Vaijayanti garland. This dreaded astra was nothing but an aṅkuśa, discharged to the accompaniment of spells and chants.

Bhagadatta was the king of Prāgjyotiṣa, ruling over the Mlecchas of the Eastern coast. He supplied the foreign Cīnas and the tribal Kirātas to the Kaurava army (V · 19 · 14 - 15). He was an expert car-warrior, but also an equally skilled elephant-rider, who preferred to fight from his elephant rather than his chariot. He is described as 'gajāṅkuśadharo śreṣṭho', the foremost amongst the weilders of an elephant good (V · 164 · 35). The exact location of the city of Prāgjyotiṣa is not known, although it is traditionally believed to be in Assam, a region well-known even today for its elephants. One thing, however, is certain that the aṅkuśa was not a typical weapon of the Mbh.

It consisted of a semi-circular hook of iron, with a very sharp point, and was attached, like an axe, to the right side of the handle. Some of the aṅkuśas were elaborately and expensively made, with gold handles studded with beryls and other precious stones (VIII.14.47).

Cutting Weapons

I. the Sword

and

the Sheild

Sword

The sword was known as asi (I.202.17), nistrimśa (I.126.2; III.157.42), khadga (VIII.32.64; IX.9.9), karavāla (I.27.44; III.166.14), and sāyaka (IV.38.30-33).

A good sword was long (dīrgha, mahat) (I.186.7; IV.5.24), thick (pīta) (IV.5.24), broad (vipula, prthu) (X.8.49; XI.16.35) and heavy (guru) (IV.38.34), capable of dealing effective blows, and withstanding great pressure (IV.38.32; VIII.62.29). As a cutting weapon it was extremely sharp (III.263.33; VIII.62.29; XI.16.23).

It was made of iron or steel (IV.38.34, 47.97), smooth, clean, without a single stratch (IV.7.1, 38.34; X.7.64), sometimes black in colour (IV.7.1), sometimes greenish-blue like a vaidūrya gem or a blue lotus (VIII. 8.27), and sometimes bluish-grey like the sky (XIII.62. 29; X.6.14). Its sharp edges were greased with oil (VII.154.26).

The hilt or the handle of the sword was made of gold (II.49.9; IV.38.30-31; X.6.14) or ivory. Ivory hilts with gold ornamentation were very popular (VI.92.49; VIII. 14.30, 18.27, 56.37). Some of the sword-hilts were studded with gems (VII.47.37). The word 'khadga', very common for a sword, which also means a rhinocerous, was probably derived from the peculiar hilt of the sword, made of rhino-horns. Kautilya does mention sword-hilts of rhino and buffalo horns (II.18).

The sword was kept in a sheath (kośa) of leather or metal, to prevent its edges from being blunted or rusted (IV.38.30-34). Special favourites were sheaths of tiger-skin (IV.38-30, 44.32), but cow and elephant-hide too was utilized for the purpose (IV.38.32; 44.32). Some of the sheaths were decorated with designs and kiṅkiṇī bells (IV.38.31).

The sword was tied to the waist by a waist-band and straps. "Baddhanistriṁśa" is an oft repreated epithet of an armed warrior (III.91.28, 158.28; XII.59. 105).

The sword came into the picture in close hand to hand fights, when the warrior was deprived of the protection of his car. With his chariot put out of use, he would jump onto the ground, his sword unsheathed and continue to fight on foot till a co-warrior came to his rescue with a chariot. Most of the sword-duals ended thus, rather ingloriously with the two opposing knights taking shelter in the chariots of their rescuers (VI.49.30, 70. 28; 70.28; 80.27). On rare occasions did a blow prove fatal (VII.31.63; VIII.9.31). This state of affairs is reminiscent of Arrian's pointed comment that the Indians in the 4th century B.C. were, on the whole, reluctant to engage in close hand to hand sword-fights (Date 1929:21).

However, a fearless warrior like Bhīma, weilding a sword, was a terror on the battlefield. At one stage

he climbed on to the elephant of the Kalinga Prince Bhānumat, killing him as well as his beast with vigorous strokes of his sword (VI.50.24). But a swordsman, even though a terror at close quarters, was always at a disadvantage before a car-riding archer, who was stationed high above the ground from where he stood and could thus aim more accurately with the numerous arrows at his disposal. The sword was useless in chariot-to-chariot fights, for the two cars generally stood way apart from each other. It was ineffective as a missile, although it was sometimes flung at the enemy (VI.50.72, 114.67; VII. 29.16, 91.40, 153.21; VIII.17.39). The best example of a valiant swordsman in action during the Mbh war is that of Abhimanyu, who continued to fight recklessly with a sword, from the ground and on foot, the Kaurava stalwarts who were in their chariots, when his own car was smashed and his horses and driver killed, till Drona broke his sword at the hilt with sharp arrows (VII.47.37). This was the fate of many a swordsman, and very often no sooner had a knight stepped off his chariot and taken up his sword and sheild that they were cut to pieces by a barrage of arrows (VII.72.28.131.48, 142.6, 164.149; VIII.18.33, 38.98, 56. 37).

In spite of this disadvantage the sword was an important weapon in the Epic. There are innumerable references to it, and every chariot warrior as well as an

infantry and a cavalry soldier was armed with a sword. But more than a weapon of offence it appears to have been a weapon of self-defence, when the bow was cut, the mace broken, and the chariot smashed.

Swordsmanship was also an important feature of martial training, and it consisted of intricate manoeuvres with the sword called "mandalāni" (VII.164.147-148).

Sheild

A swordsman always carried a sheild, called a 'carma' (I.123.7; II.66.14; III.120.17; V.162.20; VI.51.29; VII.12-60; VIII.9.30; IX.9.9; X.8.80; XII.195.8), which as the very name suggests was made of leather, generally ox-hide (ārṣabha carma) (VI.50.25, 67.28, 83.30, 112.19; VII.91.40, 117.33), stretched tightly over a framework of wood, bamboo, or wickerwork. The Mbh also refers, though only once, to a 'phalaka', a wooden sheild, made from the wood of the Vāsī (?) tree (V.152.3) and adorned with small bells (ghaṇṭā). Metal sheilds of gold (VII.138.17) and iron (III.16.5) are also mentioned once, but evidently they were rare and too heavy. The so called 'iron' sheilds (lohacarma) were an extra-large variety, not to be carried in the hand, but placed on the fortified walls of a city. As for the gold sheilds, it is more likely that gold was merely an embellishment or at the most an encasing for leather (VI.92.49, 114.62; VII.114.50).

Nothing is said about the size and the shape of these carmas, except for a 'trikūṭa carma' (XII.160.49), probably a triangular sheild with 3 edges. On the other hand, 'trikūṭa' might also refer to three sharp projections of metal jutting out from the outer surface, serving as decorations as well as piercing knobs. A few sheilds as noted above, were broader and larger than usual. These kinds were not carried by the soldiers, but placed on fortifications of cities like Dwārkā (III.16.5) to protect the walls effectively.

The sheild was used mainly as a protection and a cover during sword-fights, to ward-off the blows of the sword, and is therefore continuously paired with a sword (I.102.17; II.66.14; III.120.17; V.162.20; VI.44.34; VII. 46.21; VIII.32.65; IX.25.15; XII.99.31).

However, it was also used as a cover against arrows (VI.49.34). Arjuna faced the arrows of Aṅgārparṇa Yakṣa, armed only with a torch and a sheild (I.158.23). In the same way Bhīma fought his way out of a seige of chariots, taking the arrows on his sheild (VI.50.25). The sheild in this capacity is refered to as 'śarāvaraṇa' (VI. 56.17, 57.30; VII.35.23; 138.17). Skill at weilding the sword and the sheild together is best illustrated by the description of Abhimanyu's last-ditch fight, when he whirled them both around with such speed, swiftness and vigour, that his opponents were unable to make out the one

from the other (VII.13.51-53).

Most of the sheilds were decorated on the exterior with gold. These decorations consisted either of gold networks (VI.67.28; VII.114.50) or more commonly, of motifs such as stars and crescents (VI.50.25, 56.17; VII.13.51; VIII.9.30, 24.73). The crescent was a favorite motif, with the number varying from a 8 to a 100, to a 1000 (II.66.14; VIII.62.23; X.8.53), but the pattern of a 100 crescents was the most popular (VI.49.30, 83.30, 112.19; VII.90.30, 91.40, 164.149; VIII.9.27, 17.86, 38.98; XI.18.17), so much a part and parcel of the sheild, that very often the epithet "śatacandra" alone was used to denote a sheild (VI.78.31; VII.72.28, 164.135, 137; VIII.42.35; IX.25.15; X.8.80). These motifs were cut out from gold sheets (VI.50.25) and attached like applique to the leather. The beautiful effect of these decorations is brought out by the poet when he describes the sheild of Śiva as the dome of the sky studded with stars and planets (VIII.24.73). Jayadratha's sheild adorned with peacock feathers and small kiṅkiṇi bells (VII.12.57) was probably the only exception.

Cutting Weapons

II. To the second group of cutting weapons belong

1 Battle axes

2 Hala (ploushares)

3 Kuddala (hoe)

Axes

Paraśvadha, paraśu, kuṭhāra and kuliśa were the 4 different axes known to the Mbh.

Paraśvadha, a weapon of Mṛtyudeva (I.218.33) was either hurled by the hand (III.16.9, 274.220; VI. 50-72; 114.23; VII.113.19, 154.29; VIII.16.9), or used for cutting and lopping off the limbs (VI.44.34, 53.13, 87.14; VIII.8.4), a function it shared with the sword and certain special types of arrows like ardhacandra, kṣurapra and bhalla.

Both the paraśvadha and paraśu were not pure battle-axes. They were also used for felling trees and cutting wood, and entire forests were cut down with them (III.280.18; VIII.65.29; IX.40.14; X.10.5, XII.195.12).

Kuṭhāra according to a mythological story, was comparatively a stronger and a heavier axe than Paraśu (V.9.26).

Kuliśa is mentioned only once, as part of Duryodhana's preparations for the war (V.152.3).

Paraśu and kuliśa were ancient Vedic axes, but even in the Vedas they were not necessarily used in warfare (Singh 1965:96; Chakravarty 1941:170).

Hala

also known as lāṅgala was a ploughshare, used as an axe-like weapon. It was a characteristic weapon of Balarāma, who is referred to as Halī or Lāṅgalī (IX.54.4, 59.7). There is yet another example, that of the rākṣasa Alāyudha, who also carried a hala, during the Mbh war (VII. 151.19). His very name is probably a corruption of "Halāyudha", "fighting with a ploughshare", which was also an epithet of Balarāma (IX.52.24).

Kuddala

The spade or the hoe, another agricultural implement, possibly used as an axe-like weapon, since it was included in the pre-war stockpiling of weapons by Duryodhana (V.152.3).

Crushing Weapons

I

1 Gadā
2 Vajra
3 Śataghnī
4 Aśanī
5 Musala
6 Mudgara
7 Ulūkhala

Gadā

Next in importance to the bow and the sword was the gadā or the mace.

It comprised of a solid iron or steel head, fastened to an iron or a wooden handle with leather straps, at times embossed with gold or entwined with gold wires (III.157.65; V.50.8, 50.24; VI.19.13, 49.18, 50.21, 58.33, 59.11, 80.26, 83.29; VII.14.28, 93.15; IX.11.1, 31.35). Jarāsandha's mace-head, described as red in colour, was presumably made of copper (VII.156.8).

The mace-head compared to a mountain-peak (IX.19.22, 32.47) was generally oval in shape, culminating in a sharp point. It was either hexagonal (V.50.28; VII. 109.10) or octagonal (IX.10.50), with sharp corners (IX. 54.14), and well-formed joints (V.50.24). The entire length of the gadā was four cubits (kiṣku) (V.50.28; VII. 109.10).

The mace head was also elaborately decorated with gold, jewels (diamonds) and precious stones (maṇi) (III.225.4; V.50.8; VI.83.29, 112.47; VIII.20.32; IX.10. 50; XIV.83.20). Ornamentation with gold consisted of gold straps (VI.112.47; VII.14.13, 154.29; VIII.14.32, 23,2, 68.24; IX.10.44, 11.10, 31.59), gold network (VIII. 10.23), gold rings (VII.150.47, 109.10; IX.31.35), gold chains (VII.167.14) and tiny gold dots (II.3.5). Garlands

of red flowers and lines drawn with sandal and agaru paste added a further decorative touch (VII.101.31; IX.10.44-45, 57.22).

The mace was an extremely heavy weapon (III.23.36; VI.49.18, 59.11; VII.2.24, 152.40, 170.19), weilded with skill only by warriors of great strength and vigour, prominent among whom was Bhīma, renowned for his superhuman strength. Duryodhana, Dhṛṣṭadyumna and Sātyaki were the other experts in the feild, so also rākṣasas like Jarāsandha, Ghaṭotkaca and Irāvanta. The gadā was also a characteristic weapon of Kṛṣṇa (II.41.33, 42.34; X.6.9; XIII.14.142, 135.71; XIV.2.11, 54.22; XVI.9.19). While Balarāma, his elder brother, was the expert mace fighter of the Epic, the teacher of both Bhīma and Duryodhana.

The gadā was hurled by the hand, like a spear or a javelin, with a deadly impact, smashing chariots, crushing horses and elephants, and killing warriors on the spot (III.157.66; VI.50.21, 58.33; VII.109.10; VIII.10.23; IX.19.22). Skilled archers met the gadā hurled at them with a shower of arrows reducing it (the wooden handle) to bits and pieces (III.234.21; VII.112.47-49, 93.16, 101.31, 150.47). Only, a few like Bhīma and Śalya had the courage to catch in mid-air the speeding mace hurled at them (VI.80.26; VII.14.4).

The gadā was not simply a missile weapon, but was employed mainly in close, hand to hand duals. Bhīma

and Śalya fought two mace duals during the course of the Mbh war (VII.14; IX.II). The blows of the one were dodged by the other and taken on the mace and thus the two warriors battled on endlessly. The gadās striking against each other with terrifying speed, threw out bits of metal and emitted sparks of fire, reminding the Epic poet of a tree blistering with fire-flies (VII.14.17-18; IX.11.12-14). The most famous mace-dual, however, was fought between Bhīma and Duryodhana, providing a gruesome finale to the Mbh war (IX.56). Both the warriors donned armour and helmets, protecting the head and the chest while the safety of the lower body was gauranteed by rules governing a mace-dual. No warrior was allowed to strike below the navel, which is exactly what Bhīma did, putting the final curtain down on a long-drawn enemity. With one stroke he broke the thighs of Duryodhana, who crashed to the ground, unable to get up.

During this memorable dual, Bhīma displayed his great skill at weilding the mace, consisting of different body postures, zig-zag movements and various modes of holding and twirling the mace, before hurling it, or striking with it (IX.56.17).

Vajra

is mentioned in the Mbh as a weapon of Indra

(I.218.29; III.98.10) and Śiva (VII.172.59; XIII.17.14).

Indra's vajra, sturdy, sharp, and hexagonal, was made of the bones of sage Dadhīci (III.98.10).

But it is more likely that the vajra was a heavy wooden club, and there is a clear indication towards this when the wooden pestle (musala) with which the Yādavas destroyed themselves is identified with the vajra (I.2.221). The Vedic literature too, seems to endorse this view. There is no weapon called the gadā in the Vedas, but from the descriptions in the Ṛgveda, Indra's dreaded vajra appears to have been some kind of a mace or a heavy club. It was fashioned by the smith-god Tvaṣṭrā, made of metal (ayas), ground, whetted, polished, with a notched surface and a hundred thousand joints, edges or spikes, and was so heavy that it had to be held by both the hands (Singh 1965:96-97).

Aśanī

Closely associated with the vajra was another of Indra's dreaded weapons, aśanī, which Zimmer takes to be a rock or a stone in the Ṛgveda (Macdonell and Keith 1912 : I.19). From the descriptions in the Mbh, however, it too appears to have been a club or a bludgeon.

The aśanī was fitted with wheels or sharp discs, generally 8 in number, and was hurled by the hand (III.43. 4-5; VII.131.103, 150.90). It came crashing down like

lightening, thundering like a cloud and exploding like a storm (III.43.4-5).

However, aśanī was not a purely mythical weapon. It was seen in action twice during the Mbh war, once when Ghaṭotkaca hurled a terrible 8-wheeled aśanī at Karṇa and another time when he hurled it at Aśvathāmā. Both these fearless men, keeping aside their bows, caught the aśanī in mid-air, throwing it back at Ghaṭotkaca. It reduced his chariot and horses to ashes before crashing into the ground (VII.131.103-4; 150.90-92).

The aśanī in the Mbh like the vajra is not a weapon of Indra alone, as is the case in the Vedas, but also of Śiva or Rudra (VII.131.103; XIII.17.14).

Śataghnī

The aśanī as a wheeled projectile immediately brings to mind another weapon of identical description, the śatghnī, mentioned much more frequently. It was either a club or a wooden or metal rod fitted with wheels and spikes and adorned with bells (I.199.32; III.274.22; VII. 108.40, 154.46; VIII.7.8, 10.32, 19.26) so that when Karṇa was surrounded on all sides with arrows, he reminded the Epic poet of a Śataghnī studded with numerous spikes (VII.108.40).

Śataghnīs were carried in the chariots and hurled by the hand. Ghaṭotkaca killed all the four horses of

Karṇa's chariot in one accurate throw of the śataghnī (VII.154.46). However, despite the name "hundred-killer", the śataghnī failed to produce any great impact. It was easily cut down by arrows (VI.109.38; IX.12.24), and often enemy forces were pelted with hundreds of śataghnīs without any devastating effect (VII.29.16, 170.19).

Fortifications of cities like Indraprastha, Dwārkā and Laṅkā were loaded with śataghnīs to be hurled at the enemy trying to storm the walls (I.199.32; III.16.5-8, 268.30). These were probably the larger varities. Dr S. D. Singh (1965:114) believes that only the larger ones were furnished with wheels for easy movement, and if wheeled śataghnīs are described as flung by the hand, it should be ascribed to the poet's love of the miraculous. This may be true, but at the same time, it can not also be overlooked that the larger variety is described as wheeled only once (III.268.30). There is also the parallel example of a wheeled aśanī, which too, was flung by the hand. There was nothing to prevent the poet from describing the larger variety of śataghnī by some such adjective as "mahā". There were "mahāśaktis" as contrasted with the ordinary ones and the "mahācakrāṇi", placed on fortified walls, as contrasted with the smaller ones carried in the hands. The wheels attached to the śataghnī, therefore, may not exactly be accessories of movement, but some kind

of a sharp circular projections, which enhanced the power of the weapon. As we shall see presently, large and small metal wheels with razor - sharp edges, did form part of the Mbh arsenal.

Later writers too, seem to be divided in their opinion. The commentator of the Arthaśastra, describes it as a huge pillar, studded with big and long nails (Shamasastry 1956: 110, foot note 24), while Vaijayanti describes it as a gadā or a śilā, a block of stone, four cubits long and studded with iron spikes (Chakravarty 1941:173-4).

Musala

The musala is originally a stout but tapering wooden pestle, often paired with the wooden mortar ulūkhala, and used for cleaning and pounding grain.

In the Mbh it is a weapon of the same class as the gadā, mentioned fairly frequently, but generally in small groups of weapons (III.242.17; VI.92.54; VII.82.34; VIII.16.25; IX.44.104). It was a heavy wooden club, decorated with gold bands (IX.13.23), used as a missile to be hurled at the enemy, but easily cut down by arrows (VI.114.56.; IX.13.23).

An entire Parva in the Mbh - the Mausalaparva - is named after this weapon, and records the tragic destruction of the Yādavas, who, in a drunken orgy, killed

each other with a terrible musala. The musala, along with the hala, was a characteristic weapon of Balarāma, one of the Yādava cheiftains, also renowned as an ace mace-fighter (IX.48.6).

The musala is sometimes described as 'āyasa', 'ayomaya' or 'ayasmaya' i.e. made of metal (IX.13.23; XVI. 2.8, 4.34). However, a metal club or a bludgeon would be too heavy to weild and impossible to cut down with arrows. It is more likely that the musala was a wooden club, with only the head encased in a metal cap, and the body strapped with metal bands.

Ulūkhala

The wooden mortar, ulūkhala, associated with the wooden pestle musala, for pounding and cleaning grain, is listed once in the Epic along with a group of other weapons (VII.153.21). It is difficult to imagine it as an effective weapon, unless it was simply hurled for its crushing impact.

Mudgara

Often occurs together with the musala in small groups of weapons (III.170.4, 268.5; VI.54.3, 114.2; VII. 24.55, 29.16-17, 82.34, 154.26; VIII.14.36; XII.121.16). It was some kind of a hammer, serving the same primary function of crushing. The weapon is not at all conspicuous in the Mbh.

Crushing Weapons

II. To the second category of these weapons belong certain wooden and metal bars, used for crushing and smashing :-

1 Parigha
2 Danḍa
3 Sthūṇa
4 Hūḍa

Parigha

was a metal or a wooden bar, adorned with gold bands (I.17.16; VI.66.18, 72.4-6; VII.137.26-27; VIII.68.26) and in some cases furnished with spikes (VII.154.26). Some idea of its shape and size, length and breadth, can be had from the constant comparison of strong, muscular arms with a parigha (III.79.18, 116.24; V.46.10; VI.66.18; XV.4.7-8).

When hurled it was easily cut down by arrows (VII.137.26-27; VIII.45.14; IX.13.28), but was more effective as a crushing weapon e.g. when Dhṛṣṭadyumna hit out and rained blows on Karṇa's horses with a huge parigha (VII.148.6). On the whole, it was not a very effective weapon, either individually or collectively.

Danḍa

a metal rod, was a dreaded weapon, associated with

various gods, like Śiva (VII.172.59), Viṣṇu (XIII.175.105) and Yama (VII.64.14). Among mortals it was weilded with ease by Bhīma, smashing chariots, elephants, horses and men (VII.21.82; VIII.62.2).

Sthūṇa

was a huge wooden post, firmly held by iron bands (VII.154.36).

Hūḍa

was a similar wooden post, but probably much larger, for they were stocked on the fortified walls of Dwārkā and Laṅkā (III.16.5-8, 268.30). The Vānara army storming the walls of Laṅkā, took hold of these huge beams and threw them down into the city with a crashing sound (III.268.30).

Hūḍas were also carried in chariots and flung with the hand (III.21.32, 43.45; VII.154.36). These were probably the smaller variety.

The proto-type of these various crushing weapons - the mace, the club, the bars and the bolts, were no doubt, primitive weapons such as wooden sticks and even thick branches of trees. In the Mbh itself, Bhīma is credited with such superhuman feats as uprooting entire trees and flinging them at the enemy. In the Āraṇyakaparva, he battled on for hours with the rakṣasa Kirmira, with

branches and trees, till not a single tree in the surrounding forest-area was left standing (III.12. 46-49). Even during the Mbh war, Ghaṭotkaca used trees and branches as missiles, along with the most sophisticated weapons (VII.24.55).

Projectiles

To this category belong three types of weapons

1. Sling stones
2. Cakra
3. Pāśa

Sling Stones

Stones of various sizes and shapes, hurled by the hand and from slings and catapults, were used in defensive (III.16.5-8; III.268.30) as well as open warfare (III.23.10; VII.97.35, 154.36). These include giant boulders (parvata) (I.218.33; III.21.32, 23.10; 221.34), huge stone slabs (mahāpāṣāṇa, mahāśilā) (III. 23.10; IV.44.45; VII.154.26), smaller rocks and stones (pāṣāṇa, upala, aśma, graiveya) (I.218.44; III.159.32, 268.30; VI.50.49; VII.29.16, 35.25, 97.15, 97.34-35, 131.33, 150.35, 154.267, 166.54) and rounded balls of stone and metal (aśmaguḍa, ayoguḍa) (III.16.5-8; VII.29. 16, 35.24, 153.21, 154.36, 170.18; VIII.14.37).

The most interesting thing about these sling stones is that their use is mostly restricted to rākṣasas and mlecchas, aborigines, forest-tribals and foreigners from the hilly North-west. Thus during his fierce fight with the rākṣasa Saubha, Kṛṣṇa faced his most difficult moment when he found himself almost crushed under a heavy shower of boulders and rocks. A heap of stones covered his chariot, horses, charioteer, and even himself making them look like a huge ant-hill. Even his banner placed high atop the chariot became invisible, creating panic in his army. At this crucial moment Kṛṣṇa drew out his vajra - a deadly club - and shattered to pieces the stones around (III.21-23). During the Mbh war too, it is the two rākṣasas, Ghaṭotkaca and Alambusa, battling for supremacy who pelt each other with stones and metal balls (VII.150.35, 153.21). Ghaṭotkaca's paraphernalia of weapons included huge stone slabs, as well as round stone balls, creating havoc in the Kaurava army (VII.154.26, 36).

A stone picked up from just anywhere, the most primitive weapon, was also the most natural to a rākṣasa in a forest, like it was to Kirmira in the Naimiṣa forest, hitting Bhīma on the head with a stone slab (III.12.51). The more sophisticated versions of these crude stones is what Saubha or Ghaṭotkaca or Alambusa used on a large scale on the battlefield. The Mbh heroes

were strangers to these primitive weapons and this primitive mode of warfare.

Apart from the rākṣasas the only other people to use sling-stones were certain tribes of foreign and mixed origins (VII.97.13-15). The following tribes are named :

1. Śaka
2. Kāmboja
3. Bāhlika
4. Yavana
5. Khaśa
6. Taṅgaṇa
7. Ambaṣṭha
8. Kuṇinda
9. Pārada
10. Mandara
11. Paiśāca

Of these the Śakas and the Yavanas were the foreign Scythians and Greeks from the North-West. From the same region hailed the Kāmbojas and the Bāhlikas. To this group may also be added the Gāndhāras, who led by Śakuni, the maternal uncle of the Kauravas and a Prince of Gāndhāra, were also experts in stone-warfare (VII.29.16). These tribes are described as 'pārvatīya', inhabiting the mountaineous regions of the North-West.

of the remaining the Paiśācas, described as "vanāyujān", were probably semi-aborigine tribes living in the forest. The rest were of mixed origins, very often looked down upon as degraded Kṣatriyas.

All these tribes were ranged on the side of the Kauravas and were brought on to the field by Duhśāsana, who knew very well that none of the other tribes from the doab, like the Kurus themselves, had any training or experience of fighting with sling-stones. Thus, one of the most thrilling moments of the Mbh war comes when Sātyaki (of Kṛṣṇa's Vṛṣṇī tribe) stood all alone in his chariot, undaunted by a mad shower of stones, cutting them down systematically with his arrows. The sky at that moment became full of stones and nārāca arrows, and darkness descended upon the earth (VII.97.29-43).

Despite references to stone and metal balls, there is no word which can be pinned down to mean a sling or a catapult. Three words, Kṣepaṇī, Cakrāśma and Śṛṅgikā, which according to dictionaries are some kind of slings, do occur in the Mbh. Of these Kṣepaṇī was probably the true sling for it was weilded by those same mountaineous tribes who attacked Sātyaki with stones (VII.97.33). It occurs a few times, enumerated along with other weapons that littered the battlefield (VI.72.4, 15, 114.2; VII.35.25, 89.12). The Cakrāśma is mentioned only once (I.218.24), and was carried by the gods defending the Khāṇḍava

forest. The word, however, is part of a compound which includes other weapons too, and can therefore, be split into two words, a cakra (discus) and an aśma (sling-stone). Śṛṅgikā, as part of the defences of Dwārkā (III.16.5-8), was probably a catapult from the V-shape which resembles the two horns (śṛṅga) of an animal.

Cakra

Unlike in later times, the cakra or the discus was not an exclusive weapon of Viṣṇu or Kṛṣṇa. The Vedic Sun-god Mitra carried a razor-sharp cakra during the attack on Kṛṣṇa and Arjuna in the Khāṇḍava forest (I.218. 34). Similarly followers of Kārtikeya and even some semi-divine Siddhas carried cakras (IX.44.104. XIV.16.22) which were also a part and parcel of the Epic arsenal.

Two types can be distinguished ---

Giant ones, forming part of the defences of a city, and smaller ones, carried and flung by the hand.

Huge metal wheels placed along the fortifications gaurded Indraprastha and Dwārkā (I. 199.33; III.16.5-8). Some idea of their make and function can be had from a mythological story. The giant Eagle Garuḍa, attempting to snatch away the jealously gaurded amṛta of the gods, found the jar containing it protected

by a specially contrived mechanism, a metal wheel with razor-sharp edges, shining like the sun, and rotating continuously, so that anyone trying to go past it was cut to pieces. The Garuḍa found his way through by contracting his body and pushing it through the space between the spokes, in a matter of a split second (I.29.2).

From the above account it appears that large metal wheels with spokes and very sharp cutting edges, were placed along the walls of a city, and made to rotate continuously at great speed, probably by men manning handles attached to the axle-staff, running through the centre of the navel.

The smaller ones, flung by the hand, are often described as littered all over the battlefield (VIII.14.34). They were evidently used in large numbers. Thus, when Aśvatthāmā set in motion his dreaded Nārāyaṇāstra, bringing down a torrent of weapons (VII.170.19) or when Ghaṭotkaca created his "māyā' with all kinds of weapons comming out of nowhere (VII.154.26,36), hundreds of sharp-edged metal wheels, appearing like tiny orbes of the sun, came whirling through the sky. It is difficult to believe that these descriptions are authentic, and the very word 'māyā', illusion, seems to say as much.

There are, however, examples of single cakra(s) used by individuals. The most famous and the most dreaded of these was Kṛṣṇa's Sudarśana cakra, a metal wheel with

a thousand spokes, set around a firm navel (I.216.3; V.12.20). It was unique in so far that it would never be lost, though used again and again. It came back into the hands of Kṛṣṇa, somewhat like a boomarang, after lopping off the heads of the enemy (I.216.24, 219.7). It was presented to him by Agni, the god of Fire (I.216.24), and it gave him his supremacy over gods and men, Nāgas, Rākṣasas and Piśācas.

The only other person, apart from Kṛṣṇa who used the cakra in actual warfare was Ghaṭotkaca. His cakra too, had a 1000 spokes, an edge as sharp as a razor's, was studded with jewels and precious stones and glittered like a miniature sun (VII.131.40, 150.42). However, as a dreaded weapon it stood in no comparison to that of Kṛṣṇa's. Ghaṭotkaca used it twice, once against Aśvatthāmā (VII.131.40), and a second time against Karṇa (VII.150.42), but it was cut down by arrows, on both the occasions.

Kṛṣṇa's Sudarśanacakra seen in action during the destruction of the Khāṇḍava forest, and against the rākṣasa Śubha, is described on both the occasions as the Āgneyāstra or the Fire-missile (I.216.21-24; III.23.30). Some inflammatory matter may have been attached to the spokes, and set on fire before the cakra was sent whirling on its course. The Sudarśana, hurled as a last resort, to the accompaniment of spells and chants, setting in motion

the Āgneyāstra, not only split the city of Saubha into two, but reduced it to ashes as well (III.23.33-34). Causing fire with the aid of cakras is mentioned again (I.26.43) when the 'devasenā', the army of the gods, attacked Garuda, with burning cakras, emitting sparks, flame and smoke.

Another type of cakra was a rathacakra, a chariot-wheel, which was used on rare occasions and in moments of great distress, as a handy weapon. A warrior, deprived of the protection of his car and weapons, took up a chariot-wheel and whirled it around to keep the enemy away, or flung it, crushing anything and everything that came in the way (VII.142.10; X.8.23). Young Abhimanyu, with all his weapons gone, putting up a desparate fight, kept the Kaurava warriors at bay for a long time, armed only with a rathacakra (VII.172.10).

Pāśa

or the noose, is a very insignificant weapon in the Epic, never used in actual warfare. But nooses and ropes were included in the pre-war stock-pilling of weapons by Duryodhana (V.152.3) and infantry soldiers were armed with them, along with the bows and the swords (VIII. 8.17), probably to bring down mounted men, those riding horses, elephants and chariots.

The Epic also describes a curious weapon, the Nāgāstra, with which Arjuna tied the feet of the Kaurava

soldiers, paralyzing the entire army, which was unable to take even a step forward (VIII.37.21-22). This was probably some kind of a lasso, the ropes imagined as Nāgas (serpents), although its effect is somewhat exaggerated.

Mechanical Devices

1. Kacagrahaṇī
2. Yantrāṇi

Kacagrahaṇī

too, was some kind of a noose or lasso, fitted with a special mechanism. When the noose was hurled it got entangled in the opponent's hair either pulling him down or lifting him up from his mount. This is an inference drawn from the name 'kacagrahaṇī', gripping at the hair. This device was never actually used, but was one of the mechanisms gaurding the defences of Dwārakā (III.16.5-8) and is referred to only once more, along with a host of other weapons that littered the battlefield of Kurukṣetra (VIII.35.25).

Yantrāṇi

were different mechanical contrivances deployed along the fortified walls of cities like Indraprastha (I.199.32), Dwārkā (III.16.5) and Laṅkā (III.268.30), as well as on an open battlefield like Kurukṣetra (VI.92.69),

but nowhere in the Epic do we get any clear idea of what these mechanisms looked like or how they functioned. That a large number of them were deployed at the same time is obvious from the plural that is generally used (III. 24.3,268.30; VI.50.49, 92.69), and moreover at Indraprastha an entire network of them was put up on the walls (yantrajāla) (I. 199.32).

There is, however, every reason to believe that at least some of these machines were devices like the cakra and the kacagrahaṇī, while the others were some kinds of slings and catapults. This is not a mere assumption, for the Mbh itself describes the cakra gaurding the 'amṛta', as a superb mechanism of the gods (I.29.2). The large-scale use of sling balls and stones of varying sizes too, is an indication of the use of slings and catapults of all kinds, from simple V-shaped wood and leather ones, carried in hands to complicated mechanisms, hurling huge stone slabs and boulders.

The Droṇaparva describes how some of the Kaurava soldiers, mounted on elephants got caught in yantras and found themselves dangling helplessly from the animal's back. After that it was an easy work for Arjuna, who pinned down two and three men at a time, with a single arrow (VII.65.21). This description gives only a remote idea of how some of these machines must have worked. It is quite possible that they comprised of such simple

devices as the noose or the lasso, at times furnished with contrivances that got entangled in the hair or the clothes of enemy soldiers, dragging them down from their mounts. Caught thus in these machines, the helpless victims could do nothing to disentangle themselves, and fell an easy prey to the accurate markmanship of a chariot-riding archer. No wonder then that Yudhiṣṭhira collected some huge yantras in preparation for the war (V.150.81). However, the use of any kind of mechanical devices in the Mbh is almost negligible.

Minor Weapons

Besides the regular weapons, there was a whole assemblage of odd objects that can not be exactly described as weapons, but were used in warfare. These include :

1. Fire-brands (ulmūka, ālāta) (III.12.43, 16.5, 264.43, 268.5; IX.43.28. X.7.48);
2. dry wood and grass, to be set on fire, and thrown at the enemy (III.16.7; VII.24.55);
3. linen-cloth, probably dipped in oil or ghee, and set aflame (V.152.7);
4. jaggery (V.152.3);
5. honey (V.149.78);
6. ghee (V.149.78, 152.7);
7. oil (V.152.3);

8. sand (V.152.5);

9. dry-earth (V.149.79,152; VII.24.55)

and

10. the juice of Sarja or Śala (Shorea robusta) tree (III.268.4; V.152.3-7) all presumably heated and poured out from hollow horns (V.152.7) (śṛṅga), and other receptacles

and

11. pots full of poisonous snakes (III.268.4; V.152.4) to be emptied upon the enemy.

The defences of Dwārkā (III.165.7) and Laṅkā (III.268.4-5) were equipped with a few of these shoddy weapons, but almost the entire assemblage was gathered together by Duryodhana as he pitched his camp in preparation for the war (V.152.3-7). On the opposite side, Yudhiṣṭhira made similar preparations (V.149. 78-80).

Both the sides had taken elaborate precautions to protect their base-camps by digging moats around them and stocking weapons, food and clothing. It is, therefore, more likely that this crude assemblage of weapons was meant to protect these base camps, rather than be used in actual warfare. By their very nature these items are more useful in defensive warfare, to protect fortifications and moats, cities and camps, rather than be carried into the battle as weapons of attack. It would be too cumbersome

to carry wood, grass, sand and cloth, containers with honey, ghee, oil and sarja-juice and even snakes onto the battlefield and still more difficult to empty all this on the enemy soldiers. Nothing, however, would be more effective and more terrifying than these when hurled from high fortified walls or across a moat.

It is only once, during the entire Mbh war, that a few of these were brought out to the feild - when Ghaṭotkaca pelted the Kaurava army with dry earth, earthen clods, wood and grass (probably dry grass set on fire), and even water, wind and fire (VII.24.55).

Defensive Armour

Defensive armour was known as

kavaca (I.124.9; III.38.32; IV.57.4; V.150.81; VI.18.8; VII.19.59; VIII.4.37; X.5.35; XI.20.8; XV.30.10; XVI.4.2)

varma (I.28.11; III.24.3; IV.30.12; V.29.27; VI.16.19; VII.22.54; VIII.12.56; XI.18.17; XIV.78.14)

sannāha (II.49.7; VI.55.29, 72.4, 84.15, 116.6)

or

sannahana (VII.2.28)

tanutra (I.124.21; VI.27.5, 55.118, 69.29)

or

tanutrāṇa (VII.16.23, 36.27; VIII.12.5, 59.26, 65.35).

dehāvaraṇa (III.271.12; VIII.10.29)

and

gātrāvaraṇa (VII.2.28)

It was primarily a cuirass, protecting the vulnarable parts of the body, from the shoulders down to the waist.

The other limbs were protected by separate units of armour like :

1 śirastrāṇa (VI.31.54. VII.17.22, 64.35; VIII.16.25, 35.5; XI.18.17; XIV.78.14, 85.11)

2 jāla (I.17.13)

and

3 niryūha (V.19.4; VII.64.45), all helmets for the head;

4 kaṇṭhatrāṇa (VII.102.56) for the neck;

5 talatra (III.38.16; V.155.18; VI.92.59; VIII.14.37; XIV.83.4)

or

taltrāṇa

for the wrist;

6 hastāvāpa (VI.9.24; VIII.40.24)

for the palm;

and

7 angulitra (I.124.8; III.18.3; IV.5.1; V.180.8; VI.102.20)

or

angulitrāṇa (VII.35.23, 43.14; VIII.14.40; X.7.50; XIV.72.8)

for the fingers.

Of these, the mailcoats and helmets afforded protection against the onslaught of enemy weapons, and were fashioned out of metal. The hastāvāpa, talatra and angulitra, on the other hand, were protections against own's own bow, and were of leather. The constant friction of the bow-string against the fingers, the palm and the wrist resulted in cuts and gashes. To prevent this the fingers were protected by leather caps, the palm by a square piece of leather tied at the wrist, and the wrist itself by a leather strap tightly wound around the forearm.

Different metals such as gold (I.124.9; III.99.6; IV.30-10; V.150.22; VI.18.8; VII.43.20; VIII.14.31; X.7.11; XI.18.17; XIV.78.14), iron (IV.51, 30.11, 49.25, 57.4; V.150.81; VI.44.30) and copper (VII.31.17; VIII.59.26) were used in the manufacture of armour. Many an armour - coats are described as made of pure burnished gold, but in reality must have been of iron with lavish gold decorations.

In all 5 decorative patterns are listed :

1. Śatasūrya, a 100 miniature suns (IV.30.12);
2. Śatāvarta, a 100 concentric circles (IV.30.12);
3. Śatabindu, a 100 tiny dots (IV.30.12);
4. Śatākṣī, a 100 replicas of the human eye (IV.30.12, 14);
5. Śatapadmāni, a 100 lotuses (IV.30.13).

In all these patterns 100 seems to have been an auspicious number. Conspicuously absent is a "śatacandra" or "a 100 crescent" pattern, so common on the sheilds. The, 'satasūrya' and the 'śatabindu' patterns appear also on the bow, but the 'śatākṣī' and the 'śatāvarta' are typical of the armour. So also the floral design of lotuses. On the other hand, animal motifs appearing on bows and quivers, were not depicted on the armour.

All these decorative patterns - wheather they be on bows, quivers or armours - with the only exception of the 'śatacandra' pattern on the sheilds, are concentrated in the Virāṭaparva alone (IV.30.12-14, 38.20-24, 27). The highly decorated bows and quivers belonged to the Pāṇḍavas and the context in the text - where Arjuna, one by one, displays the hidden weapons to Prince Uttara - was very well suited for a detailed description of the weapons.

The armour-coats, however, did not belong to the Pāṇḍavas. They were donned by king Virāṭa of Matsya, his relatives and generals, when they set out to fight the marauding Kaurava army. If the Epic poets could describe them in such vivid details in the context of one battle, they could as well have done so in the context of the Mbh war also. But such descriptions of ornamental weapons and armour are conspicuous by their absence in the four main war-books - the Bhīṣma, Droṇa, Karṇa and Śalya - which are otherwise full of small details of weapons. It is, therefore, quite obvious that except for the 'śatacandra' pattern, all other decorative patterns appearing on weapons were later additions, inserted in the Virāṭaparva.

In addition to gold decorations, armour-coats and helmets were studded with precious stones and jewels like beryls (vaidūrya) (I.27.41; VII.2.23). Bhīma's iron coat studded with gems appeared like a clear autumn sky, glittering with stars (VIII.8.23).

The armour although said to be impenetrable, was in reality often, cut, broken and pierced by sharp arrows (VI.44.30, 55.29, 69.26; VII.36.27, 43.11, 49.21; VIII.65.28). The art of producing genuine impregnable armour was probably known only to a few like Droṇa, who passed it on to his favourite pupil Arjuna, who in turn taught it to his son Abhimanyu (VII.47.26). Later as the war progressed, Droṇa ceremoniously tied an impregnable

gold armour on the body of Duryodhana, to ally his fears (VII.69.69-71).

Not only men, but even horses and elephants were protected by armour plates, which covered the body as well as the face and the forehead (V.83.32, 150.81; VI.55.29, 91.46; VII.2.28, 31.17, 35.34, 63.4; VIII.13.14, 17.19). The elephants had a mukhatrāṇa for protecting the face (VI.91.46) and their armour was furnished with iron spikes (VI.55.29; XII.101.7). Cow-hide and python-skin was also thrown over the back of the elephant (XII.101.6), folds of cow-hide for protection and python-skin for decoration.

Astrāṇi

The word 'astra' literally means a 'missile' and no less than 25-26 such missiles occur in the Mbh. Their presence adds an exotic touch, a miraculous, superhuman element to the otherwise harsh realities of the war. They transform the heroes who use them into almost divine beings, in complete control of their surroundings, manipulating the fortunes of the war and the fate of their enemy with deliberate ease, looking down upon the vast multitude of warring men as mere pawns in their onward march towards victory and everlasting glory.

What then were these missiles and how were they different from the other weapons ? A closer scrutiny

reveals that they were not any one kind of weapon, but rather a glorification, a kind of personification and at times even a deification of a warrior's prowess, dexterity, alertness and skill in using a particular weapon. It is no wonder then that many of these astras were named after or associated with one or the other god. It would thus be wrong and completely misleading to take them for their face value and credit the Epic heroes with all kinds of fantastic feats and with the knowledge of magic chants producing fire, wind, water etc. from nowhere. Some scholars have even gone further and credited them with the knowledge of gun-powder and even nuclear bomb, which is not only unrealistic and unhistoric but simply preposterous.

A noteworthy feature of these astras is that they were handed down in a clear student-teacher tradition, which is very much dominated by Brahmin supremacy. Somehow the knowledge of these astras seems to have been a closely gaurded secret of a few Brahmin teachers. On one hand was Sage Bharadwāj who passed on the knowledge of the highly dangerous Āgneyāstra, the Fire-missile, to his student Agniveśya, who in turn bestowed it upon his student Droṇa, all three in the succession being Brahmins (I.121.6). On the other hand was Paraśurāma, another noted Brahmin exponent of the martial way of life, who was a veritable mine of all possible astras. He handed over their secret

to Droṇa, since he would give it only to a Brahmin, though he was not his direct pupil (I.121.21-22). Droṇa in turn taught them to his son Aśvatthāma. The only Kṣatriyas in this close hierarchy were the two great opponents of the Mbh, Arjuna and Karṇa. Karṇa acquired the knowledge of the astras by a deceit, projecting himself as a Brahmin before Paraśurāma. Arjuna on the other hand, acquired it through the regular guru-śiṣya tradition, as the legitimate pupil of Droṇa, who in Droṇa's own words, was dearer to him than his own son (I.125.7). There are, no doubt, other Kṣatriyas too, who use some of these astras on the battlefield, but none of them came upto the standards of Arjuna or Karṇa, and certainly not Paraśurāma or Droṇa.

I. To this category belong those astras which appear to be a glorification - a wildly exaggerated but a highly imaginative glorification - of a warrior's skill at shooting different types of weapons, in quick succession and in large numbers, not just at one opponent but at the entire army, all at the same time.

1. Brahmaśiras, also known as Pāśupata, was, obtained by Arjuna from Śiva Paśupati in order to kill Jayadratha (III.89.10-11). Its destructive powers were such that it could destroy the entire universe. Hence it was not to be used as far as possible against a human

opponent, but only against a powerful, a-human enemy (amānusa śatru) (I.123.74-75) (III.41.7-8).

According to another tradition Droṇa taught it to Arjuna and Aśvathāma who used it recklessly without knowing how to withdraw it. Arjuna had to repeal it on his behalf (V.15.23).

The power of the astra lay in discharging, all at once, a 1000 śūlas, gadās and arrows, probably smeared with a deadly poison since they are compared to poisonous snakes (aśiviṣākārā) (III.41.15). No opponent could possibly bear this savage onslaught. On the other hand, when the Epic says that Aśvatthāma did not know how to take back the astra, it simply means that he did not know how to combat the equally savage response it must invoke from the opposing side. Able only to attack, but powerless to defend, the very purpose of the astra would be defeated.

2. Nārāyaṇāstra : another dreaded astra consisted of every possible weapon in the Mbh arsenal, all coming down in a mad shower of hundreds and thousands. The best way to combat it was to lay down one's weapons, step down from the car, and on the whole, stop retaliating altogether. This is exactly what the Pāṇḍava army did at the behest of Kṛṣṇa when Aśvatthāmā used the astra against them as an almost last major offensive from the Kaurava side. Bhīma alone relented, unable to bear the insult of

putting down his weapons and helplessly watching while the astra took its toll. He boldly advanced into the sphere of the astra, was caught in the vortex of weapons and had to be dragged down from his car by Kṛṣṇa and Arjuna (VII.170-171).

With little imagination one can clearly see through the poetic fancy of this description. The Kauravas led by Aśvatthāmā must have launched a major offensive against the Pāṇḍavas, with all possible weapons, which had been safely stockpiled uptill then. Acting under the able stewardship of Kṛṣṇa, the Pāṇḍavas thought it wise not to retaliate, in fact to withraw to a safe distance beyond the range of the attack, abandoning their weapons and cars, till the Kauravas had exhausted their arsenal. The move paid off, the astra subsided and could never be used again, for a major offensive can not be repeated again and again. This is what the poets mean when they say that Aśvatthāmā had power to use the astra only once. An entire episode of the war, an entire offensive with the ensuing movements of the armies, the tactical moves of its generals, is, as if, condensed here into the concept of a miraculous astra.

3. Vajrāstra : when used by Arjuna against the Saṁśaptakas saw hundreds of hands being cut, along with bows, bow-strings, arrows and flag-staffs. Horses and

charioteers too were seen falling to the ground (VII.26.20). Clearly it was a multi-faced and a multi-pronged attack, mainly with sharp-edged cutting arrows but also probably with vajras, heavy wooden clubs.

4. Bhārgavāstra : consisted of hundreds and thousands of sharp arrows discharged almost simultaneously. And when the attack came from no less an archer than Karṇa, it left the Pāṇḍava army reeling under a terrible shock (VIII.45.34-36).

5. Kṣepaṇiyāstra : too evidently consisted in shooting innumerable arrows, lining the sky with a thick curtain, so much so that birds stopped flying and darkness descended upon the earth (VIII.65.34).

II. To this category belong those astras which were a poetic glorification of a warriors skill in using a specific weapon for a specific purpose.

6. Nāgāstra : We are told that Arjuna tied the feet of the entire Kaurava army with this astra, crippling their movement. The reference is clearly to some kind of a lasso, used with consumate skill and quickness wherein the ropes are referred to allegorically as serpents (nāgas) (VIII.37.21-22).

7. Suparṇāstra : was used to combat the nāgāstra by Suśarmā. We are told with genuine credulousness that

as the nāgas gripped at the feet of the Kaurava soldiers, the Eagle Suparṇa, a natural enemy of the serpents, came swooping down from the sky and started eating them up, tearing them to pieces with his sharp-pointed beak. The nāgas panicked and ran away, in fright, thus releasing the 'padabandha' or the foot-knot of the Kaurava army. (VIII.37.25-26).

In this poetic episode if the nāgas are the ropes of a lasso, then the Suparṇa descending from the sky is none but the arrow used for cutting these ropes. The skill of Suśarmā lay in accurately cutting the knot with an arrow, without hurting the person concerned.

8. Vaiṣṇavāstra : was hurled by Bhagadatta at Arjuna. It consisted of a sharp-pointed aṅkuśa or an elephant-goad. The accurate throw was aimed at Arjuna's chest and it would certainly have inflicted a mortal wound, but for Kṛṣṇa who rushed forwards, sheilding Arjuna behind him and took the astra on his own chest. At his divine touch it changed into a beautiful garland of red lotuses (VII.28.16-20).

An elephant-goad is not normally used as a weapon, but Bhagadatta's was a special case. He came from a region - Prāgjyotiṣa in modern Assam - which was famous for its elephants. He was thus the ablest and the most experienced of the elephant riders in the Epic to whom the use of an aṅkuśa was not only to goad and control the elephant, but if need be, even as a missile weapon to be

hurled at the enemy, its hooked point of sturdy iron causing a deep and gashing wound. Of course it needed great skill to fling an aṅkuśa with an accurate aim for basically it was never designed as a missile weapon. Therefore only a Bhagadatta could do it.

10. Sthūṇākarṇāstra : The etemology of the word suggests that this particular astra comprised of a sthūṇa, a stout, heavy wooden post or a metal beam which reached right upto the ears (ākarṇa) of a warrior. Thus it stood almost as high as the warrior himself, anywhere between 5 and 6 ft. Balarāma destroyed the powerful mace (gadā) of Jarāsandha with this sthūṇa (VII.156.10).

III. To this category belong 2 astras which seem to personify the quickness, alertness, swift movement and great speed of a warrior in monoeuvring the chariot and in discharging his weapons.

11. Gāndharvāstra : was used by Abhimanyu fighting a lone but heroic battle against the Kaurava army. He moved about the battlefield in his chariot with such speed and swiftness, all the while shooting his weapons without a pause, that to his opponents he appeared to be everywhere, as if there were hundreds and thousands of Abhimanyus all over. The poet brings home the point beautifully by comparing the phenomenon to that of an elaborate alātacakra, a fire-brand which when moved round

and round without a pause, creates the impression that there is a continuous circle of fire when in reality it is the swift movement that deludes the eye (VII.44.21-24).

11. Tvāṣṭram astram : Almost the same phenomenon was witnessed when Arjuna fought the Saṁpsaptakas. The swift movement and great speed of his chariot, manipulated by Kṛṣṇa, created the impression that there were thousands of different Kṛṣṇas and Arjunas. They seem to spring up from nowhere, as a result of which the baffled enemy soldiers mistaking each other for Arjuna and Kṛṣṇa killed off one another (VII.18.11-13).

IV. To this category belong a few astras which seem truly to belong to the realm of poetic fancy. They depict the desire of the Epic poet to turn his human heroes into super-human beings, who like the gods, could tamper even with the processes of Nature by being able to generate at will, any of Nature's powerful elements, fire, water, wind, earth.

12. Āgneyāstra : or the Fire-missile was the most dreaded and the most destructive of these missiles. It was capable of generating fire (I.125.9) and burning down whoever and whatever came in its way. As noted earlier it had a long tradition of being handed down from teacher to pupil, beginning with Bhardwāj, Agniveśya, Droṇa and finally

Arjuna.

It was this power to generate fire which was kept a closely gaurded secret by at least 3 generations of Brahmin teachers that has led to the belief in some scholarly circles that the ancient Indians were in posession of some sort of formulae producing explosives. It is undoubtedly true that fire did seem to have played some role during the Mbh war. For example, certain types of spears like the śakti were used as a fire-carrying and fire -spitting weapons. But this need not entail the use of gun-powder or any other such high-explosive substance. The fire-producing paraphernalia was actually quite elementary and consisted of such things as dry grass, wood cloth, ghee and the juice of the Sarja (Shorea robusta) tree (III.268.4; V.152.5; VII.24.55). The extent of the damage wrought by them depended on their easy availability and the capacity to stock them on the part of a warring army.

That the dreaded Āgneyāstra was nothing but this crude assemblage of fire-producing devices is all but clear from the two instances where it was actually used. Both the incidents took place outside of the Mbh war. In the first instance Arjuna terrorised Citraratha Gandharva by burning down his chariot with this astra. As a preclude to this we are told the story of how the Pāṇḍavas tired and thirsty, escaping from the lac-house tragedy, reached the

banks of the Ganga, as the night was about to fall, but were prevented from drinking its cool waters by Citraratha Gandharva, who was sporting in the waters with his women. Arjuna was leading the way for his mother and four brothers with an ulmūka or a fire-brand held high to light the way, as well as to gaurd against any surprise attack. The Pāṇḍavas at this stage seem to have been almost without weapons, totally unarmed and vulnarable. Arjuna dodged the arrows of Citraratha with his fire-brand and in retaliation sent the Āgneyāstra hurling towards his chariot. It is quite obvious that the terrible fire-missile was nothing but an ulmūka which was thrown with great accuracy and agility, easily setting aflame the wooden chariot of the Gandharva (I.158.28).

In the second case the astra is nothing but the famous Sudarśanacakra of Kṛṣṇa. He used it twice and both the times it caused disastrous fires. The entire city of Saubha was reduced to ashes by it (III.23.33) and so also the Khāṇḍava forest (I. 216. 21-24). As discussed earlier it is quite likely that some easily inflammatory substance - most probably cloth dipped in oil etc. - was attached to the spokes before hurling the cakra at the enemy. The skill lay in hurling the mechanism in such a way and with such terific speed, so as to bring a maximum of the surface to be set aflame in its fiery contact, before the fire emanating from it subsided. It probably travelled a full circle before

coming back into the hands of Kṛṣṇa like a boomarang. This was not something every warrior could do. Hence the unique position of Kṛṣṇa's Sudarśanacakra as a terrifying fire-missile.

13. Parjanyāstra : was used to generate water in a twofold way - one, to draw out water from the earth and two, to create clouds and rain from them (I.125.19). Arjuna had to shoot an arrow deep down into the bowels of the earth and water came gushing out to quench the thirst of the dying Bhīṣma (VI.116.23). This feat, though incredible, is not wholly impossible if the underground resevoire of water was situated immedietely below the surface and the exact spot was known. But it is well neigh impossible to imagine how artificial clouds were created by arrows.

14. Vārunāstra : too was used to generate water (I.125.19), but it is difficult to see how Bhīṣma managed to kill the horses of Śalva with this water-generating missile (I.96.37). It just proves that the Epic poets themselves had no clear idea of what these missiles were.

15. Vāyavyāstra : was used to generate wind (I.125.19), stormy wind, which carried away arrows, as well as the very soldiers who shot them, along with horses, chariots and even elephants of the enemy, as if they were a pack of dry leaves (VII.18.22-23).

16. Bhaumāstra : was used to go underground by splitting open the earth with arrows (I.125.20).

17. Pārvatam astram : also known as Śailāstra was used to create monutains, probably huge stone boulders from nowhere (I.125.20).

V To this category belong 2-3 astras which seem to involve some use of magic and hypnotism. They are certainly fictions, a product of the poet's imagination and it is very unlikely that any of the Epic heroes were trained in magic or hypnotism.

18. Kauberāstra : helped a person to dissapear from the scene of action, whenever he so desired. Hence it is also called 'antardhānam astram'.

The astra also had power to cause a kind of stupor in the opponent, as if he had gone to sleep, (I.125. 20; III.42.33).

19. Samohanāstra : too performed the same task. How exactly the Kaurava army was lulled to sleep by Arjuna is explained in the Virāṭaparva. While shooting a continuous stream of arrows Arjuna deliberately kept on twanging his bow-string and blowing his conch. The vibrating notes of the string coupled with deep resounding cry of the conch created a peculiar hypnotic effect on the minds of the Kauravas, causing them to keep down their weapons

and stand still as if in deep slumber, so much so that Prince Uttara was able to take their expensive and colourful garments off their bodies without any protest (IV.61.8-13).

20. Indrajālāstra : The word 'Indrajāla' which means 'magic' and 'jugglery' suggests the use of these mediums. But since its actual working in nowhere referred to, it is more likely to be a beautiful piece of imagination (VII.43.21).

VI. To this category belong a few astras which derive their names from one or the other god of the Hindu pantheon, but their working is nowhere explained.

21. Paurandarāstra : is associated with Purandara or Indra (I.181.20).

22. Aindrāstra : So also this astra (V.139.31; VII.132.31).

23. Brahmāstra : is associated with Brahmā (V.139.31).

24. Yāmyam astram : with Yama, the god of death (VII.132.29).

25. Prājāpatyam astram : with Prajāpati, the creator (VII.132.31).

26. Sāvitram astram : with Savitṛ, a solar god (VII.132.29).

VII. The Mbh describes a few other feats of 'astra-yuddha' or missile-warfare, although these astras do not have any special names of their own. Two of these feats relate to a superb display of archery one by Drona and the other by Arjuna.

27. Drona created a rope of arrows, with one arrow lodged in the other to lift up a wooden Vitā from a well. This masterly display won him the coveted post of a teacher for the Kuru princes (I.122.16).

28. Another great feat of archery came from Arjuna. With the aid of an astra he was able to split open the earth with his arrows and create a beautiful little lake of clean water right in the midst of the battlefield for his tired and thirsty horses. We have already noted a similar miracle performed by him with the parjanyāstra for the sake of the dying Bhīsma. At the same time he also created a house, a shelter of arrows (śarveśma), for the horses to rest inside while he continued to fight on foot (VII.74.56-57).

29. Arjuna figures again along with the other princes displaying his great prowess at archery in a specially erected arena. He drew out an astra with the help of which he seemed suddenly to expand and contract in height, to grow very tall one minute and to shrink the next minute (I.125.21).

30. Kṛṣṇa, another great exponent of 'astra-yuddha' was able to delude Saubha by alternately creating light and darkness, heat and cold. One moment the sun was shining bright, the next moment it was the moon and the stars. This is ofcourse sheer poetic fancy, and so the Epic has no hesitation in dubbing it as 'māyāyuddha' (II.21.32-38).

It is hoped that the above detailed account will dispel all doubts as regards the true nature of these astras. On one hand, there is a tendency to ignore them while studying the Epic weapons, on the other, to look upon them as lingering memories of some long-lost miraculous powers known to ancient Indians. It would be wrong to ignore them if one desires to get an authentic and a full picture of Epic warfare. At the same time those who credit the Epic heroes with impossible super-human feats would do well to remember that each of these great men whether he be Droṇa, Aśvatthāmā, Karṇa, Arjuna or Kṛṣṇa, had his own weak moments on the battlefield, and finally succumbed to an inglorious end. The power of the Epic lies in cutting down these godly men to their human size.

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A comparison, rather a concurrence of the various weapon types that occur in the Mbh and those that occur in

other ancient literary works produces interesting results.

First and foremost comes the Vedic literature. It is mainly the Ṛgveda and the Atharvaveda which provide the relevant information on Vedic warfare. Very few of the Vedic weapons have survived in the Mbh. The bow and the arrow no doubt dominate the Epic scene as much as they do the Vedic, but at the same time the Mbh has almost doubled and trebled its strength. The range of arrows is now very wide, reflected in many different shapes, numbering nearly 30 to 40 different types, each with a unique identity and name of its own. The quiver too has metamorphosed from the small wicker-work iṣudhī tied to the back, to the larger tuṇa and tuṇīra carried on elephants and in chariots. The case of spears and lances too is identical. There are about 11 types in the Epic of which the Vedic ṛṣṭi is the least conspicuous. Then there are the various metal and wooden spikes and bars and bolts, unknown to the Vedas. Another striking absence in the Vedas is of the mace, gadā. No doubt the Vedic vajra was the prototype of the later gadā but in the Mbh it has become almost obsolete. Some kind of a body armour was known to the Vedas but in the Mbh it has grown in sophistication, with different components to protect the different parts of the body. Thus as far as weapons are concerned the Mbh is undoubtedly a great leap forward from the Vedic Period.

This evolution of weapons, this acquisition of

new types, this proliferation of new shapes, this utilization of fresh raw-materials and in general this breaking of new ground could not have come about all of a sudden. The process was probably spread over a long period of time, over generations and centuries. Can this evolution then be traced through the literary and artistic expressions of the ancient Indians ? An attempt in the direction is made here.

The Vedic period came to a close around 600-700 B.C. The next important literary evidence comes from Pāṇini (500-600 B.C.). Here two new types are at once evident - the dreaded spear of the car-warior śakti and the battle-axe paraśvadha (Agrawala 1963:423). Both are prominent weapons in the Epic. The Vedic axes paraśu and kuliśa are retained in the Mbh but more for cutting and felling wood, while paraśvadha emerges as the battle-axe proper. These two important new types immediately forge a chronological link between Pāṇini and the great Epic.

No sooner do we step into the next period of hectic literary activity, into the realm of Buddhist Pāli literature, a great change comes over the scene, which is further reflected in the evidence of Kauṭilya's Arthaśāstra. The extent of the change can be gauged by the fact that at least about 50 of the Mbh weapon types have parallels either in the Pāli literature or the Arthaśāstra, who between them share about 18-19 of these. Some of these

weapons are ofcourse a legacy from the earlier period, but the rest are absolutely new types on the scene. There are two categories of them in the Epic. To the first belong those which are quite unimportant as far as actual action in the Mbh war is concerned. They occur most of the time in groups, often herded together rather indiscriminately either in descriptions of fierce battle-scenes when every possible weapon was sent showering down upon the enemy, or similar descriptions of an abandoned battlefield littered with all kinds of weapons. This was probably the simplest mode of inserting new types into the body of the text without tampering heavily with the original narration. It was a kind of a retouching on the frills. Spears and lances like bhindipāla, karpaṇa, kunta and kaṇaya and spikes, bars, bolts and clubs like śūla, mudgara, musala, parigha, daṇḍa and sthūṇa are a typical example of these. There are also a few other types like the wheeled aśanis and śataghnīs, the huge cakras and various yantras or mechanical contrivances which are associated more closely with fortified than open warfare. All these weapons by reason of their not being involved in the actual action and because fortified walls are a late phenomenon, must have entered the Epic at a slightly later stage, although as weapons they may not be necessarily of late evolution.

To the second category belong those weapons which have become an integral and inseparable part of the Epic

warfare. These are the prominent arrows nārāca and kṣurapra, the quivers tuṇa and tuṇīra, the spears śakti, tomara and prāsa, the heavy spike pattiśa and the sword and the sheild now known more and more often as khaḍga and carma. An Epic battle would be meaningless without these. This time the retouching is not restricted merely to the periphary, but has touched the very core. In fact it is not a retouching any more, it is a remoulding of the Epic material. And this remoulding must undoubtedly have taken place somewhere between 500-200 B.C. The Pālī Nikāya and Piṭaka texts which were formulated immediately after the Buddha's death are supposed to be sure guides for the period 6th to the 4th century B.C., the Jātakas from about 4th century B.C. onwards, while the Arthaśāstra is believed to reflect the conditions of the 2nd - 1st century B.C. Thus, however much we would like to believe that the great Mbh war took place in some hoary antiquity, the compulsion of the evidence forces us to conclude that in its present form it can not go beyond 500-600 B.C., at the earliest. There will be much in it which goes back to 600 B.C. but much also that will be as late as 100 B.C. It has now become almost impossible to separate these elements although divided by a chasm of centuries.

Armed with these literary facts certain conclusions become inevitable. But they are not the last word on the subject, not hard and fast rules, but more in the nature of

generalizations, trying to corelate the literary evidence with the historic and the archaeological one in an attempt to build a chronological edifice, however loose, where the different phases of the development of the war and its equipment can be spel out somewhat more distinctly.

Phase I (Pre-600 B.C.)

The Mbh war preserves certain very archaic features. In this respect it is very close to the Vedic mode of warfare. Thus the bow is the weapon supreme in both the Vedas and the Mbh and every knight is, first and foremost, a great archer. The mightiest of the Epic, who controlled the fate of the war, Bhīṣma, Droṇa, Karṇa and Arjuna, representing 3 generations of Kṣatriyas,have all become immortal as great bowmen.

With the bow came the swift chariot. These two coupled together made the path of Aryan colonisation smooth and victorious. The Mbh preserves the same spirit where the chariot-riding archer rules supreme on the battlefield. The foot-soldiers, the horses, the elephants are there merely to make the war look like a war, to fill the vast space of the battlefield of Kurukṣetra and to be massacred mercilessly by the car-riding knight weilding his bow with speed and precision. All the great battles in the Epic are often reduced to almost close-quarter duals between two car-riding archers or else it is the archer in his vehicle against the entire army and yet he emerges unscathed and

crowned in glory. The whole picture is rather lop-sided and unfair, sometimes a little incongrous and unture as if mock battles are being staged with behind - the - scene planning. But the incongruity, the touch of falsehood, the exaggerated heroism are all part of the poet's excessive zeal in trying to superimpose the scenario of the later empirical wars on the original small-scale inter-tribal warfare. The poets have remoulded the equipment of the war with subtle ease, but they could not, fortunately, touch the very spirit of the heroic age. "This tradition is indeed earlier than the Buddhist period. Memories of old bygone days fire the imagination of the poet and painter; time does not efface them, for they are embedded in the thoughts of the people through popular song and story, in the form of the living Epic". (Singh 1965:36).

Another archaic feature of the Mbh is the prominent position of the gadā or the mace. The weapon appears to have been almost exclusive to the Epics. There is no mention of it in the earlier Vedic literature, nor in the later Pālī works, while in the Arthaśāstra it has been reduced to merely a missile weapon (II.18). Thenceforth it hardly plays any role in the later warfare. What was it that made the gadā such a popular weapon with the Epic heroes and how was it that it lost its celebrated position in later times ?

The mace was an important weapon of all primitive

people. In India itself our first introduction to the mace comes from the Indus valley cities. Many mace-heads have been uncovered at Mohenjo-daro as well as at Harrapa. They are generally of stone - a very close-grained limestone, sandstone, alabaster or marble, normally lentoid in shape but sometimes also round and pear-shaped (Singh 1965:90). They generally have an hour-glass type of perforation bored from both the ends (Wheeler 1968:76), through which was inserted the shaft made of either wood or hide. Then they were lashed all over firmly and securely to the shaft with leather thongs or lashings of raw-hide which became taut on drying (Marshall 1931:II. 461). The other ancient people in India who used similar stone mace-heads were the pit and mud-hut dwellers of Burzaom (IAR 1961-62:21), the mesolithic inhabitants of Langhnaj, the blade and burin users of Renigunta and the Chalcolithic settlers of Navdatoli (Sankalia et al 1971:329), Ahar (Sankalia et al 1969:212) and Chandoli (IAR 1960-61:27). Thus the mace has a wide range in antiquity from as early as 2500 B.C. Outside India too it was universal in the ancient world from neolithic Sardinia, Causasus, and Daunbe to early and pre-dynastic Egypt and early Sumeria where it was extensively used (Marshall 1931:II.461). In these early societies the mace was used as an effective weapon of tremendous crushing power mostly against wild animals by a hunting people or

by merchants and traders having to traverse the forest or at best by householders protecting their property (Mackay 1938:399). It was no doubt a weapon of individual protection, heavy and somewhat clumsy to be carried into a battle. Even today it is not uncommon in parts of North India to carry lathis 6-7 ft. long with an iron ring at one end, the blows of which can be fatal for man and beast alike (Sankalia et al. 1971:327).

The transformation of the mace from a primitive weapon to a more sophisticated war-oriented weapon took place probably with its transformation from stone to metal. Now it was smaller and more compact but not any less effective. The Mbh gadās are all distinctly metal ones. The first of this kind was found at Harrappa (Vats 1938: I.367), a round copper mace-head, small but heavy enough to be effective, and with many cuts and marks on the surface. Another copper-bronze mace-head was found at Chanhu-daro in late Harrapan or Jhukar phase and probably belonged to a people foreign to the Harrapan culture. Wheeler has compared it to Persian examples of the 2nd millenium B.C. (1959:61), while Piggott sites specific parallels from Luristan, Hissar and Sialk (cemetry B) (AI 4 1947-48:38-40). These are the only two examples of metal mace-heads in India. It is strange that with the coming of iron, a more cheaper and sturdy metal than copper or bronze, their number does not increase, but on the

contrary they totally dissappear from the scene altogether. This is what exactly happens in literature too. From 600 B.C. onwards when iron weapons were proliferating with great speed, both the literary annals as well as the archaeological ones are peculiarly devoid of the presence of the mace. It is as if the gadā had played out its role by the time the 'Heroic Age' was over and no one had any use of it later. The evidence of the Mbh is very crucial in the context of the advent of iron. When the Epic constantly speaks of the gadā as "śaikyā" it leaves no doubt that it was made of iron or tempered steel (śaikya) (III.157.64; V.50.28; VI.50.104; VII.138.17; IX.31.35). The epithet is also applied to a sword in the Mbh (V.47.97) as well as the Jātakas (VI.449). We know from Ktesias that swords of Indian make, made of the finest steel had become famous throughout the ancient world around the 5th century B.C. Quintus Curtius too refers to the gift of 30 lbs. of valued steel by Porus to Alexander at Takṣaśilā (Singh 1965:102). Thus these iron or steel gadās probably hark back to 600-500 B.C. But in that case it is truly unfortunate and a bit unreal that not a single specimen has been uncovered anywhere in India. There is another possibility that by the 4th century B.C. the use of the gadā was restricted to a few tribes and a few people only, those who relied more on their physical strength and stamina, their personal vigour and brute force and on close hand-to-

hand fights. This mode of fighting was effective in small tribal battles but not in larg-scale ambitious wars fought for empires. Thus there were the Śibis clad in animal hides and the Mallas (Malloi to the Greek) of North West Punjab who fought Alexander with maces and lost (Mujumdar 1960:200, 219). It is thus possible to believe that the mace was an important weapon so long as the tribal set-up survived, but was pushed into a secondary role and thence into oblivion when the tribes gave way to kingdoms and kingdoms to empires. The process had already begun as early as the 6th century B.C. in Eastern India with the rise of Magadhan Power but it was Alexander who dealt the final blow to the surviving remanants of the system in North-West India in the 4th century B.C. We may thus probably be justified to look for the lost 'Heroic Age' of the Epic in the setting of the small tribal states and confederacies prior to 600 B.C.

There is a widespread confusion in the minds of many scholars as regards the mace and the club. Most of them tend to equate the two but this hardly seems plausible in the face of literary and sculptural evidence. The word 'vajra', a peculiar weapon of Indra is generally understood as a club. But Vedic scholars like Keith and Macdonell (1912:I.61) are emphatic in their denial that the early Aryans knew the use of the club. They find no word in the Vedas which would mean a club and understand the vajra to be the thunderbolt of the rain-and-storm god Indra. But as pointed out by Dr. Singh

(1965:96) the description of the vajra in the Vedas does not easily lend itself to the interpretation thunderbolt. A few other terms like 'vighana' in the Taittirīya Saṁhitā (III.2.4.I) and 'drughaṇa' and 'pināka' in the Atharvaveda (I.27.2; VII.28.I) also seem to denote some kind of clubs. As noted earlier the Mbh equates the 'pināka' with the gadā. But just as the pināka was a popular weapon of Rudra in the Mbh so also was the vajra. Could it then be that the three of them, the vajra, the pināka and the gadā were one and the same weapon or at least one of the same kind ? If this is so then the Epic gadā has its proto-type in the Vedic vajra and pināka.

However as far as a regular club is concerned the Mbh makes a clear-cut distinction between the musala and the gadā. The difference was quite obvious. The gadā was basically a 2 piece weapon with a solid metal head, tied with leather-thongs to a wooden shaft, while the musala was a completely wooden weapon,at best capped in a metal head or strapped in metal bands. There were many other crushing weapons in the Mbh but all of them were missile weapons, thrown at the enemy, and not hand weapons like the gadā.

In sculptural representations too there is an easy distinction between the mace and the club. The mace has a long handle, almost slender,mounted with a big bulbous head, while the club is a long tapering wooden rod

with a rounded end. It is the club or musala that appears more and more often on Kuṣāna coins, on the famous stone statue of Kaniṣka and in the Nagarjunkonda and the Amaravati sculptures, whereas the gadā came to be associated exclusively with Viṣnu and became more and more stylized. The club in Kuṣāna sculptures or at Nagarjunkonda rests against the seat of the king and very often he places his hand on it, as if to lean or take support (Agrawala 1962: 39-40; Naik 1941: 280). It is thus a royal weapon. But it is highly doubtful if the king rode into battle with it. In all likelihood it appears on the sculptures as a kind of a royal symbol like a rod or a scepter, symbolizing the king's right to punish and to rule.

Phase II (600-200 B.C.)

The arrival of iron on the scene brought about a total revolution in all walks of life, but particularly so in warfare and weapons. With the manufacturing costs reduced, tools and weapons of metal now became more and more commonplace and more and more specialized, with newer and newer shapes coming into being. But this revolution did not come about in one stroke, it was a gradual change towards progress and prosperity. It took some length of time to tame the new metal, hard to work but more useful and avalaible in plenty.

It is now generally accepted by archaeologists

that iron was introduced into India around 1000 B.C. It occurs in small fragments and shapeless bits at Kauśambi as early as sub-period I.3 (1025-955 B.C.) even before the arrival of PGW, while iron weapons are already on the scene in Period II (855-655 B.C.) (Sharma 1960:22, 45). At Hastinapura iron slags and ore were found in the top layers of Period II (1100 - 800 B.C.) in association with PGW (AI 10-11 1954-55:13, 23). Iron objects also appear at other PGW sites like Alamgirpura (IAR 1958-59:54), Sravasti (IAR 1958-59:2), Atranjikhera (IAR 1962-63:12; Gaur 1967:14-15) and Ujjain (Bannerjea 1965:5). Already at this early stage iron spear and arrow-heads, though still only a handful, had started making their appearance (Gaur 1967:14-15; Bannerjea 1965:4). By 600 B.C. they were found all over Northen and Central India, at Rupar III (AI 9, 1953:123), Purana Quila (IAR 1954-55:14), Jajmau (IAR 1957-58:49), Ujjain (IAR 1957-58:34), Nagda II (300-500 B.C.) (Wheeler 1959:138-39) and Navadatoli-Maheshwar (Wheeler 1959:140-42). In fact the spread was quite rapid, reaching out into the heart of the Deccan and the South. Thus by the 4th - 5th century B.C. iron tools and weapons were not uncommon at Prabhas Patan in Gujarat (IAR 1956-57:17), Bahal and Tekwada (Wheeler 1959:146), and even as deep south as Amaravati in Andhra Pradesh (Wheeler 1959:148-49).

However, India had to wait for its next cultural

phase, the NBP culture Phase, to witness a true afflorecence of iron objects. This phase is more or less firmly dated to 500-200 B.C., its spread in the Deccan and South, being more during the latter half. By then the famous 'Wootz' process for crucible steel had also been originated in India. We have already referred to the two fine steel swords of Indian make which Ketsias is reported to have seen in the court of the Persian Artaxerses Mnemon (Cordon 1958:162) and the gift of Indian steel to Alexander by Porus (Curtius IX.viii.I). This period coincided with the birth of Buddhism, and the composition of its early canonical literature, the Nikāya and the Piṭaka texts. As noted earlier in the cource of this discussion and as will be amply clear from the chart, it is with these texts that the Mbh shares a maximum of parallel weapons. With the 4th century B.C. the NBP saw the rise of the Mauryas and the composition of a political treatise like the Arthaśastra with which too the Mbh has many parallels as far as weapons go. The NBP now became the delux ware of the Mauryas and spread all over the country in the wake of this powerful empire. Thus once again it needs to be repeated that it were these centuries from 500-200 B.C., coinciding with the NBP Culture Phase in North India, which witnessed the growth of the Epic in its present form. This is not to say that the war itself took place during this period. Far from it, for the war certainly preserves many archaic features.

What must have taken place was simply a complete overhauling, a total remoulding of the ancient material. It is as if the spirit of the narration is old but the grandeur is new.

The first prominently visible change is in the arrows. Their number increases steeply and along with it their shapes too diversify easily. This is as much true of literary as of actual finds. Three sites - Takśasīlā in the North-west, Kauśambi in the Gangetic plain and Ujjain in MP - are typical examples of this exuberance of iron arrowheads. At Kauśambi alone there are in all 11 types of arrow-heads numbering about 370 in intact conditions, while the intact spear-heads number about 58. These are of course spread over many centuries, from about 500 B.C. to 300 A.D. but the number is neverthless in sharp contrast to the meagre 2-3 found prior to 500 B.C. Of the 11 types the first 8 occur throughout period III (NBP:605-45 B.C.) and period IV (45 B.C. - 580 A.D.). Of these again the first 4 types are the most numerous (Sharma 1960:45-46). We have not made any attempt here to identify any of the literary types with the actual ones found in excavations, because despite the power of the poet's words literary descriptions have failed miserably in delineating the exact shape or make of the various arrows mentioned. We have to imagine the shape very often simply from the name, but it is at best, only a gueswork game, and therefore

it would be erraneous and worse misleading to try and equate any of the literary types with actual finds. It is suffice to say that the most productive period for iron arrows and spear-heads began with 500 B.C. coinciding with the literary evidence.

The story of spears and lances is not any different. The increase in their numbers and the diversification in their shape and size was synonymous with specialization, a particular type for a particular task. Thus we find that the Śakti was for the chariot-warrior, the tomara for the elephant corps and the prāsa for the cavalry. In the Mbh the śakti is the most prominent of these for the chariot is still the supreme apparatus of war. Next to it comes the tomara which is freely used by the car-warrior, but is also as often used by those mounted on elephants. In Pali literature too it is a specialized spear meant for the elephant riders. The prāsas and other lances simply fly and whizz across the battlefield of Kurukṣetra in large numbers, sometimes shadowing the sky, but their very presence in the Epic indicates that the mode of warfare was changing. It was no longer the chariot alone which would guide the fate of the war, but the elephants and the horses and the innumerable foot-soldiers too would play a decisive role. This lends some credibility to the oft-repeated concept of a four-fold division of an army [illegible] in the Epic. The change

is already evident in the Nikāyas and the Piṭakas. The Buddhist cannon pictures a period of tansition. As new problems clamour for an answer in the arena of unabated conflict, old values are put to the test of experience, and the emphasis shifts from the chariot to the elephant and the horseman" (Singh 1965:35).

A qualitative as well as a quantitative change came over the sword too at this time. In the Vedas it is simply asi, but now it is also a khadga and nistriṁśa. According to Kauṭilya, nistriṁśa had a slightly crooked tip while asi was slender and straight like a staff (yaṣṭi). He also refers to sword-handles of different make such as those from the horns of a buffalo or a rhinocerous (khadga, from whence probably the sword derives its name), from the tusks of an elephant, from sturdy wood and from the roots of the bamboo (II.18). Ivory handles and gold decorations were very much in vogue in the Mbh too.

This period witnessed a spurt in another group of weapons. They have been described by us as bars and bolts with great crushing power. Most of these appear on the seene with the Epics, the Buddhist texts and the Arthaśastra and were extremely heavy wooden weapons - wooden bars and ~~golden~~ wooden rods and posts - but almost always reinforced with metal bands. They were known as parigha, daṇḍa, sthūṇa, hūḍa, śataghnī and even mudgara and musala. Their role in the Mbh war is very limited. We are no doubt told that they were used in their hundreds but their impact seems to have

been negligible. Besides it is rather difficult to imagine how the infantry soldiers or even the chariots could have carried these akward-sized heavy wooden rods into the battlefield. It is Kauṭilya again who offers the clue. He has described a number of contrivances called yantras, which were so devised as to hurl these huge weapons with great ease and speed, crashing down upon the enemy lines and creating a great havoc amongst their ranks (II.18).

This brings us to the yantrāṇi so often alluded to in the Epic, specially in connection with fortified cities like Dwārkā, Laṅkā and Indraprastha. Though the Epic is reticent in giving details of their actual working, we learn much about them from sources like the Arthaśāstra. Going back in history, one of the earliest mechanisms deployed on an Indian battlefield was known as 'mahāśila-kaṇṭaga', a kind of a mechanically operated catapult to hurl huge pieces of stone. It was a completely new innovation and was used against the Licchavīs by Ajātaśatru of Magadha in the 6th century B.C. Another of his innovations was the 'ratha-musala', a chariot which wrought havoc by wheeling about and hurling destruction by its attached rods (Mookerji 1956:103). With these superior military weapons never fielded before, Ajātaśatru was able to humble the powerful Licchavīs after a protracted struggle. It is significant that these novel weapons came on the scene as iron began to be exploited more and more, and when Ajātaśatru

was in the ambitious process of transforming his kingdom into an empire.

The next we hear of these machines are from Greek historians. During his campaign in India Alexander is reported to have used a variety of military engines, like the ram to batter down walls, catapults to hurl missiles, stone and metal bolts, movable wooden towers from which archers could shoot at the enemy fortifications and engines that could throw a bridge across to the battered down walls. These machines were thus mainly effective against fortifications, ramparts and embarkments, and Alexander had to face a great deal of tough opposition from fortified hilly citadels all over North and North-Western India. (McErindle 1969 :67-68, 75).

The Indians seem to have learnt a lot from the Greeks about these machines for Kautilya presents an impressive line-up of them, split into 4 movable machines (calayantra) and 12 immovable ones (sthirayantra) (II.18). Again they are assets mainly in fortified warfare, where one has to either gaurd the defences or to batter them down. The very fact that a great majority of them are termed as 'immovable' rules out their use in an open warfare where things have to be constantly moving on the battlefield. Neverthless they throw a very interesting light on the modus operandi of the 2nd - 3rd century B.C. warfare and it is in fact the first time that the like of them have been systematically described. There were wooden-pillared

and leather-covered catapults for hurling stone (āsphoṭinī), pig-shaped leather bags stuffed with cotton and wool to protect the turrets from arrows and such other missiles (sukarikā), big and small wooden beams, in one case two of them facing each other, crashing down when the mechanism is released (devadaṇḍa, urdhvabāhu, ardhabāhu, bāhuyantra, viśvāsghātī), wooden planks studded with iron nails thrown across the moat (pañcālika), fire-machines made of long beams, to set fire to turrets (saṁghāti), water-machines to put out the fire (parjanyaka), towers of three to four decks from which soldiers shot arrows (bāhumukha), a bow-like machine discharging all kinds of weapons (jāmdgnya), sharp-rimmed wheels sending stones all around when rotated (sarvato-bhadra), another fan-like wheel producing strong wind and raising dust (tālavṛnta), and wrenches for pulling down pillars (utpāṭinī). The testimony of Kauṭilya proves that the yantras of the Epic were no fiction of the poet's imagination. In fact a lot of devices like the huḍa, śataghnī, giant wheels and sheilds that were specially put upon fortified walls, as also some of the divine astras like the āgneyāstra, parjanyāstra vāyavyāstra and sailāstra producing fire, water, wind, stones etc. are more easily explained by the evidence of the Arthaśāstra. Dr S.D. Singh has rightly observed that "the tenacity of the yantra tradition in Indian literature is proof alike of its real existence and its value" (1965:113).

Since hurling stones, large and small was the primary function of most of these machines, it would be worthwhile to trace the antiquity of sling-stone warfare. Zimmer has tried to prove that the words 'aśanī' and 'adri' in the Ṛgveda indicate that sling-stones and boulders were hurled at the enemy. But as pointed out by Macdonell and Keith (1912:I.19,41) the context is purely mythical, both being exclusively the weapons of Indra, there being no evidence to show that they were employed in human wars. The Vedic Aryans were therefore most probably strangers to this primitive mode of warfare. The evidence of the Mbh which suggests that the tribes of the Gangetic plain were inexperienced in sling-stone warfare is rather interesting against the Vedic background. In the Mbh it is either the rākṣasas or some forest-dwelling tribes (vanāyujān) or else the foreign and semi-foreign people of the hilly North-West who are experts in weilding the sling. They were purposely pitched against an inexperienced Pāṇḍava army.

The need to go into these details arises due to the interesting archeological data avalaible about the use of sling-stones in the Indus valley cities and many other pre-iron neolithic and chalcolithic settlements, e.g. -

Mohenjodaro	2500-1700 B.C.	(Singh 1965:90)
Harrapa	2500-1700 B.C.	(Singh 1965:90)

Rangpur			(AI 18-19:10)
Lothal			(Rao 1956-57:87)
Surkotada	Harrapan	(stone)	(IAR 1970-71:14)
Chandigarh	Late Harrapan	(stone)	(IAR 1970-71: 8)
~~Chandigarh~~ Chirand	IA Pre-iron Neolithic	(stone)	(IAR 1968-69:5)
	2000-1600 B.C.		
Kayatha	chalcolithic		(Dhavalikar + Ansari 1975: 145)
	2000-1200 B.C.		
Ahar	chalcolithic	(stone)	(Sankalia et al 1969:207)
	1950-1200 B.C.		
Navdatoli	chalcolithic		(Sankalia et al 1971: 335)
	1600-1300 B.C.		
Gilgud	chalcolithic	(stone)	(IAR 1959-60: 4)
	1500 B.C.		
Chandoli	chalcolithic		(IAR 1960-61:27)
	1200 B.C.		
Nevasa	chalcolithic		(Sankalia et al 1960:207)
	1100 B.C.		

Maski	Chalcolithic 900-400 B.C.	stone	(AI 13 1957:13)
Brahmagiri I	Stone-axe culture 1000-100 B.C.	stone	(AI 4 1947-48:253)
Kakoria	micro-megalithic ?	stone	(IAR 1963-64:58)

The above list of excavated sites reveals that there is an ample evidence of sling-balls of stone and sometimes also of baked clay and terra-cotta prior to 1000 B.C. The natural question to follow is whether in these early societies sling-stones were weapons of offence or merely aids for hunting birds and animals. Similar stone-balls occur in many neolithic sites in West Asia and scholars like Prof. Childe and Mallowan have thought them to be huntsmen's weapons rather than those of the warriors (Sankalia et al 1971: 334-335). The smaller ones were for killing birds, as is the case amongst the Mizo tribals even today, and the bigger ones for big game hunting. They were thus weapons of the open country, formidable in the hands of a skilled man. This is as much true of the early settlements in India as in West Asia. The sling-stones in most neolithic-chalcolithic sites in the country were no doubt for killing birds and felling fast-moving game. There is, however, an exception - Mohenjo-daro. Here the find-spot of the sling-pellets can not be overlooked. The two common types of backed clay-balls, weighing between 6-12

ounces, ~~respectively~~, were found in good numbers in 1950 near the great grannary at the foot of the citadel mound at Mohenjo-daro, while 98 six-ouncers were discovered along the parapet walk connecting two of the south-east citadel towers. Fifty or more, rather rare, ovoid-shaped balls were found stored in a large pottery vessel in the lesser of the two halls on the southern half of the Mohenjodaro citadel, while numerous large pottery balls lay scattered further south in the same area outside a very thick enclosure wall (Singh 1965:90). The close proximity of these find-spots to the citadel and the citadel-wall leaves no doubt that these sling-pellets were meant for serious warfare. Their size, shape and weight merely confirms this. They weighed as much as 6-12 ounces, were anywhere between 2" and 4" long and 1.6" and 2.5" in diameter, some even larger, either round, ovoid or egg-shaped, the ovoid form adding to the spin and the accuracy of the throw. These must have been either projected by a sling or hurled by the hand with practice and precision (Wheeler 1968:77). The Mohenjodaro evidence is a clear verdict that the pre-Aryan settlements in India were experienced in sling-stone warfare. Could it be that when the Mbh speaks of the rākṣasas using sling-balls it is reviving the memory of these long-lost chalcolithic cities and pre-Aryan inhabitants of the country ?

But it is not the rākṣasas alone who fight with sling-stones in the Mbh. There are the foreign Yavana and

the Śakas too, as well as some other tribes from the hilly tracts of the North-West like the Kāmbojas, the Bāhlikas and the Gāndhāras. It was with the invasion of Alexander in the 4th Cent. B.C. that the Greeks came in contact with India, followed later in the 3rd century B.C. with further Yavana invasions under Bactrian Greek kings. The Scytho-Parthians started making inroads into India around the 2nd century B.C. and by the 1st century A.D. they were firmly established in Gāndhāra and Sind. We have it on record from Greek historians that Alexander used mechanised catapults to hurl stones, wooden beams and metal bolts during his Indian campaign (Macrindle 1969 :75). There is no such record for the Śakas but they might as well have adopted some Greek tactics as they did so many other Greek things. Before the Greeks, the Persians too, are known to have used sling-stones in a big way. Xenophon reports that during the reign of Cyrus the Persian slingers shot large stones, but still they were no match for the Rhodians who used leaden bullets and sent them twice as far as the Persians (Huart 1923:44). The Kāmbojas, Gāndhāras and Bāhlikas who were an ancient people, probably of Indo-Iranian stock and known from the days of the Atharvaveda, are likely to have inherited some of these modes of warfare. The entire North-Western region, of what is mainly Pakistan and Afghanistan today, was a melting pot of cultures where much give and take took place. It is thus

well neigh impossible to date these portions. But two factors have prompted us to include them under Phase II -- the presence of the Yavanas and Śakas and the use of iron sling-balls along with those of stone. Similar iron-balls (ayoguḍa) are mentioned in the Buddhist texts too (Saṅyutta Nikāya V.283), though unfortunately not a single one has been traced so far at any excavated site. On the other hand sling-balls of stone occur quite often at historical sites e.g. -

Eran	pre-NBP	(stone)	(IAR 1961-62:25)
Sonepur IB	pre-NBP	(stone)	(IAR 1960-61:5)
Chirand II	NBP	(stone)	(IAR 1968-69:6)
Taxila (Sirkap)	50 B.C.-200 A.D.	(stone)	(AI 4 1947-48:78)
Rajghat III	100-300 A.D.	(tc and stone)	(IAR 1960-61:37)
Brahmagiri II	megalithic	(stone)	
	200 B.C.-50 A.D.		
III	Andhra	(stone)	
	50-300 A.D.		
	(AI 4 1947-48:253)		

Of all these sites that of Takśaśīlā (Sirkap) is more interesting from our point of view since the stone

sling-balls found there cover the period of Greek, Scytho-Parthian as well as Kuṣāṇa occupation. Of the others, Rajghat is the only site situated in the Gangetic plain and its evidence is rather late, from the Christian era. A lot of spadework will have to be done still at many early historical sites before a judgement can be pronounced on the truth and veracity of the Epic weapons.

Phase III (200 B.C. - 200 A.D.)

Phase III covers a period after 200 B.C. It does not have any new weapons to its credit but its stamp is indelibly marked on the decorations and ornamentation of the various weapons.

There are two types of ornamentation - one with gold and one with jewels and precious stones. Unfortunately literary descriptions of richly ornamented weapons draw a complete blank on the archaeological scene. No such weapon has so far been unearthed anywhere in India. But we need not immediately jump to the conclusion that they were fictitious, beautiful illusions conjured up by the poet's imagination. Ancient sites outside India, in Egypt, Iraq and Iran have brought forth some exquisitely ornamented weapons while the treasures of the nomadic Scythian graves in Central Asia are unparalleled. It is therefore not unlikely that such weapons existed in India too, but somehow disappeared without a trace, one of the primary reasons

being that we have no royal graves which would preserve them intact for posterity. We have to, therefore, rely almost entirely on literary descriptions, at times aided and substantiated by sculptural representations.

Ornamentation with jewels (ratna) and precious stones (maṇi) was on a very limited scale. It was done as incrustation on metal and was possible only where the weapon was a metal one. Again it had to be restricted to those parts of the weapon which were not directly in contact with the body. Thus it were mainly the gold handles of a śakti, a sword and an aṅkuśa that were embellished with jewels and stones. Then there was the gadā with its bulbous metal head and the gold-washed armour plates of copper, bronze and iron. Wooden weapons like the bow which were backed with gold sheets were also likewise adorned. The favorite amongst the gems was beryl (vaidūrya), but corals (vidruma or pravāla) and diamonds (vajra) too are mentioned once.

A detailed discussion on gems and gems-incrustation has already been undertaken in a previous chapter (VII). The conclusions are valid here too. Most of the gems were introduced to literature from the Mauryan period onwards when trade and commerce with Cylon opened up and prospered. During the early period these gems were strung loosely on a thread or on a gold chain. The art of gem incrustation on metal came much later, an introduction of the Scytho-

Parthians at Takśasīlā around the 1st century A.D. It was a great favorite with them. Therefore all such weapons in the Mbh must belong to a later stage of Epic development - late not as weapon types but late by reason of their ornamentation. It must, however, be pointed out, right at this stage, that it is not as if each and every piece of a particular weapon type was ornamental. It was actually, very often, only a single piece in a thousand which carried the ornamentation, and it was only this piece that was a late insertion and not the others. Thus there was only one bow (VII.143.11), one gadā (IX.8.25) and one sword (VII.47.37) which had the gem-incrustation, all other specimens of the same class lacking this lavish touch. It is the same story with the armour plates - only once are they described as incrustated with beryls (I.27.41). With the śakti and the aṅkuśa, however, gem incrustated handles are not so rare (VI.107.11; VII.13.75; 108.20; IX.16.37-46; VIII.14.47), but not so very common either. On the whole weapons with this form of ornamentation were rare in the Mbh, so that they easily stand out in the vast multitude.

Ornamentation with gold was comparatively very widespread as it was varied. It consisted of

i) gold shafts for spears and javelins like the śakti, tomara and prāsa;

ii) gold handles for aṅkuśas and swords;

iii) gold strips, wires and bands for bow-staves, gadā, musala and parigha;

iv) gold chains and gold network for the mace and the sheilds;

v) tiny golden bells, kiṅkiṇīs, for the śakti, śataghnī, the wooden and leather sheilds and the leather sword-scabbards;

vi) gold-embossing or gold-carving for the leather thongs of the gadā and the ivory handles of the swords;

vii) beautiful motifs cut out from gold sheets and stuck to bow-staves, quivers, sheilds and armour coats.

Besides these specific decorations "gold bedecked" is a constant epithet of many a weapons.

The most interesting of these golden decorations are the beautiful motifs cut out from gold sheets and fixed like applique work to the exterior of weapons. The type of weapons to which they were glued, bows, quivers, sheilds and armour, were those that remained constantly with the warrior and could not generally be lost in the melee like arrows, spears and such others. These motifs were of many kinds -

i) Geometrical motifs e.g. concentric circles, tiny dots, replicas of the eye;

ii) Astronomical motifs e.g. stars, planets, the sun and the moon, particularly the half-moon or the crescent;

iii) Floral motifs e.g. lotuses and other flowers, not specified;

iv) Animal motifs e.g. tigers, elephants, deer, insects like the cocheneal (indragopaka) and the grasshopper (śalabha), fish and some birds not specified.

With one exception these decorations are entirely restricted to weapons. The exception is Kṛṣṇa's chariot described in the most lavish terms in the Udyogaparva (V.81.16-18). Certain motifs like the fish, the deer, and the birds, occur only here while others like the sun and the crescent are common.

Another rather interesting feature of these decorations is that as far as weapons are concerned they are entirely restricted to the Virāṭaparva (IV.38). None of the other Parvas particularly the war Parvas which are so replete with weapons ever speak of these applique motifs. The only one conspicuous exception is that of the śatacandra motif which appears on the sheilds and the leather bucklers

throughout the Epic. In the absence of these decorative motifs, in all but the Virāṭaparva, Kṛṣṇa's chariot all glitters with them, stands out as a clear case of later interpolation in the Udyogaparva.

On the whole, there are hardly a few places in the entire Mbh where these decorations are alluded to, and considering that it is an Epic devoted to a mighty war it is a rather poor show. There is, therefore, no difficulty to pin-point them as later additions or better still later embellishments. But the question is how late ? Let us first consider the śatacandra motif for it is the only one that occurs throughout the Epic and was immensely popular for the sheilds, so much so that the sheilds came to be identified with the design itself.

We are extremely fortunate that sheilds bearing exactly such a design are preserved for us on the painted walls of Ajanta. A square sheild in Cave VII is shown exquisitely decorated with the sun and the moon pattern (Dhavalikar 1973:112). The pattern is a series of crescents each topped with a little circle. It is not possible to count the exact number of crescents and it may not be exactly 100. But then the Mbh also mentions sheilds with only as many as 8 crescents (aṣṭacandra). Besides it is not possible for a painter to be realistic to the minutest details, on the small surface-space

available to him. What is important is the graphic vindication of a design which appears so often in literature. The paintings in this particular cave are dated to around 455-510 A.D.

However, at least 5-6 centuries earlier, around the 1st century B.C. or so, an exactly similar pattern appears at Sanchi also, but on cloth banners and not on sheilds. The sheilds at Sanchi are decorated only with bands, vertical, oblique and crossed (Dhavalikar 1965: 60-61). But there are at least two examples where cloth banners carry the crescentic design - those hanging down from umbrellas atop caitya and another held afloat in both the hands by a flag bearer walking in a procession (Marshall 1940? : II , Pl. XXVI c). Thus it is almost certain that by the 1st century B.C. the crescent design was very much in vogue, for other things if not for sheilds.

There are other opinions on the subject too. We have it from Arrian, the Greek chronicler that the sheilds used by the Indian soldiers in the 4th century B.C. were strictly utilatarian and severely plain (Date 1929:24). But the same Arrian reports that the metal armour worn by king Porus was embellished with gold and silver (Chakravarty 1941:177), though he does not give any details of design and pattern. Dr V. S. Agrawala on the other hand has cited Gupta and Sassanian parallels of 4th-5th century A.D. to explain a passage from Bāṇa's Kādambarī, which refers to

the 'śatasurya' and 'śatabindu' patterns on the armour of Prince Candrāpīḍa. He compares them favorably to the exactly similar patterns appearing on the armour coats in the Virāṭaparva. The similarity does not end here, but also includes the 'śatāvarta' pattern which appears on armour coats both in the Mbh and the Kādambarī (Agrawala 1958:112-113, footnotes 1-2).

The picture that emerges shows that by the 4th century B.C. precious metals like gold and silver were being used to embellish metal armour if not other metal weapons. By the 2nd - 1st century B.C. a pattern depicting a series of crescents topped with circles, referred to as the - sun - and - the - moon pattern by scholars was evolved, appearing mostly on ceremonial banners and was tremendously appealing to designers. It was only centuries later, in the 4th - 5th century A.D. that it appears on sheilds too, but it is quite likely that such sheilds were known much earlier although at present there is no sculptural or painted representation from an earlier period. The Mbh seems to be passing exactly through this phase for it is bristling with references to the 'candra', 'ardha-candra','aṣṭacandra' and particularly the 'śatacandra' pattern which decorated the leather sheilds of swordsmen. It is the most dominant pattern in the Epic appearing in almost each and every Parva. By the 6th century A.D. or so, these patterns became frozen and stylized into various

geometric compositions e.g. 'śatabindu', 'śatāvarta', 'śatasūrya' and 'śatākṣī' in which the number 100 appeared with a monotonous repitition. That these stylized patterns were late in the Mbh too is obvious since they are entirely restricted to the 38th adhyāya of the Virāṭaparva and do not appear anywhere else in the Epic. Their ad verbatim parallels in Bāṇa's Kādambarī can push their date further down to the 7th century A.D. Again they seem to have been confined to armour-coats both in the Mbh as well as in the Kādambarī, understandably so because no other weapon can provide so much designing surface for a pattern running into hundreds.

The floral and the animal motifs are equally interesting not only for their artistic antecedants but also for their chronological implications. We are again singularly fortunate that life-size replicas in stone of a sword and a club (musala) ornamented with animal forms have been preserved for us. Both are part of a huge headless stone statue of the Kuṣāṇa emperor Kaniṣka found at Mathura and dated to the 1st century A.D. This sword has a long hilt, originally of ivory or jade, decorated on top with a swan's head, while the ~~mace~~ club 3'-5" long is strengthened with 5 metal bands, the lower-most of which is decorated with a fish-tailed makara head which like the bands must have originally been of metal (Agrawala 1952: 39). The appearance of these ornamental animal motifs

wrought in costly materials like gold, ivory and jade on weapons belonging to a powerful emperor suggest that they were generally reserved for royal weapons. Again their association with the Kuṣāna emperor immediately raises the question whether they were wrought under foreign influences ? They most probably were. There is ample evidence to show that the art of the Kuṣānas or of the Śakas and the Parthians who preceded them and of the other nomads who inhabited the Central Asian steppes and Chinese Turkestan was very much dominated by animal forms, wrought in different mediums but particularly in dazzling gold. They can be seen everywhere in the gorgeous assemblage of Scythian and nomadic grave-goods, on ornaments, garments, utensils, horse-gear and pole-tops etc., but above all on weapons of all sorts, on sword-hilts and axe-handles, on metal plates for sheilds, quivers, scabbards and bow-cases, and on corslets and helmets. Animals like lions, tigers, lynxes, stags, ibexes and little hares alternate with eagles, griffins and fishes (Phillips 1965). With this rich legacy behind there can be no two questions about the source of inspiration for Kaniṣka's weapons. The Indian artist and metal-worker was not slow in picking up these new trends brought in the wake of a new ruling elite of Śakas, Parthians and Kuṣāṇas, but it is a typically Indian fauna with elephants, deers, crocodiles, swans and insects like the Indragopaka and the

Śalabha.

Substituting typically indegenous animals and birds was no problem for the Indian artist. He had before him some beautifully executed pieces in stone from Barhut, Sanchi and elsewhere. Now he had to merely try a new medium, metal, the malleable and the ductile gold. Another rich source of lively faunal forms were probably the early silver punch marked coins, issued by various authorities over half a millenium, from 600 to 100 B.C. The punched symbols include fishes of different kinds, elephants in various poses, humped bulls, cows, horses, antelopes, gazelles, stags, rhinos, lions, monkeys, hares, dogs, peacocks, cranes, and other birds, snakes, scorpions, little lady-bird like insects, tortoises and frogs (Smith 1972:131; Allen 1936:297-309). Thus there was no derth of animal forms. They were already there punched on silver. Now they had to be worked in gold, gold plaques and gold repousse work.

Certain other of these punched symbols too are interesting. There are lotuses which are upturned and hanging from the stalks and lotus-buds, as well as many geometrical and astronomical symbols. There are circles and circular dots, sun and stars, solar symbols like concentric rings with dots outside and crescents in various combinations. The occurence of the crescent is suggestive but is nothing compared to the frequency with which it

occurs on Sassanian coins from 226-578 A.D. In fact almost all the patterns on these coins are composed of the crescent (Smith 1972: 225-229). Earlier, around the 1st-2nd century A.D. or so, the western Satrap and the Indo-Scythian and Indo-Parthian coins too depict the crescent and the star, as well as the sun, symbolized by 7 vertical strokes as the rays or simply by 7 or 8 dots (Smith 1972: 123-126: Gardener 1966 : 70). The still earlier local coins of North India, of Ayodhyā, Avanti and Kosām or the Tribal coins like those of the Ārjunaya, Audumbara, Kuṇinda, Yaudheya, Mālava and Rājanya, ranging from 150 B.C. to 100 A.D. show no such fondness for the sun-and-the-moon or the crescent-and-the-star patterns (Smith 1972:148, 166).

It is a similar story with the dynastic coins of the same period, like those of the Mitras of Pāñcala and Kosala, of the Mathura Śatraps and of the Āndhras of the South (Smith 1972:186, 209). It is only on coins found at Takśaśilā during 350 B.C.-100 A.D. that one comes across the crescent placed atop a chaitya or of a solar pattern composed of crescents applied to a central boss (Smith 1972: 148). Takśaśilā was placed in an enviable position as the capital of Gāndhāra, a region so often described as a meeting place of cultures. In the light of the above numismatic evidence it is no surprise that Dr Agrawala (1958:112-113) sees Sassanian inspiration and influence behind the sun-and-the moon (crescent) pattern which was

very popular in the Gupta period. But as pointed out earlier the pattern already occurs at Sanchi around the 1st century B.C. Thus even if the artistic impetus might have come from foreign sources it need not be as late as the 3rd-4th century A.D.

To breifly summerise the situation, it can be argued that all those weapons in the Mbh which are heavily and intricately ornamented with gold, gems and stones, have by and large, entered the Epic somewhere between the 2nd century B.C. and the 2nd century A.D. in the wake of foreign invasion and foreign cultural and artistic influences. Since most of them are found mainly in the Virāṭaparva it is not difficult to pinpoint them as probable later additions.

Phase IV (200-400 A.D.)

This phase is represented in the Mbh by an exclusive weapon of Kṛṣṇa, the śārṅga or the horn-bow.

One of the earliest references to a śārṅga is found in the Arthaśāstra. Kauṭilya refers to 4 types of bows - kārmuka of palmyra wood, kodaṇḍa of bamboo, druṇa of some durable wood and dhanus of śṛṅga or horn (Date 1929 :13). Kodaṇḍa and druṇa do not occur in the Mbh but kārmuka and dhanu are very common. On the authority of Kauṭilya we can conclude that the dhanu of the Mbh was of horn and the

kārmuka of tāla or palmyra wood. But this might be a hasty conclusion. The dhanu was an ancient Vedic bow and from all the descriptions in the Vedas scholars are led to believe that it was made of wood and bamboo. Pāṇini too refers to a dhanu (III.2.21) as also to a kārmuka (V.1. 103), but makes a separate note of a 'tālad dhanuśi' or 'tālam dhanu' (IV.3.152) (Agrawala 1963:424), a bow made of tāla or palmyra wood. The Mbh too refers to a 'tālamātra dhanu' (V.26.23, 159.25; VIII.49.13). Thus neither the Vedas, nor Pāṇini writing in the 5th century B.C. were aware of horn-bows. The eredit of tapping new raw-materials should, therefore, go to Kauṭilya. However, around the same time or even earlier than Kauṭilya the Pāli Jātakas often refer to bows made of ram horns (Chakravarty 1941:153; Singh 1965:103). Their evidence combined with that of Kauṭilya points to the induction of the horn-bow into India before the beginning of the Christian era. In the light of this evidence the Śarabhaṅga Jātaka contains an interesting story of how the Bodhisattva was sent to Takśasilā to learn archery and there acquired from his teacher a quiver and a bow of ram-horns among other things. The quiver and the bow-case were deftly joined together, so compact that he could conceal them both beneath his under-garment when he appeared for an archery competition and emerged superior to all the archers of Vārāṇasī (Cowell 1957:III.66-67). Now a similar bow-and-quiver-compact is

portrayed attached to the saddle of a king on horseback on some Indo-Scythian and Indo-Parthian coins of the 1st century A.D. from Takśasīlā (Smith 1972:38; Gardener 1966: 91-93, 116). Thus it appears that it were the Scytho-Parthians who were responsible for introducing the horn-bow first to North-West India and then to the rest of the sub-continent. This deduction seems the most logical since it is well-known that the compound horn-bow was made famous by the steppe nomads, the various Scythian tribes of Central Asia. The horn was a typical steppe material, easily available amongst a cattle-and-sheep rearing people, whereas wood, bamboo etc. were scarce in the treeless steppes. The use of horn, two well-curved pieces joined together by a short piece of wood, automatically reduced the size and the flexibility of the bow, so that it was much shorter and stiffer than the wooden and the bamboo one. But there can be no dispute about its strength and hardness. It was notably short for its great power, but wonderfully suited to the swift-riding horsemen of the steppes, who would otherwise have been greatly inconvenienced dragging a long bow. Very often its case was combined with the quiver, compact, made of wood, covered with leather and metal and easily suspended from the waist band of the rider, leaving his hands and legs completely free to manipulate the horse, in the days when stirrups were yet to be invented.

The Scythians, however, were not the first inventors of the composite horn-bow though they are known to have used it from the 6th-7th century B.C. The bow was no doubt an invention of the Asian steppes but it was used much before the Scythians appeared on the scene by Minoans in Crete, by the Egyptians of the 19th Dynasty and by the Assyrians in the 1st millenium B.C. Its use in all these three cases synchronised with the use of the war-chariot, for just as its size made it handy for a horseman so also for a chariot-riding archer (Singh 1965:93). The same appears to have been the case in Homeric Greece too. But in this early period these bows, probably costly and difficult to make, were usually seen in the hands of nobles and princes, while the rank and file carried the simple bow of wood. The proud challenge of Penelope to bend the famous bow of her husband Odysseus merely stresses the comparative novelty and rarity of these bows. With the Scythians taking to the horse the situation was completely altered. Now every horseman needed a composite and a compact bow. With their powerful bows and intrepid riding they became the world's most feared raiders. The credit of popularising the composite horn-bow through nations and continents certainly goes to them. The first contacts of the Scythians in India were somewhere around the 2nd century B.C. when they started making inroads through Afghanistan and Baluchistan into the lower Indus Valley.

By the 1st century B.C. the first Indo-Scythian and Indo-Parthian kingdoms had been established in Gāndhāra with its centre at Takṣaśilā. The evidence of the Arthaśastra and the Jātakas points to the same period when the śarṅga bow was most likely introduced through North-West India.

However, it took a long time for it to percolate through the length and breadth of India, and its use became widespread only from the 4th century A.D. onwards as seen from the testimony of the Agni Purāṇa (5th century A.D.) in which the śarṅga emerges as the true compound bow made of horns and iron conjointly. Horns of the buffalo and the rohiṣa and śarabha deers constituted the main body joined together in the centre by a piece of metal or wood (Chakravarti 1941:154). The steppe bows were generally made of ram-horns and so were the ones in the Jātakas. Sturdy sheep and ram are more a speciality of the North-West than India proper. Hence probably the comparative novelty of the ram-horn bow which Bodhisattva had fetched from Takṣaśilā. With the passage of centuries and probably a lot of experimentation, the Indians had come to evolve a śarṅga bow of typically indegenous material like buffalo, rohiṣa and śarabha horns. Since then the śarṅga has been in general use with most members of the royalty. Sculptural and numismatic evidence supports this view. The double-curved compound bow was of rare occurrence in early Indian art, whereas a late group of Ajanta

frescoes, depicts a fine example with two well-curved halves and a staff centre-piece (Dhavalikar 1973:105). The coins of the Gupta kings portray a variety of royal bows, prominent among whom is a double-curved bow. Some of the specimens are quite short, with two finely-curved halves, a centrepiece, either straight or curved and often ringed, beaded or decorated, and two thin and tapering, evidently flexible extremities (Vidya Prakash 1960:284). This powerful bow is seen in full action on the 'lion-slayer' variety of the Gupta coins. By the 6th century A.D. the term 'śaṅga' had become synonymous with a bow.

To turn to the Mbh again the śārṅga in the Epic is a divine weapon. None of the Epic heroes weild a śārṅga. It is Kṛṣṇa and Kṛṣṇa alone ! The earlier references to the śārṅga in the Arthaśāstra and the Jātakas are entirely secular there being no trace of Kṛṣṇa anywhere. Then at what stage did the śārṅga become an exclusive weapon of Kṛṣṇa ? The first to voice such a connection was probably the poet-dramatist Bhāsa. In his drama Bālacarita based on the childhood of Kṛṣṇa he refers to Viṣṇu-Kṛṣṇa as 'Śārṅgin'. The date of Bhāsa is controversial, though many scholars would place him between the 1st century B.C. and the 1st century A.D. Many of Bhāsa's plays are based on the episodes in the Mbh and it is quite likely that the new trends deifying Kṛṣṇa and indentifying him with Viṣṇu were set in motion around this time. By the 4th century A.D.

'Śārngin' is a regular epithet of Viṣṇu in the Amarakośa (I · 19) while the inscriptions of the late Gupta kings speak of temples raised in honour of Viṣṇu-Kṛṣṇa as 'Śārṅgin' or 'śārṅgapāṇi (Hultz 1925: Corpus III.53). The Mbh evidently reflects this phase when the śārṅga had become crystallized as an exclusive attribute of Kṛṣṇa .

A word about the legend of Kṛṣṇa's rivalry with Mura would not be out of place here. It was a great event in Kṛṣṇa's life and he is said to have obtained the śārṅga bow after defeating and killing Mura. If we believe the śārṅga to have been introduced by the Scythians it could be that the Kṛṣṇa-Mura fight is a legendary memory of some actual battle between the invading foreigners and a local cheiftain or princeling. We are also told that along with the Śārṅga Kṛṣṇa acquired as booty a pair of jewelled ear-rings and lots of precious stones. This is again highly suggestive of Scytho-Parthian connections. They are reputed to have been extremely fond of gems and precious stones and the art of gem incrustation on metal, as in the case of maṇikuṇḍalas obtained by Kṛṣṇa, was another of their introductions into India. There is, however, one snag in the story. The battle between Kṛṣṇa and Mura is supposed to have taken place at the city of Prāgjyotiṣa, which is generally located in eastern India, in modern Assam, far away from the scene of action of the Śakas in the North-West. But at the same time there seems to be

The Mbh too locates the same city somewhere in North-Eastern India (II.23.17-19). If some day the exact identity of Mura and Prāgjyotiṣa is established it will probably throw some interesting light on the legend of Kṛṣṇa as a whole.

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