CHAPTER IX

ARMS AND ARMOUR
The history of warfare is intimately connected with the development of and sophistication in weaponry and implements of war. The characteristics and effectiveness of arms, beside other things, vitally determine the tactics of war. It is the range and the rate of fire of weapons possessed by rival forces, which indicate the stage upto which the close contact can be postponed, encirclement completed, the flank-attacks pressed-home, and the forward move ordered. It is again the weapon, its effectiveness against enemy arms and armour, the ease and duration for which it can be wielded in a melee and the final deadly combat, affect the outcome of the action. The weapons have cut men and empires to size and changed destinies and fortunes of nations. Out of their sharp razor-edges have emerged mighty civilizations, empire builders and world-burners. "Weapons were the best friends of the brave, the symbol of authority and the token of command....."¹

Numerous classifications of weapons based on their characteristics, their mode of operation and functions have come down to us from ancient and modern writers. Kautilya divided them with regard to their form and characteristics such as those which were immovable or movable, those with edges like 'plough-share' or razors, bows and arrows, swords, stones, and armours.²

1. Pant, G.N., Studies in Indian Weapons and Warfare, p. 1
2. Arthasastra, Bk. II, Ch. XVIII
The Agni Purāṇa\(^3\) classified weapons on the basis of the mode of their operation as under:

(a) **Yantra-Mukta**: Thrown by machines.
(b) **Pani-Mukta**: Thrown by hand.
(c) **Muktāsandhārita**: Those thrown and drawn back.
(d) **Amukta**: Which are not thrown.
(e) **Bāhuavyudha**: Natural weapons - Limbs of the body.

The *Nītīprakāśika*\(^4\) divided them as under:

(a) **Mukta**: That can be thrown.
(b) **Amukta**: That which is not thrown.
(c) **Muktāmukta**: That which can be wielded in both ways i.e. may or may not be thrown.
(d) **Mantramukta**: Those which can be thrown by means of spells.

A later work of our period *Yuktikalpātaru* of Bhoja gives out the following classification:

(a) **Māvikam**: Deceitful e.g. combustibles.
(b) **Nirmavam**: Non-deceitful like the sword.

P.C. Chakravarty has divided weapons into two broad categories i.e. **offensive** and **defensive** weapons.\(^5\) In a latest work of repute by G.N. Pant, the weapons have been functionally divided as slashing weapons, (swords, axes, etc.), weapons of

---

3. Agni Purāṇa, 249, 2; also Gustav Oppert, *On Weapons Army Organisation Political Maxims of the Ancient Hindus*, p. 11
5. *The Art of Warfare in Ancient India*, p. 151
thrust (spears, tridents, etc.), projectiles (arrows etc.) and weapons for smashing (mace etc.).

Taking into consideration their utility and role in actual battle and the terms in which they would be better understood in the modern age, the weapons belonging to the period of our study can more appropriately be divided as under:

(a) **Close-Combat Weapons**: Used at close-range and hand-to-hand fights like sword, mace, dagger, trident, etc.

(b) **Light Close-Support Weapons**: Bows, arrows, naptha balls, slings and so on which could be carried easily.

(c) **Heavy Close-Support Weapons**: Sarvatobhadra, Catapults, battering rams, Visvāsaghati etc., which were heavy machines and required number of men to carry or operate and used to defend or attack forts and fortifications.

(d) **Shields**.

(e) **Armour**.

Shoving the pedanticism in its narrow grooves, we shall proceed to study the characteristics of weapons most in use with a view to assessing their battle worthiness. It may be noted that we shall be studying weapons and their characteristics and not the history of their origin or the stages of their development dating back in the dim past.

Bow and Arrow:

In the Vedic literature one finds frequent allusions to bow and arrow. The art of using this weapon had become so important that a separate treatise called Dhanurveda had been devoted to the learning and mastery of this art - dhanu meant bow, sarva, sāri and hāna signified the arrow (Plate II and III).

The bow was held in such a high esteem that its removal from the hand of the dead person completed the last rites.

The mastery over bow and arrow was considered to be so important that it was felt that, "A single dhanurdhara can maintain law and order in a village, as a single lion rules the entire forest". The epic warriors could perform wonderful feats of valour and destruction with the help of bow and arrow. "Almost every battle scene presents a net-work of arrows crossing and cutting one another in mid air. Bows are rent asunder and bow strings are cut in twin; charioteers are slain, and chariots are destroyed together with their horses". Kauṭilya spared no pains in explaining the types of bows and arrows. Rajyavardhana, when returned to Sthāneshwar after hearing the news of his father's death had "long white bandages, bound about arrow-wounds received in battle while conquering the Hūnas....." In anguish and

---

7. RgVeda VIII. 72. 4; 77.11; IX 99-1; X 125-6, etc.
8. Ibid. II 24.8; VIII 7.4
9. Ibid. X 13.9
10. Dhanurveda Samhita, Verse 6
12. Arthasastra. Bk. II, Ch. XVIII
burning rage on being informed about the death of Rājyavardhana, thus spoke Harṣa, "truly now the fool . . . laid hands upon my lord's life as honey, saw not the coming on-set of swarms of arrows". 14 The Alinā copper plate of Maitraka king Śilāditya of 7th century A.D. eulogised that his bow and arrow had upset the peace of his enemy land. 15

The Rājataranginī mentions the darts and arrows, being used. Towards the close of Harṣa's career (1089-1101 A.D.) in the fight at the city-bridge "Janaṇa Candra and others shot arrows at the kings' fighting elephants which stood in front of the bridge and had thrown off its armour." 16 Female archers are found depicted in the art of our period (Plate IV, Figs. 1, 2, 9).

There are numerous references to bow and arrows in the Sisūpālavadha. 17 Bow and arrow was the principal weapon of Gurjar-Pratiharās as well as pālas of Bengal. A terracotta plaque from Paharpur (Bengal) shows that the bow and arrow were in use. 18 Describing the battle field of Tarain after the defeat of Prthu-virāja III, Rawlinson says that amongst other things in miles of area, heaped bows were found. 19 According to Chand Bardai Prthu-virāja was himself an expert archer who could hit a target without seeing it, only on hearing the sound.

14. Ibid., p. 180; see also p. 186
16. Rājataranginī, Bk. VII 3' 1553
17. Sisūpālavadha, XVII-53, XX-30
18. Dacca University: History of Bengal, Plate LVII
Although archaeological finds of arrow-heads pertaining to post Gupta era are rare, yet it is reasonable to assume that 'Socketed' and tanged varieties of arrow-heads were continuously in use in India. The sculptural evidence of the use of archery in India during our period is not wanting. Panels of Ellora generally show bow along with other weapons. Also Siva has been shown as holding a very long bow. Similarly sculptures at Khajuraho depict bow which is slightly less than the height of their wielder and was kept slung on the left shoulder. Jain goddess Chakresvari can be seen holding a bow in her left hand and a barbed arrow in her right hand in Dilwara temple. Several sculptures representing Rama and Lakshmana holding bow and arrow have been found in Gupta and post-Gupta art.

Based on the material of which they were made, the bows have been classified as Kārmuka made of tāla (Palmleaf), Kodanda made of dārū (Dhanvantri) and dhanuṣ made of Śrṅga (bone or horn). "Venu, Śara, Śalāka, daṇḍasana and nārācha are different kinds of arrows. The edges of arrows shall be so made of iron, bone, or wood, as to cut rend or pierce." Arrow-heads were of different kinds e.g. "Aramukha" (Serrated), "Chūrapa" (with a

21. Munshi, K.M., Saga of Indian Sculpture, p. 82
25. Arthasastra, Br. II, Ch. XVIII
26. Ibid.
razor blade), 'Gopucha' (like the tail of the cow), Ardhachandra (crescent headed), 'Suchimukha' (needle shaped), 'Bhalla' (spear headed), 'Batsadanta' (like a calf's tooth), 'Dvibhalla' (Double spear - head), 'Karmik (petal of flower) and 'Kakunda' (back of the crow) etc. 27 Each type was meant for a specific purpose. 'Ardhachandra' for aiming at throat; 'Suchimukha' for piercing the chain armour, 'Bhalla' for aiming or intersecting the arrow of the enemy, 'Batsadanta' for cutting the string of the enemy's bow, 'Karnika' for cutting the iron objects, etc. 28 "The crescent shape is common both to India and Africa and we hear of it in Roman Times; the blunt, pointless heads are said to have been used for killing birds without drawing blood or injuring the plumage". 29 Bow-strings, according to Kauṭilya were made of murva (Sanskvieria, Roxburghiana), arka (Catotropis Gigniantia), 'sena' (Hemp), savedhu (coin barbata), venu (bamboo bark) and snāvyu (Sinew). 30

The Dhanurveda Samhitā recommended that bow-string made of silk was the best and next to that were sinews of deer, entrails of the buffalos or goat, bamboo-bark or threads of cotton. 31

Bows were either simple or composite. Simple bow was made of wood but composite ones were made of horn and sinew.

Regarding the size and length of the bow the Siva

Dhanurveda says, "A good bow is that which is a little less

28. Ibid.
30. *Arthasastra*, Bk. II, Ch. XVIII
31. Pant, G.N., Unpublished thesis 'Weapons in Ancient India', p. 139
strong than its bearer. For that which is precious is not the bow, but the bow-man. If he is troubled by the bow, he cannot shoot with ease. Hence the size of a good bow should be in proportion to the strength of its bearer. The bow which measures five and a half cubits is recognised to be the best. ...According to some authorities, however, the bow should measure nine vitastis (4½ cubits)^9; the length of a horn-bow should be 3½ cubits. 32

Bow with odd number of knots on its stave was regarded as good but the one with even numbers i.e. four, six or eight, as a bad bow. 33 The normal length of an arrow was three cubits. 34

Normally the arrows were made of sara, reed and bamboo, 35 but the arrows made of iron which were often used for killing elephants were also known to the epics 36 and later authors. The tradition of bone arrows is very old in this country and was continued even during our period. Arrows belonging to 5th century A.D. have been discovered at Kausāmbi, Bangarh, Vidisā, Hastinapur, etc. and those belonging to the period 8th-10th centuries have been dug out at Rūpar, Tripuri and other sites. 37

Poisoned Arrows:

Poisoned arrows have been detailed in the RgVeda and were distinct from other arrows. 38 Kautilya mentions that

---

32. Quoted by G.N. Pant, Weapons in Ancient India, p. 144
33. Dhanurveda Samihita Op CIt. verse 35, 36
34. Oppert, Gustav, p. 13
35. Mahābhārata 7.74, 7-8
36. Ibid., 4.38, 26; Sīsūnālavadha, XVIII-41
37. Pant, G.N., Weapons in Ancient India, p. 166
38. RgVeda X 87.6
an arrow dipped with a particular type of poison, could cause biting madness. "Who ever is pierced by the arrow prepared from grains of Sālmali (Bombax hepataphyllum) and Vidāri (Liquorice) reduced to powder and mixed with the powder of Mūlavatsanābha (a kind of poison) and smeared over with the blood of chuchundari (masu rat) bites some ten other persons, who in their turn bite others." 39 Arrows treated with poison were used by Kashmiri soldiers late in our period. 40

Arrows with small arrow-heads were found to be extremely useful as poisonous arrows. "Those grooved along the sides, or rough-end under the point, were charged with Viscous poison". 41 When a young mountaineer of Vindhyan forest was presented to Harsa, the young man's hand seemed busily engaged with avikarna arrow, having its point dipped in a potent poison..... 42

Burning Arrows:

The use of burning arrows against the enemy was very well known to the ancient Hindus. The inflammable powder was prepared in a number of ways. "A stick of Visvasaghati painted with the above mixture and wound round with a bark made of hemp, zinc, and lead, is a fire-arrow (to be hurled against the enemy)." 43 They were, at times, very effectively used against the enemy.

When Kandarapa, a general of Harsa attacked Rājapuri he "threw

39. Arthasastra. Bk. XIV, Ch. I
40. Bamzai, P.N.K., The History of Kashmir, p. 199
41. Indian Antiquary, Vol. V, 1876, p. 362
42. Harsacarita: (Cowell and Thomas), p. 232
43. Arthasastra, Bk. XIII, Ch. IV
into the melee burning arrows smeared over with vegetable oil, struck by which the enemies caught fire. Believing that he knew (the use of) the weapon of fire (Agneya astra), they became frightened and fled in bewilderment, cursing their return. It may, however, be noted that the use of fire as well as poisoned arrows was forbidden by Manu. Nevertheless it did continue and Manasollása went to the extent of recommending their use against the elephants.

Inscribed Arrows:

To inflate ego and exalt personal glory, the arrows were at times inscribed with the name of the archer. The epic heroes had their names inscribed on their arrows and the practice continued during our period. Sindhurāja Parmāra (994-1020 A.D.) while hunting, is reported to have wounded an antelope, a pet animal of a Nāga Princess Sāśiprabhā with an engraved arrow which read "Navina Sāhasāṅka Sindhurāja."

The arrows were at times feathered. The feathers recommended for use were of crow, swan, sasāda, hawk, peacock, vulture, krauncha, and also of goose (Hamsa), brown hawk (Sāśa), osprey (matsyāda krauṅcha), peacock, vulture and wild cock (kukkuta). Six angulas was considered to be the normal length.

44. Rāmatarangini VII 983-984
45. Manusmriti VII. 90
46. Mānas. V. 1213
47. Mahābhārata 7.74 7-8; 7.101.46
48. Rāmatarangini VIII 1678, 1735-37
49. Ganguly, D.C., History of the Parmāra Dynasty, p. 66
50. Rāyveda VI 75.11; X. 18.14
of those feathers. However, those used for arrows of bow-horn were to be much longer i.e. 10 angulas. Four feathers were tied with the sinew or thread at the back-end of the arrow.52 (PL IV)

Barbed Arrows:

Barbed arrows were also quite popular in India. The barbs could be of different types, incipient, straight curved and very artistically curved barbs.53 It was a barbed arrow of the Mollois which had wounded Alexander.54 Such arrows have been discovered from several proto-historic sites.

Although the range of arrow-shots is not directly available but can be inferred from the discussion about the distance at which targets for practice in archery were to be placed. Accordingly the effective range of an arrow has been worked out at 120 yards and that of an iron arrow about 90 yards.55

The quivers were variously termed as Iaudhi,56 Tūnīra and Unāsāga.57 It is believed that two quivers were jointly tied to the back of an archer. This was done to ensure sufficient supply of arrows.58 (PL V)

To avoid friction caused by the bow string hand-guard (haustaghna) were used by the warriors.59

52. Pant, G.N., Weapons of Ancient India, p. 170
53. Ibid., p. 171
54. McCrindle, J.W., Alexander, p. 207
55. Chakravarty, P.C., The Art of War in Ancient India, p. 159
56. ṚgVeda, I.33.3; VI. 75.5; X.95.3
57. Mahābhārata, I. 216.7
Like arrows bows were also kept in some sort of covering or the bow-cases, which were of purely Indian origin, and were not known to other countries.

**Cross Bow:**

A word about the sophistication of bow in the shape of 'cross-bow.' It is believed that it had come into use in Europe in the beginning of the 11th century A.D. and is supposed to have been used by William's forces in 1066 A.D. However, it was a chief weapon of the crusaders in the 12th century A.D. Cross-bow was "a miniature ballista, a small stiff-bow being set crosswise at the end of a stock. Eventually the bow was made of steel, being drawn either by a cord and pulley, or by a rack and pinion, and discharging a short square bold, with an iron head, wooden shaft, and leather 'feathers'. The weapon was heavy, slow to operate, and did not work in wet weather." The advantages of the weapon were, accurate range of about 100 yards, ease of operation even by untrained and physically weak soldiers who were not strong enough to draw a long bow, and was extremely good for loop-hole shooting in defences. The cross bow came to be used in India in the reign of Iltumish (1210-1236), it might have entered the armouries of Indian kings towards the close of our period (Plate V).

---

62. Ibid.
**Sword:**

If the bow was a matchless weapon of close support, sword was an excellent weapon of close-combat. It signified man's phallic potential and symbolised his martial prowess. It personified heroism and the will to resist all aggression and unpalatable domination, nay, it was a declaration of a man's manhood, a decent gift of gods to man (Plate VII). The sword appeared with the discovery of iron which was abundant in India. It was considered to be a foremost weapon next only, by the epic-warriors. In addition to a bow and the coat-of-mail the knights wore it as a part of their uniform. It was called asai, Nistrima, Khadga, Mahakhadga and Karvāla. According to S.D. Singh asai meant a long sword, khadga a broad one and nistrima a short sword. Šāvaka was a sword with bells. Šāstri was a small sword or perhaps a dagger.

The Brihadārhaṇī and the Agni Purāṇa lay down that "a good sword must not be longer than fifty-finger breadth nor shorter than twenty five. The best sword measured fifty inches,

---

64. Mahābhārata, 12.160 81.8
65. Ibid., 1.216.16; 3.81.3
66. Ibid., 1.17.12; 3.230.31 etc.
67. Ibid., 4.38.34
68. Ibid., 2.66.14; 5.19.4
69. Ibid., 7.13.60
70. Ibid., 1.26.44 etc.
71. Singh, S.D., Ancient Indian Warfare with Special Reference to the Vedic Period. p. 109
72. Mahābhārata, 4.38.31
73. Kumāragamāna 17.45; G.N. Pant, Weapons in Ancient India, p. 239
the next forty six inches and the last thirty six inches. 74
Further, "A good sword is one which is long, light, sharp, tough and flexible". 75

"Swords were generally made of Pandrara iron found in Jāngala country, black iron of Anup, white iron of Dsarna, gold-coloured iron of Kalinga and oily iron of Kamboja". 76
Swords made in khāṭ were known for their lustre and of raika for their felling-power. Swords made in Anga were noted for their sharpness and withstanding mighty blows and of Surpāraka for durability. 77

Regarding the varieties of the sword Kauṭilya 78 mentioned three types. Nistrīna was a sword with a crooked handle; Mandalāgra was an erect sword with disc at the top and Asivashti was a sword which was sharp and long. The hilt or the handles were to be "made of horn of rhinoceros, buffalo, of the tusk of elephants, of wood or of the root of bamboo". 79 It may be that the modern 'Kukri' resembles nistrīna of Kauṭilya, modern 'kirch' asivashti, but it is difficult to describe the shape of the mandalāgra which might have been like modern "leaf-shaped pattisa". 80

74. Brahatsamhita, Ch. IV : Agni Purāna, 245, 23; G.N. Pant, Weapons in Ancient India, p. 231
75. YuktiKalpataru, VV 59-60
76. Virātparva 42, 111; Pant, p. 232
77. Agni Purāna 245, 21 ff
78. Arthaśāstra, Bk. II, Ch. XVIII
79. Ibid.
80. Chakravarty, P.C., The Art of Warfare in Ancient India, p. 164
Representations of all these swords can be seen in the frescoes and sculptures at Ajanta. The Tinnevally urn burials have revealed blades of kirish as well as pattisa.

In our times the sword hilts of the high placed nobility appear to have been highly embellished while those of ordinary soldiers without any decorations. Harṣa's sword was studded with pearls; so were the swords of the Kashmiri high class gentry. The sword sheaths were made of leather or wood. Describing the sword of the young mountaineer brought to Harṣa by a tributary chief in Vindhyān forests Śāṇa says: "...his huge broad loins were rendered formidable by a sword. The end of which was anointed with quick silver and its handle was made of polished horn,...it was wrapped in a short black antelope skin as in a woven covering and its sheath was adorned with the spotted skin of a citrake snake."

Although the sword was usually worn on the left, hanging from a waist belt but at Śāṇchi and Bharhut they have been depicted as suspended from the left shoulder with the help of a belt. However, the Agni Purāṇa firmly enjoins that attached to the waist, the sword should be slung on the left. They were hung on the right side of the warrior too.

81. Ibid., p. 164
82. Indian Antiquary, 1930, p. 171
83. Harṣa Carita (Cowell and Thomas), p. 50
84. Haiyāraṇāyikī, VII 1517
86. Harṣa Carita (Cowell and Thomas), p. 231
87. Allan, Gupta Coins, Pl. IX, Fig. 15-17, Pl. XII, Fig. 15-18.
88. Haisey, Śāṇchi and Its Remains, Pl. XXXV, Figs. 26-28; also Sīsunālavādha, XVII, 26
89. Agni Purāṇa 261, 7-8
90. Pant, G.N., Weapons in Ancient India, p. 247
Not only were the swords used for hand to hand fight but also were found effective against elephants as with it, could be cut their legs and trunks.\textsuperscript{91} Badhas were a special category of Harsa's soldiers who could well fight the elephants.\textsuperscript{92}

Harsa's ancestor Pushpabhūti was presented a sword called Atthāsa by Bhairavacarya. Bāna has beautifully described this sword: ".....he removed the covering of rags and drew forth from the sheath a sword, like the autumn sky converted to a scimitar, Kālini's stream solidified to rival Viṣṇu's sword, the Kāliya snake in its anger against Kṛiṣna become a weapon.....or Hari's stout arm with the fist tightly clenched; formed as it were of deadly poison capable of taking the lives of all the world.... \textsuperscript{93}

After the death of his father Rājayavardhana in dismay and deep anguish, threw away the sword and implored Harsa: "Dismissing all the sports of youth, deliver your bosom like Viṣṇu to the embraces of glory. I have abandoned the sword".\textsuperscript{94} Therefore, the sword was regarded such sacred weapon that its casting away signified abandoning worldly pleasures and its skilful use in battle brought glory, "Hard strokes of swords, falling upon the cuirassed panels of enemies breasts spit forth not only sparks but also glory....\textsuperscript{95} When king Ananta of Kashmir (1028-1063 A.D.) fought out a fierce action to suppress

\begin{flushleft}
\textsuperscript{91} Ibid., p. 238; Chakravarty, p. 165
\textsuperscript{92} V.S. Agarwal, Harsa Charita : Ek Sāṁkritka Adhyayan (Hindi) Op.Cit, p. 121
\textsuperscript{93} Harsa Carita (Cowell and Thomas), p. 89
\textsuperscript{94} Ibid., p. 170
\textsuperscript{95} Ibid., p. 184
\end{flushleft}
the revolt of Tribhuvna, "King Ananta, whose sword became covered with flesh and blood (until it looked like) a club; moved in the battle like a Bhairava.....when the king returned from the battle, the hilt of his sword, which had become fixed in his firm grasp, could (only) be removed from his hand after sometime by sprinkling milk (on it)". 96

The Indian swords had become well known for their qualities and were very popular with the Arabs. Debal was famous for the manufacture of swords. 97 An early Arab poet Hellal giving the account of the flight of Hemyarites says that while they were running away under the shower of arrows, "while hard Indian swords were penetrating them". 98 The sculptural remains of the pālas of Bengal (8th-12th century A.D.), particularly the Buddhist deities have been shown with sword in their hands. A large number of swords can also be seen in the plastic and pictorial art of the period. 99 Several specimen of decorated swords belonging to the Chalukyan period, have been discovered at Vīrāgala (tombstone of military heroes). 100 Sword was the most popular weapon at Khajurāho, 101 and has been classified into various categories such as double-edged straight swords, thrust swords, swords with axe-ends, cut-swords, slough-shaped swords and curved swords. 102 Therefore, it would be seen that

96. Rājatarangini VII 160, 164
97. Ibn Haukal, Elliot and Dowson, Vol. I, p. 73
98. Journal of the Bombay Branch Royal Asiatic Society, XIV, p. 240
99. Pant, G.N., Weapons in Ancient India, p. 261
100. Ibid., p. 263 pls LXIV. 7; LXIII. 14 in Vol. II
101. Ibid., p. 266
102. Vidya Prakash, Khajurāho, p. 96; Pant, pp. 268-71
the sword as a weapon of war has been dominant throughout our period, and of course continued to remain so for centuries to come. Even in the 20th century, it is worn by Army officers on a number of ceremonials and particularly while performing the duties of Aide-de-Corps of the President or Governors on certain occasions.

Spears and Javelins:

Spears and javelins stand out prominently among the ancient weapons, and formed a generic class by themselves. Weapons with sharp edges like the 'plough share were included in this class. Some of them like javelins could be thrown at the enemy from some distance and could be regarded as weapons of close support but this occasional use in the role of 'mukta' weapons does not entitle them to be categorized as such and primarily they remained as weapons of 'close-combat'. A large number of implements fell in this category but we shall list only the better known of those, in the succeeding paragraphs (Plate VIII).

Spears:

(a) Ṛati and Rambani

Ṛati the weapon of the ṚgVedic Maruts has been translated as spear. Carried by Maruts on their shoulders it positively meant spear.

103. Pant, G.N., Weapons in Ancient India, p. 290
104. Chakravarty, P.C., p. 166
106. ṚgVeda, I. 1683
(b) Sakthi

The commentator to the Arthasastra defined Sakthi as "A metallic weapon four hands long, and like the leaf of karavīra and provided with a handle like a cows nipple.\(^{107}\) In the days of the Mahābhārata Sakthi was made of iron and was a sharp weapon.\(^{108}\) It was "two cubits long. ....It has sharp tongue, a horrible claw... It is as broad as a fist and goes very far. It must be taken up and thrown with two hands. Its movements are of six kinds.\(^{109}\)

(c) Bhindivāla

The commentator to Arthasastra defines Bhindivāla or Bhindipāla as "a rod with heavy top". According to Nītiprakāśikā it had a "Crooked body; its head, which is bent and broad, is a cubit long and it is a hand in circumference. It is first whirled thrice and then thrown against the foot of the enemy. When throwing the Bhindivāla, the left foot should be placed in front.\(^{110}\)

(d) Prāsa

According to Kauṭilya Prāsa belonged to the class of weapons with edges like plough share and the commentator of Arthasastra describes it as "a weapon 24 inches(angulars) long with two handles",\(^{111}\) but according to Nītiprakāśikā

\(^{107}\) Arthasastra, Bk. II, XVIII
\(^{108}\) Mahābhārata, Ādi-parva, 30,49; Sūraṅgavacchādyya, XIX, 59
\(^{109}\) Oppert, Gustav, p. 13; Sūraṅgavacchādyya XVII, 59
\(^{110}\) Oppert, p. 13
\(^{111}\) Arthasastra, Bk. II, Ch. XVIII
its length was seven cubits and was made of red-coloured bamboo with a metal head and was sharp at the foot end for its decoration it had silken tufts.\textsuperscript{112} When Harṣa's mother queen Yasovati proceeded to commit sati, she had in her hand the \textit{Prāga} of her deceased husband.\textsuperscript{113}

The spear was a very effective weapon of close-combat and was much sought for. According to \textit{Tarikh-Yamini}\textsuperscript{114}, the troops of Jaipāla had fought against those of Mahmūd for several days, drawing blood from wounds inflicted by swords and spears, and the fight was so fierce that the 'Spears were tired of penetrating the rings of the coats-of-mail'. When Mahmūd had reached as far as the river, of wahiṃda, he was met by Anandpalas' son Brahmapāla at the head of valiant army which amongst its weapons had blue spears.\textsuperscript{115} In an attack on Kulchand, spears were freely used in close conflict.\textsuperscript{116} Spear has been mentioned in Khairına plates of Yasahkarna\textsuperscript{117} of 1076 A.D. When a fierce clash of arm was raging at Srinagar between Bhikṣu and Sussala (1121-1128 A.D.) and when "he was moving around with vijaya, Kayyas' son, a cavalier of Sussala, his own spearman, by looking at the horse and the armour which were of the same colour (as those of his opponents),

\textsuperscript{112} Oppert, p. 19
\textsuperscript{113} Agarwala, \textit{The Deeds of Harṣa}, p. 123; \textit{Harṣa Carita} (Cowell and Thomas), p. 171
\textsuperscript{114} Elliot and Dowson, p. 20, 31
\textsuperscript{115} \textit{Ibid.}, p. 33
\textsuperscript{116} \textit{Ibid.}, p. 43; See also, \textit{Chachnāmā}, p. 161
\textsuperscript{117} Mirashi, V.V., \textit{Corpus Inscriptionum Indicarum}, Vol. IV, Part I, No. 56; V. 11, p. 297
mistook him in the excitement and killed him by spear
thrusts". Spears and many other weapons were found
scattered in the battle field of Tarain after the rout
of Prthviraja III in 1192 A.D.

Lance

(a) Kunta

The Arthasastra included Kunta in the category
of weapons with 'edges like ploughshares' and its
commentator described it as "A wooden rod, 7, 6 or 5
hands in length". But the Nitiyakasika says that
it had an iron body with a sharp top and six edges. Its
length varied from six to ten cubits and was round at the
foot end. It was wielded in six different ways.

According to Sukracharya, the length of the best,
the medium and the inferior Kuntas should be 16, 14 and 12
angulas respectively, and the breadth of its head should
be two to three angulas.

(b) Kasuti

It was a short lance.

(c) Srka

It has been translated as 'lance' or 'wooden
shafts' with metal spikes'. May be that Srka were
ordinary bamboo sticks and were used by common soldiers.

118. R̄ṣitarangini VIII 1160-61
120. Arthasastra, Br. II, Ch. XVIII
121. Nitiyakasika, V, 22-23; G.N. Pant, Weapons in Ancient India,
p. 293; Oppert, p. 19
122. Nitiyakasa, Ch. IV, Sec. VII, I,382 (Tr into Eng by B.K.
Sarkar); Sacred Books of the Hindus (Allahabad, 1914)
124. R̄ṣveda I, 32.12; X, 182.2
Lance was a principal weapon of the cavaliers of our age. Yuan Chwang mentions it as among important weapons of Hārṣa's soldiers. In a coin attributed to Ratnadeva of the 12th century A.D.; a rude sketch of a horseman charging with a lance has been shown. Pandey quotes numerous coins to show that the lance was a very popular weapon with the cavaliers of 9th-10th centuries A.D. Narrating the origin of the Sambhar lake, the author of the Prithvīrāja Vijaya says that it had been created by the planting of the lance by Vasudeva (ancestor of Chāhamānas) on the suggestion and blessing of Vidyādhar, whose (magic) pill he had returned. "He (Vidyādhar) told the king to send away his army, and at sunset to plant his lance in the ground and ride away towards his capital without even looking back, adding that there would be small recompense to the king for his favour to the Vidyādhar". Since the king, forgetting Vidyādhar's advice looked back on hearing the roaring sound of ocean's waves, the lake became a salt-lake. In the first battle of Tarain (1191 A.D.), Muhammad Ghori, on a horse back led a furious charge against the Hindu Centre and shattered the teeth of Govind Rai with his lance.

126. Watters, I.P., 171; Hārṣa Carita, (Cowell & Thomas), p.188
128. The Shāhīs of Afghanistan and the Punjāb, pp. 218-219
130. Cambridge History of India, Vol. III, p. 40
Javelina

(a) Kautilya put it in the category of weapons with edges like ploughshare and his commentator describes it as "a rod with an arrow-like edge, and four, four and a half or five hands long". According to the Niti-prakasika its body was made of wood with a metal head of the shape of a bunch of flowers of three cubit length, red coloured is not crooked. It could be wielded in three ways. Avanti, Magadha and Dakshinâtya (South Indian) were well known for the manufacture of this weapon. A.L. Basham opined that Tomara was a long lance and was used in fighting from the elephants.

(b) Kanya

Kanya is "a metallic rod both ends of which are triangular. This is held in the middle and is 20, 22, or 24 inches long".

(c) Karnana

It also falls into Kautilya's weapons with edges like ploughshare and the commentator felt that it was an arrow or a dart which was to be thrown with hand. It's edges weighed 7, 8 or 9 karshas and a skilful person could hurl it as far as the length of hundred bows. Yuan Chwang mentions javelin as one of "the weapons of the
of Indian soldiers. It was the javelin of Govind Rai which pierced the arm of Muhammad Ghori in 1191, and sent him tumbling home. According to Sir Jadunath Sarkar, a javelin could effectively take on an objective at 30 to 40 paces.

**Bhalla (Bhāla)**

It had a shaft made of bamboo and a long blade. It was, however, used very rarely by the cavaliers. According to Fakhr-i-Mudibir, no Bhalla is better than the Indian Bhāla.

Besides the above, Kautilya mentions various other weapons with edges like ploughshare e.g. Hataka (a rod with three or four pointed edges), Sūla (a pointed-rod without any fixed length), Varāhakarna (a rod with its edges shaped like the ears of a boar) and Trasike (a metallic weapon like prasa).

**Mace**

Mace (club), a very heavy weapon of close-combat, was a prominent weapon of ancient antiquity. According to Plutarch Alexander "received a blow on his neck from a club" during the storming of the Malabār capital.

---

138. Watters, I., p. 171
139. Cambridge History of India, Vol. III, p. 40
140. **Military History of India**, p. 27
141. Pant, G.N., Weapons in Ancient India, p. 301
143. Arthasastra, Bk. II, Ch. XVIII
144. McCrindle, *India and Its Invasion by Alexander*, p. 312
Kauṭilya describes three varieties of the clubs namely, Musala (pointed rod made of Khādira), Yashṭi (similar to Musala) and Gadā (a long and heavy rod). It was made of iron as well as wood. But according to the Nīṭī-Prakāśika, it was made of sharp iron, had broad head with 100 spikes and its sides were also fitted with spikes. "It is a formidable weapon, four cubits long, and its body equals a carriage-axle in measure. The head is adorned with a crest; it is covered with a golden belt, and is able to crush elephants and mountains". (Plate IX). Twenty different motions are ascribed to gadā. By means of gunpowder it is thrown out of a projectile weapons of various forms.

Sukra describes the mace as of octagonal in shape, of breast's height and having strong handle. Ausanāsa Dhanurveda prescribes fifty, forty and thirty angulas length for best, middling and worst mace, respectively. As far as its shape is concerned it could be pear-shaped, quadrilateral and like the palmyra root. Lot of strength and stamina was the first requisite for the wielding of the mace which had peculiar movements and manoeuvres of its own. It could be hurled at the foe from a distance, could engage the enemy at a close proximity; it could be revolved about in the midst of foes and could smite

145. Arthasastra, Bk. II, Ch. XVIII
146. Nīṭī V, 29-30; Oppert, p. 20
147. Ibid.
148. Sukraniti, Ch. IV, Sec. VII, 1.424; Chakravarty, The Art of War in Ancient India, p. 169
149. Ausanāsa Dhanurveda, pp. 39, 40; Chakravarty, p. 169
the foe in front. Twenty movements listed by the Sāityaparva have also been adopted with approval by Nīśiprakāśika. Besides, Musala, Yashā and Gada of the Arthasastra, G.N. Pant includes, Parīsha, Mudara, Sthūna, Laguda, Musundī (Bhusundī) and Drusāna also under the general category of Maces. While describing the army of Harṣa on march Banā mentions "furiously running crowds armed with clubs..." and striking hares like polo-balls.

The use of mace as a weapon was considered very respectable and the epithet of Gadabāsta was adopted by a number of kings. One such instance is provided by Dewai Stone Inscription of Bhīma (921-60 A.D.). When the priests of Somnāt lay prostrate at the feet of Mahmūd, begging that their deity should be spared, Mahmūd preferring to be remembered as idol-breaker rather than idol-seller struck the image with his mace, "with his own hand and with the mace which is the counterpart of Excalibur in Oriental legend, he smote the face of the idol, and a torrent of precious stones gushed out."

150. Mahābhārata, Ādirāva, 68, 12
151. Ibid., 57, 1666
152. Nīti-Prakāśika, V, 31-34
153. Harṣa Carita; (Cowell and Thomas), p. 209; also p. 188
154. Epigraphia Indica, Vol. 219, p. 299
155. Elphinstone: The History of India, p. 336
156. Indian Antiquary, Vol. X, 1881, p. 22
In a war between Mahipāl and Masūd, when the latter was talking to Sharuf-1-Mulk, Copāla, son of Mahipāla gave him a severe blow with his mace. As a result, Masūd broke his nose and lost two of his teeth. 157

The use of mace was not unknown in the west. When William attacked England, in the battle of Telham Hill (1066 A.D.), Odo, Bishop of Bayeux fought with a mace rather with a sword, because he as priest did not want to shed blood. 158 The knights of 11th century hacked enemies at close-quarters with their swords, maces and axes. 159

Dagger

Dagger known as Maustika 160 (fist sword) and Vasi, 161, "was a projectile hand weapon and was also used for thrusting at close quarters and was a personal weapon of the rank and file of infantry as well as elephantry". 162

It's length was a span, had a sharp end, high neck and was broad in the middle and was ornamented. 163 It was a small and handy weapon, could be wielded effectively in a number of ways, and its qualities have been eulogized by Vaisampāyana. 164 V.S. Agarwal mentions clay figurines of

---

158. Montgomery, A History of Warfare, p. 172
159. Ibid., p. 165
160. Kitiprākāśika, V. 15.17; II 19
161. RaVeda I. 168.3
162. Pant, Weapons in Ancient India, p. 422
163. Oppert, pp. 21-22
164. Kitiprākāśika, V. 40-44, II 20
soldiers of tall stature with a griddle and a dagger, found at Ahichachchatra belonging to 6th-7th century A.D. Somesvarar in his Mānasollāsa mentions sports to be played with daggers before those with other weapons.

When Unmattavanti (937-39 A.D.) became king of Kashmir after murdering his own father Partha "Instigated by wretched companions, he exercised himself in the use of arms by hitting naked women in the hollow between their breasts with thrown daggers." King Vākatirāja II (11th century A.D.), killed Amba Prasada, ruler of Aghat Ahad, the old capital of Mewar), and with a dagger rent his mouth asunder. When Uccala (1101-11 A.D.) was attacked by assailants, he tried to hit back with his toy dagger, because his attendant, who carried his Katar, had fled from his side.

Battle Axe:

The battle-axe was known to the people of the RgVeda but rarely as a weapon of war. To the epics it was known under various names e.g. Paramu, Paraskvadha, Kulisa, Kutharas and formed as a weapon of the high nobility.

165. V.S. Agarwal, Ancient India, Vol. IV, p. 149, Fig. 188
166. Mānasollāsa, 4.1.17; See also, Mānasollāsa: A Cultural Study by S. S. Mishra, pp. 322-24
167. Rājatarangini, V 440
168. The Prithvirāja Vijaya, (Summary and Tr by Harbiles Sarda) Journal of Royal Asiatic Society, 1913, p. 269
169. Rājatarangini VIII 312
170. Das, A.C., Rgvedic Culture, p. 335
Kauṭilya classifies it under the category of razor-like weapons and lists three of its types namely Parasu (A Scymitār, semi-circular and 24 inches long), Kuthāra (A kind of axe well known) and Pattasa (Same as Parasu, but shaped like a trident at both ends). In another place Pattasa is said to be of man’s height, with two sharp blades and a top which is sharp. The hand is protected by a handle.\textsuperscript{172} It has been termed as the uterine brother of the sword.\textsuperscript{173} Its qualities were felling and splitting. It could be manipulated in six different ways i.e. raising high, threateningly, striking with it slowly or quickly, raising it rapidly, making it fixed and making as if one had nothing in own’s hand.\textsuperscript{174} The battleaxe has been illustrated in various ancient sculptures\textsuperscript{175} and coins\textsuperscript{176} of early centuries of the Christian era. On the basis of art representations of the battle axe, it has been divided into eight different categories by G.N. Pant.\textsuperscript{177}

\textbf{Vairā (Thunder Bolt)}

It is a mythical weapon, nothing could stand either its destructive power or its splendour. Made originally for

\begin{itemize}
  \item \textbf{172. Arthasastra, Bk. II, Ch. XVII}
  \item \textbf{173. Oppert, pp. 21-22}
  \item \textbf{174. Dikshitar, V.R.R., War in Ancient India, p. 111}
  \item \textbf{175. Mailey, Sānchi and Its Remains, Plate XXXV, Fig. 37; Annual Report of Archaeological Survey of India (1911-12), p. 91}
  \item \textbf{177. Pant, G.N., Weapons in Ancient India, pp. 431-32}
\end{itemize}
the destruction of demon Varuṇa. "It shines brightly with the light of a krore of suns, and it resembles the fire which shone at the dissolution of the world. Its fangs extend to a Yojana (10 miles) in length, and its tongue too is most horrible. It resembles the night of destruction at the end of the world, and is covered with 100 knots. Its breadth amounts to five Yojanas and its length to ten Yojanas. Its periphery is covered with sharp points; in colour it resembles lightening; a broad strong handle is fixed to it. Its movements are four in number.\footnote{178}

Indra's Vajra which was made of metal was originally made of stone and latter of bone, before it assumed its final shape in metal.\footnote{179} They continued to be mentioned even as late as the 11th century A.D. in the Khaṅkhara plates of Yasahkarna of the year 1076 A.D.\footnote{180} Vajra is represented in ancient arts and tribal and other ancient Indian coins. Metal thunderbolts of our period have been excavated from Sirpur district Raipur and other sites (Plate X).

\noosa

It was a kind of lariat or lasso. It was well known to the Mahābhārata.\footnote{181} According to the Nītiprakāśika, it had

\footnotes
\begin{itemize}
\item[178.] Nītiprakāśika, 1-6; Oppert, p. 16
\item[179.] Raṇḍha, I, 133, 2
\item[180.] Mirashi, V.V., Corpus Inscriptionum Indicarum, Vol. IV, Part I, No. 55; V. 10, p. 297
\item[181.] Mahābhārata, Salyanarva, 45, 108; Karnaśarva, 52, 53
\end{itemize}
a triangular form, and was composed of very small scales, made of metal. Its circumference was one span and was decorated with leaden balls. It had three movements.\textsuperscript{182}

The Asmi Purāṇa describes it, "A pāsa should measure ten cubits in length, its end terminating in a loop, and its face should be retained in the hand. It should be constructed of the strings made of hemp, or of flax, or mūnja grass, or of bhāngā or of sinews of animals, or of leather, or of other things of which a strong thread may be made. It may also be made of thirty pieces of thread twisted together.

The learners should make a running knot in a pāsa; and having held one end of it with the left hand, and twisted it round on the right, they should turn it over their hands, and afterwards throw it on the throat of a human figure covered with skin. After this, they should try to throw the string on the neck of a horse at full gallop or of animals jumping about, or such as are moving fast.\textsuperscript{183}

There were eleven different methods of employing this weapon.\textsuperscript{184}

In ancient sculpture, the noose has been shown in the hands of deities like Durgā, Siva, Etc. In a Mysore

\textsuperscript{182} Niti, IV. 45-46; Oppert, p. 15
\textsuperscript{183} Asmi Purāṇa 251, 2 ff.
\textsuperscript{184} Ibid., 252, 6-7
lintal of 12th century A.D., noose has been shown in the hands of Brahma. Its representations on coins are also not wanting. The Rānas were well known for the use of lasso or noose. One of their "notable tactics in close fighting was for one men to entangle the net while he was intent on parrying the sword blows of another". In the North Indian art noose is held by Varuna, Durga and several other deities.

Discuss or Quoit

Chakra is a very old weapon and has been named as the weapon of Indra in the Rgveda. In the Mahābhārata it assumed the name of Sudarsana-Chakra in the hands of Kṛṣṇa. It was one of the chief weapons of Viṣṇu. Kautilya grouped it along with the movable machines and his commentator describes it as a disc. Later, it has been spoken of as a weapon hurled from a distance and it cut off one or the other limb of the enemy. C. Oppert, on the authority of the Nītparkāśika and Śukranīti described it as circular disc with a quadrangular hole in its midst with circumference of two spans or ten cubits. It had five or seven motions. He rightly compared it with the quoit of the Sikhs, and its various uses were "falling,

185. Pant, Weapons in Ancient India, p. 451
186. Ibid.
187. Montgomery, A History of Warfare, p. 130
188. Rgveda, VIII 96,9
189. Mahābhārata 2.42.21; Adinārya, 33, 2 ff.
190. Atharvasatra, Bk. II, Ch. XVIII
191. Śiśupāla-vadha, XVIII, 45
192. Oppert, p. 18
whirling, rending, breaking, severing and cutting.\textsuperscript{193}"

\textbf{Satagham}

Because of the complexity of its nature and variety of its uses Satagham meaning a 'hundred killer' has been thought to be of two types, the first as a defensive weapon and the second as a projectile.

The first type of Satagham was placed on the walls of a fortified place. Indraprastha,\textsuperscript{194} Ayodhya,\textsuperscript{195} and Lanka\textsuperscript{196} were all defended by Satagham. Kautilya termed it as a movable machine and his commentator describes it as "A big pillar with immense number of sharp points on its surface and situated on the top of a fort wall".\textsuperscript{197} It is, therefore, clear that the Satagham formed an essential part of city's defensive war-heads. P.C. Chakravart\textsuperscript{198} rightly concludes that Satagham were kept on the fort walls to be hurled at the enemy forces attempting escalades. Since they have been termed as movable machines by Kautilya, it is quite likely that to facilitate movement, these heavy blocks of wood or stone, were fitted with wheels.\textsuperscript{199}

The second category of Satagham was described by the \textit{Niti-prakāśika}.\textsuperscript{200} It was made of black iron, was four

\begin{itemize}
\item \textsuperscript{193} Pant, G.N., \textit{Weapons in Ancient India}, p. 437
\item \textsuperscript{194} Ibid., p.452
\item \textsuperscript{195} Ramāvana, \textit{Ayodhyakānda}, 5, 11
\item \textsuperscript{196} Ibid., \textit{Lanka-kānda}, 3,23 of 3,13
\item \textsuperscript{197} \textit{Arthāśāstra}, Bk. II, Ch. XVIII
\item \textsuperscript{198} Chakravarty, \textit{The Art of War in Ancient India}, p. 174
\item \textsuperscript{199} Ibid.
\item \textsuperscript{200} \textit{Niti} : V, 43-9
\end{itemize}
cubits long; round and was provided with thorns. It looked like a mudgara, resembled gada in its movements, and could be hurled from a distance. However, it would be too much to believe what Oppert has said that "it was hurled out of enormous tubes by means of gunpowder". 201

After discussing both these varieties, P.C. Chakravarty concludes, "It is not improbable that the second variety of Sataghmis resembled the first-in general appearance. Only they were shorter, lighter, altogether more handy and hence used as projectiles". 202

The Sling

A weapon particularly a favourite of Kashmiri soldiers, was the sling. "With a round but sharp stone tied to its ends, they flung the stone with unerring accuracy at the target". 203 It was used in wars of the times of Jayapida. When Jajja was fighting against the king, Srideva, a village Chandala arrived in the battle field along with other villagers, who pointed out to him, from a distance, Jajja, busy in drinking water from a golden jug in the midst of the battle. "Letting go his sling, he hit the face of the (prince) with a stone, and unfailing in his aim, shouted, "there, I have slain Jajja". 204 The sling

201. Oppert, pp. 22-23
202. Chakravarty, p. 174
204. Rajatarangini, IV 475-78
remained a popular weapon in the valley till the time of Rāja Gulāb Singh "who put a stop to the frequent mimic battles between youth of different wards of Srinagar who used to turn out with slings and stones and played a very serious and earnest game".  

According to A.L. Basham, the sling was in use in the later times but it was not a weapon of any consequence. In the west Tiglathpileser III (8th century A.D.) was the first Assyrian king to employ slingers. They were deployed in Paris behind the archers as depicted in the reliefs of Sennacherib. "Their high-angled fire was particularly effective in assaults up steep slopes on cities". (Plate XI).

The Boomerang

The boomerang is described by Nātiprakāśa as having a knot at the foot and a long head; it is one hand in breadth. Its middle part is bent to the extent of a cubit; it is sharp, black coloured and two cubits long. Whirling, pulling and breaking are its three actions. "It is a good weapon for charioteers and foot-soldiers". They were made of wood, iron and even ivory. The stick is bent and flat. "When thrown, a whirling motion is imparted to the weapon which causes it to return to the

205. Lawrence, The Valley of Kashmir, p. 255; P.N.K. Bamzai, p. 199
206. The Wonder that was India, p. 133
207. Montgomery, A History of Warfare, p. 54
208. Oppert, p. 18
place from which it was thrown. The use of this weapon was known to the Bhils and other tribes of North India. It is mentioned in the Mahābhārata, where the commentator explains it as "a small board flat and crooked, to be thrown out of the hand, well known amongst the Dravidas."

**THE WAR MACHINES**

The word Yantra denotes a contrivance of any kind. Yantras are mentioned in the epics to signify implements of war. The forts of the Kātayana were usually protected with the help of Yantras. In the Sabhānārva of the Mahābhārata, Yantras formed an integral part of the defensive armament of the forts. That fort was said to be in distress in which the Yantras, wells and moats are in a state of disrepair....

Kauṭilyya classified the war-machines into immovable and movable Yantras:

**Immovable Yantras:**

From their very nature these were the heavier weapons, as explained by the commentator:

---

209. Ibid., p. 19
210. Mahābhārata, V. 155, 9
211. *Journal of the Royal Asiatic Society of Great Britain and Ireland*, 1898, p. 379
213. Ārundhvākanda. 5, 10
214. Mahābhārata, Sabhānārva 5.26
215. *Aśvī Purāṇa*. 24, 28
216. *Arthasastra*, Bk. II, Ch. XVIII
(a) *Sarvatobhadra*:

A cart, which could be revolved rapidly and hurled stones in all directions. The cart was fitted with wheels and was also called *Bhumirikāvantra*.

(b) *Jamadagnya*:

Also called *Mahāsara vantra*, which was a large machine to shoot arrows.

(c) *Bahumukha*:

"A tower *attālaka* situated on the top of a fort and provided with a leather cover and facing all directions. From this place a number of archers direct their arrows in all directions". According to P.C. Chakravarty "These were of the nature of catapults and ballistae used by the ancient Hebrews, Greeks and Romans..." Explaining the Greeks catapults Montgomery of Alamein classified those into two categories: (i) small *katapeltes* and 'petrabolos' and (ii) 'Onager'. "The small 'katapeltes' could project arrows, javelins and an eight pound stone accurately up to 250 yards; the bigger Petrobols and onager could hurl stones of about 85 pounds weight. In each case the motive power came from twisted skeins of sinew or women's hair".

(d) *Viṣvāsghāti*:

It was a cross-beam placed above a ditch at the entrance of a fort, and so placed as to be caused to fall down and

---

218. Montgomery, p. 68
kill enemies when approaching.

(e) **Sanghāti** :

It was a long pole used for setting on fire various parts of the fort.

(f) **Yanaka** :

It is difficult to understand its true nature as it has been described by the commentator only as a pole or rod mounted on a wheel so as to be thrown against enemies.

(g) **Parijayaka** :

The commentator is not clear himself about this yantra and he believes that it was either a 'water machine' used for extinguishing fire or a contrivance fifty hands in length which was kept outside the fort and was hurled against enemies when approaching. Anyway, it was lighter and less conspicuous than the Viyāsghāti.

(h) **Ardhāṅguha** :

These were two pillars, placed one opposite the other and could kill enemies when caused to fall down.

(i) **Urdhvabāha** :

It was a single large pillar so placed at a high place that it could be thrown against the enemy.

Some of the weapons covered by Kautilya under this head have already been dealt with at an earlier place. However, the remaining of the nature of machines are explained below:
Movable Yantras

(a)  Pānchālikas:

"A big wooden board with immense sharp points on its surface. This is put in the midst of water outside the fort wall to arrest the onward march of an enemy. It appears to be in the nature of an hidden low obstacle to prevent the enemy coming closer to the fort walls by making moat-crossing operations difficult. It may be of interest to note that the hostile Nāgas made use of 'Panjis' a sharp edged bamboo-nails planted in the ground arround their defences and could hamper enemy assault by piercing into their feet.

(b)  Devadanda:

A long pole with iron nails, which was placed on the fort walls. It reminds one with a modern practice of planting pointed glass pieces in the walls of houses to make wall-crossing difficult.

(c)  Šukarikas:

It was of the nature of a shield to protect towers against enemy missiles like stones. The Šukarikas were of the nature of leather covers or bags filled with cotton or wood. According to others, it was a mat-made of the bamboo-bark and was covered with leather.

(d)  Haṭṭivārakah:

A long rod with a number of points, usually two or three to drive back elephants.
(e) Tālayāṇa:
A disc like a fan.

(f) Snṛktala:
A rod with sharp points on its surface.

(g) Kūḍāla:
A spade.

(h) Asϕhāṭima:
A bag of leather with a rod to produce high sound.
Its nature and purpose is vague.

(i) Audhϕhāṭima:
A device used for pulling down towers.

(j) Trīśūla:
A trident.

It may be noted here that Kauṭilya mentions yantraṇāshaṇa (stones which can be thrown by machines), goshpanaśaṇa (stones which are hurled by a rod called goshpana) and stones thrown by hand (mushtiśaṇa) as other weapons.²¹⁹

This shows that some of the immovable machines mentioned above used stones as their ammunition. Since the Roman catapult or Onager also used stone missiles, we can reasonably be right

²¹⁹. Arthasastra, Bk. II, Ch. XVIII
in assuming that Indian machines were somewhat like the Greek or Roman catapults. The Arabs definitely used catapults in their conquest of Sind. Lane-poole goes so far to call them stone-slings, which (five of them) were sent by sea to meet him at Daibul for siege-work. "Great red flag flaunted on the top of a tall temple.....the order came from Hajjaj to 'fix the stone sling and shorten its foot and aim at the flag-staff. So the gunners lowered the trajectory and brought down the pole with a shrewd shot..." These catapults were so heavy that it required a crew of 500 to operate each one of them. The Prophet had used these catapults successfully in the siege of Taif and they had also rendered a distinguished colour service at Damascus and Mecca and also in the campaigns aimed at the reconquest of Mecca. But they were too ponderous and unwieldy to be transported easily except by sea and could be dragged only for a short distance over the land. Hence Kutaiba "in his campaign beyond the oxus, was often compelled to regret that a long and tedious land-carriage deprived him of the advantage of these implements, which were nearly indispensable in the operations in which he was engaged". On the authority of the Chachmā, it has been surmised by S.H. Hodivala, that the Mangonels and Ghosaks were used and "stones and arrows thrown from the walls of the fort of Multān".

220. Medieval India Under Mohammedan Rule, p. 8
221. Ibid.
222. Elliot and Dowson, Vol. I, pp. 434-35
223. Studies in Indo-Muslim History, p. XI and 93
The Gharwa (Fardāj, Gharvasang or Gharbasang) was also like the mangonel, a ballista, stone sling or catapult, which hurled large stones. It has been reported by Shams-i-Siraj that during the siege of Nagarkot, both sides were in the possession of "Manjānīq and that Arādāh stones were hurled by both." The manjānīq of numerous types were known to the early Muslim invaders, such as:

(a) Manjānīq-i-Daya: A heavy manjānīq.
(b) Manjānīq-i-Ghurivār: A particular type of manjānīq.
(c) Manjānīq-i-Khān: A manjānīq on wheels.
(d) Arādā: A weapon similar to manjānīq which could hurl stones as well as fire on the enemy. It was also of different varieties, e.g., Arādā-i-Brui, Arādā-i-Garda, Arādā-i-Khufta and Arādā-i-Khān.

Due to the lack of relevant literature, it has not been possible for us to determine the nature and characteristics of each type of Arādā. In the siege of Banasālā the royal troops were reported to have used catapults with success.

The use of machines to bombard enemy troops from the ramparts of the forts with stones was also known by the Rajpūts of our period. The stones hurled from the top of forts, particularly hill-forts were extremely effective and frustrated the designs of the besiegers for considerably prolonged periods.

In the siege of Banasālā during the reign of Jayasimha (1128–49 A.D.)

224. Ibid., p. 93
225. Ibid.
226. Fakhr-i-Mudbit, Adabul Harab Vashahuluat (Tr in Hindi by A.H. Rizwi), p. 271
227. Ibid.
228. Rajatarangini VIII 1677
229. Dashrath Sharma, Early Chauhan Dynasties, p. 215
when Dhanya was tightening his noose round Bhiksu and his followers, the latter fought back with stones and caused a great havoc in the royal camp. "The heads, which the stones carried off from the bodies of brave soldiers, appeared with their streams of blood, like beehives (thrown down by stones hits) from the top of trees with the bees issuing from them".

Battering Rams:

According to P.C. Chakravarty, the use of battering rams was probably known in India. But we have it on record that they were used. In the siege of Kiraj, when the people had revolted, Junaid"made use of battering rams and battered the walls of the town with them until they were breached". Although this is not an adequate evidence to show wide spread use of the weapon, yet it is of interest to know something about its details. "In the early period battering rams were somewhat clumsy and large, on six wheels, and perhaps 15 feet long; at the front was a round turret about 18 feet high, from the inside of which the ram was suspended on a rope so that it could be swung. The head of the ram, shaped like an axe, would be forcibly inserted into the gate or the wall and then levered left and right to make the walls collapse. Long sharp-headed levers were also used by individual. .....The operations of

230. Rājatarangini VIII 1686
231. Chakravarty, p. 143
232. Elliot and Dowson, Vol. I, p. 126
battering rams were obviously in great danger from defending archers, and so were given continuous covering fire from their own archers in mobile towers". 233 When the walls were strong, scaling ladders were preferred to the battering rams, which appears to be the case in India. (Plate XIII)

**SHIELDS**

The use of shields has been known to the Indian soldier right from the very early period. Since they were usually made of hide, Chharma was the usual term denoting them. 234 They were also known as Saravarna and Saravara. 235 The shields were decorated with numerous representations of sun, moon and stars. 236 (Plate XIV)

During the days of Alexander’s invasion, the Indians carried bucklers made of undressed ox-hide which were as long as the height of their wielders. 237

The Mānasollāsa 238 and the Yuktikalpataru 239 also give detailed description of the shields. The Chharma is “an arm which covers or protects the body.....it is made of wood or hide. It should.....be firm, light and tough. That which is insufficient to cover the body, or is heavy, soft, easily penetrable

---

233. Montgomery, A History of Warfare, p. 56
234. Mahābhārata, Bhīṣmāparva, 54, 26
235. Ibid., 60, 17; 90, 40; Dronaparva, 13, 72
236. Ibid., 116, 19; 96, 50
237. McQuire’s Translation, p. 221
238. Mānasollāsa, p. 20, VV. 864-5
239. Yuktikalpataru, pp. 174-5, VV. 62-5
or made of offensive material is defective.\textsuperscript{240}

The shields were made of ox-hide,\textsuperscript{241} creeper, leather and wood,\textsuperscript{242} metal\textsuperscript{243} bamboo and cane.\textsuperscript{244} The shields were of the following types:

(a) \textit{Vati}

It was a kind of mat to cover the body and was made of \textit{Ko\-thavalli}, a creeper.\textsuperscript{245}

(b) \textit{Charma}

As explained earlier, its very title denotes that these shields were made of leather\textsuperscript{246} and were in great demand.

(c) \textit{Hastikarna}

It was a sort of a board to cover the body,\textsuperscript{248} and it derived its name as its shape resembled the ear of an elephant.\textsuperscript{249}

(d) \textit{Tālamūla}

Wooden shield.\textsuperscript{250}

(e) \textit{Kavāka}

A wooden board resembling the panel of a door.\textsuperscript{252}

\textsuperscript{240} Pant, G.N., \textit{Weapons in Ancient India}, p. 378
\textsuperscript{241} McCrindle's Translation, p. 221
\textsuperscript{242} \textit{Arthasastra}, Bk. II, Ch. XVIII
\textsuperscript{243} \textit{Indian Antiquary}, 1930, p. 170
\textsuperscript{244} Chakravarty, P.C., p. 176
\textsuperscript{245} \textit{Arthasastra}, Bk. II, Ch. XVIII
\textsuperscript{246} \textit{Ibid.}
\textsuperscript{247} Pant, G.N., \textit{Weapons in Ancient India}, p. 380
\textsuperscript{248} \textit{Arthasastra}, Bk. II, Ch. XVIII
\textsuperscript{249} Pant, p. 381
\textsuperscript{250} \textit{Arthasastra}, Bk. II, Ch. XVIII
\textsuperscript{251} \textit{Ibid.}
\textsuperscript{252} Pant, p. 381
(f) **Kitika**

A shield made of leather or of bamboo bark.  

(g) **Apratihtaka**

A shield used to protect oneself against elephants. When its edges were covered with metallic plate, it was called Valahakanta.  

The shields were of different shapes, such as rectangular, round, bell-shaped, of irregular shapes, oblong, wheel-like and hemispherical. The representations of shields can be seen in ancient reliefs and frescoes. Round shields can be discerned from the Gandhāra sculptures of the 1st or 2nd centuries. The shield of oblong shape and an oval disc can also be seen on the back of the figure of a soldier.

G.N. Pant opines that these shields were made of the hides of rhinoceros or buffalo, which was in the middle ages, the chief material for the manufacture of shields. The cavalry shields of the 5th century A.D. having criss-cross design can be seen in the Gupta and post-Gupta sculpture. The hemispherical shields, also popular during the post-Gupta period, were preferred by the infantry men. The oblong shields are seen in the Bhuvaneswara frieze depicting war.

---

253. *Arthasastra*, Bk. II, Ch. XVIII
254. Ibid.
255. Ibid.
256. Pant, pp. 282-284
257. Maisey, pl. XX, XXVII, XXX; Chakravarty, p. 176
258. Pant, p. 286
259. Ibid., p. 387; pl. LXXII, 4 Vol. II
260. Ibid., pls. LXXXII, 6 and LXXXII, 5
procession. The well known Konārk-horse is seen trampling soldiers with circular shields in their hands. The Khajuraho sculptures depict a large number of representational shields carried by foot soldiers without exception.

The shields have no less been represented in the ancient paintings. Soldiers with swords and shields are seen in the rock paintings of Mahādeo hills, Pachmarhi (M.P.) and Barkhara. At Ajantā, three types of shield—parrying type, round and curved-oblong, are represented. According to Mrs. Cordington, "round hide-shields are common in modern India, elephant and rhinoceros hide being chiefly used. The little parrying shield to be seen at Ajantā is of iconographic interest and is seen in the sculpture of Deccan and South India also". Normally, the shields were delicately ornamented "with metal bosses, stars, crescents, tassels, etc." The Konārk sculpture depicts highly ornamented shields. According to Egerton of Tatton this practice of shield ornamentation was continued up to the Mughal period. "The large shields of damascened steel offer a rich field for ornamentation in gold work, the best of them are made at Delhi and Lahore".

261. Ibid.
262. Vidvaprakash, Khajurāho - A Study in the Cultural Conditions of Chandella Society (Bombay, 1967), pp. 102-3, pl. XIX 1-17; Pant, pp. 388-90
263. Indian Antiquary, 1930, p. 170
265. Ibid.
ARMOUR

Body Armour

The use of the terms like Varman, 266 Kavacha, 267 Sannāha in the Reveda prove that some type of body armour or corselet was in use by the warriors of the Vedic age. In the Mahābhārata metal armour, besides coats of quilted cotton, were known to the Aryans. 268 The Rāmāyana warriors usually protected their bodies with defensive armour. 269 Describing the body armour of Porus in the battle of Hydaspes, Arrian wrote "it was shot-proof and remarkable for its strength and the closeness with which it fitted his person... But he was wounded in the right shoulder where only he was unprotected by mail." 270 However, it is not possible to decide whether Porus metal armour was of the cuirass type or of the interlinked chain-mail variety. 271

But doubtlessly both varieties of armour, as well as waded coats of quilted-cotton, were known at that time. According to Kauṭilyya varieties of armour were, Sirastrēṇa (cover for the trunk), Kanthatrēṇa (cover for the neck), Kūrnāsa (cover for the trunk), Kāśchuka (a coat extending as far as the knee joints), Vāravāna (a coat extending as far as the heels), Patta (a coat without cover for the arms), and Nāgodaraka (gloves). 272 P.C. Chakravarty opines that Sirastrēṇa could be

---

266. Reveda. VI 75
267. Ātharvaveda, XI. 10.22-24; IX. 10.1
268. Chakravarty, P.C., The Art of War in Ancient India, footnotes on p. 178
269. Valmiki, Rāmāyana. II, 34/25; VI 52.113; I.20.9, 52.102, VI, 49.4; Pant, p. 253
270. McGrindle, India and Its Invasion by Alexander, p. 108
271. Ibid., p. 204
272. Arthaśāstra, Bk. II, Ch. XVIII
a head piece made of iron, which was worn only with the chain mail or cuirass. It may be cloth-folds tied on the head like Pagri to guard against the blows of weapons. The different varieties of armour made of iron were as under:

(a) **Lohajālika**

It was a coat of iron which could cover the whole body, including the head and arms.

(b) **Patta**

An iron coat with no cover for the arms.

(c) **Kavacha**

It was an iron-coat made of detached pieces to cover the head, the trunk and the arms.

(d) **Sutraka**

This provided cover only to the waist and the hips.

According to Chakravarty "the Loha-Jāla (Iron-net) or Loha-Jālika, was undoubtedly a hauberik of inter-linked chain-mail... the Kavacha appears to have been a cuirass, composed of breast and back-plates. The Sutraka, on the other hand, was a jacket of quilted cotton". Lastly, there was a kind of body armour fabricated from hides, hoofs, and horns of certain animals, eg. "skins with hoofs and horns of porpoise, rhinoceros, bison, elephant or cow". Hema Chandra, a Jain scholar of

---

273. Chakravarty, p. 179
274. Ibid.
276. *Arthaśāstra*, Bk. II, Ch. XVIII
12th century A.D., records in his work Dvañashrāya Kāyva "Warriors of Grahapuru wore iron armour". The different kinds of armour, as mentioned above, have been referred to by Mañgha.

The coats of mail made of iron, hide, cotton and bark have also been mentioned by the Mañaso'lāsa. But the iron-armour, because of its cost, appears to have become a monopoly of the higher classes with the passage of time. The Sukraniti says that the body armour included of "scales of the breadth of a grain of wheat, was of metal and firm, had a protection for the neck and was ornamented on the upper part of the body."

On a number of Gupta coins and on the "Bull and horse-man type" coins of the kings of Ohind, the mailed horsemen can be seen. For the head protection, apart from the helmet, as mentioned earlier, the warriors used many other types of head dresses. Cap having semi-circular form with upturned lower end can be seen on the heads of the Gandhāra soldiers. The Ajanta warriors show close fitted round cap with conical mounting. The Turks, infantry as well as cavalry, invariably used body armour. When Alau-d-din Husain pitched his forces against those of Sultan Yaminu-d-daulā, "he cased himself in

278. Sīsapālyādha XVII, 20; XIX, 11, 26 and so on
279. Mañasa, p. 80, V 562
280. Yuktikalpataru, p. 140, V. 37
281. G.N. Pant, p. 355
282. Ibid., plate LXXX 1-10
283. Ibid., plates LXXI.2, LXXX.4, LXXX.5,6,7,8,9 and 1.
armour ready for the fight. His infantry protected themselves with 'Karah', an armour made of raw hide and covered thickly on both sides with wool or cotton. "When the men put it on, they are covered from head to foot and their ranks look like walls. The wool is so thick that no weapon can pierce it."

Horses for cavalry were adequately caparisoned to protect them against weapons of the enemy. (Plate IV)

The war-horse outside the Konarka main shrine is heavily caparisoned with bosses and bands around his face; its neck has heavy chain armour, and tasselled necklaces, jewelled bracelets on legs and a tasselled breast-band which kept the saddle in position. The war elephants too wore mail-armour (varma). The Sukraniti also prescribed coat-of-mail for the elephant.

"For elephants' body big leaves resembling wheat-leaves, made of iron, were considered suitable, while for the trunk, iron-nails with sharp edges were deemed the best. Leather was considered the finest material for preparation of elephant armour."

The Arab horsemen who advanced against Dahir and reached the fort of Baith, were all clad in iron armour. Sana speaks of "hard strokes of swords, falling upon the cuirassed panels"

284. Min haj-s Siraj, Tabakat-i-Nasiri, Elliot and Dowson, (Susil Gupta), p. 33
285. Ibid, p. 34
286. Pant, plate LXXXVIII, 1
288. Arthasastra, Br. II, Ch. XXXII
289. Sukraniti, Op. Cit. 4.7.216
290. Chaub Nama, (Elliot and Dowson), Vol. I., p. 167
of enemies' breast and it also mentions enemy helmets.

Chand Bardai says: "the horse with its coat-of-mail moves about prancing just like Induja (mara) with tightened wings". And again, "Great din in the Hindu hosts now resounded when they put on their armour." Damascended gauntletts and breast plates were among articles of war scattered all over the field for miles after the rout of the Hindu army in the Second battle of Tarain. There could not be a better evidence then the one provided by Chand Bardai who, while describing Risaideva Chauhan's fight against Baluk Rao Chalukya, beautifully brings out that the warriors, their horses and elephants were all protected by armour. "Armour they placed on horses and on elephants; the warriors clad themselves in their armour; the two armies met shield to shield in their ranks...."

FIRE ARMS AND GUNPOWDER

Before closing this chapter we are tempted to make a passing reference to the use of gunpowder and fire arms in India during our period. The ordinary components of gunpowder, such as salt-petre, sulphur and charcoal were available in abundance throughout the country. The charcoal of muhi,

291. Harṣa Carita, (Cowell and Thomas), p. 124
292. Ibid., p. 188
294. Rawlinson, H.C., India, A Short Cultural History, p. 210
295. Extracts from the First book of the Prithvirāja Rāsa reproduced in Indian Antiquary, 1872, p. 276
296. Oppert, p. 58
which like arka grows in waste lands, and the rasona which is a kind of garlic, is best suited for the manufacture of the gunpowder. 297 According to the Sukraniti, the formula for making gunpowder is; "Mix 5 parts of Saltpetre with 1 part of Sulphur and 1 part of Charcoal. The charcoal is to be prepared from arka, smubi and other similar plants in such a manner that during the process the plants are so covered that the smoke cannot escape. The charcoal, thus obtained, must be cleaned, reduced to powder, and the powder of the different charcoals is then to be mixed. After this has been done, the juice of the arka, smubi and rasona must be poured over the powder which is to be thoroughly mixed with this juice. This mixture is to be exposed and dried in the sun. It is then finally ground like sugar and the whole mixture thus obtained is gunpowder". 298 "The three principal ingredients are mixed in different proportions and realgar, opiment, graphite, varmilion, the powder of magnetic iron oxide, camphor, lac, indigo and pure gum are added to the compound, according as they are required." 298 The Sukranitisara mentions small as well as large guns.

According to an old tradition the Arabs obtained the formula of gunpowder from India. 299

Johann Beckmann (1739-1811) writing in his book 'History of Inventions and Discoveries' says: "I am more than ever

297. Ibid., pp. 60-62
298. Oppert, pp. 62-63
299. Ibid., p. 42
inclined to accede to the opinion of those who believe that
gunpowder was invented in India, and brought by the Saracens
from Africa to the Europeans; who, however, improved the pre-
paration of it, and found out different ways of employing it
in war, as well as small arms and cannons". 300 Alexander, the
Great, while writing to Aristotle described the dangers to which
his army was exposed from the "flamming thunderbolts" hurled
upon them". 301 According to Colonel Tod, "We have, in the poems
of Hindu poet Chand, frequent indistinct notices of fire-arms
especially the 'Nalgholā' or tube-ball; but whether discharged by
percussion or the expensive gunpowder is dubious." 302

These references tend to convince us that Indians knew
the use of gunpowder and fire-arms from the very early period,
but according to a number of critics the Sukranītisāra was
itself a later interpolation and at best, the portions descri-
bing gunpowder and fire-arms, a later addition of the 17th
century A.D. 303 It is a common knowledge that in India, where
such a large number of festivals are celebrated, no festivity
is complete without the use of fire-works. Hence the preparation
of some kind of highly combustible substance was definitely
known. Whether or not that was used for war purposes, is
extremely doubtful.

300. Gustav Oppert, p. 48
301. Ibid., p. 54
303. Indian Antiquary 1878
In all the war diaries, not a single reference is available to the use of gunpowder and employment of fire-arms. Were even a single shot fired, the Muslim chroniclers would have fully exploited that instance to further pile mountain of praises on their benefactors and sky-heighten their glories in razing to dust the crowned heads of their Indian adversaries whose armies they have always reckoned numerically much superior. G.N. Pant is right when he says that "reference to flaming substance in later historical literature should be taken as use of fire (and not fire-arms) in battles, a feature which was common even in the Vedic times". 304