THE BEGINNING OF THE IRON AGE
IN INDIA

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The problem here discussed is: When was iron first produced from natural ores in India, in quantity sufficient to be important in the means of production? This means primarily for agriculture. Iron was the cheap metal which made agriculture possible in monsoon jungles; bronze had always been reserved for the few, so that the bronze age was normally one of warriors who pastured cattle. Exceptions were the great river valleys passing through deserts, where no forest had to be cleared and the flood-deposited silt could be stirred up with a wooden plough or harrow: the Nile, Mesopotamia, the Indus. In contrast, the Gangetic basin with its very fertile alluvial soil but much greater rainfall was under dense forest till the iron age. The harrow would certainly not do where stones and roots were a serious problem; on the other hand, the forest could be cleared by fire only along the Himalayan foothills, where such obstructions would most commonly be expected in ploughing. One further essential difference between the Ganges area and the Panjâb is that food-gathering was always much easier in the east, whereas pastoral life remained the norm in the Panjâb nearly till Alexander's day.

The late Col. D. H. Gordon stated 1). "Once one gets down to (Indian) deposits that must date earlier than 400 BC, there is no iron and, furthermore, it would appear likely that at most sites the culture which continues to that date was one that utilized copper and stone". The previous page of the same source reads: "There was no iron with

*) The reader might find my Introduction to the Study of Indian History useful for the background references and discussion.

1) D. H. Gordon: The Pre-historic Background of Indian Culture (Bombay 1958) p. 155 and 154.
the invaders of India between 1800-1400 BC. . . . The Hittites kept the secret of the process (of smelting and forging iron) which would make iron a serious competitor with bronze. . . . Not till 1200 BC do we get iron-working starting to spread all over western Asia, the Caucasus and eastern and central Europe. By 1100 BC iron was superseding bronze on the Iranian plateau and appears in graves in Luristan and at Necropole B at Sialk. . . . By 800 BC there was a full iron age throughout eastern Europe and western Asia. Copper and bronze were no longer economic propositions and gave way to iron, articles of which were produced far more cheaply and in considerable quantity, making the possession of metal tools possible for those who had to content themselves with stone". The writer, a competent archaeologist, implied that India remained inexplicably backward by not adopting the new metal.

Sir Mortimer Wheeler takes the position that Indians learned the use and preparation of iron only from the Achaemenid conquest. He even states this as a fundamental postulate 1): "There is at present no clear evidence for the systematic use of iron anywhere in the (Indian) subcontinent before (the VI-th century BC) unless sporadically in the northwestern region. Attempts to equip the Vedic Aryans in the middle of the second millennium BC, or their successors of the Brâhmaṇa period, with iron have no solid substance. . . . The earliest unequivocal literary evidence for the use of iron by Indians are the well-known references by Herodotos and Ktesias (V-th century BC); and the earliest firm archaeological evidence for the normal use of iron within the subcontinent is provided by the First Taxila (Bhir Mound) for which Sir John Marshall's initial date of c. 500 BC is unlikely to be varied significantly. It is reasonable in the present state of knowledge to associate this developed use of iron with the imposition of Achaemenid

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1) Mortimer Wheeler: Chārsaddā: A metropolis of the North-west Frontier. (Oxford University Press, 1962; for the British Academy and the Government of Pakistan); pp. 33-4. The same position was taken earlier in Wheeler's Early India & Pakistan to Ashoka (London, 1919), where he puts the Gangetic copper hoards 'at a guess' before the 8th century BC, but fails to see iron before the Achaemenids. Incidentally, the existence of two Gandhāras, on both sides of the river, must be noted.