A. Iron in Association with the Painted Grey Ware Ceramic

In north India the earliest occurrences of objects of iron or objects proving its manufacture and use have been recently discovered at four sites, namely, Hastinapura and Alamgirpur, in District Meerut, Kausambi, in District Allahabad, all in Uttar Pradesh, and at Ujjain, in District Ujjain, Madhya Pradesh. In all these sites iron objects occur for the first time in association with a later phase of the distinctive ceramic known as the Painted Grey Ware. Stratigraphically the Painted Grey Ware and the associated cultural assemblage are lower, and, therefore, earlier than the now well known Northern Black Polished Ware. As stated above, these evidences constitute also the earliest in India's stratigraphy, even when compared with the early appearance of iron elsewhere in India in regions which are geographically unconnected with or disjointed from the distributional zone of the Painted Grey Ware (fig. 18).

The evidence of the use of iron in each of these sites is considered below:

(i) Hastinapura—The evidence at Hastinapura is confined to a couple of slags of iron found at a late or upper level of the Painted Grey Ware deposit (Period II of Hastinapura). Though no actual objects were found at the site at this Period, the importance of the mere slags cannot be minimized. While the presence of actual objects
may be held the result of importation from elsewhere, the slags suggest local manufacture.

(ii) Alamgirpur.— At Alamgirpur iron objects comprising a spear-head, a barbed arrowhead, and nails and pins (pl. I) occurred throughout the 4½ ft. thick deposit of the Painted Grey Ware and associated cultural assemblage, (Period II of Alamgirpur).

(iii) Kausambi.— In Kausambi small fragments and shapeless bits of iron were discovered as early as the third of four structural periods within the first period of occupation on the site, which was clearly pre-Painted Grey Ware, in the interpretation of the excavator, in emergence. More distinctive shapes occurred in the second period of occupation, which was associated with the Painted Grey Ware, and continued in the succeeding Period, characterized mainly by the N.B.P. Ware.

The evidence at Kausambi tends to show an even earlier emergence of iron than the Painted Grey Ware on the site, and it might prima facie be construed, on this showing, as the earliest stratigraphical evidence of iron so far known in India. It should, however, be borne in mind that the nature of the objects from the earliest phase on the site was fragmentary and shapeless. Moreover, the Painted Grey Ware itself, on the basis of its simpler painted designs, confining themselves to rim bands, compared with the larger stratigraphic evidence at Hastinapura, is somewhat later at Kausambi.
Thus the evidence of iron at Kausambi accords well with
the evidence at Hastinapura or Alamgirpur described
above.

(iv) Ujjain— The evidence at Ujjain, however, is
the most prolific and consists of spear-heads, arrowheads,
and knives for domestic use in the deposits of the
earliest period of occupation on the site, called
Period 1, besides some iron objects suggesting crowbars
and a spade found in the body of the mud-rampart
surrounding the city from a little after the earliest
settlements. The occurrence of a Painted Grey Ware sherd
in the make-up of the rampart, as well as some surface finds,
and a few from the earliest period of occupation, occurring
stratigraphically below the deposits of the cultural
complex by the N.B.P. Ware, point to the actual horizon
of the iron objects on the site. This is broadly in
consonance with the evidence in the Ganga plain. Iron
becomes, of course, more prolific in the N.B.P. Period at
Ujjain, as is generally the case everywhere in India.

To sum up; by the time the distinctive
cultural phase of the N.B.P. Ware had been reached in
north India iron became very common and easily the
dominant metal, being available in diverse shapes and in
large numbers. The data are too multitudinous to be
described here and will be dealt with at some length in
Chapter 7. Even so the quantum of remains unearthed,
though representing but a fragment of the total quantity,
is apparently much less than the metallic equipments
actually used at this time. This may, no doubt, be
attributed to an extent to rusting and resultant
degeneration. In contrast the well preserved condition of the equipment of iron objects to be met with in the megalithic tombs of south India is naturally the result of careful storing and sealing. Wheeler has endeavoured to explain this contrasting experience in the following words: "Its (iron's) impressive quantity and quality owe much to the accident of preservation in protective (megalithic) tombs. The scrappy remains of iron work from the 'megalithic' levels of the Brahmagiri town would never, unsupported, have suggested the extent of the industry. Per contra, had megalithic tombs been built beside the Ganges cities of the Iron Age, there can be no doubt that their display would have been correspondingly striking."

It would be worthwhile at this stage to note that the Painted Grey Ware has been attributed by Lal to the Aryans and has been dated by him to circa 1100-800 B.C. Neither this identification nor the chronological assessment proposed by him has been finally accepted yet. These two significant aspects of the question will be dealt with in a subsequent chapter. Meanwhile, the other evidence of the early occurrence of iron in India should claim prior attention.

B. Iron in the Megalithic Burials of South India

Until almost quite recently the occurrence of large assemblages of iron equipments comprising, among others, full-length spears, daggers, arrowheads, horse-bits and wedges in fairly good state of preservation in the megalithic tombs of south India, were considered as the
earliest evidence of iron in India even though the megaliths have been dated no earlier than circa 300 B.C. It was also stated by one authority writing in 1950 that no material evidence was yet available of the use of iron by anyone in India or Pakistan prior to 250 B.C., apart from the evidence in the megalithic tombs and the cairns of Baluchistan. His exact words are quoted here for emphasis: "there being not one single object or even fragment of iron as yet found north of the Narbada and the Mahanadi which can be referred to a date earlier than 250 B.C." More recently Wheeler has postulated that it was the Achaemenid Persians who transmitted the use of iron at the end of the 6th century B.C. to northern India, and the iron work of the megaliths of south India are in turn to be traced to the north Indian sources. This over-simplifies the picture but runs counter to the evidence on hand and the points at issue remain unresolved. The testimony of iron in the megaliths is large and undisputed though the source of inspiration of the megalithic concept as of the iron in it and, of course, their chronological position remain precisely the points at issue, and already there are indications of a much earlier date for the introduction of megaliths in south India than has so far been conceded.

The repertoire of iron objects (see table) found in the megaliths displays a wide variety, and comprise knives, often tanged, daggers, usually tanged, wedge-shaped blades, barbed arrowheads, spears or lances
with flat elongated blades and round shafts, constricted at the butt and ending in a terminal knob, or leaf-shaped with a socket base, javelins, axes, with detached ring round the butt, featureless bars, swords with double edges and a mid-shaft often with a hilt, adzes, sickles, hooks, horse-bits, chisels, ferrules, hatchets or edzes with a single or double diagonal straps, bangles, nails, frying pans, ladles with a long handle, and tripod stands to support vessels.

These objects meet the needs of warfare as well as of the household or agriculture and suggest a uniformity of cultural life over the extensive peninsular expanse of south India. It is also to be noted that Adiganallur in District Tirunelveli in the far south represented the largest variety of objects indicating an evolutional culmination with a north to south trend.

C. Iron in the Post-Chalcolithic and Pre-N.B.P. Ware Levels in West-Central India

Period II (dated by the author to circa 750-500 B.C.) at Nagda, in District Ujjain, Madhya Pradesh, in a context which is a continuation of the earlier chalcolithic life on the site is another new evidence on an early date of the use of iron in west-central India. These comprise fifty-nine objects of iron occurring throughout the concerned deposits of 6 ft. 9 ins. (2.10 metres) in thickness. The objects consist of a dagger with double edges and tapering point, a circular socket of a broken axe, a spoon, a celt with a broad cutting edge, a ring,
a nail, arrowheads with a biconical cross-section and a tang respectively, spearheads with square or oval cross-section and a knife blades displaying a wide variety of shape and suggesting diverse uses, blades and sickles, besides, of course, seemingly a fairly established tradition of ironworks.

(ii) Prakash. This inference is supported further by the evidence of well defined objects of iron at Prakash, District N. Khandesh, Maharashtra, below the N.B.P. levels up to a depth of (±427 cm). The objects comprise tanged arrowheads, axe, knife-blades, fragments of a sickle, nails and clamps.

(iii) Bahal. A similar evidence is also available at Bahal, in the same district, where iron is stated to have occurred some ten feet below the lowest N.B.P. sherd.

(iv) Eran. Recently the excavation by the Sagar University at Eran, in District Sagar, Madhya Pradesh, has yielded a similar sequence of iron objects and the N.B.P. Ware. The iron objects here occur in Period II (dated to the period covering a few centuries before the Christian era) along with the black-and-red ware tradition of the earlier period (I), assigned to the second half of the second millennium B.C.), but below the occurrence of the N.B.P. Ware, of which only one sherd emerges at the uppermost level of the Period II).
D. Iron in the Cairn-Burials in Baluchistan, and Persian and Baluch Makran, on the Irano-Pakistan Borderlands

(i) General.— A fairly early evidence of the occurrence of iron within the confines of the Indo-Pakistan subcontinent and the adjoining Irano-Pakistan borderlands, going back to circa 800 B.C., if not earlier, is that provided by five out of twenty-seven cairn-burial sites (see map) reported by Sir Aurel Stein in Persian and Baluch Makran and Baluchistan proper.

(ii) Moghul, Ghundai.— The iron objects found inside some of the burial cairns at Moghul, Ghundai comprised leaf-shaped arrowheads, arrowheads with small points, a triangular barbed arrowhead and knives and daggers, besides other objects of indeterminate use. Most of these had a tanged end for hafting.

(iii) Gatti.— Small pieces of iron were earlier reported by Major Mockler from the cairns at Gatti.

(iv) Jivanrud.— A thick iron hook and scraps of iron as mentioned by Major Mockler in the eleven dams opened by him here have been reported from the site.

(v) Nasirabad.— "Small pieces of iron implement" turned up in one of the cairns at Nasirabad.
(vi) Zangian. - Fragments of iron, a broken large sword blade, and an iron weapon with a bronze fastening have been reported from Zangian.

Thus the principal recognizable form of the iron objects in the cairns is the arrowhead and rarely the domestic knife. Among the arrowheads, the trilobate or triangular barbed one from Moghul Ghundal deserves special mention as it has parallels at Nad-i-Ali in Afghan Sistan. All these are provided with a tang for hafting on to a shaft or handle respectively.

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The isolation in which these sites lie has perhaps prejudiced the importance of the discovery of iron objects in the region in respect of the larger question of the evolution of the iron industry of the Indo-Pakistan subcontinent.

A correlation of these apparently disjointed but well-defined evidences will be attempted in the following chapter to work out a connected and, as far as possible, continuous picture of the early Iron Age in India.