EVIDENCES OF THE USE OF IRON IN INDIA IN THE EARLY HISTORICAL PERIOD AS REVEALED BY RECENT EXCAVATIONS

(1) General.- In addition to the evidence on the earliest use of iron in India, there is a good deal of iron reported from various excavated sites, the chronological horizons of which require a thorough reorientation in the light of the latest concepts of chronology in India. These would in a way corroborate the inference already postulated in this work. They would also indicate, incidentally, the spatial distribution of iron in early times. Among these sites in north India where iron has been found, only those, which have, however, vaguely a relevant chronological bearing, are being mentioned below.

(ii) Traces of slags.- Ancient slags of iron are stated to be available in every district in India from the extreme south to the Himalayas and would, no doubt, represent remains of iron workings ranging from the actual profitable undertaking to endeavours of experiment.

(iii) Taxila.- Sir John Marshall's excavations at Taxila, District Rawalpindi, Pakistan, yielded large numbers of iron objects in dated contexts. The earliest of these, as dated by the
excavator, goes back to the 6th and 5th centuries B.C., and at once disproves Gordon's contention. The only iron object from this Period is a short dagger blade. The next period dated to the 4th century B.C., yielded a carpenter's adze, and a straight edged and convex-backed knife. The succeeding Mauryan period was quite rich in iron finds among which were represented a bowl, spoon and saucepan with loop handles, double-edged, straight-bladed and tanged dagger, javelin, arrow-heads of different shapes, an elephant goad, a socketed axe with slightly drooping blade, adze, a chisel, a knife, a goldsmith's (or silversmith's) tong, smith's anvils, nails, and socketed and plain hoes.

The iron objects found in the 1944 excavations of the site (Sirkap) conducted by Wheeler were available throughout all levels ranging from the mid-first century B.C., to the second century A.D.

(iv) Hastinapura. The earliest evidence of the use and manufacture of iron in Hastinapura has been mentioned already. Among the numerous iron objects found in the succeeding Period (III), dated by the excavator to circa 600-200 B.C., occur a barbed and socketed arrow-head and a chisel, both from the lowest levels of the Period, besides a bracelet with unconnected ends.
(v) **Rupar.**—The 1952-55 excavations at Rupar, District Ambala, Panjab, have shown ample occurrence of iron objects in Period III, dated to *circa* 600-200 B.C., from its earliest levels, though no trace of iron objects is found on the site in the earlier levels. The iron objects of Period III comprise nails, hooks, bars, spikes with socket, handles, knives, daggers, sickles and spear-heads.

(vi) **Sisupalgarh.**—The 1948-50 excavations at Sisupalgarh near Bhubaneswar, District Puri, Orissa, have yielded iron objects in Period IIA and IIB, dated to *circa* 200 B.C. to 200 A.D. In the light of the recent discoveries of the black-and-red ware in the pre-N.B.P. levels at Sonpur, in District Gaya, Bihar, and in the whole of west, central and south India as an integral and characteristic element of the chalcolithic culture, tentatively dated to 1500-800 B.C., as well as in the megalithic, dated to 700 B.C. onwards, the above-mentioned time-scale for Sisupalgarh would undergo a revision.

The reason for the ascription of a limited chronological range to Periods I and IIA of Sisupalgarh is to be set down partly to the then limited knowledge of the occurrence of the black-and-red ware which was considered as peculiar to the megalithic culture only, which was then very cautiously dated by Wheeler to
to circa 200 B.C. The table of chronology at Sisupalgarh was, therefore, arrived at on the conservative dating of the then freshly revealed megalithic culture at Brahmagiri. The date of the megalithic culture has been suggested by the author to commence in circa 700 B.C. The question of the black-and-red ware has been discussed at length by B. Subbarao. He has endeavoured to prove a commonness of origin of this ware dating back to about 1000 B.C., and possibly earlier still in the chalcolithic facies of west, central and south India, with developmental tendencies in later times to the elongation of the shapes leading to pointed bases, requiring ring-stands for support. The shapes at Bahil and Tekwada offer the nearest parallels in commonness of shaped between the chalcolithic ware and the corresponding megalithic ware of Brahmagiri and elsewhere. Subbarao has shown that likeness in fabric, shape or form, in decorative motifs or patterns, where they exist, not to speak of identity of technique, can generally be traced between the two cultural groups.

The black-and-red ware sherds of Sisupalgarh were found to bear "resemblance in fabric, texture and shape to the megalithic ware of south India".

The recent excavations at a burial site of the chalcolithic folk at Tekwada, on the Gfrinja, a tributary of the Godavari, in District East Khandesh,
Maharashtra, have shown apparent likeness in shape, fabric and even the scratched graffiti marks between the chalcolithic black-and-red ware, of earlier date, and the megalithic ware, of a later date. It has also been considered that the earliest or lowest occurrence of the black-and-red ware at Sisupalgarh is about 10 ft. below the lowest sherd of the Rouletted Ware, dated to circa 50 A.D. As many as 11 successive layers separate the two. Though no thumb-rule can indeed be applied to the calculation of the time scale for the formation of strata, the possibility, in the context of a proved lower horizon of the black-and-red ware, of an earlier date at Sisupalgarh strongly entrenches itself. This would also give rise to a correspondingly earlier date for iron on the site.

(vii) Nasik. The excavations at Nasik, District Nasik, Maharashtra, have yielded large numbers of iron objects, nearly ninety percent of which were recovered from the second Period of habitation on the site. This period has been subdivided into Periods IIA and IIB, respectively. Period IIA, which is the earlier of the two, has been assigned the chronological range of circa 400-200 B.C. on the basis of finds of the N.B.P. ware and silver punch-marked coins. It is apparent that this orthodox time scale has been influenced to an extent by the associated black-and-red ware ceramic, of megalithic affinity. In the light of what has been stated already about the origin of the
black-and-red the date-scheme needs a change. Further, the protohistoric chalcolithic culture has been found in the upper levels of Maheshwar and Navda-Teli to overlap with the early historical period, though at Nasik there was a period of desertion between the two before the subsequent habitation began there in a corresponding habitation period. The protohistoric chalcolithic culture has been dated on the basis of C. 14 tests to circa 1500-1000 B.C. in the light of these facts a corresponding lowering of the time scale at Nasik is clearly indicated.

The iron objects from Period IIA comprise among others, leaf-shaped arrow-heads, caltrops, choppers, concave-convex knife blades, tang fragments, axes, drills, chisels of circular cross section, lamp or ladle, iron rings and nails, suggesting a wide variety of uses. These further imply a fairly long period of evolutionary development pushing the beginnings of the industry further backward chronologically.

(viii) Maheshwar and Navda-Teli. The recent discovery of iron objects, in Period IV of Maheshwar and Navda-Teli, District Nimar, Madhya Pradesh, dated to circa 400-100 B.C., agreeing in form with those from Taxila, with the exception of the shaft-hole axe, is another evidence against the view of Gordon.
(ix) Tripuri.— Tripuri in District Jabalpur, Madhya Pradesh, has yielded iron objects in all strata except the protohistoric chalcolithic levels. The earliest of these iron-bearing strata or Period II, is dated to circa 400-300 B.C. In view of the apparent overlap of the chalcolithic culture with the beginnings of the early historical period in general, an earlier date-range than conceded hitherto for Period II, coeval with the use of iron, is called for.

(x) Nagda.— The evidence from Nagda has been discussed earlier (p. 11-12 ante). Period III (circa 500-200 B.C.) has yielded 131 objects in all. They include knives, daggers, chisels, sickles with curved blades arrowheads of square, rectangular and hexagonal cross-sections, occasionally with tangs, double edged daggers, hoes, chisels, a khedga shaped knife, nails and bowls. All these reflect the well settled nature of iron in this Period and the many-sidedness of its use.

(xi) Prakash.— The evidence of Prakash, District West Khandesh, Maharashtra, corroborates the evidence at Nagda, and takes the date of iron backwards from the datum of the N.B.P., ware, as stated earlier (p. 12 ). A full-fledged iron-using culture has been found here associated with
the black-and-red ware pottery in a deposit of 14-15 ft. thick, underlying the deposit associated with the N.B.P. ware. The pre-N.B.P. Ware iron using culture emerged on the site subsequent to the protohistoric chalcolithic culture, and was separated from it by an intervening accumulation of gravel. In all 25 objects of iron have been recovered from the pre-N.B.P. Ware levels, and 5 from the N.B.P. ware deposits. In this connection it would be worthwhile to mention that the chalcolithic culture at Prakash has been tentatively shown to be an outlier within the Malwa group of chalcolithic sites, which includes Maheshwar-Navdatoli.

The excavations at Bahal, District East Khandesh, Maharashtra, have yielded iron objects comprising spear-heads, knives, daggers and sickles. All these have occurred in Period II, dated to *circa* 600-300 B.C.

(xii) *Bahal.* - The excavations at Bahal, District East Khandesh, Maharashtra, have yielded iron objects comprising spear-heads, knives, daggers and sickles. All these have occurred in Period II, dated to *circa* 600-300 B.C.

(xiii) *Sonpur.* - The excavations at Sonpur, District Gaya, Bihar, have shown the occurrence of iron in Period III, characterized by the N.B.P. Ware and dated, accordingly, to the 6th century B.C. The objects comprise nails and blades etc.

(xiv) *Purana Qila, New Delhi.* - The excavations at Purana Qila, New Delhi, considered to be the site of Indraprastha, of the days of the Mahabharata, revealed the evidence of the use of iron in
association with the N.B.P. Ware, dating back to the
sixth century B.C. it may be recalled incidentally
that the site has yielded the Painted Grey Ware in its
earliest levels.

(xv) Jaugada.— A full-fledged iron using
culture has been found in the post-neolithic, early
historical, Period (I) at Jaugada, District Ganjam,
Orissa. It is also associated with the black-and-
red ware as at Sisupalgarh and would possibly belong
to a pre-Mauryan level and to a date comparable with that
of the megalithic culture.

(xvi) Rajgir.— The recent excavations at Rajgir, District Patna, Bihar, have also yielded
a few iron objects, apparently associated with the
N.B.P. Ware and should likewise be dated, on the
showing of Hastinapura and Kausambi, among other
sites, to the beginning of the sixth century B.C.
Its upper limit extends up to circa 200 B.C. As the
results of the latest excavations await publication
further details are not yet available.

* * * * * * * * * *

In this context it would not be out of place
to enumerate a few sites where iron has been found
as a result of excavations, but where chronological
conclusions would largely require to be revised in
the light of recent discoveries. A few such sites
are mentioned below with such relevant details as
are available.

(xvii) Hagari. — Iron objects comprising arrow-heads and nails were found in the occupational deposits of the Mahādeva temple mound at Hagari, near Chittorgarh, District Udaipur, in Rajasthan. The earliest occupation of the site was estimated to go back to the third century B.C.

(xviii) Sambhar. — Iron objects comprising hatchets, a cobbler's scraper or chisel, mouth-pieces of a blacksmith's bellows, double-edged daggers with long blades, sickles, crucibles, chisels, clasps or staples, fish-plates, braces, rings, articles for strengthening door leaves, door pivots, a stirrup, bells, ladles, spoons, a large cylindrical vessel, arrow-heads and spear-heads were found at Sambhar, District Jaipur, Rajasthan. The occupation on the site was assessed to go back to the third century B.C.

(xix) Reirh. — A large number of iron objects was found at Reirh, District Jaipur, Rajasthan, in the 1938-40 excavations on the site. According to the estimate of the excavator the oldest habitation on the site go back to the third century B.C. It is likely that this date would undergo revision with a leaning towards an earlier dating. The iron objects include sword blades, lances and spear-heads, small daggers, knives, arrow-heads, sickles, axes, adzes, nails, door fittings and fragments of door chains.
The excavations at Bairat, District Jaipur, Rajasthan, have also yielded some quantities of iron objects in dated contexts. The monastery on the site seems to have existed at a time when silver punch marked coins were in vogue, and lived through the Greek and Indo-Greek periods to the middle of the first century A.D. The iron objects found in the monks' cells consisted largely of nails. The circular temple, discovered on the site, was built in the Asokan Period and the iron objects in and around the temple comprised iron clamps, nails of different sizes, fish-plates, possibly for use on wooden pillars or doors, and an iron chisel.