The Qom Plain at the End of Bronze and the Beginning of Iron Age

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From the cultural-geographical perspective, the Qom plain is part of the cultural area of the Central Plateau of Iran. Archaeologically, this region had many contacts with other areas of the Central Plateau such as the plains of Kāshān, Sāveh, Qazvin, and Rey. It also had relations with the synchronous centres in the northeast, northwest, central Zāgros, and Khuzestān plain. This is due to its geographical position and its location on the path of cultural contacts during the third and second millennium B.C. The archaeological evidence points to the strategic position of the Qom plain as a significant factor in creating the opportunity for investigating the process of cultural interactions and changes of this period. The evidence confirms that there is no gap in the chronological and settlement sequence of the Qom plain, especially during the second millennium B.C. (i.e. from the new Bronze Age to the beginning of the Iron Age). This provides an opportunity for displaying a more obvious picture of the cultural developments of a vague period of archaeology in the Central Plateau, i.e. transition from the Bronze Age to the Iron Age. Attained from the first phase of the Qom archaeological surveys and based on the comparison of the existing data with the results of the stratigraphy and excavation at Qoli Darvish, the present study investigates the cultural sequence of the Qom plain in the third and second millennia B.C. It also examines the manner of distribution and contacts of the sites of this era, emphasizing the role and influence of the strategic position and geographic features in shaping the settlement patterns of the region.

Key words: *Central Iranian Plateau, Qom Plain, Bronze Age, Iron Age*

The Qom Plain and the Central Plateau of Iran: The Geographical Position

Regarding the natural landscape and geographical position, the Qom plain with an area of about 8,200 square kilometres is part of the geographical and cultural zone of the Central Iranian Plateau-- which extends from north to Ali-Ābād heights, from northeast to the Masileh plain, from south to the highlands located between the central part and the Kahak site, from west and southwest to the plains of Sāveh (Āweh), Āshtiān and Tafresh, and from east to the Salt Lake and Nouran desert (Fig. 1). In the literature on the Iranian prehistoric archaeology, this area is also known as 'Arāq-e Ajam' (Wendenberg, 2001: 120), 'the cultural area of the central plateau' (Malek Shahmirzādi, 2000: 315, Majidzādeh, 1988: 1, Malek shahmirzādi, 1991, 1; 2003: 21, Alizādeh, 2013: 92, Hesāri, 2007: 131, Fāzeli, 2008: 357, Esfandiāri, 2000: 3, Rustāyi, 2013: 115), 'central north of Iran' (Talāei, 2009: 8 ; Talāei, 2012: 45), 'the centre of the plateau and the cultural area of the margin of the central desert of Iran' (Sarlak, 2012: 15). This area includes the plains of Qazvin, Tehran, Sāveh, Qom and Kāshān (Talāei, 2012: 50).

Its geographical position along the main road that connects the western regions to the northeast of Iran is significant in the central plateau (Majidzādeh, 1987: 1) and roughly the most important natural roads of the Iranian plateau that connect the north to the south as well as the east to the west cross this region (Talāei, 2011: 45). From this perspective, the central plateau has a strategic position among the eastern, western and south-western regions of the Iranian plateau (Alizādeh, 2008: 47). In the central plateau, due to lack of large rivers, the location of the settlements generally depends on two important factors, namely the availability of natural resources

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and being situated along the road connecting cultural centres (Majidzādeh, 1987: 1). This situation has significantly contributed to the emergence, distribution, dynamicity, and collapse of prehistoric cultures of this area (Talāei, 2011: 45). Regarding water resources, this cultural-geographical area is composed of two semi-arid and arid regions (Talāei, 2008: 8) and is rich in mineral deposits especially copper (Alizādeh, 2008: 47). Consequently, this natural landscape has facilitated the sedentary and semi-nomadic economic structure in this region (Talāei, 2011: 51).

The most important rivers in the Qom plain include Qomrud, Anārbār (a branch of Qomrud), Zarrinroud, Sāveh, Toghrud, Zāghehrud and Nimrud (Rabiei, 1999: 169). Qomrud is the most important river of Qom and Jamkarān, which originates from the eastern foothills of Zāgros and enters the Qom area with the west-east direction; and after joining the Qaresu River, it enters the Salt Lake in the Masileh watershed (Modarresi Tabātabāei, 1966: 33).

Archaeological evidence and historical documents show that the ancient economy of this



Fig. 1: *The boundaries of the Qom plain (After: Google earth, depicted on 12/03/2017).*

The Qom Plain: Geographical and Environmental Conditions

Due to its proximity to the desert, the Qom plain has arid and semi-arid climate with extreme temperature fluctuations (Tabātabāei Majd, 2002: 77) and is considered to be arid in the geographical divisions of the regions, while the Jamkarān area due to its proximity to the southern foothills of Qom and the western margin of the central desert has higher average of rainfall (Kurdavāni, 1979: 235; Tabātabāi Majd, 2002: 77; Rabiei; 1999: 190). The natural slope of the Qom plain is south to north and west to east; therefore, the direction of the water flow and the sedimentation process caused by the floods are towards the southeast of the plain (to Jamkarān area, Qanawāt, and finally to the Masileh plain) (Kurdavāni, 1979: 226).

area relied on agriculture and animal husbandry which still are common among communities living in this area. Moreover, in this region, the combined agricultural economy comprising sedentism and limited, seasonal and intra-regional migrations based on livestock farming is prevalent. This form of economic model, i.e. sedentism and semi-nomadism, is known as dual livelihood economy, whose implementation requires extensive knowledge of the environmental and geographical conditions (Alizādeh, 1992: 34).

The main livestock of the nomadic societies include goats, sheep and camels. In summers, the nomads of the area also migrate to the Mountains of Sāveh, Fordo, and Voshno (Alizādeh, 2008: 47).

The Cultural and Archaeological Sequence of the Northern Half of Iran in the Second Millennium B.C.

The available documents related to the transitional nature of the societies at the end of the Bronze Age and the beginning of the Iron Age and the chronological sequence of the northern half of Iran in the second millennium B.C. do not provide a uniform model (Young, 1985: 376; Mousavi, 2008: 105). This limitation is caused by several factors: 1) a considerable amount of material culture belongs to the beginning of the Iron Age in hand; 2) the vast geographic distribution of this culture can be seen in the northern part of Iran, mostly obtained from the mortuary contexts of this period; and 3) the focus of research has mostly been on the changes of the pottery tradition (Dyson, 1965: 197, Mousavi; 2005: 22), especially the pottery of the north-western Iran in the first and second millennia B.C. (Young, 1965: 63; Vahdati, 2003: 63). This limitation is due to the lack of knowledge and studies conducted on the settlements that represent the cultural and stratigraphical sequence of the Bronze Age and the Iron Age (Mousavi, 2008: 105). On the other hand, in some settlements of the second millennium B.C., the nature of the transition period from the Bronze Age to the Iron Age has not been adequately identified or studied, except for the substrate of Giyān IA, which has been specifically recognized as the transition period between Giyān I and II (Young, 1965: 62). In the other settlements of the northern half of Iran, at the end of the Bronze Age and in the beginning of the Iron Age, no clear cultural layers representing the nature of the cultural transition at the end of the Bronze Age have been precisely established.

If we accept that the transition period refers not to a very long time span in the process of cultural changes of societies and necessarily links to the preceding and following periods without any gap (neither cultural nor chronological gap), and as a bridge connects these two earlier and later periods to each other, in this case, the transition period involves the parallel process of continuity and change. Perhaps the characteristic feature of the transition period is transferring some cultural traits of the preceding period to the subsequent period and at the same time providing the context for cultivating things that will be features of the new culture in the following period[1]. In this sense, the transition period can be said to be a phase between tradition (the preceding period) and modernity (the following period), and as the connector of these two periods. The transition period mostly represents an evolutionary phase in the cultural process of the societies (Sarlak, 2009: 28).

If such a view of the nature of the transition period is accepted, then, those areas such as Hasanlu, at the end of the Bronze Age and the beginning of the Iron Age, which display an apparent cultural gap (with no stratigraphic gap), generally lack a definite archaeological layer in the stratigraphic sequence of the boundary of both ages (Dyson, 1989: 125; Young, 1967: 34).

In some other sites of this period such as Dinkhāh, in addition to reporting a link between the pottery tradition of Dinkhāh IV and Hesār IIIC, in the cultural sequence of Dinkhāh IV (the end of the Bronze Age) and Dinkhāh V (the beginning of the Iron Age), "the stratigraphical gap with no chronological and cultural gap" has been reported as well (Dyson, 1975: 73). Therefore, there is no definite archaeological context in Dinkhāh to represent the nature of the cultural transition.

Additionally, the chronological and stratigraphical gap with no cultural gap has been reported in Haftvān, between Haftvān VIA (the end of the Bronze Age) and Haftvān V (the beginning of the Iron Age) (Talāei, 1390: 78; Talāei, 1994: 159; Talāei, 1983: 56; Edwards, 1981: 102). Therefore, there is no archaeological context in this area to study the process of cultural transition either.

The similar pattern like Haftvān has been reported in Sagz Ābād at the end of the Bronze Age and the beginning of the Iron Age (Talāei, 1994: 159). Although in this area, the chronological and stratigraphical sequence between periods IV and

[1] a phenomenon so called "cultural dynamism at the beginning of the Iron age"

V has provided a suitable basis for studying the settlement sequence and the continuity of the pottery styles in the transition period from the Bronze Age to the Iron Age (Talāei, 1983: 56; Talāei, 2011: 152), the emphasis on the absence of cultural and chronological gap at the end of the Bronze Age and the beginning of the Iron Age is mostly due to the continuity of the pottery traditions during the second millennium B.C.

On the other hand, the focus of the studies of this period that aim to justify and interpret the developments of the end of the Bronze Age and the beginning of the Iron Age are based on the changes of the pottery traditions, especially the burnished grey-black pottery (Mousavi, 2005: 22), while it is not possible to define a timeline and a specific geographic range for the creation and spread of the tradition of grey-black grey pottery (Mousavi, 2008: 113; Talāei, 1997: 260).

Such uncertainties are also evident in the theoretical foundations of this period, and sometimes development of different contradictory theories (Medvedskaya, 1982: 96; Danti, 2013: 370; Mousavi, 2005: 94; Mousavi, 2001: 15), in turn, has added to the complications of the studies of this period.

This situation is specifically evident in the chronological sequence of this period in the northern half of Iran. Although the classification of the Iron Age based on the cultural concept (pottery horizons) and the classification of this period based on the historical and chronological sequence (Iron Age I-II-III) has shaped the common traditional framework of the studies of this period, the lack of mutual agreement of these two viewpoints posed challenges to the study of the historical sequence and cultural developments of this period (Yang, 1993: 248; Vahdati, 105: 2003; Mousavi, 2008: 105; Young, 1985: 1997; Medvedskaya, 1982: 105). Accordingly, the view that divides this period on the basis of technological developments (iron melting technology) and the attempt to compare the chronology of the Bronze Age and the Iron Age of the northern half of the Iranian plateau with the chronology of this period in the Caucasus and Anatolia regions (Danti, 2013: 348; 2015: 150), in turn, had challenged the common, traditional chronological framework of this period and indicated that there is no uniform, comprehensive, and generalizable model in this regard.

In this condition, given the existing limitations, it seems that large centres, which represent the cultural and stratigraphical sequence of the Bronze Age and the Iron Age, are not accurately and adequately explored and investigated. It will not virtually be possible to provide any model and hypothesis (not necessarily a comprehensive and generalizable model applicable to all regions) to justify and interpret the process of cultural changes of the northern half of the Iranian plateau in the second millennium B.C.

Thus, one cause of the uncertainties is our limited knowledge of the primary context and the background from which the early cultures of the Iron Age has probably originated. This primary and rarely known context shapes the cultural and settlement layers of the new Bronze Age. Probably, most of the information available on the sequence of different phases of the new Bronze Age in the northern half of the Iranian plateau is related to the period of Hesar III (Schmidt, 1937: 155-170). Yet, there are evident limitations in this regard as well. First, most of the knowledge of architectural and settlement remains of Hesar III is related to the middle phase of this period (Hesar IIIB) and architectural remains of the final phase of this period in the Hesar (Hesar IIIC) are scarce and scattered (Talāei 2011: 151) and yet, most of the information available from Hesar IIIC is related to burial traditions (Schmidt, 1937: 232-238). Second, basically with the end of the Hesar IIIC, the sequence of the settlement of this site is terminated and the site is abandoned (Mousavi, 2008: 113). The same situation occurs in other areas of the north-eastern Iran (Turang Teppeh IIIC, Yārim Teppeh IIIB and Shāh Teppeh IIC) and the south of Turkmenistan (Namāzgāh V) (Vahdati, 2003: 104; Young, 1985: 372). This means that in the cultural and chronological sequence of north-eastern Iran, due to the lack of knowledge of the layers of the settlements at the beginning of the Iron Age, virtually, it is seriously challenging to study

the process and the nature of the transition from the end of the Bronze Age to the beginning of the Iron Age. In the north-western Iran, there is also limited knowledge of the settlement remains and the architectural sequence of the end of the Bronze Age and the beginning of the Iron Age (Talāei, 2011: 51). In the excavation of Hasanlu, due to the lack of extensive excavation of the layers of Hasanlu VI (the New Bronze Age), there is no precise information of the architectural and settlement remains of this period (Muscarella, 2006: 72), and the present knowledge is limited to the study of the pottery traditions of this period and chronological sequence of the site. The same limitation exists about the settlement layers and architectural remains of Hasanlu V (the beginning of the Iron Age) (Dyson, 1965: 197; Dyson, 1985: 108).

There is somewhat the same situation in other settlement areas of the northern half of Iran (probably excluding Sagz Ābād and Qoli Darvish) in the second millennium B.C. Few documents gathered from the excavation of Teppeh Mamourin indicate the obvious similarities between the architectural techniques and patterns of layer I to III of this site and Qoli Darvish IV to VI (Sarlak, 2011: 70; Mehrkiān, 1995: 348; Mehrkiān, 1992: 86).

In Uzbek, despite the full presentation of the results of the excavation and the importance of this site to the cultural and chronological sequence of the second millennium B.C., the status of the end Bronze period and the transition to the beginning of Iron Age has not been identified. However, based on the materials and documents obtained from the excavation, it seems that periods I and II of Dushan Teppeh and period III of Jiran Teppeh (Majidzādeh, 2010: 189) can be important regarding the study of the cultural developments of the middle of the second millennium B.C. Therefore, based on the traditional chronology of the Bronze Age and the Iron Age, it seems that in some parts of Iranian central plateau the periods like Teppeh Mamourin, IV of Sagz Ābād, V of Qoli Darvish, I and II of Dashan Teppeh, III of the Uzbeki Jiran Teppeh probably have the capacity to be studied in order to investigate the transition process from the end of Bronze Age to the beginning of Iron Age.

Another group of known sites of this period is cemeteries. However, their chronology problems and, generally, the sequence of the burials in these types of sites has not been precisely identified. Qeitarieh with tradition of using simple hole shaped graves for burial (Kāmbakhshfard, 1991: 47), the cemetery of Sarm with a variety of grave architecture and burial practices (Sarlak, 2003: 149; Talāei, 2008: 125), the Khorvin cemetery with simple hole shaped grave (Vandenberg, 1964: 2) and Sialk A cemetery with gabled roof graves (Crimson, 2010: 25) are generally attributed to the cultures of the Iron Age (Talāei, 2008: 25).

This indicates that there is not much information about the archaeology of Iranian central plateau in the second millennium BC, especially in the first half of it.

Considering this issue and regarding the range and diversity of the cultures of the second millennium BC, natural landscapes seem to play a significant role in bringing about changes and displaying the paths of the changes of the Iranian plateau cultures. The environmental diversity of the Iran plateau, on the one hand, and the lack of administrative organizations being able to unify separate societies in a relatively broad and heterogeneous geographical area, on the other hand, are among factors contributing to cultural diversity. For this reason, any attempt to provide a comprehensive framework in the archaeological studies of the end of the Bronze Age and the beginning of Iron Age of Iran, which can track and justify the cultural developments of the second millennium B.C. in northern half of the Iranian plateau, creating a single model and pattern, will virtually add to the existing challenges. Therefore, in such a situation, to the extent that the archaeological documents and material are available, cultural ties and commonalities can be preferably explained in a cultural-geographical area and in a common natural landscape, and, naturally, the similarity of archaeological materials of the farther regions having different geographies is not necessarily considered to be the common path of cultural changes, but as a sign of interactions and connections of the societies and the regions.

Taking this approach, a series of evidence and documents suggest that during the New Bronze Age and the beginning of Iron Age (based on the traditional chronology), there were cultural interactions between the areas and centres of this period in the northern half of Iran. In the Bronze Age, there were deep and extensive interactions between the areas for establishing a wide range of commercial-cultural relations in the Iranian plateau (Pitman, 2005: 11). Evidence of such relations from the early Bronze Age of the Qom plain shows that, on the one hand, this area was associated with the culture of the Proto Elamite Culture of Khuzestān plain (Shush IIIC) and, on the other hand, with the cultural centres of the northeast regions in the early Bronze Age (the period of Hesar IIA) (Sarlak, 2011: 64).

The Middle Bronze Age of the northern half of Iran is not well known. Therefore, based on the evidence obtained from the excavation and stratigraphy of Qoli Darvish (period III), the evidence of the development of a likely regional culture in plains of Qom and Sāveh which has spread to plains of Rey and Varāmin can be investigated. The pottery tradition indicative of this culture is "brown-Plum" pottery, which lasted until the New Bronze Age alongside the grey pottery, the grey-black and painted buff pottery.

Archaeological evidence shows that during the second millennium B.C., the Qom plain entered a cycle of cultural exchanges with important centres of the Northeast (the period of Hesār IIIB-C), the Northwest (the culture of Haftvān VIB and Hasanlu V), and the Central Zagros (the culture of Gudin III = Giyān II-III). The extent of the Qom plain contact paths can be extended due to the close similarity of some forms and motifs of the pottery wares of this plain in the second millennium B.C. (Qoli Darvish IV to VI) with the Kaftari period (the middle and the late Kaftari period) of Fars (Sarlak, 2011; 258, 431, 478; Sarlak, 1997: 14; Miller & Sumner, Petrie *et al.*, 2005: 61). On the other hand, the close similarities of the tradition of painted buff pottery of Qoli Darvish III to V with Gudin III5-2 regarding the form and decoration (Sarlak, 2011: 307; Henrickson, 2002: 422) can confirm the extent of the cultural contacts of the societies of larger areas of the Iranian plateau in the Bronze Age, especially during the second millennium B.C.

In the New Bronze Age (according to traditional chronology), the existence of the tradition of burnished grey pottery with the Hesar IIIB-C style in Qoli Darvish IV and V (Sarlak, 1390: 70; Schmidt, 1937: Pl, XL), the painted multi-coloured and two collared pottery so-called 'Urmia Ware' (Haftvān IVC and Sagz Ābād III-IV) in Qoli Darvish IV to VI (Sarlak, 1390: 64; Sarlak, 2010: 280; Talāei, 2009: 140), and the existence of the painted buff pottery with Gudin III style and Giyan II in Qoli Darvish IV to VI (Sarlak, 2011: 66; Henrikson, 2002: 58), and other areas of the Qom plain in the second millennium B.C. indicate cultural connection among these regions. The continuity of the burnished grey pottery, painted buff pottery. and bio and polychrome pottery in the Qom plain (and the Qoli Darvish site) during periods IV-V-VI of Qoli Darvish can indicate the continuity of the pottery traditions of the New Bronze Age in the beginning of the Iron Age. These documents of the stratigraphical and settlement sequence of this site during the second millennium B.C. suggest the lack of cultural and chronological gap in Qoli Darvish and the Qom plain at the end of the Bronze Age and the beginning of Iron Age (Sarlak, 2011: 64).

According to archaeological evidence, in transition from the end of the Bronze Age to the beginning of Iron Age and during the recent period, that is, from 1700 (1600) to 1400 (1300) B.C. (based on the traditional chronology of this period), the archaeological evidence and material obtained from the excavation of the Qom plain, and in particular the architectural techniques used in Qoli Darvish V and VI, suggest close relation with the architectural practices of other concurrent sites in the Central Plateau, including periods I to IV of Sagz Ābād, and the Layer I to III of Teppeh Mamourin (Sarlak, 2011: 70). There is also such a similarity in the form and decorative techniques (especially the burnished grey and black pottery wares) which are visible in tripod bowls, buttoned stem or ring foot beakers with a vertical handle, buttoned bottom bowls, and pitchers with a discontinuous gutter shaped

spout between Qoli Darvish IV to VI (Sarlak, 2011: 419, 442-443) and similar samples from the cemetery sites of Khorvin (Vandenberg, 1964: 13), Period V of Sialk (Ghirshman, 1939: PLXLV), Uzbek Teppeh Jiran (Majidzādeh, 1382: 147-149), Qeitarieh (Kāmbakhshfard, 1370: 97), Sarm (Sarlak and Kāvusi, 1394: 426), Giyān I3 and I4 (Young, 1965: 55), Hasanlu V (Dyson, 1965: 195; Young, 1965: 55; Muscarella, 1974: 35), Kordlar Teppeh IV (Lippert, 1979: 126), Teppeh Guy B and Dinkhāh III (Medvedskaya, 1982: 41; Talāei, 1374: 127). Nevertheless, a series of archaeological evidence, including the evidence of stratigraphic sequence, the continuation of the pottery tradition, the sequence of architectural phases, and the results of the absolute dating of cultural layers and deposits indicate that there is no cultural and chronological gap during the second millennium B.C. in the Qom plain (based on Qoli Darvish).

In addition to the evidence obtained from the excavation at Qoli Darvish, the evidence obtained from the study conducted by Sarlak (2018) also show that in some areas of the Qom plain (based on the typical samples of the pottery), there was a relatively long sequence from the Early Bronze Age to the Early Iron Age. Evidence obtained from some other areas also show chronological and settlement gap in the cultural sequence of the Bronze and Iron Age. In the first phase of the Qom plain survey, 10 sites from the Bronze Age and the Iron Age were identified (Table. 1). Among these sites, Qoli Darvish, because of its stratigraphy and its excavation, displays a clearer picture of the cultural sequence of the late fourth millennium to the late second millennium B.C. (about 3300 B.C. to A.D. 1300, Alizāde *et al*., 2013: 157; Polard *et al*., 2013: 42). The remains of the settlements of the New Bronze Age and the beginning of the Iron Age of this site extend over an area of 12 hectares. The initial height of the site (before destruction and levelling) from the surface of the plain is between 10 to 15 meters (see also Kleiss, 1983: 74). In the current situation, the highest part of the area on the south-east side is about 5 meters above the surface of the plain. Near six meters of the cultural deposits lay below the current level of the plain.

According to the evidence obtained from the excavation, the Early Bronze Period of Qoli Darvish (and the Qom plain) is known as the 'Proto Elamite' culture. The same situation is seen in most of the sites of the Central Plateau. Evidence of the presence and development of the Proto Elamite culture in the central plateau has been introduced from the period IV2 of Sialk (Girshman, 2001: 36). From Teppeh Sofalin and Shoghali in the Varāmin plain, the culture of the Proto Elamite has been identified, too (Hesari, 2007: 173). The same documents from the same culture were obtained from the period I of the Sagz Ābād of Qazvin plain (Negahbān, 1351: 23) and the Uzbek suburb of Sāvojbolāgh (Mārāl Teppeh III) (Majidzādeh, 2010: 52).

In the chronological and stratigraphical sequence of Qoli Darvish, the period 1-5II introduces the culture of the Proto Elamite and the cultural material indicative of this period, including the flared rim bowls, polychrome pottery, Uruk trays, early clay tablets, and so on that existed alongside the tradition of burnished grey-black pottery with Hesār IIA style. From this period at Qoli Darvish, five successive architectural phases have been established (Sarlak, 2011: 147-160). Also, in the Qom plain, there was evidence of two sites: Shalmout B and Teppeh Gerdāli that belong to the Early Bronze Age (Proto Elamite Culture). The dispersion of the pieces of the flared rim bowls in Shalmout B and Teppeh Gerdāli as well as the dispersion of the burnished grey-black pottery of the early Bronze Age represent the simultaneous presence of the cultural characteristics of the Khuzestān plain (the Proto Elamite) and the northeast (Hesar II) in this area. In Shalmout B, based on the evidence obtained from the excavation, the settlement sequence can be studied from the Early Bronze Age (and Proto Elamite) and the Middle Bronze Age to the Iron Age.

Based on the evidence gathered from the excavation at Teppeh Gerdāli, the sequence can be studied from the early Bronze Age to the Iron Age. Pieces of flared rim bowls of Proto Elamite period have been discovered too. The dispersion of the flared rim bowls of the Qom Plain somewhat shows the position and the pattern of dispersion of the Proto Elamite culture in the Qom plain along the

ancient roads of Kāshān, Qom, Sāveh, and Qazvin plains (and then westwards, to Kangāvar plain = Gudin V and eastwards, i.e. to Sāvojbolāgh plain = Uzbeki area) and shows the roads that connect these centres to one another.

As mentioned earlier, there is not much archaeological evidence of the Middle Bronze Age in the Central Plateau. Most of the knowledge of this period in the Qom plain has been obtained from the excavations of Qoli Darvish (period III). The results

Table. 1: *Location of the Bronze Age and the Iron Age sites identified in the first phase of Qom plain surveys*

Site	Position	Area	Height from the sea level	Distance from the Qoli Darvish Site
Shalmout B	UTM 3817841 S39495971	8.5 hectares	1038 m	11 kms away from south-western Qoli Darvish
Teppeh Gerdali	UTM 38422089 S39451115	2.5 hectares	1129 m	44 kms away from north-western Qoli Darvish
Teppeh Giv	UTM 3822244 S39432698	1 hectare	1679 m	84 kms away from western Qoli Darvish
Teppeh Alborz 1	UTM 3844417 S39494062	1.5 hectares	872 m	16 kms away from northern Qoli Darvish
Teppeh Kaftarkhor	UTM 3835222 S39434038	2.3 hectares	1578 m	59 kms away from western Qoli Darvish
Teppeh Ashtarieh	UTM 3839811 S39447038	3500 m^2	1216 m	47 kms away from western Qoli Darvish
Northern Teppeh Khalaj Ābād	UTM 38154446 S39468246	3500 m^2	1105 m	28 kms away from south-western Qoli Darvish
Teppeh Sarm	UTM 3817676 S39495806	2 hectares	1041 m	11 kms away from south-eastern Qoli Darvish
Shamshirgāh	UTM 3817734 S39496701	4.5 hectares	1047 m	11 kms away from south-eastern Qoli Darvish
Teppeh Chehel Bandegān	UTM 3816865 S39494106	6500 m^2	1083 m	12 kms away from south-eastern Qoli Darvish

of an absolute dating using radio carbon showed that the most recent settlement phase of this period dates back to 2011 to 2000 B.C. The architectural remains of this period in the stratigraphy section of Qoli Darvish shows the sequence of the three main phases (Qoli Darwish III3-1) and an architectural sub-phase. The pottery tradition indicative of this period is the "brown-Plum pottery". Given the geographical area of the tradition of brown-Plum pottery, it seems that during the Middle Bronze Age, a regional culture was spread in the plains of Qom and Sāveh which extended to the plains of Rey and Varāmin. This pottery tradition, along with grey pottery, grey-black pottery, and painted buff pottery, lasted throughout the Middle Bronze Age and roughly until the end of the Bronze Age (Sarlak, 2011: 65). This extent of knowledge was the basis for further analysis in the studies of the Qom plain and for identification of the sites of this period. As a result, two sites namely Teppeh Giv and Teppeh Alborz 1, which were related to the Middle Bronze Age, were identified. The earliest settlement in Teppeh Giv dates back to the period of the Proto Plateau B (Silk II). Based on the evidence of the survey, after the old plateau B period, the site was abandoned until the beginning of the Middle Bronze Age; and again, a long gap has been observed in Teppeh Giv at the end of the Middle Bronze Age until the Islamic era. Teppeh Alborz is a settlement belonging to the old plateau B (Silk II), which was abandoned by the end of this period, and again was occupied for a short period in the Early Middle Bonze Age. The occupation of this area ended with the end of the Bronze Age.

The evidence of the surveys suggests that the sites of the Middle Bronze Age are located along the ancient roads of Qom–Sāveh, Qom-Rey, and Qom-Varāmin. Another point is that the tradition of the brown-Plum pottery of the Middle (and New) Bronze Age does not seem to extend from the south to the Kāshān plain. Perhaps this limitation is caused by the lack of exact knowledge of the area of the expansion of this culture and the lack of archaeological surveys of the sites in the Kāshān plain during the Middle (and New) Bronze Age. In the current situation, it seems that the plains of Qom and Sāveh were the centres of the cultures of this period, possessing the tradition of brown-Plum pottery.

Most of the existing knowledge of the New Bronze Age and transition to the beginning of the Iron Age in the Qom plain (based on traditional chronology) has been obtained from the excavation of Qoli Darvish (and the Sarm graveyard). This period is identified in the Qoli Darvish sequence with period IV10-1 and consists of 10 architectural phases. In addition to the stratigraphic evidence, a relatively large amount of architectural remains of this period has been excavated and discovered in Qoli Darvish. The transition from the Bronze Age to the Iron Age in stratigraphy of Qoli Darvish is known with Period V1-2, which consists of two architectural phases. The sixth period of Qoli Darvish represents the beginning of the Iron Age (Qoli Darvish _ VI4-1) and consists of 4 architectural phases. There are no stratigraphical and chronological gap between the architectural remains of periods IV, V, and VI (Sarlak, 2011: 301-320). The evidence obtained from the first phase of the Qom plain survey also shows that it is most likely that the settlement sequence of some sites of this period of Qom plain (like Teppeh Kaftār Khor and Teppeh Ashtarieh) somewhat resembles Qoli Darvish.

The site of Teppeh Kaftār Khor encompasses a settlement site and a cemetery site located near the settlements. The excavation of this site presented evidence of the sequence of the settlement from the Middle and New Bronze Age to the beginning of the Iron Age. Based on the evidence of the survey, Teppeh Ashtarieh shows the same pattern of settlement sequence as Teppeh Kaftār Khor.

The northern Teppeh of Khalaj Ābād is also a settlement in the period of the old Plateau B (Sialk II). The evidence obtained from the excavations suggests that the site was abandoned by the end of the old plateau B, and after a long chronological and settlement gap was occupied in the Middle Bronze Age. Built on the pottery obtained from the excavation, the cultural sequence of this site from the Middle Bronze Age to the end of the New Bronze and the beginning of the Iron Age can be investigated.

The sites of Shalmout B, Shamshirgāh, and the Sarm graveyard, about 11 km (in a straight line) away from the southeast of Qoli Darvish, due to having the common buffer zone, can display the cultural sequence from the Bronze Age to the Iron Age (I-II). Based on the evidence obtained from the excavation, the Sarm graveyard represents the continuity of the burial traditions from the New Bronze Age to the Iron Age (I-II).

The evidence gathered from Shamshirgāh settlement also confirms the cultural sequence from the Middle and New Bronze Ages to the beginning of the Iron Age.

In the same boundary in the western margin of the residential district of the Sarm village, there is the prehistoric Teppeh of Chehel Bandegān. Teppeh Chehel Bandegān dates back to the old plateau B (Sialk II). The evidence of the survey suggests that by the end of the old plateau B, the site was abandoned. The existing evidence which report a short-term settlement in Teppeh Chehel Bandegān in the new Bronze Age, even if insufficient, shows that the site was occupied again after a long cultural-settlement gap in the second millennium B.C.
Shalmout B, Shamshirgāh, Sarm and Chehel Bandegān are located along the ancient road which links the plain of Qom and Kāshān to each other. The Bāruneh River and its branches were the most important water resources of the Bronze Age settlements of this area, and the aforementioned sites were created in the margin of this river and its water canals.

Based on the evidence obtained from the excavation of the Qoli Darvish site and the comparative typological studies of the potteries discovered in the Qom plain survey, the four typical types of pottery of the Bronze Age (Qoli Darvish IV) of this region include burnished grey (and grey-black) pottery, painted buff pottery, polychrome (biochrome) pottery, and red, painted pottery. The important point is the continuity of the pottery traditions of Qoli Darvish IV (the New Bronze Age) in the period V (a transition layer) and in the beginning of the period VI (the beginning of the Iron Age).

On the other hand, the typical pottery tradition of the period III (i.e. the Middle Bronze) of Qoli Darvish (the brown-Plum pottery) lasted throughout period VI and with a small percentage during the period V and the early period VI of Qoli Darvish. Accordingly, (based on the comparative typological study), Shalmout B, Gerdāli, Giv, Alborz 1, the northern Teppeh of Khalaj Ābād, Shamshirgāh, and Chehel Bandegān with the tradition of ordinary handmade brown-Plum pottery and grey-black pottery represent the settlements of the Qom plain in Middle Bronze Age. From among these sites, in Shalamout B, Gerdāli, Oshtorieh, Kaftārkhor, the northern Teppeh of Khalaj Ābād, Sarm and Shamshirgāh, the presence of burnished grey-black pottery and painted buff pottery types continued from the New Bronze Age to the beginning of the Iron Age. In Ashtarieh, the red painted pottery and in Teppeh Gerdāli, the polychrome pottery are among other typical types of pottery of the New Bronze Age (Sarlak, 2011, 68, 69; Sarlak, 2010: 281; Talaei, 2008: 140) which continued to exist in stratigraphical sequence of the Qoli Darvish and the Qom plain to the Early Iron Age (Sarlak, 2010: 280).

Discussion

The results of the first phase of the survey show that the sites of the Bronze Age and the Iron Age of the Qom plain are approximately 900 to 1700 meters above the sea level. Based on the available evidence and considering the constraints of the first phase of the survey, a relative pattern of the dispersion of the sites of the Qom plain in the Bronze Age and the Iron Age can be suggested. In the current model, if the Qoli Darvish site, which is located in the middle of the Qom plain, is considered to be one of the main centres of the Bronze and Iron age, other sites of this period are mainly along the roads that connect this site from the west, through Gerdāli, Kaftārkhor, Ashtarieh and Giv sites to Sāveh (Ojān site), Arāk and Qazvin plains (Sagz Ābād I-V) and from there through the Zanjān corridor to the Northwest (Hasanlu V, Haftvān IVC) and through Hamadān to Nahāvand (Giyān II-I) and Kangāvar (Gudin II-III) plains. The Qoli Darvish site (and the

Qom plain) was connected from the north, along the ancient road of Qom plain, to the plains of Rey, Varāmin, and Tehran and finally to the Northeast (Hesar), along the Qomrud River and its water canals through the Alborz, Ali Ābād and Mamourin sites. From the south, the Qoli Darvish and the Qom Plain were connected to the Kāshān plain through the Shalmout and the Shamshirgāh (Stark and Sialk V and VI sites). Also, from the southeast through areas such as Khalaj Ābād, Qoli Darvish was connected to the mountainous areas of the south of the plain, including the Veshnaveh area, which provided part of the raw and industrial material of Qoli Darvish (especially the metal core) (Fig. 2).

Based on the available evidence, it seems that not only during the Bronze Age and the Iron Age but also during the preceding and the following periods, the highest density of the sites was in the south, southeast and the centre of the plain (Fig. 3), and this is because of the water flow of the Qomrud River and its branches and seasonal rivers of the plain that extends to the southeast and east of Qom due to the natural slope of the plain. Therefore, the highest rate of the farmlands development and density of ancient sites have been reported in this area.

According to the evaluations carried out in the centre of the plain, several parallel and relatively long branches with the northwest-southeast direction have been derived from the Qomrud River, and the ancient sites have been developed around these branches. The existing evidence indicates that three branches deriving from the Qomrud River in south of Qom, away from the city in a place called "Miyān āb"(literally meaning "between waters"), flowed beside the Qoli Darvish site (Fig. 4).

Also, based on historical and archaeological evidence, there were two flowing streams which derived from Qomrud, namely Jamkarān Stream, on the southern side and barāvestān Stream on the northern side of Qoli Dervish (Saeidnia, 1987: 147). The Gerdāli, Kaftārkhor, Giv, Ashtarieh, and Khalaj Ābād sites, which have almost the same cultural sequence as Qoli Darvish, have adopted the same pattern and developed in the northern margin of the

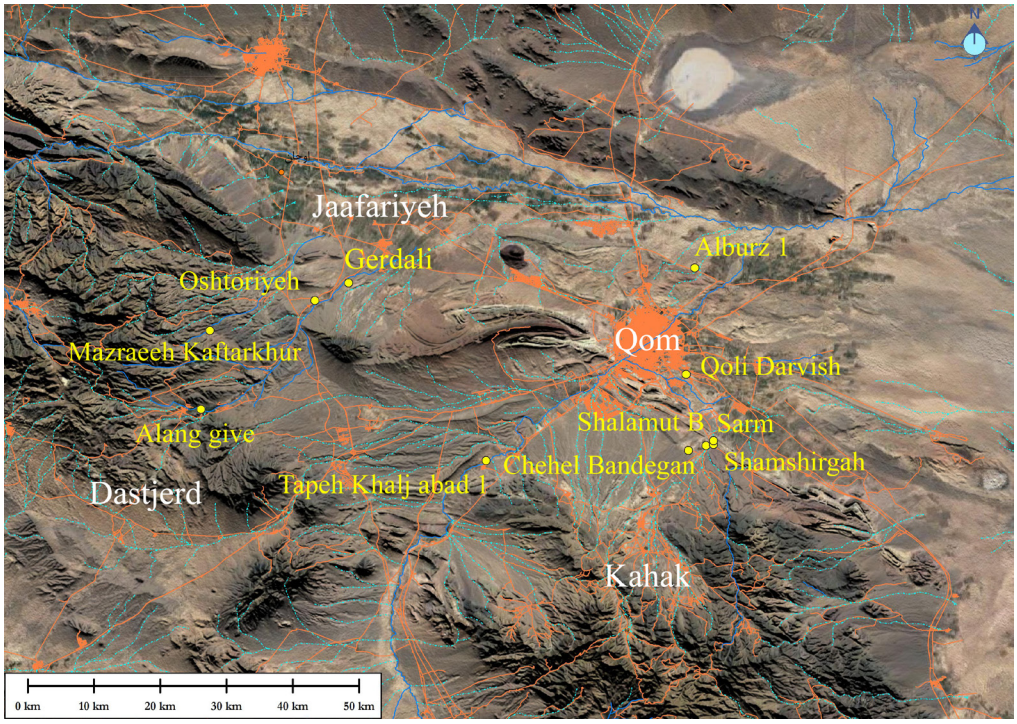


Fig. 2: *The map of the position of the Qom plain sites in the Bronze Age and the Iron Age (After: Google earth, depicted on 17/02/2017).*

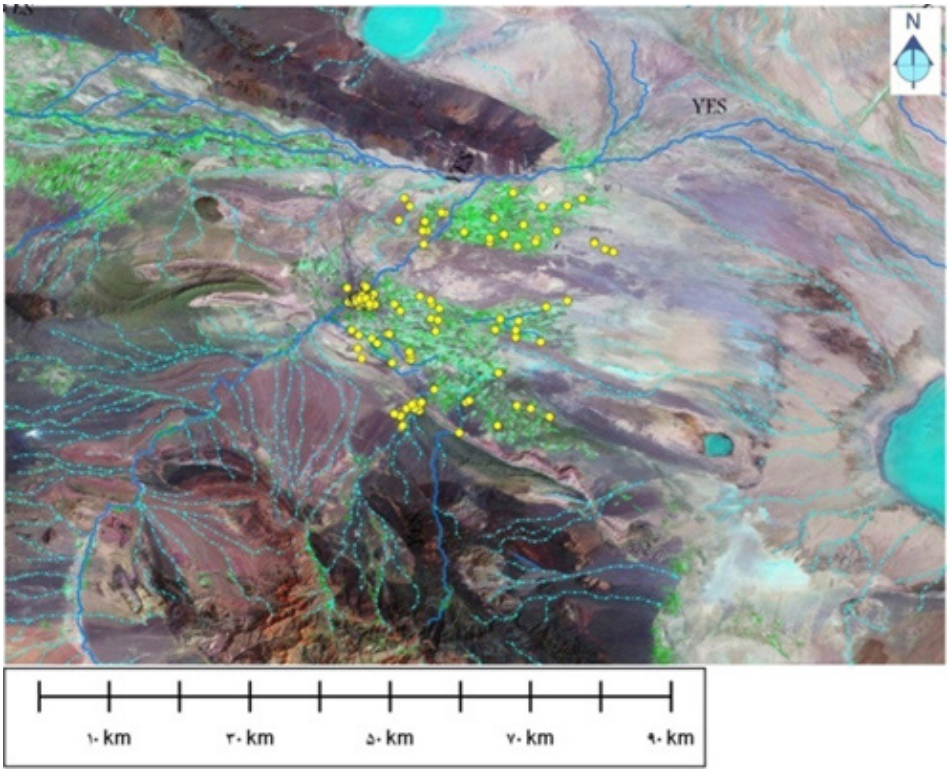


Fig. 3: *The map of the distribution, position, and density of the ancient sites in the centre of the Qom plain (After: Land sat 7, depicted on 24/10/2000).*

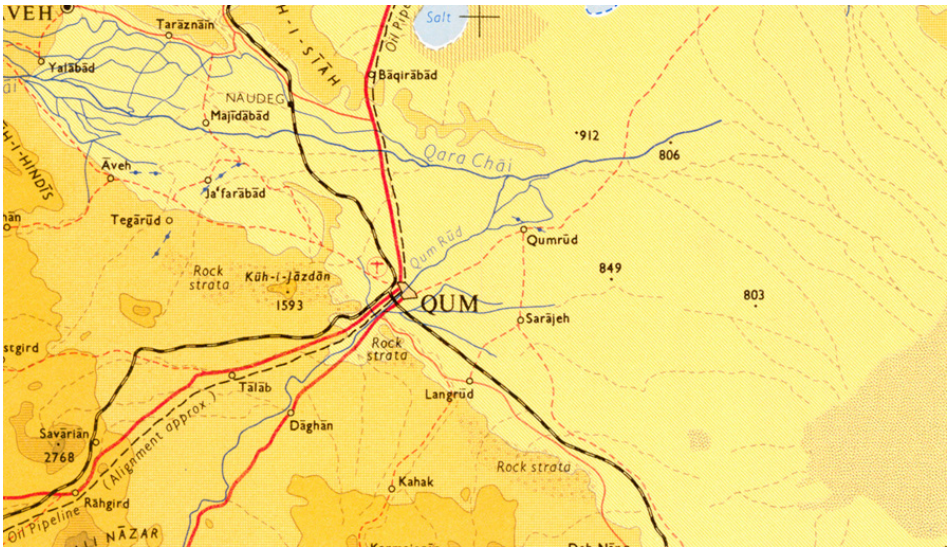


Fig. 4: *The Qomrud River and its three branches flowing around the Qoli Darvish site (After: National Imagery and Mapping Agency depicted on 1996)*

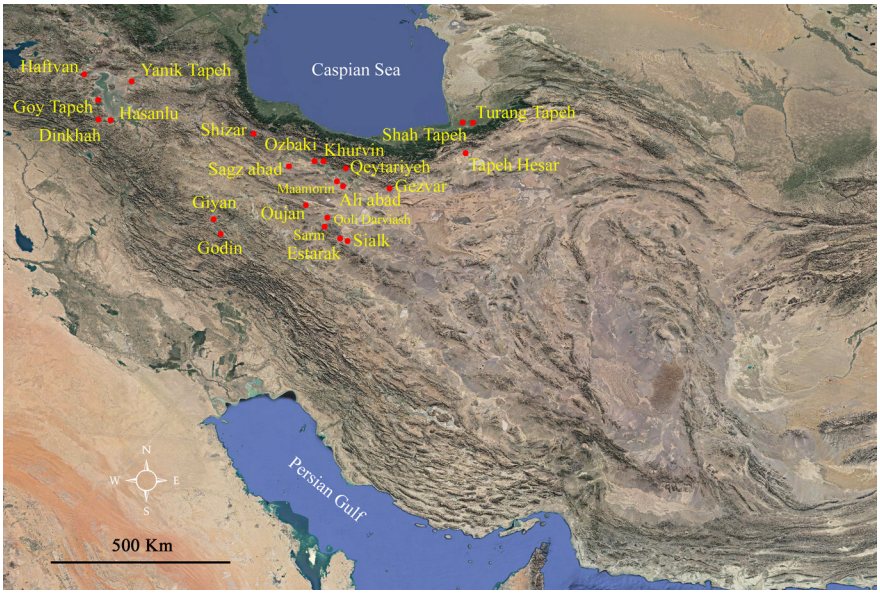


Fig. 5: *The Position of the sites of the Bronze Age and the Iron Age in the northern half of Iran (After: Google earth, depicted on 17/02/2017).*

water canals and roads. Shalmout B, Shamshirgāh and Sarm were also developed in the northern margin of the Bārune River and along the road connecting the plains of Qom and Kāshān to each other. In general, the climate and the environmental capacities of the Qom plain, as a part of a larger geographical-cultural area, have more or less the same conditions as the Central Plateau (Fig. 5).

Conclusion

Archaeological evidence indicates that during the second millennium B.C., the Qom plain was connected to other centers and cultural areas in the Iranian Plateau. The highest level of cultural interactions during this period can be studied between the Qom plain and Hissar Culture III B-C and those cultures dating back to the end of the Bronze Age in the Gorgan plain on the one hand and on the other hand with North-west cultures (Haftvān VI B and Hassanlu V) and the Central Zagros (Godin III2 and Giyan II-I) and, at a more limited level, with the Fars plain (Banesh-Kaftari period).

Also, based on the evidence of stratigraphy and excavation at Qoli Darvish site (periods of IV to VI) and Qom plain surveys, this region indicates a settlement sequence without cultural and chronological gaps; while in many other regions, the end of the Bronze Age and the beginning of the Iron Age have been recognized with a chronological or cultural hiatus, similar to what had happened at the end of the IIIC Hisar in the North-East and the beginning of the Hassanlu V in the North-West of Iran. It seems that the geographical location of the Qom plain at the crossroad of of cultural communications of various regions of the Iranian Plateau and the natural capacity of the region in terms of rich sources of raw materials required by other centers of this period, are considered among the main factors of a settlement sequence with no break in this area during the second millennium B.C.

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