Chalcolithic Ceramics from Logardan Trench D: typological features

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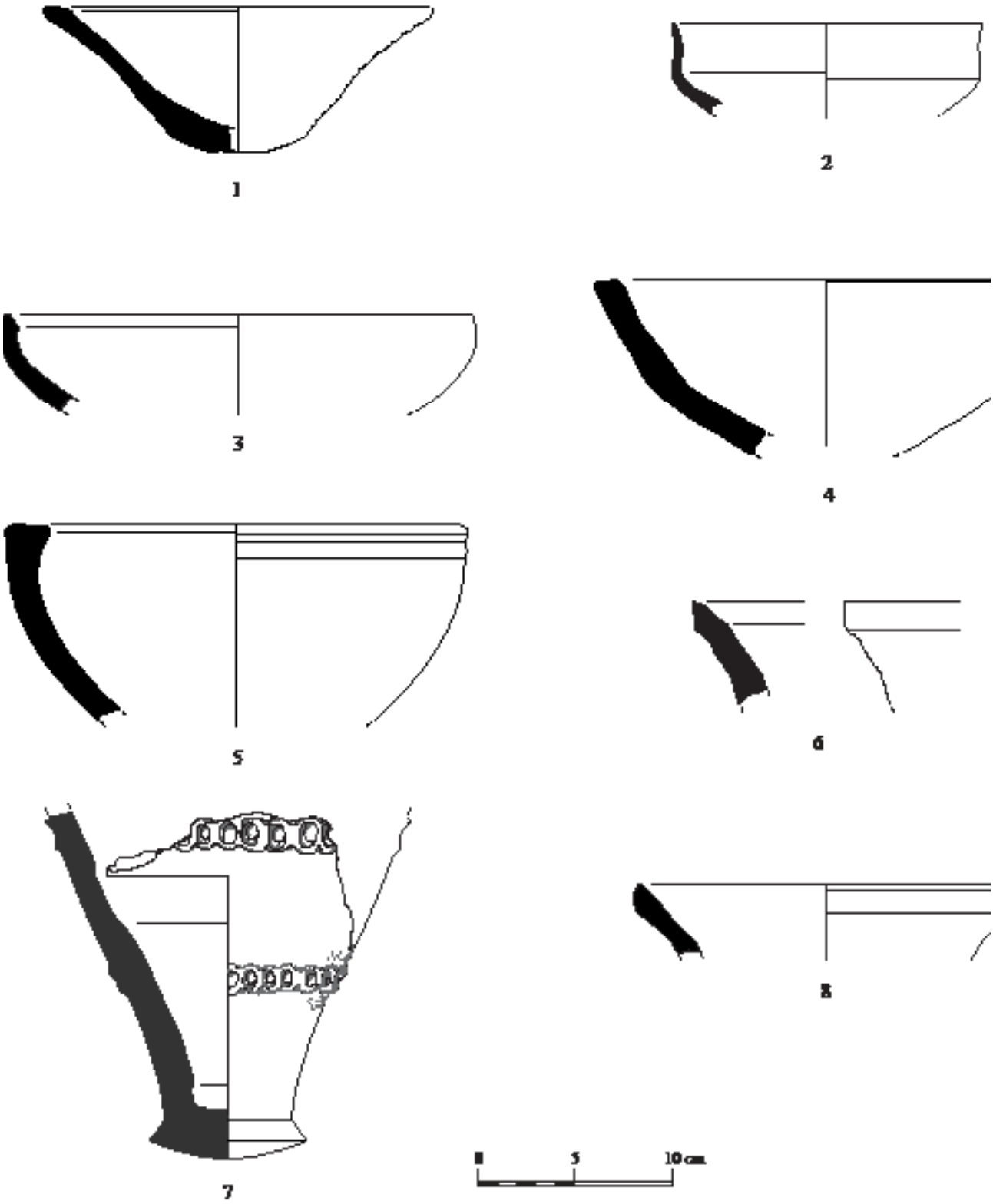
The assemblage from Levels 1-3 of Trench D at Logardan dates back to the 3rd millennium BC: Levels 1-2 yielded Akkad and post-Akkad ceramics, while pottery from Level 3 belongs to a Proto-dynastic II-III horizon[1]. Although some out-of-context chalcolithic sherds have been collected in Levels 1-3[2], 4th millennium ceramics come essentially from Level 4 and its sub-levels. It is not a huge amount of pottery (just 2205 sherds, of which 198 typologically diagnostic samples), but it significantly improves the information available on the Early Uruk period. This south-Mesopotamian repertoire was not documented at all in central and northern Mesopotamia before the excavation, in 2015, of Levels 10-8 of Trench C at Girdi Qala and, even in southern Mesopotamia, it is very little known. Obviously, pottery from Trench D Level 4 at Logardan largely confirms what already observed about the assemblage from the basal levels of Trench C at Girdi Qala, but it also offers several additional clarifications. Moreover, unlike Trench C at Girdi Qala, where a local LC2 tradition was also documented, Level 4 of Logardan Trench D yielded exclusively south-Mesopotamian-related shapes[3].

Fig. 1 - Early Uruk V-shaped bowl with scraped bottom from Logardan Trench D.

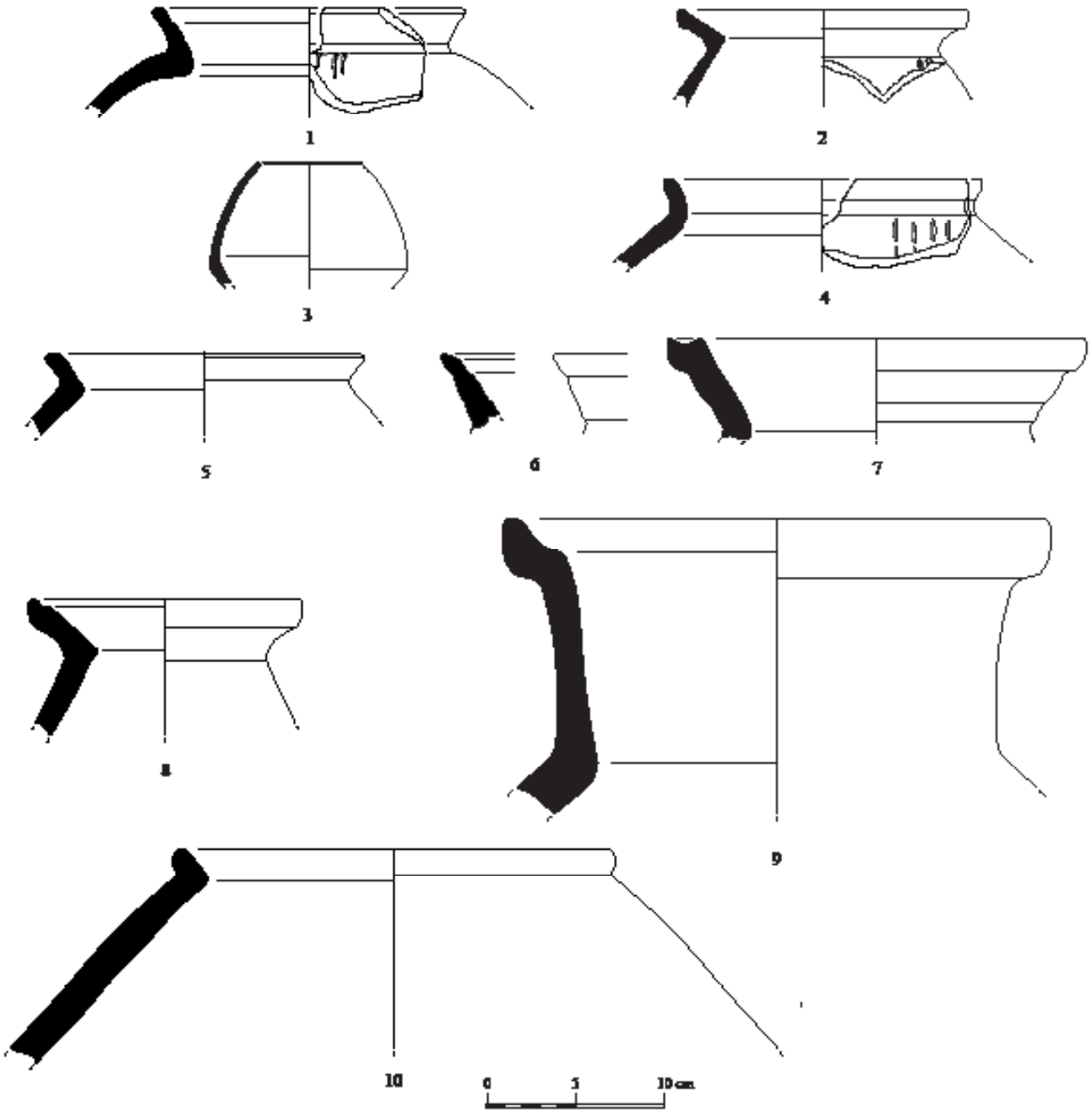
Concerning open shapes, conical flat-base bowls with rims slightly rounded or thickened on the exterior side are roughly finished and sometimes scraped on the lower part of the exterior body (Pl. I.1 – Fig. 1)[4]. The only sample of little carinated bowl is well-shaped and quite fine-walled (Pl. I.2)[5]. In-turned rim bowls are quite shallow and have roun-

1. See M. Zingarello, this volume.
2. Despite important building activities due to the construction of the kilns in Levels 1-3, only 89 chalcolithic sherds (7 Halaf, 39 Ubaid and 43 Early Uruk specimens) were found out of context in Trench D.
3. No diagnostic samples and just 5 body-sherds can be attributed to a north-Mesopotamian LC2 tradition.
4. Both morpho-stylistic and technical features of these conical bowls match with late (i. e. LC2) oriental samples of "V"-shaped Coba bowls attested in northern Mesopotamia during this phase (Baldi 2012b). For south-Mesopotamian Early Uruk parallels see Eridu (Safar *et al.* 1981: fig. 22; Wright 2014: fig. 7.2.a-b), Farukhabad (Wright 1981: fig. 46.d-f), Geser 15 (Alizadeh 2014: fig. 61.G).
5. See Geser 15 (Alizadeh 2014: fig. 61.I), Farukhabad (Wright 1981: fig. 47.p, q, r). This same type is also documented within contemporary north-Mesopotamian late LC2 assemblages, as at Nineveh (Gut 1995: Taf. 57.840) or Tepe Gawra (Rothman 2002: pl.8.743, pl. 22.2798).



1 : LOG 16 D 259-3
2 : LOG 16 D 273-6
3 : LOG 16 D 250-4
4 : LOG 16 D 273-5
5 : LOG 16 D 273-4
6 : LOG 16 D 259-1
7 : LOG 16 D 270
8 : LOG 16 D 273-2

Plate I - Different shapes of Chalcolithic ceramics from Logardan Trench D.



1 : LOG 16 D 269-4
2 : LOG 16 D 269-5
3 : LOG 16 D 279-2
4 : LOG 16 D 279-3
5 : LOG 16 D 250-6
6 : LOG 16 D 269-6
7 : LOG 16 D 269-7
8 : LOG 16 D 273-9
9 : LOG 16 D 269-8
10 : LOG 16 D 273-1

Plate II - Different shapes of Chalcolithic ceramics from Logardan Trench D.

ded or somewhat inwards belled rims (Pl. I.3)[6], while a deeper type displays pinched or top-flattened rims[7] and a slight carination towards the middle of the body (Pl. I.4-5)[8]. Coarse flattened-base basins, a widespread shape of the Middle Uruk period, appear since this early phase, even if they are quite rare[9]. Bevelled-rim bowls (hereafter BRBs), which are considered the main hallmark of the Uruk period, are quite rare and not yet serially produced: their rims can be oblique, but most of time are vertically bevelled on the exterior side (Pl. I.6)[10]. But the most characteristic open containers are the so-called proto BRBs[11], with rims sometimes thinned, rounded, or loosely cut and bevelled in various ways and with varying orientations(Pl. I.8 – Fig. 2)[12].

Closed shapes are basically represented by ovoid jars with flared necks and rounded or flattened rims, sometimes provided with straight or conical spouts (Pl. II.1-2)[13]. Carinated pots with beaded rim are not frequent but very diagnostic of Early Uruk assemblages (Pl. II.3)[14]. Some rare neckless samples have everted and rounded rims (Pl. II.4-5, 8)[15], while some sporadic specimens with developed necks (Fig. 3) have flaring pinched or hollowed rims and quite elliptical shapes

Fig. 2 - Early Uruk proto-BRB from Logardan Trench D.

6. For rounded in-turned rims see Eridu (Wright 2014: 7.2d), Geser 12 (Alizadeh 2014: fig. 58.F). For inwards bevelled-rim bowls see Farukhabad (Wright 1981: fig. 46.h), Geser 13-14 (Alizadeh 2014: fig. 59.J, 60.D).
7. See Susa "Acropole III" 7-11 (Wright 2014: fig. 7.5i), Farukhabad (Wright 1981: fig. 47.c, m), Geser 10-11 (Alizadeh 2014: fig. 57.C, O).
8. See Eridu (Wright 2014: 7.2e-f), Susa "Acropole III" 7-11 (Wright 2014: fig. 7.5g), Geser 12 (Alizadeh 2014: fig. 58.H).
9. See Uruk/Warka XII-IX (von Haller 1932: Taf. 18.B.v, Taf. 18.C.c'), Farukhabad (Wright 1981: fig. 42.a), Geser 14 (Alizadeh 2014: fig. 60.B).
10. BRBs appear as a generic open shape before being serially produced since the beginning of the Middle Uruk phase (at Uruk, they become a serial product since Level Eanna VIII-VII – Sürenhagen 1986). For Early Uruk BRBs, see Eridu (Safar *et al.* 1981: fig. 22 lower left; Wright 2014: fig. 7.2.c), Susa "Acropole III" 7-11 (Wright 2014: fig. 7.5c).
11. Dyson 1966: 320; Alizadeh 2014: 30; Wright 2014: 119.
12. See Susa "Acropole III" Levels 7-11 (Le Brun 1971: fig. 40.4; Wright 2014: fig. 7.5a-b), Farukhabad (Wright 1981: fig. 45.h-k), Geser 11, 13 (Alizadeh 2014: fig. 57.H, 59.H).
13. See Eridu (Safar *et al.* 1981: table 3:1, 3:2, 3:12, 3:17, 3:18, 3:21; Wright 2014: fig. 7.3b-e), in the Uruk region Site WS022 (Adams and Nissen 1972: fig. 33.8, 53.6; Wright 2014: fig. 7.4f, 7.4g), Susa "Acropole III" 7-11 (Le Brun 1971: fig. 40.8-9; Wright 2014: fig. 7.6g, i, j, k), Farukhabad (Wright 1981: fig. 51.g-o), Geser 14-15 (Alizadeh 2014: fig. 60.F, 61.S – for straight spouts see since Levels 9-10 fig. 56.A).
14. See Uruk/Warka XII-IX (von Haller 1932: Taf.18B.d', e', Taf. 18C.x), Geser 11-12 (Alizadeh fig. 57.f, fig.58.J), Sargarab (Wright *et al.* 1975: fig. 8.e), Kunji Cave (Wright *et al.* 1975: fig. 6.i).
15. See in the Uruk region Site WS022 (Adams and Nissen 1972: fig. 33.11; Wright 2014: fig. 7.4a), Susa "Acropole III" 7-9 (Wright 2014: fig. 7.6c-d), Farukhabad (Wright 1981: fig. 48.i, j), Geser 10, 14 (Alizadeh 2014: fig. 57.A, 60.I).

(Pl. II.6-7, 9)[16]. Another uncommon but diagnostic closed shape is represented by deep urns with a restricted mouth and club-headed rims thickened on the exterior side (Pl. II.10)[17]. Finally, some globular hole-mouth jars[18] and the very first samples of jars with triangular-section everted rims are also documented during the Early Uruk phase[19]. A remarkable Early Uruk trait which characterizes a disparate range of jars and closed shapes is represented by the hollowed inner profile of different kind of rims (Pl. II.6-9)[20].

Fig. 3 - Early Uruk jar with developed neck and ovoid shoulder from Logardan Trench D.

Concerning surface treatments, some rare (1,5% of the assemblage) but very distinctive red slipped sherds[21] probably constitute the first appearance of the southern tradition known as Uruk red ware[22]. Moreover, besides plain hand-finished surfaces, a consistent percentage of the sherds (24%) displays clear traces of scraping on the exterior body[23].

Decorations are extremely rare. The most noticeable amongst them, are some pierced lugs and the first appearance of some irregular nails (Pl. II.1-2, 4)[24] or cross-hatched incisions[25].

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16. This type is very close to the typically LC1-LC2 north-Mesopotamian flaring-rim jars (for north-Mesopotamian contemporary samples, see Tepe Gawra IX – Rothman 2002: pl. 20.2223, 2240). But compared to northern specimens, flaring-rim Early Uruk jars are quite rare and have narrow shoulders and ovoid bodies, while in the North these jars are globular and sometimes characterized by a slight carination under the shoulder. For southern parallels, see in the Uruk region Site WS218 (Adams and Nissen 1972: fig. 49.7; Wright 2014: fig. 7.4b), Farukhabad (Wright 1981: fig. 49.b-c, h-l), Geser 11, 12 (Alizadeh 2014: fig. 57.I, 58.D).
17. See Nineveh (Gut 2002: fig. 15.9-10), Farukhabad (Wright 1981: fig. 52.l), Geser Level 14 (Alizadeh 2014: fig. 60.H, K).
18. See Susa "Acropole III" (Wright 2014: fig. 7.6a-b), Geser Levels 12, 13, 15 (Alizadeh 2014: fig. 58.K, 59.D, 61.U-V).
19. This type is very distinctive of the Middle Uruk phase (see for instance at Girdi Qala northern mound Trench D). Compared to the neckless Middle-Uruk samples, the first specimens have a slightly more developed neck and a rim forming a band on the exterior side. See Susa "Acropole III" (Wright 2014: fig. 7.6e-f), Farukhabad (Wright 1981: fig. 52.h, i, j).
20. See Uruk/Warka XIII-XII (von Haller 1932: Taf. 17 D.h, I, n, Taf. 18A.p), Geser 12 (Alizadeh 2014: fig. 58.J), Susa "Acropole III" Level 9 (Wright 2014: fig. 7.6e), Kunji Cave (Wright *et al.* 1975: fig. 6.k), Sargarab (Wright *et al.* 1975: fig. 8.i), Farukhabad (Wright 1981: fig. 43.m-n, fig. 48.c).
21. See Eridu (Wright 2014: 111), Geser 15 (Alizadeh 2014: fig. 61.U).
22. The Uruk red ware is typical of the Middle Uruk phase in the South, as well as in central and northern Mesopotamia (see for instance at Nippur, Rubeidheh or Gurga Chiya – Hansen 1965: 204-205; McAdam and Mynors 1988: 39,48; Wengrow *et al.* 2016: fig. 8.13-15) and some very rare specimens are still documented in the Late Uruk (Eanna VI-V – Nissen 1970: 147), but its first appearance dates back to the end of the Ubaid period and to the Early Uruk phase (Eanna Levels XIV-XII – von Haller 1932: 38-40; Susa "Acropole I" 22 – Le Brun 1978: 181).
23. Even if quite typical of the LC1-LC2 north-Mesopotamian repertoires (Baldi 2012a, 2012b), scraped surfaces are also documented within Early Uruk southern assemblages, as at Eridu (Wright 2014: 111, fig. 7.2a-b, e-f, 7.3a), in the Uruk region (Site WS022 – Adams and Nissen 1972: fig. 33.11), at Susa "Acropole III" (Wright 1985: fig. 4; Wright 2014: fig. 7.5i, 7.6a-b), Geser 9-10 (Alizadeh 2014: fig. 56.E).
24. Finger-nail impressed and incised decorations appear in Eanna XII-IX Levels (von Haller 1932: Taf. 18A.h', Taf. 18C.g) and become popular in the Middle Uruk phase: see at Rubeidheh (McAdam and Mynors 1988: types 90a-I, 91a-e).
25. See Eridu (Safar *et al.* 1981: table 4:1), Farukhabad (Wright 1981: fig. 55.a).

Finally, a very restricted number of sherds (just 5 fragments) indicated the emergence of appliqué fingered cordons. This kind of decoration is better attested during the Middle Uruk phase (see for instance à Girdi Qala northern mound Trench D), but it is noteworthy that the first samples known from south-Mesopotamia, Khuzestan and Logardan Trench D Level 4 are associated to similar types of deep goblets (Pl. I.7)[26].

Even is quite basic, the repertoire from Level 4 at Logardan Trench D represents a unique document. It is the only genuine Early Uruk (namely south-Mesopotamian) assemblage from central and northern Mesopotamia. Moreover, it offers a significant comparative base for the ceramic productions of a period which, even in southern Mesopotamia and Khuzestan, is known from a very restricted number of sites and contexts.

Actually, on the basis of the ceramic chrono-typology established by Sürenhagen (1986), it is clear that the Early Uruk phase attested at Logardan Trench D corresponds to Levels XII-IX of the "*Tiefschnitt*" sounding at Uruk/Warka, but the excavated contexts are quite restricted and not very informative. The only other south-Mesopotamian site which yielded stratified materials is Eridu (Lloyd 1948): vessels from a well-preserved tripartite building are documented by some photos and drawings (Safar *et al.* 1981: fig. 22-23) illustrating flared-rim jars with straight or conical spouts, "V"-shaped bowls with roughly scraped surfaces, rare BRBs and different types of proto-BRBs. It largely coincides with the typology from Level 4 of Logardan Trench D. But the range of shapes from Eridu is very restricted: the total absence of storage jars or cooking pots clearly depends on the function of the excavated context, namely a tripartite building whose main spaces were devoted to serve and consume food towards the end of their period of occupation. Some other Early Uruk ceramics are also documented in the Uruk region at Sites WS022, 178, 218 (Adams and Nissen 1972: 220, 226, 228), but they come from a survey and their un-stratified nature does not allow to use them to improve our chrono-typological knowledge of this phase.

In South-western Iran, Early Uruk materials are known from Levels 7-11 of the so-called "Acropole III" sounding (Wright 1985: 726-732 and fig. 4) and from Level 23-22 of the "Acropole I" at Susa (Johnson 1973; Le Brun 1978: 181). Despite the restricted nature of the excavations, the beginning of the 4th millennium in both these trenches implies a rupture of the Ubaid-related traditions of Susa I period and the appearance of typically Uruk ceramic productions. The morpho-functional repertoire from Susa is wider than that from Eridu because both "Acropole I" and "Acropole III" soundings cut deeply through layers deposited by different activities. Nevertheless, some pottery comes from the initial cleanings of the sections (Le Brun 1971: 209-210). Well-stratified Early Uruk ceramics are also documented in Levels 11-15 of the Step Trench at Tall-e-Geser (Caldwell 1968). But from an architectural point of view, the whole 4th millennium sequence is represented by a series of fragmentary floors, walls and mud-brick layers, without any possibility of detecting some coherent building plans (Alizadeh 2014: 12).

26. See Uruk/Warka (Sürenhagen 1986: 42 T/198-223; von Haller 1932: Taf. 18C.n), Geser 13 (Alizadeh 2014: fig. 59.C).

For different reasons, also the materials from Farukhabad offer a questionable overview on the Early Uruk phase. Indeed, excavations at Farukhabad have reached Early Uruk strata in Trench B Levels 36-35, which yielded a quite large ceramic assemblage. But the sharp typological separation established by the excavator between Uruk materials and so-called Sargarab ware (Wright 1981: 91) seems problematic if one compares this production (supposed to be local) to the assemblage from Level 4 at Logardan Trench D. Despite several features testifying of a clear continuity from the previous Susa I assemblage, Sargarab ware[27] shows an unmistakably Early Uruk-related repertoire (Wright 1981: fig. 40-44). But this typological continuity between the 5th millennium Farukh repertoire and the so-called Sargarab ware is not surprising if compared to the presence of many late-Ubaid-related types within the Early Uruk assemblages. Besides, even if Wright (1981: 168 and Table 2) places this tradition between the so-called Farukh phase and the beginning of the Uruk period, Sargarab ware is not typical of the late 5th millennium layers: on the contrary, it is very abundant and even dominant in the Early Uruk phase (Wright 1981: 91). Moreover, it shares some morpho-stylistic features with other sites in Luristan and Khuzestan[28], while some of its shapes are common to north- and south-Mesopotamian assemblages of this period[29]. But it also shows several south-Mesopotamian Uruk traits from a morphological point of view[30]. In the same

27. Named this way because of the large amount of this pottery collected on the surface at the eponym village of Sargarab, in the Deh Luiran Plain (DL 169) (Neely and Wright 1994: 131-138).

28. See for instance the presence, both at Sargarab and Kunji Cave, of large club-headed bowls (Wright *et al.* 1975: fig. 6.n, 7.f), or the frequency of Sargarab appliqué finger-impressed cordons, as at Kozegarān, Khāvardi or Baba Jan V (Wright *et al.* 1975: fig. 7.e, h, j; Goff 1971: fig. 6.25-27, fig. 6.46, fig. 7.17, 21). Nevertheless, even if the early 4th millennium assemblages from northern Khuzestan and Luristan belong to a local tradition, it is evident that they are closely related both to the north-Mesopotamian LC2 chaff-faced traditions (see the in-turned rim bowls or Coba bowl-like scraped container from Chiā Sabz – Goff 1971: fig. 6.7-9, 13; see also the in-turned rim bowls and the inwards bevelled-rim bowl from Baba Jan V – Goff 1971: fig. 7.2-6, 13). In the same time, these assemblages show some south-Mesopotamian Early Uruk traits (as the slightly drooping spout of Baba Jan V or the flared rim deep bowl of Afrineh – Goff 1971: fig. 7.30; fig. 6.37).

29. For instance the flaring-rim jars with thinned rims, which are generally considered as a LC1-LC2 north-Mesopotamian type (but see for instance at Sargarab – Wright *et al.* 1975: fig. 8.f). In the same way, some deep pots with restricted mouth and rims thickened on the exterior side are documented at Nineveh ("Lower" and "Middle" Nineveh 3 phase in a typically Gawra B horizon – Gut 2002: fig. 15.9-10), at Eridu (in a genuine Early southern Uruk context – Wright 2014: fig. 7.3a), as well as at Sargarab (Wright *et al.* 1975: fig. 7.i)

30. Some samples of finger-impressed cordons are attested in Early Uruk contexts at Logardan Trench D Level 4, or at Geser 13 (Alizadeh 2014: fig. 59.C); Sargarab shallow flat-base basins are a typically Uruk shape (Wright *et al.* 1975: fig. 8.l for a Sargarab ware specimen, while see Farukhabad and Geser 14 for Early Uruk samples –Wright 1981: fig. 42.a; Alizadeh 2014: fig. 60.B); some scraped and slightly carinated bowls are also attested in southern Mesopotamia (see Wright *et al.* 1975: fig. 7.b for a sample in Sargarab ware; see Wright 2014: fig. 7.2f for an Early Uruk sample from Eridu); some early types of BRBs are attested in Sargarab ware (Wright 1981: fig. 42.n); the typically early Uruk proto-BRBs seem to be documented also in Sargarab ware (Wright *et al.* 1975: fig. 7.a); conical bowls with pouring lips, which are attested at Farukhabad in Sargarab ware (Wright 1981: fig. 40.e.), are also typically Uruk (see for instance at Girdi Qala northern mound Trench D – Pl. GQN_D I.8-9); upwards conical spouts represent another feature the Sargarab ware shares with south-Mesopotamian Early Uruk assemblages (see Farukhabad, Wright 1981: fig. 40.b; see Eridu, Wright 2014: fig. 7.3e), as well as square-section flared-rim jars (see in Sargarab ware from Farukhabad, Wright 1981: fig. 44.g-j; see Early Uruk samples from Eridu, Wright 2014: fig. 7.3b-d); finally, some very early specimens of jars with triangular-section rims – a very widespread and peculiar type of the Middle Uruk assemblages – appear at Farukhabad in Sargarab ware (Wright 1981: fig. 42.i, fig. 44.a) as at Logardan Trench D Level 4 and other Early Uruk contexts (see for instance at Susa "Acropole III" Level 7 – Wright 2014: fig. 7.6f). It is also remarkable that some jars in Sargarab ware have a rim hollowed on the inner side (see at Sargarab – Wright *et al.i* 1975: fig. 8.i; or at Farukhabad in Sargarab ware – Wright 1981: fig. 43.l, m, n), as it is sometimes the case of jars and closed shapes from genuine Early Uruk assemblages (Pl. LOG_D II.6-9) (see at Farukhabad in "Uruk ware" – Wright 1981: fig. 48.c; or Susa "Acropole III" Level 9 – Wright 2014: fig. 7.6e).

way, it is possible to recognize the first emergence of some Early Uruk decorations at Logardan Trench D Level 4 and within the Sargarab assemblage from Farukhabad[31]. Therefore, it seems likely that the so-called Sargarab ware represents a production very close to (and strongly influenced by) the south-Mesopotamian Early Uruk tradition of the Khuzestan region, attested at Susa "Acropole I" 23-22 and "Acropole III" 7-11, as well as at Farukhabad Trench B 36-35.

In this sense, the assemblage from Level 4 at Logardan Trench D reveals its entire informative potential: not only it offers a unique archaeological record in central and northern Mesopotamia, but it also allows a better definition of the Early Uruk phase in its own characteristics and in its parallels. Actually, next campaigns at Logardan will offer the possibility to better establish the technical attributes of the Early Uruk pottery on the basis of larger assemblages. For the moment, beyond morpho-stylistic features that Logardan Trench D Level 4 and all the other Early Uruk assemblages share with Godin VII-"early" VI and Uruk Eanna XII-IX, it is remarkable that the first Uruk productions do not are exclusively mineral-tempered. On the contrary, at Eridu, Susa, Uruk, Farukhabad, Tall-e-Geser or Logardan, despite some mineral fabrics, the majority of the Early Uruk sherds has quite rough vegetal pastes. As already stressed above, this intriguing element tends to remove a long-lasting prejudice on the existence of a dichotomy between north- and south-Mesopotamian late chalcolithic ceramics.

31. The most noteworthy example is represented by the vertical pierced lugs and the criss-cross incisions, which are typical of the south-Mesopotamian Uruk assemblages (as at See Eridu – Safar *et al.* 1981: table 4:1; but also at Farukhabad, in a ware that the excavator considers genuinely Early Uruk – Wright 1981: fig. 55.a; while for a sample in Sargarab ware from Farukhabad see Wright 1981: fig. 44.l).

Logardan, the Upper Terrace Survey (UTS)

Martin Sauvage, Ménania Zingarello and Bahra Salah

In order to choose the best location of a trench on the upper terrace of Logardan, it was decided to carry out a preliminary survey to see if a differentiated distribution of the archaeological material could be identified.

The upper terrace of Logardan (fig. 1) is bounded on the north-west by the 'citadel', which is the summit of the tell, separated from the upper terrace by a 3 m-slope (672 m and 669 m respectively), on the NE by the steep slope towards the Tavuq Çay river, on the SW by the slope towards the Tchachma Spi river and on the SE by the median terrace of which it is separated by a steep 3 m-slope (respectively 663 m and 660 m of average altitude).

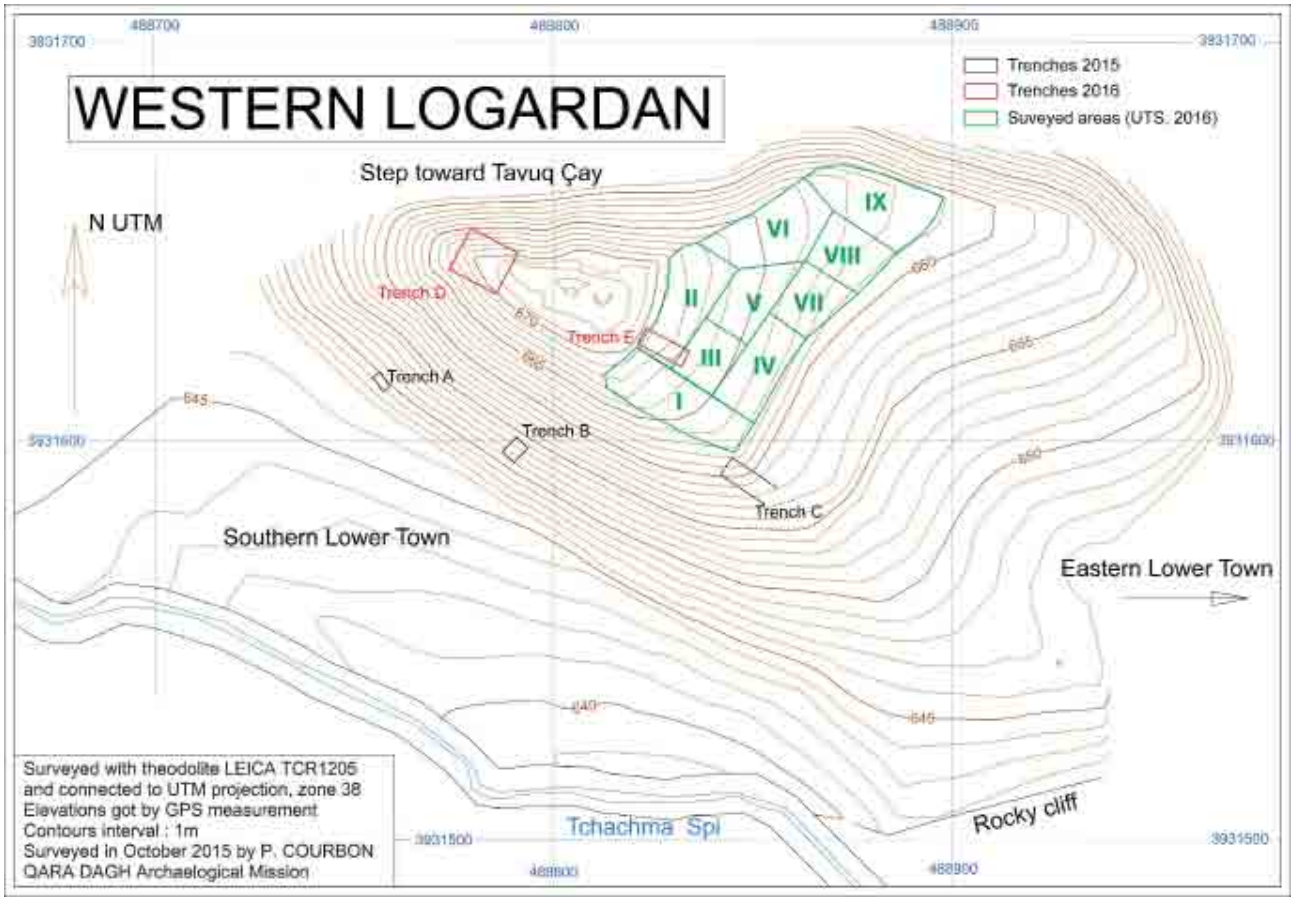


Fig. 1 - Topographical map of the western part of Logardan showing the Upper Terrace Survey areas I to IX an the locations of trenches A, B and C (2015) and of trenches D and E (2016) (topographical survey by P. Courbon, 2015; CAD by M. Sauvage, 2016).

The upper terrace thus represents a plateau gently sloping over 6 m from the NW to the SE (669 m to 663 m) with a total length of about 80 m from SE to NW and an average width of 40 m from SW to NE , covering a total area of nearly 3,000 m^2 (0.3 ha). Nine areas, numbered in roman numerals from I to IX, were delimited according to the topography but also taking into account the anomalies identified the previous year by the geophysical survey (Vallet 2015).

The surface survey was carried out over three days from 27 to 29 September by Martin Sauvage, Melania Zingarello and Bahra Salah. Because of the great number of potsherds on the surface, particularly in zones I, IV and IX, which were located were the slopes break, it was decided to collect only diagnostic sherds (lips, bases, handles, decorative elements, etc.) as well as a sampling of the characteristic pastes with a special attention to the finer wares, generally more fragmented and whose potsherds, smaller, are often less represented because difficult to locate.

The determination has been made by Johnny Baldi for the Chalcolithic and by Melania Zingarello for the Bronze Age (see infra, their reports on the pottery). All periods are attested from the late Halaf (around 5500 BC) to the Late Bronze Age (around 1200 BC) except for the Late Chalcolithic 1. A total of 1655 diagnostics potsherds were recognized including 81 of undetermined date (possibly among them sherds of Islamic era). To facilitate mapping, the dated shards have been grouped into seven main chronological phases: 1) Halaf and Halaf-Ubaid Transitional (HUT); 2) Ubaid; 3) Late Chalcolithic 2-3; 4) Late Chalcolitic 3/Early Uruk and Uruk; 5) Early Bronze Age; 6) Middle Bronze Age; 7) Late Bronze Age (see Table 1).

	HLF+HUT	UB	LC2-3	LC3/Early UK and UK	EBA	MBA	LBA	Indet.	Total
UTS I	50	32	9	6	27	43	16	26	353
UTS II	7	6	16	0	13	17	5	7	165
UTS III	6	0	15	0	10	19	7	1	131
UTS IV	14	22	8	25	8	18	11	8	249
UTS V	11	10	11	14	10	12	8	11	188
UTS VI	26	0	1	10	11	22	12	8	151
UTS VII	0	8	0	16	4	12	3	5	119
UTS VIII	9	9	0	7	7	20	2	5	106
UTS IX	56	28	4	8	3	9	4	10	193
	179	115	64	86	93	172	68	81	1655

Table 1 - UTS : Number of diagnostic potsherds by main chronological periods and by surveyed areas.

The relative proportions of each period per zone have been plotted (fig. 2) and distribution maps have been compiled per period (fig. 3).

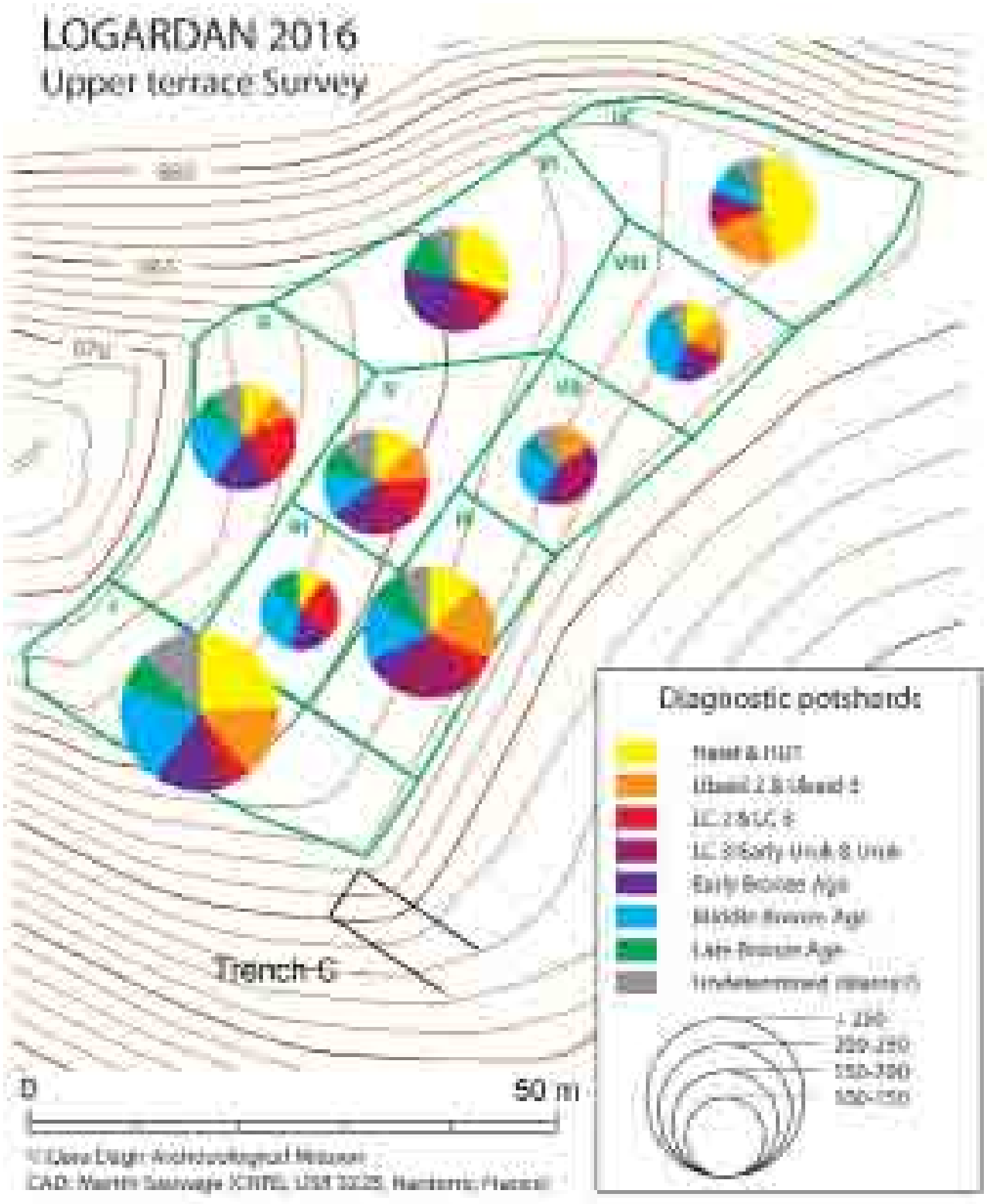


Fig. 2 - UTS : relative proportions of the diagnostic potsherds by period for each surveyed area.

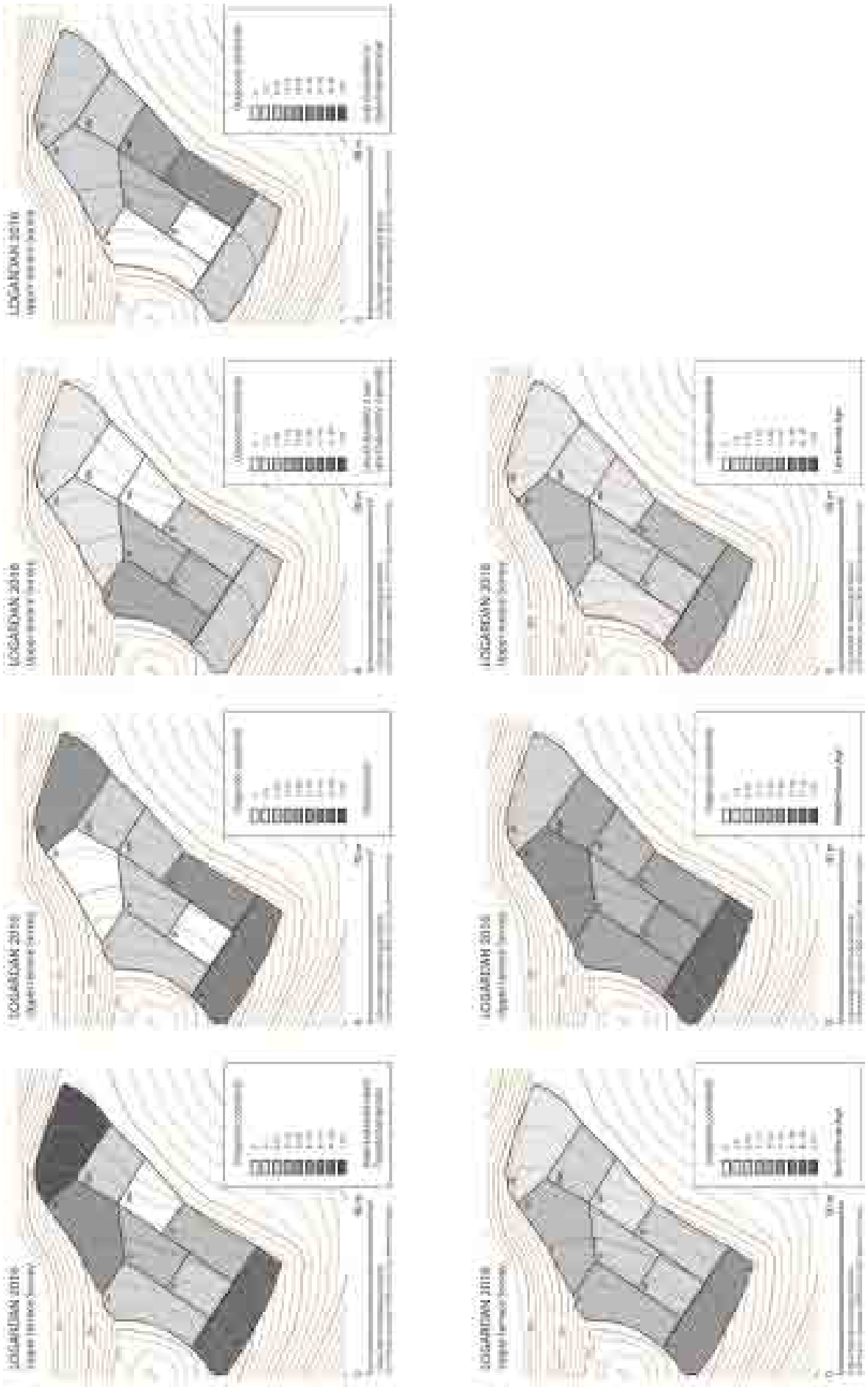


Fig. 3 - UTS : number of diagnostic potsherds by period (topographical survey by P. Courbon, 2015; CAD by M. Sauvage, 2016).

Six objects were found on the surface: four terracotta artefacts (fig. 4): a perforated weaving (LOG.E.Tc1999.1), a spherical token (LOG.E.Tc1999.2), a spindle whorl (LOG.E.T1999.3), and an architectural decoration cone (LOG.E.Tc1999.4), to which must be added a stone polisher (LOG.E.P1999.1) and an iron arrowhead (LOG.E.Met1999.1).

The terracotta cone is most interesting as it most certainly comes from the architectural decoration of an Uruk public building. It was found in zone IV, close to the slope and comes either from the citadel due to runoff or from an underlying structure associated with the slope which delimits the upper terrace to the southeast.

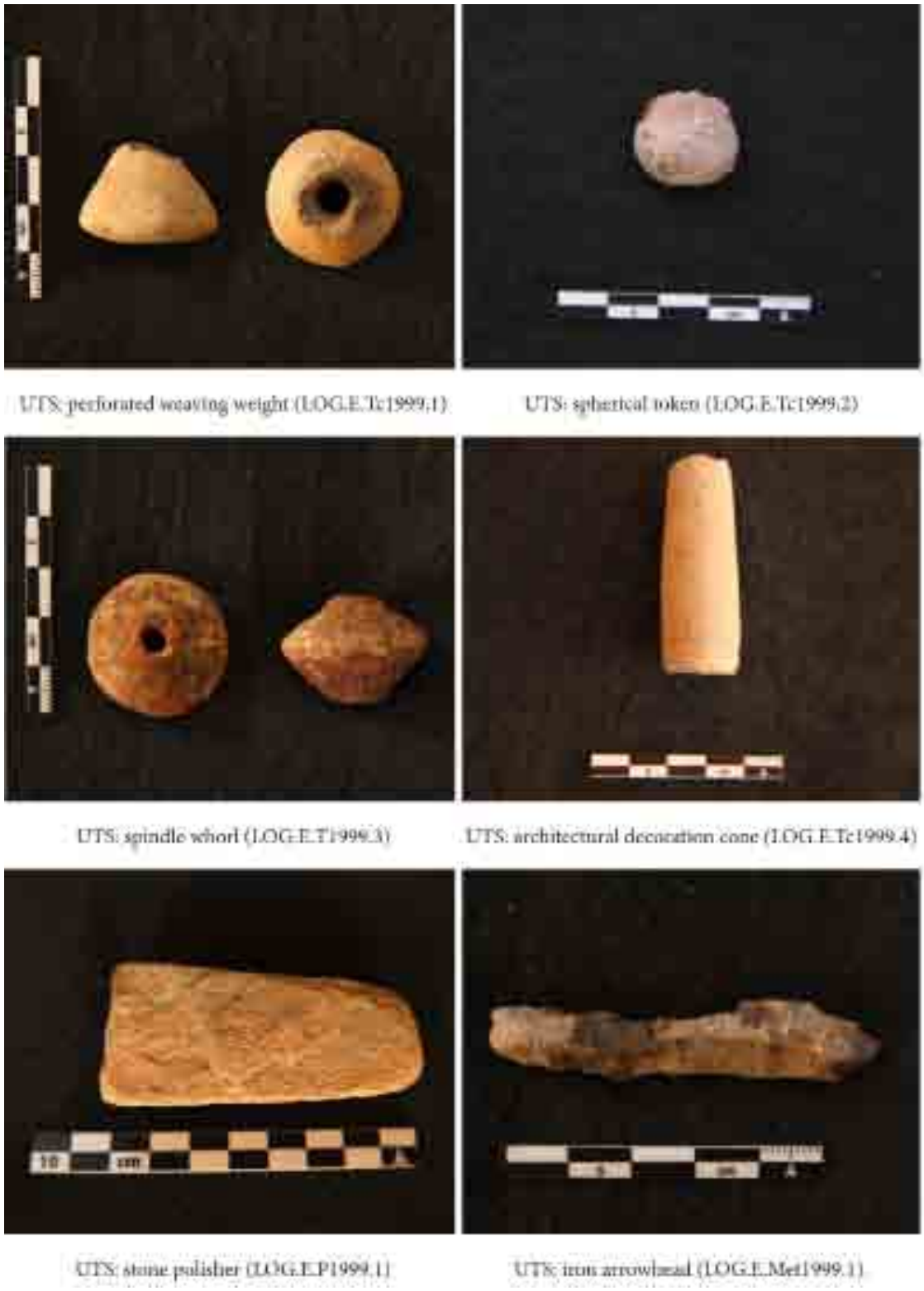


Fig. 4 - UTS : Miscelania.

Logardan Trench E

Martin Sauvage, Mélania Zingarello and Bahra Salah

During the 2015 campaign in Logardan levels of the Bronze Age were excavated at the top of Trench C, between the median and the upper terraces. In addition, a magnetic survey was carried out on the upper part of the site, showing a number of magnetic anomalies indicating underlying structures (Vallet 2015). It was decided in 2016 to go on investigating the Bronze Age levels at Logardan with a new trench (Trench E) set on the upper terrace (fig. 1). To help determine the best location for this trench, a preliminary surface survey (Upper Terrace Survey: UTS) was carried out (see *supra*). The survey has indicated a probable occupation of the Halaf and Obeid periods in the northern part of the terrace and

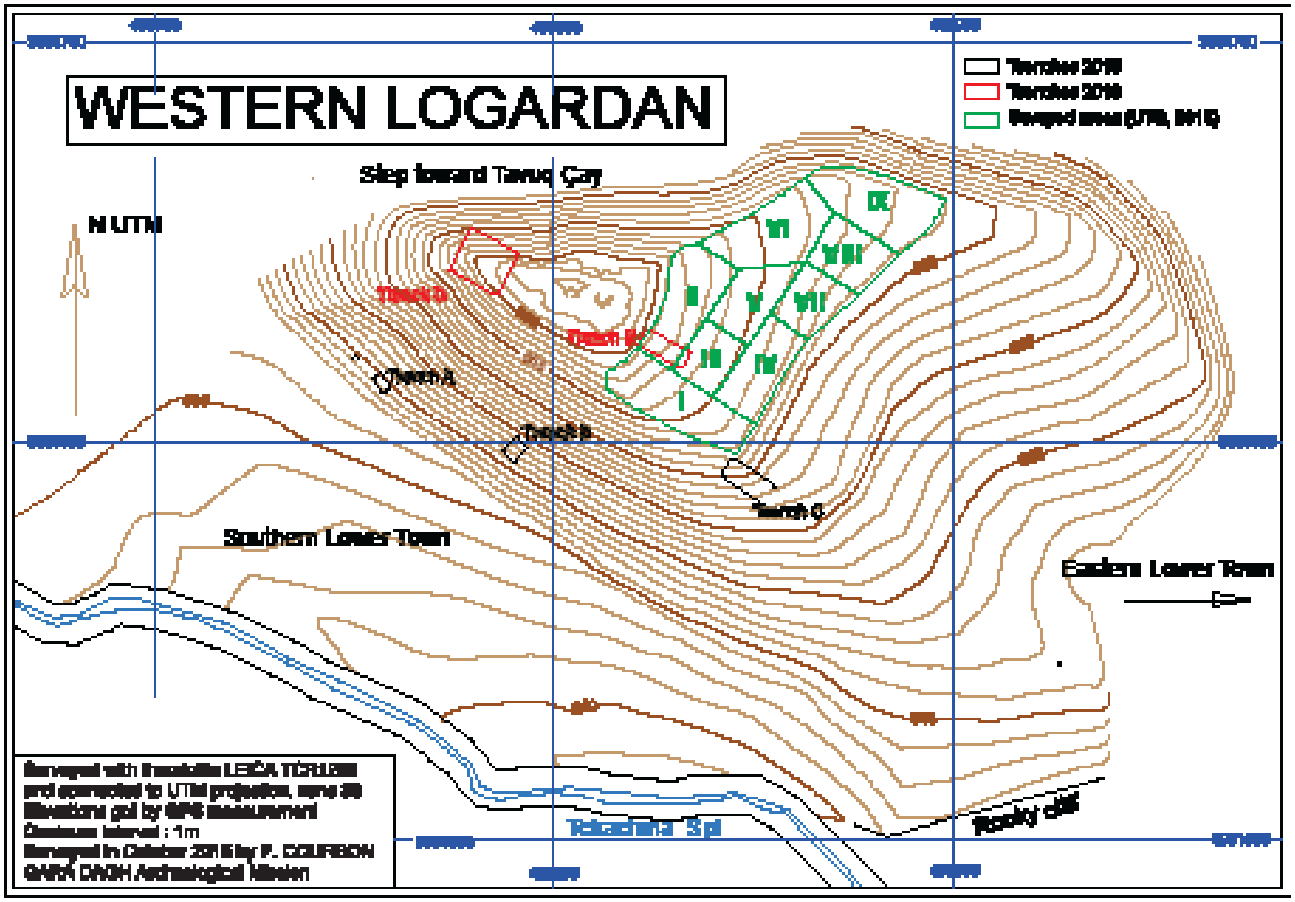


Fig. 1 - Topographical map of the western part of Logardan showing the Upper Terrace Survey areas I to IX and the location of the 2015 trenches A, B and C and of the 2016 Trenches D and E (topographical survey by P. Courbon, 2015; CAD by M. Sauvage, 2016).

a possible Uruk occupation at the junction of the upper and the median terraces. Finally, and this was confirmed by the excavation, the entire central part of the terrace appeared to have been lastly occupied by Bronze Age structures.

In this central zone, two important geomagnetic anomalies were identified by the 2015 geomagnetic survey (fig. 2). First of all, the supposed traces of the enclosure or retaining wall of the 'citadel' seemed to be interrupted to leave room to what could be the access way from the upper terrace. Secondly, a very contrasting rectangle clearly indicates a building in the axis of this access, a dozen meters below. It was therefore decided to lay trench E so that its north-west extremity reached the retaining wall of the 'citadel' and its south-east extremity an angle of the building identified by the geomagnetic survey.

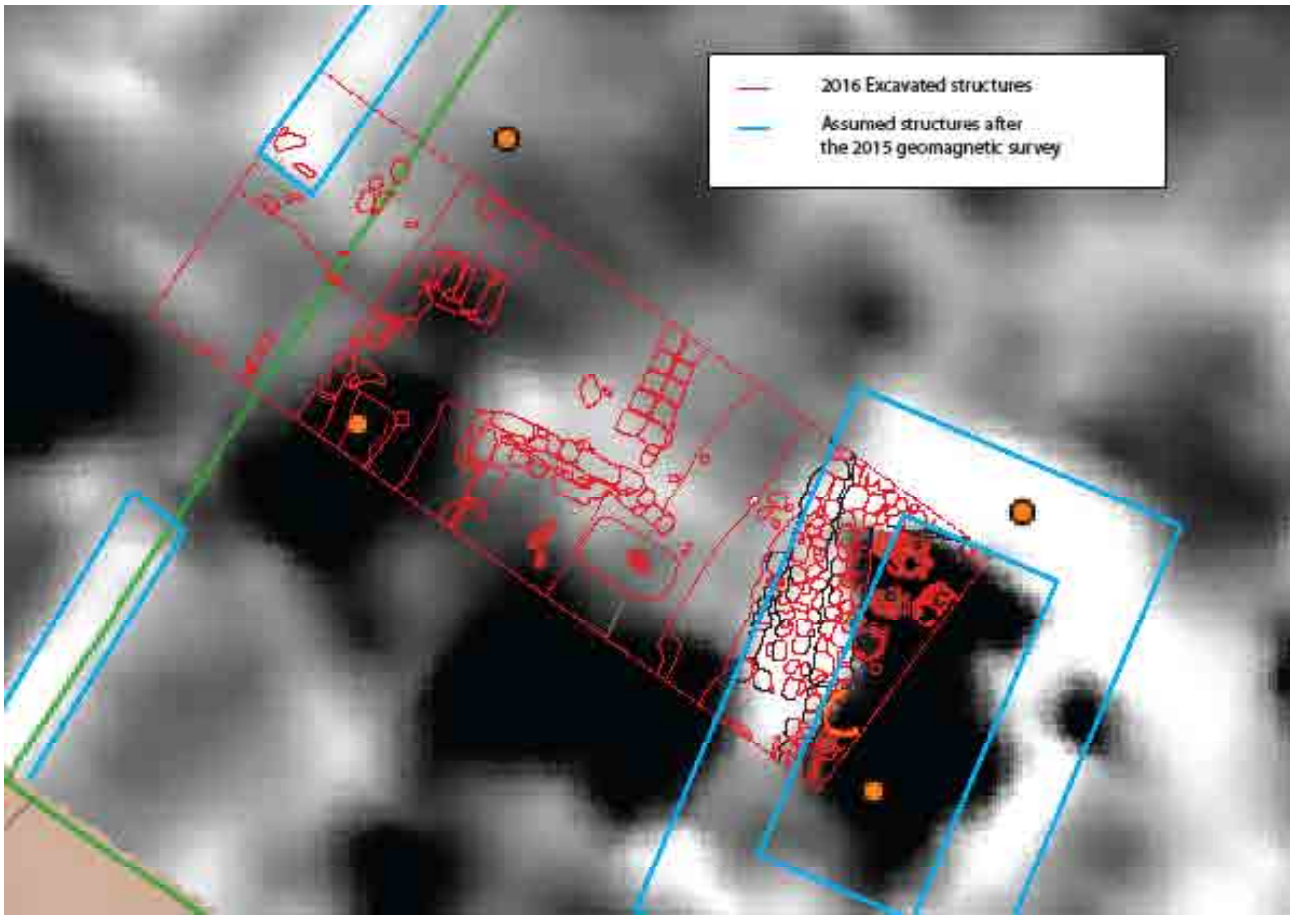


Fig. 2 - Logardan, 2015 geomagnetic survey (detail of Trench E area) with marks of what could be the retaining wall and the access way to the citadel and a rectangular building or room (geomagnetic survey by L. Darras, DAO M. Sauvage).

The excavation took place from 2 to 25 October under the direction of Martin Sauvage, with the help of Melania Zingarello and Bahra Salah, Micheline Kurdi was in charge of the calibration of the surveys and provided her help in excavating a tomb. The trench was first opened on 50 m^2: 10 m in the SE-NW axis and 5 m in the SW-NE axis; on October the 15th, an extension of 3 x 5m was added to the NW to bring the total open area up to 60 m^2 (fig. 3 and 4). The slope of the surface in Trench E is about 3 m (alt. 669.47 m at the NW, 666.51 m at the SE). Five successive levels of occupation were distinguished throughout the excavation (fig. 5), but some excavated structures could not be dated (no associated material or structures not yet emptied). Stratigraphy will certainly have to be refined during the next campaign, especially in the upper part of the trench where only the most recent levels were cleared.

Fig. 3 - Logardan, Trench E: mosaic view of the excavation at the end of the campaign (M. Kurdv)

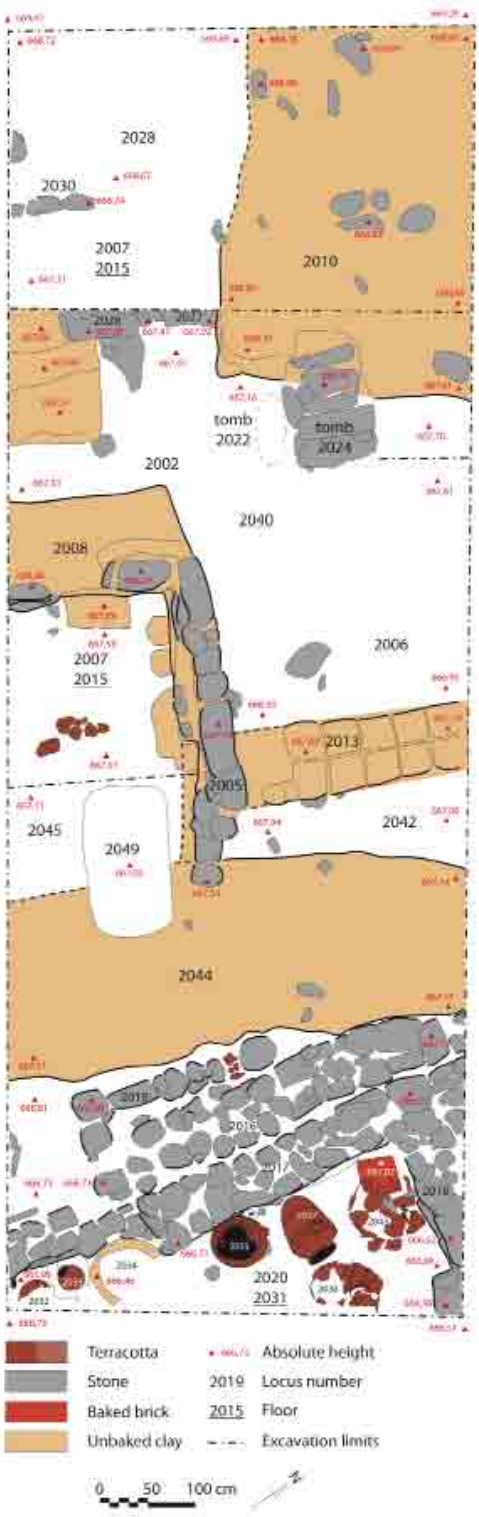


Fig. 4 - Logardan, Trench E: plan of the excavation at the end of the campaign (survey and CAD M. Sauvage).

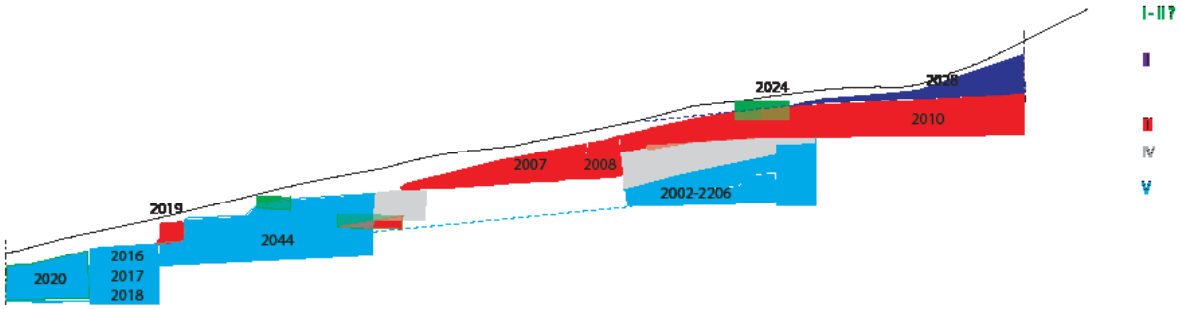


Fig. 5 - Logardan, Trench E: stratigraphic simplified scheme (CAD M. Sauvage).

▸ **Level I:** the intrusive structures, dug into the older levels, are gathered in this 'level'. These are, first, graves 2024 and 2022, as well as structure 2049. These structures have been dug into levels III or IV and could therefore belong to level II, but for the moment, no associated datable material has been found which could help for dating. We have to wait until the next campaign and the excavation of structure 2049 to clarify whether we are dealing here with a necropolis and of which date.

The structure 2024 is a cist-grave with a cover made of five stone slabs (60-80 × 20-30 cm) laid flat on one layer. Its walls are made of slabs laid edgewise. It is obviously a secondary burial: the bones are incomplete, broken and fragmentary without connection or anatomical placement (figs. 6 and 7). There is no associated material, and the relative dating of the grave is thus impossible. It is to be noted that the grave cuts the structure 2010 and is therefore later than level III.

Fig. 6 - Logardan, Trench E: grave 2024, the covering stone slabs have been removed.

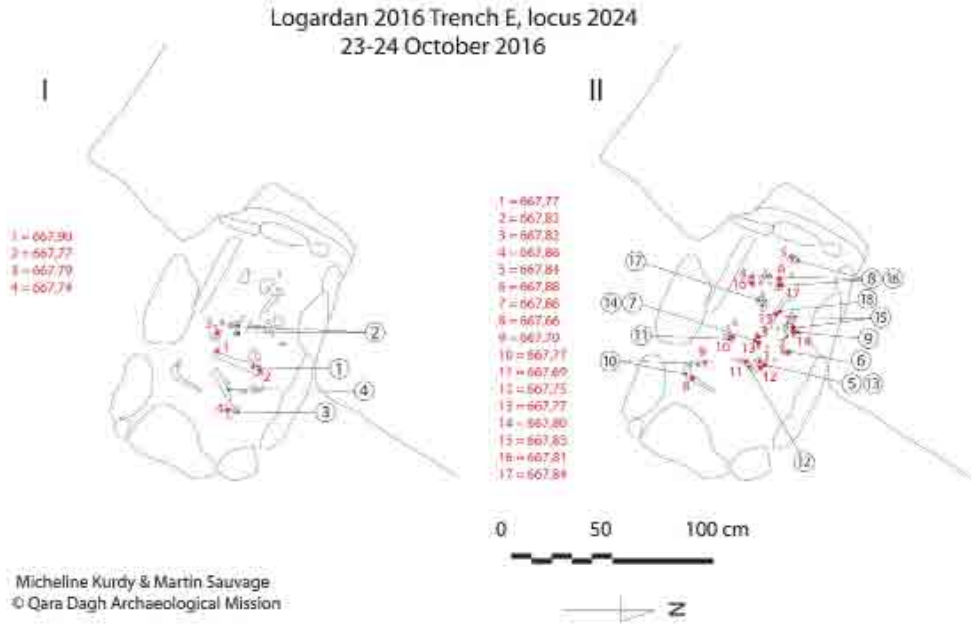


Fig. 7 - Logardan, Trench E: grave 2024 (survey and CAD M. Sauvage).

Beside this cist-grave, a pit burial was excavated, whose precise limits could not be exactly located because the substrate, a very fine grey earth, is very loose (figs. 8 and 9). It should

Fig. 8 - Logardan, Trench E: grave 2022.

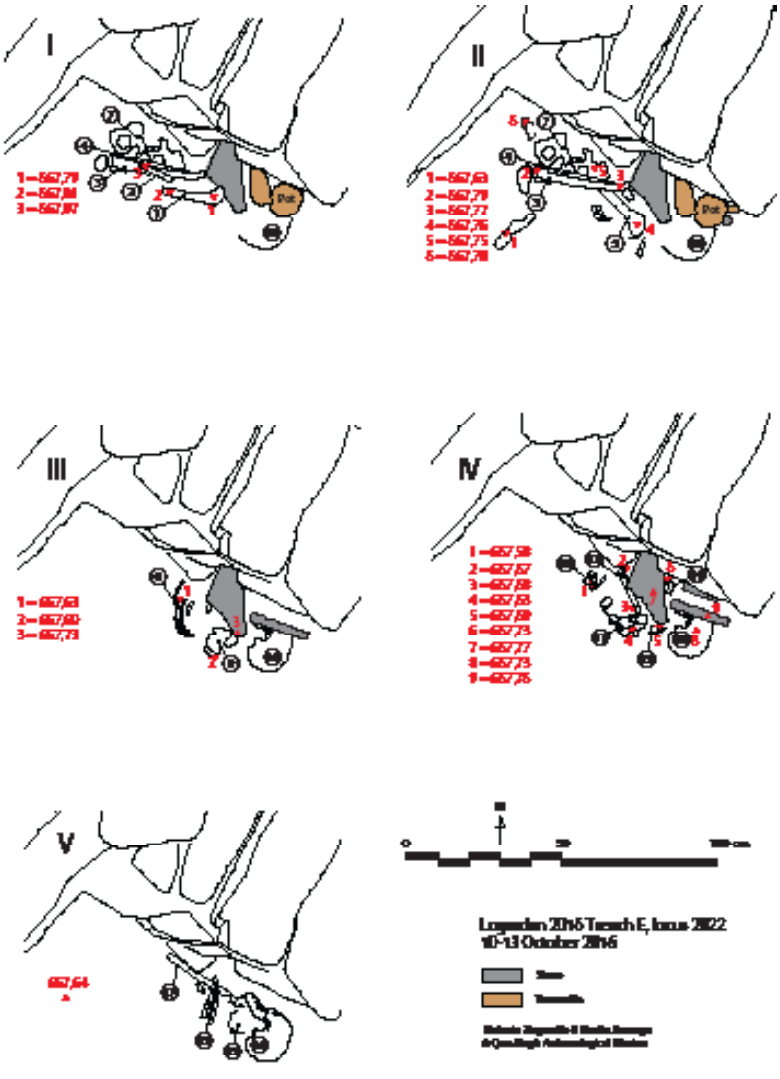


Fig. 9 - Logardan, Trench E: grave 2022 (survey and CAD M. Sauvage).

probably be considered contemporary with the grave 2024. It is a burial with a juvenile body in a flexed position on the back; the pelvis is broken in two at right angles vertically to the axis of the spine. A great number of bones, in particular those of the hands and feet, are missing. A small pot rested over the skull, but it does not have diagnostic characteristic that could help to date the burial.

Further southwest of room 2007 in space 2045, a rectangular pit (2049) oriented NW-SE and measuring approximately 1.2 × 0.6 m was located at the end of excavations but time was short to empty it. It could also be a grave, that should be excavated during the next season.

- **Level II:** that level is preserved only in the NW extension of the trench, with floor 2015 (667.31 m), which is lost in the slope to the south. A wall with a single row of stones, oriented SW-NE, divides spaces 2028 and 2007. These are obviously outdoor spaces, that abut towards the NE the structure 2020 of level III.

- **Level III:** In the northern corner of the trench a solid mass of brick has been recognized on a 3 × 4 m area and on a preserved height of 0.80 to 1.30 m. It is most likely the retaining wall of the 'citadel' standing at the top of the site and will be the subject of a more extensive excavation during the next season. It is stratigraphically contemporary of a more southerly building composed of the room 2007 and walls 2008, 2005 and 2013 (fig. 10). This building is obviously a domestic settlement, very poorly preserved in places (the walls of 2008 and

Fig. 10 - Logardan, Trench E: room 2007 and floor 2015, wall 2008 in the background and wall 2005 on the right.

2013, made of unbaked mudbricks, are only preserved on the first layer). The external floors to the north are lost and the erosion cuts the level to the south. Room 2007 was, however, fairly well preserved with two walls of unbaked mudbricks at an angle to the north (2008 and 2005), provided with a stone basement. Wall 2005 is composed of a basement of stone on two rows, the inside facing having fallen into the room. On the floor 2017, ceramic material was found (see the report of M. Zingarello, *infra*), which allows dating the whole level to the transition from the Early Dynastic III period to Akkad (ca. 2400-2300 BC).

‣ **Level IV:** Below level III, in areas 2002, 2006, 2042 and 2045, we found a layer of greyish fine earth up to 1 m thick. This filling of a vast outdoor area obviously indicates a period of abandonment. The layer abuts to the SE the 2044 mudbrick structure of level V, still present at this time.

‣ **Level V:** This is the oldest level reached in the trench during the campaign. To the north, it corresponds to a massive mudbrick structure with a stone basement (2027 and 2028) and a set of steps made of rammed earth. It is probably an early phase of the retaining wall of the 3rd millennium 'citadel'. The next campaign will seek to reach this level to the NO in order to confirm the location of the access to the citadel for this period. To the south of this massive structure, an outdoor floor (2040) with a lot of material (potsherds and animal bones) has been unearthed on nearly 5 m long (figs. 11 and 12), that could abuts the massive brick structure 2044 to the south (this point will be checked during the next campaign). This later

Fig. 11 - Logardan, Trench E: space 2002 and floor 2040, on the right the grave 2024 with its covering.

Fig. 12 - Logardan, Trench E: space 2002 and floor 2040.

structure has an average width of 3 m, and crossed the whole trench. It is supposed to act as a retaining wall, the structures to the south coming to lean against it, but its base could not be recognized yet.

In the south-eastern part of the trench, where a large magnetic anomaly was detected in 2015, stone walls (30 to 60 cm wide, preserved to a height of 1 m) delimit a room corner (room 2020 and floor 2031). In this area (fig. 13), seven jars (fig. 14) and three small pots were found *in situ*, under the remains of the collapsed earthen roof that sealed the room (fig. 15). These roof remains are in the form of blocks of raw clay bearing on one side the footprints of the plant material (probably reeds) that rested on the roof joists (fig. 16). A large basin of clay (60 cm in diameter) and a tripod holder of the same material were also found in the room (fig. 17).

The room 2020 and the surrounding walls are cut from the northern part of the trench by the massive structure 2044, whose base has not yet been reached. The belonging of the room 2020 to the level V is therefore based solely on the preliminary dating of the material. Several

Fig. 13 - Logardan, Trench E: room 2020 during.

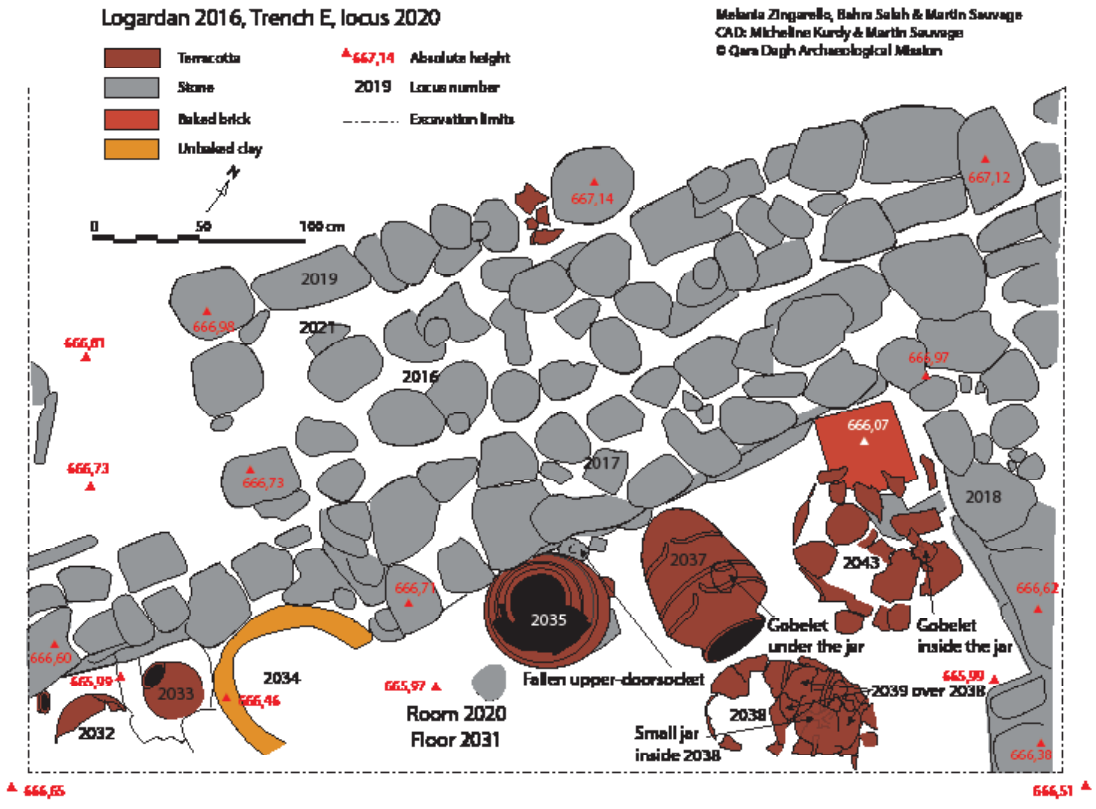


Fig. 14 - Logardan, Trench E: room 2020 and walls 2019, 2026, 2017 and 2018 (survey and CAD M. Sauvage).

Fig. 15 - Logardan, Trench E: room 2020, a jar during excavation partly covered by the collapsed earthen roof.

Fig. 16 - Logardan, Trench E: room 2020, detail of the raw earth fragments with marks of vegetal material from the collapsed earthen roof.

Fig. 17 - Logardan, Trench E: room 2020 and floor 2031, storage jars and raw earth tripode.

jars have a characteristic appliqué motive of 'snakes', which closest parallels come from the Diyala, in ED (II)-III but also late third millennium levels (see M. Zingarello's report on the ceramic, *infra*). However, some jars could also be dated, given the comparisons found, of the Late Bronze Age. But it is possible that this room has also been disturbed by late pits (from level I or II). The next campaign will have to clarify this point. In any case, it should be noted that the vases bearing this type of snake decoration are often to be found in a ritual context (Quenet 2014). We could thus deal here with the storage room of a temple.

Five objects have been found apart from ceramics and fauna (fig. 18): a bell-shaped weaving weight (LOG E.Tc1037.1), a red terracotta bead (LOG E.Tc1054.1), a fragment of a terra-

UTS: bell-shaped perforated weaving weight (LOG E.Tc1037.1)

UTS: red terracotta bead (LOG E.Tc1054.1)

UTS: fragment of an unbaked clay sealing with marks of a rope (LOG.E.T1993.1)

UTS: fragment of an architectural decoration cone (LOG E.Tc1113.1)

Fig. 18 - Logardan, Trench E: miscellanies.

cotta architectural cone (LOG E.Tc1113.1), and three fragments of clay sealing (probably on jar), one of which bears the imprint of a rope (LOG E.T1109.1).

The next campaign in trench E, scheduled for autumn 2017, will focus to continue the investigation on the slope of the 'citadel', towards the NW, in search of its enclosure or retaining wall and of the main access. We will have also to go on the excavation of the 2016 trench in order to reach, at least in the central part, the outdoor floor of level V and the base of structure 2044. Finally, the extension of the trench towards the SE will focus on the excavation of the whole room 2020 in order to complete the plan of the building and to specify its function and dating.

Bronze Age Pottery from Logardan

Melania Zingarello

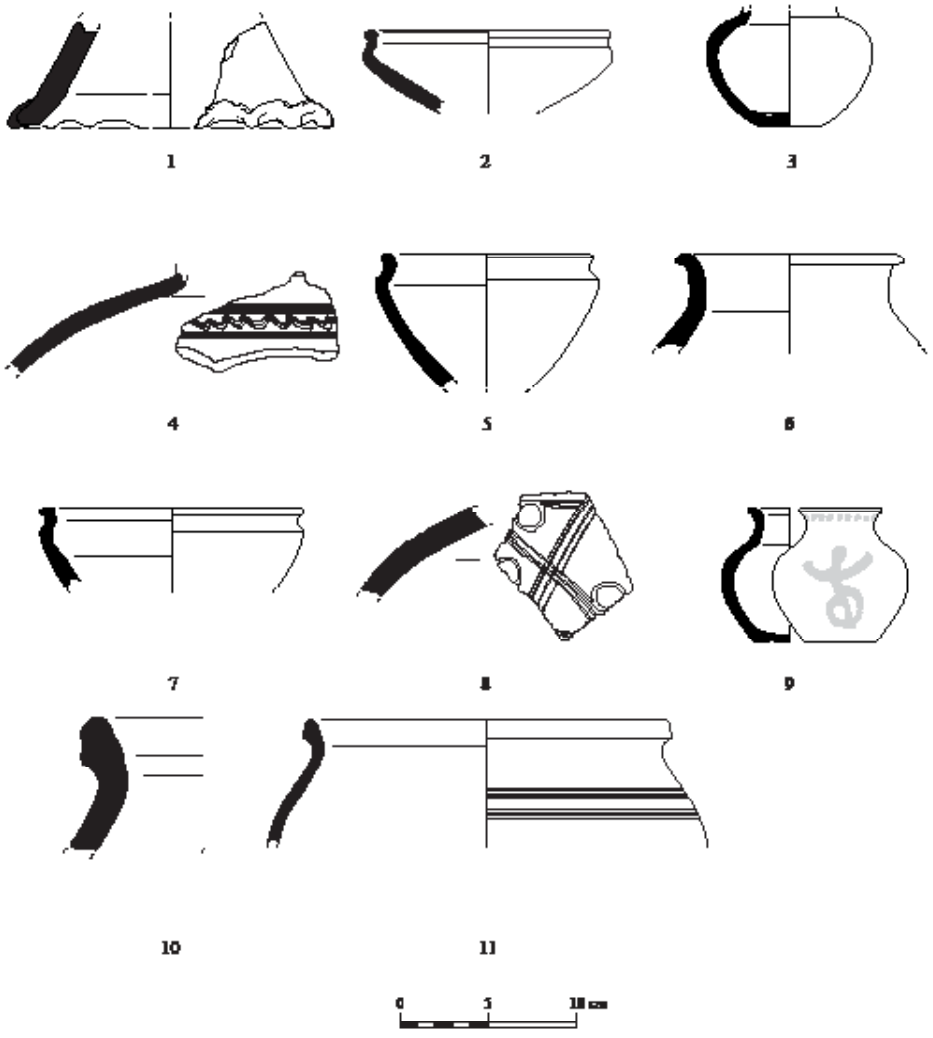
The work carried out in the second season of excavations (2016) at Logardan has included a survey on the upper terrace of the tell and the beginning of two operations – Trench D and Trench E –at the top of the site and on the north-western side of the upper terrace respectively[1]. The Bronze Age ceramic material from these operations[2] has been counted and recorded according to a "traditional" typology based on the morpho-stylistic analysis of the shards, which have been preliminary subdivided based on shape (open/closed forms) and their evolution through time based on the analysis of stratified assemblages from the site and their correlations with those from other sites in the region.

Logardan Trench D Ceramic Material

In Trench D, three Bronze Age levels, labeled 1-3 from top to bottom, the last of which is divided into three phases (a-c), all dating from the second part of third millennium BC, have been recognized. The pottery assemblage from the latest levels (1-2), represented by the construction, use and reconstruction of a ceramic workshop, is composed by few but important chronological indicators that point to a late 3rd millennium BC date. The carinated bowl with rounded, out-turned rim, a pointed carination just below the rim and a conical lower body (Fig. 1:1, LOG.D.223-1) is, for example, a chronological marker for this period, reaching his peak in the Third Dinasty of Ur period (hereafter Ur III)[3]. Earlier evidence of this pottery type, spreading across a very large area encompassing the Western Iran, through Southern and Central Mesopotamia and reaching as far as the Northern Levant[4], date from the end of Akkadian period[5]. Its presence in these levels could represent the latest occupation of the area, at least on the base of the material collected so far. Another type of carinated-sided bowl, an example of which is shown in Fig. 2:7 (LOG.D.215-1)[6], with out-turned or thickened rim flattened on top, high carination and hemispherical body, was also retrieved. This form, with several close variants recurring especially in the earlier level, is largely documented in the Tigridian region as well as in the Eastern Jezirah sites in the Akkadian and post-akkadian phases.

1. For a description of the stratigraphy in the two trenches, see the contributions by J. S. Baldi, H. Naccaro and K. Rahoof and M. Sauvage, M. Zingarello and B. Salah, respectively for Trench D and Trench E.
2. See M. Sauvage, M. Zingarello and B. Salah on Logardan Upper Terrace Survey, this volume, about the methodology applied on the survey's material.
3. For the type's description and comparison see McMahon 2006: pl. 90; Schmidt 2014; Casadei 2016: 34-36.
4. Schmidt 2014: 411 and fig. 1.
5. Late Akkadian specimens, e. g., come from Level F of the Archaic Ishtar Temples at Assur (Beuger 2013: taf. 1:8), Level XI of the WF Sounding at Nippur (McMahon 2006: 80, type O-17) as well as from Tell Asmar (Delougaz 1952: pl. 150, B.151.210) in the Diyala, but also from Susa and some sites of Southern Mesopotamia.
6. Among the others, close parallels for this kind of carinated bowl come from Tepe Gawra' Stratum VI (Speiser 1935: pl. LXVII:93), Area B's Levels 7-8 at Tell Yelkhi (Bergamini 2003-2004: pl. 4:26, 28) and Area KG's Level VIB at Nineveh (McMahon 1998: fig. 7:15-16, 18).

Fig. 1 - Selection of ceramic material from Levels 1-2, Trench D.



1 : LOG 16 D 228-12 2 : LOG 16 D 236-5 3 : LOG 16 D 239-1
4 : LOG 16 D 236-9 5 : LOG 16 D 228-1 6 : LOG 16 D 213-2
7 : LOG 16 D 215-1 8 : LOG 16 D 236-10 9 : LOG 16 D 243-1
10 : LOG 16 D 236-8 11 : LOG 16 D 236-7

Fig. 2 - Pottery from Levels 2 (nos. 6-7) and 3a (nos. 1-5, 8-11), Trench D.

Other types of open forms in the two upper levels of Trench D include small bowls with upright indented rim (Fig. 1:2, LOG.D.223-2), some small bowl fragments with a simple rim, flattened lip and straight, uneven wall and bowls with band, thickened or inturning plain rim, all typical of the Late Akkadian and Ur III periods.

The range of closed forms consists of small jars with plain or flattened rim on a flared, short neck, medium jars with triangular rim on medium-high neck (Fig. 2:6, LOG.D.213-2), wide-mouth bag-shaped jars with or without combed incisions on the shoulder (Fig. 1:3), attested in higher percentage in the earlier level. A thin-walled small version of this jar with a rounded, grooved inside rim on a very short neck was also retrieved. Levels 1-2 yielded also some examples of simple horizontal combed decoration and a combination of wavy and horizontal combed bands (Fig. 1:4). Furthermore, a very large triangular rim, probably belonging to a vat, testifies to the presence of large coarse vessels.

The earlier ceramic workshop area, represented by Level 3, saw the construction and use of several pottery kilns, built both on the inside and outside of Level 4 building, whose ruins were reused and partly adapted by means of the construction of a massive partition wall (Wall 637) and by other minor changes[7]. Sub-level 3a ceramic material did not differ significantly from that of the following Levels 1-2, but it shows types more common in Late Akkadian times. In fact, the amount of different types of carinated-sided bowls increases considerably, including both the typical "Ur III" carinated bowl (Fig. 3:2, LOG.D.245-1) now with a blunted, upright rim and a pointed carination[8], found in the upper strata of Sub-level 3a, and other variants such as deep bowls with flaring rim and high carination (Fig. 2:5, LOG.D.228-1)[9], shallow bowls with thickened rim in common (Fig. 3:1, LOG.D.249-3) as well as in fine ware (Figs. 2:2, 3:4 LOG.D.236-5)[10], and large bowls with thickened flaring rim, a rounded, emphasised carination and convex walls (Fig. 3:3, LOG.D.252-1).

Closed shaped are mainly represented by wide-mouthed bag-shaped vessels, small to medium in size (Fig. 4:2, LOG.D.251-1), and by a variety of medium and large-sized storage jars with rounded, rolled or thickened out-turned rims on medium-high neck or neckless (Fig. 4:3, LOG.D.247-3). Both these types are very often characterized by a decoration consisting of groups of band-combed lines on the shoulder (Fig. 2:11, LOG.D.236-7), that seem to appear more frequently in the Akkadian and earlier periods[11], or by horizontal and wavy lines made with a multiple-pointed comb (Fig. 2:4, LOG.D.236-9). Body shards with notched

7. For a detailed description of architecture see J. S. Baldi, H. Naccaro and K. Rahoof, this volume.

8. A very close comparison can be found at Nineveh, in "band rim bowls" of the Area KG's Level VIB, dating to the Late Akkadian/Ur III period (McMahon 1998: fig. 7:26-28).

9. The best parallels for this type of carinated bowl come from Level G of Archaic Ishtar Temples at Assur (Beuger 2013: taf. 5: 8), Tepe Gawra' Stratum VI (Speiser 1935: pl. LXVII:92), Tell Brak's Phase N (Oates 2001: figs. 418:604, 606, 431:933), and can all be dated to the Akkadian and post-Akkadian phases.

10. Different kinds of shallow bowls with thickened rim, considered as typical Akkadian shapes, are attested in the Tigridian region, the Eastern Jezirah and at the sites of the Upper Khabur. See, for example: Tell Brak, Phase N (actually post-Akkadian, Oates 2001: fig. 418:600-601, 608); Tell Fisna, Level Va (although of a slightly earlier date, i.e. Early Dynastic IIIb/Akkadian period) (Numoto 1988: figs. 22:144, 23:168); Tell Jessary, Area D's Level 2 (Numoto 1990: fig. 8:129-132); Tepe Gawra' Stratum VI (Speiser 1935: pl. LXVII:89-90); Nineveh, Area KG's Levels VII-VI (McMahon 1998: figs. 5:10-13, 7:15, 17, 20-21); Assur, Archaic Ishtar Temples' Level G (Beuger 2013: taf. 4:2).

11. Oates 2001: 165.

Fig. 3 - Carinated bowls from Sub-level 3a, Trench D.

Fig. 4 - Selection of closed shape vessels from Sub-level 3a, Trench D.

horizontal applied rope(s) (Fig. 4:4) are also common in this and in the earlier sub-levels as well as decorations with applied snakes.

An everted ledge rim on corrugated neck (Fig. 4:1, LOG.D.244-4) belongs to a very well-known kind of small to medium-sized jar, occurring in the Euphrates Banded Ware, that generally represents a hallmark of phases Early Middle Euphrates 3 and 4 in the whole Middle Euphrates Valley.[12]

Moreover, Sub-level 3a yielded a substantial amount of out-turned thickened with a quite pronounced depression on both the inside and outside rim surface or band rims grooved or channelled on the upper part, very likely aimed at holding a lid. This kind of jar seems to be common in Late Akkadian/Ur III contexts, e.g. in Level VI of the Area KG at Nineveh.[13] Some of the multiple-grooved thickened rims on medium-to-large wide-mouthed jars without neck,[14] of which one at least shows a decoration of five wavy-combed lines, date to the same period, or slightly later.

Three fragments of "pie-crust" pot stands (Fig. 2:1, LOG.D.228-12), characterised by an undulating, finger-impressed lower edge and generally considered typical of the Late Bronze Age, may date from the Late Akkadian/Ur III period as revealed by their presence in the stratigraphic sequence of Area KG at Nineveh since Level VIA or in Levels G, F and E of the Ishtar Temple at Assur.[15]

In Sub-level 3a one of the rare fragments of spout, probably belonging to a jar was recovered.[16]

One of the most interesting pots from this phase is a miniature jar with a tapered off, flaring rim on short neck, globular body and flat base, showing a black painted decoration – now discoloured in blue – of a stylised human figure with open arms and a line of painted dots just below the rim (Figs. 2:9, 5, LOG.D.243-1). If the latter seem to be more characteristic, for example, of the "shoulder-vases" decoration coming from the Ishtar Temple's Levels G and F at Assur[17] – dating from the end of Early Dynastic to the Late Akkadian periods –, the human representation is quite identical to that one painted in dark brown on the wall of a likely wide-mouth jar from Tepe Gawra' Stratum VII[18]. A small, but not miniature jar from a grave at Tell

12. Sconzo 2015: 123, type 62. Cf. also Porter 1995: figs. 15-16. An EME 3 date for this Sub-level seems excessively early when compared with the overall ceramic assemblage of Level 3, better fitting to the end of EME 4. See also the radiocarbon dates obtained for this level (Appendix B, this volume). It should be noted that some specimens of Euphrates Banded Ware jars were found also in Southern Mesopotamia, i.e. at Nippur (McMahon 2006: pl. 101:4-7), Abu Salabikh (Moon 1987: 76, no. 363) and Fara (Martin 1988: 182-183, no. 85) in Early Dynastic III contexts.

13. Cf. McMahon 1998: fig. 9:7, 10, 12, 15.

14. See, for comparison, Beuger 2013: taf. 43:5, 44:3 belonging to Level G and Level F(2) of the Archaic Ishtar Temples at Assur, respectively.

15. See the considerations expressed by McMahon 1998: 19, note 44.

16. In Central and Southern Mesopotamia as well as in the Diyala, spouted jars are typical of Early Dynastic III period, becoming rare and disappearing completely at the end of Akkadian period, when a wide-mouth teapots appear.

17. A comb-stroked surface together with simple painted dots are frequent, for example, in the so-called "shoulder vases" (Beuger 2008: 355, fig. 7).

18. Speiser 1935: pl. LXXVI:9.

Fig. 5 - Painted human figure with open arms on a miniature jar (D.243-1).

Fig. 6 - Selection of open and closed shape vessels from Sub-levels 3b-c, Trench D.

Mozan[19], dating from EJ 5 (ca. 2100-2000 BC), shares with our miniature version both the morphological aspect and part of dots decoration, painted with bitumen.[20]

The following Sub-levels 3b-c yielded typical shapes occurring in Akkadian time or dating back to the end of Early Dynastic IIIb and to the beginning of the Akkadian period. The frequency of slightly carinated bowls with inside and outside thickened rim decreases compared to phase 3a, whereas shallow carinated bowls with beaded or tapered off, slightly flaring rim (Fig. 6:2) made of fine ware, whose comparisons come mostly from Akkadian contexts[21], increase in percentage. Typical Akkadian pottery types seem to be the small cups or cylindrical beakers with beaded or slightly thickened and everted or folded outside rims with a convex or flat base (Fig. 6:1, 6:4, in the middle and at the bottom left). One of them (Fig. 6:3, LOG.D.262-8), with thickened flaring rim, walls incurving in the upper part and carination on the lower part of the body, has a band-combed decoration with five comb-incised lines at mid-body. Such cups/beakers, typical of phases b-c in Level 3, were collected from layers in Room 673 ("green" nos. 262 and 279), from the filling of kilns 664 and 665, but also from the filling of kiln 640, which belongs to Level 3a. Like other vessel types discussed above, these cups find the most consistent parallels in similar vessels from levels VII-VI in Area KG at Nineveh[22], from levels G-F of Ishtar Temple at Assur[23], and, above all, from the levels dating from the end of the Early Dynastic III/Akkadian period at sites in the Eski-Mosul region[24].

Close-shaped vessels are represented by a large variety of vessel shapes: small- and medium-sized, wide-mouthed jars, with thickened rims with a groove on the inside or on the top to hold a lid, or medium-sized neckless jars, with bevelled rim, decorated with deep incised patterns, including a wide array of wavy lines and chevron design[25]. Like for Level 3a, also in this phase wide-mouth bag-shaped vessels are largely attested, along with medium-to-large sized storage jars with thickened out-turned rims and a deep groove inside or on the top of the rim on medium-high neck or double-ridged rim jars without neck. Other closed forms include a triple-ridged rim jar without neck and comb-decorated shoulder (Fig. 7:2, LOG.D.262-14) and a jar with a plain, flaring rim and a slight depression inside with a pottery mark, consisting of three vertical parallel lines, incised at the neck base (Fig. 7:1, LOG.D.269-4).

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19. This small-medium size jar, labelled JZ005_I001 according to the ARCANE database's entry code, comes from Grave A10a2 in Area A at Tell Mozan. Cf. Rova 2011: pl. 23:3, type 122.

20. According to E. Rova (2011: 79, type 122), bitumen decoration is typical of the late 3rd and early 2nd millennium Mesopotamian pottery, although at Tell Taya (Reade 1968: 251, pl. LXXXIV:13; 1982: pl. 5) and Tell Brak (Oates 2001: 165-166) appears already in the Akkadian (Level VIII) and Late Akkadian phases respectively. In the Jezirah region, this kind of decoration seems to be particularly common in Early Jezirah 5 phase (c. 2100-2000 BC) (Rova 2011: 79).

21. Besides the specimens from Area KG's Level VII at Nineveh (McMahon 1998: fig. 5: 9-10, 13), the best parallels could be found in Ishtar Temple's level G at Assur (Beuger 2013: taf. 2:13) and at sites in the Middle Tigris Valley such as Tell Fisna (Numoto 1988: fig. 21:136-137).

22. McMahon 2008: fig. 7:1-7.

23. Beuger 2008: 356, fig. 6.

24. See Levels Vb-a at Tell Fisna (Numoto 1988: fig. 21:125-132, 22:150-155) and Tell Jigan (Fuji 1987: fig. 6:68-69). This vessel type is attested also at sites in the Upper Khabur and the Eastern Jezirah, for which see Orsi 2011: tavv. 59:10-12 (Tell Leilan), 66:20-22 (Tell Hamoukar), 74:531 (Tell Rimah).

25. See Tell Brak, Oates 2001: fig. 403:294-295.

Fig. 7 - Selection of jar rims from Sub-levels 3b-c, Trench D.

Fig. 8 - Incised and applied decoration on a large vessel' shoulder.

Large vessels are attested both in some fragments of rounded and thickened rim with a slight groove in the lower part of the rim, often showing comb-incised decoration in a sharply angled zigzag band made with a six-pronged tool (Fig. 7:3, LOG.D.262-25)[26], and in a large fragment decorated with a pattern of crossed parallel lines and impressed dots with a small notched ridge and an applied crawling snake (Fig. 8:1, LOG.D.262-11)[27]. The latter could probably belong to a deep basin or large-sized jar, which characterise the final phases of the Early Dynastic period up to the Ur III period in a broad area encompassing the Upper Khabur, Eastern Jezirah, and the Tigridian region.[28] The discovery of an undecorated "fruit stand" base (Fig. 8:2, LOG.D.262-12+241-1) is noteworthy, as such vessel shape is typical of the Early Dynastic period in Southern and Central Mesopotamia, but rarely found in the northern area.

In sum, the ceramic assemblage from the Bronze Age levels excavated in Trench D at Logardan thus far seemingly argues in favour of a strong continuity of pottery production at this site, as already pointed out for other sites.[29] The pottery from Logardan finds the most consistent parallels in the Akkadian and post-Akkadian phases of the Tigridian Region, particularly in Levels VII-VI in Area KG at Nineveh and levels G-F of the Archaic Ishtar Temples and the corresponding levels in Trench 7 at Assur. Although, as already pointed out elsewhere,[30] it should be taken into account that the materials from Nineveh span a rather long chronological range and, therefore, cannot be used for a refinement of ceramic chronology, it is nonetheless typical of the terminal phase of the 3rd millennium BC.

Logardan, located in the easternmost sector of the Tigridian region according to the regional borders assessed by the ARCANE Project, is seemingly fully included within the ceramic tradition of this area. However, it is possible to identify connections with the neighbouring areas, such as the Hamrin and the Upper Diyala, as well as the Khabur Valley, such as the parallels visible in the pottery repertoire of the Akkadian and post-Akkadian phases at Tell Brak. Differently, parallels with Southern Mesopotamia are limited but important.

Logardan Trench E Ceramic Material

Differently from the pottery from Trench D that was rather homogeneous both from the topsoil and the uppermost three layers, pottery from Trench E appeared mixed, although the reasons of such situations have to be investigated yet. Reliable diagnostic shards are limited in number in each of the five levels identified. Along with materials dating from the fourth millennium BC, two main phases can be singled out with a certain degree of confidence based on pottery. The later phase dates from the Late Bronze Age, characterised by the presence of large wide-mouthed storage jars, square-sectioned rim with horizontal ribs at the neck base and on the shoulder and above all of storage jars with a distinct inwardly bevelled rim

26. According to J. Oates (2001: 165), groups of horizontal combed bands appear more frequently in the Akkadian and earlier periods in contrast with the more regular, wavy combing typical of the post-Akkadian levels.
27. Cf. the complex pattern no. IV of the decoration typology elaborated by Sconzo, Bianchi (2014: fig. 2: IV, pl. 6:1-3).
28. See e.g. Tell Brak (Oates 2001: fig. 407:359-361) and Assur (Beuger 2013: taf. 11-18).
29. See the remarks in Orsi 2011: 206.
30. McMahon 1998; Orsi 2011: 193.

or incurved ledge rim. The earlier phase dates from terminal third millennium BC and it is recognisable from a few vessel types comparable to those retrieved from Trench D – such as a limited variety of carinated bowls with out-turned or thickened rim flattened on top, high carination and hemispherical body or wide-mouthed bag-shaped jars with a comb-incised decoration. A small carinated bowl with a high vertical grooved rim (Fig. 9), corresponding to Type 116 of the typology elaborated by P. Sconzo[31] for the Middle Euphrates region within the ARCANE project, is among the most widespread shapes of the Middle Euphrates and it

Fig. 9 - Carinated bowls with upturned, grooved rim from Trench E.

is mainly attested in Period EME 5.[32] This band-grooved rim, attested in the Upper Khabur at Tell Mozan and at Tell Barri[33], but also in Southern Mesopotamia as a characteristic shape of the Ur III period[34], was found in at least three out of five levels identified in Trench E[35].

Medium- and large-sized vessels found in one of the rooms (Locus 2020) of the building uncovered in 2016 and already identified by means of a geomagnetic survey carried out in the previous year[36], have not been restored and analysed so far. Some of these vessels, among which a complete jar and another one almost completely restorable, feature a particular decoration seldom attested thus far. The first jar (Fig. 10, LOG.E.1068-1, Jar 2033) – which still has a lump of clay attached just below the rim aimed at sealing the vessel's content – features an applied notched crescent-shapes rope, along with a ceramic raised circle, quite symmetrically placed on the shoulder. A similar decoration has been retrieved on jar rim shards from Tell Fisna's Level Va, in the Eski-Mosul region[37], and from Tepe Gawra' Stratum VI[38], dating

31. Sconzo 2015: 132-133, pl. 22:4-6.
32. According to radiocarbon dates, phase EME 5 lasted little bit more than one century, from 2196-2076 BC) (see Finkbeiner *et al*. 2015: 436).
33. Orsi 2011: tavv. 146:28 (Phase 4, Tell Mozan), 181:273 (Phase P, Tell Barri).
34. McMahon 2006: 82, Type O-22, pl. 94 with relevant bibliography.
35. These are "green numbers" 1055 (Level I or II), 1049 (Level IV), 1088 (Level V), 1089 and 1093 (Level V, Locus 2020).
36. Darras – Benech 2016: 22.
37. Numoto 1988, fig. 24: 206-207.
38. Speiser 1935: pl. LXXVI:5.

Fig. 10 - Jar 2033 (LOG.E.1068-1), with the details of decoration, from Trench E.

from the Early Dynastic IIIb/Akkadian period and the Akkadian period respectively. The second jar (Fig. 11, LOG.E.1076-1, Jar 2032) shows a deeply and spaced notched rope applied on shoulder with the edges facing downwards, representing most likely a snake. A third, large jar (LOG.E.1103-1, Jar 2037) shows the same pattern of decoration, but doubled and divi-

Fig. 11 - Jar 2032 (LOG.E.1076-1) from Trench E.

ded by a continuous applied notched rope. This kind of applied ridges seems comparable to that from Early Dynastic levels at Tell Sabra[39], in the Hamrin. These three jars seem to be particularly similar from both a morphological and a technological points of view, but further analysis is needed to refine their chronology and deeply investigate technological aspects.

Finally, as for the terminal phase of the third millennium BC, the differences observable between the vessel types attested in Trench D and Trench E may be connected with the different functions of the two areas (a pottery workshop in Trench D, and a building with storerooms in Trench E), but only further investigations during the next seasons of excavations at Logardan will allow us to clarify these aspects.

39. Tunca 1987: pls. 96:4 (Early Dynastic I), 98:3 (Early Dynastic I?).

Archaeological Survey of Girdi Qala North Mound

Clélia Paladre, Rateb al Debs and Adel Hama Amin

From October 3rd to October 5th, a surface survey was carried out on the North Mound of Girdi Qala (Fig. 1). The team was composed of four members: Régis Vallet, Rateb al Debs, Clélia Paladre and Adel Hama Amin. This surface survey allows us to realize the great damages caused by the field labour. Indeed, the site was heavily torn apart by deep passes made by the tractors. Thus, archaeological material and large stones were taking out of the ground causing great loss for the scientific knowledge (Fig. 2a and 2b). Nevertheless, these ravages had at least the merit of giving us an idea on the nature of the sediment (colours and textures) and the richness of this field.

Fig. 1 - Girdi Qala North Mound, seen from the Main Mound.

Fig. 2a - Deep ploughed land and stones removed from the ground by ploughing, at the centre of the mound, view from the East.

Fig. 2b - Other view of the site, from the West.

Methodology

The site was carefully subdivided into eight zones, numerated from I to VIII. We based this subdivision according to the results of the geomagnetic survey carries out by Lionel Darras, to the micro-topography of the mound and to preliminaries observations on the concentration of archaeological material and stones visible on the surface.

The extremities of the mound were isolated. It composed the zones I, II and VIII (the west extremity was subdivided into two parts because of the substantial extend of the area). The centre composed the zone IV. Topographically, it is the highest point of elevation of the site. The north face composed the zone III. The anomalies detected by the geomagnetic survey and the concentrations of material visible on the surface were also taken into account to establish this zone. The south face composed the zones V and VI (as with the zones I and II, we had to subdivided it face to its substantial extend). It was characterized as the exact opposite of zone III; very few archaeological materials were visible on the surface and only a small amount of anomalies was detected during the geomagnetic survey. Finally, a micro elevation just after the centre of the mound was isolated based on the high concentration of archaeological material and of the high number of anomalies detected during the geomagnetic survey. It composed the zone VII.

Results (Fig. 3)

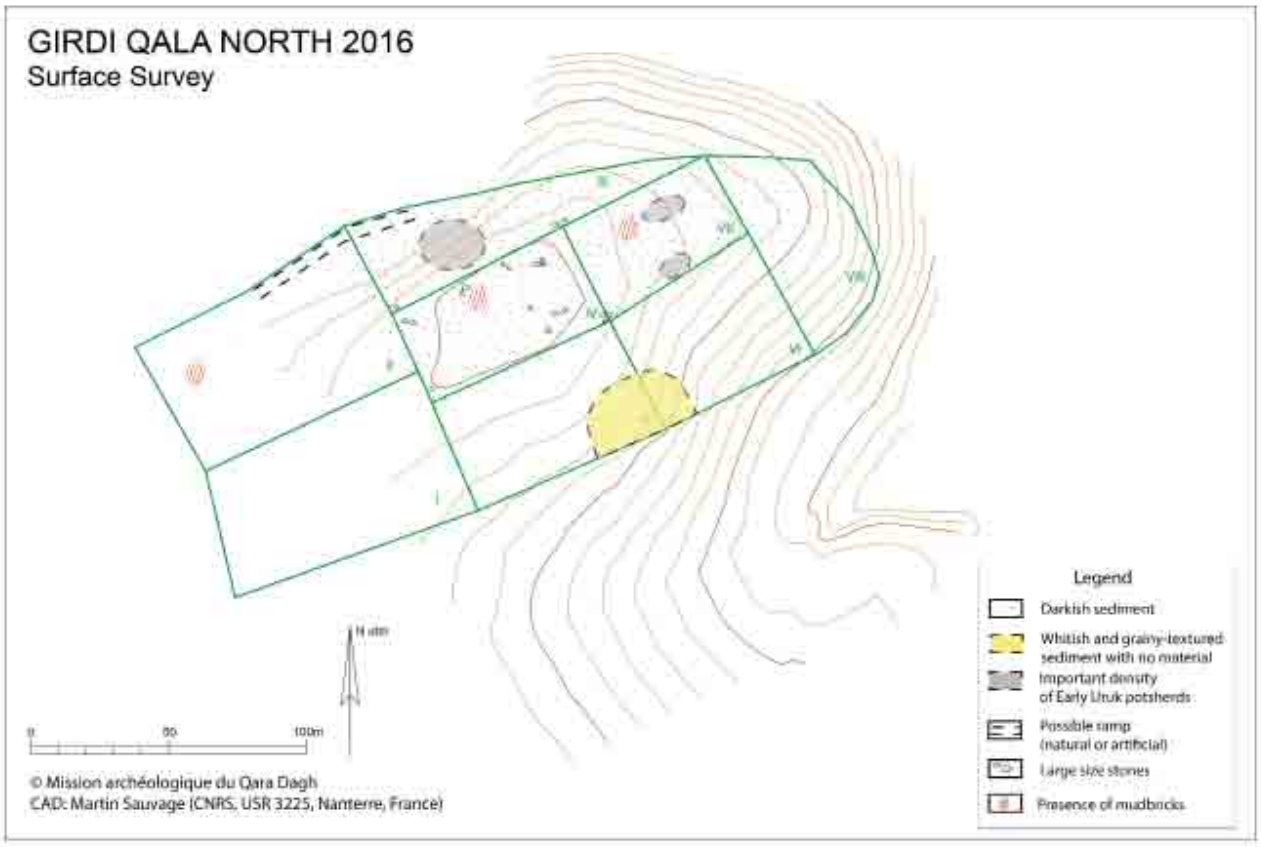

Fig. 3 - Plan of the archaeological survey, compilation of the observations made on the field.

Zone I and II

These zones provided an especially low proportion of materials (only 372 diagnostic sherds for zone I and 306 for zone II). The majority of the sherds are coming from the area near the zones III, IV and V. Just at the border with zone III and IV, a dark clay sediment characterized the ground. However, it has to be noted that some mudbricks fragments and some clayey sediment were observed in the western part of the zone II.

Zone III

It yielded an especially high proportion of materials (1036 sherds). In the centre, a high concentration of sherds and almost complete southern Uruk ceramics (BRB, Flower Pots and plates) and animals bones were observed. This concentration corresponds to an important anomaly detected during the geomagnetic survey. The entire ground was characterised by a darkish clayey sediment. Moreover, at the north-west extremity of the zone, a path along the slop, leading down to the river below, was visible. It could be an ancient ramp, artificial or natural (Fig. 4).

Fig. 4 - Picture of the possible ramp in zone III, view from the North.

Fig. 5 - Basalt weight from zone IV (GQD P 1205.1).

Fig. 6 - Painted ceramic pastille from zone IV (GQD TC 1205.1)

Fig. 7 - : *In situ* stone in zone IV, view from the West.

Zone IV

This zone delivered an average proportion of archaeological materials: 601 sherds, a door socket, a basalt weight (Fig. 5) and a painted ceramic pastille (Fig. 6). Here again, we can observe that the ground was composed of darkish clayey sediment and some mudbricks fragments could also be observed. Moreover, many stones (middle and large size) were scattered in the entire zone (Fig. 7).

Fig. 8 - Ceramic cone from zone V (GQD Tc 1206.1).

Fig. 9 - Stone mortar from zone VI (GQD P 1207.1).

Zone V

It was especially poor in archaeological material: only 142 sherds and a ceramic cone discovered next to the border with the zone IV (Fig. 8). The ground was composed of an easily distinguishable sediment; it was clearer and grainy-textured. Moreover, a large "patch" of much clearer sediment with no archaeological material was noted that in the southeast corner of this zone.

Zone VI

It provided an average proportion of archaeological material: 738 sherds and a stone mortar (Fig. 9). However, this proportion gives a distorted image of its occupation since the majority of the material is coming from the northern edge of the zone, along zone VII. A clear subdivision of this zone was also visible from a sediment point of view. In the north part (along zone VII), it was a darkish clayey sediment, whereas the rest of the surface displayed a light grainy-textured sediment. It has to be noted that the "patch" visible in the zone V also appears in this zone with the same characteristics.

Zone VII

This zone yielded an especially high proportion of materials (1003 sherds). Moreover, it showed two important concentrations of southern Uruk ceramics (BRB, Flower Pots and plates) and animals bones, that correspond to anomalies detected by the geomagnetic survey. The sediment was clayey and darkish.

Zone VIII

This last zone was especially poor in archaeological material (only 209 sherds). As in zone VI, the majority of the material comes from the north sector. Moreover, here again, a clear sedimental subdivision of the zone was visible, dark clay and in the north part, lighter and grainy-textured in the south part.

Conclusion (Fig. 10):

It seems clear that a distinction needs to be done between the north east part and the rest of the mound. The difference of sediment (darker and clayey), the crushing majority of southern Uruk ceramics and the geomagnetic results allow us to suggest the location of an Uruk site

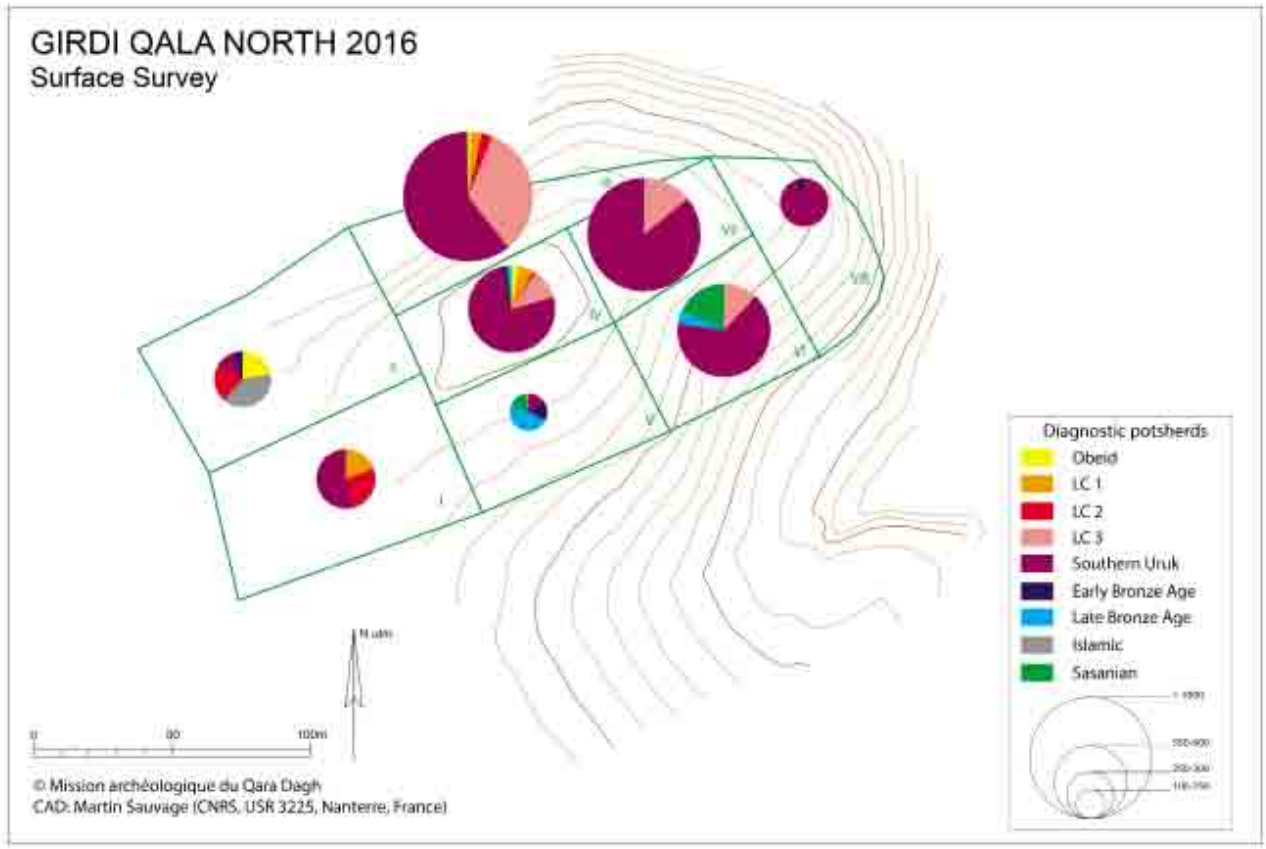

Fig. 10 - : Plan of the archaeological survey, results of the ceramic study.

in this part of the tell. It corresponds to the zone III, IV and VII. If zones I, VI and VIII delivered also a high proportion of southern Uruk ceramics, the majority of the Uruk material comes from the areas along the precedent zones. By there, these zones give us the southern limits of the Uruk site (Fig. 11), as confirmed by the geophysics (*supra*). If we add the fact that storage vessels and cooking wares were predominant and the discoveries of a stone mortar and a basalt weight, we can suggest a residential function to the Uruk occupation. This point is corroborated by the discovery in zones IV and V of a ceramic cone and a painted ceramic pastille, and by the excavations (Trench D, *infra*).

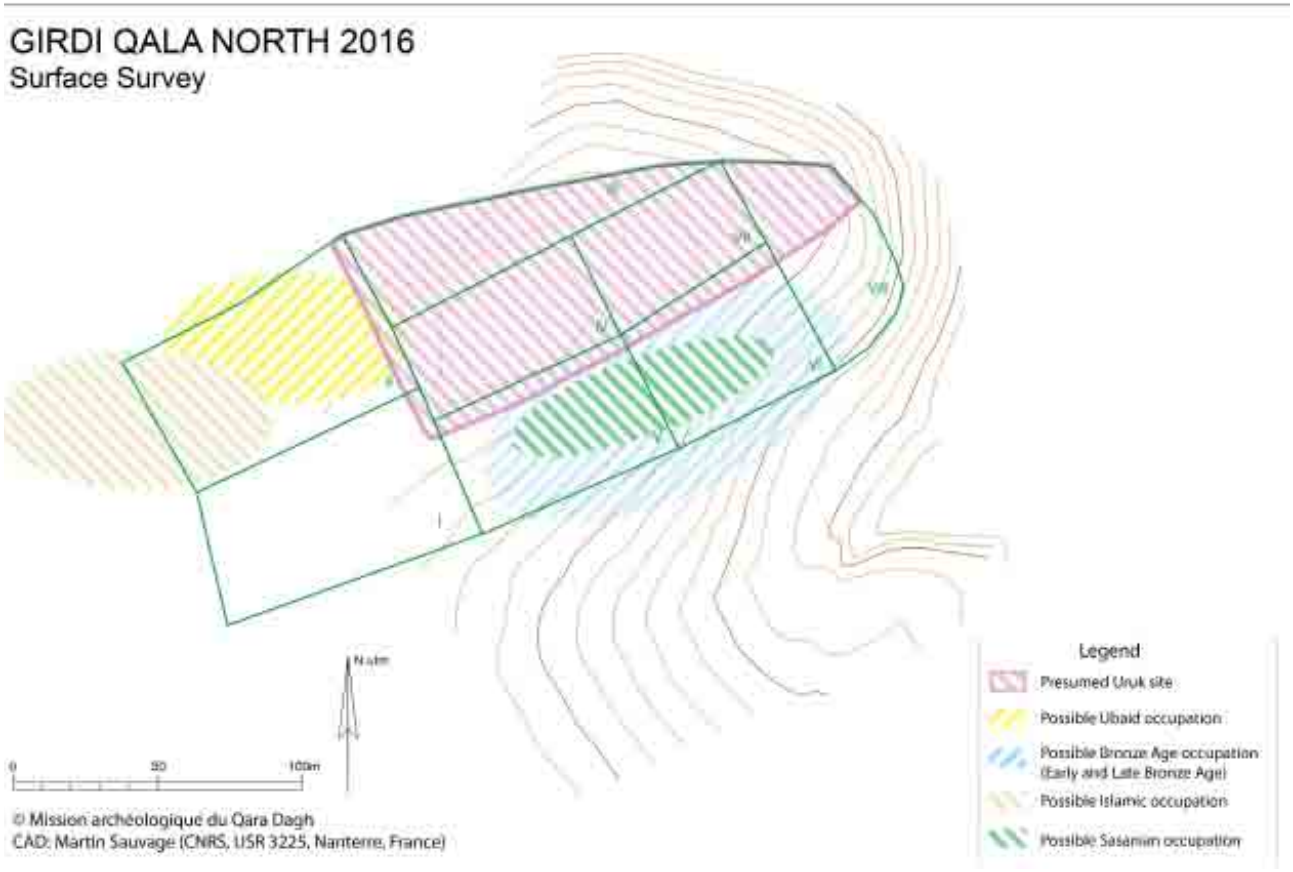

Fig. 11 - : Location of the possible ancient occupations at Girdi Qala North Mound.

However, some sectors have yielded a relatively significant amount of pottery dating back to others periods. Zone I delivered Islamic sherds while zones V and VI Sasanian fragments. An occupation of the north mound of Girdi Qala dating back to these periods would not be a surprise. Moreover, zones V and VI delivered an important amount of Bronze Age potsherds (Late and Early Bronze Age). Thus, we can suggest a scattered occupation of the south part of the mound at this period, especially if we refer to the quite different nature of the sediment (clearer and grainy-textured) compare to the north-east part. Last but not least, a high proportion of Ubaid and LC1 sherds was identifying in zone II and some were also attested in zones III and IV. This suggests an earlier occupation of the north-west sector of the mound[1].

1. For the chalcolithic material from Girdi Qala North Mound, see Baldi, *infra*.