

UNIVERSIDAD AUTÓNOMA DE MADRID

Proceedings of the 5th International Congress  
on the Archaeology of the Ancient Near East



**Universidad Autónoma de Madrid**

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Congress on the Archaeology of  
the Ancient Near East**

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La artesanía y el arte en el Oriente Antiguo

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### **Programme - Programa**

# The Late Chalcolithic settlement in the Leilan region of Northeastern Syria: A preliminary assessment

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## Abstract

The article summarises the results of the analysis of the 1995-collected 4th millennium B.C. ceramic assemblages from the Tell Leilan Regional survey. The fine periodisation adopted –based on well stratified ceramic sequences and recent comparative studies–, allows to follow settlement dynamics in detail. The first part of the period (LC 1-2) shows an increase in the number of village-sized settlements homogeneously distributed on the territory, followed, during the LC 3, by a phase of incipient nucleation, and, between the LC 3 and the LC 4, by the development of the first regional site-size hierarchy. The LC 4 phase is also marked by the appearance of southern Uruk ceramics in the area, possibly accompanied by a limited physical presence of foreigners. Most settlements appear to have been abandoned by the LC 5 period; and occupation remains sparse until the first centuries of the 3<sup>rd</sup> millennium.

**Keywords:** Late Chalcolithic, Uruk, ceramics, survey, settlement distribution, Tell Leilan, Khabur region, Syria.

## *Introducción: The Leilan Regional Survey*

The Tell Leilan Regional Survey under the direction of Prof. H. Weiss of Yale University has developed over several campaigns of fieldwork (1984-1997) and different stages of analysis of the collected ceramic material. The study area (Fig. 1) consists of a 30 km wide transect from the Turkish border to the North, to just below the Wadi Radd in southern direction, and corresponds to a total surface of ca 1900 sq km. Survey methodology has been presented elsewhere<sup>1</sup> and will not be dealt with in detail here: suffice it to remind that sites were located using a combination of: sites identified from previous surveys, maps from the area, and satellite imagery. Larger sites were divided into different collecting units, according to their topography. During the different stages of the survey, a total of 327 sites were visited (Fig. 2).

The analysis of the pottery assemblages collected during the final seasons (1995 and 1997)<sup>2</sup> of the survey is presently under way in the framework of a cooperation between the Yale University Tell Leilan project and the Ca' Foscari University Venice.<sup>3</sup> In the following, we will present an evaluation of the Late

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<sup>1</sup> L. Ristvet, In the Land of Apum: Settlement Patterns around Tell Leilan (2400-1700 BC), paper presented at the Third International Congress on the Archaeology of the Ancient Near East (3 ICAANE), Paris, April 19, 2002.

<sup>2</sup> For a short report of the 1997 season, see H. Weiss, Tell Leilan, in: H. Weiss (ed.), *Archaeology in Syria*, *AJA* 101, 1997, 97-148.

<sup>3</sup> The study of the material of the Late Chalcolithic, Middle-Assyrian/Mitannian, Neo-Assyrian, Hellenistic-Sasanian, and Islamic periods (1995 season) has been completed, while the Ceramic Neolithic and the 3<sup>rd</sup> millennium material of the same campaign are in the course of being processed.

Chalcolithic settlement in the region based on the evidence of 4<sup>th</sup> millennium ceramics from the 1995 survey season, whose study has just been completed in Venice,<sup>4</sup> integrated by preliminary data from field identifications of the 1997-collected material presently stored at the Leilan Project expedition house at Qahtaniya (Syria), whose study is planned for the next future.

### *Late Chalcolithic chronology and ceramic periodization*

The interpretation, in historical terms, of Late Chalcolithic developments in Northern Mesopotamia, and of the presence of the southern Uruk material culture in the region heavily depends on the period's relative and absolute chronology and internal periodisation. Until recently, 4th millennium B.C. relative chronology has been highly controversial, partially due to the effects of some long-lasting errors and misunderstandings, the most notable of which is the traditional synchronization of strata XI-VIII at Tepe Gawra with the southern Early/Middle/Late Uruk-Jemdet Nasr sequence. In the meanwhile, however, thanks to data from recent excavations and to the efforts of numerous scholars, a general agreement has been reached. The periodisation first proposed during the Santa Fe meeting organized by Mitchell Rothman<sup>5</sup> (henceforward, SAR) has been accepted, with slight variants, by the majority of scholars working in the field. Table 1 shows the equivalence of the SAR periodisation (with its approximate absolute dates) with different chronological schemes used for Late Chalcolithic Northern Mesopotamia,<sup>6</sup> and with the stratigraphical sequence of the main sites of the region (Leilan,<sup>7</sup> Brak,<sup>8</sup> Nineveh<sup>9</sup> and Hacinebi),<sup>10</sup> on which the present contribution is based.<sup>11</sup>

<sup>4</sup> See A. Brustolon, *Studio della ceramica del Tardo Calcolitico della ricognizione di Tell Leilan (Siria Nord-orientale)*, Venezia 2005 (unpublished MA thesis in «Conservazione dei Beni Culturali», Ca' Foscari University Venice, Academic Year 2003/2004). An extended version of the present contribution, by the same authors, is in preparation.

<sup>5</sup> M.S. Rothman (ed.), *Uruk Mesopotamia & its Neighbors: Cross-cultural Interactions in the Era of State Formation*, Santa Fe (NM), School of American Research Press, J. Currey 2001.

<sup>6</sup> Notably, those by R.V. Gut (*Das prähistorische Ninive. Zur relativen Chronologie der frühen Perioden Nordmesopotamiens* (BaF 19), Mainz am Rhein, Von Zabern, 1995) and by J. Oates (Tell Brak: The Fourth Millennium Sequence and Its Implications, in: J.N. Postgate (ed.), *Artefacts of Complexity: Tracking the Uruk in the Near East*, Warminster, British School of Archaeology in Iraq, 2002, 111-148).

<sup>7</sup> G.M. Schwartz, *A Ceramic Chronology from Tell Leilan: Operation 1* (Tell Leilan Research 1), New Haven, London, Yale University Press 1988.

<sup>8</sup> J. Oates, Tell Brak: The Fourth Millennium Sequence... cit; R. Matthews (ed.), *Excavations at Tell Brak. Vol. 4. Exploring an Upper Mesopotamian Regional Centre, 1994-1996*, Cambridge, McDonald Institute for Archaeological Research, British School of Archaeology in Iraq 2003, with earlier literature.

<sup>9</sup> R.V. Gut, *Das prähistorische Ninive...* cit.; ead., The Significance of the Uruk Sequence at Niniveh, in: M.S. Rothman (ed.), *Uruk Mesopotamia...*, cit., 17-48.

<sup>10</sup> J. Pearce, The Late Chalcolithic Sequence at Hacinebi Tepe, Turkey, in C. Marro, H. Hauptmann (eds.), *Chronologies des Pays du Caucase et de l'Euphrate aux IV—IIIe millénaires* (IFEA, Varia Anatolica 11), Paris, De Boccard, 115-144.

<sup>11</sup> For further details, see also E. Roava, A Tentative Synchronisation of the Local Late Chalcolithic Ceramic Horizons of Northern Syro-Mesopotamia, *Mesopotamia* 34/35, 1999/200, 175-199.



The chronological limits of this study correspond to those of LC 1-5 (i.e., from post-Ubaid to Late Uruk). Within these limits, our first purpose was to distinguish as many phases as practicable on the basis of unstratified material, in order to follow settlement dynamics in detail. The list of diagnostic types to be used (Table 2) was accordingly based on the triple criteria of being: 1) typical of the period, 2) easily recognizable and unmistakable for types of other periods, and 3) of wide occurrence. For each type, the main period of use was established through the comparative analysis of stratified evidence from different sites, and co-occurring types were grouped together. It is important to acknowledge that not all types have the same diagnostic value: some of them may have been in use for a longer period than others, and be therefore less useful for defining any chronological sub-phase. We tried to quantify this by attributing different diagnostic values to them (from 1 to 3, three being the highest one), and by taking these values into account in the attribution of individual sites to the different phases.

Our aim was, however, not only to adopt the finest possible chronological resolution, but also to analyse the interaction of different but contemporary (northern/local versus southern/exogenous) cultures. Therefore, we divided our material into the following six groups of co-occurring ceramic diagnostics (G1-G6), some of which are probably at least partially contemporary, but represent different cultural assemblages:

- Group 1 Types of the LC 1 = Post-Ubaid phase<sup>12</sup>
- Group 2 «Gawra» types of the LC 2 phase<sup>13</sup>
- Group 3 «Grey Ware» and other types of the early LC 3 = Uruk A phase
- Group 4 «Chaff-faced Ware» and local «Middle Uruk» types of the LC 3-4 phase
- Group 5 Southern «Middle Uruk» types of the LC 4 phase
- Group 6 Southern «Late Uruk» types of the LC 5 phase

The approximate date of the six groups with reference to the main periodisation schemes in use for Northern Mesopotamia is shown in Table 1, while Table 2 presents the contribution of each diagnostic type to the different groups.

### ***The Leilan Survey: distribution of Late Chalcolithic material***

The total number of identified Late Chalcolithic pottery fragments from the 1995 survey amounts to 947. They come from 28 sites (Fig. 3), that is ca 27% of the 104 which were visited during the 1995 season. Site dimensions are quite variable: 16 sites measure less than 5 ha (half of these actually less than 2 ha); 6 are between 5 and 10 ha, and only three exceed this limit: Tell Ghazal (n. 180), with 11.96 ha; Tell Khodr (n. 123), with 12.25 ha, and finally al-Andalus (n. 212), with 64 ha – to these, we can add Leilan itself, on the basis of excavated material from Operation 1.<sup>14</sup>

<sup>12</sup> The definition of the groups integrates both the SAR, and Gut's and Oates' terminologies, which, for some sub-periods at least, appear to us to better reflect the period's ceramic assemblages.

<sup>13</sup> No distinction between Gawra A and B was possible on the basis of the 1995 Leilan survey material, since decorated pottery, on which this distinction is mainly based, was virtually absent.

<sup>14</sup> G.M. Schwartz, *A Ceramic Chronology...*, cit.

It has to be considered that all the larger sites are multi-period settlements, whose total dimensions not necessarily derive only from their Late Chalcolithic occupation. With a few exceptions, however, there seems to be a good correspondence between site size and number of Late Chalcolithic collected sherds, and in most cases the Late Chalcolithic material was found in different sectors of the mound, i.e. over its whole surface. In particular, all the three sites measuring more than 10 hectares yielded a considerable amount of material (more than 20 sherds), and may be therefore considered as possible centres. We can thus assume the presence within the survey area of a number of LC local centres of relatively large size (between 5 and 10 hectares if not larger), including Leilan itself. All the largest settlements are located on rather high mounds; most, though significantly not all of them (see e.g. al-Andalus, n. 212, and Sultan el Tellul, n. 223),<sup>15</sup> are located along the course of present or ancient *wadis*.

The distribution of the sites on the territory is on the whole rather homogeneous; an apparent «empty spot» in the south-eastern part of the surveyed region is going to disappear once the data from the other seasons will be included in the study, as shown in Fig. 4. It is especially interesting to notice that the Wadi Radd area, a partially swampy region located in the agriculturally marginal sector at the extreme South of the survey area, which is almost devoid of settlement in most periods, is not only occupied during the Late Chalcolithic, but appears to be the seat of some of the largest centres. In the northern part of the surveyed area, the population appears to be more evenly distributed on the territory, and the average size of sites is smaller. Small-sized sites, and/or sites which yielded a small number of sherds, are especially numerous here. They tend to cluster around larger settlements: e.g. Nasr (n. 92) and Abu Farah (n. 60), and especially around Leilan (n. 1), which by this time was already the most important centre in the area, and was probably at the top of a small regional settlement system.

### *Trends of settlement development within the Late Chalcolithic period*

We will now turn our attention to the distribution on the territory of the different groups of diagnostic, and therefore to settlement development within the Late Chalcolithic period.

The LC 1 (post-Ubaid) occupation has been defined on the basis of Group 1 diagnostics (Fig. 5), i.e. mainly of «Coba Bowls» and related types («Flint-scraped bases») (types **C 1**, **B 1**), possibly associated with types which continue in use during the following LC 2 phase (types **C 3**, **C 5**), but neither in association with the most typical diagnostics of the latter, nor associated with Ubaid painted pottery. This phase would be represented by 6 sites; since, however, most of its diagnostics continue in use in the following phase, evidence for it is rather dubious.

The LC 2 (Gawra) phase is represented by Group 2 diagnostics (Fig. 5). These include some very distinctive types –Double-rimmed bowls, fine «bubbled» ware,

<sup>15</sup> Consider, in this respect, that both sites are located in the southernmost part of the survey region, in an area where ground-water is close to the surface, and which had access to the Wadi Radd swamp water resources (see L. Ristvet, In the Land of Apum...cit.; L. Ristvet, H. Weiss, The Habur Region in the Late Third and Early Second Millennium B.C., in Winfried Orthmann (ed.), *The History and Archaeology of Syria. Vol. 1*, Saarbrücken: Saarbrücker Druckerei und Verlag, in press ([http://research.yale.edu/leilan/RistvetWeissHAS\\_10.pdf](http://research.yale.edu/leilan/RistvetWeissHAS_10.pdf)).

etc.– (types **C 2**, **C 3**, **C 6** (Fig. 15a), **O 2**, and **F 3** (Fig. 15b), and less distinctive contemporary types, either continuing from the previous phase (types **C 1**, **B 2**), or continuing into the following one (types **F 1**, **F 2.1**).

All together, the sites attributed to this early section of the Late Chalcolithic (LC 1-2) amount to 21 (Fig. 6). Settlements are distributed among all size classes, with a significant component of small mounds. Furthermore, all the larger mounds continue being in use during the following (LC 3 and 4) phases. We can therefore conclude that the prevailing pattern is probably one of evenly distributed villages, with no clear evidence of settlement hierarchy.

The following settlement phase is represented by the distribution of our Group 3 diagnostics (Fig. 7). These define a ceramic horizon, first singled out by R. Gut<sup>16</sup> under the name of Uruk A, which marks the transition between the Gawra assemblage and the typical northern «Chaff-faced Ware» assemblage of the LC 3-4 periods, and is to be dated in the early LC 3 period.

This horizon is especially characterised by the presence of «Uruk Grey Ware» (type **F 2**) with its distinctive morphological types (**F 2.1** (Fig. 15c), **F 2.2**) and, in addition to these, by early variants of two typical «Chaff-faced Ware» types: the Casserole and the Hammerhead rim bowl (types **C 8.1**, **C 9.1**), occasionally associated to other less characteristic types (**C 2**, **C 3**, **O 2**, **B 1**, **F 1**, **C 8**, **C 8.2**, **C 9**, **C 9.2**, **O 3**, **O 5**). According to Gut, this horizon would also mark the first appearance in the North of southern types, namely the Bevelled-Rim Bowl. This hypothesis could not be tested on the Leilan survey material, since in no case BRB have been found exclusively associated with Group 3 types and not with later types as well.

Group 3 types were found at 14 sites (Fig. 8), 8 of which continue from the previous phase, and 4 of which continue into the following one. In comparison with the previous phase, there is a clear decrease, especially in the region around Tell Leilan, in the number of smaller size sites, which may suggest a phenomenon of incipient nucleation.

This trend becomes even more evident in the following phase, represented by Group 4 diagnostics (Fig. 9). These mark the distribution of the local «Chaff-Faced Ware» assemblage, which has been variously called «Northern Middle Uruk» or «Early Middle Uruk», and is represented, among others, at Tell Leilan V, and Hacinebi B1. The most common diagnostic element of the assemblage is «Chaff-faced Ware» (type **F 1**) with its whole range of characteristic morphological types: Casseroles and Hammerhead rims (types **C 8** (Fig. 15d) and **C 9**) in their «mature», more accentuated variants (**C 8.2** and **C 9.2**), jars with sharp interior angle and with internally corrugated rim (types **O 3** (Fig. 15e), **O 5**), etc. (types **C 5** and **F 4**). Continuity, in both wares and morphological repertoire, with the previous assemblage is quite high, and the precise chronological limit between them is somehow indistinct – it should be placed somewhere within the LC 3 phase. On the other hand, it is sure that during the LC 4 phase the same assemblage continues in use, now associated with an increasing number of southern Uruk types (e.g. at Leilan IV, and Hacinebi B2).

Group 4 diagnostics have been found at 12 sites (Fig. 10). The tendency toward increasing site size versus decreasing number of occupied sites contin-

<sup>16</sup> R.V. Gut, *Das prähistorische Ninive...*cit.

ues: the settlement pattern seems now to be centered around three foci, represented by the larger sites, located on the Wadi Breibitch (around Ghazal, n. 180, and Sharmouk, n. 59), on the Wadi Jarrah (around Leilan, n. 1) and on the Wadi Radd (Khodr, n. 123, and Sultan el Tellul, n. 223) respectively. In general, small sites are completely missing in the southern half of the survey area, while a number of them is still present to the North, along the minor tributaries of the Wadi Jarrah.

Types of southern origin (Groups 5 and 6) (Fig. 11) were quite rare in the examined material. The types which better define the earlier «Middle Uruk» sub-phase –conical bowls with pouring lip, short straight spouts, etc.<sup>17</sup>– and respectively the «Late Uruk» sub-phase –droopy spouts, elongated nose-lugs, etc.–,<sup>18</sup> were absent from the 1995 Leilan survey material. Groups 5 and 6 are therefore composed of the same diagnostic types: Bevelled Rim Bowls (type **C 4**), Reserved Slip Ware (type **D 1**) (Fig. 15f), incised and impressed decoration (type **D 2**) (Fig. 15g), Jars with sharp-angled rim (type **O 4**) (Fig. 15f, g), which occur in both phases. The autoptic analysis of the individual sherds, as well as the fact that in all occasions they appear to be associated with larger amounts of Group 4 diagnostics, make us however incline toward a LC 4 date for the majority of them.

Southern types have been recovered only at five sites (including Leilan) (Fig. 12). With one exception, they all come from larger settlements (Sultan el Tellul, Ghazal, Sharmouk, and Leilan) which are the same which emerged as local centres during the previous phase. Among them, Sharmouk (n. 59) stands out both for the number (more than 20) and the variety of southern types. In spite of its not very large size (6 ha), this site yielded a huge number of Late Chalcolithic sherds (more than 500) belonging to all our groups, and was certainly a small local centre during the IV millennium B.C. Although the Late Chalcolithic material was distributed over the whole mound, southern types have been found only in its southern sector (Fig. 13). This may suggest the presence of a small southern community within a largely local settlement, like, e.g. at Godin Tepe<sup>19</sup> and Hacinebi.<sup>20</sup> It is also important to notice that Sharmouk is located rather near to Tell Ghazal (n. 180), a larger settlement occupied during the very same periods. If the preliminary data from the 1997 survey (Fig. 14) are also taken into consideration, two further sites can be added to the map. Both are located in the Wadi Radd area: this could support the hypothesis of a special concentration of southern elements in this area.

<sup>17</sup> A typical ceramic inventory of the «Middle Uruk» phase is that from Tell Sheikh Hassan (J. Boese *Ausgrabungen in Tell Sheikh Hassan I*, Saarbrücken, Saarbrücker Druckerei und Verlag 1995, pp. 258-271, figg. 1-14).

<sup>18</sup> The Late Uruk inventory is still exemplified by the Habuba Kabira material (D. Sürenhagen, *Untersuchungen zur Keramikproduktion innerhalb der späturukzeitlichen Siedlung Habuba Kabira-Süd in Nordsyrien*, *Acta Praehistorica et Archaeologica* 5/6, 1974/75, 43-164).

<sup>19</sup> H. Weiss, T.C. Young, *The Merchants of Susa: Godin V and Plateau-Lowlands Relations in the Fourth Millennium B.C.*, *Iran* 13, 1975, 1-17.

<sup>20</sup> G. Stein, *Indigenous Social Complexity at Hacinebi (Turkey) and the Organization of Uruk Colonial Contact*, in: M.S. Rothman (ed.), *Uruk Mesopotamia & its Neighbors...* cit., 265-305.

***Conclusions: the 1995 survey data in the context of present research, and their historical interpretation***

To sum up, the data from the 1995 survey (Table 3) allow us to propose for the Leilan region a development, during the 4th millennium B.C., characterised by different phases of growing complexity, followed by an apparent collapse.

The first phase (LC 1 and 2 periods) shows an increase in the number of village-size sites homogeneously distributed on the territory, according to the traditional settlement pattern of the Ceramic Neolithic and Chalcolithic period. Later on, through a phase of incipient nucleation (early LC 3), a phase is reached, characterised by local proto-urban developments (LC 3-4), where the number of occupied sites decreases, but their average dimensions increase considerably. During the LC 4 these local developments are followed by, and partially coupled with, a limited intrusion of southern elements. By the end of the period (during the LC 5), the latter is followed, in its turn, by a rather deep crisis, involving the abandonment of most settlements in the area, which continues to be under-populated during the first centuries of the 3rd millennium B.C., as well.<sup>21</sup>

The fine periodisation adopted for the Leilan survey material thus allows us to provide a model, which may be tested and refined in the future on material from elsewhere in the Jazirah. Until now, no direct comparison is possible with the results of other surveys in the neighbouring areas,<sup>22</sup> since these generally distinguish only between local Late Chalcolithic material (our Groups 1, 2, 3 and 4) and southern Uruk material (our Groups 5 and 6). It is however clear that in all cases, in agreement with our results: a) the overwhelming majority of settlements are local in culture, and the southern presence in the region is rather limited, and b) an indigenous trend toward increased settlement size and urbanisation is evident in the earlier half of the fourth millennium, before any perceptible southern influence. This cumulative evidence from landscape studies provides the framework into which the early urban developments now attested by excavations at Tell Brak<sup>23</sup> Tell Hamoukar<sup>24</sup> and Tell Leilan itself can be better understood.

<sup>21</sup> For a preliminary evaluation of the early 3rd millennium settlement patterns in the Leilan survey region, see H. Weiss, *Ninevite 5 Periods and Processes*, in E. Rova, H. Weiss (eds.), *The Origins of North Mesopotamian Civilization: Ninevite 5 Chronology, Economy, Society* (Subartu 9), Turnhout, Brepols 2003, 593-624, esp. 601, fig. 12. The analysis of the relevant ceramic material is still in process.

<sup>22</sup> For the Khabur region see: D.J.W. Meijer, *A Survey in Northeastern Syria* (PIHANS 58), Leiden, Nederlands Historisch-Archeologisch Instituut 1986; B. Lyonnet, *Reconnaissance dans le Haut Habur: étude de la céramique*, in J.-M. Durand (ed.), *Recherches en Haute Mésopotamie. Tell Mohammed Diyab. Campagnes 1990 et 1991* (Mémoires de N.A.B.U. 2), Paris 1992, 103-132; J. Eidem, D. Warburton, *In the Land of Nagar: A Survey around Tell Brak, Iraq* 58, 1996, 51-64 (Tell Brak area); J. Ur, *Urbanism and Society in the Upper Khabur Basin*, University of Chicago 2004, 132-170 (Hamoukar area), 170-171 (Tell Beydar area). For North-western Iraq, see: T.J. Wilkinson, D.J. Tucker, *Settlement Development in the North Jazira, Iraq*, Warminster, British School of Archaeology in Iraq 1995; for the Balikh region of North-eastern Syria: P.M.M.A. Akkermans, *Archäologische Geländebegehung im Bali~-Tal*, *AJO* 31, 188-190.

<sup>23</sup> Cfr. R. Matthews (ed.), *Excavations at Tell Brak. Vol. 4...*, cit., chapters 3 and 4.

<sup>24</sup> Mc.G. Gibson et al., *First Season of Syrian-American Investigations at Hamoukar, Hasekeh Province, Iraq* 64, 2002, 45-68.

To conclude, we can briefly examine the question of the relation between «the local» and «the southern» from the point of view of the Leilan survey data. As for the date of the southern presence, this seems to us to be, as we explained before, mainly of «Middle Uruk» rather than of «Late Uruk» date, although a continuation into the following phase cannot be excluded. Be that as it may, the southern penetration certainly occurs into an area already characterized by a significant degree of endogenous complexity. In no cases it takes the form of a newly founded «colony»-type settlement, and only in one case (Sharmouk) possibly of a small enclave of foreigners within a local settlement. The prevailing pattern appears to be that of a limited presence of southern pottery, or of imitations thereof, maybe not always accompanied by a physical presence of foreigners,<sup>25</sup> on sites characterised by a prevalingly local assemblage.

In the northern part of the survey area the southern presence appears to be scanty, and limited to the largest sites, whereas a special concentration of southern material can be noticed in the southernmost part of the region, i.e. in the Wadi Radd area. A similar concentration of «Late Uruk» sites in the southern part of the survey area was noticed by Wilkinson and Tucker in the Tell al-Hawa region.<sup>26</sup> This fact may be part of a general tendency of the Southerners to settle along the southern borders of the northern regions, maybe to avoid the areas more densely settled by the local population. If, on the other hand, as it has often been suggested, one of the reasons for the Uruk expansion in the North was the control of trade and trade routes, this distribution of southern material may mark the course of a route which run from the Tigris, through the Iraqi Jazira and the Wadi Radd region, to Tell Brak, which not by chance represents the most important site with a significant southern component in the Khabur region. North-South routes following the course of the *wadis* Breibitch and Jarrah may in this case have provided the communication with the centres located to the North, whose culture maintained a distinctly local character.

In more general terms, the number of settlements, both southern and local, located in the Wadi Radd area, suggests the presence, by the mid-4th millennium B.C., of relatively favourable climatic conditions.<sup>27</sup> The unsubstantial LC 5 and post-LC 5 occupation, and the concentration of the early 3rd millennium settlement in the northern part of the survey area<sup>28</sup> would be in accordance with the hypothesis<sup>29</sup> of a worsening of these conditions by the last centuries of the 4th millennium.

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<sup>25</sup> This may explain the presence of a few «hybrid» types, mainly southern shapes and decorations on local chaff-faced fabrics.

<sup>26</sup> T.J. Wilkinson, D.J. Tucker, *Settlement Development...* cit., 43 f.

<sup>27</sup> Notice that a similar expansion of settlement into this generally underutilised, agriculturally marginal area, has been reported for the the Akkadian (Leilan IIB) period (see L. Ristvet, In the Land of Apum... cit.)

<sup>28</sup> H. Weiss, *Ninevite 5 Periods and Processes...* cit., 601, fig. 12.

<sup>29</sup> Suggested in H. Weiss, R.S. Bradley, What Drives Societal Collapse?, *Science* 291, Number 5504, 2001, 609-610; H. Weiss, *Ninevite 5 Periods and Processes...* cit.

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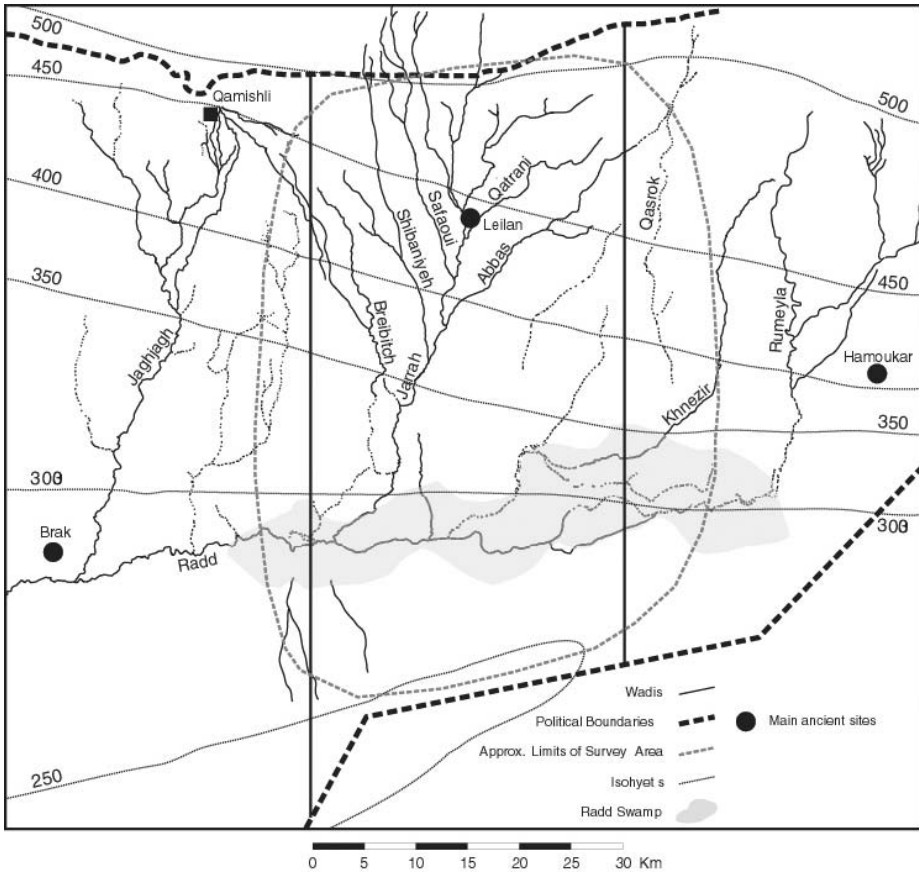
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**Fig. 1: The Tell Leilan Survey area.**

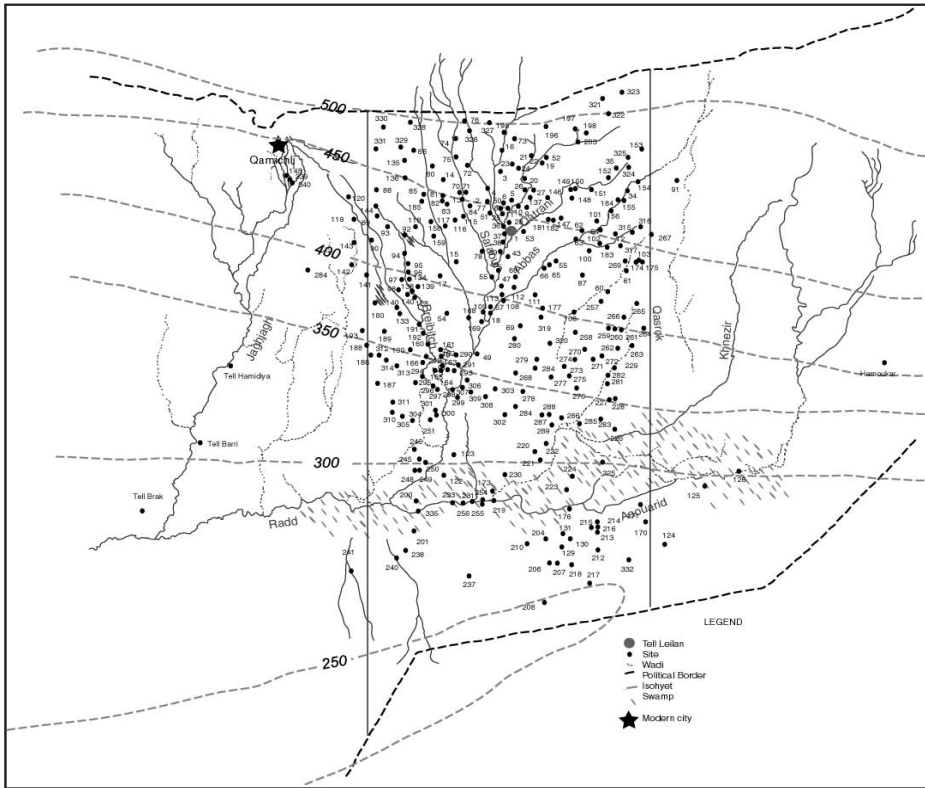


Fig. 2: The Tell Leilan Survey area with location of the surveyed sites.

APPROX. ABSOLUTE DATES B.C.	SAR	GUT	OATES	LEILAN	BRAK	NINEVEH	HACINEBI	GROUPS OF DIAGNOSTICS
3100	LC 5	Late Uruk	Late Uruk		TW11-12	-31-20 Nineveh 4		6
-				←				
3300								
3300			Southern MiddleUruk	IV	TW 13	-37-31 Nineveh 3	B2	5 (4)
-	LC 4	Uruk B	Northern MiddleUruk	V	TW 14-16 HS 1, 5-1		B1	4
3500								
3500								
-	LC 3	Uruk A		→	HS1, 6 TW 17-16? CH 9-12	-45-37 Nineveh 3	A	4
3700								
3700								
3700			Northern Early Uruk		HS 6 TW18-19 CH 13-14	-59-45 Nineveh 3 hiatus ?		2
4000	LC 2	Gawra A						
4000								
4000	LC 1	Terminal Ubaid	Post- or Terminal Ubaid	IVb	CH 15-20 HS 6	-60		1
-								
4200				↓				

Table 1: Chronological chart.

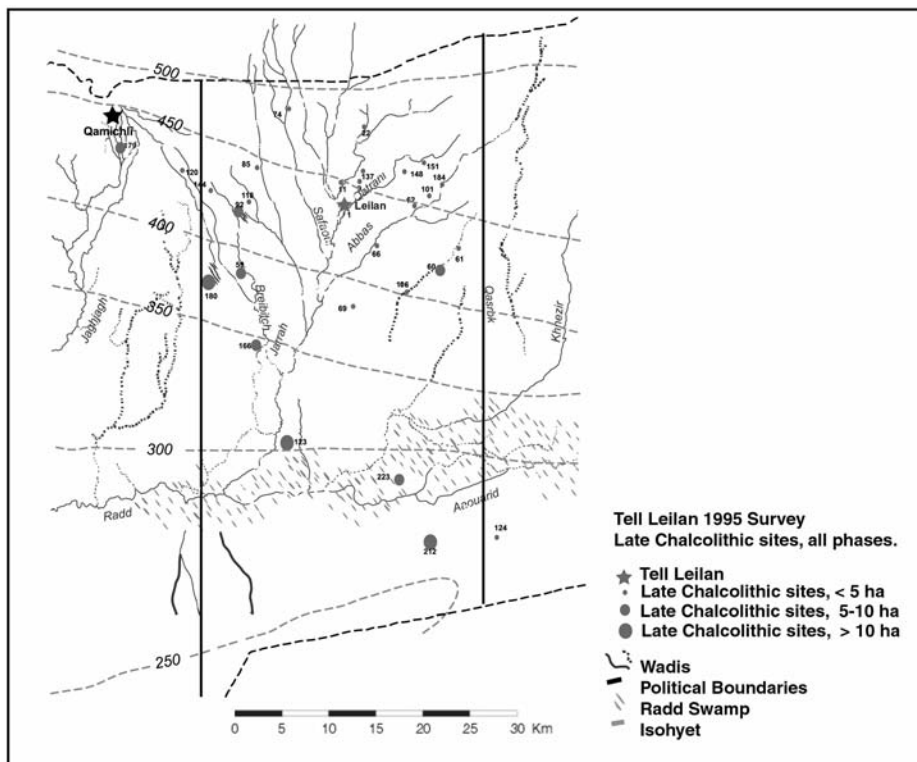


Fig. 3: Tell Leilan 1995 Survey. Late Chalcolithic sites, all phases.

Code	Description	Diagnostic Value					
		G 1	G 2	G 3	G 4	G 5	G 6
		LC 1	LC 2	LC 3	LC 3-4	LC 4	LC 5
		Group		Date			
<b>O 1</b>	Generic jar rim or neck	1	1	1	1	1	1
<b>O 2</b>	Hole - mouth jar with slightly raised rim		2	1			
<b>O 3</b>	Jar with sharp interior angle			1	2		
<b>O 4</b>	Jar with sharp - angled rim				3	3	
<b>O 5</b>	Jar with internally grooved rim			1	3		
<b>B 1</b>	Flattened or slightly curved flint - scraped base		2	2	1		
<b>F 1</b>	Chaff-faced ware		1	2	3		
<b>F 2</b>	Uruk Grey Ware				3		
<b>F 2.1</b>	Hole-mouth jar with slightly raised rim, in Uruk Grey Ware		1	3			
<b>F 2.2</b>	Bowl with slightly beaded rim, in Uruk Grey Ware				3		
<b>F 3</b>	Fine ware of the LC 2 period		3				
<b>F 4</b>	Fine wares of the later fourth mill. B.C.			2	2	2	2
<b>D 1</b>	Reserved Slip decoration					2	3
<b>D 2</b>	Southern Uruk incised-impressed decoration					3	3

Code	Description	Diagnostic Value					
		G 1	G 2	G 3	G 4	G 5	G 6
		LC 1	LC 2	LC 3	LC 3-4	LC 4	LC 5
		Group		Date			
<b>C 1</b>	Coba Bowl and related types	3	2				
<b>C 2</b>	Bowl with int. thickened, bev. rim with triangular profile		3	1			
<b>C 3</b>	Wide Flower Pot	1	3	1			
<b>C 4</b>	Bevelled Rim Bowl			1	3	3	
<b>C 5</b>	Bowl with simple inverted rim	1	1	2	1		
<b>C 6</b>	Deep double-rimmed bowl		3				
<b>C 7</b>	Simple - rimmed bowl	1	1	1	1	1	1
<b>C 8</b>	Casserole			1	2		
<b>C 8.1</b>	Casserole with simple or slightly thickened rim			3	2		
<b>C 8.2</b>	Casserole with accentuated rim			1	3		
<b>C 9</b>	Hammerhead bowl			1	2		
<b>C 9.1</b>	Bowl with simple hammerhead rim			3	2		
<b>C 9.2</b>	Bowl with accentuated hammerhead rim			1	3		

Table 2: List of diagnostic types, with proposed date and diagnostic value.

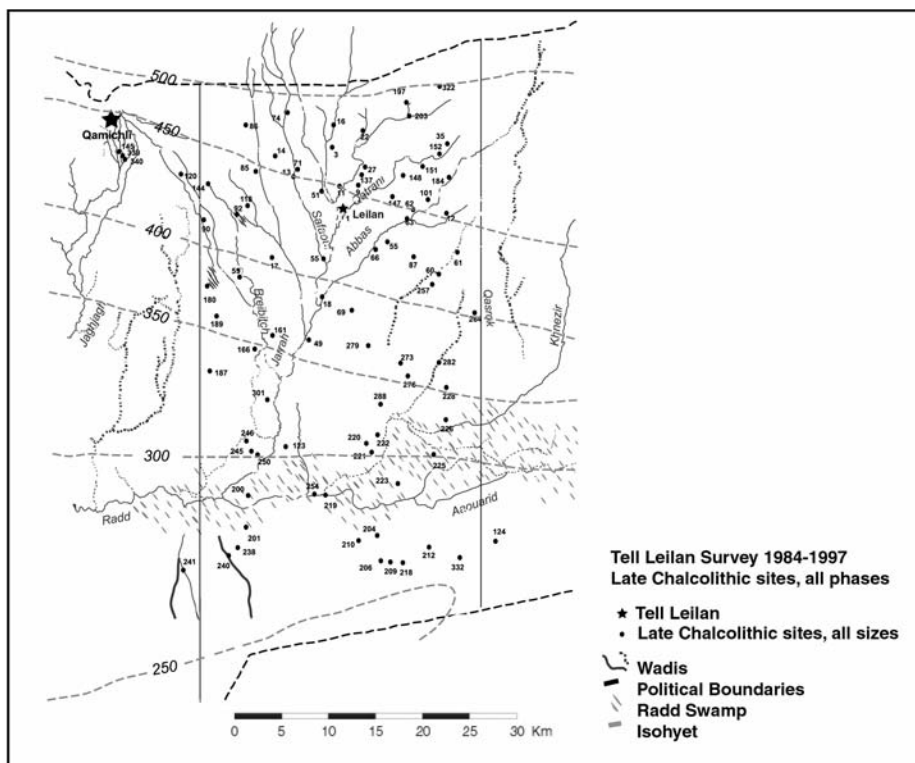
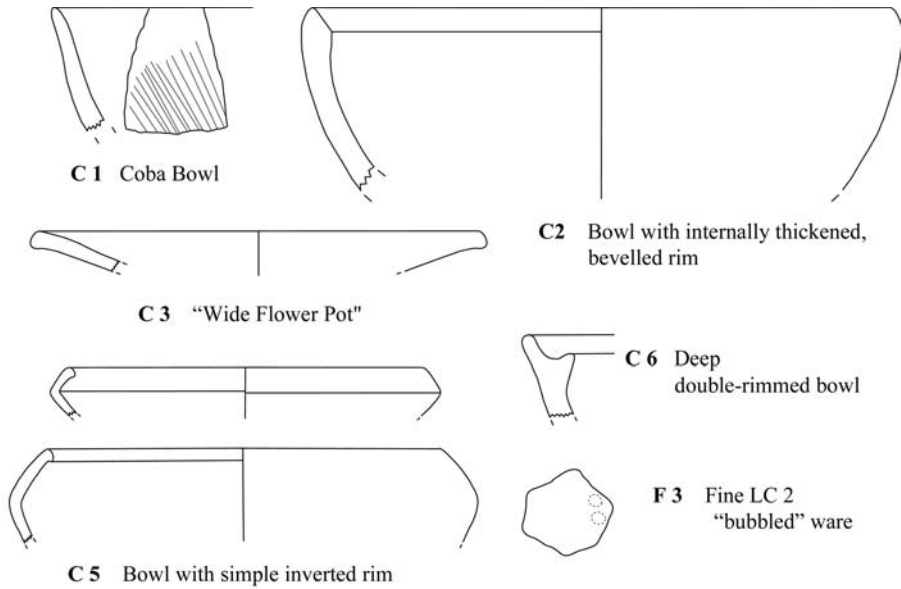


Fig. 4: Tell Leilan 1984-1997 Survey. Late Chalcolithic sites, all phases.



**GROUP 1: LC 1 (post-Ubaid) types (4200-4000 B.C. ca)**

(Gawra XII, Leilan late VIb, Brak CH 15-20, Hammam et-Turkman IVD/VA)

**GROUP 2: LC 2 (Gawra) types (4000-3700 B.C. ca)**

(Gawra XIA-IX, Nineveh MM -59 -45, Brak CH 13-14, TW 18-19, HS 6, Hammam et-Turkman VA/early VB)

**Fig. 5.** LC 1 and LC 2 diagnostic types.



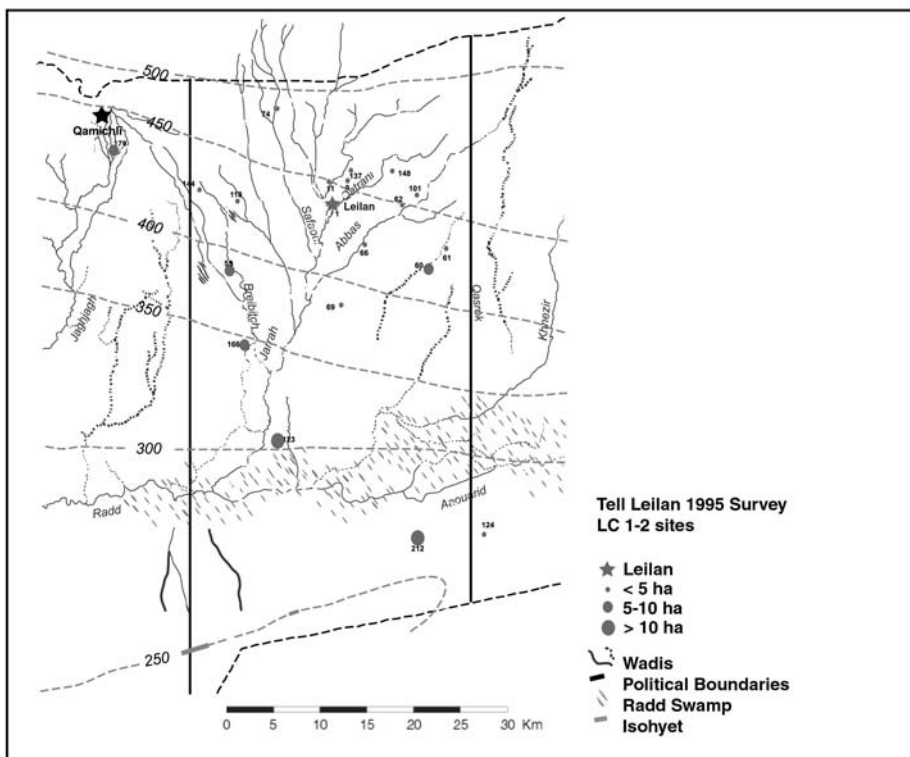
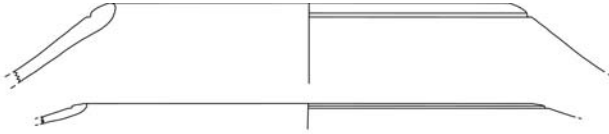


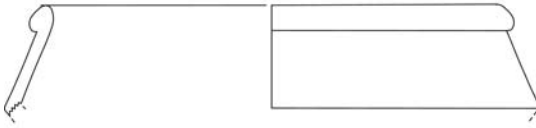
Fig. 6: Tell Leilan 1995 survey. Late Chalcolithic 1-2 sites.

Site Number	Size	Site name	Groups of Diagnostics					
			1	2	3	4	5	6
61	3.042	Abu Hajjeira	x	x		x		
101	0.785	Abbas		x				
60	6.38	Abu Farah		x				
212	64	al-Andalus		x	x			
120	1.08	Arbat			x	x		
144		Awena		x		x		
137	1.33	Barham		x				
124		East of Bagheriya	x	x	x			
180	11.96	Ghazal			x	x	x	x?
22	3.75	Gir Dahul			x			
151	4.8	Gre Pre 1			x	x		
148	1.23	Gunduk Said		x	x			
85	3.08	Khazne			x			
123	12.25	Khodr	x	x	x	x		
69	3.75	Marjan		x?				
166	7.5	Mathluteh Tawila		x	x			
62	1.77	Nabua		x		x		
92	9	Nasr			x			
184	1	Qubur al Harb					x	x?
9	4.99	Rehaya 1		x?				
11	3.48	Rehaya 3		x?				
74	4	Shair	x	x		x		
59	6	Sharmoukh	x	x	x	x	x	x?
118	1.2	Shibaniyeh		x		x		
66	1	Sufiyah		x	x			
223	7.8	Sultan el Tellul				x	x	x?
179	6.4	Tartab 3	x	x	x			
106	4.08	Toueiyel				x		

Table 3: The LC sites of the 1995 survey, with groups of diagnostics attested.



F 2.1 Hole-mouth jar with slightly raised rim, in "Uruk Grey Ware"



C 8.1 "Casserole" with simple or slightly thickened rim



C 9.1 Bowl with simple "Hammerhead" rim

**GROUP 3: "Grey Ware" and other types of the early LC 3 = Uruk A phase (3700-3600/3500 B.C. ca)**  
 (Gawra VIII, Nineveh MM -45 -37, Hacinebi A, Tell Brak H1, 6, TW 17-16 (?), CH 9-12, and Hammam et-Turkman late VB)

Fig. 7: Early LC 3 diagnostic types.

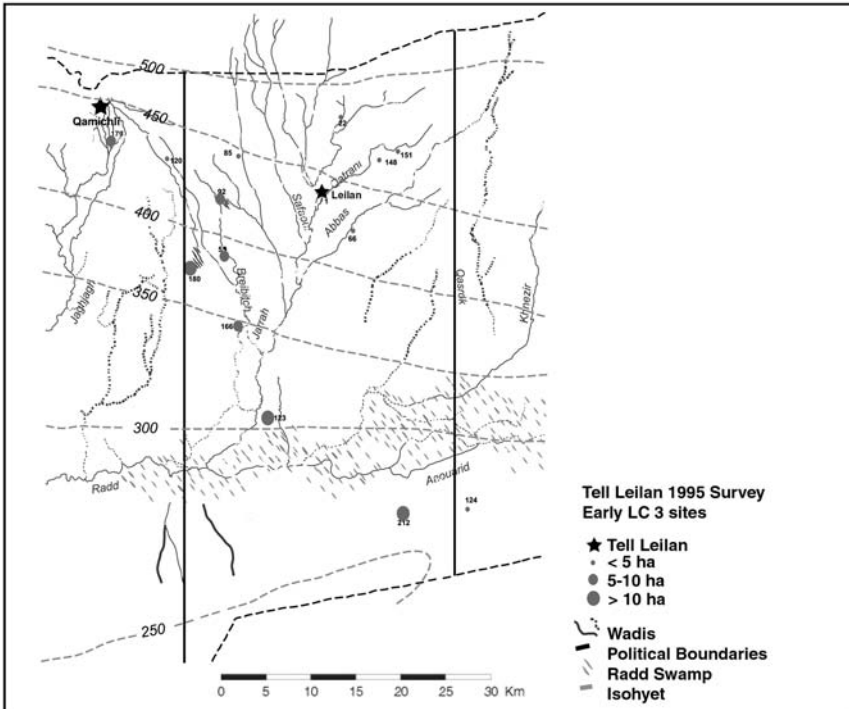
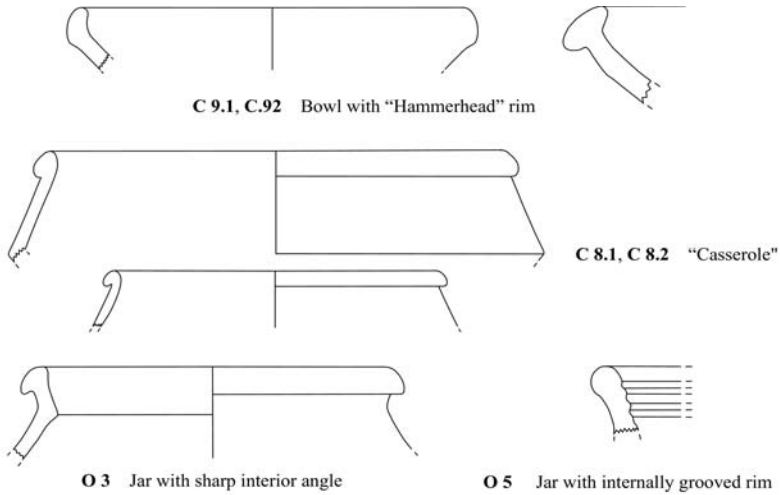
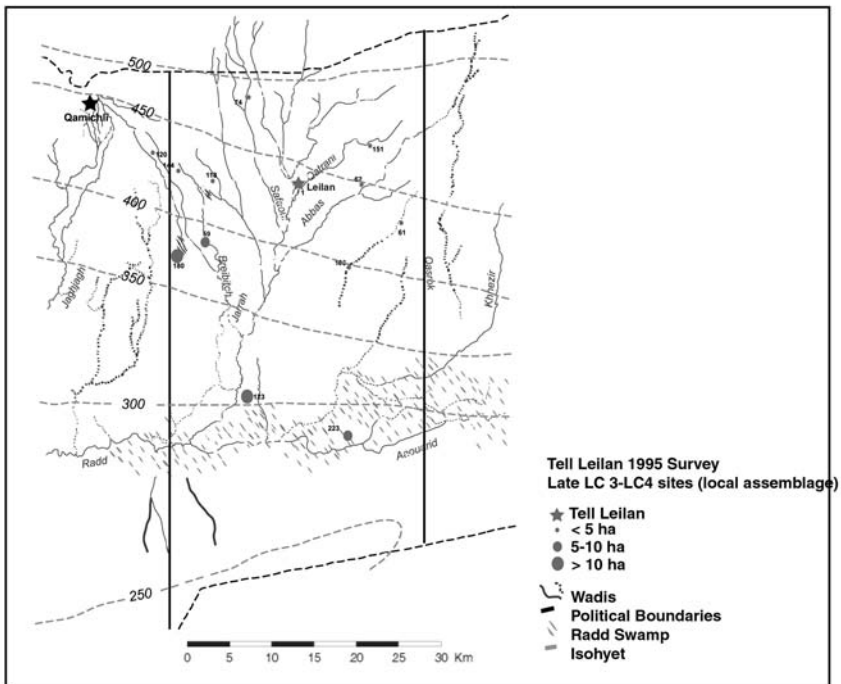


Fig. 8: Tell Leilan 1995 survey. Early Late Chalcolithic 3 sites.

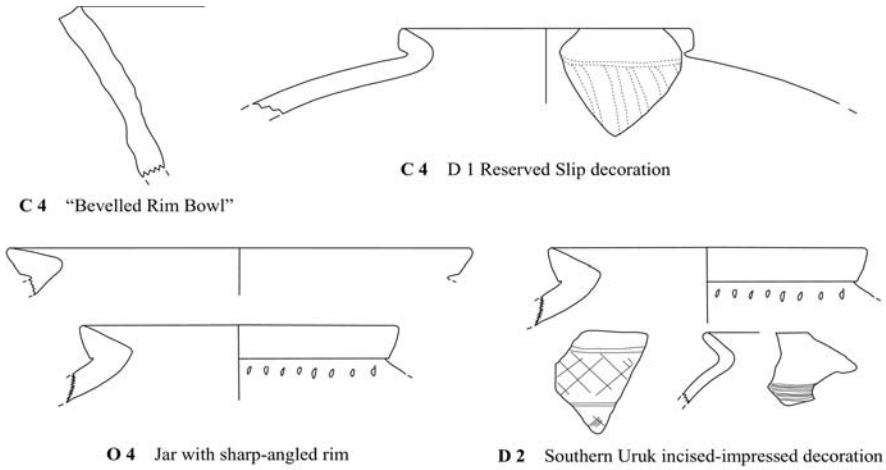


**GROUP 4: "Chaff-faced Ware" and local "Middle Uruk" types of the LC 3-4 phase (3600/3500-3300 B.C. ca)**  
 (Tell Leilan V, Hacinebi B1, Tell Brak TW 14-16, HS1, 5-1)

**Fig. 9: Late LC 3-LC 4 (local assemblage) diagnostic types.**



**Fig. 10: Tell Leilan 1995 survey. Late Late Chalcolithic 3 - Late Chalcolithic 4 sites (local assemblage).**



GROUPS 5 and 6: Southern "Middle Uruk" types of the LC 4 phase and "Late Uruk" types of the LC 5 phase (Tell Leilan IV, Hacinebi B2, Nineveh -37 -20, Brak TW 13-12, Tell Sheikh Hassan, Habuba Kabira etc.)

Fig. 11: LC4-LC5 (Southern Uruk assemblage) diagnostic types.

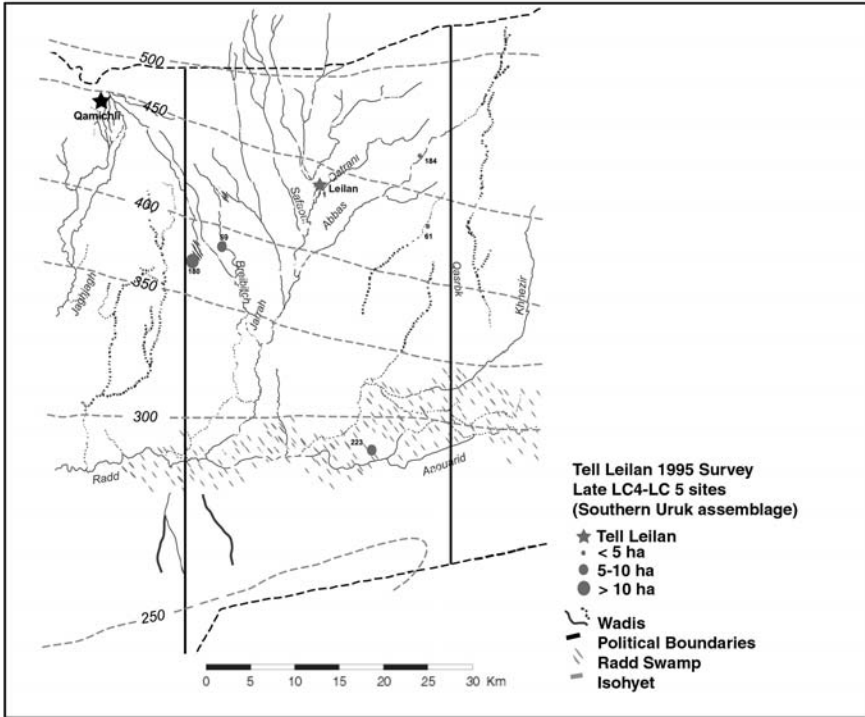


Fig. 12: Tell Leilan 1995 survey. Late Late Chalcolithic 4-Late Chalcolithic 5 sites (Southern Uruk assemblage).

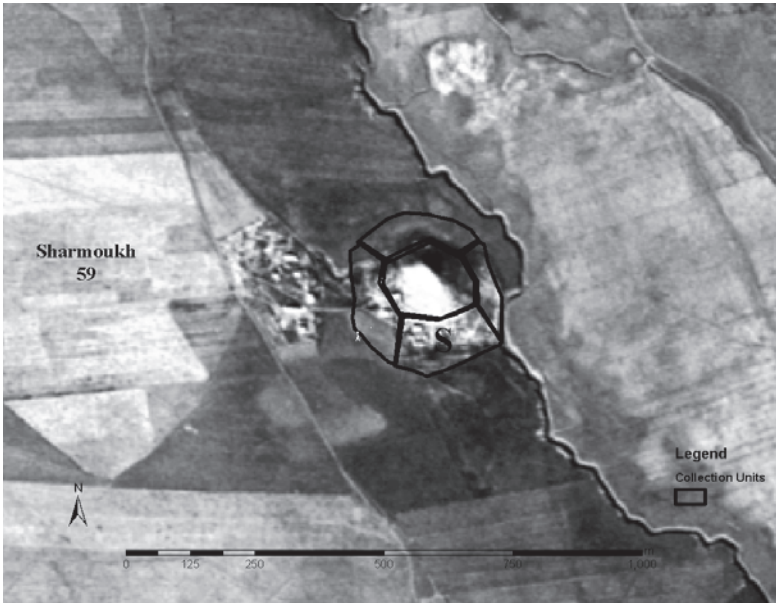


Fig. 13: Satellite photo of Tell Sharmoukh (site n. 59) with collection units (property Tell Leilan Project).

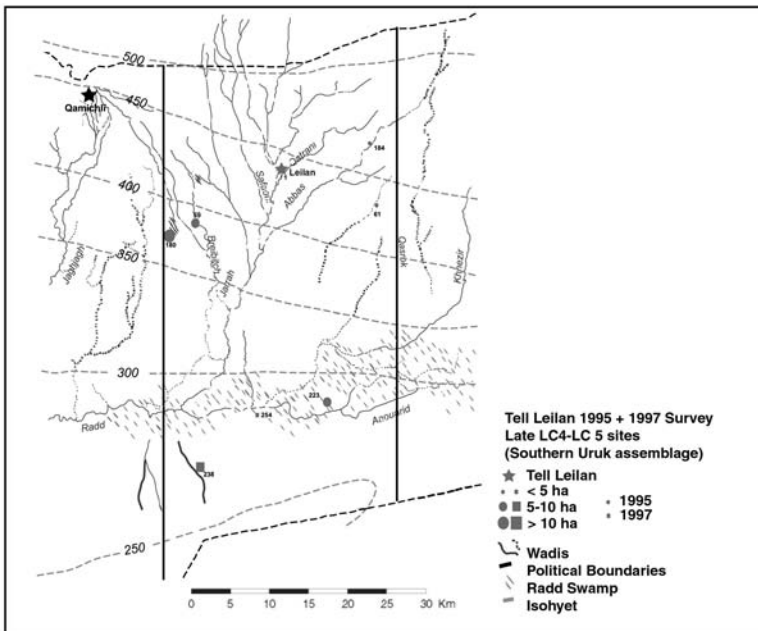
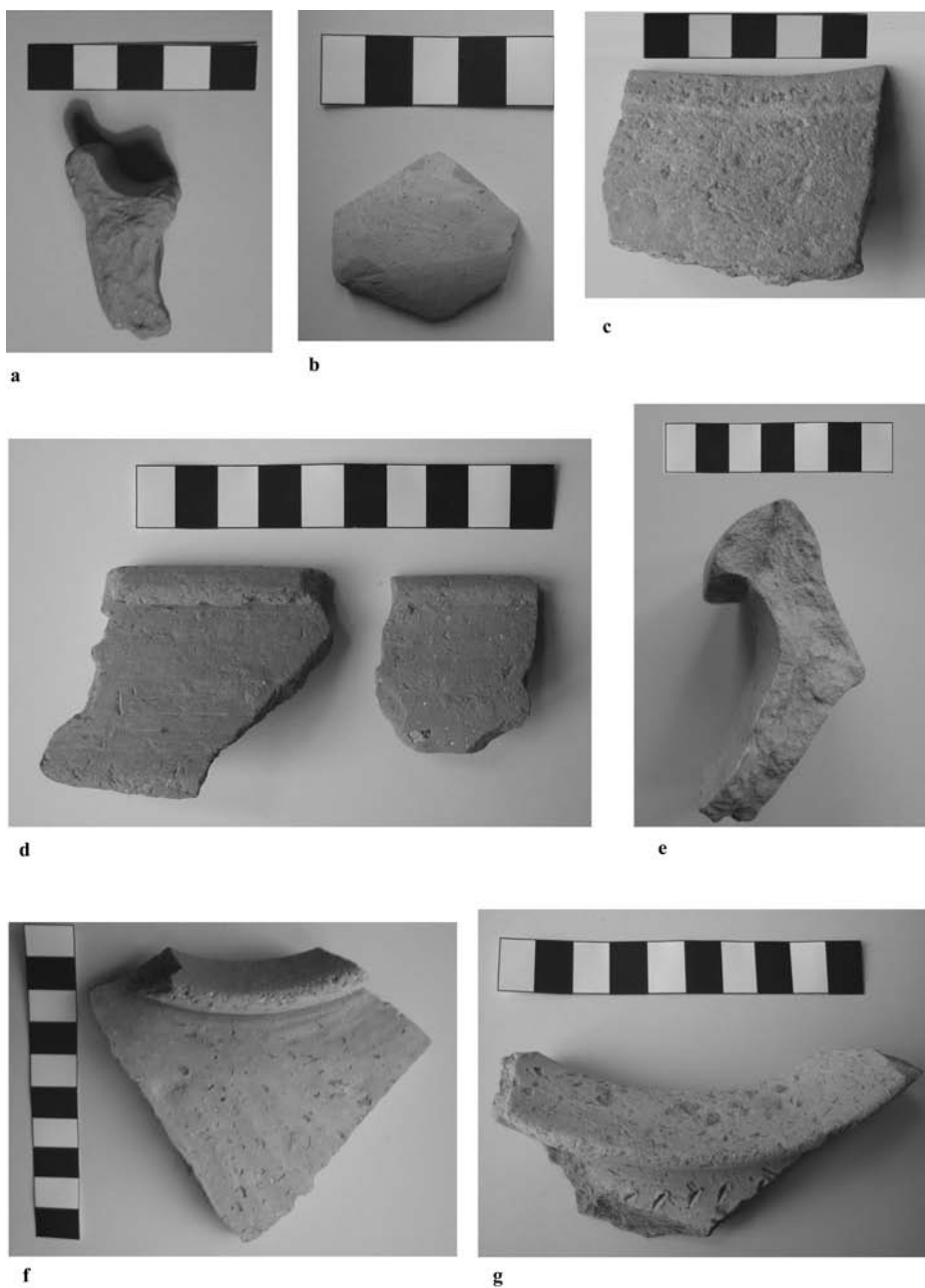


Fig. 14: Tell Leilan 1995-1997 survey. Late Late Chalcolithic 4-Late Chalcolithic 5 sites (Southern Uruk assemblage).



**Fig. 15:** Selected sherds from the 1995 survey: a) type C 6; b) type F 3; c) type F 2.1; d) type C 8; e) type O 3; f) type D 1 + O 4; g) type D 2 + O4.

