

# PRELIMINARY REPORT ON THE 1998 ARCHAEOLOGICAL INVESTIGATIONS OF PROJECT ArAGATS IN THE TSAKAHOVIT PLAIN, ARMENIA

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In the summer of 1998, the joint Armenian-American Project for the Archaeology and Geography of Ancient Transcaucasian States (Project ArAGATS) conducted its inaugural season of archaeological research on the northern flanks of Mount Aragats and the adjacent Tsakahovit plain. The goals of this research were twofold. The first was to examine the transformation of the regional landscape over the full scope of prehistoric and historic eras through the use of both systematic archaeological survey and site-based collections and mapping. We were particularly interested to define transformations in settlement and land use linked to the emergence of complex societies in the region during the Late Bronze and Early Iron Ages (LB/EIA) of the late second and early first millennia B. C. The second goal of our field investigations was to use archaeological soundings at a prominent settlement complex in order to begin to define the nature of the LB/EIA occupation of the region. To this end we conducted test excavations at Tsakahovit fortress and at adjacent settlement and cemetery complexes. This report presents the preliminary results of both our regional investigations and excavations at Tsakahovit.

Based on a brief visit to the area in 1995, we selected the Tsakahovit plain (fig. 1) as our research location for three reasons: 1) the Tsakahovit plain offers a relatively self-contained locale bounded on all sides by mountain ranges, 2) little research had been done in the region previously, and 3) the research area was outside of, but proximal to, the areas of Urartian occupation in the Ararat and Shirak plains. The last criteria was of importance due to the Urartian tendency to tear down or otherwise disrupt archaeological signatures of previously existing settlements, particularly those of Early Iron Age fortresses.

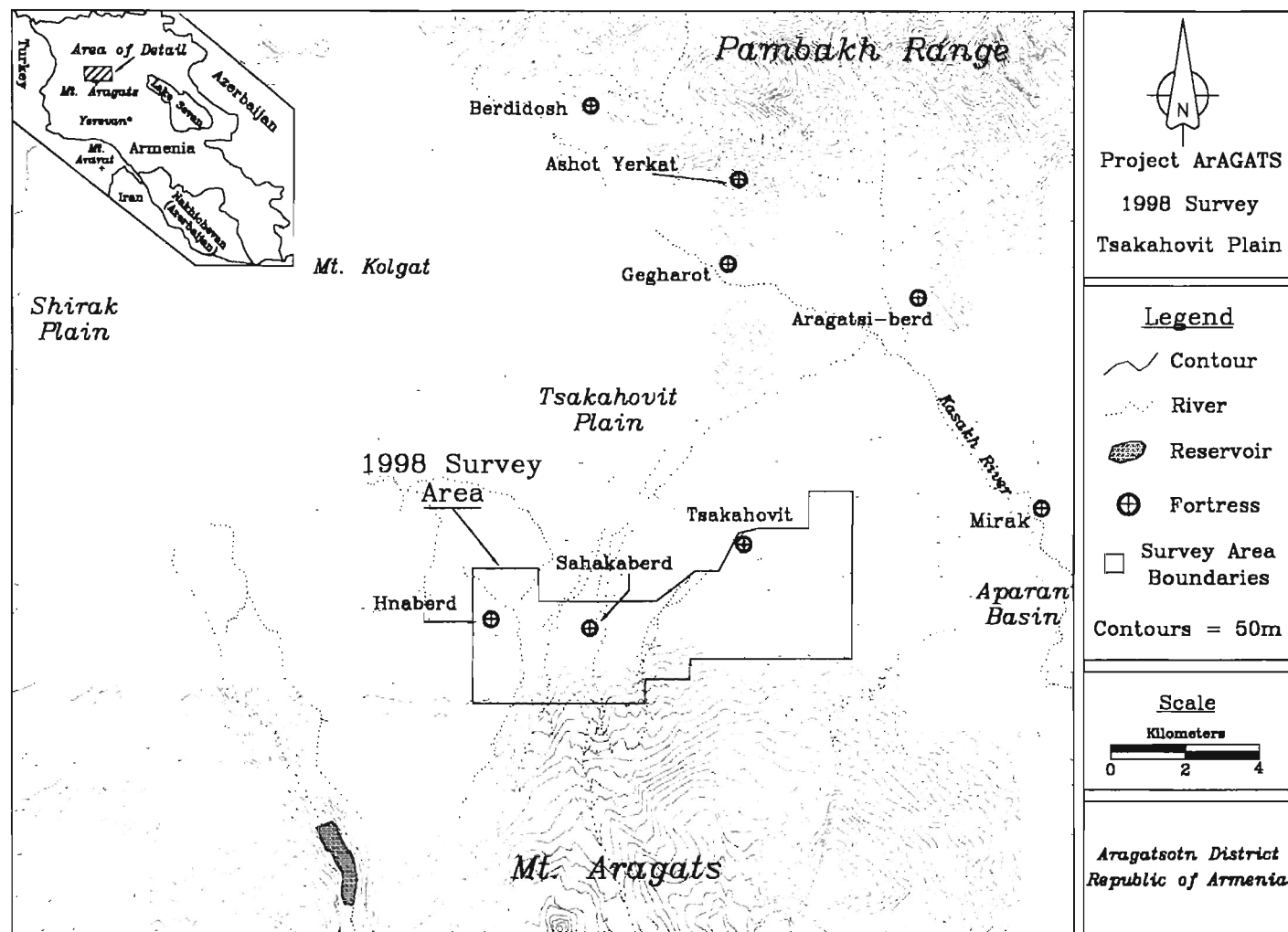


Fig. 1 – The Tsakahovit Plain Region.

Our investigations were situated at the northern limit of the Ararat physical province (the Aragatsotn administrative district). The region's primary geomorphological features are the northern slope of the volcanic massif of Mt. Aragats (4090 m), the southern slopes of the Pambak range, and Mount Kolgat (Sharai Ler) to the west; set between these formidable uplifts is the Tsakahovit basin (2000 m). The slopes of Mt. Aragats descend from peak to plain in a series of geologically distinct levels cut by radial valleys and ravines through which flow streams fed by melting snows. The Tsakahovit basin, approximately 11 km across at its maximum extent, was filled in by Middle Quaternary lava flows and Middle Pleistocene and Holocene riverine and glacial deposits (Zograbyan 1979: 54-55). The regional landscape is classified as mountain-steppe but yields to alpine conditions near the summit of Mt. Aragats. The plain itself is primarily used today for cultivation while the surrounding mountain slopes offer pasture for livestock.

At the foot of Mt. Aragats, along the southern limits of the Tsakahovit plain, a timeworn path connects the Shirak plain to the west with the Aparan basin to the east which follows the Kasak river south to the Ararat plain. An Urartian inscription carved into a rock-face in the passageway between the Shirak and Tsakahovit plains (modern Spandarian) reads:

Khaldi appeared (on the campaign) with his weapons(?), he defeated the land of Qulia, which prostrated itself before Argishti. Khaldi preceded (king Argishti). Argishti says: I destroyed the city of Duruba of the land of Qulia (Melikishvili 1960: 132).

The other primary access route into and out of the Tsakahovit plain is a narrow passage northwest of Gegharot that descends through steep gorges and narrow gates into the Pambak river valley and the Kura river drainages.

Although a number of archaeological sites in the region have been known for over a century, research in the region has been limited<sup>1</sup>. During a visit to the region in 1893, Nikolai Marr observed that "Pagan cemeteries are in evidence at Kirkh-Dagirman [modern Hnaberd] and Hajji-Halil [modern Tsakahovit] and probably extend across the foot of Aragats along the north, west, and south slopes" (quoted in Khachatryan 1974: 109). Our 1998 investigations demonstrated Marr's supposition to have been largely correct. Marr's route through the Tsakahovit basin provided a template that was

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<sup>1</sup> For a detailed history of research, see Khachatryan (1974).

subsequently repeated by Toramanyan (1942), Adzhan *et al.* (1932), and Kafadaryan (1996). Each of these scholars largely confined their investigations to recording – or re-recording – “cyclopean fortresses” in the region. The only intensive investigations of a site in the Tsakahovit region prior to 1998 were Martirosyan’s (1964) excavations at the Late Bronze Age cemetery at Gegharot (discussed below).

Before proceeding to an account of the survey and excavations, it is necessary to provide a brief introduction to recent advances in the chronology and periodization of the Late Bronze and Early Iron Ages of southern Transcaucasia. Traditional archaeological chronologies for the late second and early first millennia B.C. in the region defined distinct sets of formal and stylistic criteria and assembled them into fixed typological frameworks grouped by geographical area, relative chronology and, where possible, absolute dates (Areshyan 1974; Khachatryan 1975; Martirosyan 1964; Pitskhelauri 1979). The practical result of such systems has been that shared elements of similar archaeological complexes are often attributed to different archaeological phases. This situation has prompted more systematic efforts to define archaeological phases for the era across Transcaucasia (Avetisyan and Badalyan 1996; Avetisyan *et al.* 1996; Ramishvili 1998). The periodization for southern Transcaucasia outlined by Avetisyan *et al.* (1996) is presented in slightly amended form in table 1. For the crucial period of the late second and early first millennia B.C., the framework offered by Avetisyan *et al.* rests on detailed seriation of stylistic and formal elements for over 2000 whole and partial vessels from mortuary and settlement contexts linked to an absolute chronology through a number of lines of evidence, including parallels between Transcaucasian materials (particularly seals) and those known from more securely dated southwest Asian sites as well as a growing corpus of absolute (radiocarbon) dates.

The Late Bronze Age (LBA) in southern Transcaucasia is defined by a distinct material culture repertoire, different in form and decoration from that of Middle Bronze II or III contexts such as Vanadzor (Kirovakan), Karmirberd (Tazakend), or Trialeti (Kuftin 1941; Kushnareva 1997: 89-92, 114-116). The following criteria are generally employed to differentiate LBA materials from those of the Middle Bronze Age (MBA):

- A. While oxidized copper mines were used extensively in the MBA, the LBA marks the beginning of the exploitation of sulphide copper mines (Gevorgyan 1982: 76-77).

YEARS B.C.	PERIODIZATION	HORIZON STYLE		KEY SITES
500	Middle Iron Age	Post-Urartian / Achaemenid	Achaemenid	Erebuni, Armavir
600		Urartu	Urartu	Erebuni, Karmir-Blur, Oshakan, Aramus, Argishtihinili
700				
800	Early Iron Age	Early Iron II	Lchashen-Metsamor Culture	Horom, Elar, Keti, Metsamor,
900		Early Iron I		Artik (group 3) Dvin (burnt level)
1000				
1100	Late Bronze Age	Late Bronze III	Lchashen-Metsamor Culture	Lchashen, Horom, Aparan, Gegharot, Metsamor, Artik (groups 1-2) Karashamb, Lori-Berd
1200		Late Bronze II		
1300		Late Bronze I/ Middle Bronze IV		
1400		Middle Bronze III		Sevan/Uzerlik/Karmirberd/Karmirvank Complexes
1500	Middle Bronze Age	Middle Bronze II	Trialeti-Vanadzor Culture	Karashamb (kurgan) Vanadzor (Kirovakan) Trialeti (groups 1-3) Lchashen (120-123) Lori-Berd Uzerlik 1
1600		Middle Bronze I	"Kurgan" Culture	Trialeti (early group) Berkaber (burials 1-2) Stepanakert, Maisian (4.5)
1700		Early Bronze IV		
1800		Early Bronze III	Kura-Araxes Culture	Shengavit (3-4) Garni, Dvin, Karnut, Harich
1900		Early Bronze II		Mokhrablur Shresh-blur Shengavit 2
2000				
2100				
2200				
2300	Early Bronze I	Djervesh (Kurgan 1) Harich (early phase) Keti (burials 1-6) Horom (C1 tomb)		
2400				
2500				
2600				
2700				
2800				
2900				
3000				
3100				
3200				

Table 1 – Archaeological Periodization for Southern Transcaucasia  
(after Avetisyan *et al.* 1996).

- B. The scale and intensity of production of bronze artifacts increases dramatically during the LBA both in quantity and in the diversity of forms and types (Avilova and Chernykh 1989: 79-81). The southern Transcaucasian LBA repertoire of artifacts includes unique forms absent from MBA assemblages, including battleaxes, mace-heads, shaft-hole daggers, bits, flanged-hilt weapons, and small statuettes.
- C. LBA metallurgical production methods include open-work casting as well as casting by candle-moulds.

All of these changes in metallurgy were accompanied by intensive fortification building, an explosion in the number and size of cemeteries (MBA cemeteries generally include no more than 100 burials), and by technological and morphological changes in ceramic traditions (in particular, the painted pottery tradition that had flourished during the MBA does not appear in LBA contexts).

The Late Bronze I is a transitional phase in which lingering elements of Middle Bronze Age traditions may be found in association with features of the Late Bronze horizon. An indication as to the absolute date of this transition can be extrapolated from the site of Horom in the Shirak plain. Calibrated radiocarbon results from a Middle Bronze level on the north hill at Horom and an early Late Bronze occupation on the site's south hill suggest that the Late Bronze I transition may be dated to the late 16<sup>th</sup> or early 15<sup>th</sup> centuries B.C.

Following the transitional period, the Late Bronze II phase continues the general character of material culture styles begun in the previous phase but without the MBA elements. The transition from Late Bronze I to Late Bronze II is stratigraphically represented at Aparan cemetery (Muradyan 1987). Burial 2, containing LB II ceramics closely analogous to those from group 1 at Artik, was found superimposed atop burials 4 and 5, both of which included ceramics characteristic of both the early phase of the Late Bronze and the later phases of the MBA. The LB II phase is characterized by classic examples of Late Bronze industry, such as battleaxes of the "Transcaucasian type", shaft-hole daggers, flanged-hilt daggers, wheel-shaped bits, and metal statuettes of the Lchashen type. Pottery during the LB II phase relies primarily on polishing for ornamentation (for example, see fig. 13a).

A number of unique finds from Late Bronze II contexts have parallels with materials from beyond Transcaucasia. Seals of the "Mitannian style", known from burials at Lchashen (no. 97), Artik (no. 53, 422) and Shamiram (no. 5), have close parallels with artifacts recovered from a number of sites across southwest Asia, including levels in Egyptian and Syro-Palestinian

sites bearing inscribed materials of New Kingdom (18<sup>th</sup> dynasty, 1552-1314 or 1295 B.C.) rulers<sup>2</sup>. In addition, a number of other artifact types recovered from Transcaucasian mortuary contexts – tridents, disk-shaped pendants, bronze hooks, and cultic vessels – have close parallels with materials from Nuzi<sup>3</sup>. The weight of stylistic parallels and the radiocarbon dates from levels at Horom South that bear analogous LB II materials have led Avetisyan *et al.* (1996) to suggest an approximate date for the Late Bronze II from the 15<sup>th</sup> to the early 13<sup>th</sup> century B.C.

The late Bronze III phase is distinguished by a repertoire of metal forms unknown in LB II contexts, including swords with a blunt head, bronze daggers of the Sevan type, hooked arrowheads of the Transcaucasian type, ornamented and plain belts, and bronze knives with curved tips. Radiocarbon dates from an Early Iron I burial (no. 223) at Artik provides a terminus for the LB III in the late 12<sup>th</sup> century B.C. Therefore we can posit a relatively short LB III period extending from the mid-13<sup>th</sup> to mid-12<sup>th</sup> centuries B.C. New radiocarbon dates from Tsakahovit fortress (discussed in more detail below) from levels replete with LB II and III ceramics confirm that the LB II and III phases should be established between the 15<sup>th</sup> and 12<sup>th</sup> centuries B.C.

The florescence of the Early Iron Age, an era marked technologically by an expansion of the repertoire of iron implements, was brought to an end in the region by Urartian imperial expansion in the early 8<sup>th</sup> century B.C. Owing to the Urartian penchant for razing previously existing fortresses, a practice they described at length in their royal inscriptions<sup>4</sup>, the pre-Urartian levels at a number of sites in the Ararat plain suffered significant damage (e.g., Metsamor [Khanzadyan *et al.* 1973] and Dvin [Kushnareva 1977]). Nevertheless, the pottery from Early Iron Age levels is substantially different from both LB III and Urartian wares. Examinations of materials recovered from mortuary contexts suggest that the Early Iron Age can be divided into two distinct phases: a transitional Early Iron I, dated conventionally to the late 12<sup>th</sup> and 11<sup>th</sup> centuries B.C., and a Early Iron II phase during the 10<sup>th</sup> and 9<sup>th</sup> centuries B.C.

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<sup>2</sup> See Piliposyan (1997) for a recent thorough re-examination of seals and sealings from southern Transcaucasia. See also Schaeffer (1948: 408-415) on “Mitannian style” seals from Egypt and Syro-Palestine.

<sup>3</sup> See examples in Starr (1939: pl. 113B, 114E, 120XX, 125KK2, 126Y1 and 2, 127 B1 and G).

<sup>4</sup> For examples, see Melikishvili (1960: 14, 28, or 155).

## REGIONAL INVESTIGATIONS

The goals of our regional investigations were to document and record known Late Bronze and Early Iron Age fortress sites in the Tsakahovit plain and to examine several sites that had been reported to the Institute of Archaeology but never described. This phase of our investigations continued survey and archival work begun in 1995 that gathered topographic and architectural data for 24 fortress sites in the Ararat and Shirak plains (Smith and Kafadarian 1996; Smith 1999). We visited 8 sites in the area: Berdidosh, Gegharot, Ashot Yerkat, Aragatsi-berd, Mirak, Tsakahovit, Sahakaberd, and Hnaberd (fig. 1). Of these, the last three were within the boundaries of our systematic survey area and so will be discussed in the next section. Of the 5 sites outside the survey area, only Gegharot presented sufficient visible surface architecture to justify mapping. At all of the sites, we collected 100% of the diagnostic surface materials and a large portion of the non-diagnostic materials in systematically defined collection loci.

The overall distribution of settlement in the region closely parallels that seen in the Shirak and Ararat plains. Fortified citadels set atop steep hills and outcrops were built on the margins of the plain and highlands, albeit at somewhat lower relative elevations compared to Ararat and Shirak plain sites. The local topography of LB/EIA fortress sites in the Tsakahovit plain closely follows the preference for political centers built atop high rock outcrops that so profoundly marks the era archaeologically. The overall median grade of Tsakahovit region fortress sites is 32%, almost identical to that of Shirak (31%) and Ararat plain fortresses (29%).

*Berdidosh*

The site of Berdidosh is located 1.5 km east-southeast of the village of Lernapar, atop a high rock outcrop overlooking the northern end of the Tsakahovit plain (40°44.301' N, 44°10.991' E, 2209 m above sea level [a.s.l.]). The site had been reported previously to the Institute of Archaeology and both Badalyan and Avetisyan had briefly visited the site in 1997. Our visit in 1998 was the first systematic exploration of the remains. The site includes the fragmentary ruins of a stone wall which appears to have encircled the upper reaches of the outcrop. The masonry of the more coherent exposures of wall employed medium-sized stones (maximum diameter less than 0.5 m, greater than 0.15 m) without evidence of mortar or intervening rubble fill. The wall is not visible to an extent sufficient for approximation of the site perimeter.



The surface remains at Berdidosh were few. Only 15 sherds were recovered from our surface survey, none of which were particularly diagnostic. Our initial impression of the materials suggested both LB/EIA and late Urartian/Achaemenid era components; however, the data from the site remain too thin to support any more robust reconstruction.

### *Gegharot*

The archaeological complex at Gegharot (40°42.337' N, 44°13.516' E, 2124 m a.s.l.) was first identified by Martirosyan who recorded scatters of Early Bronze Age surface materials, a cyclopean fortress, and a cemetery (Martirosyan 1964: 23). However, only the cemetery became a focus for more intensive research. In 1956, Martirosyan (1964: 89-93) excavated five Late Bronze Age burials and in 1960, Esayan investigated three more<sup>5</sup>. The fortress of Gegharot lies on a spur of Mt. Tsilkar on the eastern outskirts of the village, 700 m northeast of the Kasak River. The site (as defined by the surface materials) covers an area of approximately 3.43 ha, but the fortification walls circumscribe only the 0.36 ha citadel (fig. 2). The citadel is highly eroded, with weathered bedrock visible at a number of places. Only the top course of the fortification walls is visible from the surface, so little can be said regarding the masonry employed in their construction. The layout of the walls suggests the presence of a gateway on the northwest side of the site as well as several possible buttresses – a feature well known from pre-Urartian sites in the Sevan area but less well documented elsewhere in southern Transcaucasia (Biscione 1994; Mikayelyan 1968; Smith and Kafadarian 1996).

The surface remains recovered from Gegharot include a large basalt grinding stone as well as a large quantity of fragmentary ceramics (n=522). Initial examination of the total corpus of ceramic remains from the site indicated 62% of the materials were broadly classifiable to the LB/EIA horizons with 3% more specifically indicative of the LB III and EI I phases; 31% of the ceramics were attributable to the Early Bronze Age, including a group of decorated sherds diagnostic of the Kura-Araxes III phase (fig. 3b, d, g). Closer inspection of 79 of the most clearly diagnostic sherds from Gegharot resulted in slightly amended ceramic counts. 39% were classifiable to the EBA Kura-Araxes III phase, 38% to the Late Bronze Age, and 22.6% to

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<sup>5</sup> Esayan's investigations remain unpublished. The materials are stored in the Armenian Historical Museum in Yerevan, inventory no. 2209. Martirosyan's materials are stored under inventory no. 2078.

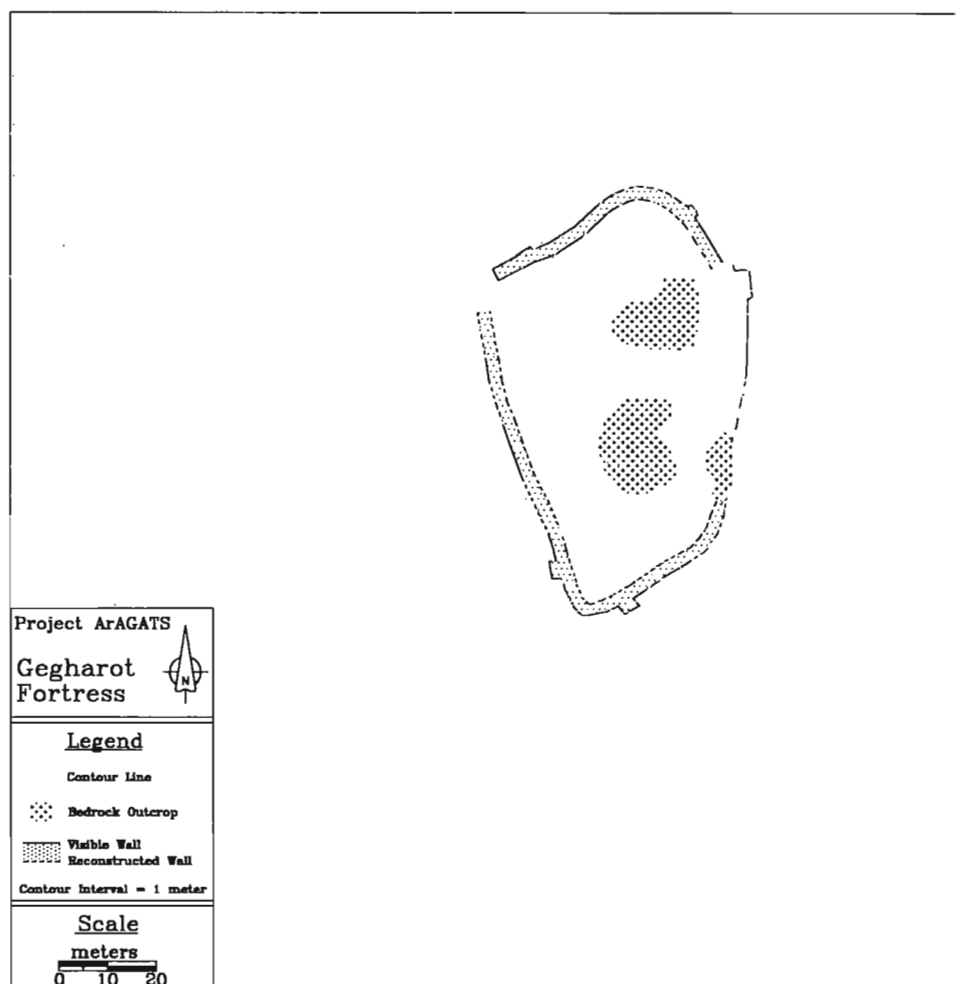


Fig. 2 – Map of Gegharot.

the late Urartian and Achaemenid eras (fig. 3). The Early Bronze Age remains at the site were concentrated primarily, but not exclusively, on the northern and eastern slopes.

#### *Ashot Yerkat*

The site of Ashot Yerkat, (40°43.455 N, 44°13.760 E, 2407 m a.s.l.) has not been previously recorded in the archaeological literature. This small fortress was built atop a high peak 1.6 km north of Gegharot, providing the

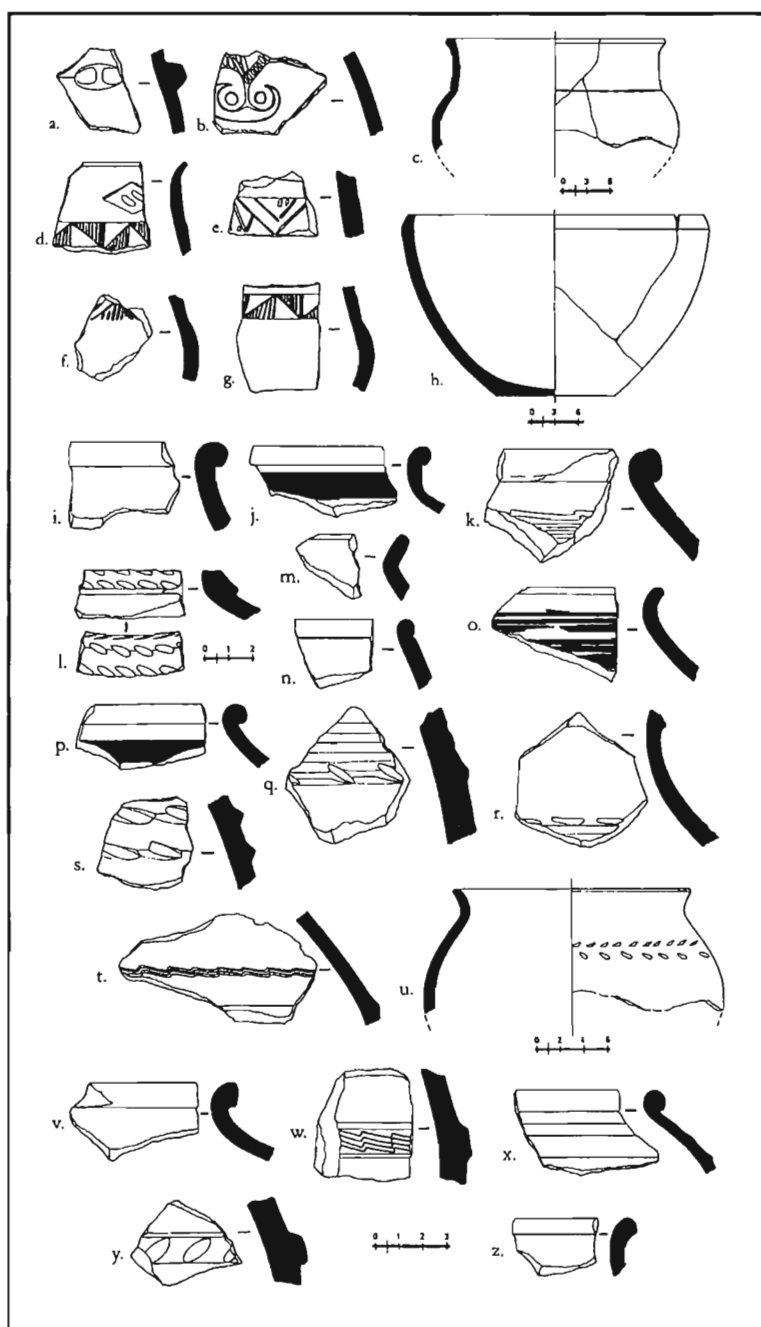


Fig. 3 – Surface Ceramics from Gegharot (a-h, Early Bronze Age; i-r, Late Bronze Age; s-z, Late Urartian/Achaemenid era).

site with clear views across the Tsakahovit plain and the northern reaches of the Aparan basin. The fortress occupies a rocky, highly eroded, elliptical citadel, elongated along an east-west axis. The north slope is exceptionally steep and practically inaccessible. The south slope hosts a large cromlech cemetery that extends up to the fortification wall. The walls enclose no more than 0.15 ha. The southern wall segment remains in relatively good condition, revealing evidence of a gateway. No surface materials were recovered.

### *Aragatsi-berd*

The site of Aragatsi-berd (Commission for the Preservation of Historical Monuments site number 701.2.1) lies just south of Gegharot, in the foothills on the eastern margin of the Tsakahovit plain (40°41.746' N, 44°17.114' E, 2087 m a.s.l.). The outcrop is highly eroded on its southern edge and has been destroyed in parts due to construction on the summit. Nevertheless, several segments of stone wall were clearly visible from the surface along with a significant concentration of ceramic debris. Initial inspection of the ceramic materials (fig. 4n-s) indicated that 40% of the recovered ceramics (n=84) were attributable to the LB III/EI I phase and 21% more generally classifiable to the Early Bronze Age (38% of the materials were unclassifiable). Further inspection of the diagnostic subset of the materials from the site suggested a more prominent Early Bronze Age component (40% of subset), and a previously undetected late Urartian/Achaemenid era element (20% of subset) in addition to the Late Bronze occupation (40% of subset). Indications from Aragatsi-berd in many respects mimic those from Gegharot with evidence of both Early and Late Bronze settlement followed by a Middle Iron Age component from the late urartian/Achaemenid era.

### *Mirak*

Mirak (Commission for the Preservation of Historical Monuments site number 723.23.1) is a topographically peculiar site, located on a low ridge on the east bank of the Kasak river near where the Aparan valley joins the Tsakahovit plain (40°38.640' N, 44°19.472' E, 2035 m a.s.l.). Remains of stone fortification walls are clearly visible, standing over 1 m high in places. The masonry is cyclopean employing large stones (over 0.5 m in diameter) without rubble fill. Despite several well preserved segments of exposed wall, it is quite difficult to trace the general layout of the fortifications at the site as they tend to disappear and reappear at irregular intervals. Although the area enclosed by the fortifications appears to be quite large (over 200 m in

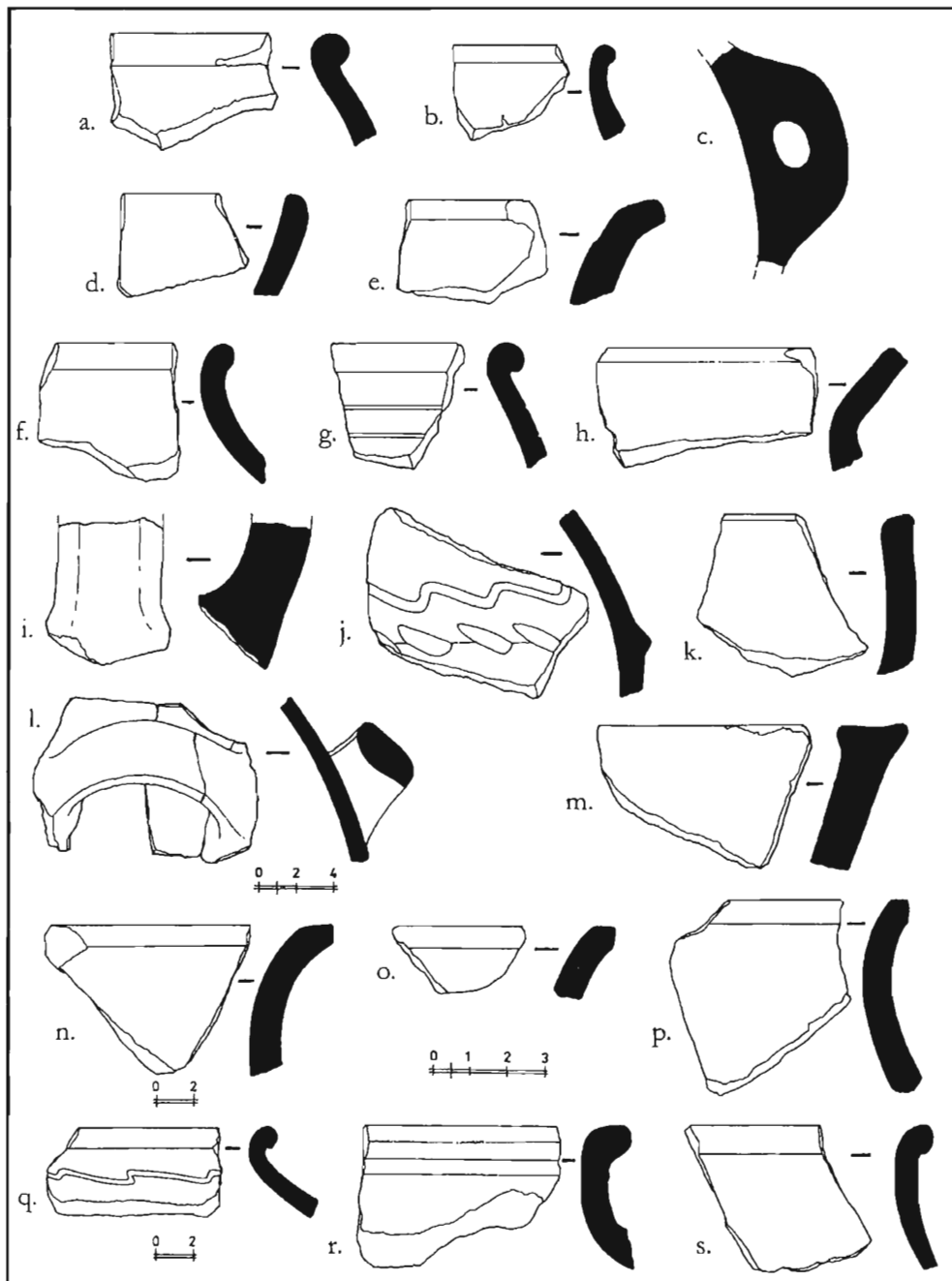


Fig. 4 – Surface Ceramics from Hnaberd (a-c, Early Iron Age; d-m, Urartian/Achaemenid era) and Aragatsi-berd (n-p, Early Bronze Age; q-s, Late Bronze Age).

diameter), very few surface materials were recovered. Our small surface collection (n=9) provided indications of a Late Bronze Age component at the site but nothing more definitive.

### SYSTEMATIC SURVEY

The primary focus of our 1998 research program was a systematic walking survey across 32.2 km<sup>2</sup> of the north slope of Mt. Aragats. This was the first time systematic regional survey techniques had been employed in Transcaucasia. The survey area was designed to surround the fortresses of Tsakahovit and Hnaberd as one of our goals was to define the landscape between fortress sites (fig. 5). The eastern and western boundaries of the survey area were set where the mountain slope turns south to face the Aparan basin and Shirak plains respectively. The southern boundary of our area was defined by a substantial decrease in the density of cultural materials observed and by the leanding edge of a series of steep rubble fields created by more recent lava flows. Our activities in the northern portion of the survey area were restricted by active cultivation on the plain and by the profound disturbance to visible features caused by an artillery range.

We used transects set at 25 m intervals as our primary mode of operation. This recovery strategy offered us a compromise between breadth and intensity of coverage particularly appropriate for an area where we had little idea what we should expect to find. Based on the formulae outlined by Sundstrom (1993: 92-93) we estimate a site discovery probability of 1.0 for sites with radii of 12.5 m or more. We calculate the total direct coverage of the survey to have been 16% of the total ground surface.

The background material density in the region was zero. Indeed, few artifactual materials were recovered beyond the immediate surroundings of fortress sites. The remains that we encountered as we moved away from the fortresses were primarily architectural – remains of settlements with visible walls, irrigation facilities with visible traces faintly cut into a hillside, circles of stones that likely once served as corrals, and, above all, an unexpectedly large number of cemeteries.

#### 1. Fortresses and Settlements

##### *Tsakahovit*

Reported by Marr in the late 19<sup>th</sup> century, the site of Tsakahovit was first described in 1914 by Toramanyan (1942: 14-17). In 1930, Adzhan, Gyuzalyan, Piotrovskii, and Baiburtyan worked briefly at the site, recording some of its

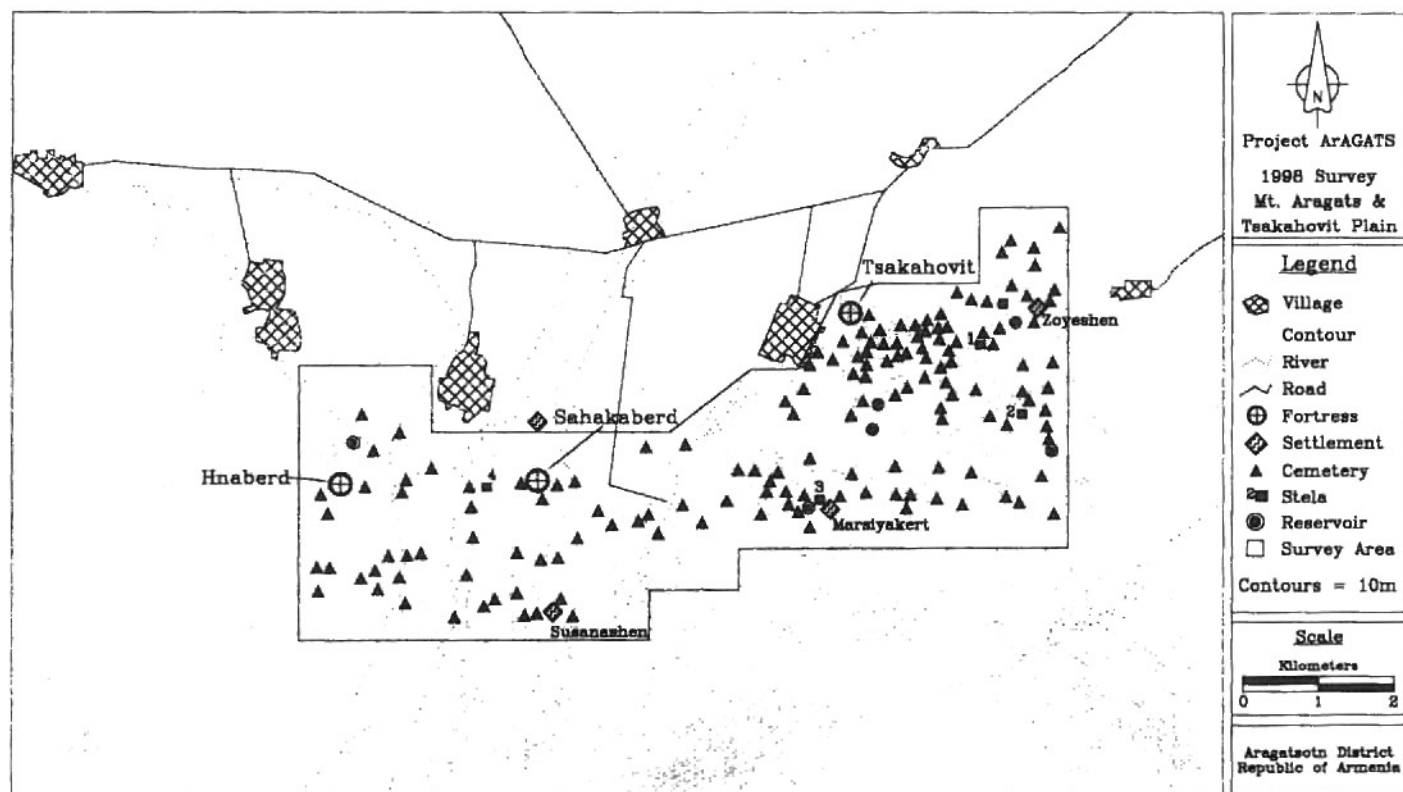


Fig. 5 - Map of Survey region.

surface features (Adzhan *et al.* 1932: 61-64). In 1963-64, Kafadaryan made the first topographic and architectural plan of the site (Kafadaryan 1996: 82; Smith and Kafadarian 1996: 33, 36). The only artifactual remains from the site to have been published are a Late Bronze Age bowl found on the surface in 1932 (Khachatryan 1974: 109) and a small collection of surface sherds reported by Smith and Kafadarian (1996: 32).

Tsakahovit is located on the leading edge of a spur of Mt. Aragats directly overlooking the southern edge of the plain (40°38.256' N, 44°13.837' E, 2183 m a.s.l.). The site extends across 39.6 ha, including the fortress outcrop, secondary ridge to the southeast, and two flanking basins (fig. 6). The fortress hill (7.59 ha), identified on some maps as Kalachi Tepe, rises 80 m above the plain in a conical outcrop capped by a flat citadel (0.59 ha). Surrounding the citadel is a stone fortification wall in generally good condition. The fortification wall appears to have been constructed atop a stone foundation or revetment which itself rested on bedrock. The wall seems to have been constructed of variable medium and small-sized facing stones on both sides of a rubble core. The facing stones were moderately worked to give a flat surface on both the interior and exterior faces. Several buttresses punctuate the exterior wall face, one on the northwestern side and three on the eastern façade.

Perhaps the most intriguing architectural feature of the fortress hill at Tsakahovit was the series of walls descending the slopes. Similar “spider-web” like sets of fortification walls are well known from a number of sites on the slopes of Mt. Aragats, including Garnaovit South and Sarnakhyur East (Smith and Kafadarian 1996: 29-31). Based on Kafadaryan’s work at the site and his initial visit in 1995, Smith (1998: 87) made Tsakahovit the type site for this form of fortress layout in his recently proposed typology. However, closer inspection of the walls on the slope at Tsakahovit reveal that they are not fortification walls at all but rather an intricate system of terraces (fig. 7). The terraces were not enclosures with two masonry faces but rather served as braces for leveling portions of the hillside. Erosion has significantly impacted the terrace walls – terrace collapse is likely responsible for the fields of large stones strewn at the base of the hill. However, a number of well preserved terrace wall segments are still visible on the northwestern and eastern slopes.

Below the southern and eastern slopes of the fortress hill are extensive architectural remains of room and building complexes. The tops of the stone walls are clearly visible from the surface, although the masonry is not. Based on the local topography, we divided the settlement architecture into three primary units: the south and east settlements at the base of the fortress hill and the southeast settlements beyond the secondary ridge. Building in the



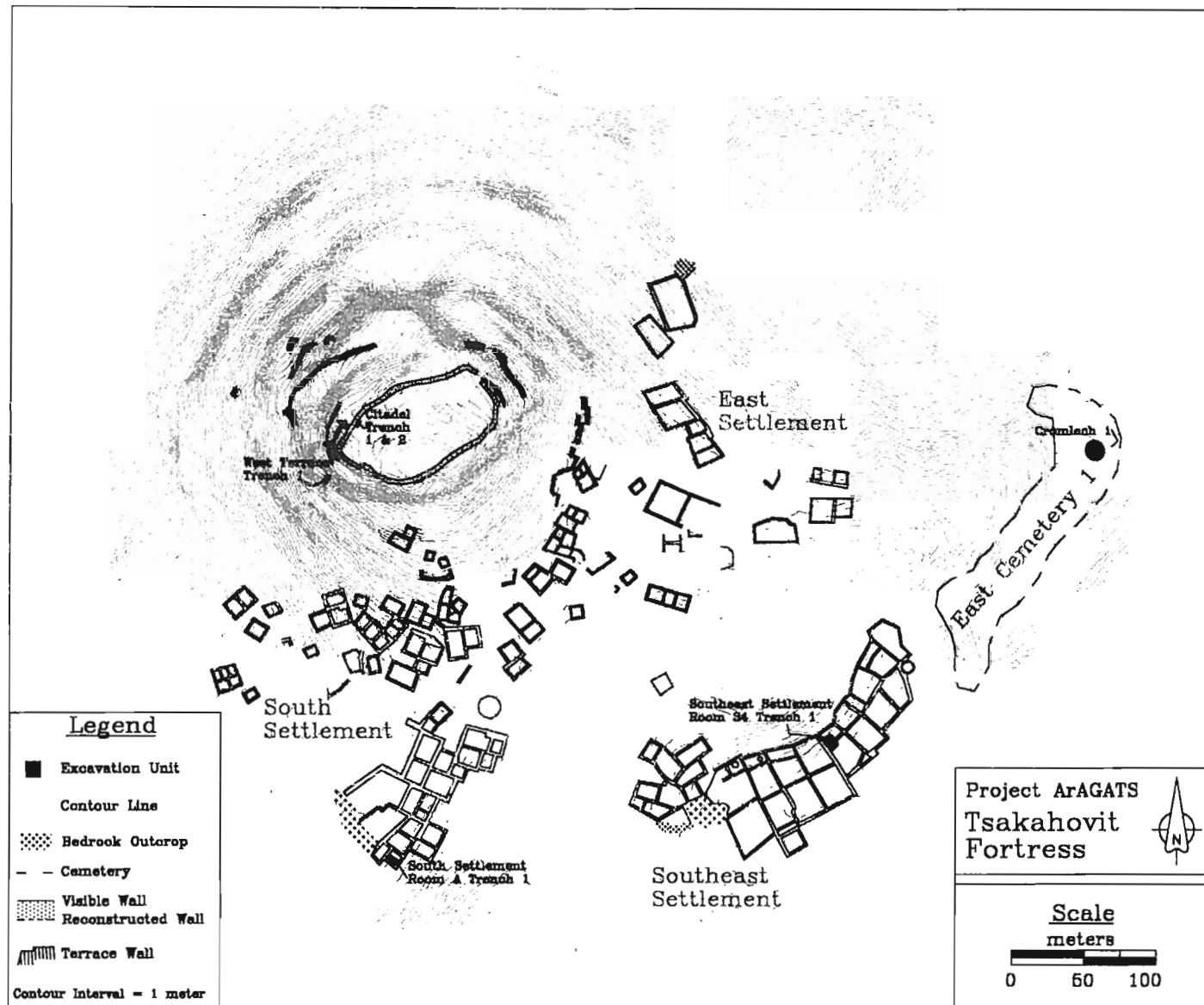


Fig. 6 – Map of Tsakahovit.

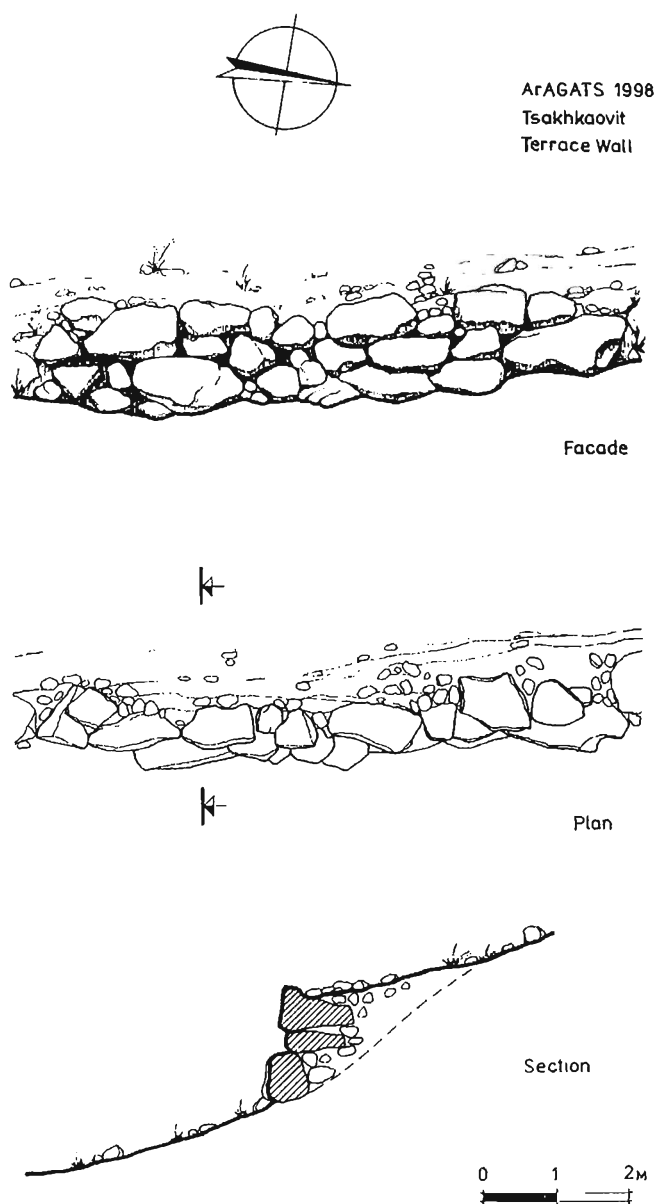


Fig. 7 – Drawing of Tsakhkaovit Terrace Wall.

south settlement is marked by the presence of several aggregated room complexes, the largest of which, located on the southern border of the site, encompasses at least 22 rooms. Smaller complexes of three to five rooms are

also visible, as are a number of smaller free-standing constructions. The architecture in the east settlement is less intelligible from the surface due to site formation processes, but does appear to be less aggregated with larger free-standing rooms. In general, the walls in both the west and east settlements appear to employ double facings surrounding a rubble core. The southeast settlement complex appears from the surface to be a single aggregated block of variably sized rooms. Most of the walls appear to be much less substantial than those of the south and east settlement complexes, with thin, double-faced walls yielding in places to what seem to be simply single rows of large stones.

Surface materials from Tsakahovit ( $n=1137$ ) suggest the earliest occupation of the site was in the Early Bronze Age. Initial examination of the surface ceramics from the site indicated that 6.8% of the materials were classifiable as Early Bronze. Furthermore, Early Bronze materials comprised 28% of the ceramics recovered from the lower west slope of the fortress hill. The dense concentration of Early Bronze materials at the base of the Tsakahovit outcrop is topographically quite characteristic of the known corpus of contemporary sites in neighboring regions, such as Karnut, Anushavan, and Ketik in the Shirak plain. Preliminary examination of the ceramics indicated that 80% were attributable to the LB/EIA (with 1.7% of the collection more specifically diagnostic of the LB III/EI I phase) and 5% typical of Middle Iron Age wares. Subsequent analysis of a subset of the diagnostic ceramics from the fortress hill ( $n=107$ ) indicates that 66.3% of the subset were typical of Early Bronze Age wares (a much stronger expression than noted in the corpus as a whole), 10.2% of the Late Bronze Age, 17% of the late Urartian and Achaemenid eras, and 6.5% of a previously unassayed Medieval component.

### *Sahakaberd*

Sahakaberd fortress had not been recorded prior to our 1998 investigations. Although considerably damaged by modern formation processes, a significant portion of the original construction is still visible (fig. 8). The fortress was built atop a moderate rise where the Auzkend stream leaves the rugged slopes of Mt. Aragats to begin a gentle final descent to the Tsakahovit plain ( $40^{\circ}36.975'$  N,  $44^{\circ}11.195'$  E, 2343 m a.s.l.). While the approaches to the site from the plain are quite steep, the terrain beyond the southern walls is quite subdued until a series of ridges rise up into Mt. Aragats.

The site extends over 8.20 ha, merging to the north with an extensive medieval era settlement (the Medieval settlement was not extensively

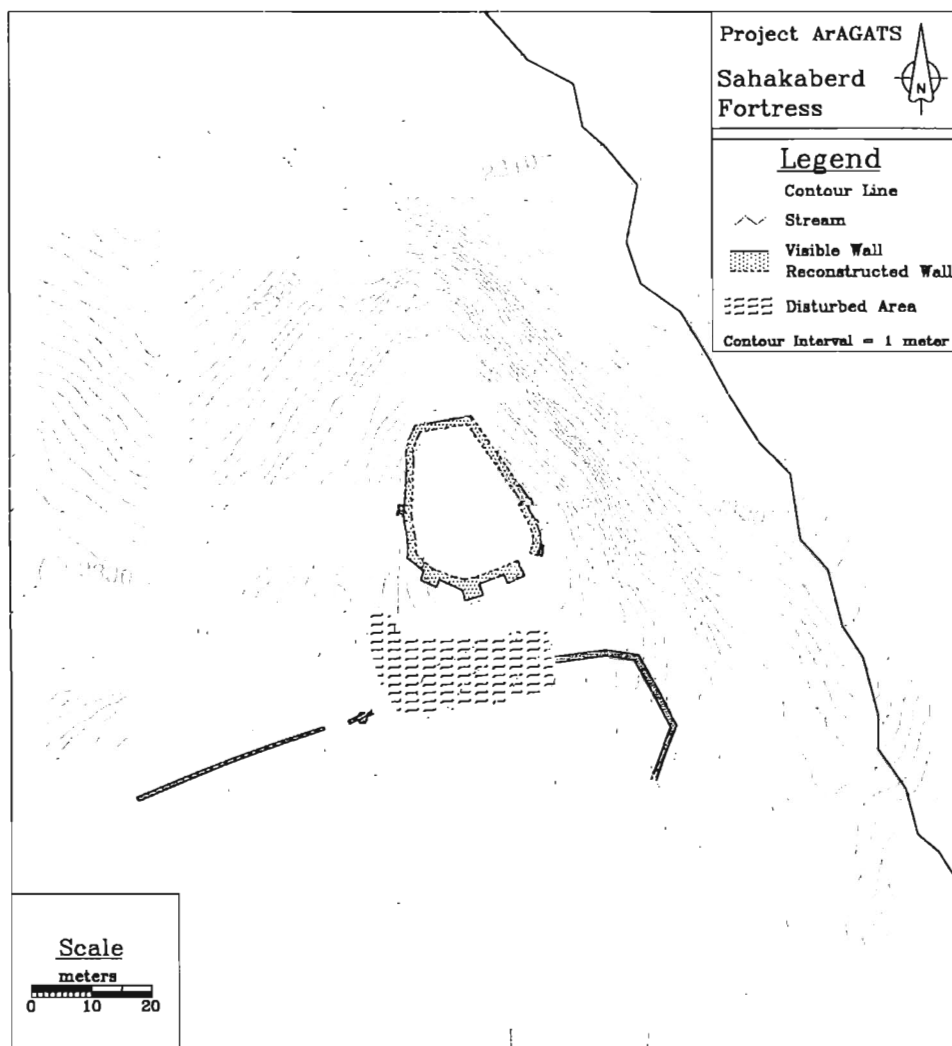


Fig. 8 – Map of Sahakaberd.

explored as it lay within the area of a military range that was off-limits to us). The visible fortification walls enclose a small citadel of 0.20 ha. The walls are built of small to medium-sized facing stones surrounding a rubble core with a gateway on the southeastern corner. The most remarkable feature of the fortification architecture is the series of large buttresses on the south wall. These buttresses project between 2.6 m and 4.6 m from the

curtine and are spaced at regular intervals of approximately 8.5 m. The appearance of buttresses on only the southern side of Sahakaberd fortress suggests that these features were not extensions of the engineering requirements of the wall itself but rather were features of the defensive system, focused where the topography afforded the least protection. A single long wall was also recorded on the slope outside the southern wall. It is unclear what relationship this wall has, if any, to the fortress.

Our preliminary examinations of the surface materials from Sahakaberd (n=257) strongly suggested occupation of the site during the Classical and Medieval eras (53%). Smaller components of the total corpus of materials indicated possible LB/EIA (15.5%) and Middle Iron Age (3%) components. Further study of a subset of particularly diagnostic materials from the site has confirmed the prominent signature of Classical and Medieval wares and cast some doubt upon the significance of earlier components of the corpus. Indeed the fortifications of Sahakaberd also point towards construction in the Classical era. The layout of the site is highly reminiscent of the architecture at Veriberd, a site located on the west slope of Mt. Aragats. The fortification wall at Veriberd also employed wide buttresses, although to a more limited extent, and test excavations conducted by Smith and Badalyan in 1995 indicated construction during the Classical era (Smith 1996: 127-129).

### *Hnaberd*

The history of research at Hnaberd is similar to that of Tsakahovit as the site has been recorded by the same cast – Marr, Toramanyan, Adzhan *et al.* and Kafadaryan. A limited set of artifactual materials was collected from Hnaberd in 1927 by M. Gukasyan (Khachatryan 1974: 111)<sup>6</sup>. However these materials are of limited utility in dating the site as the collection consists primarily of obsidian fragments, basalt grinding stones and nondescript ceramic fragments.

The fortress of Hnaberd sits atop a high, prow-shaped outcrop that rises 90 m above the surrounding terminal slope of the mountain (fig. 9; 40°37.064' N, 44°09.121' E, 2344 m a.s.l.). Like Sahakaberd, the terrain surrounding the fortification walls is very steep on all sides except the south. The archaeological site is approximately 33.2 ha in extent while the citadel enclosed by the fortification wall is 1.56 ha. The outline of the fortification wall is visible for almost the entire circuit around the citadel with significant exposures of the exterior façade on the southern end. A gateway flanked by

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<sup>6</sup> These materials are currently housed in the Armenian Historical Museum in Yerevan, inventory nos. 358-366.

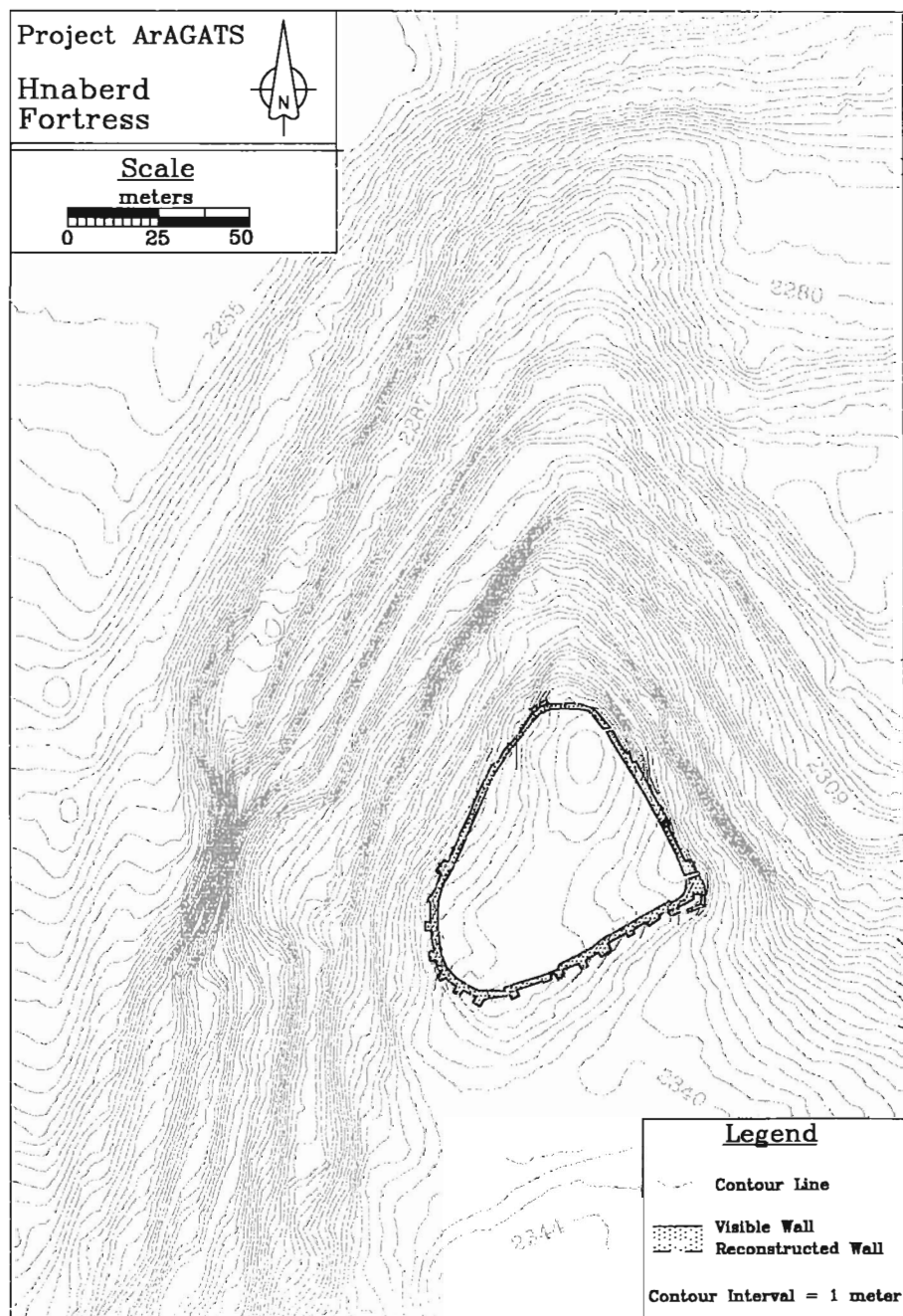


Fig. 9 – Map of Hnaberd.

towers or buttresses on the east side of the fortress is still the easiest way into the citadel. The walls of the fortifications are of medium to large stone masonry with shaped facing stones surrounding a rubble core (fig. 10). As at Sahakaberd, the most distinctive feature of the fortifications at Hnaberd is the construction of the southern wall.

While much of the fortification wall at Hnaberd appears to be relatively straightforward in its construction, the southern wall shows considerable evidence of rebuilding and redesign over the course of at least three building phases. In the first, the central line of wall was constructed, with a series of small saw-tooth corners. In a subsequent building episode, the interior wall face was added to, altering the small saw-tooth into a large corner several meters to the east. In yet another building episode, variably sized and spaced rectilinear buttresses were built against the exterior façade. It seems clear from our inspection of the joins that these buttresses were not integrated elements of the original construction. Moreover, the buttresses were constructed using a distinctive masonry which employed long flat stones rather than the irregularly shaped blocks used in building the curtain. Outside of the southern fortification wall we found evidence of a small settlement, including visible architecture.

Initial examination of the surface materials from Hnaberd (n=602) suggested two primary eras of occupation (fig. 4a-m), the LB/EIA (73%) and the late Urartian/Achaemenid era (17%). Closer inspection of a subset of the most clearly diagnostic fragments from the site (n=52) indicated four eras of occupation: the EIA (10%), the late Urartian/Achaemenid era (69%), the Classical period (19%), and the Medieval period (2%). It is important to note that this more detailed study found no evidence of wares attributable to the Late Bronze Age.

### *Other Settlement Sites*

The other settlements that we recorded during the course of our survey were rather enigmatic constructions. In addition to the Medieval settlement north of Sahakaberd mentioned above, we recorded three unfortified habitation sites: Zoyashen, Susanashen, and Marsiyakert<sup>7</sup>. Marsiyakert (40°36.818' N, 44° 13.676' E, 2325 m a.s.l.), a complex of walls located on a broad promontory high up the mountain slopes, was by far the largest settlement located during the survey. Although room complexes were not

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<sup>7</sup> In order to avoid potential confusion between fortified sites, unfortified sites, and modern villages, these site names are not drawn from surrounding features of the landscape but were coined by our project.

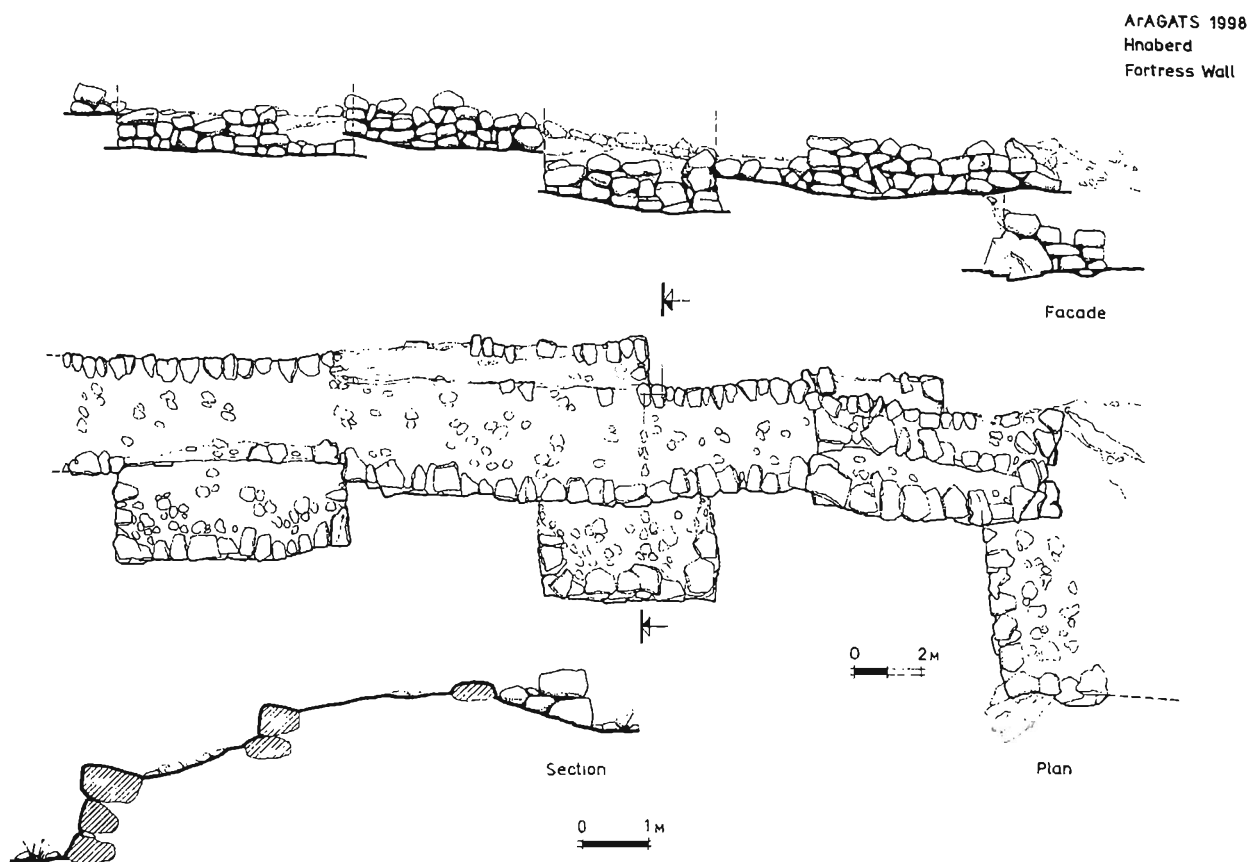


Fig. 10 – Drawing of South Fortification Wall Segment at Hnaberd.

visible, irregular lines of stone masonry walls could be traced over a total area of approximately 0,4 ha. In association with the site are a number of canals as well as a large reservoir located just below the eastern face of the promontory. No surface materials were found at the site.

Susanashen (N 40°36.043', E 44°11.183', elev. 2418 m) is a small complex of rooms located on a valley floor between an eroded bluff and a fast running stream. The west wall of the complex remains the best preserved as the eastern end of the site appears to have been cut by the stream. The site appears to be a set of rooms set in a linear block 24 m long and approximately 6 m wide. Evidence of internal dividing walls within the block was ephemeral, precluding measurement of room sizes. No materials were found at the site.



Zoyashen (40° 38.223' N, 44°15.707' E, 2246 m a.s.l.) is a large, roughly circular complex of stone walls located in a basin in the low foothills just above the plain. The area enclosed by the highly discontinuous segments of wall is approximately 4 ha. Within this space we recorded six cromlechs and a host of much smaller wall segments. But preservation was not adequate to give us an overall understanding of the coherence of the construction, leaving open the possibility that Zoyashen is actually an amalgamation of more than one building episode. Four small pieces of ceramic were found at the site, 2 diagnostic of the Early Bronze Age and 2 of the Late Bronze/Early Iron Age.

## 2. Cemeteries

Confirming Marr's supposition from a century earlier, our survey recorded a vast number of cemeteries spread across the north slope of Mt. Aragats. We recorded 144 discrete cemeteries composed of cromlechs typical of LB/EIA mortuary architecture, a density of 4.5 cemeteries per km<sup>2</sup> (fig. 5). The cemeteries were broadly distributed across the survey area, increasing slightly in density around the site of Tsakahovit but extending into the hinterland without clear boundaries. Around Tsakahovit, cemeteries primarily appeared in basins between ridges. However as we moved west, towards Sahakaberd, this general locational tendency reversed and cemeteries appeared almost exclusively on the tops of ridges. Around Hnaberd, the topography is less rugged and cemeteries are broadly distributed along the mountain slope. We also recorded other mortuary features in the area, including seven kurgans.

The cemeteries appear to reach no higher up the mountain slope than the 2500 m contour – this is approximately where a series of rough lava fields begin that extend up to the base of the summit. The cemeteries most likely extend north onto the Tsakahovit plain – construction in the village of Tsakahovit regularly turns up Late bronze and Early Iron Age materials that appear to be from mortuary contexts. But due to serious disturbance caused by construction and cultivation, subsurface testing will be required to determine the extent of cromlech cemeteries on the plain. We did not find an end to the cemeteries to either the east or the west. They seem to stretch on around the east and west flanks of Mt. Aragats. Indeed a number of well-known Late Bronze and Early Iron Age cemeteries have been excavated on the western slope of Mt. Aragats including Harich (Khachatryan 1975), Artik (Khachatryan 1979), and Horom (Badaljan *et al.* 1993, 1994).

Within the cemeteries, the burials were occasionally broadly spaced, but more often cromlechs were densely packed, creating a complex overlay of

features and dense clustering that made census difficult. Only in one cemetery (Sa.C.8) was a built feature – a stone wall – found to mark the limits of the necropolis. Estimates of the number of cromlechs in the cemeteries that we recorded ranged from 5 to 40. Although a true census of the cemeteries is not feasible, a conservative approximation of 20 cromlechs per cemetery yields an estimate of 2880 cromlechs within the survey region.

As we became increasingly familiar with the surface signature of cromlechs, we grew more sensitive to variations in architectural form. The standard form of the southern Transcaucasian cromlech has a earthen or stone lined tomb, capped by one to three large stones (usually basalt) surrounded by a stone circle. This construction typically hosts only one or two individuals. We found a number of repeated variations on this theme including burials which used more than one circle of stones (often creating a stepped appearance), stone circles styled into a spiral, and earth or stone cobble mounds raised atop the capstones. Although each cemetery was spatially discrete, there was no regularity in the architectural variants on the cromlech theme contained within a single cemetery.

We are continuing our analysis of cemetery distributions and forms and hope to publish these findings in another forum. But the presence of such extensive mortuary complexes presents us with a picture quite different from what we might reconstruct solely on the basis of fortresses. On a demographic level, the sheer size of the population of the dead poses the problem of locating these individuals in life. As the evidence of settlements within the survey area dating to the Lchashen-Metsamor horizon was meager, we are left to hypothesize that these populations either left few traces or resided on the plain itself rather than in the foothills.

### 3. Stelae

In the course of our survey we discovered four carved stone monuments, or stelae, in the hinterlands surrounding Tsakahovit fortress (fig. 11). All of the stones were of roughly hewn basalt although they differ somewhat in form. Two stelae (1 and 2) recovered adjacent to cromlechs had rounded tops and squared socket bases (stela 1: 0.28 m × 0.23 m × 0.74 m high; stela 2: recovered in two pieces, 0.37 m × 0.26 m × 0.81 m high). Stela 4, located *in situ* set into the ground next to a cromlech south of Sahakaberd, had a flat top and a pyramidal base (0.29 m × 0.16 m at the top narrowing at the base to 0.16 m × 0.07 m across; the entire stone is 0.69 m long, 0.18 m was originally above ground). Stela 3, much taller than the others, was found *in situ* on the western end of the Marsiyakert settlement, but without any clear adjacent features with which we might associate it. We did not remove the



Fig. 11 – Photo of Stela 1.

stone from the ground so we can say little about its overall height or subsurface form. The above ground portion of the stela was 0.41 m high and its rectangular body with a flat top was 0.20 m  $\times$  0.18 m.

Perhaps the most intriguing aspect of these stones, but potentially also the most misleading, is their location (fig. 5). When plotted on a map of the region, the stelae are distributed around Tsakahovit fortress to the east, west, and south. If we are allowed to speculate that the stelae functioned to mark the boundaries of a territory (economic? administrative? sacral?) then the closest analogy would be the stelae erected by the Armenian king Artashes during the 2<sup>nd</sup> century B.C. that bore Aramaic inscriptions defining

territorial divisions (Diakonoff and Starkova 1955; Tiratsyan 1959, 1980). The stelae that we found on the north slope of Mt. Aragats are generally comparable to those of Artashes in size but do not share the latter's classical appearance or tri-lobed crown. Speculation aside, we must emphasize that neither the dating nor the meaning of these artifacts is clear at present.

#### 4. Hydraulic Features

At the beginning of the century, Toramanyan (1942: 31-32) recorded two irrigation works in connection with Hnaberd fortress. One was located on the southeastern edge of the fortress hill while the other extended across the lower slopes. Both were in use at the time. By the time Adzhan *et al.* (1932: 63) visited the site, they were only able to record "traces of canals marked by the remains of stone dams".

In the course of our survey we encountered a number of hydraulic features including reservoirs, canal traces, and check dams. Although it is difficult to accurately date these features, such irrigation works have long been considered a central feature of Late Bronze and Early Iron Age political formation (Kalantar 1994). Our survey recorded five large reservoirs in basins south and east of Tsakahovit. Two of the reservoirs are still actively used – one supplies water to the modern village of Tsakahovit via a concrete canal, a second adjacent to the settlement remains of Marsiyakert serves as a watering place for livestock. The other three do not appear to be in use. These reservoirs are visible as regularly shaped depressions in the earth that, thanks to the wet weather in the summer of 1998, collect water into easily identifiable circular pools.

The canals were identifiable in two forms: as linear built features with visible architectural remains such as check dams or as linear traces, depressions faintly carved into the hill slope, well above the natural water channel. We located a large number of canal segments in the course of our survey. Geographic analysis of their extents continues as we hope to create a composite map of ancient watercourses in the region that we might then enhance with archaeological soundings in order to provide a greater degree of chronological control than is currently available.

#### EXCAVATIONS AT TSAKAHOVIT

The final phase of our summer 1998 research centered on test excavations at Tsakahovit (figs. 6, 12). We chose Tsakahovit fortress for more intensive exploration for two reasons. First, we were interested in



Fig. 12 – Photo of Tsakahovit Fortress Hill.

defining with greater resolution the Late Bronze and Early Iron Age occupation of a single site by establishing the chronological relationships between a cemetery, extramural settlement, and fortress. Given the adverse impact reconstruction often has upon preceding occupation levels, such as was visible at Sahakaberd and Hnaberd, Tsakahovit seemed the best location for test excavations. Second, the extensive terrace system on the fortress hill piqued our interest as they suggested a much greater investment in the transformation of the local terrain than is usually expected of pre-Urartian political centers. Pursuant to these objectives, we opened five exploratory operations at the site: two on the fortress hill (one atop the citadel and one on a western terrace), two in the settlements (one in the South settlement, one in the Southeastern settlement), and one in East Cemetery 1, on the eastern edge of the site.

#### *Fortress Excavations*

Atop the citadel we set two 2 m × 2 m trenches separated by a 0.5 m balk against the inside face of the western fortification wall. The sedimentary fill horizons (topsoil and wash levels) on the citadel are relatively thin – approximately 0.7 m of deposits – but the matrix is extremely rocky,

presumably due to collapsed architecture. With a section of the fortification wall's interior face exposed, we were able to more closely discern the masonry which employed stone-on-stone construction using medium-sized blocks with smaller rocks wedged into the gaps. The building stones were only minimally shaped on the exposed face and as a result the wall was not constructed in courses. Overall, the masonry of the wall appears extremely rough, though by no means haphazard.

Immediately below the sedimentary layers we uncovered substantial evidence of burning including deposits of white ash and blackened earth. It is unclear at present whether these deposits represent a single burning episode or two closely timed events. But the levels of ash do effectively seal the only occupation floor – a layer of hard-packed yellow clay and gravel, paved in some places with flagstones. On the floor of trench 2 we found two grinding stones covering a shallow pit dug into the yellow clay floor and a larger pit, possibly a hearth, filled with ash. Both features were partially ringed with stone. Within and around these features we found the remains of several polished knucklebones (2 other examples with drill holes had been found in the wash layer of trench 1). The floor also yielded a small ceramic tripod (5.0 cm diameter) and numerous vessel fragments, including an almost complete LB II/III jar (fig. 13i).

Initial examination of the ceramics recovered from the citadel trenches (N=587 for trench 1, n=791 for trench 2) described two major components of the wares recovered from the disturbed wash layers: Middle Iron Age (53% in trench 1, 27% in trench 2) and LB/EIA (22% in trench 1, 69% in trench 2). No architectural remains or living floors were documented in association with the ceramic materials above the ash layer. Below the ash layer, the later wares virtually vanish in both trenches leaving 81% LB/EIA wares (15% were not diagnostic). Closer inspection of 110 particularly diagnostic sherds from the citadel excavations (not divided by locus) found a similar overall pattern to the materials with 50% of the finds attributable to the Late Bronze Age and 32.7% to the late Urartian and Achaemenid eras. In addition, 10.9% of the materials were found to be typical of the Classical era and 6% to Medieval times.

We opened the second fortress operation on the western slope of the hill (fig. 5), expanding a small robber's trench that had been dug into the terrace. The robber's trench had yielded numerous pieces of a single large storage jar, suggesting that the area might yield well-preserved occupation layers substantially different in character from what we were finding on the citadel. After cleaning the robber's trench, we set out a 2 m wide excavation unit, stretching from the edge of the terrace back 5 m to a large stone that we thought (incorrectly) might mark the next terrace wall.

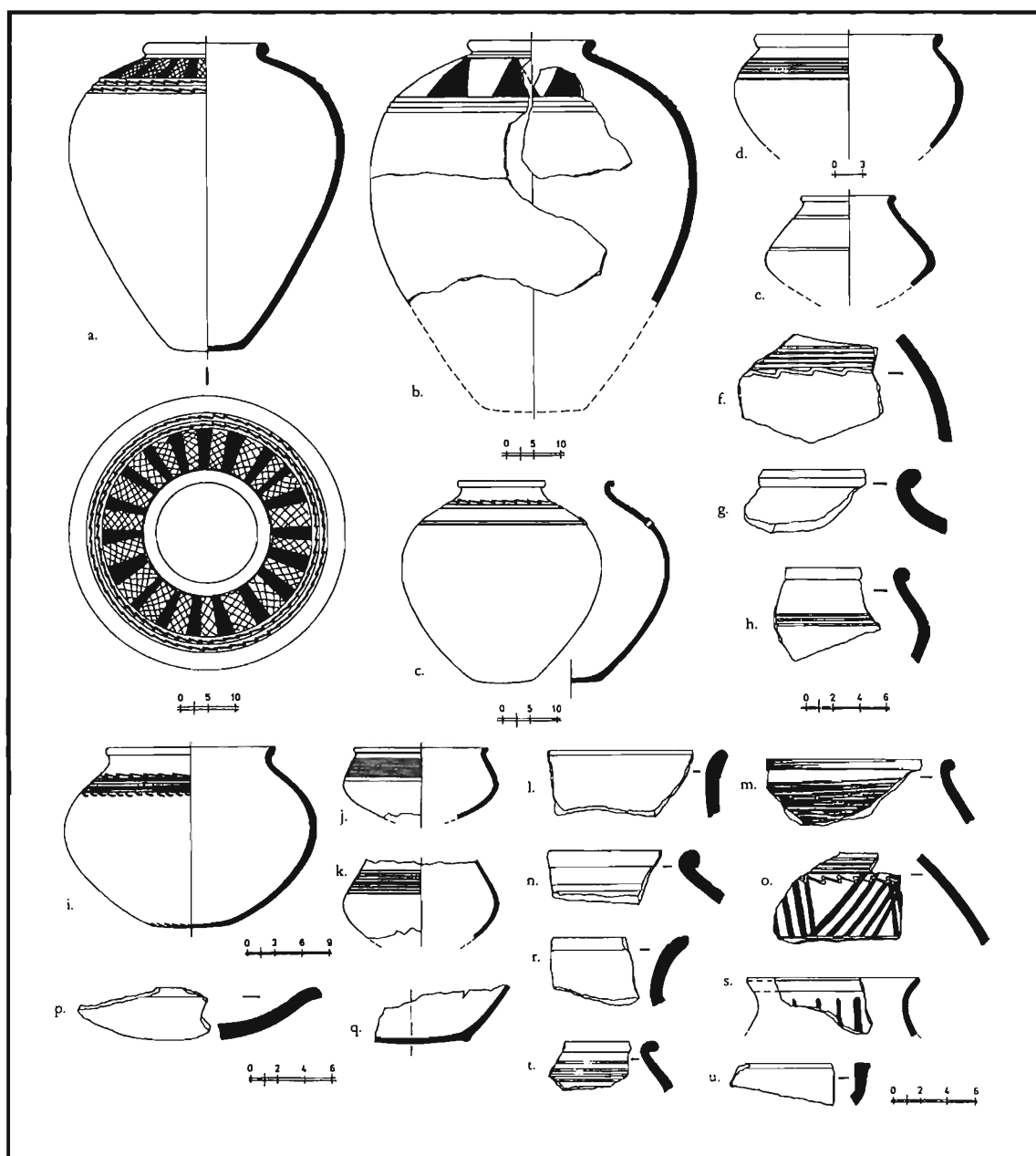


Fig. 13 – Ceramics from West Terrace Trench 1 (a-h, Late Bronze Age) and Citadel Trenches 1 and 2 (i-k, m-o, q, t, Late Bronze Age; l, p, r-s, u, Late Urartian/Achaemenid era) Excavations at Tsakahovit.

Due to the slope of the hill, the sedimentary fill horizons in the trench varied from 0.9 m at the back of the terrace to only 0.3 m near the edge. As on the citadel, the occupation level was separated from the disturbed sedimentary layers by a thick burned level (0.20 m thick). Unlike the citadel trenches, the terrace operation revealed a large number of burned beam segments resting on and just above the packed clay floor. Although the beams were not sufficiently well preserved to be useful as potential dendrochronological samples, they did yield excellent specimens for radiocarbon dating. Three samples from the beams were submitted to the AMS facility at the University of Arizona (table 2). These results suggest a date for the burning episode at the site sometime between the late 14<sup>th</sup> and the early 12<sup>th</sup> century B.C. This would fall within the chronological parameters of the LB II/LB III phase in Avetisyan *et al.*'s periodization and is well supported by the strong presence of diagnostic ceramics of this era in both the citadel and terrace operations. On the floor we recovered two large storage vessels (fig. 13 a, b) and a butter-making vessel (fig. 13 c), all attributable to the Late Bronze Age. Preliminary classification of the materials from the sedimentary layers of the West Terrace trench found 61.9% of the materials attributable to LB/EIA types and 35.7% broadly analogous to Middle Iron Age and Classical period wares. Below the burned layer, the later components virtually disappeared leaving an assemblage dominated by LB/EIA wares. Closer inspection of a select group of highly diagnostic fragments from throughout the trench (n=63) has confirmed our preliminary finding, indicating a strong Late Bronze Age component (78%) as well as evidence of less robust late Urartian/Achaemenid (17%) and Classical (5%) era components. The large number of storage vessels from the terrace operation, in contrast to the assemblage of small jars and bowls from the citadel, raises the possibility that this area of the terrace hosted storage facilities for the fortress.

SAMPLE CODE	PROVENANCE	RADIOCARBON AGE	SIGMA	CALIBRATED YEARS BC
AA 31034	Locus 8	3015 ±45	1	1390 - 1210
			2	1410 - 1120
AA 31035	Locus 6 Sample A	3040 ±45	1	1400 - 1260
			2	1430 - 1160
AA 31036	Locus 5 Sample C	2975 ±50	1	1310 - 1120
			2	1390 - 1040

Table 2 – Radiocarbon results from West Terrace Trench 1 Excavations at Tsakahovit.



*Settlement Excavations*

In order to define the occupational sequence of the settlements we opened test trenches in two rooms of the south and southeast settlements. In the south settlement, we excavated the western half of room A (8.35 m × 3 m). Although bearing a superficial resemblance to Late Bronze and Early Iron Age constructions from the surface, a vertical exposure of the wall face in room A (with parts of clay facing material still visible) reveals the closely hewn stones, intervening rubble fill, and regular courses that are more widely known from later eras.

The sedimentary fill horizons in the room were between 0.5 m and 0.9 m deep. As we had found on the fortress hill, the upper disturbed layers in the room (n=364) contained a mixture of LB/EIA (17.6%) and late Urartian/Achaemenid era (49.2%) wares (fig. 14a-h). However, as we came down upon the living floor, it was the LB/EIA wares that dropped out of sight, leaving only Middle Iron Age ceramics of the late Urartian and Achaemenid eras. Closer examination of a subset of particularly diagnostic ceramics from room A (n=63) confirmed the pronounced late Urartian/Achaemenid era component (74.5%) and revealed a smaller Classical period aspect (23.8%). In contrast to the fortress hill occupations, there was no evidence of any destruction episode and the living floor was fairly clean.

In the southeastern settlement we opened a 1.75 m × 3 m trench in the southwestern corner of room 34. The architecture of the room proved less substantial than we had thought and the deposits quite thin (less than 0.55 m). As a result it was quite difficult to get a sense of the construction in the trench since in few places did the lines of stone include more than one course. Near the southwestern corner of the trench, our excavations uncovered what appear to be two large stone pillars flanking a 0.9 m wide doorway. We opened a small trench (1 m × 0.5 m) through the doorway and into the adjacent room. However, this did not greatly clarify the nature of either space.

The ceramic materials recovered from room 34 (n=483) were dominated by Middle Iron Age and Classical period wares (93.8%). Closer inspection of a select group of diagnostic fragments (n=43) identified three primary groups: 81% were classifiable as late Urartian or Achaemenid era wares, another 9.3% were identifiable as Classical era wares, and only 9% were classifiable to the Late Bronze Age (fig. 14 i-m). At present, we remain uncertain about the function of room 34, although the large size of rooms in the southeastern settlement, and the difficulty of roofing such spaces, raises the possibility that at least some of the spaces may have served as animal shelters.

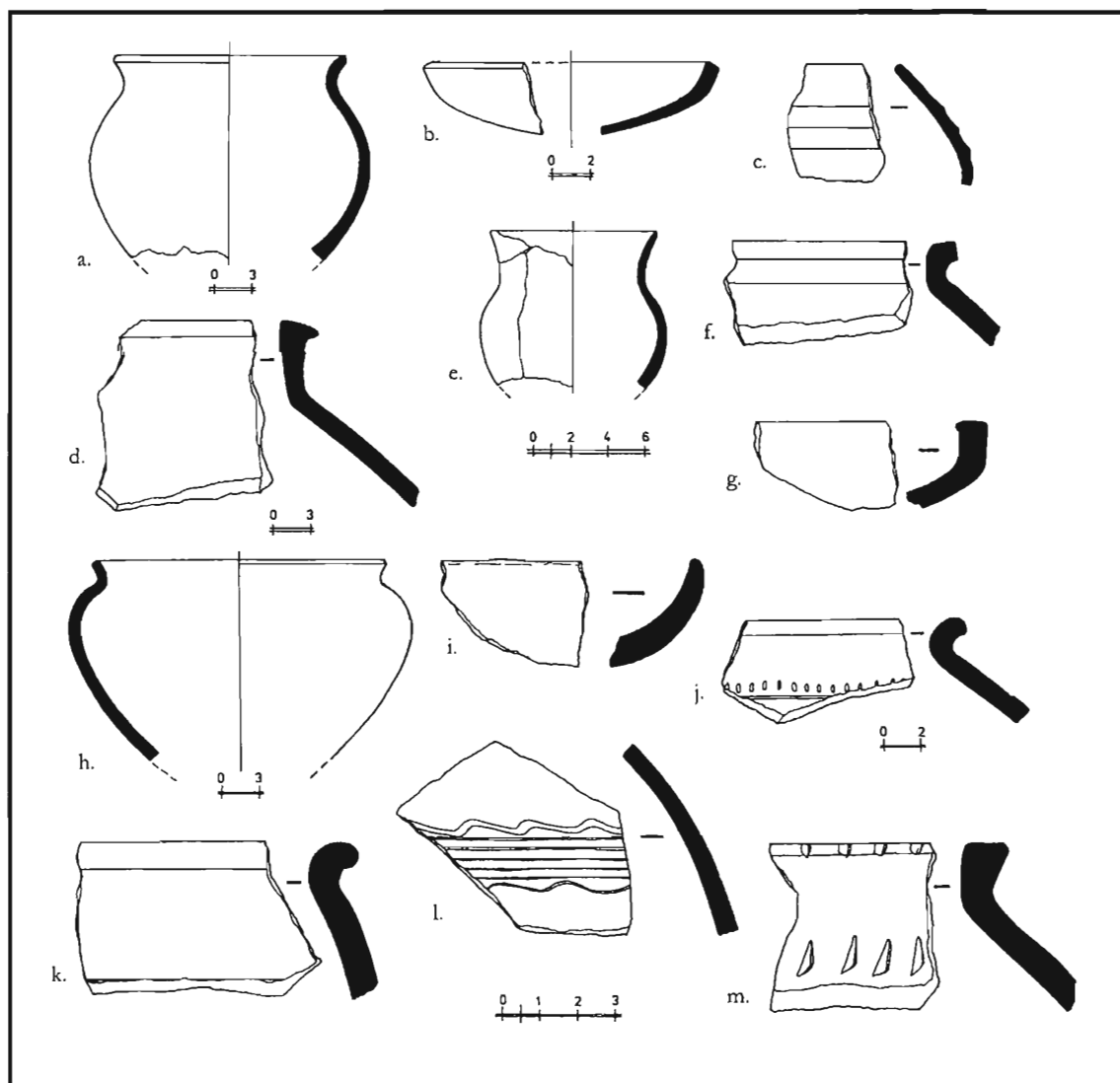


Fig. 14 – Ceramics from South Settlement Room A (a-h, Late Urartian/Achaemenid era) and Southeast Settlement room 34 (i-k + m, Late Urartian and Achaemenid era; l, Late Bronze Age) Excavations at Tsakahovit.

### *Cemetery Excavation*

Our last excavation unit was what appeared from the surface to be a single large cromlech located on the eastern edge of the Tsakahovit complex (fig. 15).

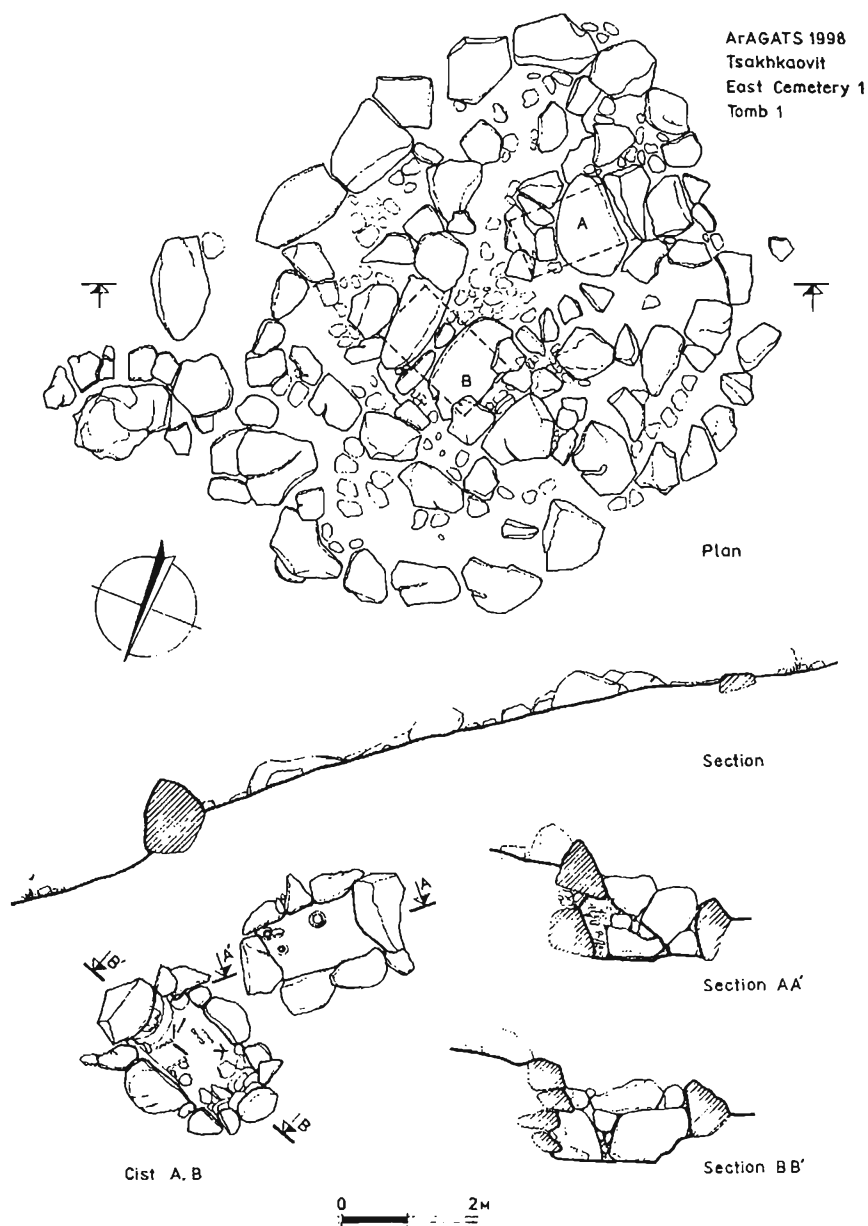


Fig. 15 – Drawing of Cromlech in East Cemetery 1 prior to excavation.

The burial feature is an oval-shaped construction (9 m in diameter east-west and 9.6 m diameter north-south) covered by stone fill and encircled with large

basalt blocks. After cleaning the surface of the cromlech, it became clear that the feature was in fact two stratigraphically superimposed burials where the mortuary construction associated with cist A was built atop the cromlech surrounding cist B. Both chambers were stone lined and capped with large basalt blocks. Cist B (1.75 m × 1.05 m × 1.10 m) was oriented NW-SE while cist A (1.70 m × 0.90 m × 1.15 m) was oriented NE-SW. In cist A we found 4 LB II vessels but no skeletal material (fig. 16 a-d)<sup>8</sup>. In chamber B we found 2 whole and 2 partial LB II ceramic vessels in association with a handful of human bones, including the top of a cranium and several long bones (fig. 16 e-h)<sup>9</sup>. The osteological materials are currently being examined in Yerevan to determine basic demographic information as well as any evidence for trauma.

The ceramics found in both chambers echo materials recovered from the fortress trenches in both form and design, suggesting contemporaneity between the cemetery and the fortress. From both surface survey and excavations at Tsakahovit, we can offer the following preliminary reconstruction of the formation of the site over time and across space:

- a. Early Bronze Age: a settlement was constructed on the lower reaches of the southwest slope of the fortress hill.
- b. Late Bronze II and III (late 15<sup>th</sup>-late 13<sup>th</sup>/early 12<sup>th</sup> centuries B.C.): the fortress was built along with the terraces and East Cemetery 1. It also seems highly likely that a large number of the other cemeteries recorded around the site were also constructed at this time, although this conclusion must await further investigations.
- c. Late Urartian/Achaemenid era (7<sup>th</sup>-5<sup>th</sup> centuries B.C.): construction of the south and southeast settlements. We might extrapolate from our preliminary results that the east settlement was also constructed at this time but the eastern area of the site remains at present unexplored.
- d. Classical period (4<sup>th</sup>-2<sup>nd</sup> centuries B.C.): it is possible that the occupation of the south and southeast settlements continued without interruption into the Classical period. However, given the rather small portion of materials recovered of the Classical era, the nature of occupation at the site during this time remains uncertain.

It is important to note that Early Iron Age and classical Urartian wares are entirely absent from the repertoire of ceramics recovered from Tsakahovit. Similarly, no evidence was found of Middle Bronze Age materials.

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<sup>8</sup> These vessels correspond in form and ornament to wares dated to the relatively later portion of the LB II phase, probably corresponding to the early 14<sup>th</sup> century B.C.

<sup>9</sup> The stylistic and technological elements of the vessels from chamber B hint at a date in the first part of the LB II phase, perhaps during the late 15<sup>th</sup> century B.C.

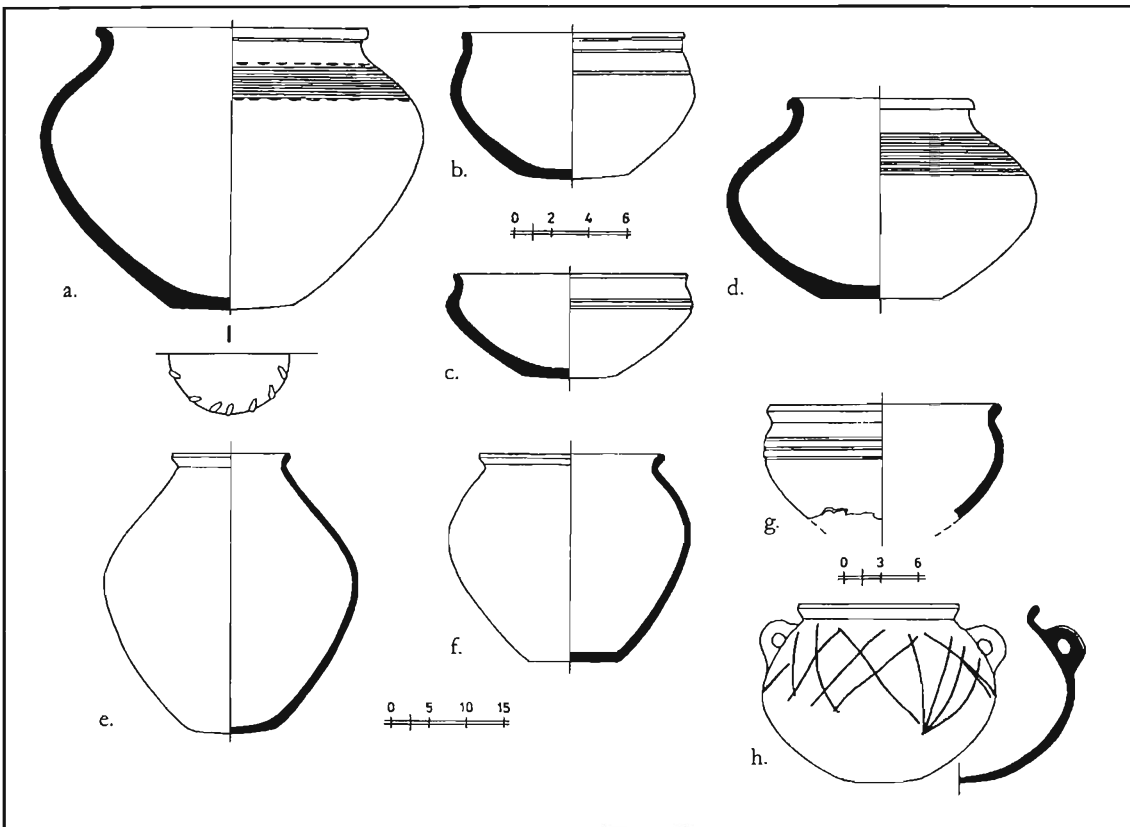


Fig. 16 – Ceramics from Cists A (a-d) and B (e-h) of Burial 1, East Cemetery 1 at Tsakahovit.

### CONCLUSIONS

In assessing the evidence collected from the five major sites distributed around the Tsakahovit plain, it appears that the occupations of Gegharot, Aragatsi-berd and Tsakahovit – all sites in the eastern reaches of the plain – were well synchronized, each boasting prominent occupations during the Early Bronze, Late Bronze, and late Urartian/Achaemenid eras (table 3). Further to the west, occupation of Hnaberd seems to have begun in the Early Iron Age, when the eastern sites show no signs of habitation and continued through the classical era (when Sahakaberd seems to have been founded).

Sites Periods	Gegharot	Aragatsi- berd	Tsakahovit	Hnaberd	Sahakaberd
Early Bronze Age					
Middle Bronze Age					
Late Bronze Age					
Early Iron Age					
Urartu					
Achaemenid					
Classical					


 = Evidence of Occupation at Site

Table 3 – Periods of Occupation at Five Major Fortress Sites in the Tsakahovit Basin.

One tentative conclusion that arises from all three phases of our research is that a significant portion of the temporal data – ceramics from both survey and excavations, radiocarbon dates – all point to the LB/EIA as a period of intensive and extensive occupation of the Tsakahovit plain region. This was a critical time in the political history of Transcaucasia as what appear to be more mobile settlement regimes of the Middle Bronze Age were succeeded by a re-expression of permanent habitation sites in the indelible form of the cyclopean fortress. These changes in settlement formalized and reinforced patterns of social stratification that have their roots in the early

2<sup>nd</sup> millennium B. C. Further exploration of the proto-historic occupations of the Tsakahovit plain will undoubtedly shed considerable new light upon the sources of social complexity in Transcaucasia.

#### ACKNOWLEDGEMENTS

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