ՀԱՅԿ ԱՎԵՏԻՍՅԱՆ
HAYK AVETISYAN

ԱՐԱՄՈՒՍ
ՀՆԱԳԻՏԱԿԱՆ ՀԵՏԱՔՐՈՏՈՒԹՅՈՒՆՆԵՐ
ARAMUS
ARCHEOLOGICAL INVESTIGATIONS

ՆՎԻՐՎՈՒՄ Է ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ ԱՆԿԱԽՈՒԹՅԱՆ 20 ԱՄՅԱԿԻՆ

Գիրքը հրատարակության է երաշխավորել
ԵՊՀ հնագիտության և ազգագրության ամբիոնը

Խմբագիրներ՝ Պ. Ավետիսյան, Հ. Թոքմաջյան

Համակարգչային ձևավորումը և լուսանկարները Ն.Ավետիսյանի

Աշխատանքը նվիրված է Արամուսի հնագիտական համալիրների ուսումնասիրությանը, որը համառոտ ներկայացնում է հնավայրի նյութական և հոգևոր մշակույթի որոշ դրվագներ: Նախատեսված է մասնագետների և ընթերցող լայն շրջանակների համար:

Հեղինակն իր երախտագիտությունն է հայտնում
Մարաշի Հայրենակցական Միությանը գրքի
տպագրության համար:

Տպագրություն՝ Հալեպի Մարաշի Հայրենակցական Միություն

Sponsored by UMA - UNION OF MARASH ARMENIAN
Aleppo - Syria

Տպաքանակ՝ 1000 օրինակ

Հալեպ 2012

Արամուս

Հայաստանի Հանրապետության Կոտայքի մարզի Արամուս գյուղը և շրջակայքը աչքի են ընկնում հնագիտական ու պատմաճարտարապետական հուշարձաններով: Մեծաքանակ համալիրները վերաբերում են քարի դարից մինչև միջնադար ընկած ժամանակաշրջանին : Դրանց մեջ առանձնանում է հատկապես Արամուս գյուղի տարածքի հսկայական ամրոց - բնակավայրը, որի պեղումները սկսվել են դեռևս 1980-ական թվականներին, Երևանի պետական համալսարանի հնագիտական արշավախմբի ջանքերով: Սպիտակի երկրաշարժի և ԽՍՀՄ կազմալուծման հետևանքով հուշարձանի տարածքում կատարվող պեղումները ժամանակավորապես դադարեցին :

ԵՊՀ հնագիտության և ազգագրության ամբիոնի և Ինսբրուկի (Ավստրիա) Լեոպոլդ Ֆրանցի անվան համալսարանի մշակած ծրագրով գիտական ուսումնասիրությունները վերսկսեցին 2004թ.ի աշնանը :

Ավելի քան յոթանասուն մետր բարձրությամբ, արևելքից-արևմուտք ձգվող բլրաշարի վրա վեր են խոյանում երբեմնի ահռելի ամրոցի ավերակները: Համալիրը բաղկացած է երկու՝ արևելյան և արևմտյան խոշոր հատվածներից: Արևելյան մասում կառուցվել են վերին և ստորին միջնաբերդերը: Վերին միջնաբերդը հատակագծում ուղղանկյուն, մոտ 20-30 մ լայնքով, արևելքից արևմուտք ձգվող առանցքով, շուրջ մի քանի հա տարածք ընդգրկող, բազմաթիվ կառույցներից և շինություններից կազմված ամրաշինական համակարգ է: Վերջինս օղակված է տասնյակների հասնող որմնահեցերից և աշտարակներից բաղկացած՝ 2,1-5,5մ հաստությամբ պարսպապատերով: Պարսպապատերից՝ մինչև 1,05 մառաջ եկող որմ-

նահեցերն ունեն 3-5-8մ երկարություն: Տեղանքի որոշ հատվածներում ժայռերը հարթեցված են: Պարսպապատերի ամրությունն ապահովելու համար տեղ-տեղ կառուցվել են մեկից մինչև երեք շարք աստիճանաձև հենապատեր: Վերին միջնաբերդի արևելյան և արևմտյան ճակատային պարսպապատերի մեջ բացվել են կողային աշտարակներով ամրացված հզոր մուտքեր:

Ստորին միջնաբերդը հանդիսանում է վերը նկարագրված համալիրի օրգանական շարունակությունը: Զբաղեցնելով ավելի փոքր տարածություն, այն ուղղված է արևելքից արևմուտք, իսկ արևելյան հատվածում միաձուլվում է վերին միջնաբերդի արևմտյան մուտքին: Հատակագծում ձգված ուղղանկյան տեսքի ստորին միջնաբերդը շուրջ 20 մ ցածր է տեղադրված վերինից: Քննարկվող համալիրն ունի ավելի քան 30 մ լայնություն և վերին միջնաբերդի նման շրջապատված է տեղանքի գծագրությանը համապատասխան պարսպապատերով: Կրկնելով վերին միջնաբերդի կառուցողական մանրամասները, այն արևմտյան պարսպապատի կենտրոնական հատվածում ունի հզոր մուտք, որի հյուսիսային և հարավային հատվածներում կառուցվել են խոշոր անկյունային աշտարակներ:

Ամրոցի արևմտյան հատվածը համեմատաբար վատ է պահպանվել: Նշված տարածքը ընդգրկող այս համալիրը շրջափակված է բազալտե հզոր պարսպապատերով, որը հավանաբար «բակի» դեր է կատարել: Ամրոցի արևմտյան հատվածն ունի արևելք-արևմուտք ուղղվածություն և ստորին միջնաբերդից բաժանվում է 12 մ լայնությամբ հյուսիս հարավ ձգվող ճանապարհով:

Ամրոցի տարածքը տեղանքի գծագրությանը համապատասխան բաղդատվում է դարավանդների, որոնք, մասնավորապես միջնաբերդի հյուսիսային և հարավային թևերում, իրարից հեռանում են 70-100 մ: Դարավանդներն իրենց հերթին տեղ-տեղ ամրացված են մինչև 2,5 մ բարձրությամբ պահպանված պարսպապատերով, որմնահեցերով և աշտարակներով: Նման դարավանդները բնորոշ են ուրարտական մի շարք ամրոցներին և բնակավայրերին՝ Հայկաբերդ, Կայալի Դերե, Արգիշտիխինիլի և այլն:

Ուրարտական խոշոր ամրոցների նման Արամուսն ունեցել է քաղաքային հատված, որը սակայն չի պահպանվել:

Ամրոցի պարսպապատերն ունեն բազալտե կոպտատաշ հսկայական քարաբեկորներից կրկնակի զրահապատ չոր շարվածք: Պատերի հաստությունը համապատասխանում է ուրարտական ստանդարտին՝ տատանվելով 2,1-5 մ միջև, պահպանված բարձրությունը 2,5 մ: Պարսպապատերի համար հիմք են հանդիսացել բազալտից ժայռերի հարթեցված ելուստները: Հին վարպետները պատերի ամրությունն առավել ապահով դարձնելու նպատակով, դրանց հիմքի մասում ավելացրել են միաշար - եռաշար հենապատեր: Բացի այս հենապատերից կառուցվել են նաև 3-8 մ երկարությամբ, 1-1,2 մ լայնքով որմնահեցեր, բազմաթիվ քառանկյուն, ուղղանկյուն կցակառույց աշտարակներ, որոնց մի մասն անկյունային են:

Ամրոցի առանձին համալիրներն ու շինությունները մեկմեկու հաղորդակից են հարթ, աստիճանավոր թեքամուտքերով: Միջնաբերդերի որոշ հատվածներում, պարսպապատերի մեջ, հստակ ընդգծվում են նաև պաշտպանական նկատառումներով «ծուղակի» սկզբունքով կառուցված մուտքեր, անցումներ, որոնք իրենց հատակագծային լուծումներով տիպական են Վանի թագավորության պաշտպանական համակարգի համար: Արամուսի ուրարտական ամրոցի թվագրման համար կարևոր նշանակություն ունի նրա հիմնադրման ժամանակագրության հետ կապված խնդրի վերլուծականը: Տասը տողից կազմված էլառի արձանագրությունը ունի հետևյալ բովանդակությունը.

/1/ Խալդի աստվածն արշավեց, իր զենքին
/2/ հպատակեցրեց Էթիունի երկիրը:
/3/ Խալդին ուժեղ է, Խալդիի զենքը ուժեղ է:
/4/ Խալդյան զորությամբ արշավեց,
/5/ Արգիշտին, Մենուայի որդին,
/6/ նվաճեց Ուլուանի երկիրը՝
/7/ Դարանի քաղաքի երկիրը: Խալդյան
/8/ մեծությամբ Արգիշտին, Մենուայի որդին,
/9/ թագավոր /է/ հզոր, թագավոր՝ Բիայնիլիի,
/10/ տերը՝ Տուշպա քաղաքի:

Արամուսի ուրարտական ամրոցից ոչ շատ հեռու տեղադրված մի այլ հնավայրի Դարանի ամրոցի դիմաց՝ նրա հարավային կողմում Արգիշտի I-ի կողմից թողնված այս արձանագրության ուսումնասիրությունից պարզվում է, որ Ուրարտուի հզորագույն արքան գրավել է Ուլուանի երկիրը Դարանի քաղաքով:

Ուրարտուի թագավորները, որպես կանոն, խոշոր երկրամասեր և քաղաքներ գրավելուց հետո կառուցում էին /եթե չէին վերակառուցում հինը/ նոր քաղաքներ, ամրոցներ, միջնաբերդեր:

Ահա նման պատկեր է ուրվագծվում Արամուսի ամրոցի ուսումնասիրության ժամանակ, որը հավանաբար նույն Դարանի քաղաքի բաղկացուցիչ մասն է հանդիսացել : Այս ամենը և հնագիտական նյութի վերլուծականը մեզ հնարավորություն է տալիս ենթադրելու, որ հետազոտվող ուրարտական ժամանակաշրջանի ամրոցը կարելի է թվագրել մ.թ.ա. VIII դարով :

Տեղանքի արդյունավետ օգտագործումը և նախագծային լուծումները համապատասխանում են Բիայնիլիի քաղաքների շինարարական արվեստի չափանիշներին:

Արամուսի ամրոցի պարիսպների հատակագծային առանձնահատկությունները բնորոշող հատկանիշները՝ ուղղագիծ պարսպի հաստությունը, միմյանց որոշակի հեռավորությամբ հաջորդող և պարսպից առաջ եկող որմնահեցերը, աշտարակները բնորոշ են ոչ միայն Արարատյան դաշտին, այլև նախալեռնային և լեռնային շրջանների համալիրներին, ամբողջ Վանի թագավորությանը: Արամուսի բիայնական միջնաբերդի պարիսպները ունեն Էրեբունիի և Արգիշտիխինիլիի, Կարմիր բլուրի միջնաբերդերի պարիսպների նույնատիպ ձևերը:

Արամուսը կարևոր նշանակություն ունի բիայնական ամրոցների պաշտպանական համակարգում, քանի որ այն բացի պահակակետ լինելուց, նաև Ուլուանի երկրի վարչա-տնտեսական քաղաք- կենտրոններից է: Այն իր ֆունկցիաներով մոտենում է Արգիշտիխինիլիի, Էրեբունի, Թեյշեբաինի քաղաքներին: Բլրի գագաթից տեսանելի ազդանշանով կարելի է հաղորդակցվել մի շարք ամրոցների հետ, որոնք գտնվում են ռազմավարական բանուկ ճանապարհների վրա: Արամուսի ամրոցը յուրօրինակ դարբաս է Սևանի ավազանի և Արարատյան դաշտավայրի միջև, ապահովելով Ազա երկրի անվտանգությունը հյուսիսից :

Ակնառու է, որ Արամուսում բարձր զարգացածության էր հասել երկրագործությունը, որն ի տարբերություն Արարատյան դաշտի, ուներ նախալեռնային շրջանին բնորոշ առանձնահատկություններ: Սրա հետ մեկտեղ բարձր զարգացածության մակարդակի հասած անասնապահությունն առավել ամբողջական էր դարձնում տնտեսական կյանքը՝ ապահովելով բնակչությանը երկրագործական և անասնապահական մթերքներով: Սրա վառ ապացույց են հանդիսանում առատորեն հանդիպող նյութական մշակույթի ամենատարբեր հավաքածուները:

Կանոնավոր պեղումները շարունակվեցին 2004թվականից ամրոցի արևելյան ծայրամասի հյուսիսային հատվածում: Մինչ 1ին դարավանդը առանձնացվեց պեղման հրապարակ, շուրջ 250 մետր քառակուսի մակերեսով: Շարունակելով պեղումները արշավախումբը նպատակ ուներ ճշ-

տելու ամրոցի կառուցապատման փուլերը, հստակեցնելու ժամանակագրական խնդիրները, շերտագրական իրողությունները և այլն: Այս պրոբլեմների պարզաբանման համար պեղավայրը ընդարձակվեց հիմնականում միջնաբերդի հյուսիս-արևելյան ուղղությամբ: Կատարվեց պեղավայրի փաստագրումն ու վավերացման աշխատանքները: Պեղման աշխատանքների ընթացքում ուսումնասիրվող տարածքը ընդարձակվեց: Մաքրվեց միջնաբերդի արևելյան մուտքին կից կառուցված հյուսիսային աշտարակը, առաջին պարսպապատը: Համարյա ամբողջովին պեղվեցին միջնաբերդի չորս շինությունները: Որոշակի հստակություն արձանագրվեց պարսպապատերի հետազոտման ժամանակ: Հատկապես կարևոր է դարավանդի վրա կատարված անատոմիական բացվածքում հայտնաբերված պարիսպի մնացորդը: Ամենայն հավանականությամբ այս պարսպապատը վերաբերում է միևչուրարտական ժամանակաշրջանին և բնորոշվում է որպես կիկլոպյան ամրոցի մնացորդ բնակեցված բրոնզե դարից :

Նշված պարիսպից դեպի հարավ դարավանդի վրա բացվել է հաջորդ պարսպագիծը: Վերջինս վերաբերում է Վանի թագավորության ժամանակաշրջանին և միջնաբերդի արևելյան հատվածում միանում է հզոր աշտարակի՝ մնացորդներին: Այս պարսպապատը իր կառուցողական առանձնահատկությամբ կրկնում է Վանի թագավորության նմանօրինակ շինություններին: Ուսումնասիրությունները ցույց տվեցին, որ միջնաբերդը օղակող վերջին պարսպագիծը անկասկած հետուրարտական ժամանակաշրջանի համակարգ է, որը գոյատևել է նաև վաղ միջնադարյան ժամանակաշրջանում: Բացի ամրաշինական դիաքրոն կառույցներից միջնաբերդում պեղվեցին նաև տարբեր շինություններ:

Պեղումների ընթացքում հավաքվեց տարբեր ժամանակաշրջաններին վերաբերող մեծ քանակությամբ հնագիտական գտածոներ: Վերջինները դասակարգվում են մի քանի խմբերի՝ մետաղական, քարե իրեր, խեցեղեն և այլն: Դրանց մեջ հատկապես կարևոր են ուրարատական ժամանակաշրջանի նյութերը, մասնավորապես խեցեղեն անոթները: Չնայած խեցանոթները հիմնականում բեկորային են, բայց այնուամենայնիվ հստակ պատկերացում են տալիս ուրարտական խեցեգործության մասին: Առանձնանում են տարբեր չափերի և տիպերի խեցանոթներ, որոնք օգտագործվել են երկրագործական և անասնապահական մթերքների վերամշակման և պահպանման համար:

Առանձին նմուշներ վերաբերվում են կենցաղային և ծիսական խեցեղենին: Ուրարտական խեցեղեն հավաքածուն դասակարգվում է երկու տիպի. ա/ կարմրավունից մինչև դեղնավուն, սև մոխրագույն բարձրորակ անգոբապատ և բ/ կոպիտ, սև փայլատ մակերեսով: Հարկ է նշել, որ այս անոթների 90 %-ը պատրաստված է դուրգի վրա: Խեցանոթների քննարկվող խումբը թվագրվում է մ.թ.ա. 8-6 դդ.:

Պեղումների ժամանակ հայտնաբերվել են մետաղից ոչ մեծ քանակությամբ գտածոներ, որոնք հիմնականում վերաբերում են Վանի թագավորության ժամանակաշրջանին և իրենց լայն զուգահեռները ունեն Կարմիր բլուրի, Էրեբունու, Արգիշտիխինիլիի, Այանիսի և այլ հուշարձանների նյութերում: Մետաղե իրերից առանձնանում են բրոնզից և երկաթից մատանիներն ու ականջօղերը, ապարանջանները, շքասեղներն ու ֆիբուլները: Այս իրերը պատրաստված են բարձորակ բրոնզից՝ կաղապարով և իրենց ոճական առանձնահատկություններով բնորոշ են ուրարտական կիրառական արվեստին:

Բրոնզից բաժանարարները, մատանիները, ականջօղները բաժանվում են երկու խմբի, բարակ

լարից մեկ պտույտով և տափակ մակերեսով երկու և ավելի ոլորապտույտ: Ականջօղներից մի քանիսը մակերեսներին ունեն գինդաձև հարդարանք: Հայտաներված ապարանջանները բարձրորակ բրոնզից են հարթ մակերեսով: Որոշ գտածոներ՝ կտրվածքում կլորավուն են, իսկ ծայրի մասերը տափակ իրար մոտեցող: Ֆիբուլները պատրաստված են կաղապարով և ունեն աղեղնաձև մեջք, նրբին ասեղ ոճավորված կենդանակերպ առյուծագլուխ և օձագլուխ ծայրեր: Մետաղե իրերի մեջ առանձնանում են բրոնզից և երկաթից նետասլաքները, դանակները, դաշույները, նիզակի սայրերը:

Նետասլաքները կտրվածքում ռոմբաձև են հարթ և խնձորակաձև պոչուկներով: Նիզակները խողովակակոթառ են և պատկանում են կարճ սայրով նիզակների տիպին: Գտնված դանակները՝ երկաթից են ունեն կլորացող և սրածայր շեղբեր, մեկը ունի տափակ մեջք:

Հատկապես հետաքրքիր են բրոնզե գոտիների բեկորներ, որոնք եզրագծված են գծանախշ հորինվածքով: Դրանցից մեկը դրվագման եղանակով զարդարված է մեծ և փոքր ուղղահայաց խաչվող կլոր վարդյակներով: Դրանք պատկանում է ուրարտական միջին չափի գոտիների տիպին: Բացի վերոհիշյալից հայտնաբերվել է բրոնզից ժապավենաձև թիթեղ, որը զարդարել է գավազանի փայտից կոթառը կամ էլ կահույքի որևիցե մաս:

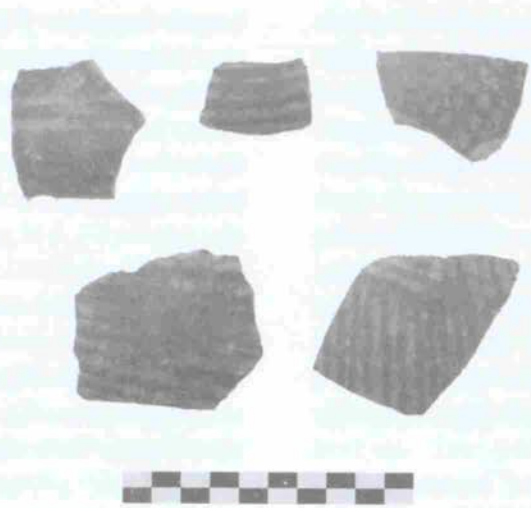
Պեղված գտածոներից պետք է առանձնացնել երկաթից սկավառակաձև դեպի կենտրոն սրացող թիթեղ-կոճակը: Հավանաբար այն կամ զրահաշապիկի կամ էլ վահանի (ումբոն) մաս է հանդիսանում:

2007թ պեղումների ընթացքում հայտնաբերվեց բարձորակ բրոնզից ցուլի արձանիկ: Այն ունի ընդգծված եղջյուրներ, կլորավուն գնդաձև աչքեր, կարճ պոչ, ձգված մարմին և համեմատաբար կարճ ոտքեր: Իր ոճական առանձնահատկություններով արձանիկը հանդիսանում է Վանի թագավորության քանդակագործության ինքնատիպ նմուշ և թվագրվում է մ.թ.ա 8-6-րդ դարերով: Այն նաև հետաքրքիր աղերսներ է գտնում, ինչպես կոլխիդակոբանյան մետաղի, փոքր Ասիական բրոնզի, այնպես է Լուրիստանյան արտեֆակտների հետ:

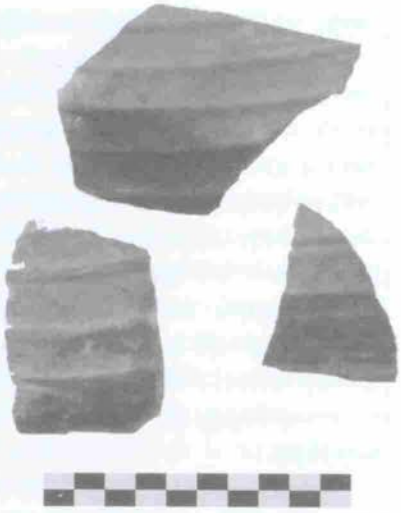
Արամուսի պեղումները բացառիկ հնարավորություն է ընձեռում տվյալների համեմատական վերլուծությունների միջոցով վեր հանելու՝ տարածաշրջանի պատմահնագիտական համապատկերը նաև մինչև ուրարտական արշավանքները: Վանի թագավորների արշավանքներին անմիջապես հաջորդող իրավիճակի առանձնահատկություններն ու հիմնական բնութագրական չափանիշները, «Ուրարտական» և «էթիունյան» մշակույթների փոխհարաբերակցության, փոխներթափանցման հնագիտական դրսևորումները էլ ավելի կամբողջանան հետագա պեղումների արդյունքում:

Նկ 1

Նկ 2



Նկ 3



Նկ 4

Նկ 5

Նկ 6

Նկ. 1. 2. 3. 4. 5. 6. Խեցեղեն նմուշներ 2009-2010թթ.պեղումներից.

THE FORTRESS OF ARAMUS: PRELIMINARY REPORT OF EXCAVATIONS IN 2004 AND 2005*

HAYK AVETISYAN, WILFRID ALLINGER-CSOLLICH

The archaeological expedition of Yerevan State University began in 1988 excavations of Aramus fortress located on the south-western edge of the village Aramus, District Kotayk, Republic of Armenia[1]. Before these excavations the fortress has been partially investigated and described by the archaeologist E.V. Khanzadyan (1973)[2].

The site is situated on a terrain constituted of massive basalt rock hills. On a more than 70 m high range of hills, in direction from the east to the west, are situated the ruins of the former colossal fortress. The complex consists of two great parts – eastern and western. On the eastern part are located the upper and the lower acropolises.

The 20-30 m wide upper acropolis is a fortification system of rectangular plan, stretched on the axis from the east to the west and consisting of numerous constructional units. It is surrounded by a 2,1-5,5 m thick fortress wall with its buttresses and towers. The buttresses are 3-5-8 m long and stretch up to 1,05m forward from the fortress wall itself. On some places of the terrain the rocks are smoothed. To provide the hardness of the fortress walls, in some particular places were built one to three rows of stepped breast-walls. In the eastern and western frontal fortress walls of the upper acropolis were opened entrances fortified with lateral towers.

The lower acropolis is an organic continuation of the complex described above. This big, from the west to the east directed area, blends on the eastern part with the western entrance of the upper acropolis. The lower acropolis is in its lay-out of stretched-rectangular form and is situated ca. 20 m lower than the upper one. This complex is 30 m wide, and like the upper acropolis, is surrounded by the fortress walls which coincide with the common configuration of the terrain. It repeats the constructional details of the upper acropolis and in the central part of the western fortress wall has a powerful entrance, on the northern and southern sections of which have been constructed great angular towers.

The western part of the fortress is partially damaged. Being directed from the east to the west, it is divided from the lower acropolis with a 12m wide north-south directed street. This complex is surrounded by powerful basalt fortress walls, which have played probably the role of a "yard".

The territory of the fortress, in harmony with the terrain, is divided into terraces, which, in particular on the northern and southern wings, are in 70-100m distance from each other. The terraces in their turn are fortified in different parts with the fortress walls, buttresses and towers preserved up to 2,5m. These buttresses are typical for some Urartian fortresses and settlements like Çavuştepe/Haykaberd, Kayalı Dere,

* Translated to English by BSc, MSc Sabina Kuntner. The Excavation Campaign Aramus is a joint project supported by Prof.Dr. Hayk Avetisyan, Yerevan State University, Armenia, and by Univ.-Doz. Dr. Wilfrid Allinger-Csollich, Univ.-Prof. Dr. Peter Haider, Univ.-Prof. Dr. Robert Rollinger, University of Innsbruck, Austria, and Univ.-Doz. Dr. Jasmin Dum-Tragut, University of Salzburg, Austria.

1- For the main results of Armenian excavations cf. Avetisyan and Avetisyan 2006: 119-134.

2- Khanzadyan 1979: 11.

Argištihinili etc.[3] Aramus, like other great Urartian fortresses, had a lower town, which however has only partially survived to our times.

The fortress walls, formed by two rows of huge basalt coarse stone blocks, have been built in dry masonry. The thickness of the walls coincides with the Urartian standards (between 2,1-5m, the preserved height is 2,5m). As basis for the fortress walls were used the smoothed protuberances of basalt rocks. To make the hardness of the walls more secure, the old masons have added on their basis breast - walls of one to three rows. Beside this breast - walls, also buttresses (3-8m long and 1-1,2m wide) and many quadrangular/rectangular towers (part of which are angular) were built.

Particular complexes and constructions of the fortress come into contact to each other through flat, stepped entries. In some parts of the acropolis, in the fortress walls, are definitely seen also entries or passes ("traps") built with protective purposes. With their lay-out these are typical for the fortification system of the Van Kingdom.

In the year 2004 the archaeological expedition of the Yerevan State University, Armenia (directed by Dr. H. Avetisyan) and the University of Innsbruck, Austria (directed by Dr. W. Allinger-Csollich) renewed the excavations of Aramus. The preliminary reports of 2004 and 2005 international excavations of the site are to be presented in this article.

In the first campaign a 5, 20 x 41, 50 m width trench was opened in area A on the eastern and on the north-facing slope of the acropolis. The morphological features of this area are characterized by a plateau on top of the acropolis and by two terraces that run along the foothills of the acropolis and were

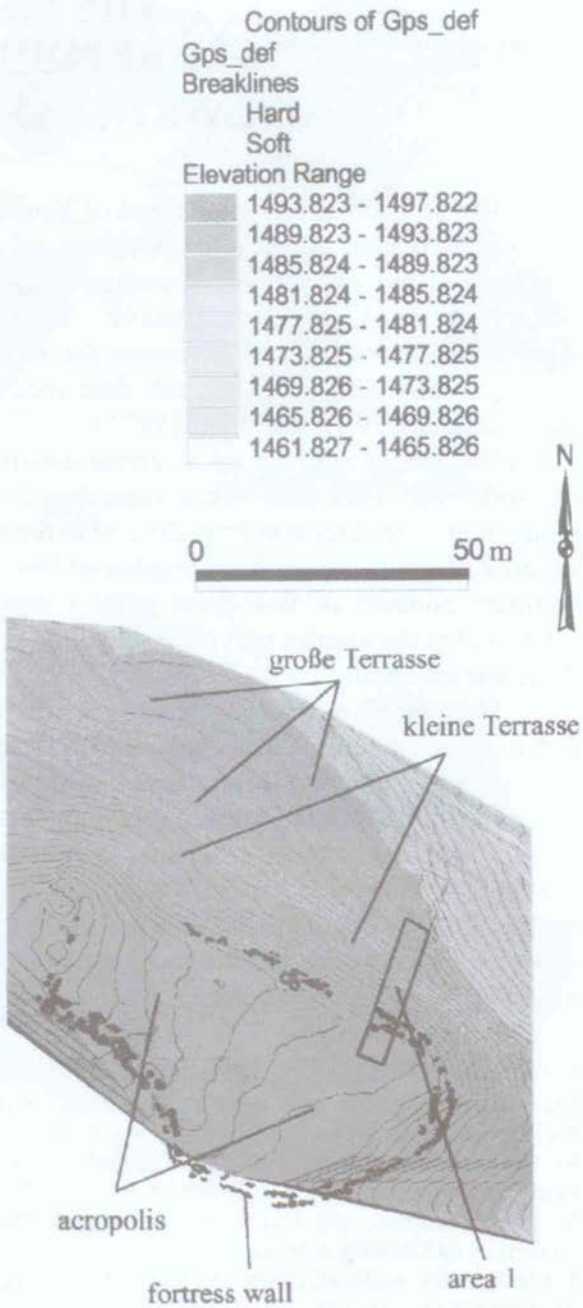


Fig. 1: Detail Aramus.

3- Avetisyan 2001: 41.

defined as "kleine Terrasse" and "große Terrasse" (Fig. 1).

Both the "große Terrasse" and the acropolis, previously described by Avetisyan[4] and Smith and Kafadarian[5], were each enclosed by a big stonewall, built by using the so-called "Kastenmauer" technique which suggests a contemporaneous uprising of both the complexes of the fortress, the acropolis and the "große Terrasse", which is still unproven.

Until recently, investigations have considered the "kleine Terrasse" to be of little interest and have regularly omitted this feature from interpretations of the fortress[6]. In contrast, this study revealed the "kleine Terrasse" to be of relevance for the understanding of both the extension and the appearance of the fortress. In fact, there are many more walls of this kind scattered around the whole hill, suggesting that the slopes of the hill were part of the fortification system or as Avetisyan has suggested to be a rampart that runs to the eastern slope of the acropolis where an entrance is postulated[7].

The main objective of the trench in area 1 was to enable, for the first time, the definition of a stratigraphic sequence. This, in turn, would allow relating the different stonewalls and ultimately obtain an absolute dating based on the ceramics found.

Upon removal of deposit d001, area 1 was divided into three parts through definition of surfaces s002-008 and s024 (Fig. 2). These surfaces stand in

4-Avetisyan 2001: 37-38.

5-Smith, Kafadarian 1996: 35-36.

6-Avetisyan described the presence of some terraces inside the "acropolis" which find many parallels with other Urartian fortresses such as Çavuştepe/Haykaberd, Kayalı Dere, Argištihinili (Avetisyan 2001: 38), but did not mention the terraces occurring on the slopes.

7- Personal communication (September 2004 in Aramus/Armenia).

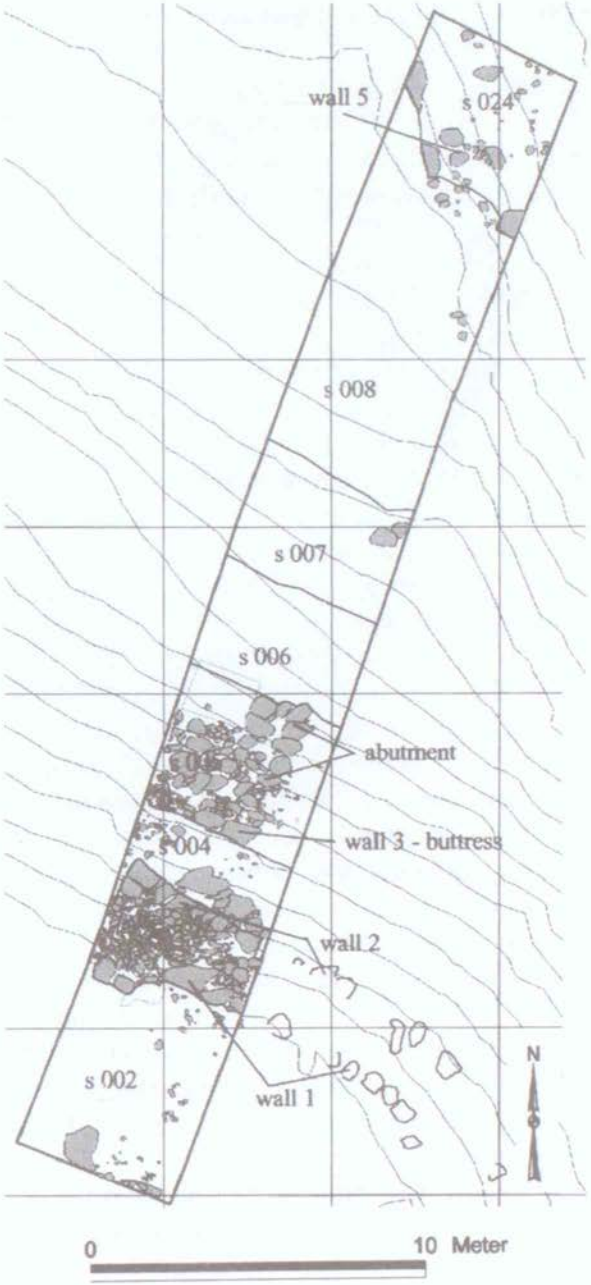


Fig. 2: Area 1 s 002 - s 008 and s 024.

relation to the courses of stonewalls 2 to 5 and are located as follows: s002 on the plateau of the Acropolis, s004 north of wall 2 in the top half of the slope and s005- s008 and s024 in the lower half of the slope extending from upon the buttress of wall 3 in the south to the northern end of the trench.

Deposit d003, located between walls 1 and 2, was consistent with Avetisyan[8], who reports to constitute filling material of the acropolis' "Kastenmauer".

The northern extension of the trench was not investigated due to time constraints. Consequently, walls 4 and 5, which are located in this area, were omitted from both the stratigraphic sequence and the correlation with the other walls. Instead the excavation focused on the plateau and on the upper part of the slope. The results of the first campaign are summarized as follows:

The oldest wall (wall 3) is situated in the upper half of the slope under deposits d004 and d009, which are suggested to represent the ruins of a clay wall, which form the upper part of a fortification wall. On the other hand, wall 3 could have been also a terrace wall used to merely provide additional horizontal building surface as was confirmed to be the case with wall 2 (see below). Further research is needed to confirm either assumption. .

The documentation trench DOST II was opened on the "kleine Terrasse" westward of the abutment. Here wall 6 was found and later associated with wall 3. However, this association has yet to be confirmed. It is also suggested that walls 3 and 6 belong to the oldest period, period III.

Wall 2 was built on the fallen ruins of wall 3. This marks the beginning of a new period, period II,

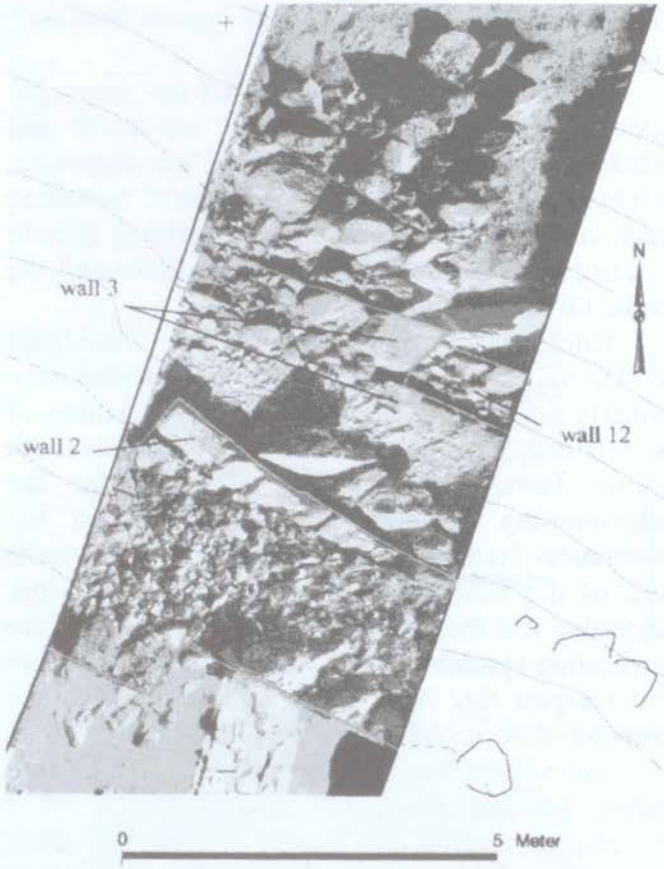


Fig. 3: Area 1 - phase IId.

8-Personal communication (September 2004 in Aramus/Armenia).

which was divided into four phases (i.e. IIa, IIb, IIc and IId). Walls 2 and 12 were built during the oldest phase, phase IId (Fig. 3). Wall 12 was deepened from the surface s019 which lies on wall 3, indicating that wall 3 was still in use during this phase. The relation between wall 2 and wall 12 was grounded on the assumption that the latter enlarges the buttress of wall 3 to the same width of wall 2.

Rooms R1 and R2 on the acropolis are representative of phases IIa, IIb and IIc (Fig. 4). R1 was built on the terrace formed by wall 2 and deposit d016, which was used as filling material. On the east profile there are two distinct destruction layers d011 and d012b (Fig. 5). Both layers were related to a reconstruction in R1, because wall 9 was built in phase IIa on deposit d012b and wall 10 was built in phase IIb on deposit d011. A further study is needed to define an association between the phases found in rooms R1 and R2 which is also marked by a destruction layer.

The latest period, period I, was divided into two phases, Ia and Ib. Phase Ib is represented by wall 1. The construction of this wall resulted in the destruction of room R1 (Fig.4). Wall 1 was deepened from the surfaces s012a on the east profile (Fig. 5) and s021 on the west profile. Deposit d020 was filled at a later stage to form a horizontal layer over the ruins of the rooms, and marks the historical interface of period I. The ceramic of these deposits constituted additionally to Urartian pottery, material comparable to late Urartian/early Achaemenide pottery. Interestingly, this type of material was not found in the layers of the rooms. The last phase, phase Ia, is characterized by an abutment that grounds on surface s006 and which runs across wall 3 to the western corner of the buttress of wall 2. The buttress shows

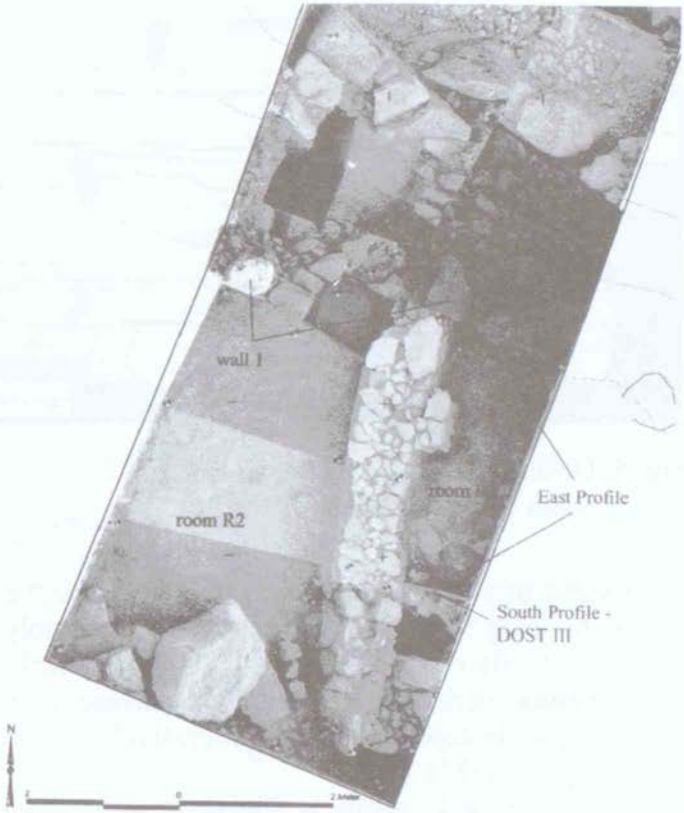


Fig. 4: Detail acropolis.

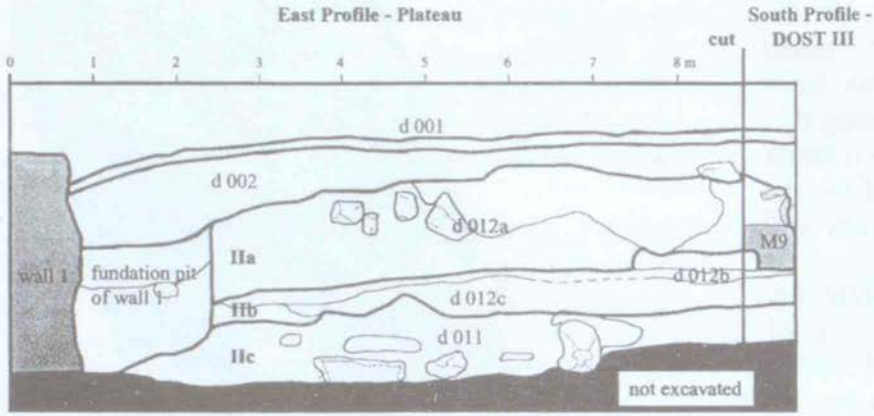


Fig. 5: Detail East Profile - Plateau and South Profile - DOST III.

clear signs of soil creep and was supported by the abutment (Fig. 2). Further potsherds, possibly associated also with the late Urartian/early Achaemenide period, were found on surface s006 (Fig. 6.1), while deposit d006 held exclusively typical Urartian pottery (Fig. 6.2-4).

A remarkable result is the completion of a stratigraphic sequence, which can be divided into three main periods (I, II and III). The sequence represents the development of the settlement on the northern slope of the acropolis and on the acropolis itself.

The lack of information concerning wall 5 and the result about wall 1 need to be considered in the discussion of dating and associations between stonewalls, in particular with regard to the appearance of the fortress.

At present, it is not clear whether the fortress of Aramus was built in one step as a whole. Nor has it been confirmed whether the fortress dates exclusively to the Urartian period, or whether, as supported by the ceramic findings in d020 and on s006, it also dates to an earlier period.

Proposed future research addresses the need for more details on the transition from the Urartian to the Achaemenide period.

Moreover, further study plans to include investigations on the transition from the Early Iron Age to the Middle Iron Age (Urartian period). Among the Urartian pottery assemblage a large amount of material dating from the Early Iron Age was found in the great majority of deposits.

In conclusion, the proposed expedition is expected to provide insight into the relationship between the pottery formed in local tradition and the standard Urartian pottery. Likewise, recent findings such as of a Kura-Araxes potsherd from the deposit d011 in Room R1 suggest the existence of yet older layers, including the Early Bronze Age (Fig. 7.4).

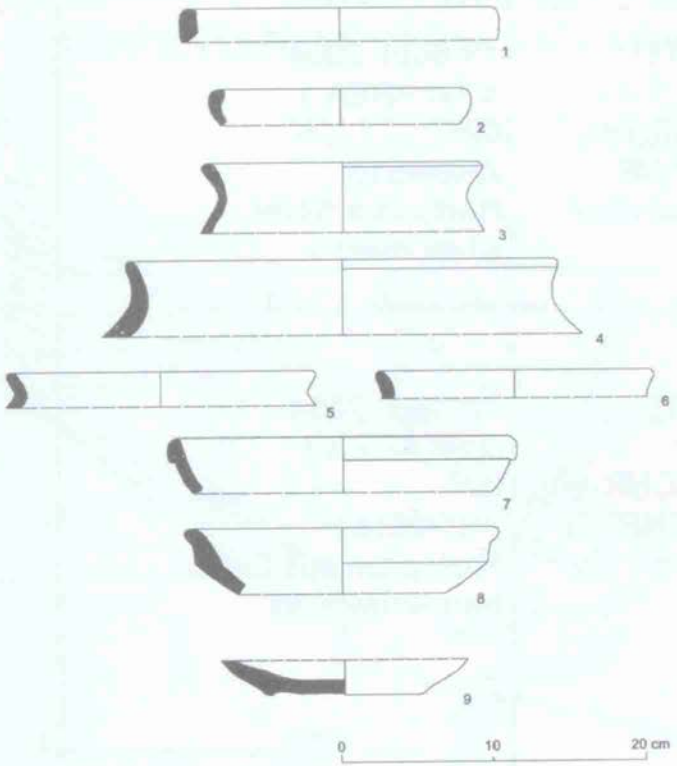


Fig. 6: Aramus 2004. Area 1. Ceramic Extract. Ceramic of Middle and Late Iron Age of s006 (Fig. 6.1), d006 (Fig. 6.2-4) and d016 (Fig. 6.5-9). 1 middle-fine reddish gray clay minerally auxiliary. 2 middle-fine reddish-brown gray clay core minerally auxiliary. 3 coarse gray clay minerally auxiliary. 4 coarse reddish gray clay minerally auxiliary. 5 fine reddish-gray clay minerally auxiliary. 6 coarse gray clay gray-brown core polished minerally auxiliary. 7 middle coarse gray clay minerally auxiliary. 8 middle-fine reddish-brown clay minerally auxiliary. 9 coarse dark gray clay minerally auxiliary.

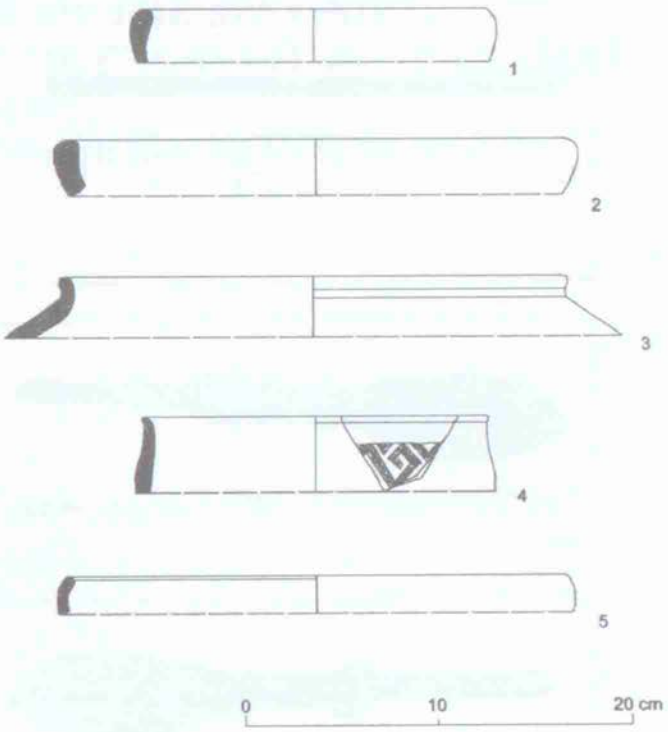


Fig. 7: Aramus 2004. Area 1. Ceramic Extract of d011. Kura-Araxes Ceramic with relief decor and ceramic of Middle Iron Age. 1 middle-fine red clay light gray core engobe minerally auxiliary. 2 middle fine dark red clay engobe minerally auxiliary. 3 middle coarse brown clay reddish-gray core minerally auxiliary. 4 fine gray clay brownish-gray core engobe. S fine light red clay, light gray core.

	DATE: SU: FINDNR: INV.NR: Description	13.Sept. 2004 s006 AREA 1 026 AR04/515 Nadel aus Silver silver needle
	DATE: SU: FINDNR: INV.NR: Description	19.Sept. 2004 s006 AREA 1 007 AR04/516 Pfeilspitze aus Eisen Iron Arrowhead
	DATE: SU: FINDNR: INV.NR: Description	25.Sept. 2004 s011, AREA 1 075 AR04/524 Fibel aus Bronze Bronze Fibula

Fig. 8. Metal finds from area 1.

PRELIMINARY REPORT OF THE SECOND ARMENIAN-AUSTRIAN CAMPAIGN OF EXCAVATION AT ARAMUS AREA A (2005)

WALTER KUNTNER AND SANDRA HEINSCH

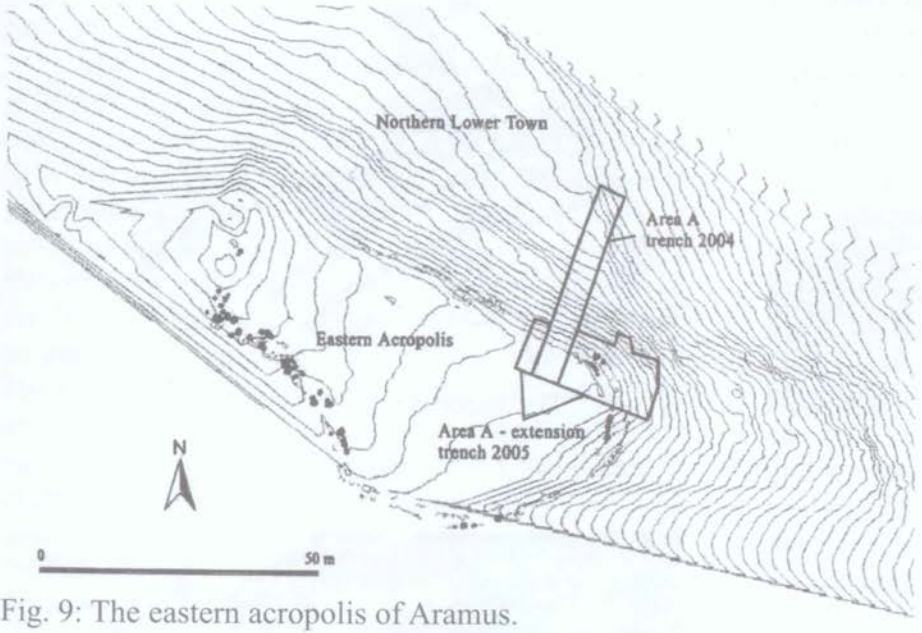


Fig. 9: The eastern acropolis of Aramus.

The excavation campaign Aramus 2005 continues the archaeological research in area A in the eastern acropolis of the fortress of Aramus. In 2004 a trench was opened measuring approximately 5 x 36 m in order to obtain a stratigraphic sequence between the acropolis area and the northern lower town (Fig. 9). Findings from the excavation campaign Aramus 2004 confirmed that the settlement of the acropolis encompassed several phases. The remains cover the Iron Age (1200-500 B.C.), and also suggest an Early Medieval occupation[9]. Due to the relatively restricted size of the area investigated, there are aspects that remain unanswered. In particular, there are questions with regard to the stratigraphic relation between stonewalls in the slope and the acropolis area. Consequently, the findings provide a partial insight into the settlement patterns and inevitably affect the interpretation of the overall archaeological findings.

Further sampling was taken at three points within the excavation area established in 2004 namely, the documentation trench (Dokumentationsstellen) DOST II and IV and the so-called "acropolis trench" (Akropolis-Tiefschnitt). These records aimed primarily to provide answers to the stratigraphic questions. The acropolis trench served also to prepare

9-Kuntner and Heinsch, Preliminary Report of the First Armenian-Austrian Excavation at Aramus, 2005 (in prep.).

for the excavation campaign 2006, that sees a general lowering of the acropolis area. The expansion of trench area A in 2005 aims to investigate the coverage and morphology of the fortress on the north-east slope, as well as the settlement patterns in the acropolis area.

This paper reports firstly, findings from the slope area (Part I) and secondly, findings from the acropolis area (Part II). Results from excavation campaigns 2004 and 2005 were combined. Periodisation results here presented are preliminary and dating was based on selected records only.

Part I. The Slope Area (Fig. 10)

The fortress wall of the northern lower town is primarily recognizable by a marked, stretched and about 2m wide relief mark, characterized by scattered stones and smaller random wall traits. In the 2004 trench, the fortress wall was defined as "Schalenmauer" (two stonewalls/casings surrounding a rubble core) and a Stretch of about 7 m of its surface was cleaned. The 2005 campaign provided further measurements of the fortress wall extending to the south-east. As recorded, the stones show a straight line pattern and therefore exclude the possibility of the fortress wall being connected to the stonewall M30 in the east slope as can be supposed by watching the plan proposed by Smith and Kafadarian[10]. In contrast, the fortress wall in the northern lower town connects to the stonewall M3. At this connection point the fortress wall of the lower town also connects with stonewall M13. Stonewall M13 in turn, forms an impressive bastion together with stonewall M30 (Fig. 10-11).

On the east slope, between stonewall M3 and stonewall M30 stands stonewall M31. Cleaning of its surface revealed a 2.70 m wide projection. Based on the overall findings so far, it has not been possible to

10- Smith, Kafadarian 1996: 35-36.

Fig. 10: The Slope Area.

Fig. 11: Connection point between stonewall M13 and the fortress wall of the lower town (right).

link stratigraphically stonewall M31 to the surrounding walls. Nevertheless, considering the parallel course of M31 to M3, the wall is preliminarily more closely associated with M3. With regards to this, the association between M3 and M31 shows similarities with the relation between M3 and M6 in DOST II.

The documentation trench DOST II was opened in 2004 west of the abutment. It had the objective to analyze the stratigraphy above terrace I. This terrace is held by stonewall M4. This wall is visible only westwards outside the trench. Likewise, DOST II aimed at investigating the course of M4 to the east. However, terrace I flattens within the trench and given the limiting depth of less than 10 cm[11] no records could be taken. Unexpectedly, excavation works revealed stonewall M6, which runs eastwards below the abutment. Because a stratigraphic linking of M6 to M3 could not be completed in 2004, the excavations of 2005 aimed to gather more information on M6. A solid understanding of this stonewall is a major prerequisite for further excavations in the northern lower town. The documentation trench DOST II in the 2004 trench is going to be expanded east and southwards round the abutment and up to stonewall M3. The excavation methods applied are the same as used in the previous excavation campaign. The main objectives include the clarification of the course of M6 and its foundation level (which could not be exposed in 2004 due to massive basalt boulders), as well as the analysis of the wall's function and stratigraphic position relative to M3 (Fig. 14). Additional objectives, which are, however, going to be of greater weight in the upcoming excavation campaign 2006, include stratigraphic sampling in relation to findings from the northern lower town.

11-Due to time limitations the analysis of samples from DOST II concerned mainly stratigraphical aspects and partly M6.

Fig. 12: North facade of stonewall M13.

Fig. 13: Northeast edge of the bastion (stonewalls M13 and M30).

Based on scattered stones that show through the surface outside the trench it is possible to follow the course of this stonewall up to the fortress wall of the northern lower town. The annex between these two walls remains, however, still to be exposed. Part of the course of M6 was further exposed in the southern expansion of DOST II. In comparison with the wall's transect in the west trench (exposed the previous year), the wall at this location is shifted by about 60 cm southwards.

The findings allow the reconstruction of a wall rebound below the abutment. Similarly, M3 is characterized by a 60 cm wide rebound at the same location. This, in turn, enables a comparison between the course of M6 and M3. While it is clear that there is a connection between the rebound of M3 and a 2.70 m wide buttress of the wall (exposed in 2004), it is necessary to analyze further the findings before being able to make a similar conclusion with regards to M6. Overall, the exposure of M6 comprises a height of 140 cm whereby its foundation horizon presently remains unexposed. This hinders a conclusive clarification of the stratigraphic relation between M6 and M3. Nevertheless, the stratigraphy on both, west and east profile in the area between M3 and M6 allows the definition of a communal interface defined as i019. This interface consists of: the southern façade of M6, the surfaces s055 and s053, the surface of basalt plate III and finally, the northern façade of M3.

In 2004, surface s053 was exposed from underneath SE 019 and along stonewall M3. In 2005 excavation works exposed the foundation horizon of M3 and revealed that it lies immediately on the basalt plate III. Additional findings from 2005 include SE 055 underneath SE 019. No direct connection between SE 053 and SE 055 could be determined because basalt plates I - III hindered further excavation. In contrast, comparison of material composition provides evidence of a correlation between these two layers. In particular, both layers are characterized by black ash stains and charcoal fragments.

There is a close association between SE 019 and the deposition of the basalt plates I and II. In fact, at the height of the lower edge of the basalt plate II there is a

Fig. 14: North facade of stonewall M6 in DOST II-2005.

barely recognizable interface within SE 019 indicating that this could be an artificial deposit. During this time stonewalls M3 and M6 remained visible. However, it is unclear to what extend M6 was still used as part of the fortress system, for no stratigrafic correlation could be determined between the stone destruction layer SE 014 north of M6 and the area between stonewalls M3 and M6.

In summary, the findings from documentation trench DOST II indicate that M6 served as a terrace for stonewall M3 at least during their common interface[12]. The area between measures approximately 2 m in width providing sufficient potential space for a battlement as suggested by a silhouette in the profiles reminiscent of a stonewall. As a result, that stonewall M6 was higher preserved than nowadays. Ultimately, the findings imply that differences in wall construction methodology (as defined by the choice of stone size and the way that these are built into the wall (Kuntner, in prep.) should not be used a priori as a historical indicator. In fact, the choice of methodology and accuracy used to construct the wall could also have been driven by functional necessities.

Findings from 2005 show that the foundation pit of stonewall M12 (exposed in 2004) as running along side M3, east of the buttress needs to be corrected from surface s019 to s013. The interface i013 stretches from M3 in the south, across the basalt plates I and II, and over the preserved top edge of M6 to its destruction layer SE 014. These findings identify a phase, where stonewall M6 was already a ruin and wholly covered, while stonewall M3 was still exposed and in use.

Similar functional unanswered questions as were found between stonewalls M6 and M3 also occur between stonewalls M3 and M2. The 2004 campaign did not provide sufficient evidence to determine whether M3 in fact, stood up as a fortress wall. The area between these stonewalls is analyzed and expands over an area of 3 m on the western slope and an area of 4 m on the east slope. Surface s010 is exposed in both areas. As recorded in the previous year, this surface is composed of a layer of hand-sized stones. It stretches across M3, then southwards and underneath M2. The excavation centered mainly on the search for mud bricks within SE 009, as initiated by findings of isolated straw-tempered fragments of mud bricks in the previous year. However, no additional findings in support of this view where found 2005 in the study area. In fact, SE 009 consisted of homogenous yellowish, sandy clay. Here, ceramic fragments from Early and Middle Iron age as well as from Early Bronze Age were found.

In the west slope expansion, stonewall M19 was exposed from below SE 009. M19 runs parallel to M2 and grounds on SE 010. The wall is composed of two rows of stones surrounding a core of small pebbles. Neither mud bricks nor any fragments were found at this location. Consequently, SE 009 appears to be an artificial deposit used when M2 was built. It was deposited on top of the fallen stonewall M19 and SE 010. Likewise, it suggests that the isolated mud brick remnants found in the deposit are remnants that were integrated secondarily.

Further, findings in the east profile of the western slope expansion, suggest a foundation pit for stonewall M2 deepened from s009. However, this view is based exclusively by findings from this area, as there is no further evidence to support a foundation pit along the remaining north-eastern course of the

12-As said before, the foundation level couldn't be reached. Thus an older NÐtzungsphase can not be excluded, during which the structure may have a different function, for example as an older fortress wall. The stonewall M3 shows very clearly how important it is to take into account a change of function in time.

stonewall M2. This findings also support the interpretation of stonewall M3 as terrace, both as settlement area on which M19 was built and as support for the fill of SE 009 into which stonewall M2 was built.

On the other hand, evidence from DOST IV (deepened approximately 50 cm and expanded 3m westwards between the casings of the fortress wall in 2005) suggests that we are dealing with just one aspect of the purpose of stonewall M3. In fact, two in situ mud brick layers were found on stonewall M18 (exposed beneath stonewall M2). M18 has the same direction as M2 and M19. However, based on the difference in stone size as well as construction methodology, stonewall M18 can not be related to stonewall M19. On the other hand, there could be a functional relation to stonewall M3. The assumption is that the findings represent an inner and outer casing of an older 2 m wide fortress wall of the eastern Acropolis. This wall is in turn boosted by stonewall M6, as said before, maybe as a battlement. The likelihood of this scenario is, however, to be considered with regards to the rather restricted area covered by DOST IV. The M3 findings are consistent with the view that the structure could have served three functions: fortress wall – settlement area – terrace/support.

Results from DOST IV are relevant because of two main aspects. On one hand they explain the succession of the several stages of the fortress wall, and on the other hand they provide the only link between the stratigraphy of the slope area and the acropolis area. The proposed interpretation of the sequence of the fortress wall presented in 2004 was reviewed in light of the analysis of the profiles in DOST IV. The assumption in 2004 was that there were two different periods (period I and II) that can be summarized as follows. Period II includes only stonewall M2. This wall held the terrace on that room R1 was built. Period I instead represents the phase of the construction of M1 that formed, together with a new use of stonewall M2 the fortress wall. This period also includes the filling of the acropolis area by the SE 020. Stonewall M1 was deepened in the destruction layers of the rooms, SE 021 in room R2 and SE 012 in room R1.

The 2005 results clearly show that the fortress wall (M1 and M2) instead belongs to one period only, while covering two distinct phases. The older phase b saw the concurrent construction of both stonewalls as casings of the fortress wall filled by SE 003. With regards to M1 this is true for the eastern wall section east of the projection, deepened in the ruins of room R1 (i.e. SE 012), as well as for the remnants recorded in a line in the western extension of DOST IV. It follows that during the older phase the inner casing of the fortress wall (M1) doesn't consider the rebound of stonewall M2. This finding is confirmed by a wall section on the southern slope of the acropolis showing the same characteristic.

In the younger phase a the inner casing (stonewall M1) was adapted by the rebound deepened in the destruction layer d021a of room R2 and finally boosted by an abutment running upward from the terrace I across the slope to the junction point. The eastern section of stonewall M1, starting approximately eastward of room R1 is also regarded as to belonging to this younger phase a. There are two reasons for this assumption. Firstly, the direction of the fortress wall deviates slightly to the south and is characterized by a joint on both casing - stonewall M1 and M2. Secondly, stonewall M1 lacks a foundation pit and instead runs across the stonewall M25, grounding on interface 1020.

In conclusion, the suggested periodisation of the fortress wall is going to be compared with the results of the acropolis area. As mentioned above, the results

of stonewall M31 do not allow a chronological Integration and are therefore excluded. Although, the analogy to stonewall M6 in the DOST II serves as an approach, it lacks any stratigrafic observation. Stonewalls M14 and M30 are also excluded from the discussion as their chronological reference is limited to their relationship to stonewall M3. It is emphasized, that stonewall M3 remained in use during the whole period covered up to now. This hindered to draw definite conclusions. Further is necessary to add clarity to the findings gathered so far.

The fortress wall of the eastern acropolis of Aramus can be divided into four phases a-d. The oldest Phase d includes the so called "older fortress wall" formed by the stonewalls M3 and M18. In addition, the fortress wall has a terrace/battlement represented by stonewall M6. It remains unclear, whether the latter wall also belongs to an older phase or period. As indicated by the stonewall M19 grounding on the SE 010, phase c of the "older fortress wall" consisted only of the stony substructure used as a settlement area. Stonewall M12 too, belongs to this phase, although its purpose remains unclear. This correlation is based upon the Interpretation, that the layer SE 013 represent the debris of the mud brick superstructure of the "older fortress wall". However, the absence of any spur of mud bricks remains unexplained. Phase b and a finally cover the timeframe of the so called "younger fortress wall" described above.

Part 2. The Acropolis (Fig. 15)

The goals of research in the acropolis during the campaign of 2004 was to gain an overview of the stratigraphy. This resulted from the desire to gather as much information as possible about the settlement activity before the end of work. Therefore, the applied method concentrates on the documentation trench DOST III. The circumstance that the DOST III was set exactly in room R1 enable us to clarify the stratigraphy of this room (to some extent as seen in 2005), but otherwise affects negatively our understanding of the stratigraphy in the western part of the acropolis outside of room R1. As a consequence the stratigraphy could be analyzed only retrospectively in the west profile. The layers beneath the SE 020 were summarized and defined as SE 021, adjourning the final clarification for the campaign 2005; this means the detailed analysis of the layers forming the SE 021, both their relationship to the stonewalls M11, excavated only marginally, and M7 and M8 of room R1, as to the stratigraphy in the documentation trench DOST IV. The former aimed at the correlation of the structures within the acropolis. The only fact known at the beginning of the campaign Aramus 2005 was that both rooms R1 and R2 antedate SE 020. The latter instead attempted to link the stratigraphies of the acropolis and the slope area.

In 2005 afore mentioned stratigrafic questions were investigated anew in the acropolis trench and in the documentation trench DOST IV between stonewalls M1 and M2. In addition, the acropolis area was extended by 3,30 m westwards, concentrating on the analysis of the stonewall M11. On the other hand we extended our research activity in the acropolis area also to the east, enlarging the trench unto the fortress wall M1. The focus of this enlargement aimed at opening a larger surface in order to get more information about the architectural remains and thus about the settlement history to correlate with the periodisation of the fortress wall.

Part 2.1. The western extension of the acropolis

The periodisation of the settlement in the acropolis, based on the results of 2004 excavations, was confined to the eastern profile of room R1. This comprises one period divided into three phases. The

Fig. 15: Area A – acropolis.

use of room R2, as said before, could just be assigned generally to this period, but without any preciseness relating to the phases. The results of 2005 confute this periodisation totally, as room R1 was in use only in one phase within a continuous settlement period that covers the whole findings yet excavated in the acropolis. Moreover, it was ascertained that the SE 011 doesn't belong to the stratigrafic sequence of room R1, as interpreted in 2004 - when it was seen as the first destruction layer of this room - but instead marks the foundation horizon of that room. The SE 011 can be correlated with SE 049 westward of room R1, where it is covered by the SE 021. This means that the history of room R1 is just seizable through the layers d012a-c. The results of the excavation in room R1 are discussed afterwards in the context of the eastern acropolis extension. Before dealing with this aspect it is necessary to discuss the results of the western

acropolis extension.

The stratigraphic clarification of the layers SE 021a-d confirmed both their importance for the understanding of the settlement activity and the correlation of the two areas, the slope and the acropolis. The two lower layers d021b-c stretch across the SE 049 and lay in the east on the stonewalls of room R1, while to the north they run beneath the fortress wall, where they can finally be correlated with the SE 016 in the foundation trench DOST IV.

The stonewall M11 was cleared over a length of 5 m and grounds upon the layer d021b. It has a thickness of about 1 m and is build like all other walls by two rows of stones surrounding a core of pebbles. The stones don't show any trace of trimming, but its size is comparable with those of stonewall M26 in the eastern extension (see below). The stonewall M11 forms the northeastern wall of room R2. The room can be entered from the east by a 75 cm wide door signalized also by an in situ laying door socket.

The stratigraphic situation of stonewall M11 shows clearly that the construction phase of room R2 postdates the building phase of room R1. If we consider the evidence that the fortress wall M1 was built only after the destruction of room R1, it could be argumented that room R2 also was built only thereafter.

But the stratigraphy in the DOST IV does not allow any exact conclusions since both the expansion of the SE 016 or rather d021b-c to the north as the stratigraphy – as represented in the west and east profile in this sector - are not fully understood. One reason is the difficulty to correlate the SE 049 in the acropolis area with any layer within the DOST IV. Moreover, there are also difficulties to delimit the layers within the DOST IV as much interferency disruptes the stratigraphic sequence due to the remodellings of the fortress walls.

The SE 016 in the west profile is characterized by two depressions or pits with corresponding fill. The earlier one can not be fixed with certainty since the interface is very vague and the material features of the fill are very similar to that of layer d021b/SE 016. The second one, on the other hand, can be definitely associated with the foundation pit of the fortress wall M2. Provided that there is an earlier depression, it would mean that room R2 antedates the construction of the "younger fortress wall" and possibly even of the stonewall M19 (phase c). This would assign both room R2 and R1 to phase d of the fortress wall periodisation, allowing moreover to divide this phase into two subphases d1 and d2. Just as well it is possible that only room R1 belongs to phase d, while room R2 belongs to phase c since the interface of the destruction layer SE 032 runs across the fortress wall M18 (phase d) and correlates with the surface s021b. Therefore, it is impossible to determine whether room R2 was built before or after the destruction of the fortress wall M18 (if this interpretation as such is true) or of stonewall M19.

If there is not an earlier depression, than both structures, room R2 and the fortress wall, belong to the same surface s021b. Consequently room R2 can antedate, postdate or even date to the same phase as the construction of the fortress wall phase b.

It is assumed that room R2 antedates phase b of the fortress wall since in 2004 a second in situ door socket was found in the acropolis lying on the surface s021b next to the room R1. It indicates that both rooms must have been in use at least during a common timespan, as the functionality of this door socket is only given if the stonewall M7 was still standing. Thus it seems to us more plausible to arrange the foundation phase of room R2 between the destruction of room R1 and the construction of the fortress wall of the acropolis. This interpretation doesn't finally solve the

question regarding the depressions/pits in SE 016. If we assume again the existence of an earlier depression, either a pit or something else, both rooms are to be assigned to phase d. If not, then room R1 can be correlated with phase c or d and room R2 between phase c and b. However, we interpret this finding, it is clear that room R2 was still in use during the whole phase b, since the destruction layer d021a of room R2 is lying on the fortress wall M1 and its surface marks the niveau of the foundation pit for the reconstruction of this wall in phase a.

Furthermore, the layer d021a covers the grave G2 inside of room R2. The grave G2 was not deepened, but instead installed on the surface s021b, meaning that it was visible on the surface and therefore postdates the use of that room. The skeleton is well preserved lying east-west on the back. Since just the lower part of the body was excavated, while the upper part runs in the west profile, it is not known in which direction the face is oriented. To judge from the basins skeleton, lying slightly on the right side, it can be supposed that the face is showing to the south. The extraction of DNA from the humeri of the skeletons in graves G2 and G1, the latter uncovered in 2004, was successful, allowing both the examination of human species as a radiocarbon dating of the graves.

Part 2.2. The eastern extension of the acropolis

The functional interpretation of the SE 020 as filling and the interpretation of the surface s020 as the youngest period interface to be correlated with phase a of the fortress wall periodisation could be confirmed. Moreover, this surface marks also the foundation level of stonewall M26, exposed in sum about a length of 1 .75 m. The wall runs in a southwestern direction perpendicular to the stonewall M1 and its thickness is between 80 and 90 cm. The stonewall is formed by two rows of ashlars, each measuring about 40 cm and laid in regular courses with displaced joints surrounding a core of smaller stones.

Beneath the SE 020 as well as the stonewalls M1 and M26 the stonewall M25 was found. It runs 3 m in width in east-west direction. The wall has a breadth of 80 cm and consists of two rows of stones surrounding a core of pebbles, but which, unlike wall M26, are not trimmed. In the west the stonewall M25 is bonded rectilinear with stonewall M17, and together form the northwestern edge of room R3. The corner of room R3 lies above the southeastern corner of room R1. Between stonewalls M25 and M17 the destruction layer of room R3 was cleared running underneath the stonewall M26.

The stonewall M25 is built directly above the stonewall M24, both having the same direction as the same construction technique. Westwards the stonewall M24 adjoins to the stonewall M21, by the bottom line of the former lying on its upper edge. The stonewall M24 postdates the walls of room R1 too, and can therefore be correlated with room R3, maybe representing an older phase of that room, and finally belonging to phase b of the fortress wall periodisation.

Room R1 is completely excavated. The SE 011 is not the first destruction layer of this room, as believed in 2004, but represents its foundation horizon. The increasing occurrence of Early Bronze Age remains - ceramic and lithic artefacts - in this layer and beneath in SE 049 suggests the existence of an older settlement period directly under the stonewalls of room R1.

The stratigraphic sequence in room R1 is therefore limited to SE 012. The subdivision of this stratigrafic unit into these three layers d012a-c, termed in 2004 in the east profile, can be confirmed. In 2005 each layer could be analyzed separately. The room is defined in the west by stonewall M7, to the south by stonewall M8, both already found in 2004 and the

latter fully exposed in 2005, and to the east by stonewall M21. On the latter there were still remains of a clay plaster on the outside of the wall facing eastwards. The northern wall of room R1 was destroyed by stonewall M1. Consequently only the length of the room, which averages 5 m, could be measured. The stonewalls of room R 1 are conserved all to the same height of approximately 60 cm and show all the same construction technique as the above mentioned stonewalls M24 and 25, although consisting of somewhat larger stones. Just the southeast corner shows traces of a larger destruction, caused by the building of room R3 described above. The thickness of the walls of room R1 is different in size. The thinnest wall M7 has a width of approximately 80 cm, stonewall M21 of 90 cm and the thickest stonewall M8 of about 110 cm. At present it is not possible to explain this difference. It seems plausible that stonewall M8 represents the principal wall running east-west, while the stonewalls M7 and M21 were lateral walls, that formed the rooms aligned along the fortress wall of the acropolis (phase c/d).

In the east of room R1 an oven was found. It is swatted and burst, but lying in situ yet. The oven grounds on the surface s012c and is attached via a rear stone structure to the stonewall M21. The oven is preserved to a height of 60 cm and is built up in one piece of low burnt clay resembling the ceramic properties of the large pithois found in room R1 in 2004 (SE 017). The under range has a rectangular shape measuring 55 x 80 cm, while the upper range is of oval form with a diameter of 50 cm. Inside and at the bottom of the oven a 10 cm thick ash layer was found, from which a soil sample was taken. This layer is covered by parts broken from the oven as well as stones and fragments of mud bricks, originating from the destruction of the room walls. The destruction layer d012a covers the whole area of the room. The foundation level of the oven is superimposed by the ash layer d012b. It is preserved up to 5 cm around the oven and in the western part of the room along the stonewall M7, while in the middle of the room there are just a few black ash stains distinguishable.

Southward of the oven and along stonewall M21 a round, 30 cm big clay structure is preserved, followed by three more clay structures, but with rectangular shape with approximately 35 cm width running eastward along stonewall M8. The clay structures can be compared with the stonewall M9, uncovered in 2004, and which yielded the large pithois (SE 017) mentioned before. A soil sample was also taken of the clay structures so that interesting results concerning the aliments stored and prepared in this chamber can be expected. It can be taken for granted that this room was the kitchen.

In the eastern acropolis extension two more stonewalls, M15 and M16, were excavated. The walls run onto the stonewall M8 and are separated by a joint. Stonewall M15 is preserved very badly, consisting just of a course of stone. Stonewall M16, on the other hand, is better preserved, in sum three courses high, reaching the preserved upper edge of stonewall M8. It has a width of 50 cm. Between these stonewalls and under SE 020 the SE 048 was uncovered, characterized by ash linses and small fragments of charcoal. Beneath follows the SE 052. The latter runs across a 60 x 80 cm long, flat basalt plate, and its surface (s052) marks the foundation horizon of stonewall M15.

Eastwards of stonewall M21 a triangular and about 2 m width trench was deepened about 80 cm (trench acropolis-east-extension-I). Therein stonewall M22 was exposed protruding up to 10 cm beneath stonewall M21. Both walls run in the same direction, so that is by now unclear whether stonewall M22 represents an older phase of room R1 or an older period within the settlement sequence reminiscent of

<table>
<tr><td colspan="2">Fortress wall</td><td colspan="6">Acropolis</td></tr>
<tr><td>phase</td><td></td><td></td><td></td><td></td><td></td><td></td><td>phase</td></tr>
<tr><td>a</td><td>abutment restauration of M1 and</td><td></td><td></td><td></td><td></td><td>M26</td><td>1</td></tr>
<tr><td colspan="8">SE 020 (filling)</td></tr>
<tr><td rowspan="2">b</td><td rowspan="2">“younger” fortress wall (M1-M2)</td><td></td><td></td><td rowspan="2"></td><td>R3 [M25-M17]</td><td></td><td>2</td></tr>
<tr><td></td><td></td><td>[M24]</td><td></td><td>3</td></tr>
<tr><td colspan="8">destr. of room R1</td></tr>
<tr><td>c</td><td>“unfortified” settlement [M19]</td><td></td><td></td><td>R2 [M1l]</td><td></td><td></td><td>4</td></tr>
<tr><td rowspan="2">d</td><td rowspan="2">“older” fortress wall (M3-M6)</td><td></td><td>R1</td><td></td><td></td><td></td><td>5</td></tr>
<tr><td>R4</td><td></td><td></td><td></td><td></td><td>6</td></tr>
</table>

Table I: Preliminary Correlation.

the findings in the SE 049. In the south the stonewall M22 is interrupted by a semi-circular stone subsidence and runs underneath the stonewall M24. Eastward it is linked with a stone pavement bounded by the stonewalls M32 and M23. Both stonewalls are constructed with two rows of hand-sized stones surrounding a core of pebbles. The top edges of these structures correspond with the preservation niveau of stonewall M22. To the north they run under the stonewall M1. The stone pavement is interrupted in

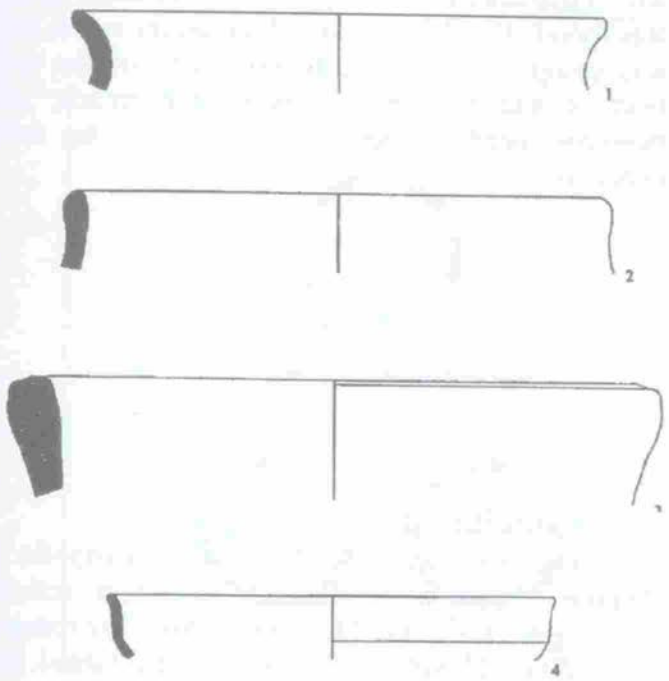


Fig. 16: 1 middle fine, outside and inside black clay, dark-brown core (10 YR 2/2)[13] (d012a). 2 middle coarse, outside black (2,5 Y 2,5/1), inside dark grey clay (2,5 Y 3/1), dark grey core (10 YR 2/2) (d012). 3 coarse, dark red-brown clay (5 YR 3/3) (d012c). 4 fine, outside and inside reddish brown clay (5 YR 4/4), dark red-brown core (5 YR 3/2) (d012b). [1:4]

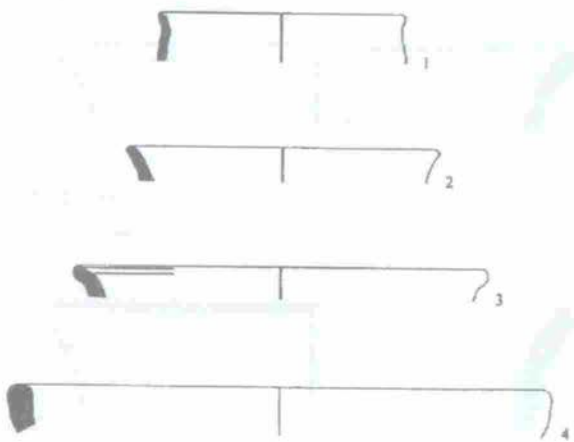


Fig. 17: d020 - acropolis east extension
1 middle fine, ouside and inside red clay (2,5 YR 4/6), dark grey core (5 YR 3/1), burnished. 2 middle fine, outside and inside red clay (10 R 4/4), black core. 3 fine, black clay. 4 middle fine, outside redbrown (5 YR 4/4), inside dark brown clay (7,5 YR 3/4), dark red-brown core. [1:4]

13-Cf. Munsell Soil Color Charts 2000.

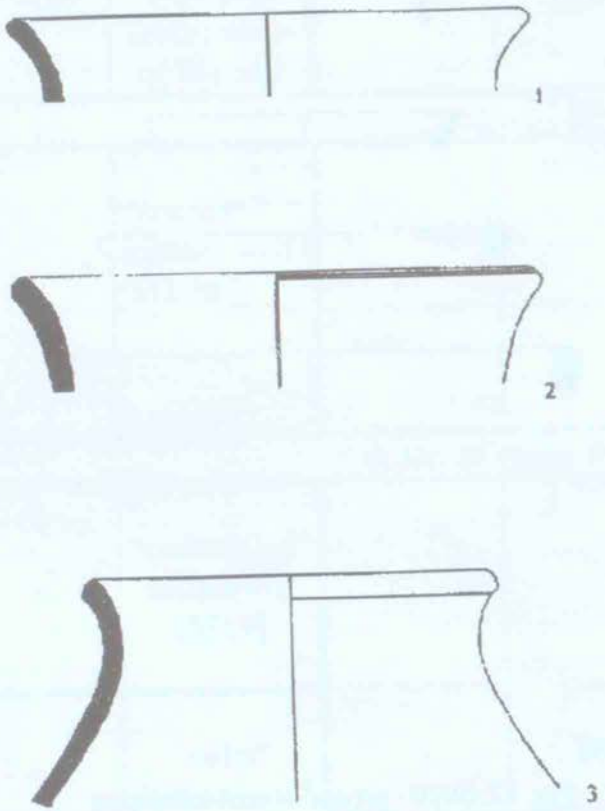


Fig. 18: 1 middle fine, black clay, polished. 2. middle fine, outside brown (7,5 YR 5/4) and inside brown clay (7,5 YR 4/4), reddish brown core (5 YR 4/4). 3. middle fine, outside black, inside reddish brown (2,5 YR 4/4) clay, dark reddish brown core (2,5 YR 3/3). [1:4]

the west by a pit containing an embedded, large pithoi with a diameter of 40 cm, where an obsidian sphere was found. The delimitation of the layers in this area was complicated by the homogeneity of the clay features and the narrowness of the trench, and therefore need further investigation to be fully understood.

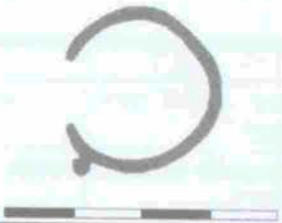
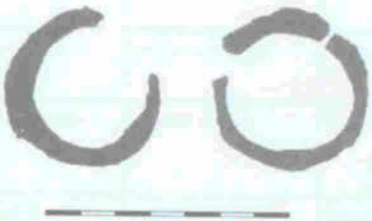
Conclusion

The excavation in the eastern acropolis of Aramus shows a continuous settlement activity covering the Early and Middle Iron Age. The remains can be divided into 6 phases represented in Table I. The correlation of the results in the acropolis with the periodisation of the fortress wall is about to be fully solved, particularly with regard to the oldest structures R1 and R2 as even the structures in the trench acropolis-east-extension-I. This is due to the fact, that so far the only link between the stratigraphy of the slope and the acropolis area was confined to the DOST IV.

The preliminary correlation shown in Table I is primarily based upon two stratigraphic indicators. These are layer SE 020 and findings of the destruction of room R1 by the construction of the "younger" fortress wall in phase b. The final correlation of the phases c and d needs further investigation. This will be only possible by the removal of the fortress wall in order to open a new trench in north-southern direction.

ARAMUS EXCAVATION 2005

Overvies: findings

	Ring SU: s002 Area: A/slope FindN°: FP054
	Rings SU: d030/d018 Area: A FindN°: FP002/FP003
	Bronze Ring SU: d043 Area: A/KM-West FindN°: FP031
	Bronze Ring fragment SU: d018 Area: A/DOST IV FindN°: FP004

	Bone needle SU: d020/s021 Area: A/Acropolis West Extansion FindN°: FP020
	Iron fragment SU: i001/s002 Area: A/Acropolis East Extension FindN°: FP012
	Pearl SU: – Area: A Find N°: –
	Iron Arrowhead SU: i001/s002 Area: 1/Acropolis West Extansion FindN°: FP009

Fig. 19

APPENDIX 1: THE LITHIC ARTEFACTS FROM ARAMUS EXCAVATIONS 2005

HELGA MARCHART

№	US/area	Typus	Material	Colour	Retouches	L [cm]
1	d002/slope east of footbridge	linear flake	linear flake	gray-brown	use retouch sinistro-lateral	1,4
2	d002?/slope	point	linear flake	black, patina	proximal area: fine retouch	3,6
3	d009/slope, west of footbridge FP 042	linear flake	linear flake	grayish-black, opaque, patina, dorsal/ventral sinter-incrustation	proximal area: edges by means of fine retouch slightly indented	2,4
4	d009/slope,west of footbridge FP039	microscraper	hornstone	red-brown, inclusions of fragmentary microfossils	distal area: partial retouch	2,4
5	d020/acropolis west	linear flake	linear flake	gray-brown, striated sinter incrustation, distal translucent	partial distal retouch	2,7
6	d020/acropolis west	linear flake	linear flake	black, partial patinated, dorsal sinter-incrustation	sinistro-lateral partially abrupt retouched	2,6
7	d020/acropolis west	linear flake	linear flake	gray-black, opaque, dorsal sinter-incrustation	sporadic sinistro-lateral retouch, partial dextro-lateral use retouch, edges rolled	2,5
8	SO 18/deep trench 2004 FP 067	linear flake	linear flake	black, translucent		3,3
9	d049/deep trench 2004 FP 057	linear flake	linear flake	gray-black, lateral translucent		2,0
10	grave 2	linear flake	linear flake	brown- transparent dorsal/ventral patina, sinter-incrustation		4,0
11	grave 3	linear flake	linear flake	black, opaque spots of sinter	distal area and sinistro-lateral edge retouch, edges rolled	2.0
12	gate wall, outside left	trimming flake	linear flake	gray-black, opaque, dorsal patina		4,2
13	d048/acropolis east extension	flake	linear flake	gray, opaque, ventral spots of sinter	sinistro-lateral: partial fine retouch	2,9
14	gate wall, outside left	trimming flake	linear flake	black, dorsal patina		4,2

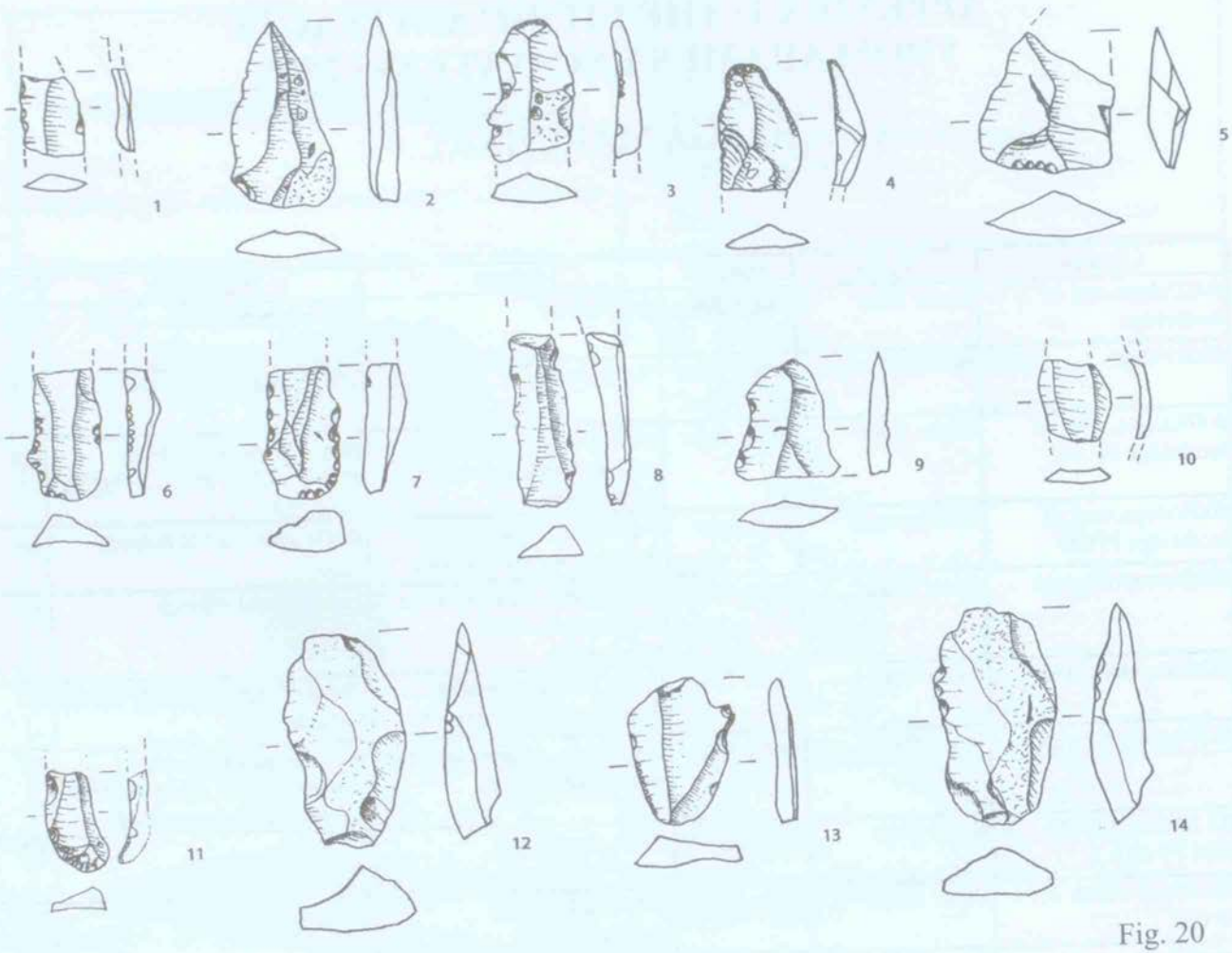


Fig. 20

Bibliography

Avetisyan H.G. 2001, Aragaci amrašinutyunə (The Fortification of Aragats), Yerevan (In Arm.).

Avetisyan H.G. 2001, Aragac. Urartakan amroc'i pełumnerə (Aragats. Excavations of the Urartian Fortress), Yerevan (In Arm.).

Avetisyan H.G., Avetisyan P.S. 2006, Araratyan dašti mšakuytə m.t'.a. XI-VI darerum (The Culture of Ararat - Valley in the 11-6th centuries BC), Yerevan (In Arm.).

Khanzadyan E. 1979, Elar-Darani, Yerevan (In Arm.).

Smith A.T., K. Kafadarian 1996, New plans of Early Iron Age and Urartian Fortresses in Armenia: A Preliminary Report on the Ancient Landscapes Project, "Iran", XXXIV, 1996: 25-37.

A BRONZE SCULPTURE FROM ARAMUS

HAYK AVETISYAN, WILFRID ALLINGER-CSOLLICH

Tab. II-1 Aerial photography.

The joint expedition of Yerevan State University (Department of Archaeology) and Innsbruck University (directed by H.G. Avetisyan and W. Allinger-Csollich) continued in 2006-2007 its investigations in the territory of Aramus fortress in the Kotayk' district of Armenia. Within last year in the northern section of the eastern edge of the fortress, up to the first terrace, an area of 250 m2 was excavated.

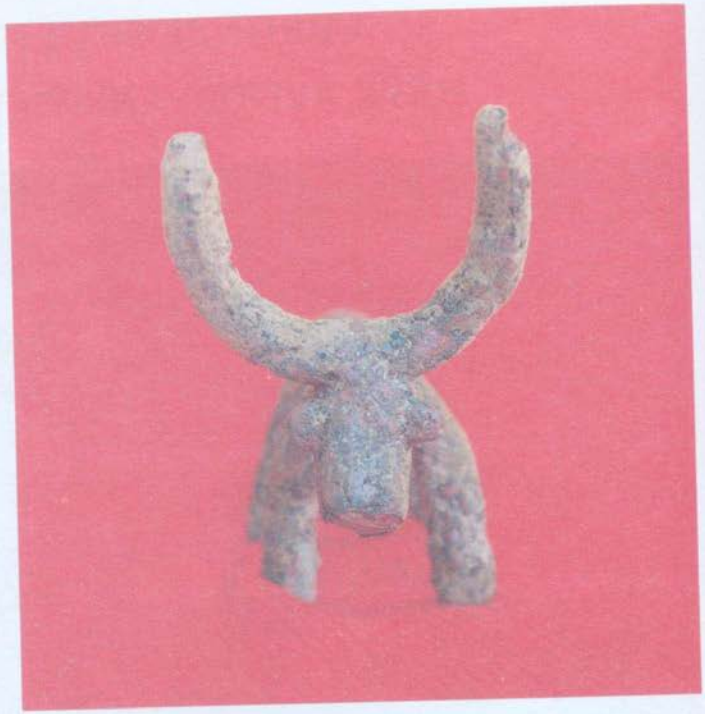
Tab. II-2: Bronze a bull.

Continuing the former works the expedition aimed to verify the fortress's construction phases, in order to define more precisely chronological, stratigraphical sequences etc[1]. For these purposes the excavation area was broadened mainly to the north-east in the direction of the acropolis[2].

During the excavations the expedition cleaned the northern tower by the eastern entrance of the acropolis, as well as the first line of fortification walls. Almost completely was unearthed one of the buildings of the acropolis. The investigations of other constructions of the fortress also were continued.

Greater clarity was established during investigations of the fortress-walls. The remains of a wall discovered in across-section of a trench

1-Avetisyan 2005a: 97ff.
2-Avetisyan 2005b: 151ff.



Tab. III-1: Bronze a bull.

excavated on terrace M 6 is especially noteworthy. This wall very likely belonged to the Pre-Urartian period and was part of an earlier cyclopean fortress. To the south of this wall, on the terrace, we opened a later line of a wall dating to the period of the Van kingdom, which in the eastern section of the acropolis joins with the remains of a large tower. With its unique construction, this wall echoes similar Urartian structures. Our investigations show that the last line of wall surrounding the acropolis was built sometime after the Urartian era, and continued to exist as late as the early medieval period. In addition to clarifying the construction sequence of fortification structures at the site, we have also uncovered other structures within the acropolis (Tab. II/1).

In the process of excavations a large quantity of archaeological materials has been unearthed. Of

Tab. III-2: Bronze a bull.

particular note amongst these are the materials of the Van kingdom period, including ceramics that allow us to reconstruct Urartian pottery manufacture at Aramus. Vessels of different types and sizes from the site have been used for storing of agricultural and cattle-breeding goods. Certain pottery forms relate both with everyday life and with ritual activities. The collection of Urartian pottery can be classified into two main groups: a) Red to yellowish and black-grey slipped examples of high quality, and b) Black, rude examples with matt surface. It is of note that 90 % of this pottery is made on potter's wheel. The pottery groups under consideration are dated into the VIII-VI centuries BC[3].

Also metal objects (different rings, bracelets, needles, fibulae of bronze and iron) were found, which date mainly to Urartian period[4] and find broad parallels among the materials from Karmir Blur, Erebuni, ArgishtiÆinili, Ayanis and other contemporary sites. These artefacts have been made of bronze and in both production and style are typical for Urartian applied arts. Amongst the interesting finds is a fragment of a bronze belt decorated with linear ornamentation.

During the 2007 excavation season, a high quality bronze sculpture of a bull also came to light (Fig. 1, Tab. II/2, III/1-2). It has emphasized horns, rounded-spherical eyes, a short tail, a stretched body and comparatively short legs. With its stylistic characteristics it could be defined as a distinctive example of Urartian sculpture and according to stratigraphical disposition can be dated into the VIII-VI centuries BC. However the tradition of bull statues made on this or similar manner go back to the Bronze Age Anatolian-Caucasian cultural world – in particular to the mid and second half of the III millennium BC (Early Bronze Age sites of Alaca Höyük-Horoztepe-Maikop type)[5] or to the second half of the II millennium BC (i. e. Late Bronze and partly Early Iron Age sites of Lchashen-Metsamor/Tsiteligorebi[6], as well as of Colkhis-Coban[7] cultures). The mythological background of such sculptures is clearly discernable in Hattic, Hittite and Hurrian traditions (cf. e. g. the mythological images of twin bulls Hurri and Šeri connected with the cult of Thunder-God and attested also archaeologically)[8].

3-Avetisyan and Avetisyan 2006: 129-131.

4-Avetisyan, Allinger-Csollich 2006: 105ff.
5- Mansfeld 2001.
6-Arutyunyan 1987.
7- Domanskiy 1984.
8- Cf. Schmidt 2002: 97-98.

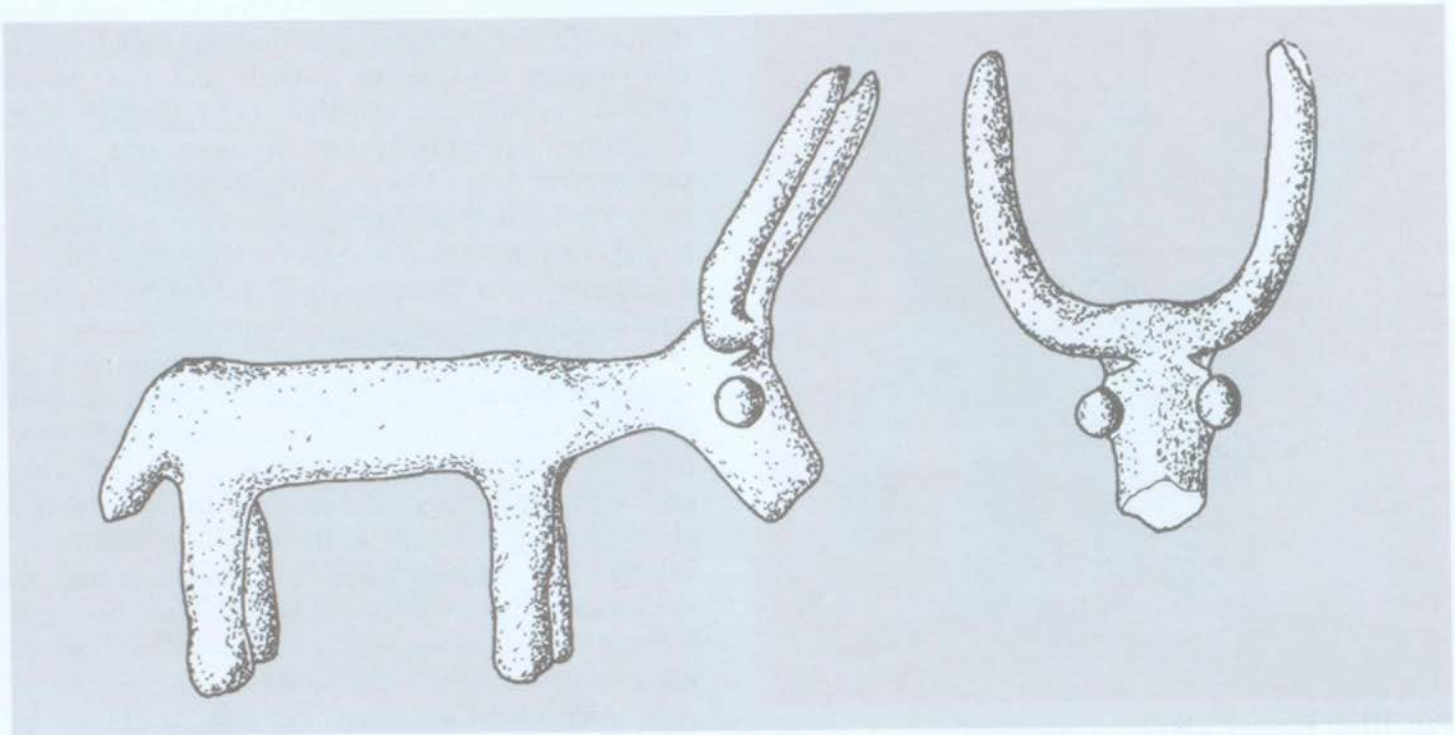


Fig. 1: Bronze a bull.

BIBLIOGRAPHY

Arutyunyan L.G. 1987, Xudožestvennye obrazy v plastike lčašenskogo tipa v iskusstve xetto-xurrito-mitannijskogo kruga, VI. Respublikanskaya konferencija po problemam iskusstva Armenii, Yerevan, 15-20.

Avetisyan H. 2005a, The Fortress of Aramus, "Hušarjan" 3, Yerevan, 97-102.

Avetisyan H. 2005b, The Excavations of Aramus, "Patmut'yun ev krt'ut'yun" 1-2, Yerevan, 151-158.

Avetisyan H., P. Avetisyan 2006, Araratyan dašti mšakuyt'ə m.t'.a. XI-VI darerum (The Culture of Ararat - Valley in the XI-VI Centuries BC), Yerevan (in Arm.).

Avetisyan H., W. Allinger-Csollich 2006, The Fortress of Aramus: Preliminary Report of Excavations in 2004 and 2005, AJNES I, 105-134.

Domanskij Y.V. 1984, Drevnjaja xudožestvennaja bronza Kavkaza, Moskva.

Mansfeld G. 2001, Die „Königsgräber" von Alaca Höyük und ihre Beziehungen nach Kaukasien, AMI(T) 33, 19-61.

Schmidt K. 2002, Norşuntepe. Kleinfunde II, Artefakte aus Felsgestein, Knochen, Ton, Metall und Glas, in: „Archaeologica Euphratica" II, Mainz am Rhein.

THE IRON AGE FORTRESS OF ARAMUS, ARMENIA:
THE ARCHAEOLOGICAL EVIDENCE OF THE EAST AND NORTH FORTS

SANDRA HEINSCH, WALTER KUNTNER AND HAYK AVETISYAN

Fig. 1: The ridge of Aramus seen from the east.

The fortress of Aramus is located 18km north-east of Yerevan on the eastern half of the Kotayk Plateau bordered to the north-east and south-east by the foothills of the Gegham mountain range and to the west by the Hrazdan gorge (Pl. I and II). The fortress was built on an altitude of about 1495m above sea level atop a narrow ridge running east-west along the southern fringe of the paleolake basin of Aramus. The most remarkable topographic feature delimiting the basin to the north is the extinct volcanic massif of Mt. Hatis (Pl. III), which represents, thanks to its extended opencast mines of obsidian, one of the most notable archaeological areas for the research of the prehistory of the Kotayk region (Schäfer, Weishäupl and Gasparian forth).

The ridge of Aramus rises almost 50m above the plain, where especially the northern slope ascends steeper compared to the others (Fig. 1). At the base it measures approximately 350m in width and 1000m in length. A shallow saddle, more or less midway of the length, divides the ridge into two parts (Fig. 2). The western part shows no signs of settlement or of

Fig. 2: Arrow indicating the saddle, behind the unfortified west mound, in the foreground the West Fort. At the point where the peoples are standing runs the delimitation of the West Forts.

fortifications and on its largely rocky surface only few ceramic sherds, mainly of medieval date, were found. It is assumed here that this area was used as a quarry for the construction or merely the several re-constructions of the fortress of Aramus eastwards of the saddle presumably demolishing originally standing defensive structures. From a strategic point of view namely it is inconceivable why this part remained totally unfortified providing such an excellent plane for the siege of the fortress. One could imagine, however, that the hill was still surrounded on its west side by a lake or swamp during the Iron Age. Clear evidence with regards to this point remains missing.

The ground plan of the fortress of Aramus complies strictly with the morphology of the ridge and

Fig. 3: Monolithic blocks forming an embankment for the fortification wall of the East Fort (Period V). The counterfort (right hand) was built in Period IV.

can significantly be divided into six autonomous fortified sectors, hereinafter referred to as forts (Pl. IV). The oldest parts of the fortress are the Central and East Forts followed by the two West Forts, also built atop the ridge, and finally the North and South Forts built respectively on the north and south slopes. The latter are further characterised by several parallel running terraces (Pl. V), which not only increase the effective surface of the forts but turned out to be an essential part of the defensive system. Each fort is enclosed by a wall substructure constructed of cyclopean dry masonry with grossly hewn rhyolithe and tuff stones with an average size of 50 to 80 cm largely set in regular courses supplemented by a cobble fill. At regular intervals and especially at corners there were repeatedly used, however, also bigger blocks with sizes of up to 2 meters. The wall thickness ranges between 2 and 2.7 metres, though the width of 2.2 metres resulted to be a standard. At the surface the stone substructures were hardly preserved higher than one course, but once excavated they consist throughout of three or four courses with a height between 1 and 2 meters.

In this regard it was surprising to find that not all stonewalls grounded on bedrock, and if so, that there was no evidence of fine bedrock carving such as in Bastam (Kleiss 1988, 182) or Ayanis (Çilingiroğlu 2001, 25-27; Harmansah 2009, 184-190). The levelling of the base for the foundation of the stone substructures was instead contrived more rudely both by wedging smaller stones beneath the walls and in the bedrock fissures and by quarrying the bedrock itself re-using the monolithic blocks as massive foundation stones (Fig. 3).

Despite the crudeness of the building technique, both standardisation and a well-conceived planning are clearly discernible in the masonry and layout of the fortress of Aramus. It is, therefore, conceivable that the conversion of the fortress to its greatest extent may have occurred within a relative short span of time, which is the period of the Urartian expansion into the Kotayk Plateau and further to Lake Sevan sometimes between the foundations of Erebuni (782 B.C) and Argishtihinili (776 B.C.) by Argishti I. and the foundation of Teishebaini/Odzaberd by Rusa I. (735-713 B.C.). However, a pre-Urartian foundation cannot be excluded, as will be discussed below. Likewise, the date of the foundation of the South Fort remains unknown, which ultimately makes up nearly 50% of the whole expanse. Regardless of this open chronological issue, the fortress of Aramus measures 400m in length and 240m in width enclosing in sum a fortified area of 9.6 hectares, thus representing the largest fortress of the Kotayk Plateau.

The size and above all its geostrategic location at the intersection of the routes from the main royal residences of Erebuni and Karmir Blur as well as

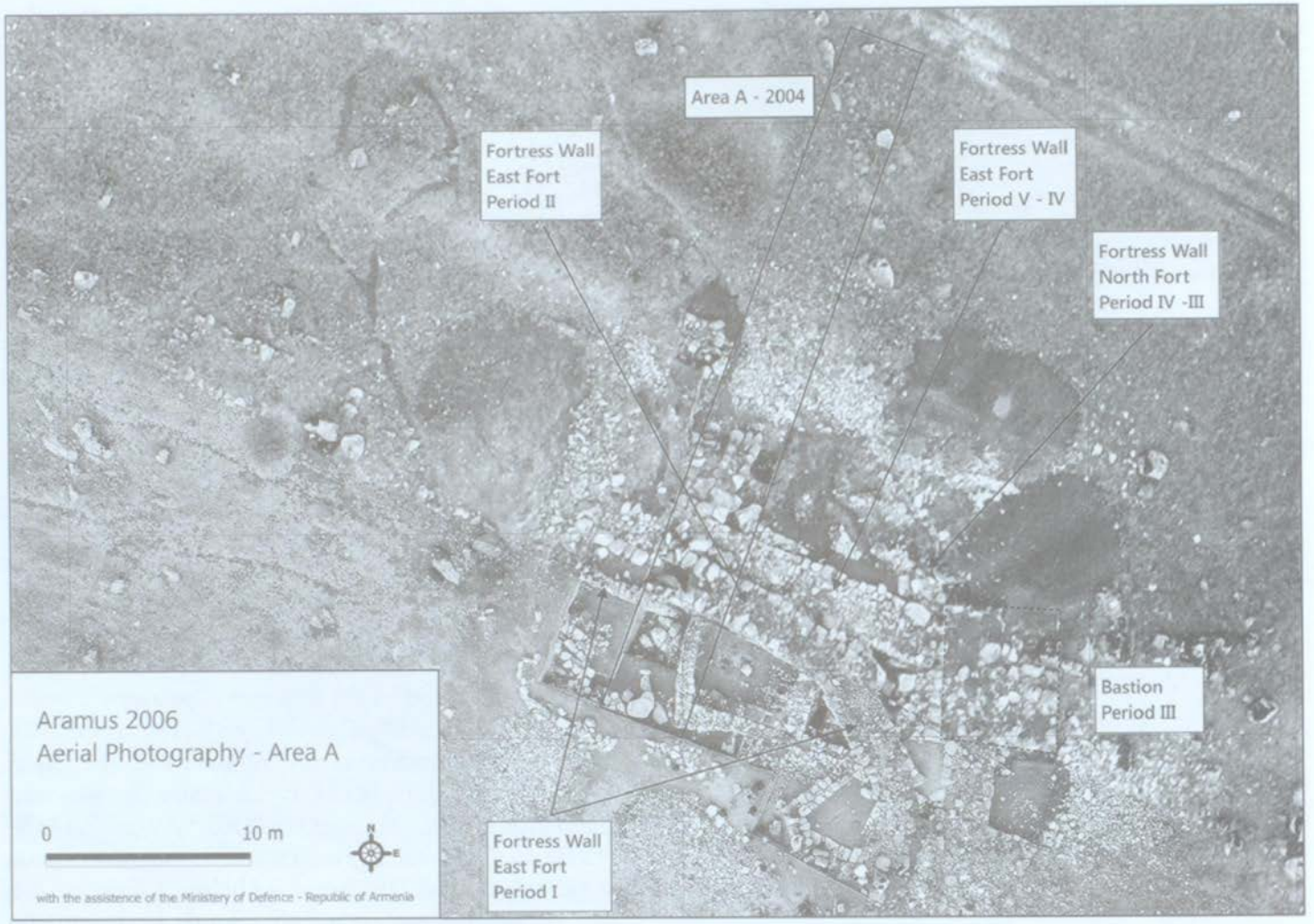


Fig. 4: Aerial Photography of Area A.

Argishtihinili, the latter via the aligned fortification system comprising the fortresses of Aragats, Oshakan and Dovri along the foothills of Mt. Aragats, directed to Lake Sevan, make it likely to regard the fortress of Aramus as an important centre both for the economic control of the rich agricultural and stock-farming resources of the Kotayk Plateau as well as military outpost and collecting point for the continuation of the northern expansion (Smith 1999, 55-57). The reconstruction of the Urartian advance to Lake Sevan across the plateau of Kotayk via Aramus eastwards of Mt. Hatis over the Gegham mountain range, from where it was possible to target the northern as well as the southern shore districts, instead of a more northerly direction along the Hrazdan gorge passing by Lchashen, as argued by some scholars (Salvini

2002, 37-43), is at least corroborated by two facts: first, that no Urartian fortifications are known north of the line Aramus - Dovri and secondly, that the here proposed itinerary remained the major route from the Ararat plain to Lake Sevan until the Middle Ages as exemplified by the impressive fortress of Sevaberd. The eminent role of the fortress of Aramus within the history of the Kotayk Plateau at least from the Middle Iron Age until the Middle Ages is further emphasized by the results achieved in the course of an extensive archaeological survey conducted in the surroundings of Aramus in 2007. In fact, at least seven more fortified sites could be identified along the old road leading to Lake Sevan dating to the Iron as well as to the Middle Ages (Heinsch and Kuntner, forth.).

Prior archaeological research in the Kotayk region

Archaeological investigation of the Kotayk region began nearly a century ago and has resulted in a series of significant discoveries. The first archaeological explorations conducted in this region focused, however, mainly on Prehistory (Avetisyan, Avetisyan, Gasparian, Gabrielyan, Nahapetyan, Hovsepyan and Arakeljan forth.). At the beginning of the 1930s and 1940s, in addition to the extensive mapping of archaeological sites throughout Armenia, archaeological research was particularly concentrated on the study of settlement patterns and their adaptation within the Bronze and Iron Age periods (Badalyan and Avetisyan 2007).

But it is only in the 60s that the first comprehensive archaeological excavations were conducted in this region by E. Khanzadian, who put major emphasis on the investigation of the Early and Middle Bronze Age settlement and cemetery of Elar, situated 15km north of Yerevan (Khanzadian 1979), extending therewith the well-established practices of systematic research, since then already experienced at Karmir Blur, Arinberd, Armavir and Metsamor to the Kotayk region (Lindsay and Smith 1996, 170-178). Although only few relevant Iron Age artefacts were found on that occasion by Khanzadian, she nevertheless suggested an identification of Elar with the city of Darani on the basis of a cuneiform rock inscription of Argishti I. found nearby the site commemorating the conquest of the land of Uluani, the land of the city of Darani (Salvini 2008, 348-349). It is in this historical context that the beginning of the fortress of Aramus has to be related.

The Iron Age fortress of Aramus

The fortress of Aramus was studied more than once during the 20th century. Unfortunately, the results of these early explorations, which encompassed also several trenches in the Central Fort, have not been published yet. The first systematic excavations were led, however, only in the 80s by H. Avetisyan, whose investigations concentrated on the western part of the Central Fort (Avetisyan 2001). Here, Avetisyan uncovered a monumental gate flanked by two huge towers, which were reinforced at a later time, as well as several rooms aligned along the inner surface of the northern fortification wall. At least two main periods could be discerned by him. Both periods were dated to the Middle Iron Age due to the great quantity of Late-Urartian pottery and several fragments of red, highly polished pottery found within the cultural layers of these rooms (Avetisyan 1999/2000; 2005a; 2005b).

In 1995 the fortress of Aramus was again surveyed by A. T. Smith and K. Kafadarian within the Ancient Landscape Project. On this occasion a first detailed plan of the fortress was published on the basis of a plan created in 1989 by Armenian scholars (Smith and Kafadarian 1996, 36-37). At that time Smith and

Kafadarian already emphasized the prominent position of Aramus within the study of Iron Age fortresses in Armenia, especially in regard to the combination of typical components of Urartian construction practises with native elements of Early Iron Age building traditions, for which they use the term "frontier style architecture" comparing Aramus with such sites as Horom, Dovri and Odzaberd.

In 2004 the investigation of the fortress of Aramus was resumed within the cooperation project Aramus Excavations and Field School conducted by the State University of Yerevan (Armenia) and the University of Innsbruck (Austria). The project has been designed as an open platform for interdisciplinary research and university teaching supplying a modularised summer school trainee program based exclusively on Open Source and Free Software and furthermore providing unrestricted access to all documentation data, which will be published in a WebGIS Database (special thanks to Giuseppe Naponiello, the Abteilung Neue Medien und Lerntechnologien and the Zentraler Informatikdienst of the University of Innsbruck for their assistance). Moreover, it was possible to develop new digital documentation strategies based solely on FLOSS, among others the metodo Aramus for geo-referenced photomosaic documentation (Kuntner and Heinsch 2009. Bezzi, Bezzi, Gietl, Heinsch, Kuntner and Naponiello forth.) as well as to create the eLearning platform Digital Archaeological Documentation (special thanks to Alessandro Bezzi, Luca Bezzi and Rupert Gietl).

So far, five campaigns of the duration of one month each have been accomplished within the East and North Forts of Aramus. In the following, a summary of the stratigraphical results as well as a preliminary date of the settlement periodisation will be given.

The Armenian-Austrian Expedition 2004-2008

In September 2003 the Armenian-Austrian Expedition undertook a first season of fieldwork in order to familiarize with the backgrounds and the finding materials as well as to find an appropriate area to start excavations. The findings collected on the surface enclosed by the fortress dated from the Paleolithic period to the Middle Ages showing a much longer utilisation of the hill than previously thought. The paleolithic artefacts, mainly found atop the ridge, amply add to our understanding of the oscillation of the shorelines and the extension of the former paleolake situated in the basin of Aramus, when the ridge was apparently used as one of the numerous encampments possibilities so far attested only on the foothills of the Gegham range. In contrast to the paleolithic evidence only few sherds of Early Bronze Age Kura-Araxes pottery were found on the hill, which were, moreover, concentrated in one single spot on the upper part of the south slope next to the fortification wall of the Central Fort. Further sherds were, however, found later in the excavation trench of area A in the East Fort, suggesting the existence of some kind of settlement activity. Whereas Middle Bronze Age sherds were totally missing, Late Bronze Age sherds were again found in the Central, East and West Forts.

The excavation in area A was generally consistent with these results, although one single Middle Bronze Age fragment was found. Pottery belonging to the Iron Age was extremely common and was found all over the hill. Lastly, ceramic sherds tentatively dated to the 3rd century B.C. and to the 3rd-4th centuries A.D were found at the south and north slopes of Aramus. Medieval material (7th-10th centuries A.D.) also appears conspicuously in particular in the East- and North Forts as well as at the

West Forts. In sum, the investigations conducted in 2003 revealed on one hand that the hill itself was in some way used since the paleolithic as well as during the Bronze Ages and on the other, that the fortress of Aramus was not only settled consistently during the Iron Ages but that the structures had experienced also an ample re-utilisation in the Middle Ages.

The outcome of the fieldwork of 2003 proved the East Fort to be the most promising sector for the intended archaeological research, namely the investigation of the transition from the Late Urartian to the Achaemenid time. The terrain morphology of the East Fort, characterised by a strong sedimentary accumulation, and the tangle of structures already visible on the surface, especially on the north-east slope, showed that this area must have grown significantly over time and that several occupation levels could therefore be expected. Moreover, the large amount of sherds concentrated in the north-east part of the East Fort and on its north slope predominantly dating to the Late Urartian and Achaemenid periods seem likewise to ensure the achievement of the goals set (thanks to Stephan Kroll for his detailed and helpful suggestions during the initial phase of this work in Aramus).

Finally, because of former investigations conducted by H. Avetisyan in this part a gate could be expected to be situated at the east escarpment of the East Fort. In this regard the huge bastion seemed to provide an important feature both for the verification of the existence of the gate and as a link to our excavations in the East and North Forts by the exposure of the defensive bulwark connected to it and coherently extending into the East and North Forts.

The excavation results of the East and North Forts of Aramus

In 2004 an almost 4m wide and 35m long trench running from atop the East Fort downhill to the fortification wall of the North Fort was delimited at a distance of nearly 10m westward of the bastion, since in this area different stonewalls were already discernible on the surface of the slope converging in direction of the bastion. In the following campaigns, the so-called Area A, was progressively extended eastwards exposing both the fortification bulwark at the northern slope and the structures enclosed within the East and North Forts uncovering finally an area of about 500m² (Fig. 4). In several spots bedrock was reached so that the sequences of these forts can be regarded as cleared. The results of the Armenian-Austrian excavations yielded a total of five building periods I-V. While the youngest period I dates to the Middle Ages (Plontke-Lüning and Heinsch forth.) periods II-V, which revealed an uninterrupted settlement sequence that saw the reuse and partly re-building of the fortification walls of the East and North Forts, can be ascribed to the Middle and Late Iron Ages. The discussion of the results will concentrate on the latter (Pl. VI).

The oldest period V is defined by the foundation of the East Fort tangible by the fortification wall II exposed along the northern slope over a length of 18m. The wall grounds directly on bedrock and resembles, although of more elementary type, the building technique applied in Karmir Blur (Fig. 5). Period IV is, on the other hand, defined by the construction of the fortification wall of the North Fort, which, due to its oblique approach to the fortification wall of the East Fort, forced the rebuilt of the east corner as well as the demolition of the eastern section of the former fortress wall II, originally joint at right angle. So far as ascertained, the newly built eastern section of fortress

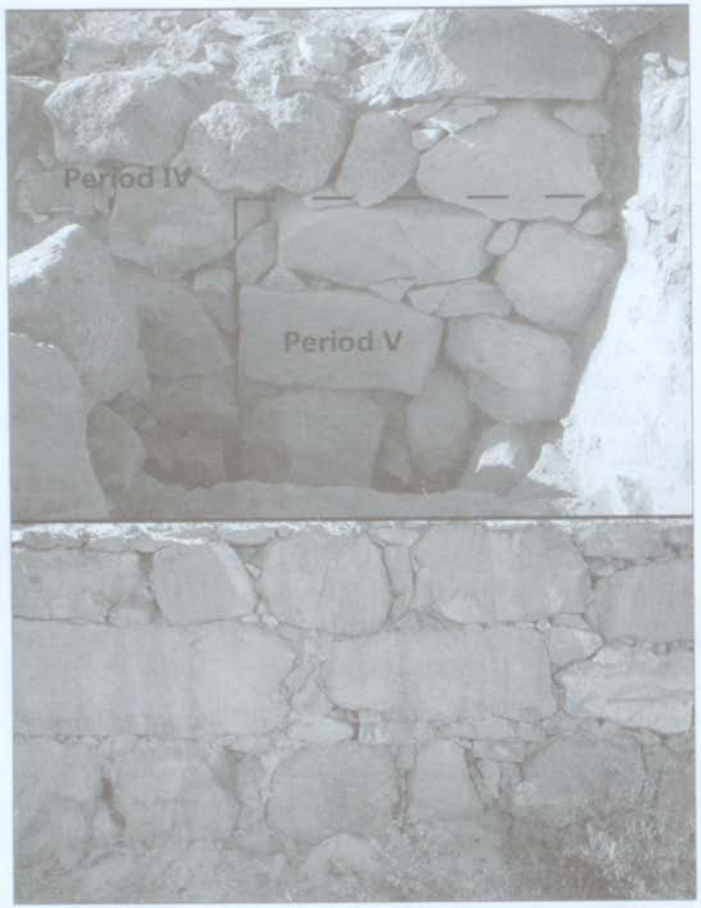


Fig. 5 Comparison between the building techniques of the fortress wall of Period V in Aramus and its rebuilding in Period IV (above) and the fortress wall facing the Court in Karmir Blur· (below).

wall II was not founded on bedrock but rather ascended to the south according to the terrain of the eastern escarpment.

The distinction of these periods within the stratigraphical sequence of the East Fort posed a challenge and was, because of the overlying construction of periods III and II, only broadly possible. The associated layers were therefore grouped under the stratigraphical unit SE 071, which is marked by the succession of several, different sized bands of sandy-chalky layers mixed with small basalt chips and more loamy layers mixed with charcoal and debris (Pl. VII). It is assumed here that the sandy-chalky layers derived from the mining of bedrock, which served as rough material source for the basalt blocks needed for construction, while the loamier layers represent the proper cultural layers of Period V and IV (Kuntner and Heinsch 2010).

A tentative interpretation of the ceramic findings recovered within the sequence of SE 071, which were most successfully examined in trench R1, suggests for period V a date from the 9th to the 8th century B.C. (Pl. VIII, 10-17) and for period IV from the second half of the 8th to the 7th century B.C. (Pl. VIII, 1-9). Among the most important findings confirming the proposed date of period IV is a red polished bull head protome (Pl. IX, 2) found in the uppermost layer of SE. A number of ceramic samples were finally taken from layer SE 071 for luminescence dating. The results, which are listed below, require, however, as can be easily deduced, further investigation since they clearly contradict the picture presented here.

By far the most comprehensive excavation results relate, however, to periods III and II, which can be both dated by a well-stratified ceramic corpus and radiocarbon dates: period III ranges from the second half of the 7th century to the 5th century and period II from the 5th century to the 3rd century B.C.

Period III marks an overall rebuilding of the fortification walls of the East and North Forts as well as the construction of a gateway near the east corner of the East Fort flanked on both sides by a huge and amply protruding tower or merely bastion. This period is further characterised by an entirely new arrangement of the rooms within the East Fort, whose

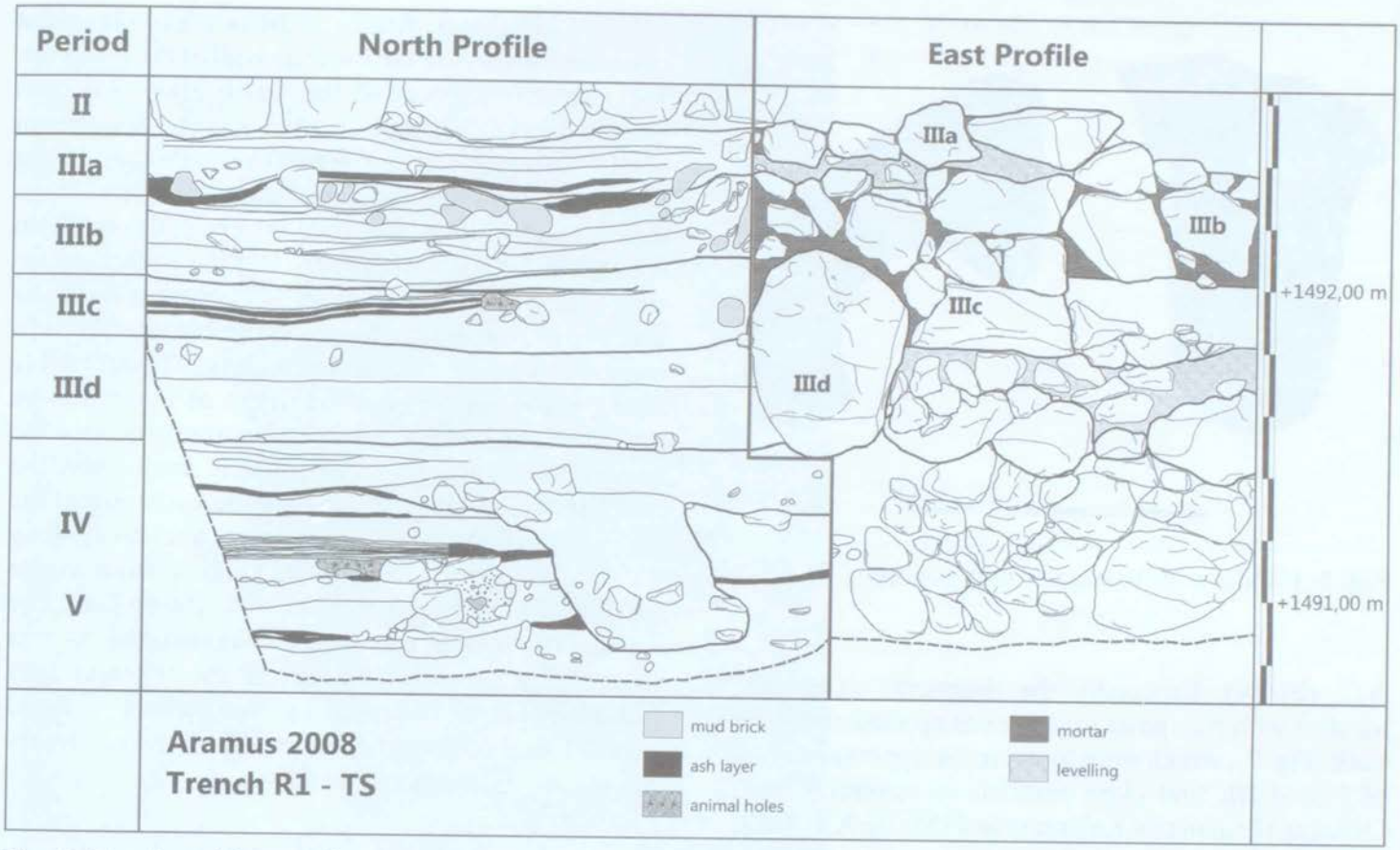


Fig. 6: Stratigraphic sounding in Trench R1 – TS.

alignment sets the rule for all further rebuilt phases of the Iron Age settlement. By accessing the gate-room through the gateway it was possible to enter rooms R1 and R2. Further the latter leads to an open space, whose interface niveau lies up to 1m higher than that in the rooms as a consequence of the free standing bedrock. This finding shows that the rooms were set between the fortification wall and bedrock. It is assumed here that they were primarily used as storage cellars. Comparable cellars are again to be found in the fortresses of Oshakan (Esaian and Kalantaryan 1988, Pl. CXI) and Karmir Blur (Barnett 1959, 11).

In sum, four main phases, IIIa - IIId, were defined on the basis of the rebuilts of the room stone walls built along the inner face of the fortification wall. In both rooms R1 and R2 it was possible to correlate the different occupational layers of Period III, which were characterised by a remarkable succession of several beaten mud floors and thin ash deposits, with the single rebuilt phases (Fig. 6). The ceramic sequence shows a gradual shifting of Middle Iron Age wares and forms datable to the 7th and 6th century

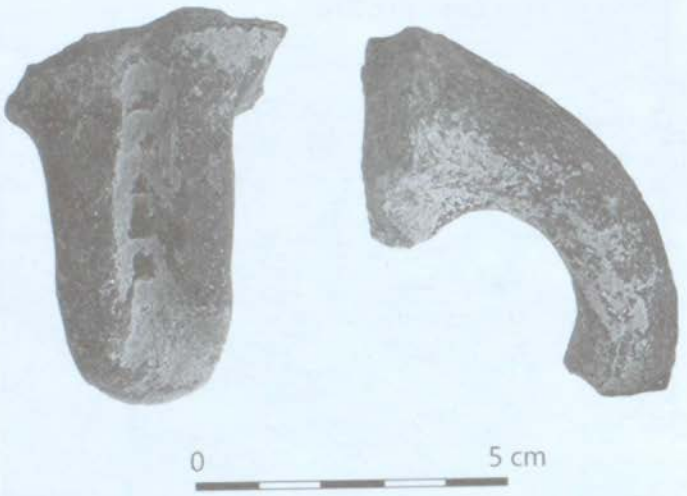


Fig. 7: Handle with triangular impressions.

B.C. (Pl. X). Especially the fragments of several handles with triangular impressions applied along the back (Fig. 7), which were found in the uppermost level of Period III, find close parallels to examples from Oshakan (Esaian and Kalantaryan 1988, Pl. XX, 1 and 4; Pl. XLIX, 5).

The dating of the end of Period III in the 6th century seems further corroborated by the findings in the North Fort, where a narrow trench was opened along the fortification wall (Fig. 8). Over a debris layer, which can be correlated to Period IV, a beaten mud floor could be recognized thinly covered by ash and charcoal fragments. On its surface, occluded by the fallen debris of the Period III fortress, lay iron and bronze weapons (Pl. XI) and a small bronze ox figurine (Pl. IX, 1) (Avetisyan and Allinger-Csollich 2008). The arrow heads find close parallels to Ayanis dated to the end of the 7th century B.C. (Derin and Muscarella 2001).

Period II saw, finally, a major reassessment of larger sections of the fortification wall of the East Fort. The northern segment of the fortification wall was relocated more than once. In order to clear the different levels, as a result of the several re-buildings during period III between the foundation interface of its fortification wall and the final interface, the northern area has to be risen with earth. But the earth bank on which the new fortification wall of period II had to be founded proved at least to be an unstable ground and a weak point in the defensive structure. The inevitable repair works, of which a minimum of five could be discerned, caused a continuous rearrangement of the east corner of the East Fort, which finally saw the occlusion of the gateway and a trapezoidal run of the fortification line. This result suggests a relatively long duration for period II, which, judging from single ceramic sherds, lasted until the 4th century B.C. The fortress of Aramus was then abandoned and its area reused as a cemetery during the the 9th and 10th century A.D., as indicated by two carbon-14 dated graves found deepened into the ruins. Nowhere traces of a violent destruction were found.

The inconsistent results of the luminescence dating

As mentioned before, in 2007 ceramic samples were collected from layer 071 for luminescence dating. The research aimed to determine to what extent these layers contain mixed material as a consequence of the several rebuilds, as the dating for the foundation of the East Fort relies on this level (Special thanks to Amie Cuhaciyan and Jim Feathers, University of Washington).

The result of this investigation clearly shows that strong mixing must be considered, all the more, since the date seem to indicate a date into the 2nd millennium B.C. However, sample UW1771 poses a

Fig. 8: Trench in the North Fort (looking northwest).

much more unexpected problem, as the red ware with black core is generally regarded as diagnostic for the Urartian period alone. The assessment of this fragment shows that the ware seems to have remained in fashion throughout the Hellenistic period, yet contradicting the common dating. Since this investigation was carried out on only one fragment, it is not considered of sufficient weight to be regarded as representative. But this preliminary result calls for attention and further investigation to proof the validity of the suggested luminescence date. This research is being conducted at the moment (Heinsch forth.).

Conclusions

In assessing the history of the fortress of Aramus it is important to stress that the periodisation presented here was defined on the basis of the building sequence determined on the fortification walls of the East Fort. Within this sequence fortress wall II played a major role. The stone substructure remained namely in use throughout the Iron Age occupation of the East Fort. Following its foundation in period V the structure was recovered two times in its original function as stone substructure, in period IV when the North Forts was built and in period III in the course of the construction of the gateway and its bastion-like towers, in both instances causing a redesign of the east section. The raising of the occupation layers during period III, which filled the area within the East Fort to almost 1m above the surface of the preceding period, necessitated in period II the construction of a new fortress wall I along the north escarpment. In that occasion fortress wall II was reused as solid base, whereas the east section, built in period III, remained in use as fortress wall. The periodic reuse of parts of the fortress walls as well as the evidence gained from the stratigraphic sequence, which showed no interruptions in the occupation of the East Fort, indicate that the fortress of Aramus was continuously in use from its foundation in the 9th to 8th century till its abandonment in the 4th or 3rd century BC.

The correlation of this periodisation with historical defined periods such as pre-Urartian, Urartian and post-Urartian/Achaemenid, generally used synonymously with Early, Middle and Late Iron Age, poses, however, difficulties because it is hardly possible to link the period interfaces with absolute dates. The carbon-14 dating of the foundation of the East and North Forts in period III for example, ranges between the middle of the first half of the 7th century (673 B.C.) and the 5th century B.C. It can, therefore, provide only a rough time frame.

Important conclusions can be drawn, however, from the ceramic evidence. The ceramic assemblages of periods V and IV are characterised both by black-grey-brown burnished pottery clearly resembling local Early Iron Age traditions of the Lchshen-Metsamor VI group (Avetisyan and Bobokhyan 2008, 126; Avetisyan, Avetysian, Navasardyan and Bobokhyan forth.) and by red burnished pottery containing some few highly polished specimens, whose forms find close parallels with the state assemblage typology of Urartian vessels (Zimansky 1995; Avetysian 1999/2000). These wares faded out progressively during period III, which on the contrary is characterised by a high percentage of a pale grey ware. This distribution seems to suggest an older date for the foundation of the East Fort in period III within the frame defined by the carbon-14 dating, this is in the second half of the 7th century B.C.

The question of the date of the re-foundation of the East and North Forts in period III cannot be solved beyond all doubts, namely whether it still dates into the reign of Rusa II. or of one of his dynastic successors or at least already in the Achaemenid time. This does however, not prevent to infer that the fortress of Aramus outlived the governing of the Urartian kings in Tushpa. The same difficulty is found also when trying to date the foundation of the East Fort in period V, since judging by the high percentage, but also long persistence of the black-grey burnished ware in period V an Early Iron Age dating cannot be excluded. In this regard it may be interesting to note that fortress wall II appears to have been lacking buttresses at the time of its foundation, which were added only later on in period IV.

PLATES

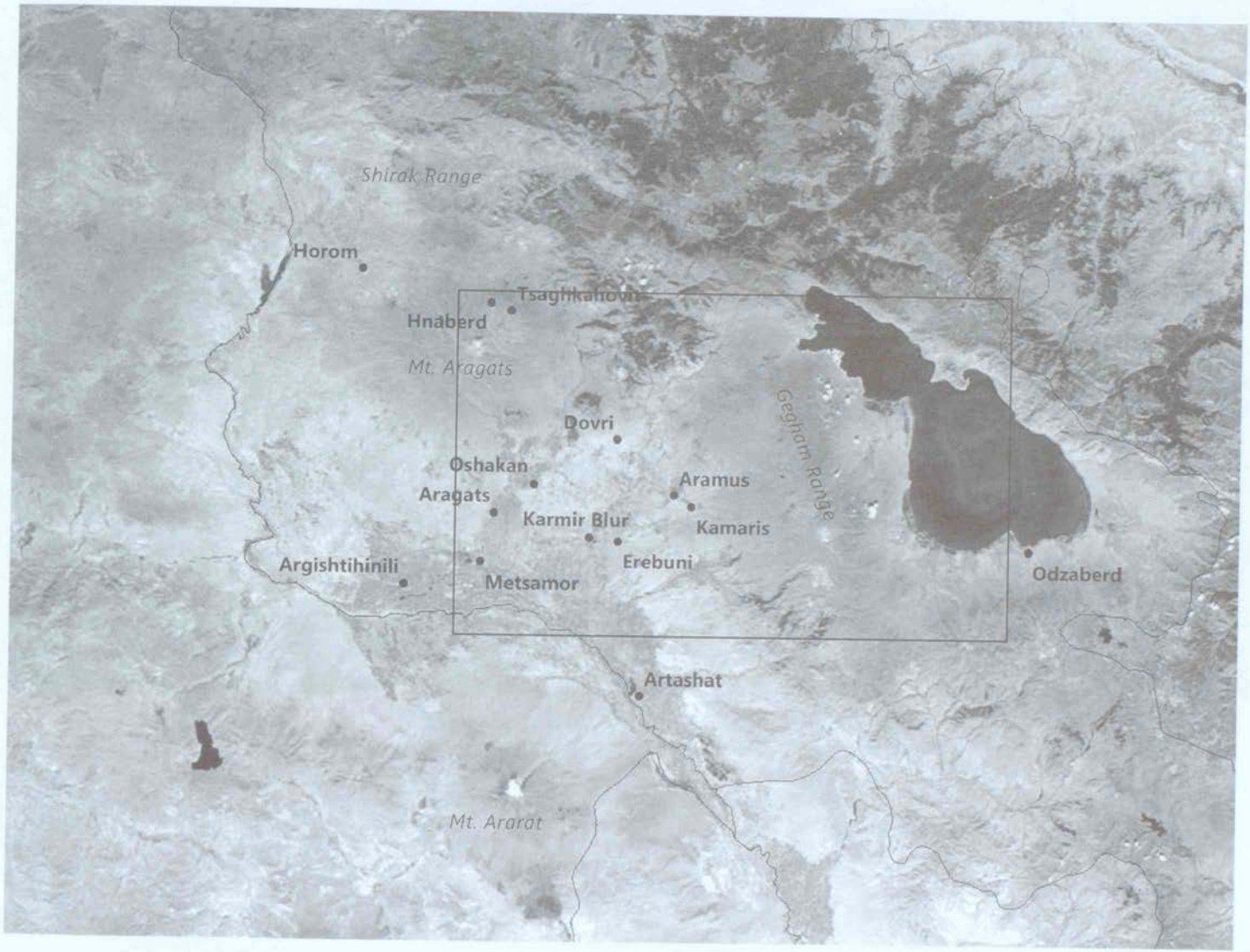


Plate I: Map based on NASA/GSFC, MODIS Rapid Responce.

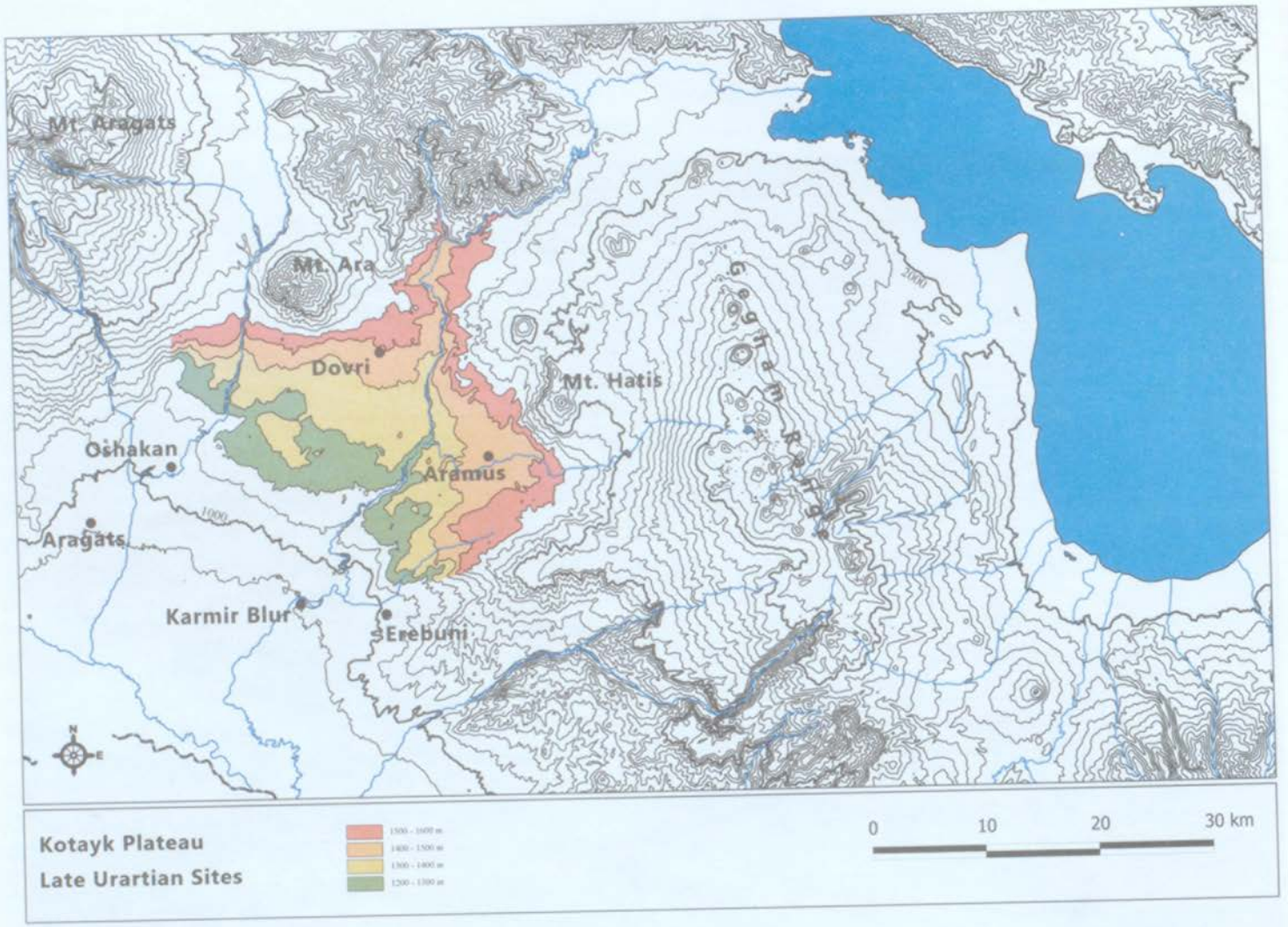


Plate II: Map based on Acopian for the enviremont - American University of Armenia.

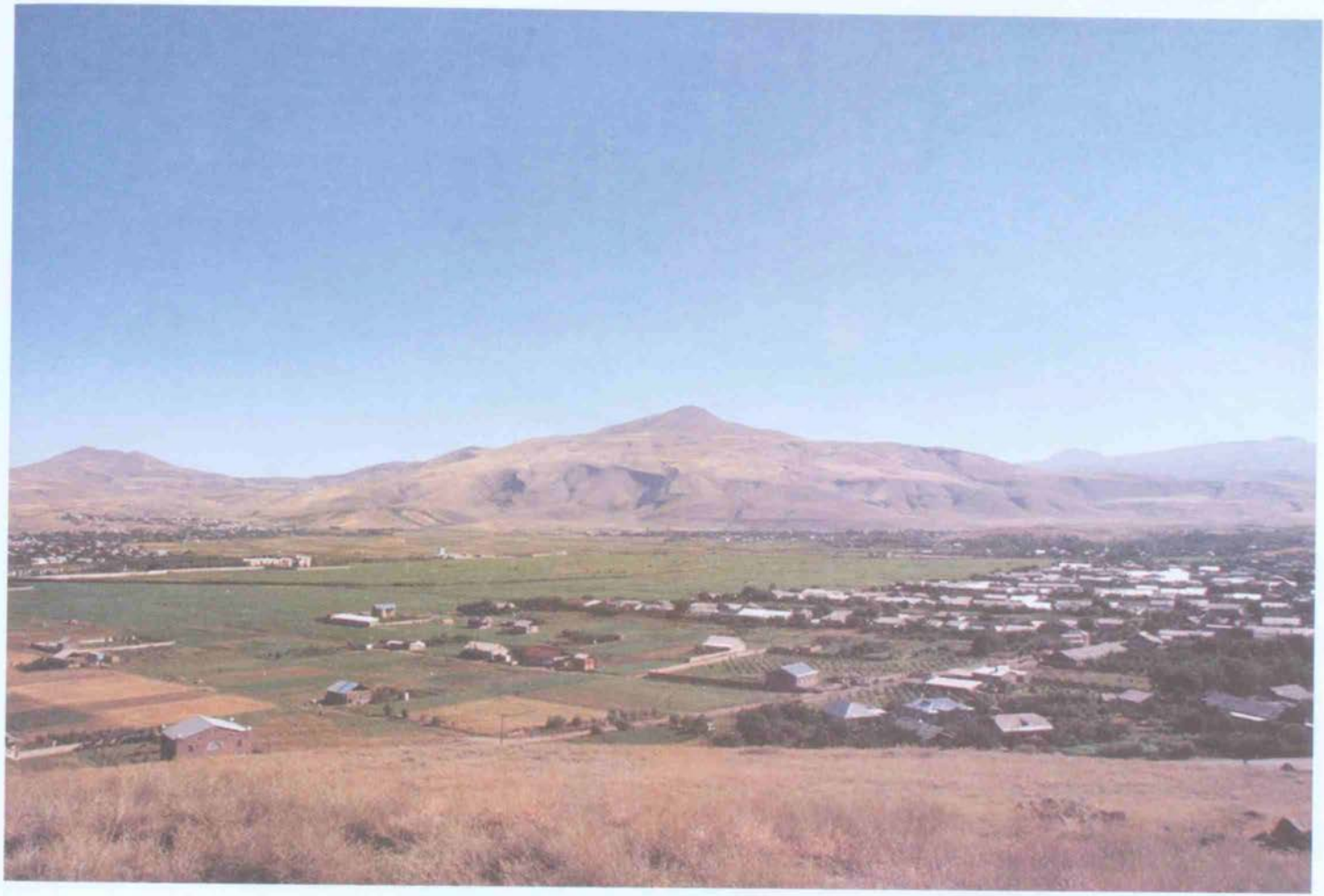


Plate III: District Kotayk.

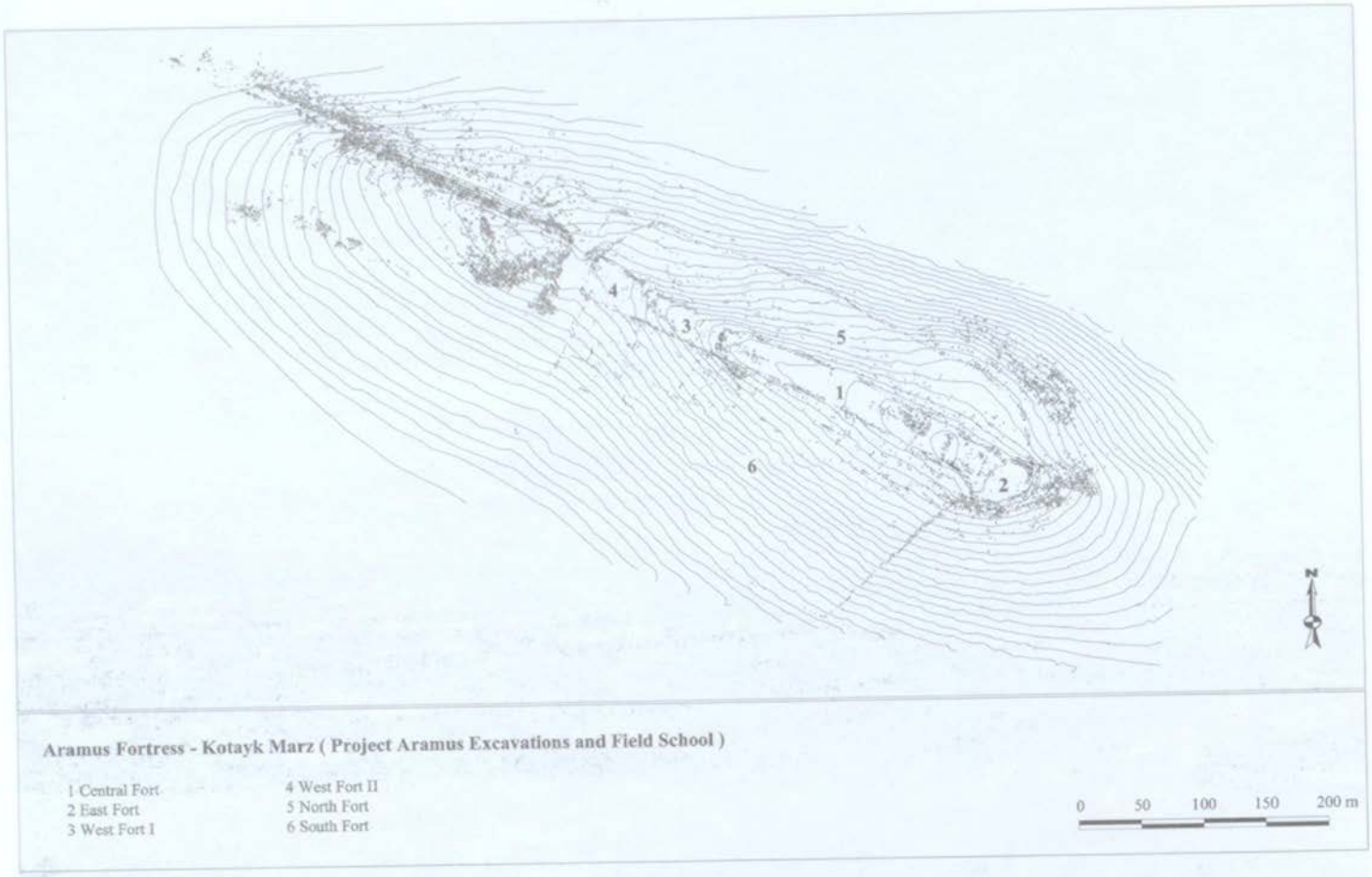


Plate IV: Aramus fortress.

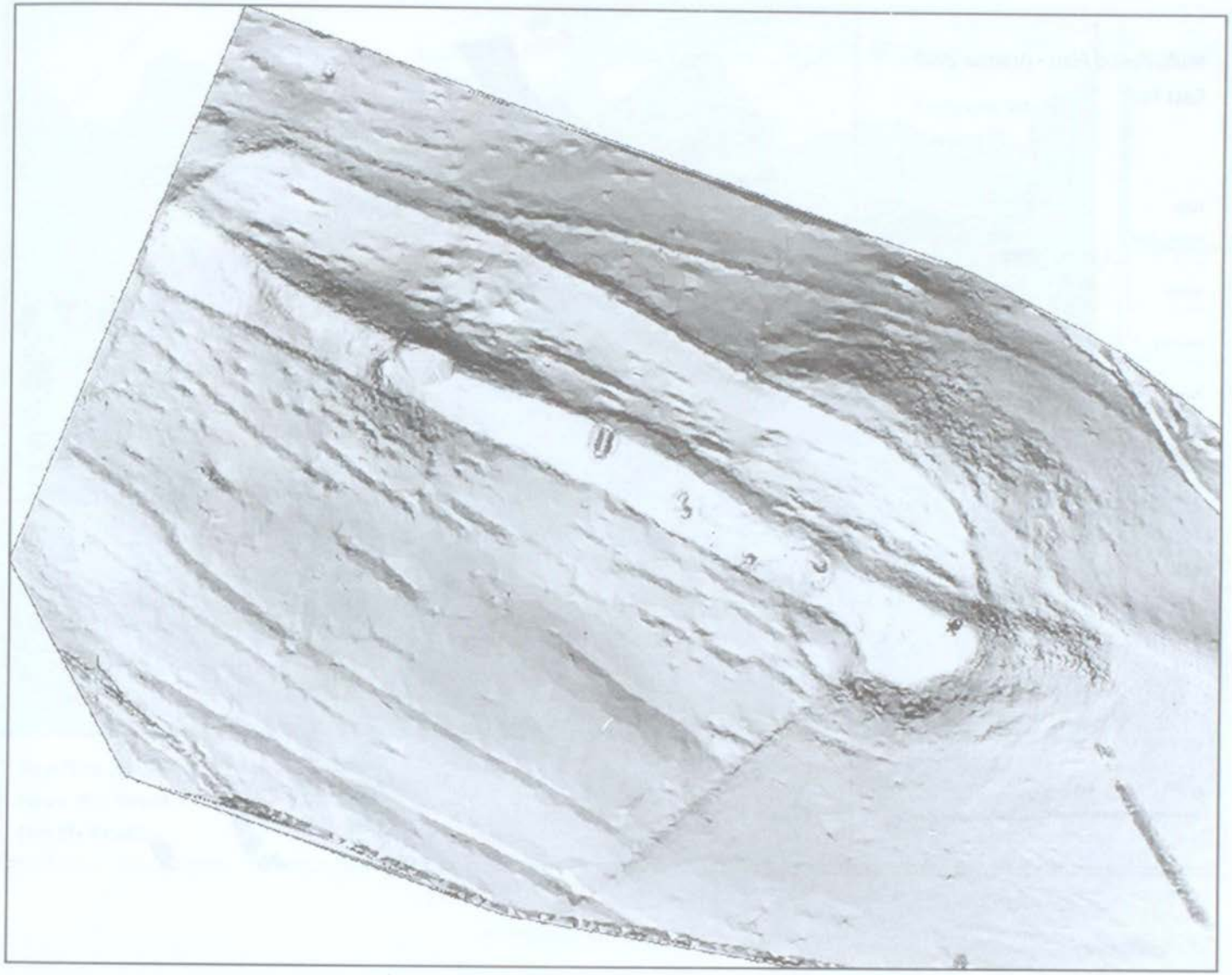


Plate V: DEM of the hill of Aramus.

provided by
SatIng - Klaus Kerkow

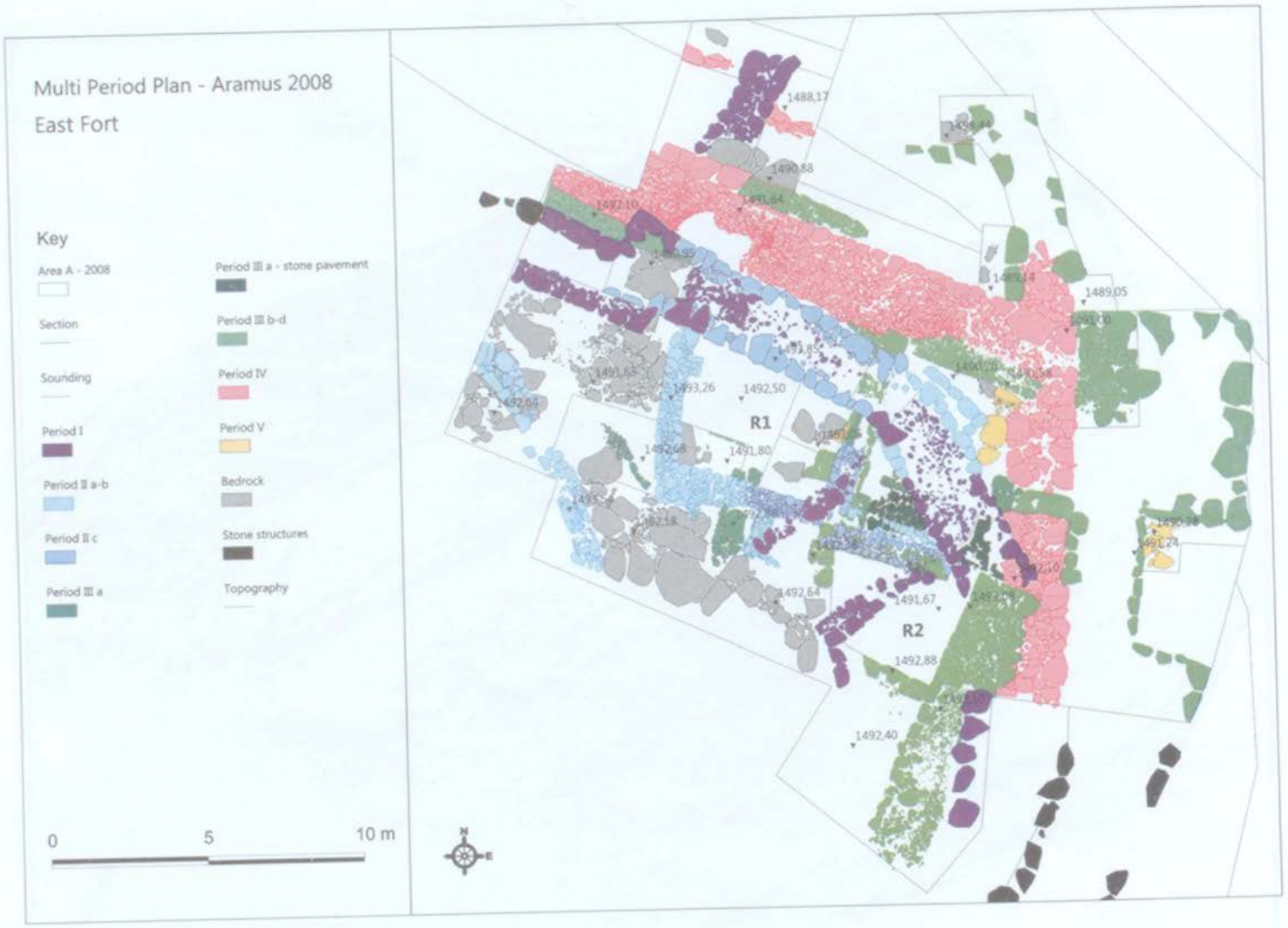
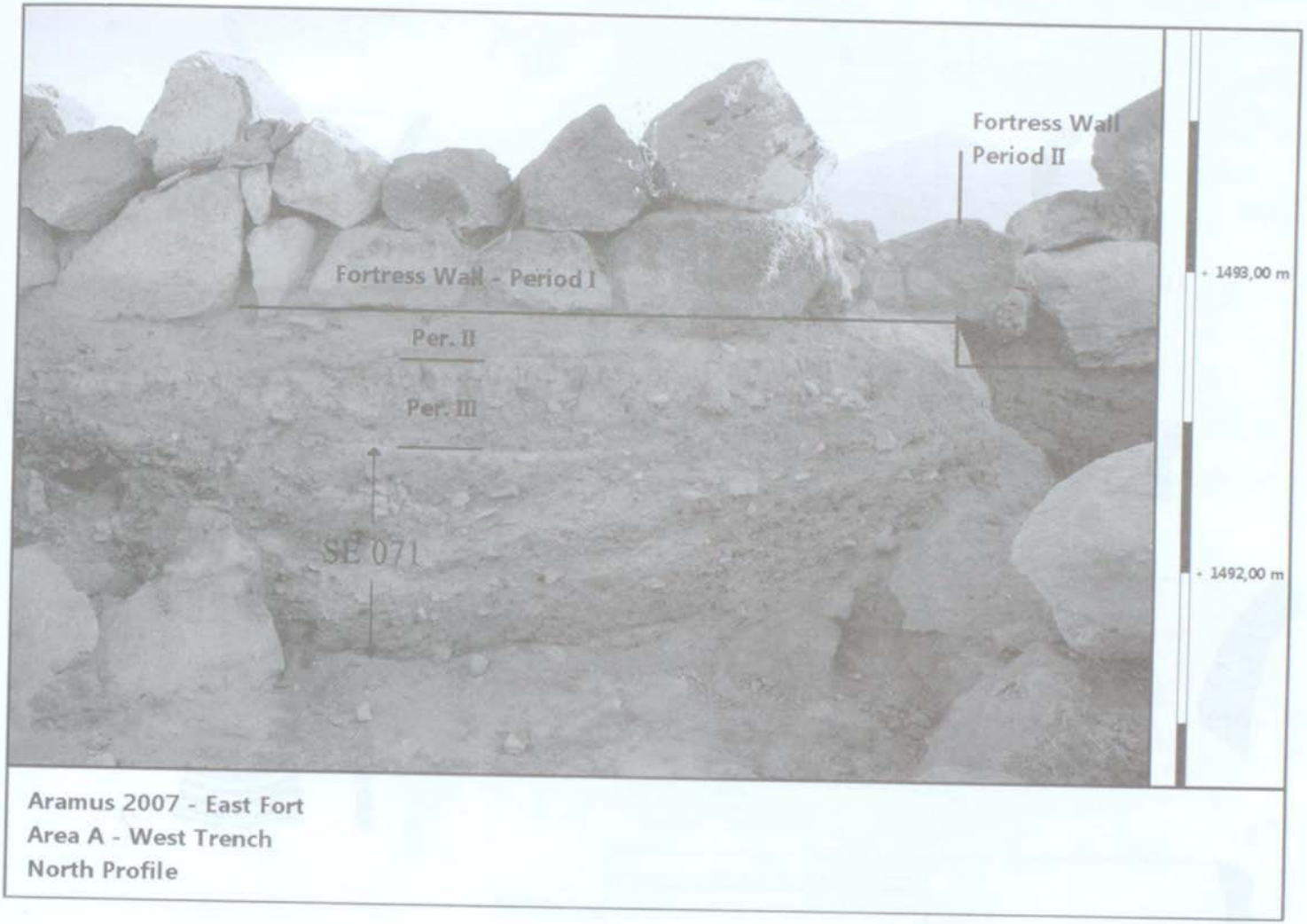


Plate VI: Multi period plan.



Aramus 2007 - East Fort
Area A - West Trench
North Profile

Plate VII: Profile.

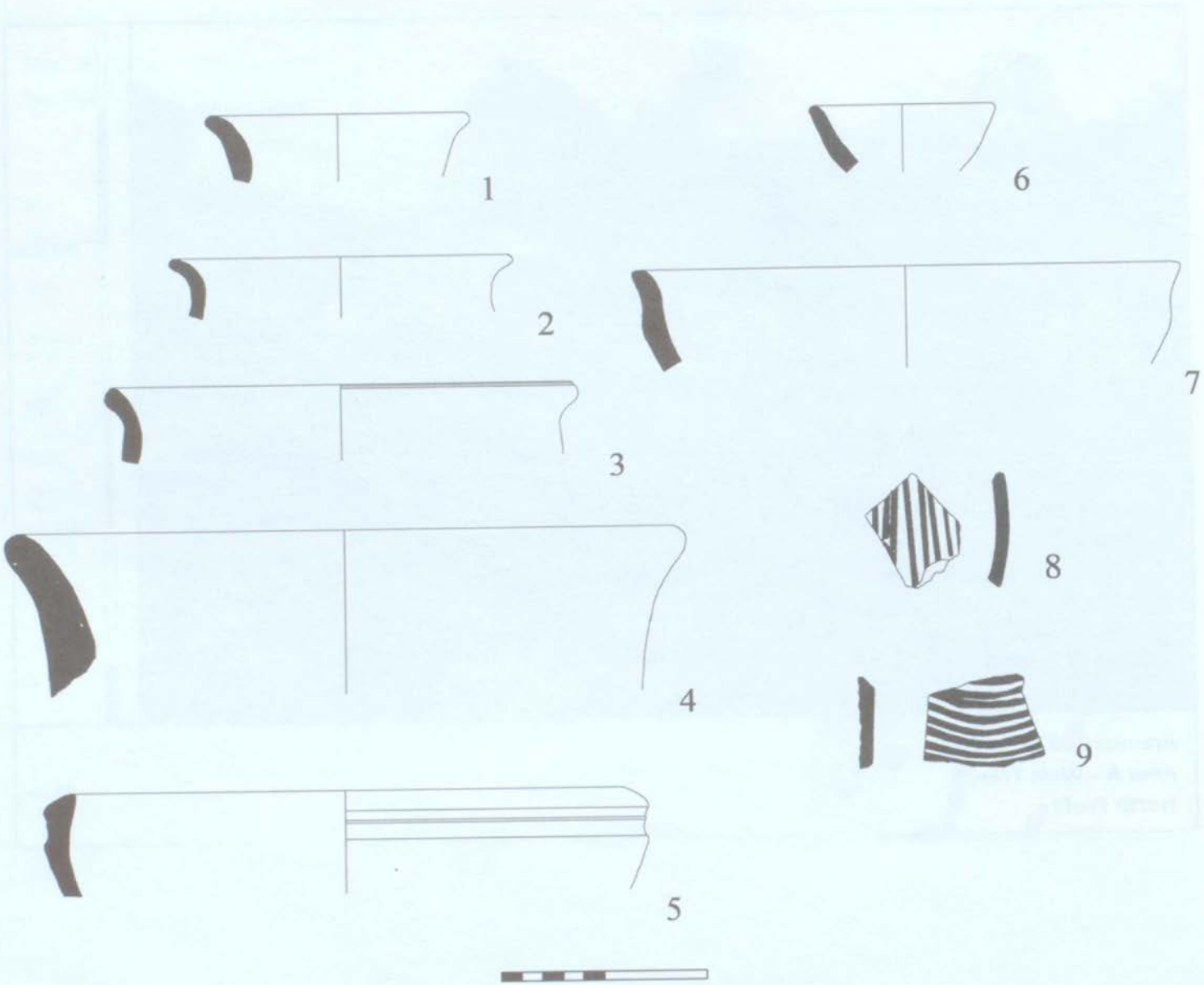


Plate VIII
Fig 1-9: Urartian ceramics in local style period IV.

Plate VIII
Fig. 10-17. Pre-Urartian and Urartian ceramics in occupation level - period V.

1

2

Plate IX
Fig. 1. Bronze sculpture of a bull.
Fig. 2. Bull head protome, made of clay. Both were found in occupation period IV.

Plate X
Fig. 1-7: "Post-Urartian" grey and (light) brown ceramics from occupation level - period II.

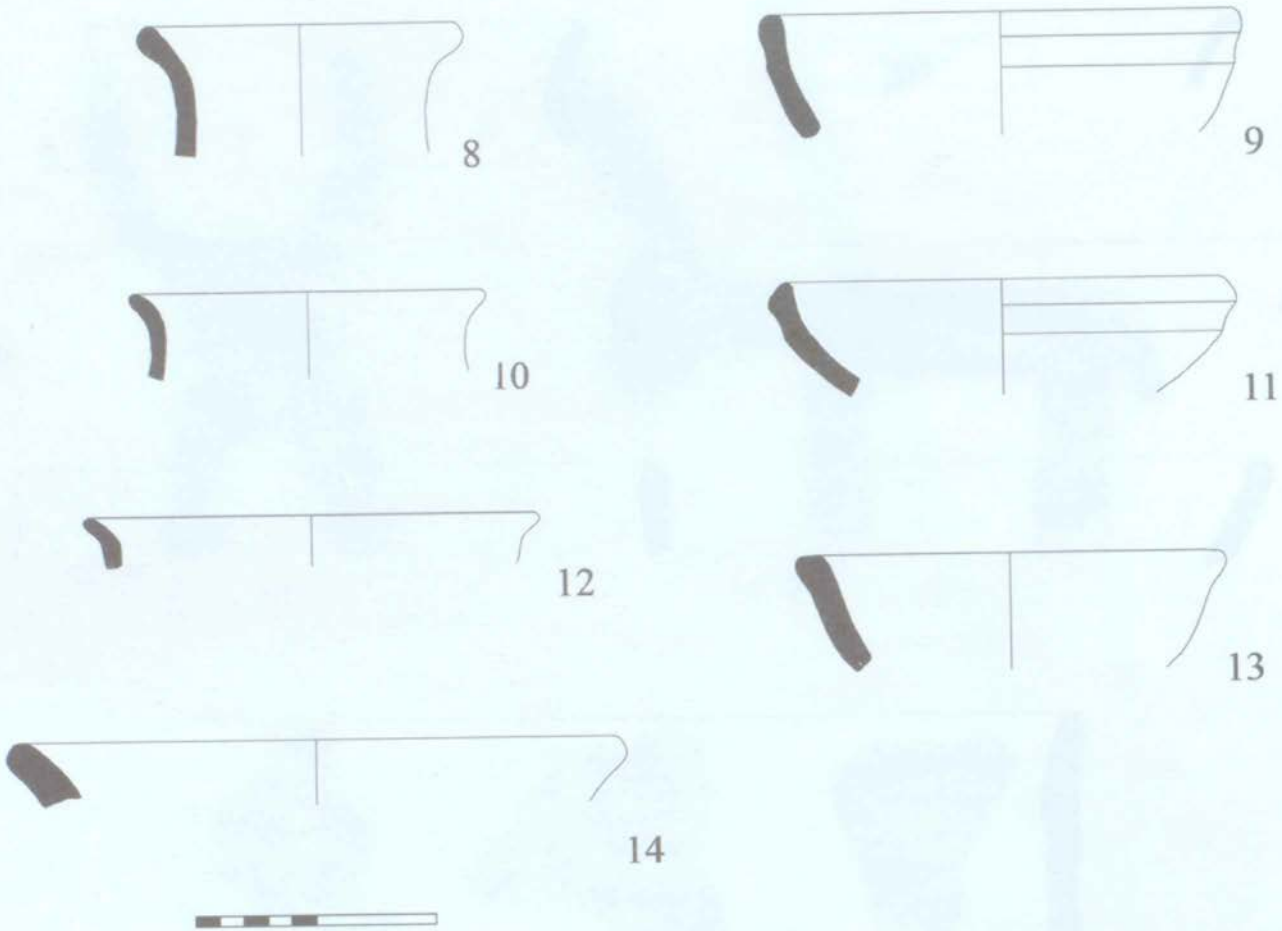


Plate X
Fig. 8-14: late Urartian brownish-black ceramics and red polished ceramics from level-period III.

Plate XI: The metal artifacts.

Bibliography

Avetisyan, H.
1999/2000 "Urartian Ceramics from the Ararat Valley as a cultural phenomenon (A tentative representation)." Iran & the Caucasus 3: 293–314.
2001 Aragats (Excavations of the Urartian fortress). Yerevan, 37–50.
2005a "The Fortress of Aramus." Hušarjan 3: 97–102.
2005b "The Excavations of Aramus." Patmut´yun ev krt´ut´yun 1-2: 151–158.

Avetisyan H. and W. Allinger-Csollich
2008 "A Bronze Sculpture from Aramus." Aramazd 3/1: 87–90.

Avetisyan H., P. Avetisyan, B. Gasparian, I. Gabrielyan, S. Nahapetyan, P. Hovsepyan and D. Arakelyan
(forth.) "Die paläolitische und archäologische Umgebung der Stätte von Aramus. Die Kotayk Region." In: Aramus I. Die armenisch-österreichischen Ausgrabungen in der eisenzeitlichen Befestigungsanlage von Aramus, edited by W. Kuntner, S. Heinsch, H. Avetysian, W. Allinger-Csollich, R. Rollinger and J. Tum-Dragut.

Avetisyan H., P. Avetysian, K. Navasardyan and A. Bobokhyan
(forth.) "Lchashen-Metsamor V-VI: The Impact of Local and Urartian Ceramics in Iron Age Armenia." In: Der archäologische Befund und seine Historisierung. Archäologische Dokumentation und seine Interpretationsspielräume, Innsbruck, 16th – 18th December, edited by S. Heinsch, W. Kuntner and R. Rollinger.

Avetisyan P. and A. Bobokhyan
2008 "The Pottery Traditions of the Armenian Middle to Late Bronze Age 'Transition' in the Context of Bronze and Iron Age Periodization." In: Ceramics in Transition. Chalcolithic Through Iron Age in the Highlands of the Southern Caucasus and Anatolia, edited by K.S. Rubinson and A. Sagona, 123–183. Ancient Near Eastern Studies Supplement 27. Leuven-Paris-Dudley, M.A.

Badalyan R. S. and P. S. Avetisyan
2007 Bronze and Early Iron Age Archaeological Sites in Armenia, Volume 1: Mt. Aragats and its Surrounding Region. British Archaeological Reports, International Series 1697. Oxford.

Barnett R. D.
1959 "Further Russian Excavations in Armenia." Iraq 21/1: 1–19.

Bezzi A., L. Bezzi, R. Gietl, S. Heinsch, W. Kuntner and G. Naponiello
(forth.) "Aramus Excavations and Field School. Experiences in Using, Developing, Teaching and Sharing Free/Libre and Open Source Software." In: Fusion of Cultures, edited by
F. Contreras and F. J. Melero, CAA'2010 – Granada.

Çilingiroğlu A.
2001 "Military Architecture." In: Ayanis I. Ten Years´ Excavations at Rusahinili Eiduru-kai 1989-1998, edited by A. Çilingiroğlu and M. Salvini. Documenta Asiana 6: 25–36, Roma.

Derin Z. and O. W. Muscarella
2001 "Iron and Bronze Arrows." In: Ayanis I. Ten Years´ Excavations at Rusahinili Eiduru-kai 1989-1998, edited by A. Çilingiroğlu and M. Salvini. Documenta Asiana 6: 189-217, Roma.

Esaian S.A. and A. A. Kalantaryan A.A.
1988 Oshakan 1: Osnovnie Resultati Raskopok 1971-1983 g.g. Arkheologicheskie raskopki v Armenii 18. Yerevan.

Harmansah Ö.
2009 "Stones of Ayanis: New Urban Foundations and the Architectonic Culture in Urartu during the 7th C. BC." In: Bautechnik im antiken und vorantiken Kleinasien, edited by M. Bachmann. BYZAS 9: 177-197. Istanbul.

Heinsch S.
(forth.) „Die Keramik von Aramus." In: Aramus I. Die armenisch-österreichischen Ausgrabungen in der eisenzeitlichen Befestigungsanlage von Aramus, edited by W. Kuntner, S. Heinsch, H. Avetysian, W. Allinger-Csollich, R. Rollinger and J. Tum-Dragut.

Heinsch S. and W. Kuntner
(forth.) „Some Survey Data of the Kotayk Plateau, Armenia." In: Aramus I. Die armenisch-österreichischen Ausgrabungen in der eisenzeitlichen Befestigungsanlage von Aramus, edited by W. Kuntner, S. Heinsch, H. Avetysian, W. Allinger-Csollich, R. Rollinger and J. Tum-Dragut.

Khanzadian E.V.
1979 Elar – Darani. Yerevan.

Kleiss W.
1988 „Aspekte urartäischer Architektur." Iraniqa Antiqua 23: 181–215.

Kuntner W. and S. Heinsch
2009 „Aramus. Uno Scavo di Archaeologia Orientale Floss." Archeologia e Calcolatori, Supplemento 2: 83–93.

Kuntner W. and S. Heinsch
2010 "The Ostburg of Aramus, an Urartian and Achaemenid Fortress. The Stratigraphical Evidence." In: Proceedings of the 6th International Congress of the Archaeology of the Ancient Near East, 5 May – 10 May 2009, Sapienza, Università di Roma, edited by P. Matthiae, F. Pinnock, L. Nigro and N. Marchetti, Volume 2, Excavations, Surveys and Restorations: Reports on Recent Field Archaeology in the Near East: 339–348, Wiesbaden.

Lindsay I. and A. T. Smith
2006 "A History of Archaeology in the Republic of Armenia." Journal of Field Archaeology 31/2: 165-184.

Plontke-Lüning A. and S. Heinsch
(forth.) „Archäologische Untersuchungen im Dorf von Aramus." In: Aramus I. Die armenisch-österreichischen Ausgrabungen in der eisenzeitlichen Befestigungsanlage von Aramus, edited by W. Kuntner, S. Heinsch, H. Avetysian, W. Allinger-Csollich, R. Rollinger and J. Tum-Dragut.

Salvini M.
2008 Corpus dei testi urartei. Volume I: le iscrizioni su pietra e roccia. Documenta Asiana VIII. Roma.

Schäfer D., B. Weishäupl and B. Gasparian B.
(forth.) "Geologische Surveys im Gebiet im Mt. Hatis, Kotayk Plateau, Republik Armenien 2005-2006." In: Aramus I. Die armenisch-österreichischen Ausgrabungen in der eisenzeitlichen Befestigungsanlage von Aramus, edited by W. Kuntner, S. Heinsch, H. Avetysian, W. Allinger-Csollich, R. Rollinger and J. Tum-Dragut.

Smith A. T. and K. Kafadarian
1996 "New plans of Early Iron Age and Urartian fortresses in Armenia: a preliminary report on the Ancient Landscape Project." Iran 34: 23–37.

Smith A. T.
1999 "The Making of an Urartian Landscape in Southern Transcaucasia: A Study of political Architectonics." American Journal of Archaeology 103/1: 45–71.

Zimansky P.
1995 „Urartian Material Culture as State Assemblage: An Anomaly in the Archaeology of Empire." Bulletin of the American Schools of Oriental Research 299/300: 103–115.