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Osservazioni prosopografiche sul personale del tempio degli dèi di Ebla[1]

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Abstract. The article intends to offer an overview of the personnel tied to the Eblaite temple of gods (e_2 dingir-dingir-(dingir-dingir)), which was likely devoted to the worship of the royal ancestors. The Ebla documents distinguishes individuals exclusively tied to worship activities (lu_2 dingir-dingir-(dingir-dingir)) and individuals tied to the management of the temple (lu_2 e_2 dingir-dingir-(dingir-dingir)). In addition, the documentation provides attestations of young individuals employed in support of both sacred and profane activies, and women employed at the service of the temple.

Keywords. Ebla, temple of gods, cultic personnel, management personnel, service personnel.

INTRODUZIONE

Nella documentazione scritta del palazzo G di Ebla (tardo XXIV sec. a.C.) si può notare la presenza di operatori del culto definiti "(uomini) degli dèi", lu_2 dingir-dingir-(dingir-dingir), e di operatori addetti alla gestione del tempio degli dèi, definiti appunto "(uomini) del tempio degli dèi", lu_2 e_2 dingir-dingir-(dingir-dingir). Si tratta dunque del personale riconducibile al "tempio degli dèi", e_2 dingir-dingir-(dingir-dingir), probabilmente il santuario in cui si praticava il culto degli avi reali divinizzati,[2] dove il re e la regina tornano alla fine del rituale regale.[3] Tali categorie di individui sono

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[2] A riguardo degli avi divinizzati, si veda Archi 2015: 164; 2016: 144. Bonechi (2016b: 34; 2016a: 68) ipotizza l'identificazione tra il Tempio Rosso, interpretato da Matthiae (2009: 772) come santuario della dinastia regale, e l'e_2 dingir-dingir-(dingir-dingir). Diversamente, Archi intende la formula e_2 dingir-dingir-(dingir-dingir) come alternativa ad e_2-e_2 dingir-dingir, quindi riferentesi ad una pluralità di templi (Archi 2016: 148).

[3] Bonechi 2016a: 68.

apparentemente attestate solo ad Ebla[4] e sembra dunque possibile presumere che siano state legate ad una struttura materiale ed a un culto locale. Sembra inoltre evidente che non si tratti di personale interscambiabile nelle funzioni; coloro che sono definiti "(uomini) degli dèi" non sono mai definiti "(uomini) del tempio degli dèi", mentre laddove "(uomini) del tempio degli dèi" sono semplicemente definiti "(uomini) degli dèi", sembra evidente che si tratti di omissioni casuali. Inoltre, la documentazione fa menzione di giovani definiti "figli degli dèi", impiegati in supporto di attività sia sacre che profane, non necessariamente identificati per nome, e di donne, sia giovani che adulte, rigorosamente anonime, al servizio del tempio. Un elemento variabile è sicuramente riscontrabile nel nome del tempio, così come nei titoli del suo personale, laddove difatti si possono trovare sequenze da due a quattro dingir.[5] I seguenti paragrafi intendono offrire una panoramica sulle differenti categorie del personale templare, discutendone, quando possibile, la successione cronologica, l'affiliazione e la sfera d'azione.

1. GLI UOMINI DEGLI DÈI

Gli operatori cultuali lu$_2$ dingir-dingir(-dingir-dingir) possono essere intesi come sacerdoti principali,[6] coloro che, di fatto, operavano sacrifici agli dèi.[7]

Due di essi sono noti per aver officiato nei rituali regali, rispettivamente *A-ma-za-u$_3$/A-ma-za*,[8] nel rituale legato al matrimonio del re Irkab-damu (Rituale A), e *En-na-il/En-na-*NI,[9] nel rituale legato al matrimonio del re Iš'ar-damu (Rituale B). Quest'ultimo attestato, inoltre, nel culto dei re defunti.[10] Francesco Pomponio[11] riporta la presenza di due ulteriori operatori cultuali definiti lu$_2$ dingir-dingir(-dingir-dingir), EN-*zu$_2$-we-rum*, il quale fu in carica in un periodo successivo ai rituali, e *I-da-ni-ki-mu*, il cui ufficio risulta cronologicamente più sfuggente.

A-ma-za-u$_3$ fu dunque attivo fino al periodo di *Ar-ru$_{12}$-gum$_2$* e gli successe, durante il periodo di *Ib-ri$_2$-um*,[12] *En-na-il*, spesso definito tramite l'affiliazione con il suo predecessore: *En-na-il* lu$_2$ *A-ma-za*.[13] Pubblicazioni successive allo studio di Pomponio riportano l'esistenza di un ulteriore individuo affiliato ad *A-ma-za-u$_3$*, KEŠDA-*ma-lik*. La sua presenza è nota da un testo del periodo di *Ib-ri$_2$-um* ((TM)75.(G).1329 = *ARET* XIX 12), dove egli è definito figlio di *A-ma-za*, il lu$_2$ dingir-dingir-dingir (r. I 9-12: KEŠDA-*ma-lik* / dumu-nita / *A-ma-za* / lu$_2$ dingir-dingir-dingir). Lo stesso KEŠDA-*ma-lik* è semplicemente definito come lu$_2$ *A-ma-za* nel frammento 75.3728 = ARET III 656 r.? II' 2'-3'. A differenza di *En-na-il*, però, non sono note attestazioni di KEŠDA-*ma-lik* con il titolo paterno. Grosso modo contemporaneo[14] di *En-na-il*, e probabilmente appartenente allo stesso nucleo familiare,[15] è

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[4] Biga 2006: 26.

[5] Pomponio 2008: 258; Archi 2016: 148.

[6] Fronzaroli 2003: 14; Archi 2021:10.

[7] Archi 1996: 43.

[8] Pettinato 1992: 234-235; Fronzaroli 1993: 35; Pomponio 2008: 258; Archi 2020: 59.

[9] Pettinato 1992: 234-235; Fronzaroli 1993: 76; Pomponio 1993-1994: 42; 2008: 259; Archi 2016: 145; 2020: 59; 2021:10.

[10] Fronzaroli 1992: 168-169; Pasquali 2014. *En-na-il* è inoltre definito "soprintendente degli dèi" (ugula dingir-dingir), titolo che potrebbe sottolineare la funzione di intermediazione di tali operatori con il mondo divino, in un testo parzialmente riconducibile al Rituale A, 75.2417 citato in Biga 2006: 22-23 e Archi 2021: 10.

[11] Pomponio 2008: 258-259.

[12] Fronzaroli 1993: 76.

[13] Nonostante l'uso del generico lu$_2$ al posto dell'inequivocabile dumu-nita, un rapporto parentale tra *En-na-il* e *A-ma-za-u$_3$* supposto da Fronzaroli (1993), Pomponio (2008) e Archi (2016; 2021) sembra plausibile. Tale ipotesi è difatti corroborata dall'effettivo rapporto parentale attestato per EN-*zu$_2$-we-rum* e *I-ti-*^{d}NI-*da-bal* (si veda oltre).

[14] Supposizione di Pomponio (2008: 259) sulla base del frammento 75.5878 = *ARET* XII 1284, dove di *En-na-il* non è però specificato né il titolo né l'affiliazione, dunque è possibile si tratti di un omonimo.

[15] Il frammento 75.5878 = *ARET* XII 1284 (per cui si veda la nota precedente) menziona anche *A-ma-zu$_2$*. Poiché non vi è rottura tra la fine della colonna III' e l'inizio della IV' si potrebbe ipotizzare che la menzione di *A-ma-zu$_2$* stia ad indicare l'affiliazione di *I-da-ni-ki-mu*: r. III' 5'-IV' 1: [*I-d*]*a-*[*ni-ki*]*-mu* / lu$_2$ dingir-dingir-dingir // <lu$_2$> *A-ma-zu$_2$*. La quantità di tessuti assegnata in questa sezione di testo avrebbe aiutato ad identificare il numero dei beneficiari, ma è purtroppo illeggibile. La sequenza delle informazioni tuttavia suggerisce che *A-ma-zu$_2$*, sicuramente più anziano ed importante, non ricorra nel testo come effettivo beneficiario, ma che

l'operatore cultuale *I-da-ni-ki-mu*, il quale fu in carica durante il periodo di *Ib-ri₂-um*.[16] L'assenza di *I-da-ni-ki-mu* nel Rituale B lascerebbe supporre che egli non fosse in carica al momento delle nozze di Iš'ar-damu, o che *En-na-il* ricoprisse un ruolo superiore, equiparabile a quello di *A-ma-za-u₃*. Non è da escludere però che *I-da-ni-ki-mu* fosse tra i funzionari connessi "alla richiesta del buon presagio" all'interno della cerimonia-nidba₂ del dio Kura.[17]

Successivo ad *En-na-il* è EN-*zu₂-we-rum*, le cui attestazioni riconducono difatti al periodo di *I-bi₂-zi-kir*.[18] Nonostante l'affiliazione di EN-*zu₂-we-rum* non sia mai dichiarata, sembra possibile che egli appartenesse alla famiglia di *En-na-il*.[19] Il figlio di EN-*zu₂-we-rum*, *I-ti*-^{d}NI-*da-bal*, fu anch'egli un lu₂ dingir-dingir(-dingir-dingir), probabilmente attivo per un breve arco di tempo nel periodo immediatamente precedente alla distruzione del palazzo G.[20] L'affiliazione è in questo caso nota dal frammento 75.5423 = *ARET* XII 949, il quale menziona l'unzione del capo, quindi la fine del lutto,[21] di *I-ti*-^{d}NI-*da-bal* figlio di EN-*zu₂-we-rum* (v. V 1-4: [...] // i₃-giš sag / *I-ti*-^{d}NI-*da-bal* / [d]umu-nita / EN-*zu₂-we-rum*). Un'attestazione interessante di *I-ti*-^{d}NI-*da-bal* si trova in 75.2334 = *ARET* XX 25, databile al periodo di *I-bi₂-zi-kir*. In questo testo, l'operatore cultuale riceve vesti di lino per due pa₄-šeš[22] del dio ^{d}NI-*da-bal* di *A-ru₁₂-ga-du*^{ki} (v. I 17-II 4: 2 gada^{tug2} ḫul / 2 pa₄:šeš / ^{d}NI-*da-bal* / *A-ru₁₂-ga-du*^{ki} / *I-ti*-^{d}NI-*da-bal* / lu₂ dingir-dingir-dingir / šu-ba₄-ti).[23] I testi ad oggi pubblicati documentano un ulteriore operatore cultuale del tempio, *I-in-ze₂*, attestato in un periodo compreso tra l'ufficio di *Ib-ri₂-um* e quello di *I-bi₂-zi-kir*, la cui affiliazione non è però nota. In ordine cronologico, la prima attestazione di *I-in-ze₂* si trova in 75.1375 = *ARET* XIX 17, databile al periodo di *Ib-ri₂-um*, dove un certo *Ib-ga-iš-lu*,[24] l'effettivo beneficiario dell'esborso di tessili registrato, è definito lu₂ *I-in-ze₂* lu₂ ⌈dingir⌉-dingir (v. IX 5-8). Successivamente, in 75.1903 = *ARET* XX 12, databile al periodo di *I-bi₂-zi-kir*, *I-in-ze₂* ricorre come beneficiario di vesti e lana (v. VIII 4-6: 1 aktum^{tug2} 1 na₄ siki / *I-in-ze₂* / lu₂ dingir-dingir-dingir).

1.1 Osservazioni sugli "uomini degli dèi"

Si può quindi notare che nel periodo coperto dagli archivi, un periodo che abbraccia il regno di tre sovrani e l'ufficio di tre ministri, la carica di operatore cultuale del tempio sia stata ricoperta da almeno sei individui. La presenza di più operatori cultuali del tempio in uno stesso arco di tempo implicherebbe una sorta di gerarchia interna, ipotesi suggerita dalla presenza di un unico operatore cultuale di questa categoria nei rituali regali. Considerando che una precisa sequenza cronologica delle attestazioni risulta sfuggente, è comunque possibile ritenere che questa contemporaneità sia solo apparente. Sembra difatti ugualmente possibile che il succedersi dei vari operatori cultuali

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il suo nome sia servito ad identificare *I-da-ni-ki-mu*. Se questa interpretazione è corretta, allora sembra lecito supporre che l'*En-na-il* menzionato nel frammento sia stato un omonimo dell'operatore cultuale. L'affiliazione di *I-da-ni-ki-mu* ad *A-ma-zu₂* è supposta anche da Archi (2020: 59), il quale ritiene che *I-da-ni-ki-mu* ed *En-na-il* fossero fratelli.

[16] Si veda la sua attestazione in 75.1298 = *ARET* XIX 3 v. V 2-4. Un'ulteriore attestazione di questo operatore cultuale è nel frammento 75.5474=*ARET* XII 991 r.ʾ III' 2'-3': *I-da-ni-ki-mu* / lu₂ dingir-dingir-dingir.

[17] Pomponio 2008: 193 e 259. Diversamente, Bonechi (1989: 145-146) suppone che si tratti dell'omonimo figlio del re (dumu-nita en).

[18] Pomponio 2008: 259.

[19] Archi (2021: 59) suppone che si tratti del figlio di *En-na-il*.

[20] Si veda la sua attestazione in 76.522 = *ARET* VIII 522 = MEE 5 2 (v. VI 20-23: 1 sal^{tug2} / *I-ti*- ^{d}NI-*da-bal* / lu₂ dingir-dingir-dingir / šu-ba₄-ti).

[21] Bonechi 2020a: 113 fn. 56; Bonechi 2020b: 341.

[22] Secondo Pomponio e Xella (1997: 286), il personale del dio comprendeva pa₄:šeš, šeš-II-ib e un enku. Interessante notare, che, secondo Schwemer (2001: 114, in particolare nota 794), ^{d}NI-*da-bal* potrebbe rientrare nella categoria di divinità con nomi di persona originariamente legata al culto degli antenati, in quanto esse stesse originariamente avi divinizzati.

[23] Questa attestazione sembrerebbe suggerire che l'*I-ti*- ^{d}NI-*da-bal* attestato in 75.2238 = *MEE* 12 26 in relazione all'offerta di ovini per il dio ad *A-ru₁₂-ga-du*^{ki} fosse la stessa persona (r. XI 24-27: 5 udu / ^{d}NI-*da-bal* / in / *A-ru₁₂-ga-du*^{ki} / *I-ti*-^{d}NI-*da-bal* / nidba₂). In realtà, in questo caso potrebbe essersi trattato dell'omonimo figlio di *Ib-ri₂-um*, come suggerito da Waetzoldt (2001: 219). Da notare, infatti, nello stesso testo la presenza di *En-na-il* in connessione con le offerte ai betili degli antenati (r. XII 21-26).

[24] Non è chiaro se *Ib-ga-Iš-lu* fosse anch'egli parte del personale templare e, eventualmente, in che ruolo; ulteriori attestazioni di questo individuo riconducibili al tempio non sono ad oggi note.

in un arco di tempo tutto sommato limitato fosse dovuto alla loro anzianità al momento dell'accesso alla carica.[25] Da qui, la possibile relativa brevità di alcuni uffici, come ad esempio quelli di *I-da-ni-ki-mu*[26] o *I-in-ze₂*, e la possibile relativa longevità di altri, come gli uffici di *En-na-il* e EN-*zu₂-we-rum*.[27] Si può inoltre prendere in considerazione la possibilità che si sia trattato di uffici limitati ad un determinato arco di tempo e che quindi il passaggio della carica non avvenisse necessariamente al momento del decesso del precedente operatore culturale. In tale caso però, bisogna considerare l'assenza di notizie riportate a palazzo riguardanti la loro attività o investitura, a differenza di quanto avviene per gli šeš-II-ib e le loro cariche temporanee.[28]

A prescindere dall'effettiva età degli individui coinvolti o della durata dei loro uffici, in almeno un caso dove l'affiliazione è chiaramente espressa tramite il termine dumu-nita (EN-*zu₂-we-rum*/*I-ti*-ᵈNI-*da-bal*), sembra evidente che si trattasse di una carica ereditabile di padre in figlio. Ad ogni modo, sulla base dell'affiliazione o dei legami ricostruibili, si potrebbe supporre che la maggior parte degli operatori culturali attestati appartenesse ad una stessa casata.

2. I FIGLI DEGLI DÈI

In questo contesto, bisogna considerare la presenza di "figli degli dèi" (dumu-nita dingir-dingir-dingir), di cui vi è menzione negli stessi rituali regali (Rituale A: r. IX 25-26 e Rituale B r. XII 4-5). In essi, la pluralità di individui attivi contemporaneamente è chiaramente definita dalla reduplicazione dei sumerogrammi (dumu-nita dumu-nita dingir-dingir-dingir).

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[25] In questo caso, la menzione di un "anziano degli dèi" in un testo databile al periodo di *I-bi₂-zi-kir*, 75.2590 = *ARET* I 6 (v. VIII 14-17: *Iš-la-ni* lu₂ *Ga-ʾa₃* libir-ra₂ dingir-dingir-dingir) potrebbe riguardare personale di servizio del tempio, piuttosto che un operatore culturale. Considerando che la menzione di questo titolo è funzionale all'affiliazione dell'effettivo beneficiario dei tessili, sembra probabile che *Ga-ʾa₃* non fosse più in attività al momento della redazione del testo e che quindi si sia trattato di una definizione contestuale. Si noti, comunque, che né *Iš-la-ni* né *Ga-ʾa₃* sono attestati altrove come servitori o operatori culturali del tempio nei periodi precedenti. In 75.1264 = *ARET* 1 15 v. 5-8 *Iš-la-ni* lu₂ *Ga-ʾa₃* è attestato senza ulteriori specifiche.

[26] Se le supposizioni circa la sua affiliazione sono corrette, *I-da-ni-ki-mu* potrebbe essere stato il primo successore designato di *A-ma-za-u₃*, a cui solo successivamente subentrò *En-na-il*.

[27] La differenza nel numero di attestazioni dei vari operatori culturali può essere indice di una maggiore o minore importanza (o quantomeno di un maggiore o minore coinvolgimento con le attività del palazzo) o semplicemente rispecchiare una differente durata delle cariche di ognuno di essi. Al di là di ogni possibile interpretazione, le tre attestazioni di *I-da-ni-ki-mu* (si vedano nota 14 e nota 15) e le due di *I-in-ze₂* possono essere confrontate con le 13 di *En-na-il* e le 10 di EN-*zu₂-we-rum*.
En-na-il è difatti attestato in almeno 13 testi in cui è riconoscibile per il titolo o l'affiliazione: in contesti amministrativi (esborso di tessili e metalli): 75.3683 = *ARET* III 613 r.ʾ I' 5'-6': *En-na-il* / lu₂ dingir-dingir-dingir; 75.3961+3968+3976 = *ARET* III, 858 v. II 3-4: *En-na-il* / lu₂ dingir-dingir-dingir; 75.1369 = *ARET* IV 12 r. XIII 9-10: *En-na-il* / lu₂ *A-ma-za*; 75.1435 = *ARET* IV 13 v. XI 18-19: *En-na-il* / lu₂ *A-ma-za*; 75.5097 = *ARET* XII 719 r.ʾ I' 5'-6': *En-na-il* / lu₂ *A-ma-za*; 75.5900+5922 = *ARET* XII 1304 r. V 16-17: *En-na-il* / lu₂ dingir-dingir-dingir; 75.1328 = *ARET* XIX 11 r. IX 2-3: *En-na-il* / lu₂ *A-ma-za*; 75.3465(=*ARET* III 401)+10223+10266 = *ARET* XX 5 v. IV 2-3: *En-na*-NI / lu₂ dingir-dingir-dingir. In contesti culturali: *ARET* XI 2: *passim En-na*-NI nidba₂; 75.2417 v. XIV 4-5: *En-na*-NI / ugula dingir-dingir-dingir (si veda su); 75.1764 = *MEE* 7 44 r. III 1-4: si-du₃-si-du₃ / en-en / *En-na*-NI / šu-du₈; 75.2238 = *MEE* 12 26 r. XII 23-26: si-du₃-si-du₃ / en-en / *En-na*-NI / šu-du₈. Nel testo di cancelleria: 75.10052=*ARET* II 33=*ARET* XVI, 12 r. IV 14 (per cui si veda oltre). Archi (2020:59) riporta inoltre la sua presenza negli inediti: 75.2365 r. XVI 9-13; 75.2524 v. II 8-12, in cui se ne menziona la morte.
EN-*zu₂-we-rum* è invece attestato con il suo titolo in almeno 10 testi, in contesti amministrativi (esborso di tessili e metalli) : 75.2525 = *ARET* I 1 v. X 16-17: EN-*zu₂-we-rum* / lu₂ dingir-dingir-dingir; 75.1591 = *ARET* I 8 = *MEE* 7 3 v. XI 2-3: EN-*zu₂-we-rum* / lu₂ dingir-dingir; 75.3522 = *ARET* III 458 r. V' 5-6: EN-*zu₂-we-rum* / lu₂ dingir-dingir; 75.1709 = *ARET* IV 20: r. VIII, 5-6: EN-*zu₂-we-rum* / lu₂ dingir-dingir-dingir; 75.1290 = *ARET* VII 114 r. IV 1-2: EN-*zu₂-we-rum* / lu₂ dingir-dingir-dingir; 75.1362 = *MEE* 2 40 = *ARET* XIX 15 r. II 7-8: EN-*zu₂-we-rum* / lu₂ dingir-dingir-dingir; 75.2460 = *ARET* XX 10 r. IV 11-12: EN-*zu₂-we-rum* / lu₂ dingir-dingir-dingir; 75.1950 = *ARET* XX 20 r. X 8-9: EN-*zu₂-we-rum* / lu₂ dingir-dingir-dingir; 75.10129+(=*ARET* III 685)+3792(=*ARET* III 714)+=*ARET* XX 23 v. IX 2-3: EN-*zu₂-we-rum* / lu₂ dingir-dingir-dingir; 75.2428 = *MEE* 12 35 r. IX 11-12: EN-*zu₂-we-rum* / lu₂ dingir-dingir-dingir. Archi (2020:59) riporta inoltre la sua presenza negli inediti: 75.2593, in cui se ne menziona la morte, 75.2446 r. ii 22-23; 75.2551 r. III 12-iv 1; 75.2609 o IV 5-6: 75.2625 r. II 15-16.

[28] Si veda Archi 2002: 28.

Il testo di cancelleria 75.10052 = *ARET* II 33 = *ARET* XVI 12 riporta (r. IV 12-V-8) la presenza di un figlio (dumu-nita) di *En-na-il*, da identificare presumibilmente con l'operatore culturale del tempio, due "figli degli dèi" (dumu-nita dingir-dingir-dingir), e due figli (dumu-nita) di *Uš-ra-sa₂-mu,* probabilmente da identificare con il servitore del tempio degli dèi (per cui si veda oltre il § 3).

Diversamente, il testo amministrativo 75.1337 = *ARET* XIX 13 registra l'assegnazione di un tessile ad un certo *I-si-rum₂* di *En-na-il* dei "figli degli dèi" per aver prestato servizio come šeš-II-ib "legato" nel sa-za$_x$-ki (r. I 7-15: 1 ib₂-III sa₆ gun₃ ^{tug2} / *I-si-rum₂* / lu₂ / *En-na-il* / lu₂ dumu-nita / dingir-dingir-dingir / keš₂-da / sa-za$_x$-ki / šeš-II-ib). Nel caso in cui *En-na-il* sia da identificare con l'operatore culturale del tempio, si può immaginare che un suo figlio o un giovane a lui subordinato fosse stato un "figlio degli dèi" nel momento in cui svolse l'attività di šeš-II-ib. Considerando che gli šeš-II-ib erano reclutati tra le famiglie più importanti,[29] si può supporre che l'affiliazione del giovane a *En-na-il* implicasse un reale legame parentale o che lo status di *En-na-il* fosse più significativo di quello della famiglia di origine. Qualunque fosse il suo legame con *En-na-il,* si può comunque notare che *I-si-rum₂* non figuri tra gli operatori culturali che successero ad *En-na-il*.

Sembra comunque plausibile che non tutti i figli degli operatori culturali del tempio fossero destinati a seguire le orme paterne e che non necessariamente i "figli degli dèi" fossero figli di operatori culturali. Al di là dei legami parentali, si può supporre che si sia trattato di giovani individui impiegati in supporto degli stessi operatori culturali probabilmente a più livelli: sia in contesti cultuali che in attività profane. Si noti infatti la menzione di "figli degli dèi" in 76.530 = *ARET* I 5 = *MEE* 5 10, dove un'unica sezione (v. VII 4-12) registra l'assegnazione di tessili a quattro individui: due connessi ad un carpentiere (lu₂ NP nagar) e altri due definiti "figli degli dèi" (dumu-nita dumu-nita dingir-dingir-dingir). La presenza di giovani (dumu-nita) in connessione al tempio degli dèi (e₂ dingir-dingir-dingir) è inoltre attestata in 75.G.1709 = *ARET* IV 20 r. V 8-12. Un'ulteriore attestazione di "figli degli dèi", relativa probabilmente a due individui, si trova inoltre nell'inedito 75.2609[30] o. IV 10-11, in cui ricorre anche EN-*zu₂-we-rum*. Considerando la giovane età un requisito della categoria, sembra dunque lecito supporre che diversi giovani individui abbiano prestato servizio come "figli degli dèi" nell'arco di tempo compreso tra l'ufficio di *Ar-ru₁₂-gum₂* e quello di *I-bi₂-zi-kir*.

3. GLI UOMINI DEL TEMPIO DEGLI DÈI

Gli individui definiti lu₂ e₂ dingir-dingir-dingir risultano essere sicuramente più numerosi di quelli definiti lu₂ dingir-dingir-dingir e molto spesso sono attestati in piccoli gruppi. Si tratta probabilmente del personale templare, formato da uomini adulti senza alcun legame parentale noto, dedito agli aspetti profani della gestione templare, piuttosto che di operatori cultuali, il cui rango sembra sia esser stato invece più elevato.[31] Poiché non sono attestati pa₄:šeš del tempio degli dèi,[32] ossia inservienti addetti alla cura di persone d'alto rango, divinità e relativi ambienti,[33] sembra possibile immaginare che le due funzioni fossero equiparabili, ossia che i lu₂ e₂ dingir-dingir-dingir agissero come servitori degli avi divinizzati e del loro tempio.

Durante il periodo di *Ar-ru₁₂-gum₂,* dunque contemporanei di *A-ma-za-u₃*, sono attestati con la carica di servitori del tempio *Ra-i₃-zu/La-i-zu* e *Ir₃-peš-il*, talvolta in coppia,[34] *Na-na*, attestato separatamente in uno stesso testo

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[29] Archi 2002: 25.
[30] Archi 2020: 59.
[31] Pomponio 2008: 259; Pomponio 2013: 97.
[32] Biga 2006: 24.
[33] Archi 1996: 58.
[34] Da notare che 75.2162 = *ARET* XV 46 le assegnazioni di tessuti ai due servitori sono registrate separatamente (r. VII 8-11: 1 sal^{tug2} / *Ir₃-peš₂-il* / lu₂ e₂ / dingir-dingir-dingir; v. VI 1-3: 1 gu-sag^{tug2} / *La-i-zu* / lu₂ e₂ dingir-dingir-dingir). Diversamente, in 75.1537 = *ARET* XV 27 l'assegnazione di tessili ai due servitori è registrata in un'unica sezione (v. IV 24-V 4: 4 nig₂-bar-DU / *Ir₃-peš₂-il* / *Ra-i₃-zu* / lu₂ e₂ dingir-dingir-dingir-dingir).

che cita *Ra-i$_3$-zu*,[35] e *Za-ri$_2$-um*.[36] Probabilmente dal periodo di *Ib-ri$_2$-um* fino al periodo più tardo dell'archivio è attestato un gruppo di servitori del tempio formato da tre individui: *Uš-ra-sa$_2$-mu*, *A-šu-ur*-NI, *I-da*-NE/*I-ti*-NE, citati sempre secondo quest'ordine di sequenza.[37] *Uš-ra-sa$_2$-mu* e *A-šu-ur*-NI sono attestati anche singolarmente. *Uš-ra-sa$_2$-mu* è colui che è citato insieme all'operatore cultuale *En-na-il* nel testo di cancelleria 75.10052 = *ARET* II 33 = *ARET* XVI 12, in relazione a due suoi figli (si veda su § 2). Inoltre, in 75.1743 = *ARET* XX 9, *Uš-ra-sa$_2$-mu* ricorre due volte: come assegnatario di tessili insieme agli altri membri del gruppo (r. II 20-III 9) e in relazione ad un individuo definito suo rappresentate ed effettivo beneficiario del tessile assegnatogli (r. III 5-9: 1 gu-mug$^{\text{tug2}}$ / *Iš-l[a]*-BE / maškim / *Uš-ra-sa$_2$-mu* / lu$_2$ e$_2$ dingir-dingir-dingir). Sebbene il rango di *Uš-ra-sa$_2$-mu* possa non essere stato così basso come ipotizzato da Pomponio per i servitori del tempio degli dèi, sembra comunque improbabile che egli possa aver ricoperto un ruolo di rilievo all'interno dell'amministrazione palatina tale da poterlo identificare con il titolare del sigillo d'alto pregio ritrovato a palazzo, come ipotizzato da Matthiae.[38] *A-šu-ur*-NI è invece attestato in 75.1259 = *ARET* IV 3 r. I 18-II 1, probabilmente databile al periodo di *Ib-ri$_2$-um*. La rottura della parte superiore della tavoletta non permette di seguire le specifiche della sezione riguardante *A-šu-ur*-NI e se, quindi, l'assegnazione di tessili abbia riguardato la sua regolare attività di servitore del tempio degli dèi o l'occasionale funzione di "collettore" per il tempio degli dèi" (ur$_4$/ur$_x$ (lu$_2$) e$_2$ dingir-dingir-dingir). Tale funzione è difatti attestata per diversi servitori degli dèi, probabilmente in relazione al procacciamento di beni necessari al tempio e al suo personale di culto e di servizio.[39] *A-šu-ur*-NI è chiaramente definito collettore del tempo degli dèi in 76.539 = *ARET* VIII 539 = *MEE* 5 19 (v. VIII 3'-4': *A-šu-ur*-NI ur$_x$ / lu$_2$ e$_2$ dingir-dingir-dingir). Nonostante l'assenza di riferimenti al tempio degli dèi, sembra possibile identificare ulteriormente *A-šu-ur*-NI con il collettore che in 76.525 = *ARET* VIII, 525 = *MEE* 5 5 (r. X 5-13) reca alla regina notizie sull'attività di šeš-II-ib di uno dei figli del ministro *I-bi$_2$-zi-kir* o con colui che, al fianco di *I-ti*-NE, ricorre come collettore per i servitori del re (pa:šeš en). Lo stesso *Uš-ra-sa$_2$-mu* è attestato come collettore del tempio degli dèi, al fianco del già noto *I-ti*-NE e di un certo *A-da-ma-lik* in 75.1328 = *ARET* XIX 11 (v. II 7-13), databile dunque al periodo di *Ib-ri$_2$-um*. *I-ti*-NE è infine attestato come collettore in 75.2429 = *MEE* 12 36 v. IV 2-10 in connessione alla regina. Questo stesso testo riporta la presenza di un ulteriore servitore degli dèi in funzione di collettore, *En-na-ba-al$_6$*, ricompensato per aver portato alla regina la notizia della nascita di un figlio di una principessa.[40] *En-na-ba-al$_6$* ricorre come collettore del tempio degli dèi in un altro testo[41] che cita i membri del gruppo di servitori del tempio degli dèi: 76.530 = *ARET* I 5 = *MEE* 5 10 r. XI 19-21. *En-na-ba-al$_6$* è però a sua volta membro di un altro gruppo di servitori del tempio degli dèi composto da quattro elementi: *En-na-ba-al$_6$*/*En-na*-BE, *Ib-ḫur*-NI, *I-da*-NI, *Ga-da*-NE, anch'essi citati sempre nel medesimo ordine. Si può dunque appurare l'esistenza di due gruppi distinti di servitori degli dèi attivi contemporaneamente nello stesso arco di tempo. *En-na-ba-al$_6$* è attestato come unico servitore del tempio in 76.521 = *ARET* VIII 521 = *MEE* 5 1 v. V 14-15,

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[35] *Na-na* è attestato solo in 75.3261 = *ARET* III 225 v. I' 4'-7': 1 gada$^{\text{tug2}}$ / *Na-na* / <lu$_2$> e$_2$ / dingir-dingir-dingir-dingir; *Ra-i$_3$-zu*, da identificare con l'omonimo servitore del tempio (Pomponio 2008: 259), è attestato invece nella sezione successiva (v. I' 8'-10': 1 ib$_2$-III$^{\text{tug2}}$ gun$_3$ / *Ra-i$_3$-zu* / lu$_2$ <e$_2$> dingir-dingir-dingir-dingir). L'omissione dell'elemento lu$_2$ nell'attestazione di *Na-na* è con molta probabilità casuale, senza necessariamente implicare alcuna diversa funzione o carica. Si confronti con la seguente attestazione relativa a *Ra-i$_3$-zu*: 75.1358 = *MEE* 2 37=*ARET* XV 10 r. VIII 9-12: 1 [...] / *Ra-i$_3$-zu* / <lu$_2$> e$_2$ dingir-dingir-dingir.

[36] 75.1345 = *MEE* 2 30 = *ARET* II 14 r. III 2-4: 1 *gu$_2$-li-lum* ku$_3$:bar$_6$ gar$_5$ / *Za-ri$_2$-um* / lu$_2$ e$_2$ dingir-dingir; 75.1457 = *ARET* XV 25 r. VII 10-12: 1 sal$^{\text{tug2}}$ / *Za-ri$_2$-um* / lu$_2$ e$_2$ dingir-dingir.

[37] La prima attestazione del gruppo in ordine temporale è probabilmente in 75.1770 = *ARET* XX 6 r. XIV 15-XV 4, la cui datazione è riconducibile alla fine dell'ufficio di Ibrium o gli inizi di quello di Ibbi-zikir; si veda Archi 2018: XIII. Ulteriori attestazioni del gruppo sono raccolte in Cianfanelli 2020:145; si noti che in 76.530 = *ARET* I 5 = *MEE* 5 10 r. VIII 22-IX 2 è assente *I-da*-NE/*I-ti*-NE.

[38] Matthiae 2010: 274, specialmente nota 6. Per via della fattura d'alto pregio, Matthiae ritiene che il sigillo TM.07.200, recante il nome *Uš-ra-sa$_2$-mu,* sia appartenuto ad un ufficiale d'alto rango del palazzo e individua come possibili proprietari un coppiere e il servitore del tempio degli dèi, non escludendo si sia trattato della stessa persona.

[39] Cianfanelli 2020: 144 (per le attestazioni dei servitori degli dèi attivi come collettori, si vedano in particolare pp. 141-147).

[40] Cianfanelli 2020: 149. Si vedano inoltre le attestazione di *En-na-ba-al$_6$* in funzione di collettore in relazione a danzatrici (Cianfanelli 2020: 144).

[41] Si noti che questo stesso testo cita anche figli degli dèi; si veda su § 2.

databile agli ultimi periodi dell'archivio, mentre ricorre insieme agli altri membri del gruppo (con o senza riferimenti al tempio) negli inediti[42] 75.250 = *ARET* X 51, 75.549 = *ARET* X 61, 75.558 = *ARET* X 64, 75.559 = *ARET* X 65 e gli editi 75.537 = *ARET* IX 44 r. VII 16-19 e 75.453 = *ARET* IX 54 V 1-4. Da notare poi la menzione di 4 persone del tempio degli dèi (4 *na-se*$_{11}$ lu$_2$ e$_2$ dingir-dingir-dingir) in ARET X 63 r. III 3, probabilmente in riferimento a questo secondo gruppo di servitori del tempio.[43] In *ARET* IX 44, questo gruppo di servitori del tempio è tra gli ufficiali ib-ib da cui dipende un gruppo di lavoratrici definite GA$_2$×GI, e lo stesso accade probabilmente in *ARET* X 51, dove è presente la stessa sequenza di nomi.[44] Ugualmente, in *ARET* IX 54 questo secondo gruppo di servitori rientra nell'elenco di ufficiali ib-ib da cui dipendono lavoratrici uscite fuori città (dam e$_3$ uru-bar).[45]

3.1. Osservazioni sugli "uomini del tempio degli dèi"

Sembra dunque chiaro che i servitori del tempio, in funzione di collettori o ufficiali ib-ib, si occupassero della gestione del tempio e dei suoi lavoratori. È inoltre possibile ipotizzare che essi fossero di un rango intermedio, né troppo alto come quello degli effettivi operatori del culto, intermediari della sfera divina, né troppo basso come quello del personale di servizio, a cui era affidata l'effettiva manutenzione del tempio. La distinzione fra i due gruppi di servitori del tempio, *Uš-ra-sa*$_2$-*mu*, *A-šu-ur*-NI, *I-da*-NE/*I-ti*-NE da un lato e *En-na-ba-al*$_6$, *Ib-ḫur*-NI, *I-da*-NI, *Ga-da*-NE dall'altro può essere ipoteticamente imputabile alle effettive sfere d'azione: più legato alla cerchia del palazzo ed i suoi possedimenti il primo gruppo, più legato al mondo esterno il secondo. Indizi che suggerirebbero una tale interpretazione sono offerti proprio dalle funzioni di collettori o funzionari-ib-ib svolte dai due gruppi. Per il primo gruppo si evidenzia l'interazione con servitori del re (75.1328 = *ARET* XIX 11), con la regina (75.2429 = *MEE* 12 36), quindi con un mondo riconducibile al palazzo. Per il secondo gruppo si evidenzia invece la gestione di lavoratrici al di fuori della città (ARET IX 54) e il riferimento di notizie esterne alla corte riguardanti una principessa eblaita.[46] Esterno al gruppo di servitori, vi è poi *Du-bi*$_2$-*ga-lu*, il custode del tempio[47] menzionato in 75.1950 = *ARET* XX 20 r. VIII 14-IX 3, testo che cita anche l'operatore cultuale EN-*zu*$_2$-*we-rum* (r. X 7-9).

4. LE DONNE DEL TEMPIO DEGLI DÈI

Il personale del tempio comprendeva anche donne, sia giovani (dumu-munus) che adulte (dam), le quali non sono mai citate per nome.[48] Si tratta del personale di servizio, i cui compiti riguardavano infatti l'approvvigionamento del tempio (u$_2$-a) e la sua pulizia (luḫ). Riferimenti a donne adulte[49] provengono da un periodo tardo dell'archivio. Essi sono infatti presenti in: 75.457 = *ARET* IX 42 r. V 5, dove è registrato un esborso di cereali per donne al servizio del tempio (1 ½ še lu$_2$ e$_2$ dingir-dingir-dingir); in 75.350 = *ARET* IX 51 IV 7-V-1, dove è esplicitata la funzione di addette all'approvvigionamento (u$_2$-a) per tre donne del tempio (3 dam u$_2$-a <e$_2$> dingir-dingir-dingir);[50]

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[42] Si veda Biga 2006: 25 note 28 e 29.

[43] Biga 2006: 23 e nota 25.

[44] Milano 1990: 133-135. Secondo lo studioso, potrebbe trattarsi di donne addette al confezionamento e trasporto di ceste per lana e tessuti (Milano 1990: 385).

[45] Milano 1990: 168.

[46] Si tratta della principessa *Ti-a-i-šar*, si veda a riguardo Cianfanelli 2020: 149 nota 142. Sul matrimonio di questa principessa, figlia di Irkab-damu, si veda Archi 2018: 154.

[47] Precisamente "custode del tempio rinnovato"; si veda Catagnoti 2019: 26. Lo stesso testo cita il responsabile di lavori edilizi del tempio, il quale, si presume, fosse esterno all'ordinaria gestione templare; a riguardo si veda Bonechi 2016b: 28-29 nota 44; Catagnoti 2019: 26 nota 37.

[48] Sembra plausibile che in questo contesto dumu-munus non indichi l'affiliazione o subordinazione delle lavoratrici ad un qualche individuo o al tempio stesso, ma che piuttosto si riferisca alla fascia d'età delle lavoratrici.

[49] In alcuni casi che si tratti di donne è desumibile dalla specifica del colofone.

[50] Da notare l'assegnazione di cereali nella sezione successiva (r. V 2-3) a tre donne addette all'approvvigionamento di un altro tempio

nell'inedito *ARET* X 97, dove 3 še gu_2-*bar* di cereali sono assegnati ad addette all'approvvigionamento del tempio (r. IV' 2'-4': 3 še gu_2-*bar* u_2-a e_2 dingir-dingir-dingir).[51] Si può dunque desumere che vi fossero tre donne adulte contemporaneamente impiegate nell'approvvigionamento del tempio. Diversamente, si ha menzione di 6 giovani donne addette all'approvvigionamento del tempio (6 dumu-munus u_2-a e_2 dingir-dingir-dingir-dingir) in almeno due testi: 75.1591 = *ARET* I 8 = *MEE* 7 3 r. XVII 14-17 e 75.1743 = *ARET* XX 9 r. VIII 20-23, databili al periodo di *I-bi$_2$-zi-kir*. È inoltre noto un gruppo di tre giovani donne addette alla pulizia del tempio (dumu-munus luḫ e_2 dingir-dingir-dingir-dingir) in 75.1319 = *ARET* XIX 6 v. V 19-VI 2, databile quindi al periodo di *Ib-ri$_2$-um* e in 75.1336 = *MEE* 2 25 v. IX 9-13, la cui datazione è incerta. Non è chiaro, dunque, se le tre donne dello stesso gruppo, che in un periodo più tardo servirono il tempio come addette all'approvvigionamento, originariamente fossero addette alla pulizia. Al periodo di *Ar-ru$_{12}$-gum$_2$* è ascrivibile la presenza di una giovane donna citata in 75.1869 = *ARET* XV 37 v. VIII 14-IX 3, la quale potrebbe essere stata anch'ella un'addetta alla pulizia del tempio.[52] Infine, vi è menzione di due giovani donne del tempio, la cui attività non è però specificata, in un testo riconducibile all'ultimo periodo dell'archivio, 76.523 =*ARET* VIII 523 = *MEE* 5 3 r. VIII 3-4 (2 dumu-munus / lu_2 e_2 dingir-dingir-dingir).

5. CONCLUSIONI

La suddivisione del personale sembra abbia risposto alle diverse esigenze della gestione templare e cultuale: da un lato gli effettivi operatori del culto, nei rituali regali affiancati dal supporto di giovani uomini, dall'altro ufficiali legati agli aspetti gestionali del tempio, un custode, giovani uomini impiegati in supporto ed infine personale di servizio, esclusivamente composto da donne, dedito all'approvvigionamento e alla cura fisica dei luoghi. Sulla base di quanto fin'ora descritto sembra evidente che gli operatori cultuali mantenessero la carica per brevi periodi ed agissero singolarmente, a differenza dei servitori del tempio attestati in gruppo e per archi di tempo più lunghi e in diverse sfere d'azione. Donne al servizio del tempio operavano singolarmente o in gruppi variabili, ma l'assenza di nomi propri non permette di capire se sia trattato di personale stabile o occasionale. Simili considerazioni valgono anche per i "figli degli dèi", attestati in coppia o in un numero non determinabile nei rituali regali, la cui attività potrebbe esser stata però legata ad una determinata fascia d'età e circoscritta quindi nel tempo. Nonostante i molti punti ancora oscuri, il quadro finora delineato offre comunque uno spunto per avanzare considerazioni di natura cronologica. Qui di seguito (Tab. 1) è dunque proposta un'ipotetica successione temporale del personale templare in relazione ai differenti periodi d'ufficio dei tre ministri in carica nel periodo coperto dagli archivi.

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o struttura il cui nome non è però purtroppo leggibile.

[51] Biga 2006: 23 nota 24.

[52] Pomponio (2008: 413) identifica il segno corrispondente all'attività della donna come LAK 733 e interpreta kid$_2$-<sag?>, "(tessili) per la figlia del guardiano? del tempio degli dèi". Sembra comunque possibile che si tratti di luḫ e che quindi questa sezione riguardi un'addetta alla pulizia del tempio.

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Tab. 1. Ipotetica successione cronologica del personale templare

Ministri	Operatori cultuali lu$_2$ dingir-dingir-(dingir-dingir)	Servitori del tempio lu$_2$ e$_2$ dingir-dingir-(dingir-dingir)	Personale di servizio e supporto
Ar-ru$_{12}$-gum$_2$	1) *A-ma-za-u$_3$*	1) *Ir$_3$-peš-il* 2) *Ra-i$_2$-zu* 3) *Na-na* 4) *Za-ri$_2$-um*	dumu-nita (Rituale A) 1 dumu-munus luḫ?
Ib-ri$_2$-um	2) *I-da-ni-ki-mu* (lu$_2$ *A-ma-zu$_2$*?) 3) *En-na-il* lu$_2$ *A-ma-za*		dumu-nita (Rituale B) 3 dumu-munus luḫ *I-si-rum$_2$* dumu-nita 2 dumu-nita
Ib-ri$_2$-um o *I-bi$_2$-zi-kir* *I-bi$_2$-zi-kir*	4) *I-in-ze$_2$* 5) EN-*zu$_2$-we-rum* 6) *I-ti-*^{d}NI-*da-bal* dumu-nita EN-*zu$_2$-we-rum*	Primo gruppo: 5) *Uš-ra-sa$_2$-mu* 6) *A-šu-ur*-NI 7) *I-da*-NE Secondo gruppo: 8) *En-na-ba-al$_6$* 9) *Ib-ḫur*-NI 10) *I-da*-NI 11) *Ga-da*-NE	*Ib-ga-iš-lu* *Du-bi$_2$-ga-lu* igi-sig 2 dumu-nita *Iš-la-ni* lu$_2$ *Ga-ʾa$_3$* libir-ra$_2$ 3 dam u$_2$-a 6 dumu-munus u$_2$-a 2 dumu-munus 2 dumu-nita

An Archaeological View to the Mannaean Kingdom

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Abstract. The Mannaean Kingdom's heartland is located south of Lake Urmia and north of Lake Zaribar in the Zagros Mountain in western Iran from the 9th to 6th centuries BC. Until recently, knowledge on the Mannaeans mostly came from Assyrian texts and, in rare cases, from Urartian inscriptions. In the last five decades, new findings from archaeological excavations and surveys have revealed other aspects of Mannaean material culture. Most of these excavations have been published in Iranian journals, which present summaries without clear methodologies or typologies. This article is an attempt at synthesizing recent publications on archaeological field studies, in some of which the author participated. The goal is document the state of knowledge of the Mannaean culture based on the results of recent archaeological excavations and to share a more articulate understanding of this kingdom with a larger audience.

Keywords. Mannaean Kingdom, 1st Millennium BC, Iron Age, Zagros Mountains, West Iran.

I. MANNAEA'S (MANNA'S) ROLE IN ZAGROS REGION

In the geographical region of the Zagros Mountains, from the late Bronze Age to the beginning of the *Achaemenid* Empire (559-330 BC), numerous small and large polities appeared, among which the *Ellipi*s and the *Mannaean*s are perhaps the best known. Data derived from the Assyrian tradition of keeping annals with descriptions of military campaigns in various regions are currently the primary source of historical information for these Zagros-region polities. These sources make clear that geographical proximity to, and periodic engagement with, Assyria contributed to the growth and prosperity of the *Mannaea* and *Ellipi*. Both these powers were neighbors of the powerful and glorious *Assyrian* Empire and served as buffers preventing friction between the Assyrians and rival kingdoms. On the northern borders of the Zagros Mountains, the *Mannaeans* separated *Assyrians* from the kingdom of *Urartu*, while

the *Ellipis* in the central Zagros region was situated between *Assyrians* and the *Elamites*. Naturally, the more powerful polities attempted to absorb the buffers and bring their affiliates to power in that region. As a result, to defend their affiliates or to end the dominance of their rivals, Assyria, Urartu, and Elam would occasionally meddle in the affairs of or invade the smaller polities (Hassanzadeh, Curtis 2018, Young 1988, Levine 1974, 1977, Dyson 1965b).

On the other hand, the *Mannaea* and *Ellipi* were aware of their key position. They constantly worked to secure their interests as the balance of power shifted. By securing political agreements with whoever held power at a given moment, *Mannaea* was able to use its "in-between" position (Fuchs 1994: 447-450) to great advantage, shaping it into a powerful political-cultural nucleus. Meanwhile, *Assyria's* incessant invasions of the Zagros region further strengthened and unified the small polities and tribes of the Zagros region, leading to the formation of a power called *Media*. Ultimately, the *Mannaeans* would be integrated into this great alliance. It is worth mentioning that during the final years of the *Assyrian* Empire, *Mannaeans* acted as Assyria's allies against the *Medes* , According to Babylonian texts, Nabopolassar, the king of Babylon, defeated a coalition of Assyrian and Mannaean troops who arrived to assist the city of Assur in the spring of 616 BC (Luckenbill 1927: 417); this demonstrates that the *Mannaeans* were aware of the strategic balance of power in the region and were providing a Zagros counterbalance to the voracious spread of Media. Eventually, however, their fear became reality and after the defeat of the *Assyrians*, *Mannaea* became part of *Media*. The latest mention of the Mannaeans comes from an external literary tradition, in which they are described as subordinate to the Medes (Jer. 51:27).

At its maximum expansion around 714 BC, the Mannaean territory was expanded up to the area dominated by Urartu, where the *Sahand* Mountains and *Bozghush* heights (between Lake Urmia and the Caspian Sea just south of Tabriz) created a natural border between *Urartu* and *Mannaea*. From the west, Mannaea's neighbor was Assyria with the Frontier Mountains of modern Iran and Iraq as their border. From the east, the Mannaean state had a mutual frontier with Median provinces (Levine 1974). For the southern frontier, a line stretched from *Marivan* to *Dehgolan* up to *Ghezel Ozan* valley (north of the central Zagros in Kurdistan) has been suggested. in the south, Mannaean share their border with The Assyrian province of Zamua[1] and Parsua[2] (Fig. 1). The buffer state of Allabria was between the Parsua and Mannaea (Zadok 2012).

II. POLITICAL HISTORY OF MANNAEA

The name *Mannaea* appears first in Assyrian inscriptions during the reign of *Shalmaneser* III[3], dating to 843 BC (Diakonoff 1985: 61; Yamada 2000: 62-63). In the thirtieth year of his reign, this Assyrian king conducted a campaign to Mannaea led by a general (commander in chief) known as *Daiiān-Aššur* (Diakonoff 1985: 65; Yamada 2000: 66 and 224). *Izirtu* appears as the capital city of Mannaea (Frame, Fuchs 2020: 52, RINAP 2, Sargon II

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[1] Zamua is an Assyrian province located between Sulaimaniya and Marivan. Levine suggested Lake Zaribar in Marivan as Lake Zamua (Levine 1989, for a detailed discussion on Zamua / inner Zamua, see: Medvedskaya 2000).

[2] Parsua was established as a result of the first campaign of Tiglath Pilesr III in 744 BC (Radner 2003: 44, 49-50, 57) and is located in the modern Sanandaj area in Iranian Kurdistan province (Zadok 2001). Parsua is located in the south-east of Mannaean territory (Radner 2013: 443).

[3] This text is on the famous "Black Obelisk" now in the British Museum (BM 118885 = 48=11-4,1), A.O.102.14 (Grayson 1996: 69-70). lines 159 to 169 refer to Mannaeans: "(159) In my thirtieth regional year, while I was residing in Calah, I gave orders (and) sent out Daiiān-Aššur, (160) the field marshal, chief of my extensive army, at the head of the army. Crossing the River Zab he approached the cities belonging to the city Ḫubuškia. He received tribute from Datana, the Ḫubuškaean. Moving on from the cities belonging to the city Ḫubuškia he approached the cities of Magdubu, the Madaḫisaean, (and) received tribute. Moving from the cities of the land Madaḫisa he approached the cities of Udaku, (165) the Mannaean. Udaku the Mannaean took fright in the face of the flash of my strong weapons and abandoned Zirtu, his royal city, (and) ran away to save his life. He went after him (and) brought away his oxen, sheep, (and) property without measure. He razed, destroyed, (and) burned his cities. Moving on from the land Mannaš he approached the cities of Šulusunu of the land Ḫarna (or Ḫir/Kin/Murna). He captured Masašuru, his royal city, together with the cities in its environs".

1: line 86; Novotny, Jeffers 2018: 195, RINAP 5.1, Ashurbanipal 9: line ii27), recorded as Zˀtr according to Aramaic inscription from Qalaichi Bukan (Lemaire 1998, Eph'al 1999; Balatti 2017: 87-90).

Urartian inscriptions record campaigns against Mannae from 820 BC until the middle of the 7th century BC. These campaigns led to the complete defeat of Mannaea at times and provided the opportunity for Urartians to campaign beyond Mannaean borders towards the west of modern-day Iran (Kroll 2005; Diakonoff 1985: 69). The deafeat of Mannaea by Urartu, however, never resulted in their submission, a fact that was also never claimed by Urartian kings (Salvini 2005; Burney, Lang: 1971: 133, 144).

The ascension of *Tiglath-Pileser* III to power, the revival of Assyria's supremacy, and the great defeat imposed by this king on the Urartians put an end to the military campaigns of Urartu against Mannaeans, who were able to recover parts of their lost territory with the help of Assyrians. According to inscriptions by *Tiglath-Pileser* III, around 737 BC a person called *Iranzu* reigned over Mannaea (Tadmor 1994: 99-100). Existing evidence shows that he was a powerful king who had expanded Mannaea's territory in every direction. *Tiglath-Pileser* III led a military campaign to the west of Iran around 737 BC and waged war against various provinces, but did not attack Mannae and its provinces (Tadmor and Yamada 2011: 53-54, RINAP 1, Tiglath-Pileser III 17: line 10b-12; Levine 1972: 6-11). Aware of the Assyrian king's campaign, *Iranzu* welcomed him and offered gifts including horses of various types, as well as large oxen and sheep (Tadmor, Yamada 2011: 53-54, RINAP 1, Tiglath-Pileser III 17: line 10b-12; Tadmor 1994: 99-100).

According to records from the reign of Sargon, after *Iranzu*'s death in 717 or 716 BC his son *Aza* came to power, but was later assassinated during an Urartian uprising (Frame, Fuchs 2020: 52, RINAP 2, Sargon II 1: line 78b-83a). As a result, Aza's brother *Ullusunu* (Fuchs, Schmit 1998: PNA 1: 238), an ally of the Urartians, seized power (Frame, Fuchs 2020: 52, RINAP 2, Sargon II 1: line 83b-85a). Sargon immediately attacked Mannaean territory and invaded its capital. *Ullusunu,* who had fled to the mountains, turned the events to his advantage by becoming an ally of the Assyrians and seeking forgiveness and was thereby returned to power by Sargon (Frame and Fuchs 2020: 52, RINAP 2, Sargon II 1: line 85-92). Assyrian campaigns from 719 until 715 BC were not effective in reducing Urartu's provocations and the separatist acts of Mannaea's revolting provinces. Accordingly, Assyria organized a major campaign in the region against Urartu in 714 BC (Mayer 1984; Balatti 2017: 87-90).

After reviving Assyria's power and seeking revenge on the Mannae by recapturing its lost frontier regions, *Ashurbanipal*, Assyria's potent king, waged war against the Mannaean king *Ahseri* (Luckenbill, 1927: 326-28). According to *Ashurbanipal*'s annals, after this campaign Mannaeans revolted against their own king, assassinated him along with his family, and threw his body in the city (Novotny, Jeffers 2018: 239, RINAP 5.1, Ashurbanipal 11: line iii4-10). *Ualli*, one of *Ahseri*'s sons who had survived, came to power with the support of Assyria. He sent his crown prince *Erisinni* as a hostage to *Ashurbanipal*'s court and pledged to pay taxes to Assyria (Novotny and Jeffers 2018: 239, RINAP 5.1, Ashurbanipal 11: line iii11-26; Balatti 2017: 87-90).

The relationship between Assyria and the Mannaeans was stable for a while, but as the Assyrian Empire diminished, so did the Mannaeans. During the year 616 BC, the Babylonian army defeated Assyrians in the middle Euphrates. In Babylonian inscriptions (Luckenbill 1927: 411), it is recorded that Babylonian armies arrested a group of Mannaeans who were helping the Assyrian army (Zawadzki 1988: 118). According to Babylonian texts, during the spring of 616 BC the Babylonian king Nabopolassar defeated the Assyrian army as well as the Mannaeans who had come to Assyrians' aid in *Kablini* (Luckenbill 1927: 417; Oates 1991: 178). Apparently, in the aftermath of this defeat and decline of the Mannaeans, the Median kingdom annexed Mannaea to its territory. In the sixth century BC a Hebrew source had mentioned the Mannaean kingdom, along with the *Scythian* and *Urartian* kingdoms, for the last time (Jer. 51:27) as an autonomous part of Media. With few exceptions, the Mannaeans are not mentioned in Achaemenid sources, suggesting that Mannaea ceased to exist as an independent identity and was fully subsumed under the sovereignty of the Medes[4] through a process which Young calls "Iranization" of Zagros (Young 1988: 22; see also Zadok 1979: 171).

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[4] In Achaemenid sources there is no direct mention of the Mannaeans, suggesting that they were understood to have been absorbed into Media. Given the Mannaean tradition for wall decorations, I believe that "Medians" mentioned among the artists decorating the

III. LINGUISTIC DATA REGARDING MANNAEANS

Unfortunately, there exists very limited information regarding the language of Mannaea. No indigenous inscription has been found within Mannaean geographical boundaries, and there does not seem to be a local tradition of using writing. According to Zadok (2002: 140) "It is unlikely that there was ever any ethno-linguistic unity in Mannaea" but a geographically varying mixture of languages, including Iranian languages, Hurrian, and Kassite. The few inscriptions were known from this region (the Qalaichi Bukan inscription (Eph'al 1999, Fales 2003, Lemaire 1988, Sokoloff 1999, Teixidor 1999, Tropper 1998) and Rabat brick inscriptions (Reade, Finkel 2014) are written in Aramaic and Assyrian cuneiform scripts. This does not indicate that Mannaeans used the Aramaic or Assyrian languages, as an Assyrian inscription from the reign of Sargon (ca. 714 BC) (SAA 11: 31) refers to a Mannaean interpreter in the Assyrian court known as Gi-Ki-I / Gikî (Fales, Postgate 1995: SAA 11, pages 29, 31: line 6-7). Rather, it may have been that Mannaean rulers adopted the scribal practices of the Assyrian court by employing Aramaic and Assyrian scribes (Sokoloff 1999).[5] Elite personal names and toponyms referring to Mannaean places and people in Assyrian and Urartian manuscripts indicate that many had a Hurrian linguistic character (Postgate 1987-90: 340).

Three scholars who have contributed the most to linguistic studies of the Mannaeans are Streck (1898/1899), Boehmer (1964) and Zadok (2002). They classified and provided the existing linguistic evidence for the language and reach of the Mannaeans, primarily through analysis of toponyms and personal names. The known toponyms and personal names identified with Mannaea are:

IIIA)   **Places**
IIIA.1)   *Zi-ir-ta* (Grayson 1996: 70) or *I-Zir/Zi-ir-ti/tu* (Fuchs 1994: 439), *I-zir-te* /I (Lanfranchi, Parpola 1990: SAA 5, page 148, 204, line r.6; Novotny, Jeffers 2018: page 195, RINAP 5.1, Ashurbanipal 9: line ii 27).

IIIA.2)   *I-zi-bi-ia* (Fuchs 1994: 429); *U-zu-bi-i/a*, *Uz-bi-a* (Piepkorn 1933: 47; Borger 1996: 34), mentioned in Sargon II's inscription, was attacked by Assyrians along with Izirtu and Armaed (Frame, Fuchs 2020: 52, RINAP 2, Sargon II 1: line 87); it has tentatively been identified with the present-day Ziwiye (refer to Godard 1950: 5; Adamec 1976: map 1-20-D).

IIIA.3)   *Ur-me-e(IA)-te, Ar-ma-et(-ta)* was at the center of Mannaea (Fuchs 1994: 424; Borger 1996: 34).

IIIA.4)   *Sa-an-ḫa* has been indicated with A.5.

IIIA.5)   *Ú-lu-ši-a* (Lanfranchi, Parpola 1990: 217, 5f), later pronounced *Lu-u-ši-a* (around 798 BC) (Millard 1994: 34), was possibly located near the Assyrian province of *Zamūa*.

Many other locations from the period of *Aššurbanipal* were noted in Piepkorn's 1933 article (see Borger 1996: 34). But no specific and significant information regarding their precise location have been obtained. These locations are as follows:

IIIA.6)   *At-ra-a-na/ni* or *Te-ra-a-na* (go to Parpola 1970: 55f)

IIIA.7)   *Ar-si-ia-ni-iš*

IIIA.8)   *A-za-qa-ia/na-ni*

IIIA.9)   *E (ia)-ir-is/iš-te-ia-na*

Royal Palace of Darius at Susa, as recorded in the DSF, were in fact Mannaeans. See Link: https://www.livius.org/sources/content/achaemenid-royal-inscriptions/dsf/ line 54: "The men who adorned the wall, those were Medes and Egyptians." Within later Median territory, only Mannaean sites such as Qalaichi, Rabat, Ziwiye, Hasanlu, etc. provide evidence for sophisticated wall decoration.

[5] This is contra Marf 2019, note 24, who states that Sokoloff 1999, 106 claimed that the scribes in question were Mannaeans. Sokoloff is clear on this point, suggesting "the writer (of the Bukan stele) may have been a native Aramaean scribe, who emigrated from the western Aramaic areas to the east."

IIIA.10) *Bi-ir-(ru-u)-a*

IIIA.11) *Gu-si/su-né-e* is possibly in the south and south-west of *Mannaea*, near the border of Assyria.

IIIA.12) *A+A-ú-si-áš*

IIIA.13) *Áš-šá-áš?(-)dan-na-su*

IIIA.14) *Pa(?)-š[á-...-n]a-su* which was at the centre of the Mannaean geographical borders during the 7th century BC.

IIIA.15) *Áš-di-ia-áš*

IIIA.16) *Ur-ki-ia-mu-un*

IIIA.17) *Ár/Up-pi-iš*

IIIA.18) *Si-hu-u-a*

IIIA.19) *Na-zi-ni-ri* Royal city

IIIA.20) *Ši-me-ri(-)Ha-di-ri* which, according to Urartian inscriptions, was clearly situated in the Mannaean territory (Diakonoff and Kashkai 1979: 25, 81).

There used to be following population centers at the frontier of Mannaea and Urartu, indicated in texts:

IIIA.21) *Suk/su-u-ki-a*

IIIA.22) *Ba-a-la*

IIIA.23) *A-bi-ti-ik-na*

IIIA.24) *Pa-a/ap-pa*

IIIA.25) *La-lu-uk-nu/ni*

IIIA.26) *Ma-al-la-a-ú* a mountain between Mannaea and Urartu where a military fortress was situated (Thureau-Danging 1912: 172).

IIIA.27) *Uš-qa-ia* (Diakonoff, Kashkai 1979: 13) near the entrance of A.28.

IIIA.28) *Za-ra-an-da*

IIIA.29) *Da-ar-ba-né* (Diakonoff, Kashkai 1979: 29)

IIIA.30) *Su-ú-bi*, which was called *Man-na-a+a* by Urartians (Thureau-Dangin 1912: 169-172). Our only information source regarding this province is the accounts of *Sargon*'s eighth campaign during the siege of the Urartian Fortress of *Ushkaya* in which *Su-ú-bi* was indicated (Luckenbill 1927: 84-85).

IIIA.31) *Ú-iš-di-iš* (Thureau-Dangin 1912: 91) which was called *Ú-Gi-iš-ti* by Urartians (Diakonoff, Kashkai 1979: 92f) has been located in the north of *Maragheh* (Diakonoff 1985: 80).

IIIA.32) *Zig/k/qirtu* (Fuchs 1994: 471). This province was situated at the border of Urartu (Lanfranchi, Parpola 1990: 123, SAA 5: 164, line 1-12) and has been located in the *Mianeh* region (Mollazadeh 2009: 50).

IIIA.33) *An-di-ú* (Grayson 1996: 213) was first mentioned during the reign of *Shalmaneser* III (858-823 BC) (Luckenbill 1926: 210). In one of the brick inscriptions of *Nimrud* that dates back to 802 BC, *Adad-Nērārī* III (805-782 BC) has claimed the sovereignty of numerous lands in Zagros, among which *An-di-ú* has been mentioned. In his latest study, Diakonoff suggested the location of *An-di-ú* along the coasts of the Caspian Sea (Diakonoff 1985: 65) and Malekzadeh has approved this idea, by considering the existence of *Marlik* graveyard and *Amlash* pottery types (Malekzadeh 1994: 17).

IIIA.34) *Mi-is-si* (Arutyunyan 1985: 138) is the southernmost region of *Mannaea*. In his Eighth campaign, *Sargon* advanced from *Parsua* to *Mi-is-si*. *Ashurnasirpal* II, in his Third campaign to *Zamūa*, mentions a place called [uru]*Me-su* situated in the eastern mountains of *Shahrizor* near a lake. In Levine's view, considering the vicinity of *Mi-is-si* with *Parsua* and the location of *Parsua* and *Namri* in the southern mountains of *Shahrizor*, the region of Lake *Zaribar* (*Zrebar*) and the city of *Marivan* is an appropriate area for locating *Mi-is-si* (Levine 1974). In another statement, *Mi-is-si* has been located in the region of *Bijar*, *Divan-Darreh,* or *Takab* (Mollazadeh 2009: 50).

IIIA.35) *Kumurdu* (Borger 1996: 34) is possibly south of Mannaea.

IIIA.36) *Su-ri-ka-aš* (Thureau-Dangin 1912: 31), a region at the border of *Karalla* and *Allab/pria*, has been mentioned in the eighth campaign of *Sargon* II in 714 BC (Levine 1977: 137; Thureau-Dangin 1912: 31). This includes A.36.a) *Si-ni-hi-ni* (Thureau-Dangin 1912: 35) that according to Herzfeld is equivalent

to *Sine* (*Sanandaj*) based on phonetics (Herzfeld 1938: 164; A.36.b) *Rap-pa-a*; and A.36.c) *A-rat-ta-a* (Zadok 2002: 22-23). According to Sargon's inscription, the Mannaean king *Ullusunu* covered the distance between his capital and the frontier fortress of this province in 14 hours (Luckenbill 1927: 108). *Surikaš* has been located in the *Baneh* region (Mollazadeh 2009: 50).

IIIA.37) *Har(ra)na* (Grayson 1996: 70, RIMA 3: Shalmaneser III A.O.102.14, lines 168, 181)

IIIA.38) *Allab/pria* (Parpola 1970: 12). There exists few geographical signs for determining the exact location of *Allab/pria*. *Allab/pria* has been mentioned only 3 times in texts: once within the accounts of the sixth campaign of *Shalmaneser* III (Grayson 1996: 40, RIMA 3: Shalmaneser III A.O.102.6, line iii58-iv6), the second time in Adad-Nirari III Period (810-783 BC) (Grayson 1996: 212-213, RIMA 3: Adad-nārārī III A.O.104.8, line 8) and another time during the reign of *Sargon* II (Frame, Fuchs 2020: 53, RINAP 2, Sargon II 1: line 89; RINAP 2, page 61, Sargon II 1: line 192; RINAP 2, page 85: Sargon II 2: line 225; RINAP 2, page 117: Sargon II 4: line 36; RINAP 2, page 134: Sargon II 7: line 55; RINAP 2, page 217: Sargon II 43: line 32; RINAP 2, page 266: Sargon II 65: lines 31 and 37; RINAP 2, page 350: Sargon II 82: line 54'; RINAP 2, page 425: Sargon II 115: line 23). In Levine's viewpoint (Levine 1974) *Allab/pria* used to be a region between *Surikaš* and *Parsua*. An area within the boundary of *Saqez* in the north, *Marivann* in the west, and *Sanandaj* in the south has been suggested for the territory of *Allab/pria* (Hassanzadeh 2009a: 56).

In addition, there are place names for the region south of Lake Urmia in Urartian texts, although it is not clear that they were within the sphere of Mannaean control (Diakonoff, Kashkai 1979).

These locations are as follows:

IIIA.39) *A-la-te* (a mountainous region)

IIIA.40) *Ar-tsr-mu-[...]*

IIIA.41) *Ur-ia*

IIIA.42) *Te-er-[t]u(?)-be*

IIIA.43) *U-ba-a-ru-gi-il-du*

IIIA.44) *K[u]/l[u]-[...]-ru-pi-ra*

IIIA.45) *Er-Ir-ki-u-ne*

IIIA.46) *Me/Mi-na-ap-su(-ne)e*

IIIA.47) *Du-qa-ma-a*

IIIB.   Names of People

IIIB.1) *U-da-ki*, was an Iranian name in 829 BC during the reign of *Shalmaneser* III (Grayson 1996: 70, RIMA 3, Shalmaneser III, A.O.102.14: line 165).

IIIB.2) *Ir-an-zu/ú* was a Mannaean ruler and political ally of Sargon II during the last thirty years of the eighth century BC. We have his name in the Assyrian inscription of Tiglath – Pileser III 3 times and Sargon II 4 times (Tadmor 1994: 98; Tadmor, Yamada 2011: 53, RINAP 1, Tiglath-Pileser III 17: line 10b-12; RINAP 1, page 84 and 87, Tiglath-Pileser III 35: line I 15'-20' and line iii24-30; RINAP 1, page 121, Tiglath-Pileser III 47: line 39b-41; Frame, Fuchs 2020, RINAP 2, page 50, Sargon II 1, line 58; RINAP 2, page 132, Sargon II 7, line 36; RINAP 2, page 255, Sargon II 63, line i11'; RINAP 2, page 268, Sargon II 65, line 62; RINAP 2, page 424, Sargon II 115, line ii14).

IIIB.3) *A-ka-c-a* was a representative of Mannaea during the time of the *Rūsa* II 730-714 BC in Urartu (Melikisvili 1971: 231)

IIIB.4) *A-za-a* 719-716 BC is probably an Iranian name (meaning "billy goat" = "leading an army") and was one of the sons of *Iranzu*, brother of Ullusunu (Fuchs, Schmitt 1998: PNA 1: 238). A strong coalition of Mannaean princes formed against him, supported by the Urartian king, who acted in favour of his own candidate Ullusunu, Azâ's brother. In the ensuing battle, Azâ was killed. The opposition set up

Ullusunu as king, but could not prevent the Assyrians from taking revenge in 716 (Zadok 2002: 25; Fuchs, Schmitt 1998 (PNA 1): 238; Frame, Fuchs 2020, RINAP 2, page 52, Sargon II 1, lines 80, 81 and 82; RINAP 2, page 80, Sargon II 2, lines 72, 73, 74 and 75; RINAP 2, page 116, Sargon II 4, line 22', 24', 25' and 26'; RINAP 2, pages 132 and 133, Sargon II 7, lines 37 and 38).

IIIB.5) *Ul-lu-su-nu* (Fuchs 1994: 416), *Iranzu*'s other son and *Aza*'s brother, was assassinated by supporters of Urartu. After the Assyrian campaign, he had become a supporter of *Sargon* (Boehmer 1964). We have his name 9 time in Sargon II period (Frame, Fuchs 2020, RINAP 2, pages 52-61, Sargon II 1, lines 83, 87, 88, 101, 102, 137 and 191; RINAP 2, pages 81-85, Sargon II 2, lines 80, 95, 96 and 224; RINAP 2, page 116, Sargon II 4, lines 26' and 27'; RINAP 2, pages 133-134, Sargon II 7, lines 38, 40, 44 and 50; RINAP 2, pages 255-257, Sargon II 63, lines I' 8', ii' 14', 21' and 24'; RINAP 2, pages 266-274, Sargon II 65, lines 32, 52, 62, 80 and 155; RINAP 2, pages 345, Sargon II 82, lines iii 12''' and V 47'; RINAP 2, pages 387-388, Sargon II 102, line 15'; RINAP 2, pages 424-425, Sargon II 115, line ii22).

IIIB.6) *Bagdatti*, one of *Ullusunu*'s brothers and the ruler of the Mannaean province of *Uishdish* (Luckenbill 1927: 10, 56). As his territory was at the frontier of regions influenced by Urartu, he had a role in *Aza*'s assassination. *Bagdatti* was taken captive by the Assyrians (Boehmer 1964: Note 27). We have his name in Sargon II inscriptions 2 times (Frame, Fuchs 2020, RINAP 2, page 116, Sargon II 4, line 25'; RINAP 2, page 313, Sargon II 74, line ii 13).

IIIB.7) *Metatti*/Mitatti, probably the ruler of *Zikirtu* (Baker 2017: 255), fought the Mannaean ruler as an ally of the first Urartian rulers, was defeated by *Sargon* in 714 BC, and was forced to escape (Boehmer 1964: Note 29).

IIIB.8) *Ah-se-e-ra / Aḫšēri*, a *Hurrian* name during the time of *Esarhaddon* and *Ashurbanipal* (Novotny and Jeffers 2018, RINAP 5.1, page 63-65, Ashurbanipal 3, line iii 16, iii 23, iii 43, iii 76; RINAP 5.1, page 87-89, Ashurbanipal 4, line iii 9, iii 30, iii 1'; RINAP 5.1, page 122, Ashurbanipal 6, line iv 24''; RINAP 5.1, page 146, Ashurbanipal 7, line iv 18', iv 1'', iv 36''; RINAP 5.1, page 195, Ashurbanipal 9, line ii 21, ii 32, ii 38; RINAP 5.1, page 238-239, Ashurbanipal 11, line ii 126, ii 133, iii 4, iii 6; RINAP 5.1, page 277, Ashurbanipal 13, line iii2).

IIIB.9) *Ualli* was a Mannaean king (son of *Ahseri*) during the reign of *Ashurbanipal* (Borger 1996: 35; Piepkorn 1933) with whom *Ashurbanipal* fought during his fourth or fifth campaign. He was assassinated by the Mannaean people around 664/665 BC (Boehmer 1964: note 31). We have his name in *Ashurbanipal* inscriptions 9 times (Novotny, Jeffers 2018, RINAP 5.1, page 65, Ashurbanipal 3, line 80; RINAP 5.1, page 89, Ashurbanipal 4, line iii2'; RINAP 5.1, page 123, Ashurbanipal 6, line iv 73''; RINAP 5.1, page 147, Ashurbanipal 7, line iv 41''; RINAP 5.1, page 170, Ashurbanipal 8, line iv 1''; RINAP 5.1, page 65, Ashurbanipal 9, line ii 41; RINAP 5.1, page 239, Ashurbanipal 11, line iii 11; RINAP 5.1, page 268, Ashurbanipal 12, line iii 2''; RINAP 5.1, page 305, Ashurbanipal 23, line 90).

IIIB.10) *E/I-ri-si-in-ni* is most probably a *Hurrian* name (Borger 1996: 36). He was the son (heir to the throne) of *Ualli* who was sent to the Assyrian court along with his daughter. Ashurbanipal mentioned this event 9 time in his inscriptions (Novotny, Jeffers 2018, RINAP 5.1, page 65, Ashurbanipal 3, line iii 85; RINAP 5.1, page 89, Ashurbanipal 4, line iii 8'; RINAP 5.1, page 123, Ashurbanipal 6, line iv 81''; RINAP 5.1, page 148, Ashurbanipal 7, line iv 49''; RINAP 5.1, page 170, Ashurbanipal 8, line iv 8''; RINAP 5.1, page 195, Ashurbanipal 9, line ii 46; RINAP 5.1, page 239, Ashurbanipal 11, line iii 18; RINAP 5.1, page 268, Ashurbanipal 12, line iii 3''; RINAP 5.1, page 276, Ashurbanipal 13, line iii 8'').

IIIB.11) *Daiaukku*, *Bagdatti*'s successor in *Uishdish*. He was responsible for the surrendering of 22 Mannaean fortresses to the Urartian *Rūsa* I and after taking back the fortresses for *Ullusunu*, *Sargon* II sent him to exile to *Hama* in *Syria* (Boehmer 1964: Note 28; Frame and Fuchs 2020, RINAP 2, page 54, Sargon II 1, lines 102 and 103; RINAP 2, page 82, Sargon II 2, lines 96 and 98; RINAP 2, page 134, Sargon II 7, line 49).

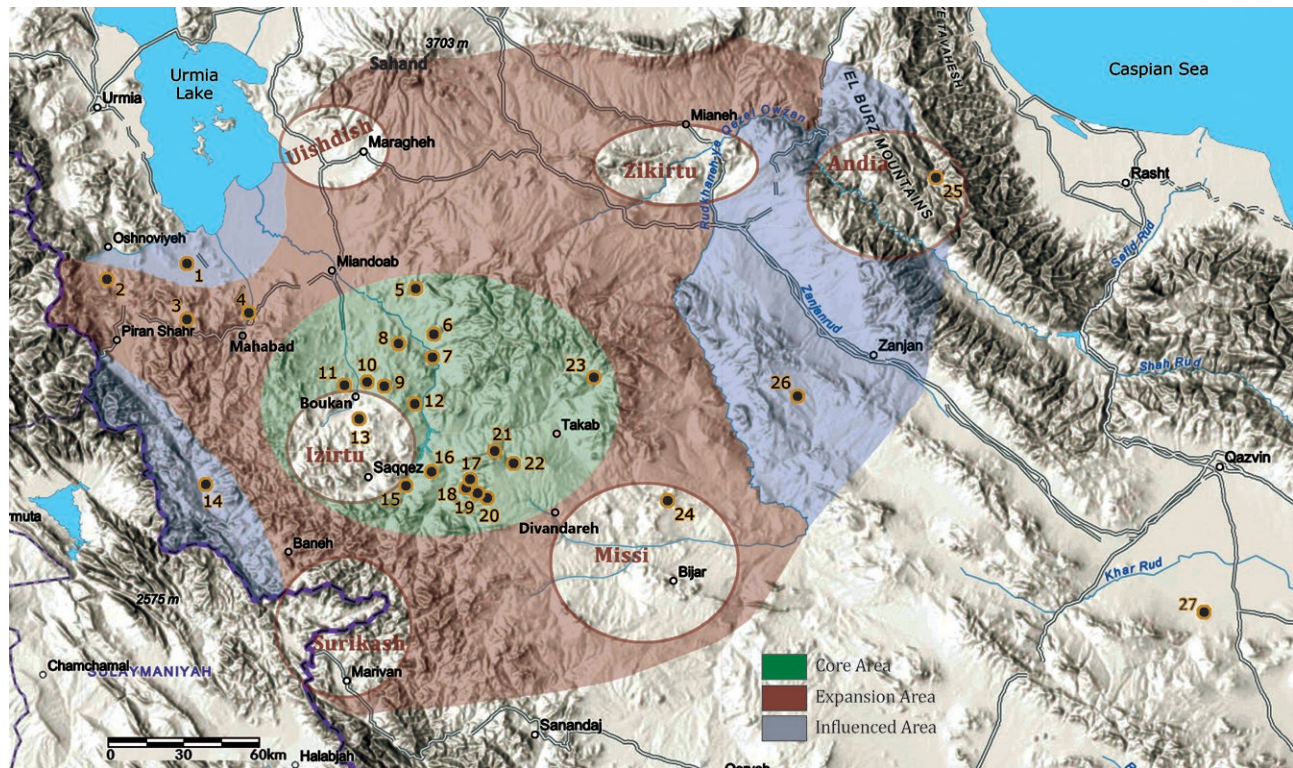IIIB.12) *Belihabu* is probably a Mannaean ruler (according to Diakonoff 1985: 102).

Fig. 1: Map of Iron Age sites in north-west Iran with Mannaean cultural material: 1. Hasanlu, 2. Kani Kisal, 3. Gargul, 4. Bardakon-te, 5. Jan Aqa, 6. Jowsatu, 7. Tepe Qapan, 8. Qaleh Bardineh, 9. Kaldageh, 10. Qalaichi, 11. Grda Qit, 12. Shah-Moradan, 13. Tbt, 14. Rabat, 15. Saheb, 16. Kani Zerin, 17. Ziwiye, 18. Changbar, 19. Mala Mcha, 20. Qaplantu, 21. Kani Koter, 22. Kul Tarikeh, 23. Zendan-e Suleiman, 24. Ghamchi-Khay, 25. Çala dêm, 26. Kul Tappeh, 27. Sagzabad (Map by Yousef Hassanzadeh). Mannaean realm about 714 BC showed in the colored zone (Based on Levine 1974: 101, Fig. 1 and Hejebri-Nobari, Mollazadeh 2004: 89).

IIIB.13) *In-s/zab/p-ri* was the governor of the city of *I-zir-te* that has been mentioned during the reign of *Sargon* II (Lanfranchi and Parpola 1990: SAA 5, page 148, 204, line 11).

IIIB.14) *Abat-šarri-uṣur* was a Mannaean envoy (Lanfranchi, Parpola 1990: SAA 5, page 126, 171, line r.4).

IIIB.15) *Ri-pa-man-na-a* was mentioned in 634 BC (Radner 1999: 204).

IIIB.16) *Gi-ki-I* / Gikî was a Mannaean interpreter (Fales, Postgate 1995: SAA 11, page 29, 31: line 6-7).

IIIB.17) *Adakupa* is an envoy of the Zikirtean(s) (Fales,d Postgate 1995: SAA 11, page 31 r. 1–3 (nd).

IIIB.18) *Zi-ba/ma-ga* was registered on brick inscriptions of the Achaemenid period in 527/6/2/15 BC[6].

IV. ARCHAEOLOGICAL EXPLORATIONS IN MANNAEAN SITES

The most important sites where Mannaean remains have been found in archaeological exploration and studies (Fig. 1) are as follows:

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[6] For information regarding Mannaeans during the Achaemenid period, see Zadok 1979: 171; for comprehensive information regarding Mannaean linguistics, see Zadok 2002.

IV.1. Ziwiye (map 1, No. 17)

The site of Ziwiye is located 42 kilometers directly northeast of Saqez, adjacent to a village of the same name, and is one of the key sites of the Iron Age in north-western Iran, dating back to ca. 800 BC and lasting through the 7th century BC. Some historians identify modern Ziwiye with the region of Mannaea called Zibia or Izbia in, for example, the descriptions of Sargon II's sixth campaign (Frame, Fuchs 2020: 52, RINAP 2, Sargon II 1: line 87), following an assumption made by Godard based on their phonetic similarity (Godard 1950: 5; Adamec 1976: map 1-20-D). Others, however, have called this identity into question (Levine 1974: 108, 120; Muscarella 1977: 205). The site first drew attention in the late 1940s following a chance discovery which then led to seven years of commercial excavations of the site by antiquities dealer Ayoub Rabenou (Muscarella 1977; Hassanzadeh 2012), lasting from November 1946 to August 1953. Many objects said to be from Ziwiye were published by Andre Godard, an archaeologist and antiquities collector who was then the Director of the Iran National Museum. Pieces allegedly discovered at Ziwiye, or attributed to the site, found their way to museums across the world, including the Metropolitan Museum in New York, the Louvre Museum in Paris, the British Museum in London, and the Iran Bastan Museum in Tehran, in numbers so large that their provenance has been called into question (Muscarella 1977). It is important archaeologically to make a clear distinction between the excavated site of Ziwiye and the Ziwiye "treasure" (Muscarella 1977).

Since the first fieldwork at Ziwiye, archaeologists have conducted fifteen controlled excavation seasons at the site. These include Robert Dyson, for a brief season in 1964 (Dyson 1963c; 1965b); Nosratollah Mo'tamedi, for a total of eight seasons, from 1976 to 1979 and 1994 to 1999 (Mo'tamedi 1996), Simin Lakpour, for a total of four seasons from 2000 to 2003, Kamyar Abdi, for one season in 2008 to review preceding operations (Abdi 2012), and Abdolreza Mohajerinejad, for one season in 2012 to prospect the ground and surroundings of Ziwiye (Mohajernejad *et al*. 2014). Unfortunately, only a very small segment of the results of these studies has ever been published, but this author's analysis of pottery collected at the site suggests occupation from the end of the 8th century through the 7th century.

The excavated buildings at Ziwiye stand on four platforms built into the hillside to create level surfaces on the steep site (the architectural remain description is based on the author's observations), and include:

A) an outer section and courtyard providing an open space, perhaps for bringing goods into the site as well as for keeping horses and other seasonal activities;

B) a service/administrative area that has a long staircase with rooms flanking both sides. Kitchen pottery and utensils suggest that service activities such as cooking for the occupants of the site were likely carried out in this area. Numerous ballista stones and other defensive equipment were recovered in this area, suggesting that this area was used for defense. Interestingly, a number of these stones are also observed on the southern slope of the hill (towards the present-day village of Ziwiye) indicating their use at times of defending the castle;

C) The main residence, which includes a columned hall and side rooms. Column bases in the hall were reused in several phases, making it, after buildings from Hasanlu IVC, one of the oldest columned halls in the history of architecture in Iran. Battlements were constructed along the outer side of the hall, some of which were also used as grain storage spaces.

It is important to note that these three areas were separated by very narrow, easily defended areas, as if they were designed to be defended by a small force in the event of an attack. The fortified nature of this architecture is also evidenced by the presence of what appears to be a clandestine escape route at the end of the columned hall, perhaps to allow the residents of the building to exit in an emergency. Finally, grain storage was built into the principal residence, providing food security during times of siege.

Unique and precious artifacts have been found at the site of Ziwiye. Among the most spectacular finds we can point to a gold necklace and apron, a gold bracelet, and rhytons made from glazed ceramic (Mo'tamedi 1997), decorated glazed jars, various ivory plaques, and glazed bricks that decorated the columned hall at Ziwiye. Art historians and archaeologists have discussed the cultural production of the site as being related to Assyria, Scythia, and Urartu, at the same time having a local, Mannaean character (Mo'tamedi 1995; Muscarella 2017). The corpus of seals excavated at Ziwiye confirms the ceramic dates, as well as the connections between Ziwiye and Assyria in the 8th and 7th centuries BC (Ascalone, Baseri 2014).

From a broader perspective, these archaeological finds and their dating suggest that Ziwiye was an important Mannaean-Median fortress that stood in the face of Assyrian invasions, and, at the same time, an important center for cultural exchange as well as a valuable workshop for local artists of this land (Hassanzadeh 2016a) during the Iron Age. Certain types of pottery characteristic of Ziwiye—glazed vessels and those with incised motifs, see part V.4 below—are considered to be hallmarks of Mannaean culture and when found at other sites suggest connections with Mannaea.

IV.2. Hasanlu (map 1, No. 1)

This site is situated 7 kilometers north-east of the present city of Naghadeh and was excavated from 1956-1977 by R. Dyson from the University of Pennsylvania; From the beginning of the expedition, excavators attempted to identify the ethnolinguistic and political affiliation of the inhabitants of Hasanlu in Periods V and IV, based largely on geographical and historical evidence. Early in the excavations, the site and its culture in Period IV was called Mannaean (Dyson 1960a: 119-20; 1960b: 132; 1961a: 534; 1961b: 64; 1962: 639; 1966: 416; 1967: 2965; Crawford 1961: 88, 94; Ivanchik 2001: 97, n.4), and Edith Porada (1965: 108, 110) referred to its artistic production as "Mannaean Art". Dyson, citing Assyrian and Urartian sources, suggests that the people in this region "spoke a dialect of Hurrian" (Dyson 1961b: 64; 1962: 642-44; 1966: 421) and that the political affiliation of Hasanlu was unknown (Dyson 1968: 89) but likely Mannaean. As Oscar Muscarella remarked in 1971 "the racial determination of the V and IV periods have remained unresolved" (Muscarella 1971: 264; 1987: 136), and while contemporary scholars would not frame this discussion in terms of race, the identity of the residents remains unknown. For Hasanlu V, a period that has been thoroughly reinterpreted by Michael Danti (2013), Dyson saw evidence of an Indo-European migration at the site (Dyson 1963a: 33). Thirty years later, Winter (1989: 101-3) claimed that there is no evidence to support any relation between Period V and IV Hasanlu with Indo-Europeans, but accepted its association with Hurrian culture. Young suggested that they were probably Indo-Europeans who had become Iranian (Young 1985: 368, 374-75).

In terms of the ancient name and identity of Hasanlu, Salvini identifies Hasanlu as *Mašatti*, a province in the northwest of Iran according to Urartian texts (Salvini 1995: 25, 41-42, 46; Dyson, Muscarella 1989: 19, n. 105). Julian Reade (1979) has identified Hasanlu as being in the region of *Gilzanu* mentioned in Assyrian royal inscriptions (not *Mašatti*, unlike Winter 1989: 102). These claims depend essentially upon determining the geographical location of this site in comparison with others mentioned in Assyrian and Urartian sources, locations that change regularly with new interpretations; Salvini (1995: 25) concurs with Reade's claim, which is supported in part by Assyrian artifacts discovered in Hasanlu, although the extent of the relationship between Hasanlu and Assyria has been called into question (Danti, Cifarelli 2016).

Important recent research by Iranian scholars has shown that the northernmost reaches of Mannaea's geographical extent fall well to the south of Hasanlu. Hasanlu was therefore not likely a part of the Mannaean territory, although for the brief time before the fall of Hasanlu to Urartu in about 800 BC, it may have been politically and possibly culturally associated with Mannaea (Khatib-Shahidi 2004: 72; Mollazadeh 2009: 53). If we accept that Hasanlu was, in fact, *Gilzanu,* it is likely that Hasanlu was an autonomous province[7] whose relationship with Mannaea is unknown (Cifarelli 2019: 28). Certainly at Hasanlu, excavators discovered glazed vessel fragments, glazed brick, and ivory fragments (Danti, Cifarelli 2016 363–64) that are similar to artifacts founded at Mannaean sites like Ziwiye (Hassanzadeh 2016b).

IV.3. Changbar Graveyard (map 1, No. 18)

This graveyard is located 40 kilometers east of the city of Saqez and about a thousand meters from the well-known Ziwiye site. It was excavated between the years 1976 to 1979 under the supervision of Nosratollah Mo'ta-

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[7] For more details about Hasanlu's historical identity, see Kroll 2010 and Curtis 2019.

medi along with the excavations carried out at Ziwiye. Although the results of these excavations were never published by the excavator, nevertheless later analysis of the excavated artifacts that were housed in the National Museum of Iran showed that more than 331 graves were discovered during the course of these operations (Naghshineh *et al.* 2012: 108). Use of this cemetery appears to have begun slightly earlier than the palace levels at Ziwiye but is otherwise contemporary.

IV.4. Zendan-e-Soleyman (map 1, No. 23)

Zendan-e-Soleyman, in the north of the city of Takab, was explored between the years 1959 and 1964 under the supervision of the German Archaeological Institute. This site includes a conical peak made of travertine rising 110 meters, the remnant of a once-active travertine spring within a period of 15000 to 20000 years (Thomalsky 2011: 105). In 1958, Hans Von Der Osten identified a number of walls around the Zendan-e-Soleyman Mountain and gathered a few pieces of ceramics, leading to the first chapter of excavations a few months later led by Von Der Osten and Rudolf Naumann. During the excavations, field supervision was assigned to Hans Georg Uller and Zone Sachrisson. During 1960 and 1961, Carl Nylander and Wolfram Kleiss started outlining and documenting the existing architecture of the site. After a one-year interruption, the Zendan-e-Soleyman excavation was resumed under the supervision of Kleiss and with the cooperation of Rainer Michael Boehmer (Thomalsky 2011: 105-106; Naumann 1967; Boehmer 1967). Based on the ceramic analysis, the later of the two periods observed at Zendan-e-Soleyman (Period II) appears to coincide with occupation levels at Ziwiye, although with more Urartian imports, while the earlier material (Period I) has better parallels with Hasanlu IVb (Boehmer 1988; Thomalsky 2006: 280) The architecture of the site features a high terrace with a gate, a courtyard, and other buildings. Excavators argue that its location by an isolated mountain, its unusual geological features (the travertine spring), and its open-air courtyard suggest that it is a setting for cult activities. Overall, the close ceramic parallels with Ziwiye suggest that during Period II, Zendan-e-Soleyman was within the Mannaean sphere.

IV.5. Qalaichi (map 1, No. 10)

This site is located 7 kilometers to the northeast of the town of Bukan in the West Azerbaijan province. It is a few hundred meters away from a village bearing the same name, to the southwest of Urmia Lake, and on the east coast of the river known as Simineh-Rood. The site's height is 1,539 meters above the mean sea level.

An archaeological survey by Kleiss in 1976 revealed the first signs of this important site of the Mannaean kingdom (Kleiss 1977: 27-29). He mentioned the site as Haidar Khan and made a sketch plan of the fortifications. During the second quarter of 1979, remarkable finds from the Teppeh Qalaichi first found their way to the antiquities market of Bukan. For 6 long years, the site of Qalaichi was continually plundered by illicit diggers and smugglers (Mousavi 1994), when finally a rescue excavation team, under the supervision of Ehsan (Esmail) Yaghmai was assigned to the site in the year 1985. Reaching the site, Yaghmai began the rescue excavation project, and he recounts that the result of two months of effort by the archaeological team under the Ministry of Culture and Higher Education was the discovery on the ancient Qalaichi mound, in Bukan of the ruins of an ancient structure dating back to the first millennium BC (Yaghmaei 2017). According to the excavator, this structure showed features of religious architecture. The motifs on glazed bricks, including kneeling figures who appear to be engaged in ritual activities, and skeletal remains of quadruped possibly sacrificed in ceremonial activities, confirmed the hypotheses. The building included a vast hall spanning from the east to the west of the hill. On the west side of the hall, there were two chambers and on the east side of the hall, there were towers, an entrance gate, and side chambers (Yaghmaei 2015). The most historically significant discovery of the 1985 excavation campaigns was the Aramaic inscription (mentioned earlier) dated to about 700 BC (Lemaire 1988) on a standing stone at Qalaichi. An additional fragment was found in 1990 on antiquities market in Tehran. The extant piece has only 13 written lines. This inscription dates to the reign of Ullusunu, the powerful king of Mannaea from 716 BC onwards (Lemaire 1988, 1998, Eph'al 1999; Sokoloff 1999).

Excavations at Qalaichi, led by Bahman Kargar, were resumed in 1999 and continued up to 2006. During several excavation seasons, Kargar unearthed the remains of a temple dating back to the Mannaean period within an expanse of ca. one acre – as will be thoroughly explained in the architectural section of this article. In addition to unearthing remains of architecture at Qalaichi, excavators found numerous glazed bricks, in particular the large cache found during the ninth and last season of excavations in 2006 (Kargar 2004; Binandeh *et al.* 2017). These glazed tiles display an extraordinary range of motifs, including geometric and floral patterns; birds; animals such as goats, bulls, and lions; winged human figures in a kneeling pose; winged human-headed lions, sometimes with the horned cap of divinity; and bird-men, sometimes with ibex horns (Hassanzadeh, Mollasalehi 2011).

The architectural remains at Tappeh Qalaichi seem to belong to a cultural phase dating to the reigns of the Mannaean kings. So far, three building stages have been identified at the site: Ia, Ib, and Ic from the top to the bottom, respectively (Kargar 2004: 231).

Ia: This is the uppermost Mannaean cultural level at Tappeh Qalaichi. Esmail Yaghmai discovered architectural remains in the centre of the mound, including several small chambers with pisé (compressed earth) walls, and inner surfaces decorated with paintings of vegetal, geometric, animal and human themes. The remains do not exist anymore because they were destroyed by plunderers during the 14-year intermission in excavations (Kargar 2004: 231). Based on the author's observations, this phase is include some walls which made on top of columned hall and some clay platforms in south yard, some of which were decorated with glazed bricks and were most likely used for the purpose of praying in the open space when main phase (B) was destroyed (Kargar 2021: 64-78).

Ib: The architecture of the Qalaichi site consists of an enclosed area of one hectare surrounded by stone walls. The walls of the outer ramparts have two entrances; the main entrance is located on the east side and consists of a bastion on either side of the entrance as well as a guardhouse. The other small entrance that is situated on the north side was probably used for the entry of important people or for emergency exit (Kargar *et al.* 2020: 36-37).

These structures were erected over a rocky surface, paved with uncarved stones. several stone platforms were also built in order to facilitate the construction of the intended structures. Structures within the site were constructed with two to three rows of stones at the base and completed with unbaked mudbrick. They include a vast columned hall measuring 19 by 35 meters and five lateral chambers. A platform for placing votive offerings is located in the middle of room No.1. The floors of rooms No. 3 & 4 are paved with unbaked mudbrick. The internal walls of the hypostyle hall and rooms 3 & 4 were decorated with red and white ochre and blue paintings. Another significant feature of the architecture of the Qalaichi site is the stone platform located in the northwestern part of the site (Fig. 2). In addition, the waste dump found in the northeastern part of the site, in which more than 5000 pieces of animal bones were discovered, is a clear sign that sacrificial ceremonies were held in that place (Hassanzadeh, Curtis 2021: 13).

Ic: we have not a clear report from this stage.

Qalaichi is a key site of the Mannaean kingdom because it has just one period and all Architectural phases belong to the Mannaeans, and also fine materials from this site such as glazed bricks, carved and glazed potteries give us a general documented idea about the archaeology of Mannaea.

IV.6. Kul Tarikeh Graveyard (map 1, No. 22)

Kul Tarikeh graveyard, located in Kurdistan one kilometer southwest of Yuzbash-Kandi village (five kilometers from the Karaftu cave and 50 kilometers north of Divandereh city), was excavated under the supervision of Hassan Rezvani during two seasons in 2001 and 2003 as part of the Karaftu project (Rezvani, Roustaei 2007). Unlike Iron Age burials at other sites, pits dug into a soft, powdery bedrock—possibly tufa—which closed with large stones were used, and often reused, for burial at Kul Tarikeh. Based on comparative studies with Ziwiye and Qalaichi, Rezvani has identified the ceramics found on this site as being related to those from Ziwiye, and of Mannaean origin. Neo-Assyrian cylinder seals were found here as well (Azarnoush, Helwing 2005: 221 and Fig 46-48).
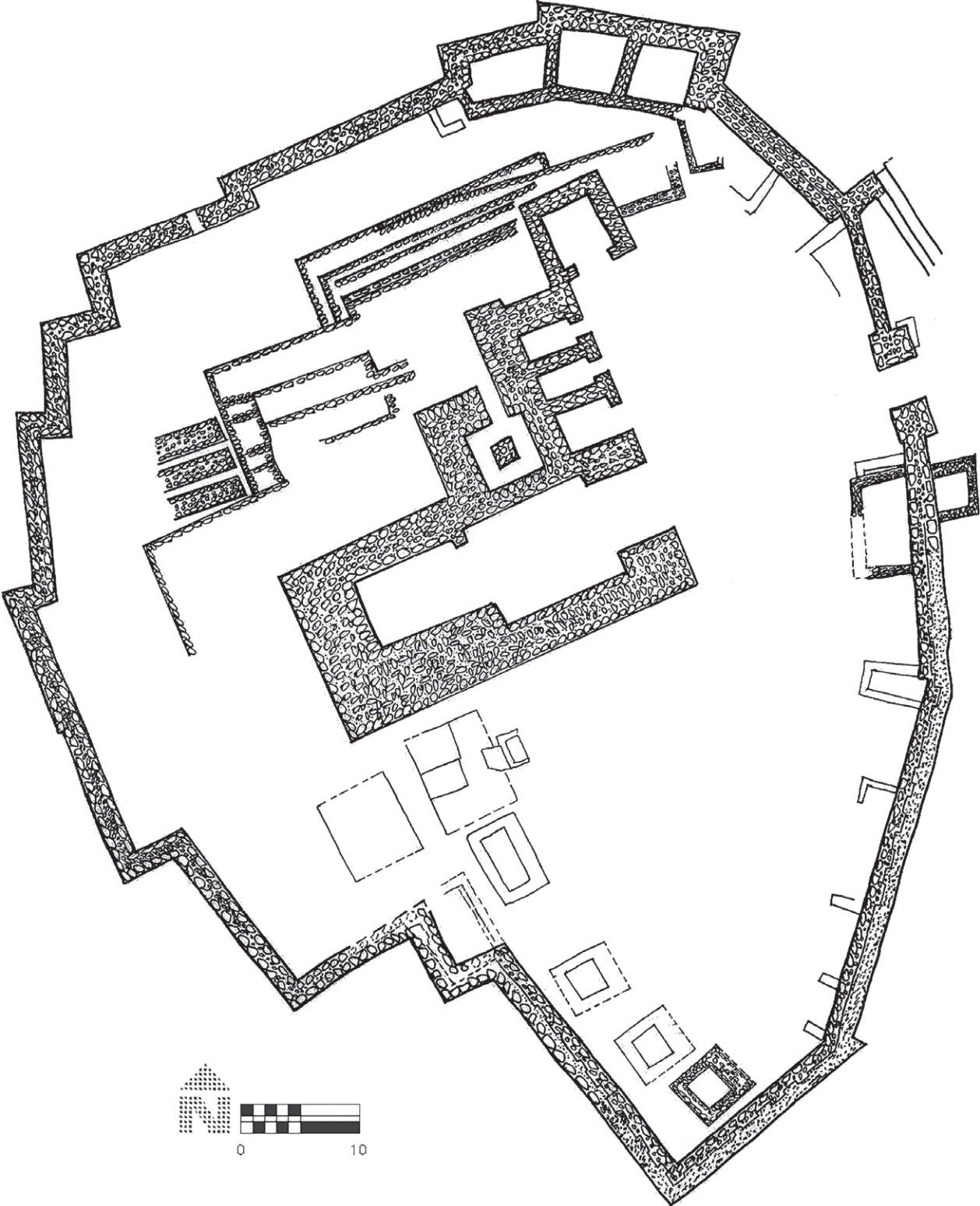
Fig. 2: Plan of Qalaichi Architecture remains (Kargar *et al.* 2021).

IV.7. Rabat Tepe (map 1, No. 14)

This hill is located next to the present-day city of Rabat, fifteen kilometers northeast of the city of Sardasht, not far from the Zagros passes to Assyria. Following the discovery of illicit excavations in the summer of 2004, an excavation team headed by Bahman Kargar was sent to the site during the summer of 2005 (Kargar, Binandeh 2009). The excavations were continued from 2006 under the supervision of Reza Heidari (Heidari 2010).

Since then, parts of a small palace have been uncovered, notably a courtyard with an Assyrian-style pebble mosaic pavement with a design predominantly of concentric circles which are most similar to those found at the Assyrian site of Ziyarat Tepe, Diyarbakir Province, Southern Turkey (Matney 2016). Excavators dated those features to the Iron III period, during the height of the Mannaean kingdom in the eighth–seventh centuries BC. The most important finds include glazed clay crenellations, tiles, and bricks (Afifi and Heidari 2010). The tiles and crenellations show geometric, floral, and figural designs, some of them featuring composite creatures such as winged human-headed winged lions. Five of the latter are decorated with Assyrian cuneiform inscriptions, which mention a ruler "Ata" of a locale called "Arzizu," both of which were mentioned in an inscription of Ashurnasirpal II in the ninth century BC (Grayson 1991, RIMA 2, page 207; Ashurnasirpal II: A.O.101.1, lines ii72b-76a). If "Ata" refers to the 9th- century ruler, these inscribed glazed bricks would be far older than the 8th-century pebble mosaic floor (Reade, Finkel 2014: 593), although it is possible that "Ata" was the name of a later polity in this region that was a vassal to Sargon II (Fuchs 1998).

While this paper considers Rabat to be a site influenced by Mannaean culture, Lanfranchi, and later Radner, point out that the location of the Sardasht Plain aligns well with the kingdom the Assyrians called Hubuškia (Radner *et al*. 2016: 22). At the moment, it is mutually exclusive interpretations, for deciding about this ideas, we need more document and details, hopefully, come from future excavations.

IV.8. Mala Mcha Graveyard (map 1, No. 19)

This graveyard is located 200 meters from the Qaplantu village and about 4 kilometers from the Ziwiye site. During the summer of 2012, Abdolreza Mohajerinezhad conducted a rescue excavation on this site (Amelirad *et al*. 2017). Sixteen individual and multiple burials were excavated, most of which had been plundered. Excavators dated their remaining contents to the Iron III period, with ceramics similar to those found in other adjacent sites including Ziwiye, Changbar, and Kul Tarikeh.

IV.9. Bardakonte (map 1, No. 4)

Bardakonte is situated 7 kilometers from the city of Mahabad and on the road from Mahabad to Urmia. This site was excavated in 2012 under the supervision of Mohammad Ghorbani and with the collaboration of Abdolkarim Esmaili (Esmaili 2015: 90). The architecture and the ceramics unearthed at this site are similar to those of Qal'e Bardineh.

IV.10. Qaplantu (map 1, No. 20)

Qaplantu is situated near a village of the same name, four kilometers from Ziwiye and 200 meters from the Mala Mcha graveyard. Surveys were conducted at this site by Faegh Tohidi (1970's), Saber Vafaei (1990s), Yousef Hassanzadeh and Sedigheh Ghodratabadi (2008) (Ghodratabadi, Hassanzadeh, 2009: 93-95). This site was once erroneously identified as ancient "Izirtu," and like Ziwiye, numerous gold and silver objects emerging on the art market in the late 1940's and 1950's were claimed to have been from Qaplantu (Muscarella 1977: 210-211). Ceramics from this site resemble those from Ziwiye.

IV.11. Bardineh Citadel (map 1, No. 8)

This site is located 300 meters from the village of Aghjivan and 35 kilometers from the city of Bukan, on the axis of the road from Bukan-Shahindezh. This site was surveyed in 1976 by Javad Babak-Rad and Gholamali Shamlou and later by Yousef Hassanzadeh during the summer of 2002 (Hassanzadeh 2009b). Based on potteries found in the survey, Hassanzadeh has identified this site as Mannaean.

IV.12. Kul Tepe (map 1, No. 26)

This site is located southwest of Zanjan and studies led by Swiny included it among sites with "Ziwiye-type", or here Mannaean, incised pottery (Swiny 1975; T6). Because of its distance from the Mannaean heartland, this similarity in material culture might be better explained as showing a relationship with Mannaeans rather than a Mannaean site.

IV.13. Grda Qit (map 1, No. 11)

Near the village of Hamamian, three kilometers northwest of the city of Bukan and twelve kilometers from Qalaichi site, local villagers found burials with ceramics similar to those found at Ziwiye and Qalaichi (Seifnejad 2009: 30).

IV.14. Jan Agha Fortress (map 1, No. 5)

This site is situated 45 kilometers from Miandoab and north of the village of Jan Agha on the road from Miandoab to Shahin-dezh. This fortress was studied by Kargar (Binandeh, Kargar 2008), who identified its structure, architecture as well its tiles as being of Mannaean origin, although these findings have not been confirmed.

IV.15. Jowšatu Citadel (map 1, No. 6)

This citadel is situated on the steep slope of an isolated mountain twelve kilometers northeast of Shahin-dezh and adjacent to a village of the same name. The architectural remains include a well-built, massive fortification wall with round towers, mud brick walls with rubble bases, as well as smaller stone walls said to be like those found at Jan Agha and Zendan-e-Soleyman. Based on its architecture and excavated tiles and ceramics, the site was identified as having had Mannaean (and later) occupation (Mollazadeh 2015). Stephan Kroll (personal communication) suggested from the stonework that this fort is not Urartian and not Mannaean. I agree that it is likely later, perhaps Hellenistic Parthian or even later, as the stones are worked so carefully, as found in Parthian or Sasanian architecture but not in Urartian or Mannaean buildings. The published pottery looks Iron Age (not necessarily Mannaean) but also looks later (Mollazadeh, Binandeh 2021: 38-40).

IV.16. Kani Zêrin (map 1, No. 16)

This Mannaean graveyard is located on a straight line one kilometer from the village of Aliabad, fourteen kilometers from Ziwiye, and 25 kilometers from the city of Saqez. It was excavated in August and September of 2015 under the supervision of Ali Hozhabri (2017). The excavators report finding Mannaean ceramics there, as well as evidence for metallurgical production (Qanbari-Taheri *et al*. 2020).

IV.17. Kani Kisal (map 1, No. 2)

Kani kisal is located in a village with the same name 10km south-west of *Ushnaviye*, in western Azarbaijan Province. This site had been attributed to Urartian Period in the past (Pecorella, Salvini 1982: 28; Salvini *et al.* 1976: 21), as the result of civil works some Mannaean material culture including glazed pottery found in 2008. This material was studied and published by Ali Binandeh (2020).

IV.18. Kani Koter (map 1, No. 21)

Kani Koter cemetery is located in the south-west of Dere Pemeyan village, and 12.5 km from Ziwiye in the town of Saqez in the Kurdistan province. This site was illegally excavated and recovered artifacts were placed in the Sanandaj archaeological museum and published by Amelirad and Azizi (2019). Among the rich array of objects found at this site are ceramics, glazed beakers, metal vessels, and a decorated bronze belt with parallels at Ziwiye, thereby attributed to Mannaean culture.

IV.19. Gargul (map 1, No. 3)

In 2009, fragments of a bronze belt were found in the village of Gargul in the Lajan district of Piranshahr, in the Western Azerbaijan province of Iran. The belt, now housed in Urmia Museum, is ca. 95 cm. in length. Its body is 9.5 cm wide, and it has a 15 cm diameter medallion "buckle" (Cifarelli *et al.* 2018).

Authors suggested that "As a local product distinct from South Caucasian, Urartian and Assyrian traditions, this belt is a rare survivor of a culture (Mannaean?) that is not yet well understood" (Cifarelli *et al.* 2018: 8).

IV.20. Sagzabad (map 1, No. 27)

Tepe Sagzabad is situated close to Buin Zahra city in the Qazvin Plain of north-central Iran. This site has been excavated by teams from Tehran University since 1970. New seasons of excavation after 2016 under Mostafa Dehpahlavan focused on burials at the site. The grave goods are dated to Iron Age II-III and include ceramics, personal ornaments, and weapons that appear relatively contemporary to the material from graves of the eastern graveyard of Qara-Tappeh. The grave goods also include Mannaean incise? pottery (Dehpahlavan *et al.* 2019). I think the presence of Mannaean material culture here shows us "a site in relation with Mannaean's", not "a Mannaean site".

IV.21. Briefer publications and reports have indicated that the following sites have evidence of Mannaean culture:

IV.21a. Kaldageh (map 1, No. 9): Bahman Kargar has identified the Sangar fortress on top of the Kaldageh/Kaltakeh mountain, situated 12 kilometers east of Bukan and 5 kilometers southeast of Qalaichi, as one of protecting locations of Tepe Qalaichi (Kargar 2004: 230, footnote 5);

IV.21b. Shah-Moradan (map 1, No. 12): Reports indicate that Qalaichi style glazed ceramic bricks and tiles were unearthed from the mountainous fortress of Shah-Moradan near the village of Sari-Ghamish (25 kilometers east of Bukan on the coast of Zarineh River (Kargar 2004: 230, footnote 6).

IV.21c. Tbt Fortress (map 1, No. 13): 3 kilometers south of Bukan and 15 kilometers from Qalaichi, the existence of a semi-circular solid tower has been reported as Mannaean style (Alizadeh, Firouzmandi 2013: 99); but they are more like Parthian – Sasanian towers, not Iron Age / Mannaean.

IV.21d. Haji Soufi Fortress: Excavators reported the discovery, 8 kilometers from Ziwiye and 3 kilometers from Qaplantu, of a Mannaean fortress surrounded by a wall made of mudbricks and rubble (Rezvani 2004: 84);

IV.21e. Saheb Fortress(map 1, No. 15): Rezvani has identified this fortress, located 18 kilometers southeast of Saqez, as being Mannaean (Rezvani 2004: 84);

IV.21f. Ghamchi-Khay Citadel (map 1, No. 24): This citadel, also called Ghamchoghay, surrounded by a wall made up of semi-circular towers located near Bijar has also been described as Mannaean according to survey studies (Babak-Rad 1969: 67-69); a plan published by Kleiss (1972: 165-168; Fig. 36-38) and he suggested the site as a Mannaean site, too.

IV.21g. Tepe Ghapan (map 1, No. 7): Narges Mirzai outlined and performed stratigraphy on this site, situated at the center of the city of Shahin-Dezh, and discovered a layer comprising remains of Mannaean tiles (Mirzayi, Abbas-zadeh, in press).

IV.21h. Çala dêm Graveyard (map 1, No. 25): Located in Shal Village in Khalkhal City, Ardebil Province. Rescue excavations during March 2019 turned up 140 artifacts, including some Mannaean glazed pottery and pottery with incised motifs (Shayeghi, Ebrahimi 2021: 480, Fig. 9). Despite the presence of Mannaean material culture, it is more likely "a site in relation with Mannaeans", not "a Mannaean site".

V. CHARACTERISTIC FINDS AT MANNAEAN SITES

Distinctively Mannaean excavated materials can be assigned to three major categories: Architecture, pottery, and decorated portable objects. We will survey each of these fields in the following section:

V.1. Architecture

Before examining architecture, it is important to point out that architecture at Mannaean sites generally consists of mudbrick walls on stone foundations, in contrast to the rubble stone masonry characterizing Iron Age architecture of *Ellipis* in Luristan. The Mannaean architecture will be examined by type, below.

V.1a. Monumental / Religious Architecture

Architecture designated as "religious" is characterized by the presence of a platform for the purpose of prayer/offering/sacrifice inside roofed (covered) spaces, as well as in open spaces as reported in Qalaichi (Kargar 2004). In some cases, as at Rabat, platforms were paved with a pebble mosaic (Hejebri Nobari, Afifi 2009: 49), although other spaces are not paved. Bahman Kargar identifies these spaces as praying platforms, a notion endorsed by Julian Reade who refers to examples of elevated platforms for prayer in Assyria and Pasargadae (Reade, Finkel 2014). In any case, if we consider these empty spaces as platforms (which are numerous even in this limited area), we should also consider monumental purposes for some parts of the Rabat architectural structures (Kargar, Binandeh 2009: 117).

This religious function might be evidenced at Qalaichi by the more than 5600 fragments of animal bones discovered during the first excavation season underneath the engraved floor of the columned hall, as well as during the subsequent seasons inside the pit (Nezamabadi *et al.* 2011). These bones do not indicate any signs of butcher's cuts, bites, or breakage for the purpose of using their marrow. It appears their flesh was not removed or consumed, suggesting they were placed under floors as votive/sacrificial offerings, while other pieces were put in a pit.

V.1b. Columned Halls

Although no clear plan has ever been published of the architecture of Ziwiye, this site is predominantly characterized by its columned hall, which is among the oldest columned halls in Iranian architecture. During the 1994

excavations, 8 stone column bases were discovered inside this columned hall (Motamedi 1995: 353), 85-93 centimeters in diameter, and placed within distances of 360 to 393 centimeters from one another (Motamedi 1995: 354). A 35 by 19-meter columned hall was also discovered in Qalaichi, with 5 column bases that measured 100 centimeters in diameter and 20 centimeters in height and were very similar to the examples in Ziwiye (Yaghmai 2017, Kargar 2004: 234). Also in Bukan region, Mollazadeh (2020) reported a column base made with the same method. In Hasanlu IV as well, other similar columned halls were discovered with similarities to the previously mentioned halls, although these halls are much older, having been initially erected during the Hasanlu Period V (1450-1250 BC) (Dyson 1983/1984: 302-303; Dyson, 1973c: 1; Danti 2013).

V.1c. Pavements

Pavements of different materials also may characterize Mannaean architecture. An area of approximately one hectare of the floor of the Qalaichi site is paved with stone, while a band of one meter wide at the edge of the walls of the entrance at the columned hall has been paved with finer stones (Kargar 2004). Paved floors are also present in Hasanlu Levels V and IV, as well as Ziwiyeh.

Vast paved areas made from pebble mosaics were also discovered in Rabat (Fig. 3). The mosaic design of these pavements consists of seven concentric circles in square frames of 160 × 160 centimeters (Heidari 2007: 205; Hejebri - Nobari, Afifi 2009: 49), as well as 170 × 150 or 170 × 180 centimeters (Kargar, Binandeh 2009: 116). In certain cases at Rabat, on the surface of the pavement, simple square bricks of various dimensions were installed (Hejebri - Nobari, Afifi 2009: 50; Kargar and Binandeh 2009: 115-116).

V.1d. Architectural Decorations

Perhaps the most distinctive aspect of Mannaean architecture is the use of glazed and unglazed ceramic decorative elements, including ceramic wall tiles, knobs, and knob plaques of the types below:

1. Simple wall pegs inserted into the wall, with a glazed, rounded head were found at Ziwiye and Qalaichi (Fig. 4:1).

2. Knob plaques, similar to the wall knobs or pegs, but surrounded by a lozenge or square plaque that lies flush on the wall. All of the exposed surfaces on these plaques, including the knob, are generally glazed. This type was found at Ziwiye and Hasanlu (Fig. 4.2).

3. A type of ceramic decorative plaque without the wall insertion, but with a square plate with an animal head protome. The head was hollow, probably to allow a bar to be placed by which it could hang on a wall. In this model, the lozenge/square-shaped head and the animal head are glazed. Examples of this category were found in Hasanlu (Fig. 4.3).

4. Small ceramic decorative whorl-shaped bosses, some convex and some flat. These are perforated to allow metal nails to fasten them to walls, their average diameter is 9 to 10 centimeters and the diameter of the holes in the middle of these wall bosses are 1.5 to 2.8 cm (Heidari 2007: 210; Hejebri - Nobari, Afifi 2009: 53), and are glazed and decorated with rosettes (Kargar, Binandeh 2009: 118). This type is mainly found in the site of Rabat (Fig. 4.4).

V.1d.1. Glazed Bricks

Glazed bricks are one of the most essential and distinctive finds from Mannaean sites. These bricks are made and used in a variety of sizes. In Ziwiye, bricks were made in the form of isosceles triangles with a 7 cm length, 10.5 cm height, and 2 cm thickness and glazed (Motamedi 1995: 328). Glazed bricks were also found at Shah-Mardan of Bukan (Kargar 2004: 230, footnote 6). However, the glazed bricks from Qalaichi (Fig. 5) in

Fig. 3: Rabat pavements were discovered in the 2006 excavation season (courtesy of R. Heidari).

Bukan (Yaghmai 2017; Kargar 2004; Hassanzadeh 2006; Hassanzadeh, Mollasalehi 2011) and Rabat (Afifi, Heidari 2010) are exceptional with respect to their variety in size and pattern as well as abundance compared to other sites.

Bricks from the sites of Rabat and Qalaichi are generally 33-35 cm square, with some half- (almost 15 to 17 × 33 to 35 cm) and quarter- (approximately 15 × 15 to 17 × 17 cm) sized. Glazed imagery includes geometric, vegetal, or geometrical/vegetal composite motifs, human and animal composite motifs, and human motifs. A group of five glazed bricks from Rabat, originally in one or more horizontal courses, were decorated with a fragmentary Assyrian cuneiform inscription (Heidari 2010, 339-41, Tab. LII.2-LIV).

V.1d.2. Rock/ Stone Carving Architecture

Evidence for stone carving technology is found at a few sites whose ceramics place them within the Mannaean sphere. These include the Bardineh Fortress in Bukan where, on top of a high mountain, the necessary space for settlements, surrounding and fortification walls, seating platforms, and large reservoirs for storing water were carved out of living rock (Hassanzadeh 2009b). Similarly, at Bardakonte in Mahabad, massive stones were used in the construction of architecture, which includes architectural, burial, and worship. In addition, rubble stone

Fig. 4: Glazed decorative pegs from Manneans sites. 4.1; Glazed decorative peg from Ziwiye, housed in Iran National Museum, Museum No. 2904, L. 28.5 cm, Maximum D.: 8 cm, Hassanzadeh 2016b: 100, picture 60. (©Iran National Museum). 4.2; Glazed decorative peg from Ziwiye, housed in Iran National Museum, Museum No. 2725, L. 29 cm, Maximum D.: 10.1 cm, square plate D.: 18 cm, Th.: 2.1 cm, Hassanzadeh 2016b: 101, picture 61 (©Iran National Museum). 4.3; glazed plaque with Lion head from Hasanlu, housed in Iran National Museum, Museum No. 8744, Square plate D.: 22 cm, Lion Head H.: 15 cm, Lion Neck D.: 12.1 cm, Excavation No: Has-64-450 (bB31 ⑤ □2 Δ87) Hassanzadeh 2016b: 103, picture 62 (©Iran National Museum). 4.4; glazed clay pegs from Rabat excavation, 2005; D.: 9-10 cm, Th.: 1.5-2.8 cm (Kargar, Binandeh 2009: 129, Pl. 14).
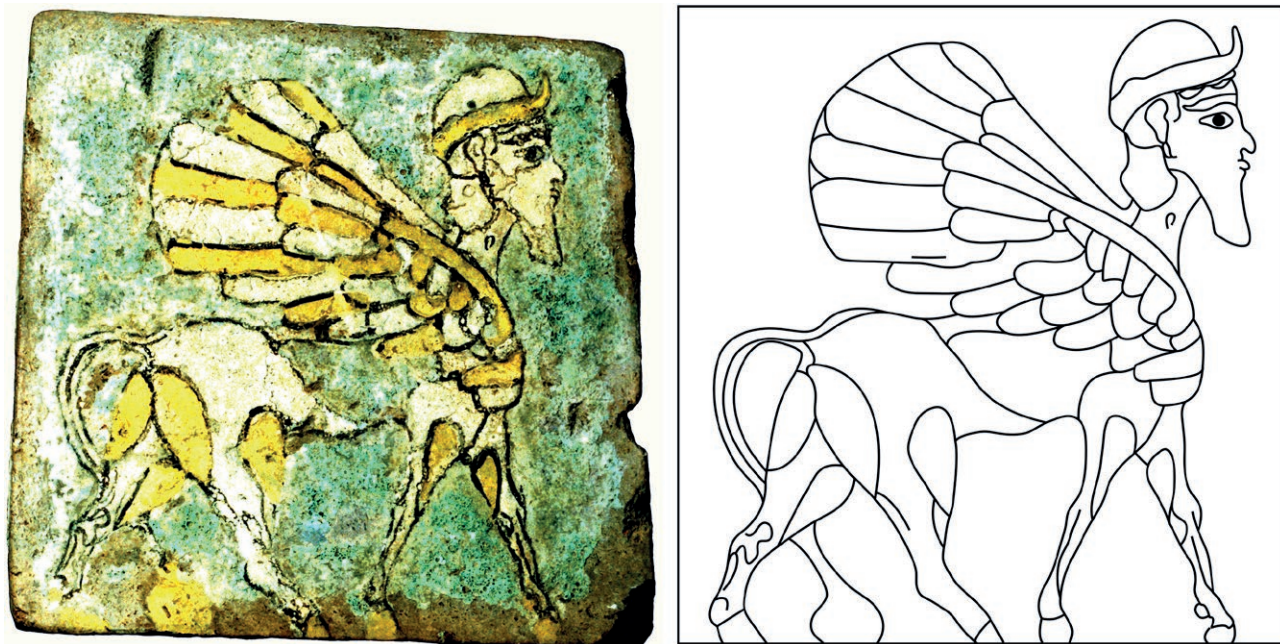
Fig. 5: A glazed brick from Qalaichi, housed in Iran National Museum, Museum No. 13653, D.: 34×34×9cm, Hassanzadeh, Molla-salehi 2017: 119, fig. 100 and 127, Drawing 55 (©Iran National Museum).

masonry walls with large and massive rocks (Mollazadeh 2015) were reported from various investigations, although the validity of some has not yet been approved.

V.2. Burial

Of the five burial sites reported from the Mannaean geographical territory, four (namely Changbar, Mala Mcha, Kul-Tarikeh and Kani-Zêrin) have been scientifically excavated, some of them for more than one season (Changbar and Kul-Tarikeh). Reports, in general, do not establish a specific pattern of Mannaean burials that is distinct from burials of the Iron Age in the Iranian Plateau. These cemeteries are assigned to the Mannaean culture based primarily on grave goods, particularly ceramics. Most of these burials are stone-lined chambers covered by large flat stones on top. Rare are the Assyrian-style bronze coffin from Ziwiye and pottery from Mala Mcha.

V.3. Ivory Carving

Carved ivories, much like glazed bricks, are one of the types of artifacts strongly identified with Mannaean sites, although many examples attributed to them are not from scientific excavations. Many ivories "said to be from" Ziwiye are in the Louvre Museum, the National Museum of Iran (Charlesworth 2019, Mazzoni 1977), the British Museum, and the Metropolitan Museum (Wilkinson 1975). Recently Sheler Amelirad published a group of well-carved ivories excavated at Ziwiye in 1997 at the Sanandaj Museum (Amelirad 2019), concluding that while the local artisans who made them were familiar with Assyrian and perhaps Urartian subject matter and style but "adapted them to serve their own purposes and meanings" (Amelirad 2019: 20). Hundreds of carved ivory fragments were also found during excavations at Hasanlu (Muscarella 1980), some imported from regions to Hasanlu's west, and some locally produced. These ivories are generally decorated in a wide range of styles, and feature animals, composite creatures, human beings, floral, and vegetal motifs (Fig. 6).

Fig. 6: An Ivory from Ziwiye, housed in Iran National Museum, Museum No. 5436, L.: 12.8 cm, W.: 4.8 cm, Th.: 4 mm; Charlesworth 2019: 132 (©Iran National Museum).

V.4. Pottery

At the sites discussed above, among the common types of Iron Age pottery, two classes of ceramics are categorized as specifically indicating Mannaean occupation: Small, globular glazed jars with rounded bases, and pottery with incised decoration.

V.4a. Glazed Pottery

Glazed pottery, particularly (mostly small) globular jars with rounded bases, and shapes featuring an ovoid base are reported from the sites of Hasanlu (Danti, Cifarelli 2016), Ziwiye, Changbar, Kul-Traikeh, Qalaichi, and Rabat (fig. 7). While these are a type of pottery associated with Assyria, even appearing on Assyrian relief images,
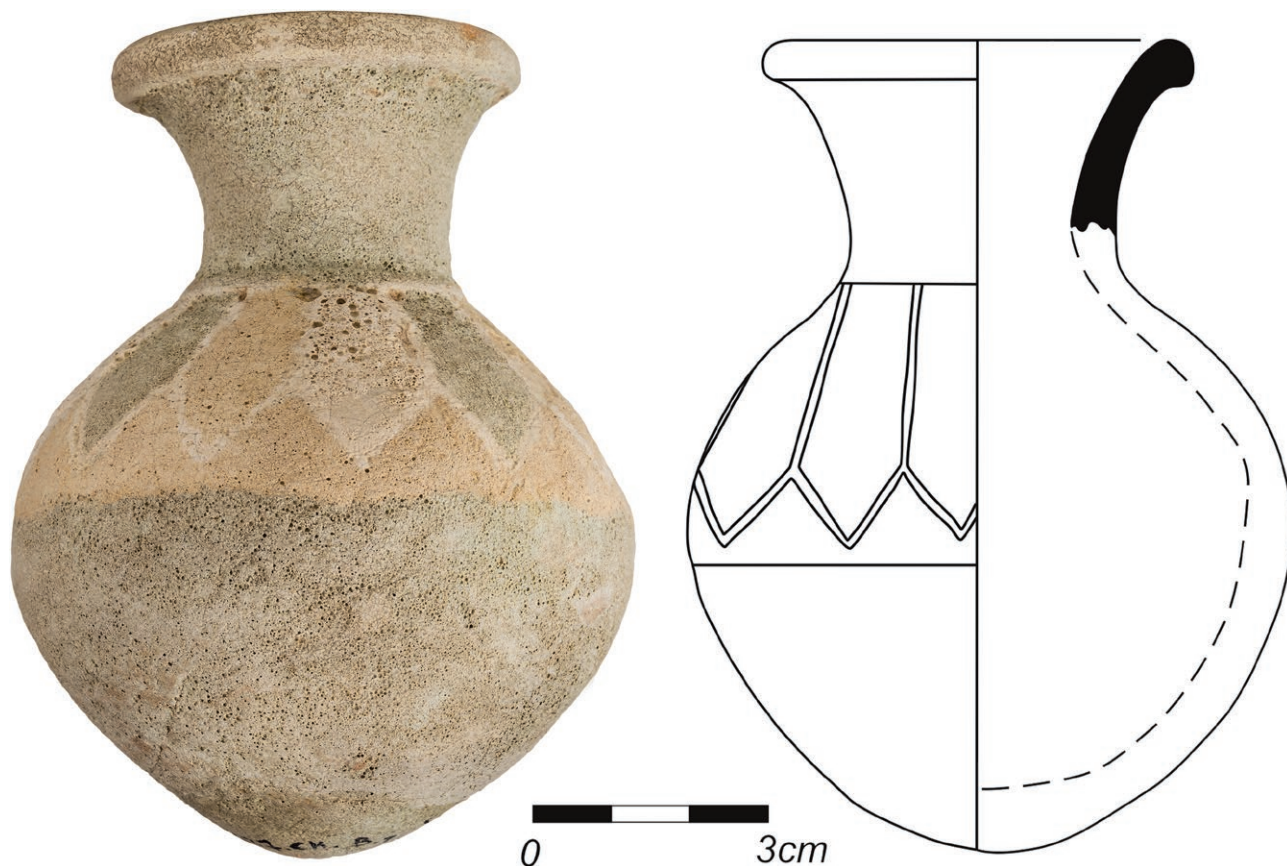
Fig. 7: Glazed pottery from Changbar Cemetery, housed in Iran National Museum, Museum No. 10583, Rim Diam.: 4.1 cm, H.: 10.7 cm, max. Body Diam.: 7.7 cm, Hassanzadeh 2016b, 55 (©Iran National Museum).

recent research suggests that they are not all necessarily imported to the Zagros region from Assyria. The presence of glazed pottery fragments under Iron II (Period IVb) floors at Hasanlu suggests that glazed pottery production in northwestern Iran starts well before the first millennium BC, and analysis of the distribution of these vessels suggests that they may have originated in Mannaean lands (Hassanzadeh 2016a). They represent a relatively early stage in Mannaean history in the mid-ninth to mid-eighth centuries.

V.4b. Pottery with incised motifs

Pottery decorated with incised, inverted triangles was excavated at Ziwiye, as well as Zendan-e-Soleiman, Qalaichi, Kul-Tariekh, and Mala Mcha, In the collection of pottery from Zendan-e-Soleiman, among other examples of Iron Age ceramics, those with incised motifs have been considered Mannaean (Boehmer 1988, Thomalsky 2006). Pottery with incised motifs was also reported from Ziwiye (fig. 8) (Young 1965: 61; Dyson 1963c: 35; Mo'tamedi 1997), Qalaichi (Mollazadeh 2008, Kargar 2004: 242-245), Kul-Tarike (Rezvani 2004: 101, fig. 10: 2; p. 104: fig. 5: 10; p.109, fig. 10: 6; p.110, fig. 11: 8), Mala Mcha graveyard (Amelirad *et al*. 2017), as well as from the ruins of the Grda Qit graveyard (Seifinejad 2009: 30). This style of pottery appears to date to the 8th century BC and may be slightly later than the globular glazed jugs although that has not been confirmed archaeologically. The use of incisions to create the inverted triangles, according to Boehmer's analysis of the ceramics at Zenden-e-Solaiman, is characteristic of the Mannaeans (Boehmer 1988) While similar designs are associated with later Urartian and Achaemenid ceramics, they are generally painted (Kroll 1975: 73-74; 1976: 164-65; 1977: 105, and n. 177, Dyson 1999).
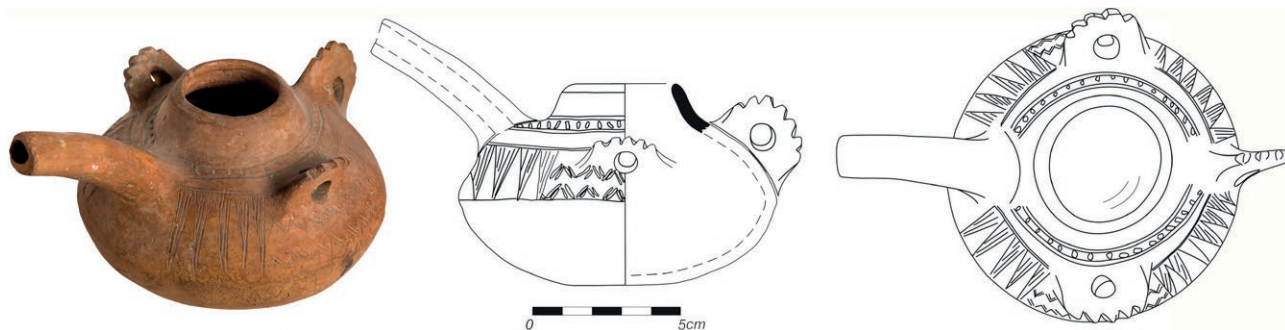
Fig. 8: Incised pottery type from Ziwiye, Housed in Iran National Museum, Museum No. 2905, Rim Diam.: 3.3 cm, H.: 7.2 cm, Base Diam.: 4.4 cm; Hassanzadeh 2016b, 70-71 (©Iran National Museum).

VI. MANNAEAN ARTISTIC MOTIFS

Given the paucity of Mannaean sites excavated and thoroughly published, and the prevalence of unexcavated objects in discussions about Mannaean cultural production, it is difficult to provide a comprehensive description of Mannaean Art.

As was the case for Urartu to some extent, Mannaean visual arts bear a strong relationship to the contemporary artistic production from Assyria, particularly as transmitted through portable objects, such as seals, ivories, metal objects, and perhaps textiles. Nevertheless, it is clear that artists working at Mannaean sites, or whose work found its way to Mannaean sites, were not simply copying the art of Assyria, but were integrating local preferences and traditions with those imported from Mesopotamia to the west, Elam to the South, the Iranian peoples to the east, and the Urartians and South Caucasian people from the north. For example, the beautifully decorated copper alloy belt found at Gargul, discussed above, demonstrates knowledge of the regional artistic traditions that are otherwise only known from Hasanlu (Cifarelli *et al*. 2018). The execution of the decorative motifs on the glazed bricks found at Mannaean sites show astonishing freedom compared to Assyrian examples, which tend to be more regular and rigid in design (Hassanzadeh, Mollasalehi 2011: 47). Similarly, a comparison of the motif of concentric circles surrounded by semi-circles on decorated Mannaean bricks are quite different from the manner in which those motifs are articulated in Urartian art (Hejebri - Nobari, Afifi 2009: 55). In sum, the abundance of ceramics with incised motifs at Mannaean sites, the presence of ivories, the use of glazed bricks and wall tiles as architectural decoration, architecture that features paved floors, stone foundations and brick walls, platforms for offerings, and columned halls, all characterize the cultural production of the Mannaean people, and help distinguish it from neighboring peoples. By beginning to describe and distinguish the archaeological evidence for Mannaean cultural production in the 8th and 7th centuries BC, we can begin to appreciate this important civilization as a significant contributor to Iranian history, and not simply as a satellite of the Assyrian or Urartian Empire.

VII. CONCLUSION

Compiling an archaeological study on the Mannaean kingdom for the first time, with a focus on the findings of excavations of sites attributed to this first millennium BC culture, is challenging, as there has been no serious discussion about this material culture and it is difficult to determine which cultural material items can be attributed to Mannaeans. The first issue is that there are no finds with inscriptions to help us prove that the associated materials are Mannaean in origin; therefore, in order to reach a preliminary conclusion, we need to base our hypotheses on some assumptions.

In the sites thought to be within "Mannaean Territories" based on historical geographic resources and Assyrian and Urartian texts, certain Iron Age cultural materials are distributed in other Iron Age sites in the adjacent

regions and even wider on the Iranian Plateau. To assign a site to the Mannaean culture, we have also used architectural styles; Thus, in the region south of Lake Urmia and north of Zaribar Lake, considered Mannaean territory, an Iron Age settlement with a hypostyle hall, flagged floor, stone foundations, adobe walls decorated on the outer surface with red ochre and glazed bricks, in addition to glazed ware, incised decoration ware and ivory items among its cultural materials, could be considered as a distinctive Mannaean site.

Not all of these materials should be expected to appear at every site; however, each of the above items suggests the possibility that the site is Mannaean. It is hoped that the criteria introduced in this paper initiate a serious discussion among archaeologists to look at cultural materials recovered through excavations in this region in a more refined way, with constructive scientific criticism to develop the current ideas and concepts. The goal is to have a more accurate constraint on the chronology of these cultural materials/features in order to differentiate between the finds related to the beginnings of the Mannaean period from those materials related to the time-span when the Mannaeans were part of the Median society, taking into account the cultural interactions with their Assyrian and Urartian neighbors. By providing this general overview of the structures and materials found through excavation, this paper is a general overview of these cultural materials in the context of the archaeological sites studied, and a first attempt to rigorously classify and study these so-called Mannaean materials.

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Building Walls, Social Groups and Empires: A Study of Political Power and Compliance in the Neo-Assyrian Period

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Abstract. This contribution aims to use social history and social theory to investigate political power and compliance with authority in ancient Western Asia, through the case study of Neo-Assyrian imperial building projects. Our first aim is to discuss the realities of construction work in the Neo-Assyrian Empire, focusing on the building process both through literary sources and archaeological data. Our second goal is to understand the role played by these building sites in the strengthening of local and supra-local political orders, in the consolidation of social group boundaries, and in the construction of political subjectivities of the ancient social actors involved. Our reflection sheds light on the new interpretative possibilities – and challenges – that integrating social theories, archaeological work, and language technology may create.

Keywords. Political philosophy, archaeology, *ilku*, social history and theory, social contract, political economy, anthropology, mudbricks, social structures, network analysis.

INTRODUCTION

One of the main critiques of Rousseau's idea of the social contract – since the very moment it was published in 1762 – has always been that it never actually occurred in real life. It is an artificial and imagined contract that nobody ever signs or enters into consciously. The 19th-century intellectuals condemned this fictive contract by glorifying organic communities' ties, theorizing about the *Volksgeist*, putting forward customary and family law, and sometimes romanticizing Christianity. They argued that there is no such thing as the social contract, but there are, however, strong ties between individuals and the groups that they belong to by birth and tradition. Social theorists have tools to conceptualize both swings of the pendulum when they insist that societies are always grasped

in *status nascendi*. Then there is not a 't₀' moment where a society is created and remains crystallized for a time before transforming. There are sudden ruptures, but societies are *always* in a process of construction with forces that lean towards preserving the *status quo* and others that lean towards change, forces that work for integration and others for disintegration. These processes are constant, not always unidirectional, and create a kaleidoscope of possible social and political configurations. Societies are founded again and again, day after day, year after year, in a variety of ways. In this perspective, the social contract is not a 't₀' moment but an uninterrupted succession of them.

There is nothing simple and obvious in the fact that the Neo-Assyrian imperial administration could extract labour and taxes from a population, and that the population works within these boundaries. Likewise, there is no universal theory, no universal model that could explain what exactly people are ready to comply with in terms of resource extraction. Scholars have insisted that there is always a symbolic dimension to political domination: there is in people's minds a set of principles and social representations, a specific view of the world that naturalizes the arbitrary and renders antagonisms and social inequalities – or at least a certain level of inequality – acceptable (Weber 1964 [1920]; Cassirer 1946; Bourdieu 1979a, 1979b, 2014:162-176). This scaffolding is different from one society to the next. This means that there is no universal threshold, no universal red line that an administration could cross that would trigger opposition. As there exists no universal notion of justice through which people perceive their interaction with state authorities (Sen 2009), the level of taxes and resource extraction that people are ready to accept varies in time and space and across social groups, and it depends on what the state says it is giving back, what it does give back, and on a set of ideas on what it is fair to be asked to do/to hand over in exchange (Thompson 1971; Scott 1985, 1990; Richardson 2020).

Scholarship on the relationship between the imperial administration and members of the ruling elite is prolific. The same cannot yet be said about its relationship with the members of the lower strata of Neo-Assyrian society. The quantitative argument for including social history in the analysis of ancient Western Asian empires is straightforward: why concentrate all the attention on the smallest fraction of the population? The more qualitative argument speaks to a wide panel of academic enterprises beyond history itself: if we want to grasp societies holistically, we need to look at the entire social fabric (Hobsbawm 1971). While the power of elites is sourced from below, the ideology they produce is always in a dynamic relationship with the wider social structures and existing symbolic arrangements (Geertz 1973; Bourdieu 1994). Moreover, social structures and symbolic productions both include social actors that are no longer human or that never were – such as spirits of ancestors, deities and other meta-persons (Sahlins 2017). The political society is a cosmic polity anchored in its specific ecological and material environment, and the study of the social contract and of political ontologies should include the social ties woven with non-human contractors.

Why do we consider building activities as a locus of social contract? Building sites brought together multiple members of society: the gods, the king, his high-ranking officials, hired laborers such as architects and master builders, deportees and corvée labourers. Participation in a building site is therefore a social, political and cultural activity. The aim of this contribution is to analyse the role of Neo-Assyrian monumental building activities in the constant construction of the political society and in the strengthening or rearranging of local hierarchies.

Monumental building projects are of course not the only place where the construction of the political society took place, but these are likely the most representative (Knapp 2009; Richardson 2015; DeMarrais, Castillo, Earle 1996: 17–19; Pauketat 2000; for other places in which the social contract is generated, see Wilkinson 2003: 11-14; Ur 2005; Rosenzweig 2016, 2018).

To address our research goal, we study the social topography of monumental building sites and reflect on the social change brought about by these enterprises in local societies. We pay attention to the practical transformations of local societies with the emergence of labour ties between the administration and the local individual social actors (elite and non-elite social groups) but also reflect upon the discursive framework within which they take place.

THINKING AND RETHINKING ANCIENT POWER: A HISTORICAL SETTING

The grip of the early Mesopotamian states was long thought of as absolute and based on violence. The majority of the non-elite population was imagined as slaves and passive, exploited subjects with little wriggle room to exercise political agency. This dogmatic way of imagining ancient social actors does not easily lead to the exploration of political subjectivities and to the investigation of the terms of the social contract or to the symbolic dimensions of political domination. These long-lasting paradigms of orientalism in Assyriology were progressively disproved in the second half of the 20th century and in more recent studies on the nature of political power in ancient Western Asian polities (Darling 2013: 15-32; Svärd 2016; Richardson 2012, 2017). Important developments in the study of the economy in general – and labour in particular, specifically in Mesopotamian societies – have attested a wide variety of work contracts (Postgate 1974; Jursa 2015; Radner 2007), and that private property was widespread (Démare-Lafont 2016; Radner 1997, 2007). Working outside your own household was common and individuals now appear to have been able to anchor themselves to different types of institutions and to move rather freely between them. Also, rather than an all-powerful despotic state, we see a more complex and multi-layered political reality, which faces mistakes, hesitations, power conflicts and straightforward failures. Richardson has made a strong case for the 'weakness' of Mesopotamian states in the 2nd millennium BC (Richardson 2012, 2017). Although the Neo-Assyrian Empire is usually portrayed as the zenith of Mesopotamian imperial power and the highest achievement of administrative centralization, it still struggles to make things work. The State Archives of Assyria highlight the daily difficulties of running an empire: far from being a smooth-running, self-regulating and easy endeavour, we see imperial agents struggling to carry out their work (i.e., how to look after royal demesnes and collect taxes in SAA 01 176, SAA 01 182, SAA 05 003),[1] dispatching agents to oversee fluvial shipments of timber (see SAA 01 004, SAA 05 003), organizing road stations (see SAA 01 177), dealing with greedy or incompetent administrators and accusations of all sorts (see SAA 15 189, SAA 05 121), reporting on conspiring sheikhs (see SAA 10 354) (Luukko 2018; Deller, Parpola 1966; Parpola 1995). Another relevant factor in the lack of clarity on state authority and compliance is the cloud of mystery surrounding the political role of intermediate social groups such as *nasiku*/sheikhs, which are still relatively understudied by textual scholars.

The Neo-Assyrian political system went through significant changes during its long 300-years span (911 BC–609 BC), and one has to be careful not to extrapolate 'phenomena unique to the reign of a certain king or even to a certain period within this reign onto the entire Neo-Assyrian period' (Svärd, May 2015: 6). The early Neo-Assyrian state also changed as a result of its expansion and integration of new territories outside the Mesopotamian heartland and there are variations in the content and style of royal inscriptions and reliefs throughout this period (Liverani 2012; Harmanşah 2013: 93-101; Tudeau 2019). Its early administrative technology was to some extent inherited from the 2nd millennium BC Middle Assyrian state (see Düring 2015 for a review of the discussions on this point) but as the empire conquered new territories, it had to fine tune its administrative techniques to be able to penetrate distant territories and integrate their populations. This integration happened both on a practical and discursive level, through a network of provincial administrations extracting taxation and corvée labour but also through physical construction of Neo-Assyrian architecture and reliefs, which translate into a discursive and symbolic fabrication that legitimized political domination and extraction. Building programmes beautifully inserted themselves into this propaganda narrative. We would like to focus on the very process of building these places as a *locus* where these practical and discursive policies were being constructed and implemented. With tools from social history and social theory we try to grasp the role that building sites played in the structuring of social relations between individuals, groups, and the state.

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[1] All State Archive of Assyria (SAA) texts can be accessed at http://oracc.museum.upenn.edu/saao/corpus.

MATERIALS AND METHODS: NETWORK ANALYSIS OF BUILDING SITES

We use textual analysis to study the social relations formed at the building sites, and to this data we apply qualitative social network analysis (SNA). Our approach is invested in describing all the actors involved, determining their place in the social topography of the empire and trying to grasp their lived experience. We look at the symbolic dimensions of construction projects by analysing the discourse on earthen building activities in royal inscriptions and administrative letters. We reflect on the potential and pitfalls of computer-assisted SNA for analysing ancient building sites.

Then, we employ computer-assisted Network Analysis (NA) as an effective tool to explore the symbolic attributes of specific materials used in the building process and some of the social actors engaged on site. An emic perspective is fundamental to understanding a society's perception of itself: how it portrays itself to its own members and to outsiders. Language technology can assist traditional textual criticism by using big data to show syntagmatic and paradigmatic semantic connections of words in a much wider textual corpus.

The lexical portal recently launched by CoE ANEE makes it possible to perform network analysis on the Akkadian texts present in the Open Richly Annotated Cuneiform Corpus (Oracc).[2] In the portal there are two networks built by ANEE on the basis of 7346 Akkadian texts, primarily dated to the Neo-Assyrian period (c. 930–612 BC). A total of 4930 Akkadian words in their dictionary forms have been inserted in the portal to be explored through network analysis. The basis of the selection is to include words that appear five times or more in the texts (Jauhiainen *et al.* 2021; Svärd *et al.* 2020; For portal information see Jauhiainen *et al.*; Sahala *et al.*). The two networks were created with different methods: first, the Pointwise Mutual Information (PMI) routine, which creates connections of a syntagmatic semantic nature, highlighting words that appear together in multiple texts and scoring that connection. Second, the network based on word vectors built with fastText elaborates connections based on the paradigmatic semantic connections of words, thus connecting words that belong to the same conceptual category (Svärd *et al.* 2020). The results were then visualized in Gephi, and the interactive portal provides the user with the possibility of extracting a sub-network in the form of an ego graph, that is, a word and all the words that are directly connected to it (Bastian, Heymann, Jacomy 2009).

A SOCIAL NETWORK ANALYSIS OF NEO-ASSYRIAN BUILDING SITES

Neo-Assyrian building sites must be seen as a form of collective and organized action that requires the coordination of multiple social actors. The individuals involved in these projects are not all human beings, and when they are, they come from different places in the social topography belonging to different institutions. Although written texts and archaeological materials from public buildings tend to focus on the ruling elite, administrative letters provide us with concrete information about the organization of labour during the building process. Mythological and ritual texts allow us to understand the role played by the gods in these enterprises and the fundamental mediation of the religious personnel.

In the *Enuma Elish*, the Mesopotamian creation myth particularly influential in the 1st millennium BC, the first description of the construction of a monumental building is that of the Esagil (Tablet VI, 57-67). It was built by the gods after Marduk was elected as their king in the midst of an episode of social unrest. After creating human beings, they thought it necessary to establish the institution of kingship to wisely guide and shepherd the people. Building was also amongst his duties. But the gods did not entirely delegate their prerogatives and they still controlled the *modus operandi*. In the Neo-Assyrian period, the gods are the initiators of imperial construction projects, or at least the projects need to be submitted to them for approval. The gods communicated with the king through visions and sometimes gave him precise instructions on how to carry out the work, for instance by

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[2] The extraction date for the data used: February 2019.

Figure 1. Votive relief of Ur-Nanshe, king of Lagash, Early Dynastic III (2550–2500 BC). The king is portrayed with a basket of earth used to manufacture mudbricks on his head. (Source: Ernest de Sarzec, *Découvertes en Chaldée* 1896. Public domain).

specifying a desired location (RINAP[3] 5, Ashurbanipal 006 http://oracc.org/rinap/Q003705/). If no direct command had been passed and the king wanted to launch a project, he had to consult the gods by resorting to the usual communication channels, which meant he heavily relied on his religious specialists to ask the question and interpret the given answer according the correct procedures (RINAP 3, Sennacherib 160, http://oracc.org/rinap/Q003965/).

The Neo-Assyrian king is described as the 'deities' builder', i.e., builder of temples (Dalley 2010; Lackenbacher 1982; Karlsson 2013: 97), which is a fundamental pillar of royal ideology. This portrayal also underlines the king's humility in front of the gods (Karlsson 2016; Lackenbacher 1982; Oppenheim 1949; Russell 2017) (Fig. 1).

The re-elaboration of previous iconographic Mesopotamian motifs used by Gudea, Ur-Nanshe and Ur-Nammu is adopted by the Neo-Assyrian king Ashurbanipal, who is portrayed carrying a basket of earth on top of his head (Fig. 2) (Lackenbacher 1982; Karlsson 2016: 103-104).

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[3] RINAP = *Royal Inscriptions of the Neo-Assyrian Period.*

Figure 2. Stela of Ashurbanipal in which the king is shown with a ritual basket of earth on his head © The Trustees of the British Museum. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) license.

Neo-Assyrian royal inscriptions provide us with numerous examples of the king as master builder, who raised a basket onto his head (e.g., RINAP 4 104, Esarhaddon 105, http://oracc.org/ribo/Q003334/), rebuilt the city from top to bottom, mixed the clay for bricks with precious materials (e.g., RIMAP 3 A.O.102 10, Shalmaneser III 010, http://oracc.org/riao/Q004615/; RIMAP 2 A.O.100 3, Tukulti-Ninurta II 03, http://oracc.org/riao/Q006033/) and completed the building by plastering (e.g., RINAP 5/1 11, Ashurbanipal 011, http://oracc.org/rinap/Q003710/). When the king mentions his predecessors, it is often a matter of legitimation by showing that he is acting in the tradition of previous kings. Looking at the practical organization of building sites, it is obvious though that the king is not the actual physical builder: archaeological and textual data indicate the effort needed to coordinate the construction labour (Sinopoli 1994: 170; Parker 2011: 374-375; Parpola 1995: 50).

During the Neo-Assyrian Empire, numerous palaces were built in the different capitals and in the provinces. These palaces were important administrative centres run by a multitude of officials (Groß , Kertai 2019; Groß 2020; Politopoulos 2020: 141). The royal household played a fundamental role. Many of the high-ranking officials, designated in the sources as 'the big ones', usually translated as 'magnates', took an active role during construction: the palace manager, the palace supervisor, the treasurer, the granary supervisor and the provincial governors all had a part to play (Groß 2020). All these officials were assisted by their scribes and deputies. Sheikhs also appear to be involved in human resource management as in the case of Dur-Šarruken (SAA 15 280, http://oracc.org/saao/P334710/). Gathering the necessary bricks for the building sites was also a logistical challenge that required coordination and created tensions. The bricks were produced at different sites, centralized and then shipped out to the provincial governors (SAA 19 052, http://oracc.org/saao/P224427, SAA 05 291, http://oracc.org/saao/P313453/). A very interesting aspect of the construction sites is that portions of walls were assigned to the different provincial

governors. This is evidenced in a letter in which a treasurer explains to King Sargon II how he has settled a mis-understanding between two governors regarding the exact portions of the walls that they had to build (SAA 01 164, http://oracc.org/saao/P334333/). Not all collaborations led to tensions though, as other reports are mostly positive (SAA 15 094, http://oracc.org/saao/P334074). We can now turn to those officials who were part of the actual workforce, amongst which we find the chief master builders, master builders, chief architects, and architects. Master builders and their junior apprentices were fundamental to Neo-Assyrian construction enterprises and were a disputed resource amongst the magnates of the empire (SAA 05 056 http://oracc.org/saao/P313448/ „ SAA 01 165 http://oracc.org/saao/P334644/). Magnates wrote letters to the king to request them on specific building sites (SAA 16 111 http://oracc.org/saao/P334265/), but the king's wishes could be disputed by the treasurer who kept a close count of the workforce (SAA 05 056 http://oracc.org/saao/P313448/) , SAA 15 151, http://oracc.org/saao/P313476/). Two of these letters also mention runaway master builders, which must have put further strain on their management. Recent studies describe the numerous social actors involved such as *ummânu*/skilled craftsmen, *šelappiāiu*/architects, metalworkers and stoneworkers (Harmanşah 2013: 162–167; Baker 2017; Groß 2020). Religious specialists intervened at specific moments of the building process, with detailed procedures in the case of the construction of temples (Ambos 2010). They communicate for instance, with the god Kulla, the lord of foundations and brickwork (RINAP 2, Sargon II 043, http://oracc.museum.upenn.edu/rinap/rinap2/Q006524). Thus, in every building project taken on, the king stands interlaced within a network of social relations that stretches from the realm of the gods to a wide variety of officials working in his palace. Let us now leave the high spheres and look at the lay citizens partaking in the constructions. This workforce was composed of multiple actors, working under different contractual obligations.

First forced labour, which was made up by prisoners of war, deportees and slaves.

(But) as for me, Sennacherib, king of Assyria, the performing of this work came to my attention by the will of the gods and I put my mind to it. I forcibly removed the people of Chaldea, Aramean (tribes), the land of the Manneans, (and) the lands Que and Ḫilakku, who had not submitted to my yoke, then I made them carry baskets (of earth) and they made bricks. I cut down canebrakes in Chaldea and I had their splendid reeds hauled (to Nineveh) for its (the palace's) construction by enemy soldiers whom I had defeated.

RINAP 3/1 3 41-43, Sennacherib 003

http://oracc.org/rinap/Q003477/

Building projects had a way of integrating newly conquered populations as never before in the political economy, societal fabric and cosmic narrative of the Neo-Assyrian Empire (Oded 1979, Parker 1997; Groß 2018). They became a platform for the imperial administration to create new ties with the ever-increasing population under its control (see RINAP 5/1 11 x85, Ashurbanipal 011, http://oracc.org/rinap/Q003710/; RINAP 3/2 43 6b, Ashurbanipal 011, http://oracc.org/rinap/Q003517/). These people were often uprooted from their original social and community settings, and became unwillingly active social actors by contributing to the empire socially, politically and culturally.

Another type of labour used on the building sites was *ilku* workers, as Assyrians performed corvée labour, *ilku*, as part of their duty to the king (Burke 2008: 141-143; Bernbeck 2019: 143-145; Yokoyama 1994). *Ilku* obligations were mainly linked to land tenure and could also be carried out on royal demesnes, in irrigation projects, temples, or through enrolment in the army (men only in this case). Evidence indicates that individuals could send dependents to perform *ilku* duty in their place (Postgate 2013: 22; Düring 2020: 104). *Ilku* was imposed on the lay population, including recently displaced populations, but also on lower ranking state officials, however these seem to have been able to produce some kind of substitute payment, a commuted equivalent of the service (Groß 2020: 63; Postgate 1971: 499; Postgate 1974: 400). The mentions of *ilku* in the State Archive of Assyria corpus show that sourcing and coordinating this workforce was not an easy task, with most challenges stemming from discussions on who exactly can be subjected to what. The sources reveal that people from all echelons tried to escape their duties: state officials reminded the king of forgotten exemptions (SAA 08 296, http://oracc.org/saao/P236978/, SAA 01 099 http://oracc.org/saao/P334048/), or argued that a specific task could not be considered part of their

ilku service (SAA 19 033, r12 http://oracc.org/saao/P393615/). The correspondence shows discussions between the kings and their officials about which category specific groups of people fall into and if they could be asked to perform *ilku* (SAA 01 223, 4 http://oracc.org/saao/P313502/; SAA 01 183, 12 http://oracc.org/saao/P334830/). These letters also show the difficulties faced by the officials in the mobilization of the workforce, as people plainly refused to participate in what they defined as a 'burden' (SAA 16 040, http://oracc.org/saao/P313428/), whilst others simply escaped and resettled elsewhere to avoid being persecuted by *ilku* duties 'month after month' (SAA 01 183, 12 http://oracc.org/saao/P334830/). Even when the officials and the performers seem willing to comply with their duty, more challenges arise regarding the chain of command (SAA 10 324 http://oracc.org/saao/P334320/, SAA 13 182 http://oracc.org/saao/P238742/). One edict appointing an official lists the severe punishments of wrongful appropriation of *ilku* workers, punishments that include tongue cutting and supernatural sanctions, which indicates that such fraud could not have been unusual (SAA 12 082 http://oracc.org/saao/P336125/).

To our knowledge, there is no evidence of women or men being hired for wages to work on building sites, but it is not implausible that these transactions happened. There is evidence of craftsmen such as blacksmiths hiring themselves out (Radner 2015), and we also know that the state sometimes hired personnel on a short-term basis to cover punctual needs. But again, the evidence here concerns bodyguards and scouts, not builders (Radner 2015). The absence of sources related to hired labour on building sites could mean that the Neo-Assyrian state was able to supply the necessary workforce by dispatching craftsmen remunerated through the land-grant system and the workers serving their *ilku*.

We now focus our attention on the actors and institutions financing the construction works. Textual sources reveal the underpinnings of financing schemes as the larger the building project, the bigger the financing scheme. Most of the king's officials, high-ranking and low-ranking got their income from the land grants assigned to them when they took up office and so did not receive specific remuneration because the work simply fell under their general responsibility (and when they believed it did not they made a point of it: 'The king, my lord, surely knows that it is not (part of) our *ilku*-duty' SAA 19 033, r12 http://oracc.org/saao/P393615/). We have mentioned previously how the king and his treasurer were careful to distribute the workload equally amongst governors to avoid tensions. The rations that the workers received were seemingly taken from the royal granaries (Postgate 1974; Faist, Llop 2012), which were plenished by the grain harvested from royal demesnes, sometimes by other *ilku* workers, or levied through the agricultural tax (Groß 2020: 337–348). However, evidence suggests that the construction costs were not sustained solely by the imperial treasury but that 'portions' of the construction could be supported by loans granted by individuals (Parpola 1995). King Sargon II seems to have borrowed silver from different individuals (SAA 01 159 http://oracc.org/saao/P334910/) to finance the construction of Dur-Šarruken (Bedford 2009; Parpola 1995). Exactly how this silver was used is unclear. One should also mention here that the only reason we know about this private-public financing scheme is that the creditor is complaining that some merchants have been refunded while he is still waiting for the refund of his 570 minas of silver.

ANALYSING THE NETWORK: A SOCIAL SCIENCE APPROACH

This review of the sources shows that building projects gather a wide scope of social actors that hold different positions in the social topography: the gods, the king, his high-ranking officials, craftsmen, architects, master builders, *ilku* labourers, deportees, and enslaved populations. Two things to remember here is that all these social groups were seldom in contact – at least to that extent– and that lay people would not have had access to these places outside of the specific building experience (Dewar 2022: 135; also, Dewar's personal communication). These interactions are not just interpersonal, but fundamentally inter-institutional: they involve different imperial offices, different socio-political organizations such as families, lineages, clans, and occupation groups such as guilds. They also speak about asymmetrical dependencies when owners can send their enslaved dependents to perform *ilku* in their place. Through the activation of these different interpersonal and inter-institutional ties, building sites connect different localities, villages, towns and cities. The networks that they create stretch through the urban and

rural landscapes, integrating distant lands with the imperial core (Wilkinson *et al*. 2005; Parker 2011; Liverani 2012; Harmanşah 2013: 127-130; Neumann 2020).

The sources also reveal that building sites required a substantive coordination of the Neo-Assyrian magnates. We see instances of both cooperation and competition taking place between different types of offices (i.e., conflicts between the office of the treasurer and the offices of the provincial governors) and between similar offices (i.e., competition between the offices of the governors). Sociology of organization applied to bureaucratic systems shows that these are not as efficient and rational as sometimes portrayed (Crozier, Friedberg 1977). Organizations are social systems based on interactions of their members, and as such they are dynamic entities and not static as their organizational charts suggest. The constant changes of their environment create uncertainty, which requires actors to improvise. There might be precise codes, rules of procedures, but not all events can be precisely predicted. This is when individual social actors and groups can develop strategies, but their aims do not always match up with those of the wider organization (Crozier, Friedberg 1977). In our case study, the individuals in the office of governor x implement individual strategies, but they also take part in office-level collective strategies against the office of governor y. Likewise, all the offices of governors x, y and z can implement strategies against another office or against the king himself. Ultimately, the empire can only function if the multi-scalar individual and collective strategies favour the bureaucratic system as a whole more than they favour its sub-units. Endeavours like wide-scale public building constructions show us how fragile these equilibriums actually were. The choice of the state to share the workload equally between governors can be seen as a solution selected to neutralize the endemic competition raging between their offices. With every new building site, the king must have made sure to keep dangerous entropic dynamics at bay. He should guarantee that these structural conflicts are regulated, and that everyone is moving to achieve the wider organization's goal and not just advancing personal interests. In this optic, the process of planning and building guarantees the power balance between the different institutions of the highest spheres of society, thus continuously reaffirming the structure of power. This is crucial for the continuity of the king's rule.

Furthermore, some of the phenomena that we have encountered so far, such as individuals benefiting from exemptions, sending dependents to perform duties in their place, or handing over *ilku* payments, could have functioned as status signalling, which sociological research has shown to be fundamental to the construction of social group boundaries (Veblen 1961 [1899]; Bourdieu 1972, 1979). Taxation and corvée duty then, should not be interpreted solely as a means by which the Neo-Assyrian state gathers resources but as suggested by Richardson for the Old Babylonian period as a powerful tool to create political subjectivity (Richardson 2020). Being exempt from *ilku* also meant having more time to work for a wage, as Radner mentions for the inhabitants of Assur engaging in caravan trade (Radner, 2015: 336). *Ilku* exemptions were a means of increasing one's prestige or symbolic capital, but also one's economic capital. Another point raised by the exploration of the logistics and energetics of Neo-Assyrian construction sites is that of social and geographic mobility. It is conceivable that the existence of a mobile workforce did impact local social, economic and political orders (Zaccagnini 1983; Radner 2007; Postgate 1987). We need to wonder if the wide-scale mobilization of *ilku* workers impacted the structuring of social relations at any level by affecting the local political economies and household modes of production.

Computer-assisted Network Analysis (NA) could be an effective tool to explore these ties in both the interpersonal and inter-institutional dimensions. Sourcing the data from Prosopography of the Neo-Assyrian Empire, researchers from the CoE ANEE have built a social network that is visible through Gephi (Jauhiainen, Alstola 2022). The first obvious obstacle we face is that the fragmentary nature of the textual sources and archaeological materials at our disposal does not yet enable us to picture the full socio-demographics of one specific Neo-Assyrian building site and to produce a holistic graph that would picture all the social actors involved. We could, however, generate graphs of different building sites and then combine them to produce an ideal type. But, here, we face the second challenge that needs addressing: many people evidenced in the sources still remain invisible in the networks generated. At the moment, the software is programmed only to place as nodes individuals that are mentioned by name. This means that the labour force listed in the texts do not always appear in the networks, which impedes a comprehensive social network analysis of monumental building sites. Generally, we still cannot visualize the individual social actors from the lower strata, their relations of dependency, and the everchanging structuring

of the social contract. This is very problematic if we want to take a more holistic approach to social history. Likewise, social network analysis has been criticized by generations of sociologists, who have argued, for instance, that focusing on interaction makes the structures disappear (Bourdieu 2014: 111-114; Borgatti, Brass, Halgin 2014). The danger then is de-politicizing the social world by turning conflict-ridden social stratifications into friendly networks. Taking these warnings into account, SNA can be programmed to show inter-institutional relations and not just inter-personal ones. Acting on this need, the team of researchers working on the software has integrated the information of people's offices when stated in PNA (Jauhiainen, Alstola 2022). This means that we could theoretically analyse the interactions of institutions in a specific time period but also over the *longue durée*.

SEMANTIC DOMAINS ANALYSIS

In the analysis we carried out for this contribution we were interested in visualizing through network analysis the link between people and building materials, specifically builders and mudbricks, as a concrete example to further our knowledge of labour organization.

When we look for the Akkadian word for mudbrick, *libittu*, in the PMI network we see a clear connection with words that indicate standardized building practices and mathematical arguments (e.g., *nalbanu*/brick mould; *nazbalu*/standardized load; *igigubbû*/constant or coefficient), but also to šitimgallu, the Akkadian word for master builder, indicating the presence of a skilled/specialized workforce at the construction site (Fig. 3).

On the other hand, the fastText graph highlights a direct connection of *libittu* with *labānu*/to make bricks or to spread, *nalbanu*/brick mould, *tupšikku*/brick carrying (basket), *naburru*/battlements or crenellations, *eperu*/earth, *kupû*/canebrake, *igāru*/wall, and *dūru*/city wall, thus stressing more the typology of work, raw sources and final location of mudbricks than the quality of labour (Fig. 4).

In the portal's sidebar, the degree highlights the number of connections the searched word, for example in fig. 3 and 4 *libittu*, has with different words based on the algorithm. The number to the right of each word indicates
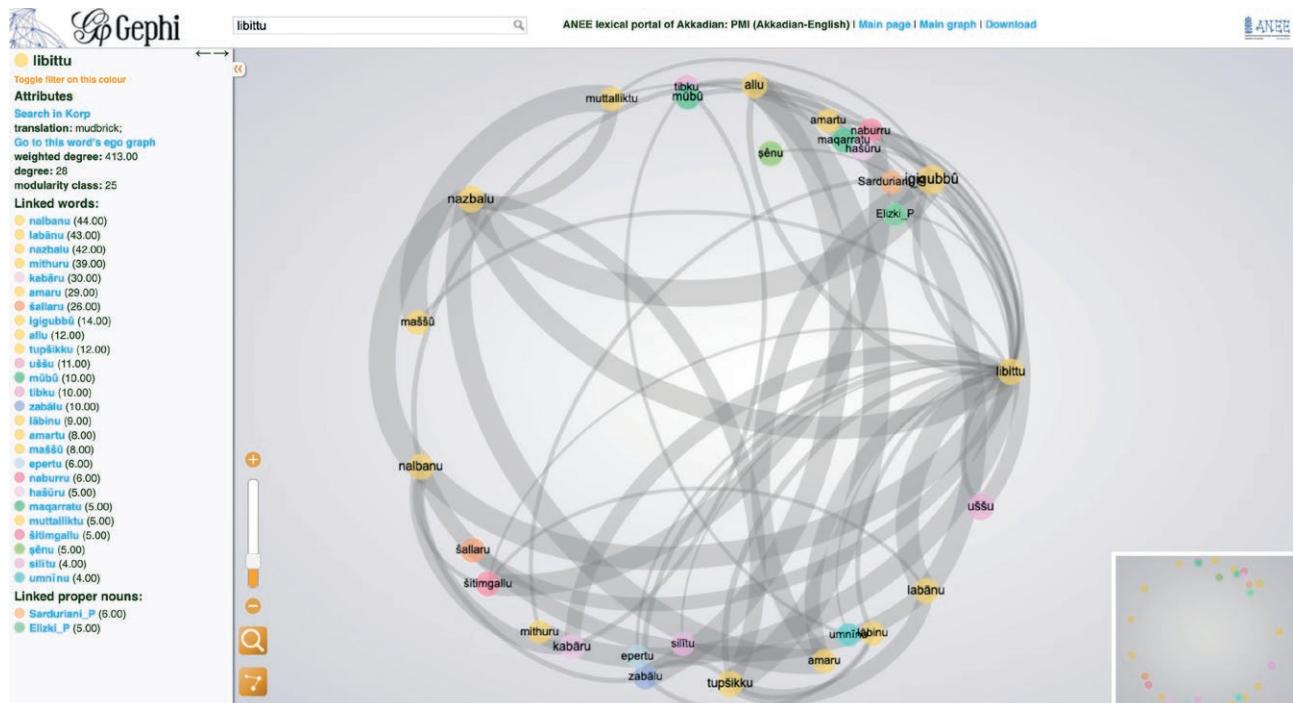
Figure 3. PMI graph of *libittu*.
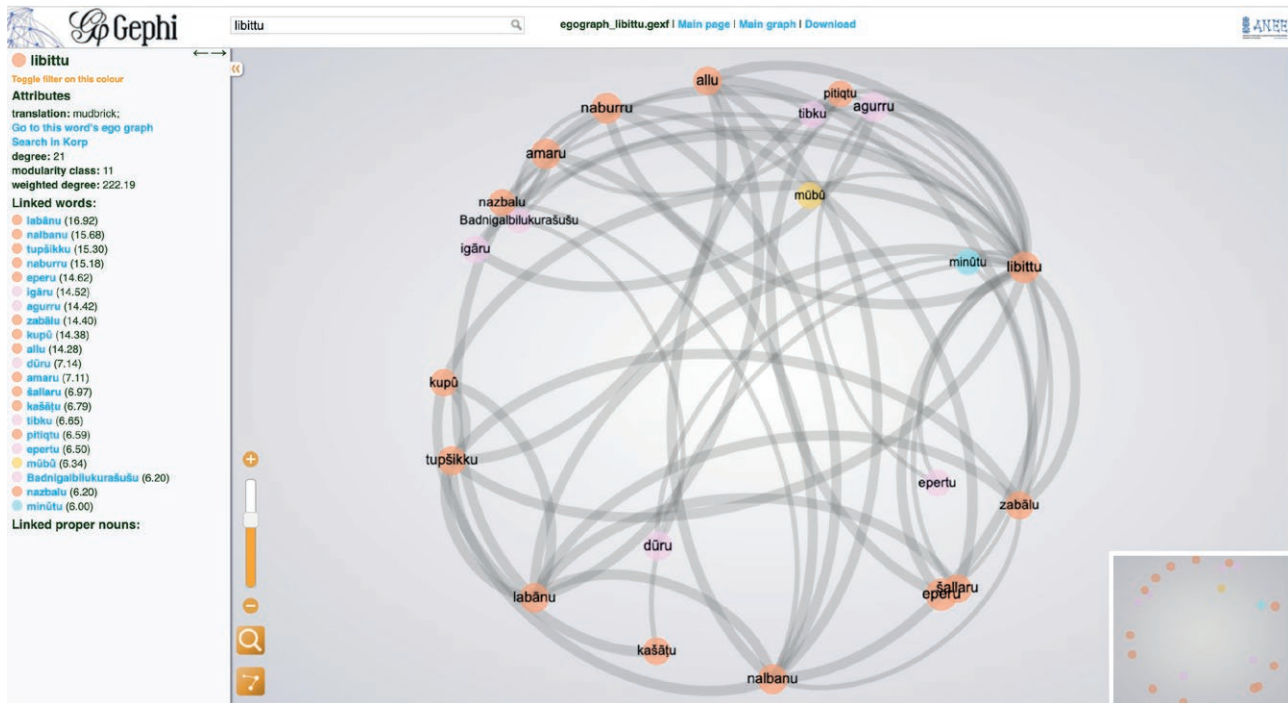
Figure 4. FastText graph of *libittu*.

the strength of the link between the word and the original search word. The PMI network (Fig. 3) highlights the relationship between mudbrick and the nature of labour, while the fastText provides information about raw sources, location and tools of labour.

When we search for the Akkadian word for builder, *itinnu*, the resulting PMI ego graph provides interesting connecting words in which we can detect a strong link to the builder's work and city wall construction (*itinnu-pilku*). The graph also provides the connection between builder and apprentice/junior assistant, *qallu* (Fig. 5).

It is relevant to note the difference that emerged from the search for master builder, *šitimgallu*, in the PMI and fastText graphs (Figs. 6-7). While both graphs highlight a link to *gišhurru*/plans or planning, *naburru*/battlements, and *emqu*/wise one, the PMI graph also provides a clearer connection with *ummiānu*/craftsmanship and mudbrick work (e.g., *nalbanu/ labānu/ libittu*), highlighting how the word šitimgallu/master builder is directly connected with earthen constructions. On the other hand, the fastText ego graph is focused on the behavioural and qualitative characterization of the master builder as an integral part of the construction mechanisms of the empire (e.g., *lēʾû*/skilled; *emqu*/wise, *šūturu*/very great).

In the NA fastText analysis we noticed the strongest links between master builder and *lēʾû* (powerful one/competent) and master builder and *emqu* (wise one), both connections stressed the necessity of empowering the craftsman as part of the state machine and imbued him with adjectives related to power and control. Likewise, in the SNA PMI network there is a strong correlation between master builder and *kakugallūtu* (activity/body of knowledge of the exorcist) that emphasized the religious dimension of earthen construction, specifically when done for the king and the gods. When we explored the link between *libittu* and *tupšikku* in the SNA, we noticed a strong link between this latter and *ilku*, stressing how *ilku* was an integral part of the earthen construction work (Fig. 8).

The fastText *ilku* graph shows all the different domains in which forced labour was used; among those, building sites were one of the most important social spaces (Fig.9).

Likewise, conducting a fastText NA of the world *dullu,* another Akkadian work used for corvée labour, we noticed the direct link between *dullu* and builder; and *dullu* and powerful highlighting not only how the builder's work was linked with hardship, but how central it was to the concept of power itself (Fig.10).
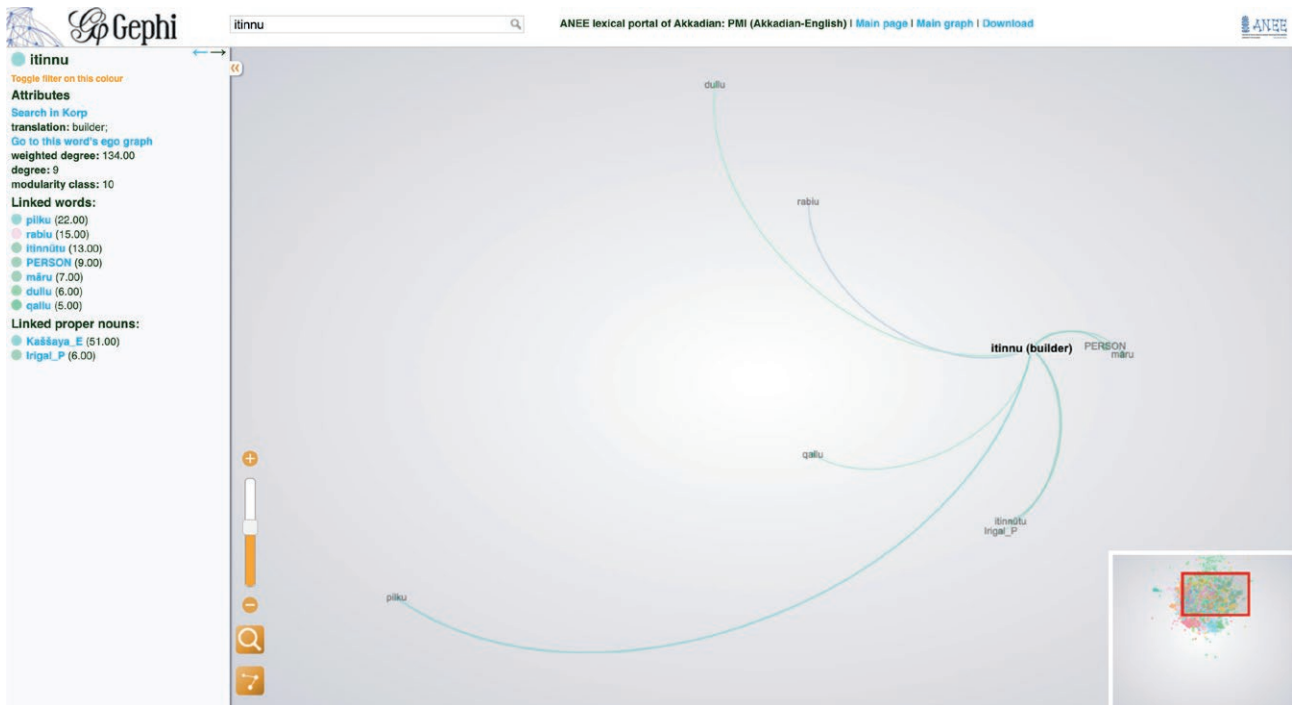
Figure 5. PMI Graph of *itinnu*.
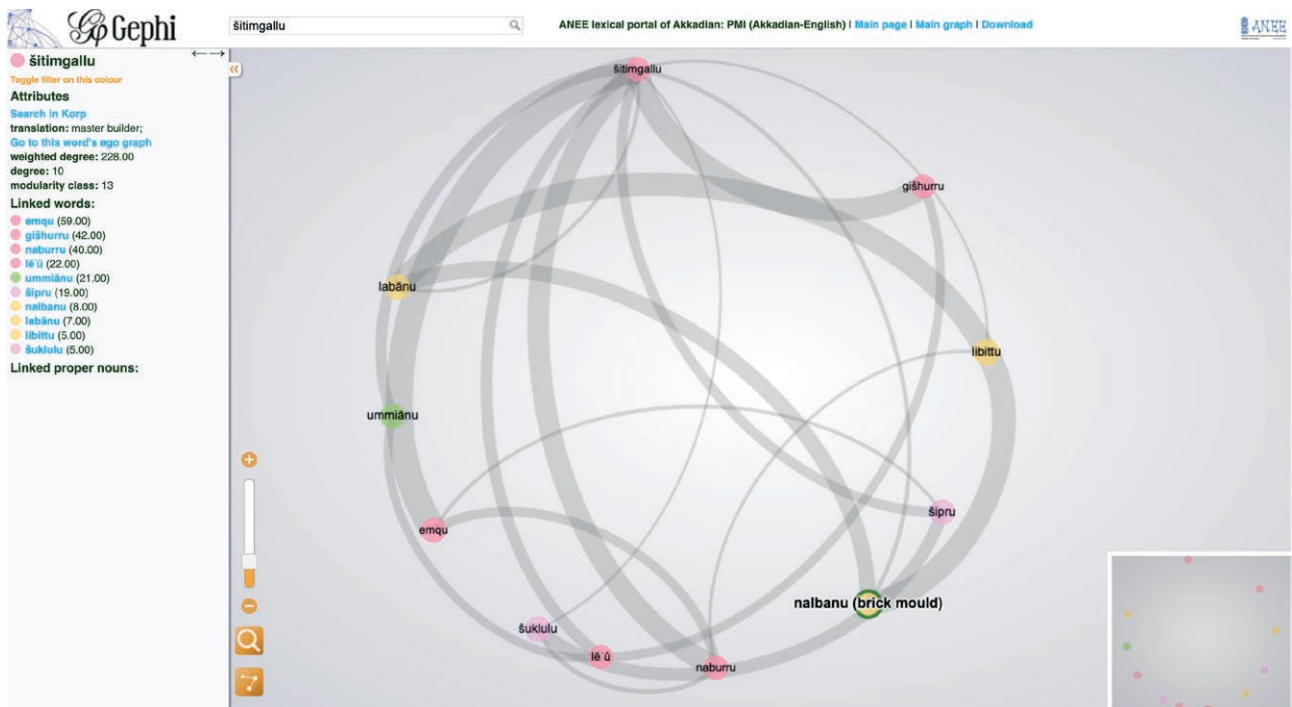
Figure 6. PMI graph of *šitimgallu*.
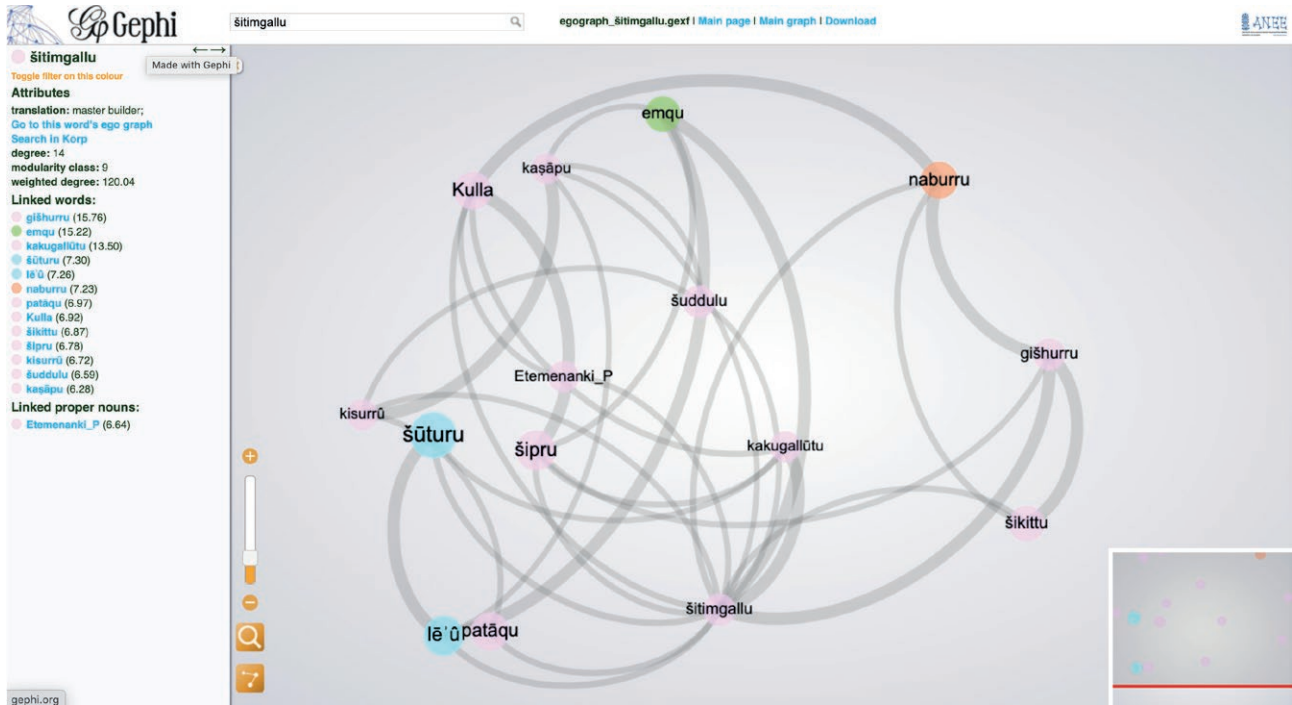
Figure 7. FastText graph of *šitimgallu*.
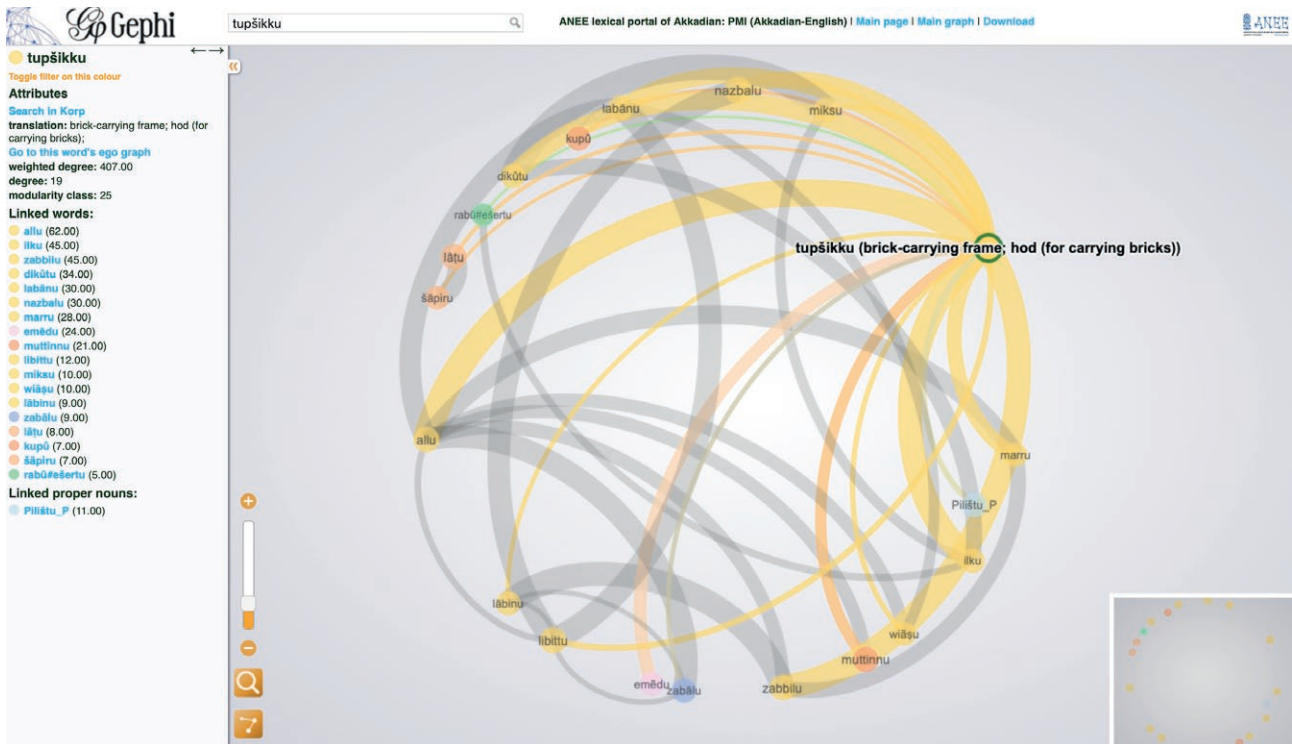
Figure 8. PMI graph of *tupšikku*.
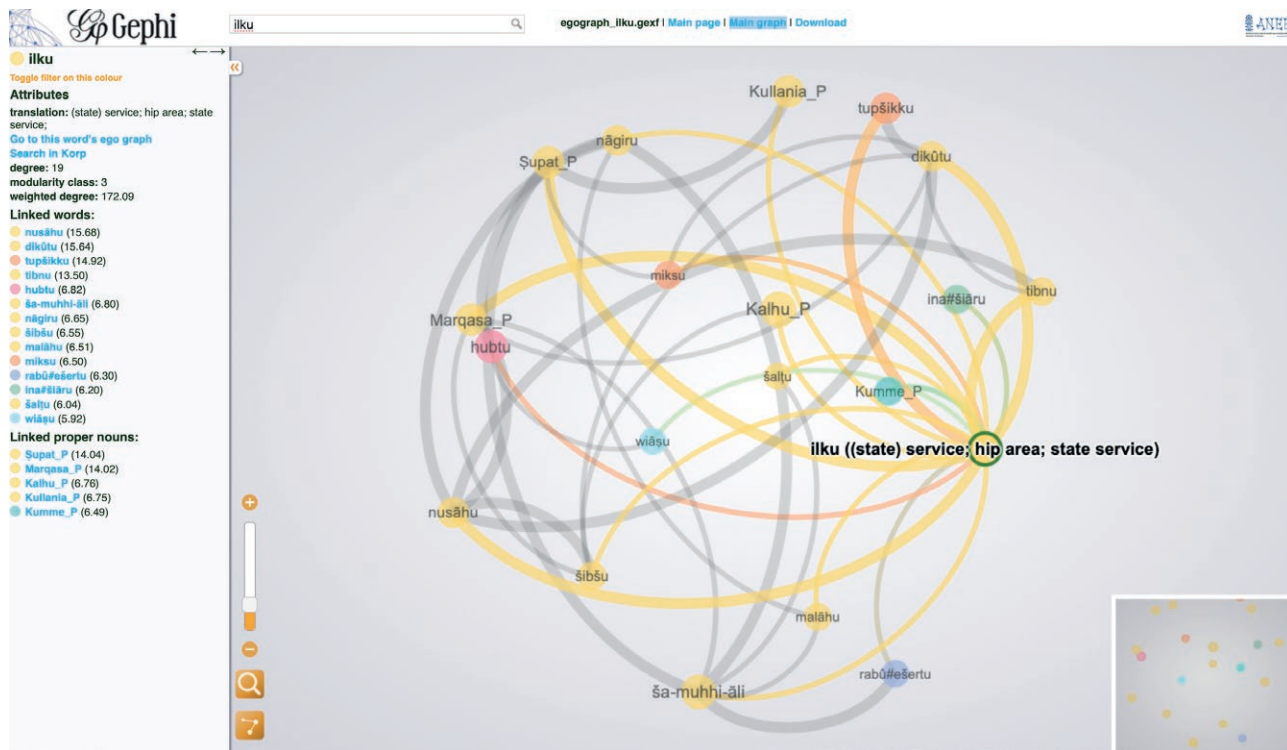
Figure 9. FastText graph of *ilku*.
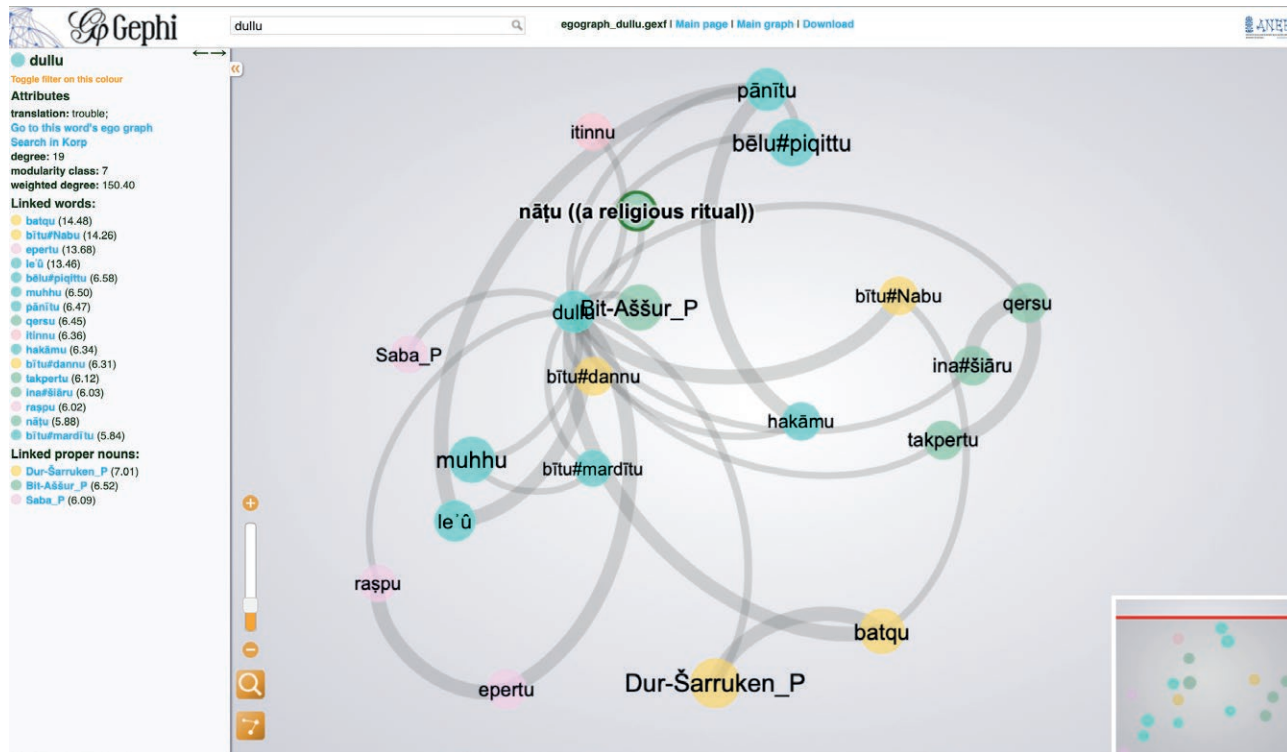
Figure 10. FastText graph of *dullu*.

DISCUSSING IMPERIAL DYNAMICS: A SOCIAL HISTORY FRAMEWORK

Studies in the field of the historical sociology of empires attest that the longevity of their political systems depended on their ability to balance the power of the different social groups. Empires constantly had to fight entropy by making sure their resources did not disappear back into civil society (Eisenstadt 1963; Mann 1984, 1986; Cooper, Stoler 1997). Works of comparative historical sociology showed the great variety of configurations and repertoires mobilized by states and empires to pursue this goal (Skocpol 1979; Burbank, Cooper 2010; Monson *et al.* 2015). Scholars working on different time periods and geographical areas studied the endemic competition raging in the high echelons of society and described them as a fundamental factor of large structural transformations, alongside class conflicts involving the lower strata of the population (Lachmann 1987, 2000; Wallerstein 1974, 1991, 2002).

Research, though, did not just focus on the higher echelons of societies. Thompson's concept of 'moral economy' had a deep impact on the reflection on compliance of individual social actors and groups with political authority (Thompson 1963, 1971). He argued that the 18th-century food riots in England took place not just because people were hungry but also because they considered the high prices of grain fundamentally unfair, a breach of what he termed 'a moral economy'. Scholars researched the dynamics of social movements, grasping when popular discontent leads to organized struggle and when it does not, when that discontent turns to physical force and why (Tilly 1964; Wolf 1969; Migdal 1974; Tilly , Wood 2019). They also clearly showed that resistance to political authority does not necessarily take the form of loud protest and revolutionary effervescence but also – and more often – that of discrete and strategic evasion of the grip of the state (Scott 1977, 1985, 1990, 2017; Wolf 1969). The contemporary studies of empires increasingly take all these different aspects into account, focusing on political systems and networks of power, aspects of the political economy but also of the lived experience of the subjects (Bang, Bayly , Scheidel 2020).

Scholars working on historical bureaucratic societies like the empires of Western Asia, or modern nation states, explain that one of the best ways to grasp their political and social architecture is to look at the fiscal technology that they create and implement. Resource extraction is at once the backbone of any large-scale bureaucratic organization – which cannot exist if it cannot afford to – and the fundamental locus of interaction between state agents (ancient and modern) and lay social agents. Within this line of research, Scheidel (2018) investigates corvée systems in different historical and geographical contexts, with an emphasis on the use of workforces in monumental building projects. Scheidel concludes: '*State formation and public construction have long been closely connected in manifold ways, and that makes it all the more important for historians to understand the strategies that states employed for getting things done*' (Scheidel 2018: 262).

Our research shows that organizing and implementing the work at a building site was far from an easy task. Within the royal household, every single step of the process leads to conflicts of varying intensity. Identifying the workers mobilizable for *ilku* was also highly controversial, mainly because it condensed and replayed conflicts that have to do with group boundaries and status signalling. Even when everybody was complying, logistical challenges were still numerous. Quite surprisingly, given this rather unruly backstage, the state did actually manage to get things done.

Our study also indicates that participation in a building site, or in any other imperially led infrastructural project, meant being part of a project that encompassed the entire social and cosmic topography. The construction projects are commanded by the gods, entrusted to the king and finally carried out by multiple social actors belonging to diverse social groups. The dichotomy between royal inscriptions on the one hand, in which the king is the master builder, and the letters and archaeological data on the other, which indicate that monumental public building was a massive collective endeavour, well represent the complex reality of the Neo-Assyrian construction process. The semantic and lexical domains used to describe the Neo-Assyrian kings are often transferred onto the *šitimgallu*, the craftsman who is organizing and guiding the work on site, and under the authority of whom the labour is carried out. This transfer is highlighted in computer-assisted NA by the link between the node 'master builder' and the node 'powerful one/competent'. This relation underlines that the discursive devices used to justify

political power at large are mobilized to strengthen the authority of the agents who are in a face-to-face interaction with the population who is actually implementing the construction. The mobilization of the workforce needed on a construction site and the actual process of building generated social ties, reaffirmed hierarchies, and consolidated local and supra-local orders and their relation to each other. The construction of a palace is a powerful act by which the imperial administration engineered the social fabric, creating or reaffirming synapsis between state and non-state institutions, sometimes almost from scratch in the case of newly created provinces. It was not only walls and gates that were built, but the whole political society that was (re)built along with them.

In the Neo-Assyrian empire, one counted as Assyrian when paying taxes in the form of goods or labour (RINAP 1, Tiglath-pileser III 05, http://oracc.org/rinap/Q003418/). Membership in the community is open: it does not depend on birth in a specific group, be it social, cultic, or ethnic (Postgate 1992; Machinist 1993; Aubet 2013: 126-158; Karlsson 2013: 178-186). This is not to say of course that Neo-Assyrian society was egalitarian, it just means that membership in the ingroup of Assyrians depended on something that people did and not on something that people were. Membership depended on the participation of individuals in the imperial economy or in one of its infrastructure projects. This idea finds a structural analogy in mythological texts, in which human beings were originally created to relieve the gods from hard work (Lambert 2013). Hence, labour – especially *ilku* – is the original purpose of the existence of human beings and the very condition of their membership in the Neo-Assyrian society. In this outlook, there is something fundamentally economic about the Neo-Assyrian, and generally Mesopotamian, social contract in both its supernatural and secular formulations. This statement is not new in itself. Founding arguments about imperial power in ancient Western Asian societies were grounded in an analysis of their political economy: Marx's statement in *das Kapital* about the 'asiatic mode of production', Wittfogel's 'hydraulic hypothesis' that conceptualized irrigation needs in agricultural production as the basis of the state's power over the population (Wittfogel 1957), and Deimel's Temple-State theory (Falkenstein 1954; Foster 1981; Silver 1983; Aubet 2013: 120-126). However, as stressed previously, recent Assyriological research has shown that the grip of the state might not have been so all-encompassing; it has become important to rethink the terms of these wide-scale infrastructural projects (Postgate 1992; Aubet 2013: 126-158).

Political power is fragile because it ultimately relies on the consent of the people. Being that the people are more numerous than the minority that govern them, power and privileges are not shared equally in societies. Why, then, does the majority comply with political domination and, when applicable, with having resources extracted from them in the form of taxes and labour? Is it simply because they are afraid of sanctions and punishment? Scholars have suggested a more complex explanation and insisted that there is always a symbolic dimension to political domination, stressing that 'the most brutal relations of force are always simultaneously symbolic relations' (Bourdieu 1994: 12). We have already mentioned Thompson's 'moral economy,' but more needs to be said here about the ways in which compliance is induced. The sociologist Max Weber, in his efforts to understand the relationship between religious and economic phenomena, insisted that we need to look at how the higher echelons of society justify the social order and their grip on power. They need to explain – to themselves and to those they ruled – why exactly it is that they find themselves at the top of the social scale (Weber 1978 [1922], 1981 [1923]). Picking up Weber's work, the sociologist Pierre Bourdieu added that the 'theodicies' are always 'sociodicies' (Bourdieu 1971: 312).

Bourdieu's earliest work on how state institutions favour the reproduction of social elites in France (Bourdieu and Passeron 1964; Passeron and Bourdieu 1970, Bourdieu 1989), coupled with his theoretical reflection on the concept of 'fields' and 'habitus' (Bourdieu 1972, 1979), ultimately led him to look at the state itself as a sociological object in his *cours au collège de France* given between 1989 and 1992 (collected in Bourdieu 2012). The culmination of this effort can be seen in the article 'Rethinking the State' (Bourdieu 1994), in which Bourdieu gives the following advice:

> In order to understand the power of the state in its full specificity, i.e., the particular symbolic efficacy it wields, one must (...) integrate into one and the same explanatory model intellectual traditions customarily perceived as incompatible. It is necessary first, to overcome the opposition between a physicalist vision of the social world that conceives of social relations as relations of physical force and a 'cybernetic' or semiological vision which portrays them as relations of symbolic force, as relations of mean-

ing or relations of communication. The most brutal relations of force are always simultaneously symbolic relations. And acts of submission and obedience are cognitive acts which as such involve cognitive structures, forms of categories of perception, principles of vision and division. (Bourdieu 1994: 12-13)

Bourdieu's particularity *vis-à-vis* Marxist approaches is that he conceived these cognitive structures not as forms of consciousness that could be 'false' or 'awoken', or as ideologies that consist just of 'representations' but as dispositions of the body, 'deep profound corporeal dispositions' (Bourdieu 1994: 14). He argued that:

Submission to the established order is the product of the agreement between, on the one hand, the cognitive structures inscribed in bodies by both collective history (phylogenesis) and individual history (ontogenesis) and, on the other, the objective structures of the world to which these cognitive structures are applied. (...) The state does not necessarily have to give orders or to exercise physical coercion in order to produce an ordered social world, as long as it is capable of producing embodied cognitive structures that accord with objective structures and thus of ensuring the belief of which Hume spoke – namely, doxic submission to the established order. (Bourdieu 1994: 14-15)

Historians could object that the state that Bourdieu is talking about has nothing to do with ancient Western Asian polities. And this may be true. Bourdieu's original starting point was the French state. He did gradually adopt a more historical approach, reading and commenting on the works of the historical sociologists mentioned above, going back in time and using a variety of materials to build his theories. Bourdieu did not look at Assyriological material, which we consider a shame as a Mesopotamian detour would have greatly enriched his work and hence social theory in general. Ancient Western Asian societies did not have the same political tools and symbolic devices to create embodied cognitive structures: they had no wide-scale public education system that could spread ideas on a shared identity to all corners of the empire. They had multi-layered political structures, different non-state/city-state institutions that exercised coercion and law making (Liverani 1979; Lamberg-Karlovsky 2000: 14-21; Schloen 2001; Barjamovic 2004, Van de Mieroop 2015), and they could not mobilize a pre-defined culture as the basis of an identity that could create a powerful emotional bond between individuals and the public administration. Following this reasoning one can ask: how exactly would the Neo-Assyrian state produce these embodied cognitive structures? By engaging the population in frequent building and renovation work.

The construction sites allowed individual social actors, such as corvée workers, to create an individual history – Bourdieu's 'ontogenesis' – aligned with a collective history – Bourdieu's 'phylogenesis' – in projects that were designed to insure the very reproduction of the objective social and political structures of the empire.

Interestingly enough, even non-compliance with *ilku* duties could ultimately be framed as a normal or logical state of affairs in the theodicy and sociodicy of the Neo-Assyrian Empire. We mentioned earlier that the other Akkadian word used in contexts of corvée labour, *dullu*, also means hardship, a word that was also connected to the concept of power. Assyrian subjects were hardly the first ones trying to escape *ilku* duty; long before, as narrated in the Old Babylonian *Atrahasis*, a group of gods known as the Igigi resented the corvée duties imposed on them by higher gods (Lambert , Millard 1969). They cursed, complained, debated, seemingly gathered weapons and took their claims to their Chamberlain, the god Enlil. The decision is taken to relieve the Igigi from their work, and to transfer the *ilku* onto a new player in the game, the human being, created from clay mixed with the blood of one of the rebellious gods. We can agree that that was a surprising choice of ingredients if one was looking for a docile labour force. Elements of *Atrahasis* were integrated into *Enuma Elish*, the creation myth that was central in the Neo-Assyrian period, often copied down but also adapted to the Assyrian pantheon (Lambert 2013). This interesting story gave a powerful framework to make sense of the constant resistance of all human beings – from all social backgrounds – to authority and political domination. Then, even when social agents are rebelling against the *ilku* duties imposed on them by the ruling authority, they are still replaying and conforming to a wider cosmic narrative. One could say here that they are aligning an ontogenesis, a rebellious personal history, with a phylogenesis, a rebellious collective mytho-history.

Building sites were clearly not the only tool mobilized by the state to craft these embodied cognitive structures. Conscription of large strata of the population and their cyclical mobilization in military operations, and wide scale

agrarian policies were part of the same effort. Whilst the present paper focused on construction sites, we believe that only the study of the ways in which these multiple strategies overlapped and intersected in the lives of ordinary social actors can allow a deep understanding of how the state was perceived, viewed from below.

CONCLUSIONS

The Neo-Assyrian state wilfully employed the symbolic and regenerative nature of architecture as one of the *loci* to strengthen the sociodicy of the empire by mixing different social categories in construction and reconstruction activities. This brief exploration through network analysis has shown that the social relations formed at building sites and their symbolic dimensions are a heuristic way to understand not just how walls were constructed, but how – and more importantly – the entire political society was built and periodically renovated. But state policies do not operate in a void.

If we intend to rethink the grip of the Neo-Assyrian state, we must be ready to conceive that some social dynamics are not its creations *per se*. We need to understand the dynamics of the local political economies of the countryside to be able to grasp exactly what the state was leaning on and what it was pushing back against. To pursue this goal, more studies are needed on the lower echelons of Neo-Assyrian society and their relation to the social groups around them. There is enough textual information and archaeological data to sketch the social structures of the Neo-Assyrian countryside and to grasp the sociological aspects of its 'signature landscape' (Wilkinson 2003; Ur 2017). Practically, this means devoting more attention to the *qinni*, to the different levels of the *bētū*, to the *nasiku*, to the small farmed demesnes, to the villages and their managers, and to the place of lower-echelon social actors in the large estates. State-led interventions in the economy had very concrete effects on the different social groups and likewise non-state asymmetrical dynamics between social groups had profound effects on the state: debt cancellations subtracted workforce from higher social groups and high levels of dependency subtracted workforce from the state.

The infrastructural projects that the state was constantly carrying out meant that it needed a large number of *ilku* workers, and this in turn suggests that it had to push against the endemic dynamic of exploitation and rural usury, making sure that the majority of the land did not belong to only a few individuals – including of course its own agents. Building sites can be seen as equilibrating tools: they reinforced the state's relation with individuals and the different groups they belonged to, they reaffirmed the social boundaries between social actors, but they also kept the entire social fabric in balance. Computer-assisted SNA can help visualize and understand how imperial dynamics impact social groups and their identity, but we need to make sure that these different social actors and their groups actually appear in the networks that we are generating. We need to place the *ilku* labourers, the deportees, and the slaves as nodes of the network. And we must be able to visualize and investigate not just interpersonal interactions, but inter-institutional ones. It is only by aligning our sets of tools with our theoretical ambitions that we may be able to translate into concrete practices our humble wishes of giving a voice to the lower strata of the Neo-Assyrian society, those who were, for all practical purposes, the Empire-builders.

This contribution shows that answering questions regarding Neo-Assyrian political governance and compliance requires the collaboration of scholars in multiple fields. Computer-assisted linguistic studies and network analysis are very promising, but they do add a layer of possible incomprehension between scholars because they introduce a new terminology altogether (i.e., 'degree', 'ego graph', 'nodes', 'strong ties and weak ties', 'core', 'periphery') and because the graphic visualizations are generated according to an algorithm, which often works in a way that only few scholars understand. Generating a graph in Gephi is easy, it is a click of a mouse. What is not easy is to comprehend exactly what you are looking at and what its significance is. This is why an interdisciplinary approach in which Assyriologists, archaeologists, computer scientists and social theorists work together to fine tune these tools and shed light on the results is needed. When we have a network that shows us a more representative panel of ancient social actors, linked to the different institutions and social groups they belong to, localized spatially, and with their connection to the material culture established, we will be able to better grasp ancient Western Asian societies in their sociological, economic, religious and political dimensions.

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Cooking in Iron Age Alalakh: Change and Continuity in Vessels' Functional Role[1]

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Abstract. The site of Alalakh is located in the modern province of Hatay, southern Turkey. The recent discovery of Iron Age levels at the site offered the perfect opportunity to shed new light on the Iron Age I and the beginning of the Iron Age II (12th-9th century BC). This paper will focus on the analysis of cooking vessels retrieved from the Iron Age levels of the site. Studies on cooking and food preparation activities represent a long-standing *lacuna* in the archaeology of the Ancient Near East. The analysis of cooking vessels' typology and function can offer a deep understanding of social habits and cultural behaviours and add new data towards the interpretations of the Iron Age in the site and in the Northern Levant.

Keywords. Iron Age, Northern Levant, Cooking, Pottery, Archaeology.

INTRODUCTION

Now more than ever before, studies on cooking and food preparation are fashionable. Since the last 50 years food and human activities related to it are increasingly appearing in the archaeological literature (Karageorghis, Kouka 2011; Graff, Rodríguez-Alegria 2012; Graff 2018; Mee, Renard 2007; Spataro, Villing 2015; Hruby, Trusty 2017; Ivanova *et al.* 2018; Steel 2016; Lymperaki *et al.* 2016; Killebrew 1999; Ben-Shlomo *et al.* 2008). Food is fundamental to human survival and activities related to food are part of our daily practice. Therefore, daily-use ceramic wares (cooking wares) are unique tools to investigate social and political aspects of the past and can offer a deep understanding of social and cultural processes.

This study aims to examine the temporal changes of the Iron Age cooking vessels from the site of Alalakh, located in the modern province

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of Hatay, southern Turkey. The starting point of this research is the examination of the Iron Age cooking vessels from two perspectives: typological and functional. The background for these changes is then discussed with special emphasis on the relation between food and social practice to understand ancient daily life and economy. Cooking vessels as containers used for the preparation of food could be a rich source of information on cooking practices. Apart from providing information on the actual food cooked in the pots through the analysis of organic remains, their shape provides a useful indicator of the techniques used for its preparation and it may be related with the kind of food cooked in them, while their size provides information over the number of people sharing the food in the relevant social context (Lis 2008; Lymperaki *et al.* 2016).

FOOD AND SOCIAL PRACTICE

Archaeologists have long been aware of the importance and significance of food and consequently they approached the subject in different ways (Dietler, Hayden 2010). In particular, recent studies focused on the understanding of foodways and cuisine as well as character and development of past cooking practices and cultural interactions. Archaeological studies have focused on the material culture of food, as well as with the substances consumed. Scientific analysis on archaeobotanical and faunal remains were conducted in order to identify the ancient diet and the physicality of food. However, to understand the materiality of food and therefore the cultural habits and social behaviours linked with food consumption, it is necessary to better analyse the cooking vessel's functional role. This article focuses on the materiality of foodways, i.e. the cooking pots, and interrogates how these vessels shaped people's lives and how changes in cooking pots' morphology may reflect changes in social practices through the Iron Age at Alalakh.

Cooking pots are one of the most easily identified groups of utilitarian pots in any ceramic assemblage and they are unique tools for investigating social and political aspects of the past as well as understanding complex social and cultural process behind historical change. The analysis of cooking vessels is strictly connected with the analysis of foodways and any change visible in cooking vessel's morphology and function might help in identifying the relationship between food and social practice as their morphology can reflect modifications in diet or recipes that can be connected to changes within the society. Archaeologists, however, find difficult to deal with social practices, as they can only be inferred by the analysis of the remains of daily life (Steel 2016). Engaging with the materiality of pottery, in particular with the cooking vessels, and considering what can be interpreted about changes in social practices allow the archaeologists to assume information on daily life and economy of ancient people. One of archaeology's contributions to the study of food and foodways is the analysis of the objects used to produce and consume food. These objects can be considered as mediators between food and social body, and they can reveal information related to their possible functions and connected practices (Stockhammer *et al.* 2018).

For instance, the typology of the base can provide information on the type of installation used for cooking: a ring or flat base means that the pot was placed next to the fire; a rounded base suggests that the cooking pot was placed on the fire pit or directly on top of the circular oven. Furthermore, the presence or absence of handles and the typology of rim may also provide information regarding the manipulability of the vessel. In addition to this, information on rim size and vessel's capacity may point to a larger or smaller quantity of people involved and therefore provide information about household size and meal preparation (Montesanto 2020b).

Therefore, changes in cooking vessel's function, recipes and ways of cooking could reflect social changes, while changes in cooking vessel's morphology and technology may detect information on ancient daily life and economy and, as a consequence, helping in interpreting ancient cuisine and cultural habits. Functional traits tend to change over time at gradual rates in the way. They are introduced, drift, adopted and spread through populations and eventually replaced. As utilitarian items, cooking vessels should therefore be analysed according to their functional characteristics to get a better idea of behavioural processes through time (Galaty 2017).
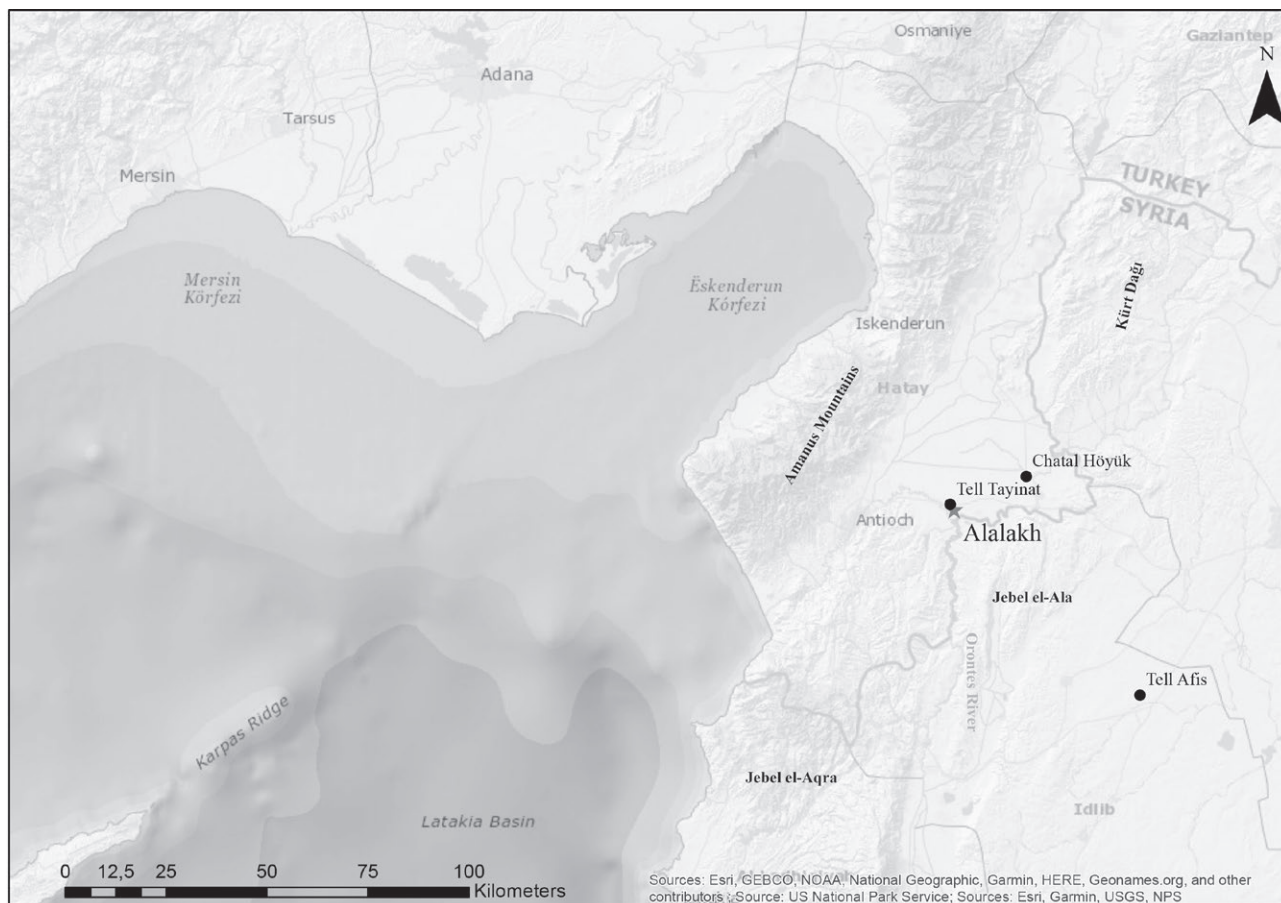
Fig. 1: Map location of Alalakh and other sites mentioned in the text.

ALALAKH IN THE IRON AGE

The site of Alalakh is located in the Amuq region, in southern Turkey (Fig. 1). The Amuq is a triangular valley, positioned in the Hatay region, enclosed by mountains (the Amanus or Nur Dağları to the north, the Kürt Dağı to the east and the Jebel el-Aqra or Kel Dağı, Jebel el-Ala and Jebel Siman to the south) and is crossed by three main rivers: the Orontes flowing north from Syria, the Afrin entering the valley from south-east, and the Kara Su from the north. The Amuq region was never the seat of powerful polities but of relatively small sized kingdoms, from Mukish to Unqi to Antioch (Yener 2005). Archaeological research focused towards the Amuq with the Oriental Institute of Chicago's surveys and excavations (Braidwood 1937; Yener 2005) and with excavations in Alalakh (Woolley 1955; Yener 2010; Yener 2013). In the Iron Age, the Amuq region was the seat of the Syro-Hittite kingdom of Unqi (Bryce 2012) whose capital city was located on the site of Tell Tayinat (Harrison 2009; Harrison, Osborne 2012). Recent research on the site of Alalakh yielded a series of well stratified Iron Age deposits. Until recently, it was thought that Alalakh occupation ended in the final stages of the Late Bronze Age (13th century BC), however, new evidence suggests a prolonged period of occupation until the 9th century BC. In particular, excavations in square 42.10 (Fig. 2) revealed a total of three occupational phases (local phases 1-3) dated to the Iron Age I-beginning of the Iron Age II (mid-12th century BC-9th century BC). The square is located in Area 1, to the south-east of the so-called "temple area" first excavated by Woolley (Woolley 1955: 89-90; Montesanto, Pucci 2019; Yener *et al.* 2020, Fig. 2).

The occupational phase dated to the Iron Age begins with phase 3 (Fig. 3). This phase has been divided into two sub-phases (a and b) because of the identification of two floors and of the disappearance and appearance of
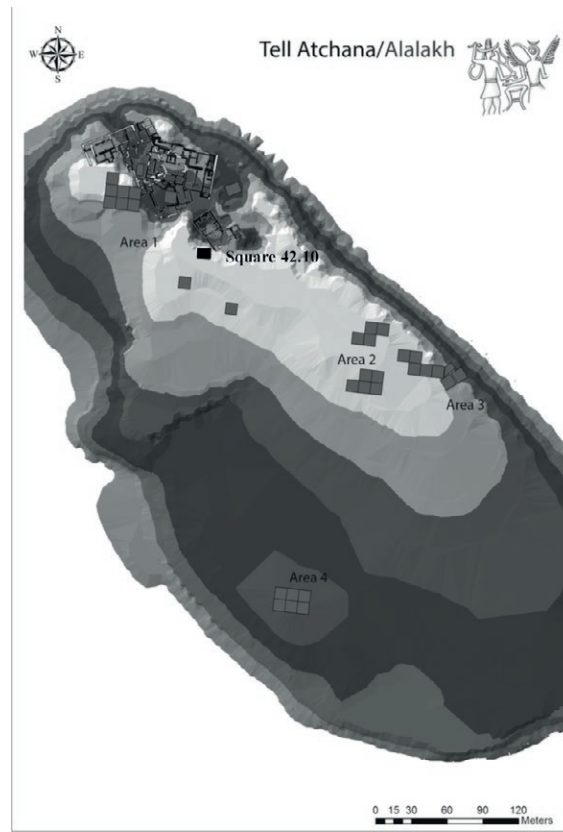
Fig. 2: Location of square 42.10.

new features while the general plan did not change. The deposition between the floors is about 15 cm. Phase 3b is placed directly on top of phase 4a, dated to the Late Bronze Age II (Yener *et al.* 2014; Yener 2017; Montesanto, Pucci 2019; Yener *et al.* 2020; Montesanto 2020a) and is the first occupational phase to be recorded after the 14th or 13th century BC and it can be dated to the mid-12th century BC because of the presence, *in situ*, of shapes such as the pilgrim flask, the truncated cup and the fusiform jar generally dated to the 14th and 13th centuries BC (Horowitz 2015; 2020), and because of the recovery of a painted sherd inspired by the Aegean LH IIIC Middle Developed style (Koehl 2017: Fig 18.1, 7). This phase 3b consists of an open area with the upper face of the threshold stone of phase 4 reused on a clay floor (Locus 24). Here a pyrotechnical installation (Locus 23) has been identified consisting of an elliptic pit with a stone at the bottom and located in the south-western part of the square. This installation can be interpreted as a circular oven. The surface near this installation is irregular and a shallow pit with partially disarticulated bones of a small sized bovid and a dog was identified. The floor yielded some *in situ* objects such as pottery, a grinding stone, hand-stones, beads, earrings, pendant, pins, a metal beer strainer, a ceramic hob, a tripod base of a stone vessel with traces of burnings, and a pivot stone, suggesting it was an area dedicated to daily life or domestic activities such as the processing and the preparation of food.

The main architectural feature identified in phase 3a is a curvilinear structure (Locus 18) lying on the floor (Locus 16) that runs in a north-south direction and divides the area in two. The structure consists of mud bricks fragments and stones kept together by a mixture of fragments of pottery and bones put together. The structure is preserved for a height of about 30 cm considering the absence of mortar and the building material, it has a thickness that varies from 20 to 40 cm. The structure could be possibly interpreted as an installation separating the square into two areas rather than a proper wall. The ceramic material in the fill above the floor is very abundant and only few *in situ* objects were found such as a burnt cookpot (Fig. 6.n), beads, needles, rings, grinding stones,
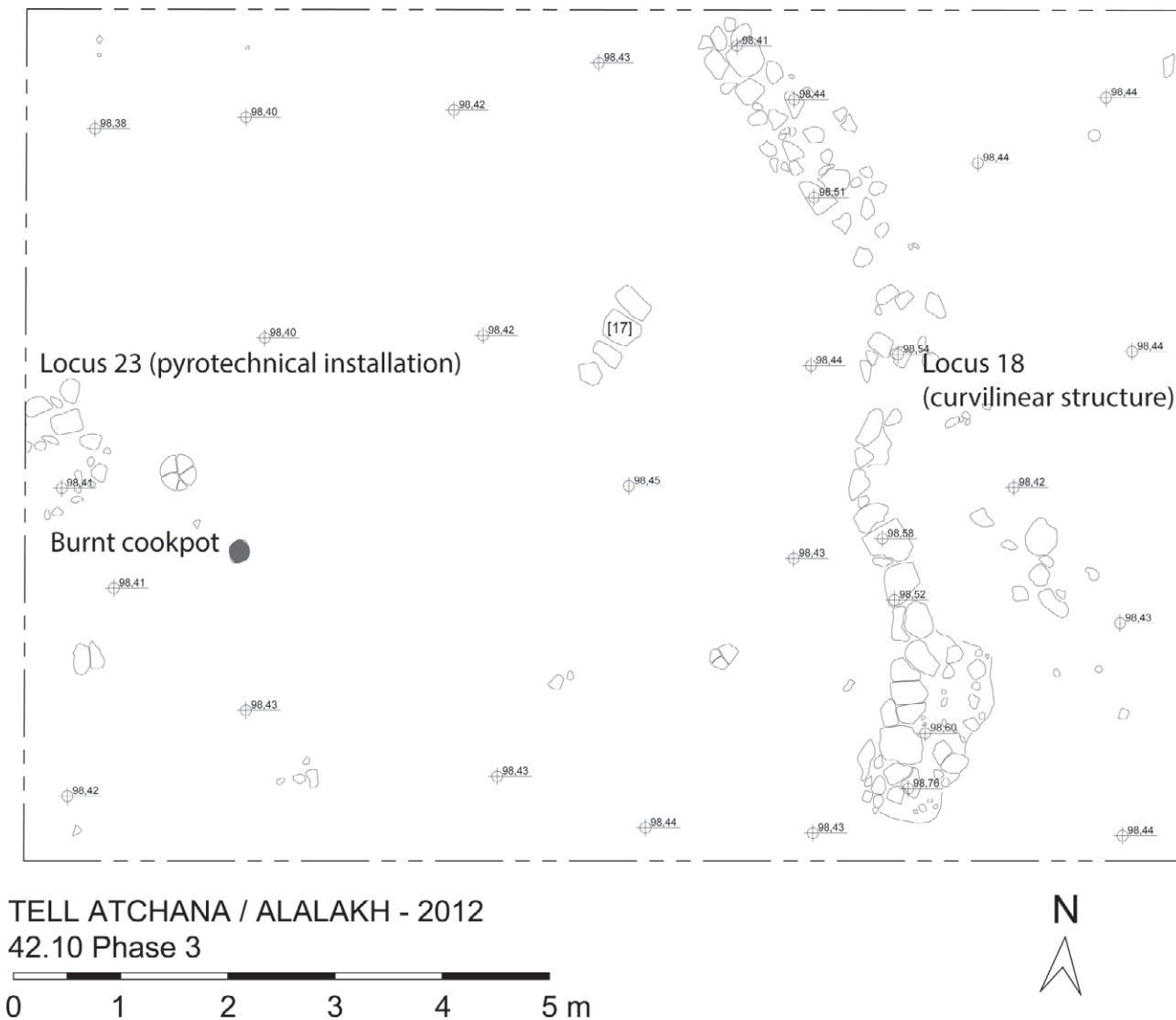
Fig. 3: Plan of square 42.10 Phase 3. Drawing courtesy of the Alalakh excavations project.

fragment of basins, fragments of an ivory plaque, a palette, miniature wheels and a lid. Pottery retrieved from Phase 3 includes a total of 722 identified rim sherds of which 44 (6.09%) are cooking pots. The pottery assemblage consists of a majority of eating and drinking shapes (namely plates and bowls), few craters and very few storage vessels. Objects retrieved from this phase includes personal items such as beads, pendants and rings, six hand-stones, one grinding slab and four ceramic basins.

Phase 2 can be securely dated to the Iron Age I because it is stratigraphically located on top of phase 3a. Furthermore, the presence of two floors and of few installations, without any change in the general plan, allows the distinction of phase 2 into two sub-phases (a and b, see Fig. 4). The deposit between the two floors is of about 20 cm and it represents the continuous use of the open area. A small patch of stones (Locus 15) has been retrieved in the western part of the area and the remains of the curvilinear feature are still visible on the surface of this phase. A few objects have been retrieved, mainly beads and roundels.

Phase 2a is again an open area with almost no architecture. The floor belonging to this area is more regular if compared to the previous one. On top of the older curvilinear structure (Locus 18) a row of stones indicates
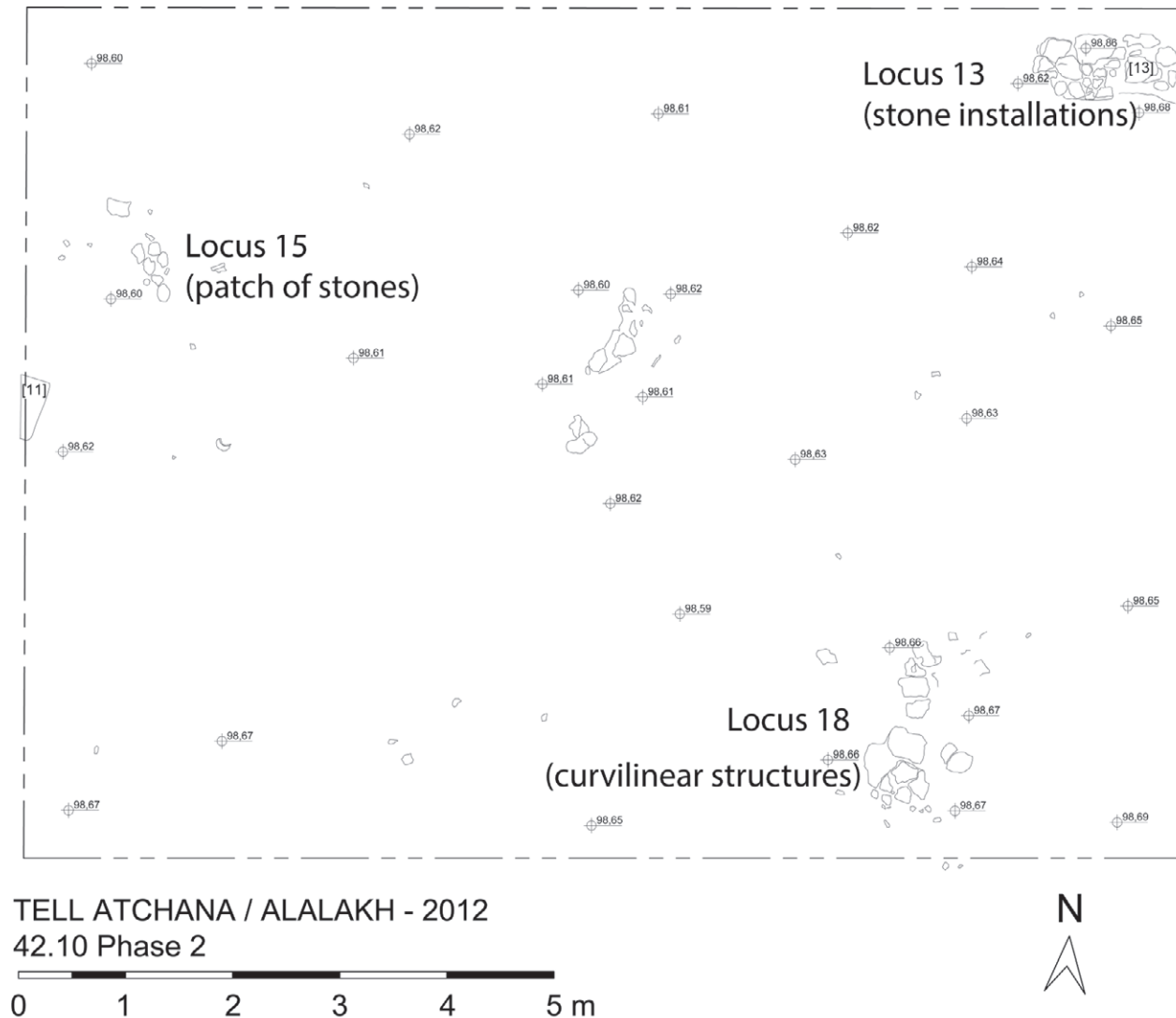
Fig. 4: Plan of square 42.10 Phase 2. Drawing courtesy of the Alalakh excavations project.

that the area was still separated into two parts (Locus 15), while a stone installation (Locus 13), which was probably built as a limited floor for specific activities, was built on the north-eastern part of the square. Few objects have been retrieved from this phase: a fragment of basin, a hand-stone, a mortar and two stone maces. Pottery retrieved from Phase 2 includes a total of 758 identified rim sherds of which 87 (11,4%) are cooking pots. The pottery assemblage consists of a majority of shapes related to eating and drinking functions such as plates, bowls, craters, small and medium-sized jars, and very few storage vessels. Objects retrieved from this phase includes personal items such as beads, pendants, rings, a mortar, one hand-stone and a ceramic basin.

Phase 1 was probably an open area consisting of a floor and few installations related to it (see Fig. 5). Loci 8 and 10 are rounded stone structures, where the central stone is flat and deeper suggesting the use of it as support for a vessel, possibly they were potsherds hearths. A large storage jar was found smashed into pieces not far from one of the installations (Locus 10). Several other flat stones (Loci 6, 7 and 9) were found located in the western part of the area and next to grinding stones, grinders and grinding slabs as well as quern-stones, basins, hand-stones, mortars and an axe. This is the last phase of occupation of the square and possibly representing the last

Fig. 5: Plan of square 42.10 Phase 1. Drawing courtesy of the Alalakh excavations project.

phase of occupation of the entire site as it lays immediately underneath the topsoil. This phase of occupation is dated to the 9th century BC because of the finding of pottery shapes that can be compared to the assemblages dated to the Iron Age II of sites such as Tell Afis (Mazzoni 2014: fig. 20.14), Tell Mastuma (Egami *et al.* 1988-1989: fig. 11.6) and Tell Tayinat (Osborne 2011: pl. 4.1). Pottery retrieved from Phase 1 includes a total of 393 identified rim sherds of which 42 (10,68%) are cooking pots. The pottery assemblage consists of a majority of plates, bowls, few craters, jars and very few storage vessels. Objects retrieved from this phase includes personal items such as beads, pendants and rings, seven hand-stones, four grinding slabs, three querns, one mortar and a basin.

The finding of objects such as grinding slabs, querns, hand-stones, mortars and basins, related to the processing of foodstuff and the presence of vessels linked to the processing (cooking pots), and eating (plates and bowls) of food support the idea that the square was an area linked with food preparation and consumption (Montesanto, Pucci 2019; Pucci 2020; Montesanto 2020a).

COOKING POTS TYPOLOGY

The Iron Age cooking pot from Alalakh is a well-known type within the pottery assemblage of nearby sites. It is similar to other cooking pots found in other sites of the Amuq region such as Tell Tayinat (Ünlü 2017: Fig. 7;
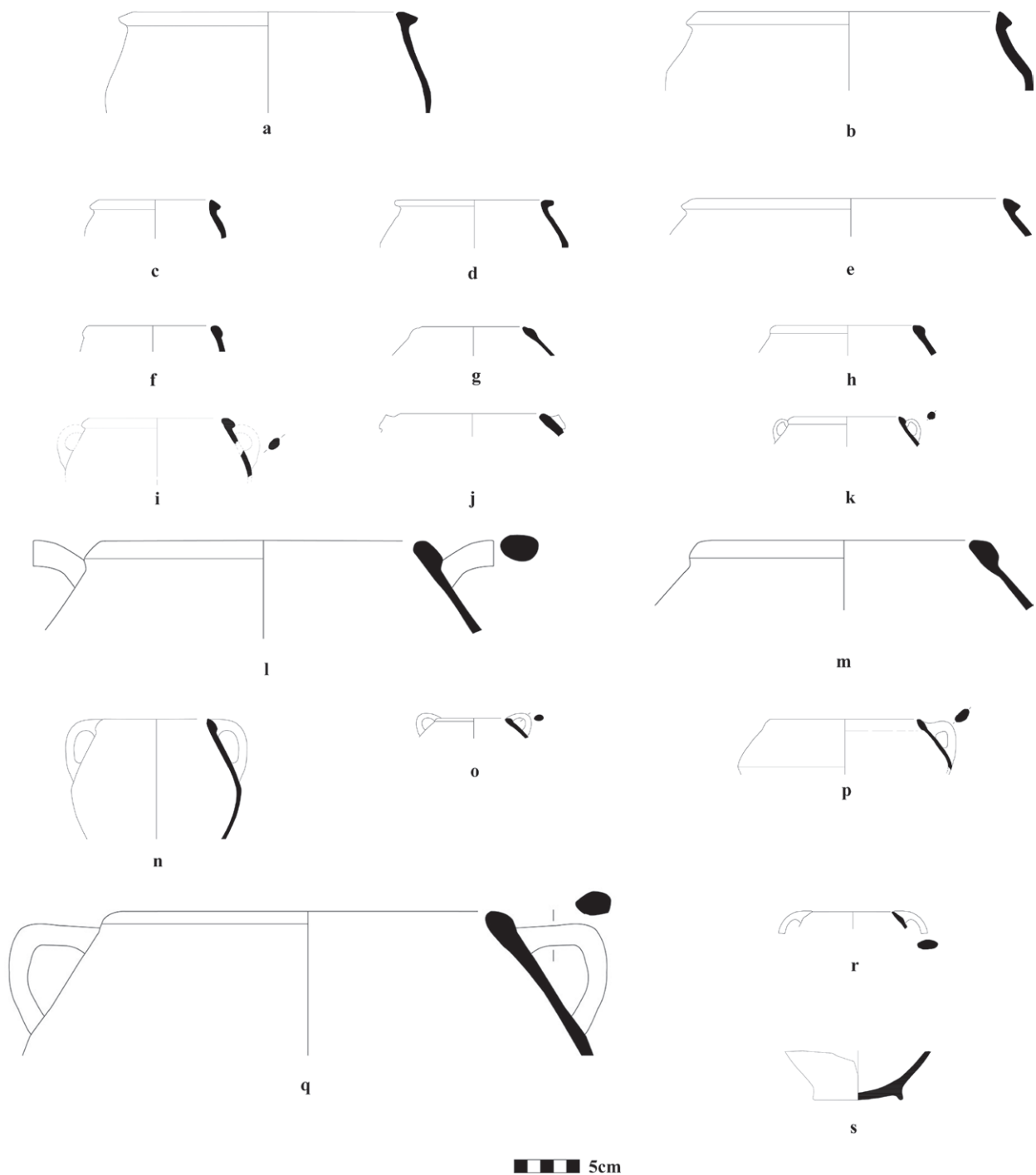
Fig. 6: Cooking pots from square 42.10. a-e) Broad cooking pot; f-r) Hole-mouthed cooking pot; s) ring base. Drawings courtesy of the Alalakh excavations project.

Fig. 7: Hole-mouthed cooking pot.

Fig. 8: Shell ware fabric.

Welton *et al.* 2019: Fig. 18) and Chatal Höyük (Pucci 2013: fig. 2.17, 15; Pucci 2019a fig. 50) and of Northern Syria (Venturi 2007: 264-266; Venturi 2010: figs 9.7-12, 12.1-5; 2020: 65, 73).

Iron Age cooking pots at Alalakh are produced in what is called "shell ware" (Fig. 8). Shell ware is a highly plastic material with hardly any grit or sand that gives to the pot a characteristic peachy-brownish colour. The fabric is heavily tempered with shells. Experimental work done in Alalakh (Morrison, Horowitz 2016) demonstrates that a huge amount of shell is needed in order to create the shell ware fabric, possibly the same amount in weight as of the clay used. The adding of a large amount of tempered material increases the thermal shock resistance (Müller *et al.* 2014: 269). The primary component of shell is calcium carbonate and the inclusion of calcite elements to clay pastes reduces the shrinkage during drying and increases thermal shock resistance during firing and use (Rice 1987: 97-98; Rye 1976). The shell in the archaeological samples analysed shows signs of mechanical breakage, possibly caused by using grinding tools (Horowitz and Çakirlar 2017). Probably, this special temper was added to reduce the effects of thermal stress on the cooking pot as a result of repeating heating and cooling. Experimental work also shows that while the shells were not heated to a high temperature prior to being fired, they might have been boiled, suggesting the cooking of mussels (Morrison, Horowitz 2016: 186). In particular, shell ware fabric (Figs 7-8) at Alalakh generally has a brown core (Munsell colour chart 7.5YR 5/2-4/4) and a black surface or peach-brown (Munsell colour chart 7.5YR 5/6-4/6; 7.5YR 5/2-4/4).

Two types of cooking pots have been recorded in the Iron Age pottery assemblage: the broad cooking pot and the hole-mouthed cooking pot. The broad cooking pot (Montesanto, Pucci 2019a: 115; Figs 6a-e) represents the 4 % of the whole assemblage and it is more popular in the first levels of the Iron Age (Iron Age I; 55-77%[2]; phases 3b and 3a), while they become less popular in later levels (48-21%; phases 2b-1). The broad cooking pot is generally considered the typical Late Bronze Age cooking pot (Horowitz 2020: 217, fig. 7.11), however, it continues to be used also during the Iron Age. Broad cooking pot has a wide opening, a kind of neck and a biconical body. The rim (flanged, rolled out, and rail) generally ranges from *c.* 25 cm to 35 cm in diameter. Its volume is ranging from *c.* 10 to 28 l. Bases are always rounded, sometimes a gentle carination on the shoulder creates a biconical profile (Montesanto, Pucci 2019: 115).

The hole-mouthed cooking pot (Montesanto and Pucci 2019: 115; Figs 6f-r) has a rounded body with narrow opening, rolled out rim with a diameter ranging from 10 cm to 25 cm. It has a narrower opening when compared to the broad cooking pot, a biconical body and a low carination (Montesanto, Pucci 2019: 115; Figs 6f-r). Furthermore, the hole-mouthed cooking pot often has strap or, in later levels, ear-like handles. It usually has a flat base, but ring bases (Fig. 6s) are also attested. They represent the 5% of the whole assemblage. They are less popular in the first levels of the Iron Age (45-23%; phases 3b-a) but they become quite popular in the later phases (Iron Age I-II; 52-79%; phases 2b-1). The rim (folded over) is ranging between 12-25 cm and its volume is of *c.* 6-8 l. The hole-

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[2] Percentages are given in reference to all the cooking pots in the phase.

mouthed cooking pot is considered almost a standard during the Iron Age (Birney 2008) and at Alalakh is present on all the Iron Age phases. This cooking pot starts to appear during the Late Bronze Age II, although in very small quantities.

The hole-mouthed cooking pots from Iron Age Tell Atchana are shell-tempered. The use of crushed shell as temper for cooking pots has a long tradition in the Amuq valley, starting from the Late Bronze Age (Morrison and Horowitz 2016; Horowitz 2020). While shell tempered cooking pots are attested in Iron Age I levels from Tell Tayinat (Welton *et al.* 2019: 311) and Chatal Höyük (Pucci 2019a: 68), cooking pots dated to later phases of the Iron Age are similar in shape but made with a mineral-tempered fabric (Pucci 2019a: 204-206). However, such change is not visible in the cooking pots from Tell Atchana. The tempers are used independently from the shape of the vessels, since shell and mineral tempers in Tell Tayinat and Chatal Höyük were applied to different cooking pot types.

According to several studies (Killebrew 1999; Sassaman 1995) the shell temper is more suitable for indirect heating, thus suggesting that the cooking pots were either suspended over the fire or placed next to it. Most probably, the broad cooking pot, with the rounded base, was suspended over the fire by the use of a rope or of andirons or hobs to support it. The flanged and rolled out rim might suggest the use of a rope to suspend the pot or to remove it from the fire. The hole-mouthed cooking pot, with the flat or ring base, was most probably placed next to the fire and the handle would have permitted an easy removal.

FUNCTIONAL ANALYSIS OF COOKING POTS

Cooking pots are included in the broader food processing class. Food processing is the transformation of raw materials into food, or of food items into other forms for consumption. This processing involves non-ceramic utensils such as grinding stones, mortars, knives and other objects that were used to process raw materials. However, since the main focus of this paper is on pottery, only pottery vessels will be considered. The approaches used here takes inspiration from behavioural archaeology (Schiffer 2010; Montesanto 2020b) which understands that objects are shaped by the interactions between humans and things, the affordances theory (Gibson 1979) which define the specific ways an object can be used and the entanglement theory (Hodder 2012) which adds the notion that the human-thing relationship is constraining and it teaches to explore the networks of dependencies that drive the human condition. Since the things we use are linked and shaped by the world around people and by the way people uses them, changes visible in their function or in the way vessels were used might reflect changes in social and cultural habits and therefore can be used to reconstruct an historical narrative for a specific period.

In order to understand any change in the way cooking pots were used, i.e. vessel's function, it is necessary to look at aspects in their technology and morphology. i.e. vessel's attributes, that might hint the way they were used. The specific attributes of cooking pots allow an involvement in the transformation of food into a consumable product. These attributes include design parameters that define the affordance of a vessel for a specific task (Montesanto 2020b). The main attribute related to cooking pots is technology defined as the use of different types of clay minerals that are more or less naturally resistant to thermal shock ware type. Other attributes that make the cooking pot suited for food processing are its size and shape, i.e. its morphology. Shapes fitted to process food need to be suitable to be put close to a heating source, they need to have a body shape with no sharp carinations in order to minimise different thermal gradients from one side of the vessel to the other. Additionally, they may have a shape designed for the production of a particular type of food or intended for a particular use, such as trays often used to keep the food heated.

Functional analysis of pottery not only allows to understand the technological choices made by the potters but also how these choices shaped and were shaped by the social community. For instance, this type of analysis allows to understand what type of food was cooked and how it was cooked.

The cooking pot typology recovered from the Iron Age levels of Alalakh, compared with similar items recovered from contemporary sites located in the Amuq Valley and Northern Syria (Welton *et al.* 2019: 311; fig. 18;

Pucci 2019a: 202-206; fig. 50; Venturi 2020: 65, 73; pls. 36.3, 37.4-5; 44.7-10, 55) suggests the use of two different style of cooking: cooking pots with wide mouths, such as the broad cooking pots, enable an easy access to the content and a fast evaporation and are usually meant to cook dishes that are meant to thicken liquids and that require frequent stirring (Villing, Spataro 2015: 6). The broad cooking pots, with their wide opening, were used suspended over the fire and were used mainly for rapid, high-temperature cooking (boiling) and therefore could have been used to cook soups and similar dishes.

In contrast, cooking pots with a narrow opening, such as the hole-mouthed cooking pots, reduce the relative surface area so that the liquid evaporates more slowly and it is practical to cook food with high liquid contents, such as stew, porridges, broth and legumes. Hole-mouthed cooking pots, with their narrow opening, were placed next to the fire and they were meant for slow, low-heat cooking (simmering) of liquid dishes (Killebrew 1999: 107). Therefore, the adoption of a narrower cooking pot and the gradual reduction of cooking vessels with a rounded base might be related to a change in the types of foods cooked, changing from a predominantly consumption of food to a preference of more concentrated stews. The use of two different styles of cooking is also supported by the finding of two types of cooking installations at Iron Age Alalakh: the pyrotechnical installation, possibly a circular oven (Locus 23; Fig. 3) found in phase 3 that might have been used in connection to the broad cooking pot and the rounded stone structures (Loci 8 and 10; Fig. 5) from phase 1 that may be interpreted as potsherd hearths used in connection with the hole-mouthed cooking pot.

The functional analysis of cooking pots can also be used to understand social daily life and practices of ancient societies. The differences in size and volume may show a different strategy used when cooking a meal for a bigger or a smaller household. The size of cooking vessels is related to the quantity of food and thus to the number of people for whom the food is prepared. Therefore, the capacity of the cooking pot might be related to the contexts in which the consumption of food took place. Large cooking vessels imply the consumption of a large quantity of food and point to a greater number of people involved, while smaller cooking vessels might refer to a house's ordinary cooking pot assemblage and therefore they might reflect a more domestic scale of food preparation and consumption. For this study, a reconstruction of broad cooking pots and hole-mouthed cooking pots has been used to calculate the volume. The reconstruction is based on the archaeological samples retrieved from Alalakh and from complete, contemporary cooking pots from Tell Tayinat and Chatal Höyük (Welton *et al.* 2019: 311; Pucci 2019a: 202-206).

It is possible that larger sized cooking pots, as the majority of the broad cooking pots, were used to cook more than one meal at once or a meal for a higher number of people in comparison to the medium sized cooking pot, as the majority of the hole-mouthed cooking pots, that could have been used for a smaller number of people or for one or two meals for a small household. According to some studies (Nelson 1981; Whitelaw 2014: 253), a cooking pot with a volume of *c*. 8 l, such as the hole-mouthed cooking pot, could provide two or three meals for a household of 3-5 people. In comparison, the broad cooking pot could potentially contain two to three times as much of food. Therefore, the increase of the hole-mouthed cooking pot in Iron Age levels and the gradual decrease of the use of the broad cooking pot may be linked with a change in cooking habits with regard to what was cooked inside these vessels, and possibly it may suggest a reduction in size in the households. This hypothesis can be confirmed by evidence coming from the nearby site of Chatal Höyük (Pucci 2019a: 289-293; Pucci 2019b: 185-187). Here, the gradual decrease of the broad cooking pot and the increase in the use of the hole-mouthed cooking pot might be related to the reduction in size of the settlement's structures, which became smaller and more agglutinated during the Iron Age I and II (Pucci 2019a: 290).

It seems that the hole-mouthed cooking pot does not replace the broad cooking pot as they appear together from the first layers of the Iron Age up to the end of the Iron Age occupation on the site. However, it can be noted the preference for a different way of cooking, probably linked with the adoption of different dishes such as stews. This preference is represented by the increase of the hole-mouthed cooking pot during phase 2.

The beginning of the Iron Age at Alalakh and in the Amuq Valley witnessed a process of re-urbanization after a period of ruralisation. This process is mirrored in the material culture and in particular in the cooking pots. The preference of the hole-mouthed cooking pot over the broad cooking pot suggests a change in cooking habits, but more importantly a smaller household dimension. The use of two types of cooking pot proposes a use of two dif-

ferent cooking installations. Broad cooking pots, with rounded or convex bases, needed a support to be placed on the fire and several studies (Killebrew, 1999; Ben-Shlomo *et al.* 2008; Yasur-Landau 2010) suggest that they were placed inside circular ovens; hole-mouthed cooking pots, with flat or ring bases, could have been placed directly on the surface and next to the fire and therefore they were suitable to be placed on open hearths (Yasur-Landau 2010). Cooking vessels and cuisine are generally very conservative and any change visible in cooking pots and cooking habits rarely happens for mere functional reasons but rather for social and cultural factors. Therefore, besides changes in cooking practices, changes in cooking vessels from Iron Age Alalakh might also be the result of change in local economy.

For instance, the adoption of the hole-mouthed cooking pot may refer to a different style of cooking. Furthermore, the different size and morphology refers to different quantities of food that needed to be prepared and to different types of food.

The use of the hole-mouthed cooking pot is visible not only in Tell Atchana, but also in Chatal Höyük (Pucci 2019a), Tell Afis (Venturi 2020) and Ain Dara (Stone, Zimansky 1999). In these sites, the hole-mouthed cooking pot is used alongside the broad cooking pot. Although the hole-mouthed cooking pot appears in many sites of the Amuq valley and inner Syria around the beginning of the Iron Age (Birney 2008; Venturi 2020; Pucci 2019), the hole-mouthed cooking pot starts to appear at Alalakh at the end of the Late Bronze Age II (Montesanto 2020a; Horowitz 2020).

Yasur-Landau defines the change in cooking practices and the differentiation of foodways as markers for the "deep change" (2010: 13). While change visible in other spheres may be influenced by fashion or style, any change in cooking, an activity generally conducted inside the house, may be a marker of acculturation or some degree of migration (Yasur-Landau 2010: 227). From this point of view, the adoption of the hole-mouthed cooking pot in the Amuq valley and inner Syria during the Iron Age I can be considered as an indication of migration. However, recent analysis of the Chatal Höyük pottery material demonstrated that while the pottery assemblage shows a strong infiltration of foreign elements in the drinking and eating sets, these new shapes did not influence the way of eating and drinking, but only the appearance of the tableware (Pucci 2019b: 184).

Along this line, evidence from Tell Atchana shows that the change in cooking practice was happening well before the beginning of the Iron Age. Therefore, the increasing use of a different type of cooking pot does not need to be linked to migration, but it might mirror the introduction of a different practice, which did not necessarily substitute completely the local repertoire and tradition but coexisted with the previous tradition and therefore maintaining two different types of cooking behaviours.

The absence of a visible change in cooking habits at the beginning of the Iron Age confirms this hypothesis: the local broad cooking pot in shell temper persists from the Late Bronze Age to the Iron Age, alongside the hole-mouthed cooking pot and they clearly belong to a local tradition visible in other sites of the Amuq valley.

DISCUSSION AND CONCLUSIONS

Studying cooking activities from the past can provide a window in many aspects of ancient societies, such as social change, cultural practices and social identity. Cooking and eating are essential elements of social interaction and therefore a better understanding of cooking activities and of cooking vessels provides unique insights in social habits and behaviours. As a consequence, change and/or continuity in cooking vessels, cooking installations and recipes may give an insight in changes in social habits, cultural behaviours and everyday life. The analysis of the cooking pots coming from the Iron Age levels of Alalakh offered a unique opportunity to understand if any change affected people living on the site at the beginning of the Iron Age and through the Iron Age I and the beginning of the Iron Age II.

As it was pointed out by this study, the increased use of the hole-mouthed cooking pot might be linked with the preference of different dishes such as stews, of different cooking installations and it might also suggest a change in the site's and household's economy during the first centuries of the Iron Age I and the beginning of the Iron

Age II. According to the shapes and sizes of the Iron Age cooking pots from Alalakh, there was a certain variety of dishes that comprised an ordinary meal in that period. Meals were prepared for both a large and a limited number of people. The presence of cooking pots of larger capacities indicates the consumption of food by a larger group of people who shared the everyday meals, or it may be related to their use in special events that involved a larger number of people. The use of smaller cooking pots indicates that meals were consumed by a rather limited number of people, suggesting a more domestic scale for their use.

The study of cooking pots' shape also shows morphological differentiation which points to different culinary practices. It appears that during the first part of the Iron Age I there was a preference for ceramic vessels used for boiling and placed on circular ovens like the one recovered from phase 3b, while at the beginning of Iron Age II cooking vessels used for stewing were more popular and placed on an open fire like the potsherd hearth from phase 1.

The Iron Age I witnessed a change in the organisation of the Near Eastern states, in the material culture, in the distribution of the settlements and in the social and cultural ideology of the Near East. This period has been considered a period of transformation, not only in the political and economic systems, but also in the material culture (Weeden 2013; Venturi 2010; Pucci 2019b; Osborne 2020). The archaeological evidence dated to the Iron Age in the Amuq Valley is limited to the sites of Alalakh, Tell Tayinat and Chatal Höyük. The archaeological evidence from Chatal Höyük shows a process of re-urbanisation of the village during the mid-12th century BC (Pucci 2019a) which continued until the 9th century BC. A similar situation is visible at Alalakh. Here the site underwent a significant reduction in size is visible from the mid-12th century to the 10th century BC. Many scholars believe that the period of change and instability represented by the early Iron Age is due to the migration of Aegean people (Yasur-Laundau 2010; Janeway 2017). The presence of Aegean migrants in the region is witnessed by the local production of typical Mycenaean shapes recovered at Alalakh, Tell Tayinat and Chatal Höyük (Koehl 2017; Janeway 2017; Pucci 2019b). However, the Mycenaean shapes introduced in the local assemblages of the Amuq valley did not influence the traditional way of eating and drinking, but they affected the appearance of the wares, contrary to what can be assumed from the evidence coming from other regions in the same time frame. For instance, the appearing of Aegean cooking practices in Cyprus is reflected by the introduction of Aegean cooking jugs alongside local cooking pots (Bunimowitz, Yasur-Landau 2002; Yasur-Landau 2010: 141). Evidence from the northern Phoenician area suggests that migrants originated from Cyprus or Syria manifested their identity in a minor way, creating special drinking vessels fit for their feasting (Gilboa 2006-2007; Yasur Landau 2010: 171). At the same time, the recovery of Aegean cooking jugs alongside local cooking pots in Philistia indicates that Aegean and local behavioural patterns were conducted side by side from the beginning of the appearance of Aegean material culture (Ben-Shlomo *et al.* 2008; Yasur-Landau 2010: 140).

Sometimes, any change in the way of cooking is linked with the arrival of a new population (Ben-Shlomo *et al.* 2008) and with the creation of new tastes. However, the creation of new tastes is never socially neutral, but it is always entangled with affiliations to different social groups (Bourdieu 1984). It is unclear if the creation of new tastes and, therefore, the increased use of a different cooking pot, is related to the introduction of new foodstuff such as stews or whether old ingredients were processed in a new way. However, it seems that at Alalakh the newcomers, or the new social group, are not visible in the material culture or they merged with the local community. The evidence coming from the analysis of the Iron Age cooking vessels from Alalakh suggests a new model for the interpretation of the Early Iron Age in the Northern Levant: small groups of migrants arrived in a context that had experienced a strong economic decay and disruption before their arrival. These migrants were too few to build their own enclave and did not encounter any resistance from the local communities. Therefore, their impact upon these communities was neither culturally nor economically dominant. However, the migrants and the local communities were not passive, they interacted and contributed to the creation of a new pottery assemblage and material culture (Lis 2018; Pucci 2019b). In particular, it seems that in the Northern Levant locally produced Aegean shapes were introduced as part of the eating and drinking assemblage (Koehl 2017) while cooking vessels were mainly of local origin. An exception is represented by the site of Tell Tayinat, where a small number of Aegean-style cooking jugs have been found (Welton *et al.* 2019: 311). The presence of Aegean-style cooking jugs in Tayinat and their absence from the assemblages retrieved from Alalakh and Chatal Höyük well fits with the recon-

struction of Tayinat as the initial seat of the migrant group (Hawkins 2009; Harrison 2009; Welton *et al.* 2019), thus suggesting that the impact this group might have had was not strong enough in the site of Alalakh to deeply change the material record within the Iron Age. Indeed, the evidence here contributes to the interpretation of the Iron Age in the Amuq Valley and confirms the complexity of this period, thus highlighting the inadvisability of the mega-narratives that mask the diversity of the local sequences. The analysis of Iron Age cooking vessels from Alalakh confirms the idea that, in the material culture record, continuity and change coexist and that the Iron Age cultural landscape displays both continuity and discontinuity in the material culture.

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Over the Frontier. Remote Sensing Analysis of the Roman Eastern Borderland in Mesopotamia through Declassified Satellite and Aerial Imagery

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Abstract. This paper discusses the spatial configuration of the Roman easternmost borderland in Mesopotamia through several case studies and, particularly, with the aid of declassified aerial and satellite imagery. Satellite pictures from the 1960s and 1970s have proved to be of incredible value for the archaeological research in the Near East, contributing to a solid advancement in the understanding of large-scale phenomena on long-term periods. This is particularly true for the so-called *late* periods of Mesopotamian history which – traditionally – suffer from an inexplicable lack of terrain data. Although the research has consistently improved in the las decade or so, the support of remote-sensing techniques has open new and fruitful research trajectories on the matter. I will employ legacy aerial data, CORONA and HEXAGON declassified satellite imagery and U2 aerial data to assess some case studies in the region and to provide new insights on such a contested space, now roughly comprised between northeastern Syria and northwestern Iraq.

Keywords. Mesopotamia, Satellite, Landscape, Roman, Syria, Iraq, Aerial.

INTRODUCTION. ROME ON THE EDGE

The easternmost territories of the Roman Empire have received a discrete amount of attention in the past decades, with many works however focusing on socio-economic and historical phenomena, rather than on the proper archaeological records (Millar 1993; Sommer 2008; Edwell 2012). With the advancement in landscape archaeology practices for South-West Asia in the last years, a re-appraisal of the spatial physiognomy of the Roman eastern frontier in Mesopotamia is timing and necessary.

The very first caveat to the analysis of the Roman easternmost territories is that its geographical definition is volatile, and with no fixed points or markers – as, comparatively, the Rhine frontier in Germany (Franconi 2020). This ever mutating and fluctuating zone of interaction roughly com-

prised between Northeastern Syria, Southeastern Turkey, and Northwestern Iraq saw the presence and interchange of three main agents: the Roman Empire, the Parthian, and Sasanian Empires, and a large amount of nomadic and non-sedentary communities of Arabs (Fisher 2016; Palermo 2019). This kaleidoscopic scenario contributed to the social definition of the Roman eastern borderland. Ancient borderland areas presented indeed an invaluable framework for interaction and engagement between different groups, establishing examples of bilateral interplays and reciprocal approaches, as indeed they still do today. In a straightforward view, modern scholars have come to think of borderlands as areas where no major (or hegemonic, in a Gramscian sense) power expresses a firm political and economic dominion (Bates 1975). The relationships between the settled population, whose subsistence was mainly based on agriculture, the nomadic component, which relied on pastoralism, and those who fell somewhere along the spectrum in between contributed to the creation of a specific socio-ecological interface in the contested regions.[1] It is in this complex scenario that our analysis takes place. Given the often-complicated political situation in large part of the historical Roman period Mesopotamia, remote sensing and integrated analysis (combining archaeological, historical, and literary data) have proved to be particularly effective. Despite the basic consideration that ground-truthing operations must be carefully and systematically performed to validate the remote analysis, the mapping and identification process (along with some interpretative analyses) represents the core business of the satellite and aerial imagery driven research in this part of the world.

MAPPING THE FRONTIER FROM ABOVE

Pioneers of Remote Sensing in Mesopotamia

It is a matter of fact that (declassified) satellite and modern aerial imagery came late on the stage in regard to the attempts of mapping the Roman eastern borderland in Mesopotamia. Already in the initial years of the 20th c. the very early endeavors of *Père* Poidebard marked the beginning of the *remote sensing* season for North Mesopotamia. Antoine Poidebard was a French military chaplain and skilled pilot who yielded to the archaeological community then and today thousands of aerial images of major sites, cities, and landscape features of the greater Near East, from Lebanon to Jordan, from the Syrian desert to Iraq (Poidebard 1934). Between 1928 and 1929 Antoine Poidebard flew over North Mesopotamia, snapshotting several archaeological features between Nusaybin/Al-Qamishli (anc. *Nisibis*) and the upper Tigris River in North Iraq. This is not the venue to discuss and criticize certain chronological attributions of Poidebard nor to celebrate his vision for the community of landscape archaeology, but rather the work of Poidebard must be integrated and compared with more recent remote sensing data, satellite imagery interpretation, and – fundamental aspect – thorough ground-truthing operations. And yet, the goal of Poidebard was not distant from the core topic of this paper: recognizing traces of the Roman occupation, mobility, and presence – in general – in the easternmost territories of the Empire. Comparing some of the shots of Poidebard with modern aerial and satellite images might therefore provide a useful insight into the archaeological landscape of North Mesopotamia. Poidebard was very much interested in the reconstruction of the itineraries and – in general – the mobility in the *provincia Mesopotamia*, also considering and using – not rarely in a naïve way – the *Tabula Peutingeriana*.[2] Particularly interesting, in this sense, is the coverage of the area that runs from the east-

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[1] In this sense, Arabs played a key role. Studies on the interaction between settled peoples and nomadic tribes have proved to be successful in regions such as the Negev or the Jordan Desert, whereas our understanding of the processes of negotiation in Mesopotamia is limited. In general, on the archaeology of nomadic community see Cribb 1991; Szuchman 2009. For detailed overviews of the nomadic segments of Jordan and the Negev, see Finkelstein, Perevolotsky 1990; Rosen 1992. More recently, a Liden-based project is investigating the "Landscape of Survival" in the Jordan Black Desert region, with particular attention to the dichotomy nomads/settled peoples (see Akkermans *et al.* 2014: 186-205; Huigens 2015).

[2] On the Tabula Peutingeriana (Peutinger Map) see Talbert 2010 with extensive references and digital appendices available at: https://peutinger.atlantides.org/map-a/. On the role of the map for the reconstruction of the routes in the region see Altaweel, Hauser 2003. Scardozzi 2014. Palermo 2019: 210-230.

ern bank of the Khabur river to the area of Ain Sinu at the eastern edge of the Sinjar massif, towards the Tigris. Photographs taken over this steppe-like stretch of Mesopotamia now comprised between Syria and Iraq include a large variety of settlements, structures, possible routes, and forts, the chronology of which is difficult to assess. And yet, Poidebard – and many others after him, including the late David Oates – interpreted with firm certainty these material remains as evident traces of the Roman presence in the region. One of the most emblematic cases, for example, is represented by the so-called "*castellum*" located not far from the large pre-classical mound of Tell Brak, in the governorate of Hassake, in northeastern Syria, which I will discuss further on in the paper.

No longer after the flights performed by Poidebard, Sir Aurel Stein flew over the modern Syrian-Iraqi border in search of visible traces of the Roman presence, also supported by the Royal Geographic Society and the Royal Air Force (RAF). The operations carried out by Poidebard stopped in the region of Singara, and – in the 1938 – Stein took over the *task* to investigate the easternmost stretch of the *limes* towards the Tigris and Hatra. This last centre was central to Stein's research question as he had planned to explore its role within the complex system of routes and tracks of the region, also linking it to the evidence from the Peutinger map. Unfortunately, Stein (76 years old at the time) died prior to the completion of his research, which was later fully published by David Kennedy, Derrick Riley (1990).

Declassified datasets

In the last decades satellite and aerial imagery primarily taken for military purposes during the Cold War era by US satellites and spy planes have gained a central and crucial part in the archaeological research worldwide, and particularly in the Middle East. These data have been extensively used by archaeologists to assess several historical phenomena (Ur 2003; Casana, Cothern 2008; Casana 2020: 89-100): from the detection of cultural heritage risks (Stone 2008; Parcak *et al*. 2016; Casana, Laugier 2017) to the identification of large-scale irrigation features (Ur and Reade 2015) and settlement transformation through time (Ur *et al*. 2013; 2021).

However, these very same records have been limitedly used for the study of the Roman borderland areas in Mesopotamia (Scardozzi 2014; Palermo 2016; 2019). Here I propose an overview of the data in our hands: CORONA, HEXAGON, and U2 pictures, before moving to the application of those pictures – and their analysis – to some case studies concerning the easternmost territories of the Roman Empire.

The CORONA Program (1959-1972)

CORONA was the code-name of an US government complex and meticulous espionage program that was ran between 1960 and 1972. The official name of the spy satellite program was CORONA KH 1-4 (where KH stands for *keyhole*). The program was specifically requested by the US government to replace the previous spy spotters employed until then: the U2 program (which I will discuss below) and the GAMBIT KH-7 (Hammer, FitzPatrick, Ur 2022: 2), which were purposely targeting specific structures/facilities during the early years of Cold War. Over the course of the program, more than 100 satellites were employed, with an approximate number of high-resolution pictures taken topping 800.000. The first and foremost technical advantage of these images is their resolution that – depending on the machines used – varies from 20 to 6 feet (60 to 18 m ca). This represents an enormous advantage if compared to other commercially available datasets like SPOT or LANDSAT whose resolution does not match the required standards for site-level exploration in archaeology. The second advantage – especially if compared to GAMBIT – is the much larger spatial coverage of CORONA (and HEXAGON later). Images were classified until made available in the 1996 (first batch) and the remaining part in 2002. They are now freely available as digital images via different online platforms like the USGS's owned Earth Explorer (https://earthexplorer.usgs.gov) and the Corona Atlas of the Middle East setup of the University of Arkansas (https://corona.cast.uark.edu/). Unlike aerial photography which traditionally uses two vertical shots with a high degree of overlap (>50%), satellite imagery, and CORONA particularly, is built upon the usage of two cameras taking a forward

and afterward picture as the satellite passes over. This technique is called stereoscopy. Stereoscopic imagery consists in two pictures obtained with cameras angled at similar degrees (in case of CORONA is ca. 5°) but with different viewing angles, which will result in different shadows and pictures of the same scene. While one single shot is often used for the landscape archaeology purposes of simply detecting archaeological features, the combination of both images would provide much more data in terms of visual information.

Besides the technical aspects of the CORONA images, their wide and successful employment within the archaeological research of Eastern Mediterranean and the Middle East lies in the fact that these images offer a glimpse into a pre-industrialized and less agriculturally exploited landscape, where naturally archaeological features are more visible and/or stand out more clearly.

Since its clearance, the CORONA program has proved to be one of the best sources for landscape archaeologists in SW Asia. Its potential was first assessed by David Kennedy in 1998, then several other studies have used CORONA-based imagery datasets to explore different aspects of the ancient Near East (Ur 2003; Alizadeh, Ur 2007; Hritz 2014). Considering that on many occasions – mostly due to political turmoil – ground-truthing operations in the Middle East might suffer a halt or be forcedly reduced in time and space, the employment of such an interesting remote sensing tool certainly provides useful insights for both the archaeological research proper and studies of cultural heritage and management in endangered areas.

The Hexagon Program (1971-1986)

Starting in 1964, the US government t commenced the development of a new satellite program (KH-9, code-name HEAXAGON) that would have followed the successful CORONA. Operated from 1971 to 1986 HEXAGON was the last and longer remote espionage program of the United States during the Cold War. Unlike CORONA, however, only 20 satellites were launched, picturing the world (and mostly the eastern block and the MENA region) from 1971 to 1984 (Hammer, FitzPatrick, Ur 2022: 2). The technical aspects of the HEXAGON images did not differ from the ones that I described while discussing the CORONA program. The real difference between the CORONA and the HEXAGON program lies in the quantity of data provided by the latter. At the end of the program in the mid-1908s, almost 2 million pictures were taken (compared to the ca. 700.000 of CORONA). Another important difference – which is more relevant for the application of these datasets in the archaeological research – is that the panoramic shots of HEXAGON covered an area averagely 3 times larger than the one covered by the CORONA satellites. Lastly, the whole program adopted a cloud-free approach (Oder *et al.* 1992), meaning that the HEXAGON pictures were taken in better visual conditions than CORONA, ultimately enabling the United States government to obtain images of – almost – the entire Asian continent (Hammer, FitzPatrick, Ur 2022: 3) (an interactive map of the total coverage for the HEXAGON program is accessible at this link: https://arcg.is/1HL8fS0).[3] Also, the better resolution of HEXAGON over CORONA was praised by the American espionage system for its ability to detect on the ground small-scale military vehicles, for example. Finally, HEXAGON images were declassified in 2011, but they have been made available to the public only recently (from 2020).

The U2 aerial imagery (1956-1960)

The last set of declassified images to be openly released by the US government belongs to the U2 program. These photographs were part of a Cold War era spy program that ran from June 1956 to May 1960 (Hammer, Ur 2019: 108). The code-name of the mission was CHESS and the flights were organized in three different locations: (A)Wiesbaden, (B) İncirlik/Adana, and (C)Alaska. Teams operating at B and C were also moved occasionally to

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[3] A complete and interactive version of the article by Hammer, FitzPatrick, and Ur is available here: https://storymaps.arcgis.com/stories/4a9b3b59888746fa9390f7f1f9c5add9 (Last access: December 2022).

Pakistan (B) and Japan and Southeast Asia (C).[4] Unlike CORONA and Hexagon, however, U2 pictures are not publicly available yet and, in fact, they are stored in a cold facility in Kansas and can be accessed (for scan and pictures) at the NARA (National Archives and Records Administration) laboratories and cartographic rooms in College Park, Maryland. The enormous advantage of the U2 pictures – if compared to the satellite datasets – lies in the higher resolution of the aerial shots, counter-balanced, however, by a much smaller coverage in terms of spatial extent. Another advantage is that U2 aerial pictures provide an even earlier datasets if compared to later satellite records, thus enabling the researcher to have a glimpse over specific areas of the greater Near East that would have been heavily industrialized and urbanized in later decades. As in the case of the satellite data, the U2 images must be subject to accurate and precise geo-referencing to be fully and successfully employed in the archaeological research. Each of the U2 planes operating during the program mounted a B-camera systems (composed by two lenses, the successor of cameras A1 and A2 previously used in the program). This is a very high-resolution and panoramic machine. It took a vertical picture and then three pictures to the left and to the right, generating a horizon-to-horizon image. The later shots are, naturally, quite stretched and they need precise post-process work in a GIS environment to but accurately used for the archaeological research.

CITIES, SETTLEMENTS, AND LANDSCAPE OF ROMAN MESOPOTAMIA

In the western part of the Roman world, the degree to which conquered lands were integrated depended on the way military unites were dispersed and garrisoned. Their social, economic, and cultural impact was significant, and determined the creation of civilian settlements (*canabae*) that served to sustain daily life at the camp, and later turned into cities themselves (see the case of *Colonia Agrippina*, modern Köln, in Germany). Such crucial locations thrived economically and were involved in both military and civilian life. In this sense, one of the best markers of the Roman military presence in Northern Europe, for example, is undoubtedly the so-called "playing card"-shaped forts, which were widespread along the fringes of the western empire (Breeze 1983; Wamser 2000; Vermeulen *et al.* 2004; Bidwell 2007).

In the East, the Roman army had to necessarily face a different scenario. The Near East, and Mesopotamia in our case, was home to a sophisticated and well-established urban culture, together with long-standing social, political, cultural, and economic traditions. This is the case, for example, of the pre-Roman period cities of North Mesopotamia (Fig. 1). Urban areas, although limited in number if compared to other eastern regions, constituted the core of the *consensus* within the limits of the eastern borderland. This is displayed in the adoption, by the social components of the cities, of certain values of external origin in terms of religion, architecture, economy, and administration that amalgamated with the local social substrate to create the panorama of Roman Mesopotamia. The negotiation of these values shaped the social and physical features of each city; taking place at different levels, this mediation is visible through major categories of evidence such as environmental factors, politics, strategic relevance, and the economy.

Environmentally speaking, the four major centres, Nisibis, Rhesaina, Hatra, and Singara, lie in a steppe land area that covers a substantial part of North Mesopotamia. The four therefore share a common geographical setting that includes the presence of waterway(s), springs, and arable lands in the immediate proximity of the urban structures. The common ecological features are therefore reflected in their analogous importance in terms of political control. Rome's influence in the Mesopotamian borderland was particularly visible in the area whose nodes were the major urban areas. These acted as key points for the maintenance of imperial control.

The role of these cities as trading points and commercial hubs also affected the economic landscape on a regional scale. Few examples: notwithstanding the seemingly geographic isolation, Hatra played a key role in the traffic of people and goods towards North Mesopotamia (Foietta 2018). Furthermore, after the peace treaty of the

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[4] It goes without saying that the flights operating from the B departure point – Adana – were involved in most of the coverage of the Middle East and the Gulf.
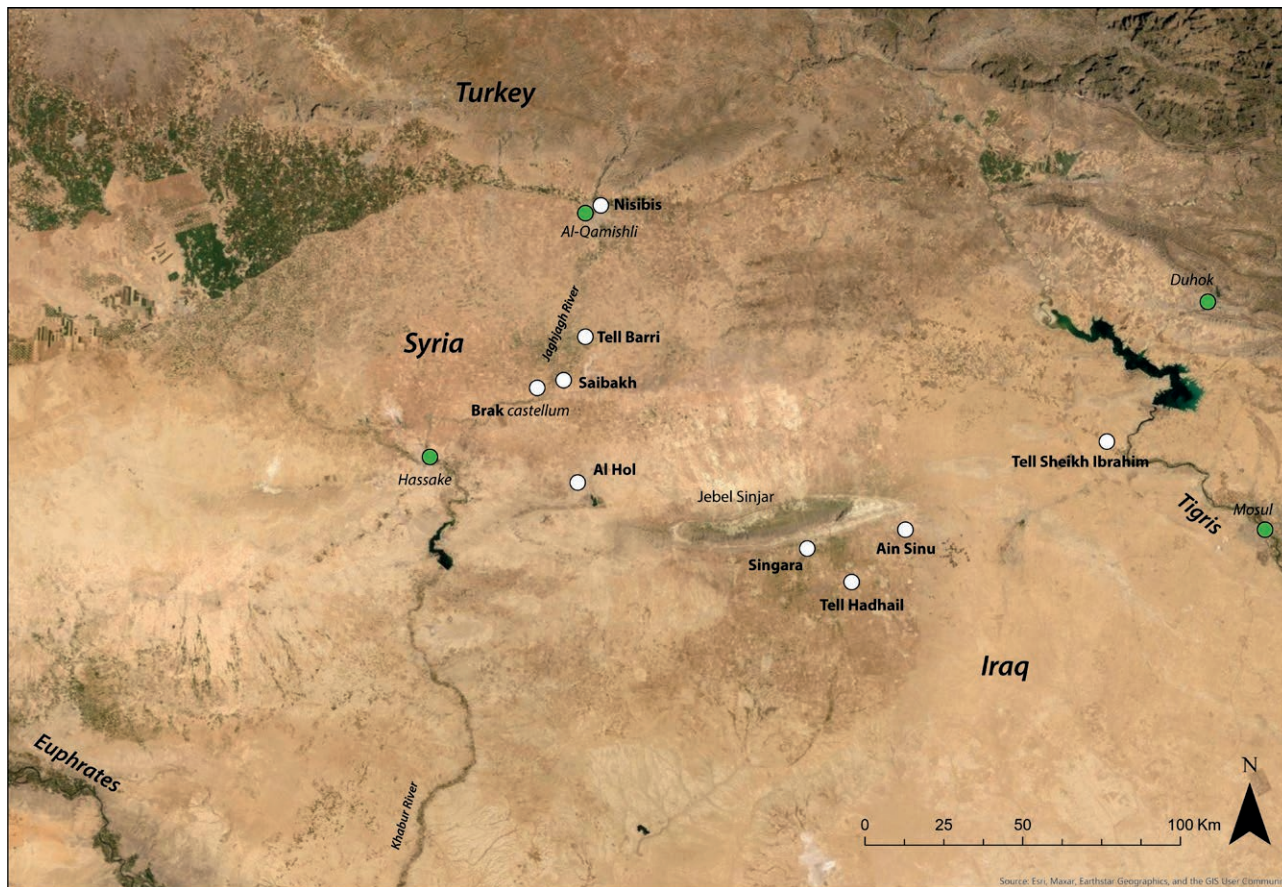
Fig. 1: Spatial extent of North Mesopotamia with major settlements cited in this paper (ESRI basemap / map by the author)

late 3rd c. AD, only Nisibis was granted the permission to establish trade exchanges with Persia, a fact that reflects both the relevance of the city itself and the role that the urban hubs had in the developing economy of the region and of its relationship with distant areas (Palermo 2014; 2019: 228). Prior to the 3rd c. AD, Nisibis and Rhesaina, not too distant from each other, interacted in terms of economic interests, territorial control, and strategy within the political context of Rome's influence in the area. Indeed, both the cities possessed a significant garrison. If Rhesaina connected Nisibis to the westernmost areas of Roman Syria, the regional capital acted as a natural entry for long-distance trade towards Persia and Central Asia.

How is this social and politico-economic importance of urban centres reflected on the ground? How were these centres developed architecturally? How did they interact with the surrounding landscape? These are some of the questions that might arise when dealing with the urban nodes of Roman period Mesopotamia; questions that might find a tentative and preliminary answer through the lens of landscape archaeology. I will therefore present some case studies (cities, small settlements, forts, roads) connected to the period of Rome's interaction in the region and will tentatively analyse their characteristics and features using the remote sensing datasets already described before.

Departing from Singara – perhaps the most well preserved of the Roman period cities of Mesopotamia – I will explore the area to the East, towards the Tigris, and the Upper Khabur basin, to the West and North-West of the city.

Singara. A Fortress City at the Edge of the (Roman) World

The ancient site of Singara (36.328178 N, 41.855121 E) partly overlaps with the Iraqi town of Beled Sinjar (*beled* = Arabic for "town, city", but also Kurdish "Shingal"), in the province of Nineveh, close to Tell Afar and in the foothills of Jebel Sinjar, not far from the modern Syrian–Iraqi border. The city is currently a regional centre predominantly occupied by Kurds and Yazidis to whom the entire region of the Sinjar Mountain is sacred (Açyikildiz 2010). The geographic environment of Singara falls within the classification of steppe-desert, and the city lies on the 250 mm isohyet line. This is an area of elevated climatic uncertainty where yearly rainfall oscillates frequently, causing aridification phenomena that led (and still leads) to social and economic setbacks (Palermo 2021: 247-268). The modern centre is cut in half by a *wadi* coming down from the Jebel Sinjar, and several carsic springs are also scattered around. The remains of the ancient fortress of Singara are still visible in the layout of the modern town of Sinjar. In fact, the northern sector of the circuit walls encloses the modern houses, which exploited part of the fortification and the inner structures of the ancient city. Although some of the still-standing buildings might have been restored, adapted, and modified in later periods (specifically during the early Islamic phases of the city), it is interesting to imagine that these later reconfigurations considered an earlier layout – the largest part of which coincides with the Roman period.

In a CORONA image of 1967 (Mission 1102-1025) one can admire the circuit walls of Singara. They have been quite well preserved within the early modern and contemporary layout of the city. There is no certain evidence for its chronology, but it has been suggested by many (Oates 1968; Scardozzi 2014; Palermo 2019) that the original structure might have been erected at the time of the maximum expansion of the Roman presence in the region, sometime between the early 3rd c. AD and the Diocletian period. Naturally, the entire defensive system has undergone several modifications and transformation through time, and particularly in the 13th c. AD when the city fell within the area controlled by the Atabegs of Mosul (Palermo 2019: 150). The relatively irregular path of the circuit wall is most likely due to the difficulty to adjust masonry and monumental architecture to the rolling landscape in which the city lies, at the southernmost edges of the Jebel Sinjar. In Fig. 2 projecting u-shaped towers are visible at regular intervals, while the possible remains of a fortified – elevated – citadel is also highlighted. There is no indication of a systematic organization of the internal space of the city, nor excavations carried out by David Oates in the 1950s were able to identify any (Oates 1968). One can only assume the spatial organization of Singara on the base of regional comparisons with other well-known and more extensively excavated sites. Dura Europos, on the Middle Euphrates might indeed provide some interesting data in this regard (Baird 2018). As in the case of Dura, Singara was obviously not a uniquely military settlement, and thus the Roman presence had to adjust to the pre-existing urban layout and architecture. If the solution employed at Dura, with the Roman units hosted in the northern edge of the site and (almost) separated by the remaining part of the city by a west-east wall, the same solution cannot be radically and categorically excluded for Singara. However, unlike Dura Europos, surrounded by three side of defensive walls and overlooking the Euphrates from a relatively high cliff to the East, the morphology of the terrain upon which the city of Singara developed offers perhaps a different solution. The citadel, which is visible in the CORONA image to the North of the site, must have hosted administrative building also – and foremost – in pre-Roman times.

Unfortunately, excavations carried out by David Oates and his team did not focus on the citadel, also possibly because it was (and still is) completely covered by modern houses, but systematically explored the gates and some of the defensive towers (Oates 1968: 97-106).

Back to the CORONA image of Singara, it is possible to use the spatial data provided by the satellite imagery to calculate the possible extension of the Roman period city. Indeed, the area enclosed by the city walls does not exceed the 17 hectares, a figure that does not really comply with the definition of Roman period *urban* centre. Also, demographically speaking, the space within the city walls of Singara during the Roman presence in the area must have been quite dense, almost equally distributed between local inhabitants and military personnel (considering the comparison with Dura a viable solution, and there is no doubt to propose an alternative). Several studies have focused on the calculation of demographics and urban demographics particularly, with a substantial number

Fig. 2: CORONA image (Mission 1039-1025, February 1968) of Singara, in Northern Iraq. U-shaped towers (A) and the supposed citadel (B) are visible (map by the author).

of them dedicated to the Roman world.[5] Research conducted within the framework of the Oxford Roman Economy Project shows that an estimated population for nucleated settlements (villages) ranged between 150 and 250 persons per hectare (Witcher 2011: 43). It has also been observed that in Bronze Age Mesopotamia, for example, this range could have varied between 100 and 200 persons per hectare (Postgate 1994; Wilkinson 2003: 39-51). This is largely based on comparative observations of modern rural communities, where building techniques (adobe, mostly) and household components (enlarged families) did not change too much from the ancient times (Kramer 1982). Eventually, by combining a Mediterranean with the Near Eastern model, one can assume that a range of 100-200 persons/ha can be also applied to later periods of Mesopotamian history. And yet, the space within a city was not entirely occupied by private dwellings (public buildings, roads, market squares, and open areas were all part of the urban layout), and for this reason, a lower figure would be much more realistic in determining demographic quantities. The walled area of Singara covers an approximate area of 17 hectares, which means that, considering the low range test parameters, it could have hosted approximately 1,700 inhabitants, a number that seems relatively low for a "city", whereas if one assumes the highest parameter, the population of Singara might raise to circa 3,400, which fits particularly well – proportionally – with the models proposed by Rob Witcher (see above). Starting from the very end of the 2nd c. AD, Singara became the headquarter of the *I Parthica*, one of the two legions deployed in Mesopotamia by Septimius Severus.[6] This evidence suggests that the population could have increased by *at least* by 4.000 units – but higher numbers are more likely. Considering that there is no evidence of an external fort/camp at Singara, one must think that Roman soldiers were hosted within the city walls, following

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[5] See the extensive biography on the topic, which is available at: http://oxrep.classics.ox.ac.uk/bibliographies/ancient_city_populations_bibliography/ (Last accessed: December 2022).

[6] *I Parthica* and *III Parthica* were effectively deployed in the region. The *II Parthica*, although created for the eastern campaigns, was headquartered at *Albanum* (Palermo 2019: 81-82). Singara will host the *I Parthica* and the *I Flavia Constatina* during the Sasanian siege of the 344-348 AD (Palermo 2019: 83).

the model that I have already illustrated for Dura Europos. At this point, Singara would have been populated by a potential of ca 6.000 people (lower figure) or, in case of higher estimation, 7.500. These figures are very well within the scale of a mid-to-large settlement in pre-industrial societies, as rightly pointed out by A. Bowman and A. Wilson (2011: 3). Eventually, this increase in population was necessarily tied to a stronger pressure on the potential agricultural catchment area, whose effective exploitability must have represented a great impact on the general economic life of the city.

Indeed, demography – and particularly demography in the ancient world – is considered a key element for the understanding of multiple and complex economic processes (Jongman 2011: 116). Usually, significant intensifications in economic activities during the classical/late antique period in Mesopotamia can be directly correlated with an increase in the size of settlements (Lawrence *et al.* 2016). And indeed, archaeological surveys carried out in the large area from the Upper Khabur basin to the Tigris have demonstrated that the "Age of the Territorial Empires" (the Assyrians, Seleucids, Romans, Parthians, and Sasanians) went hand in hand with a steady intensification of urban and non-urban settlements, despite the natural curves and the inevitable periods of political instability.[7]

Naturally, each major centre of the ancient world was not isolated or detached from its own regional landscape, and if the parameters used to estimate the supposed population of the large centres of Roman Mesopotamia are valid, the next step is to define their possible catchment areas. These zones represent the expendable agricultural potential of each city. A model to calculate the extension of a city's agricultural sustaining area in the fragile landscape of North Mesopotamia has been formulated by the late T. Wilkinson (1994: 483-520). This assumes that a single person eats approximately one hectare's worth of grain or cereals per year (based on a fallowing regime, which can be adapted to the ecological context of North Mesopotamia).[8] According to these figures, the catchment area of Singara, for example, could have extended – at least – for as far as 17 km² if one considers a low estimate for its population, or 34 km² if using the highest parameters (Fig. 3). The adjoined military population raises these numbers considerably. Unfortunately, no systematic survey has been carried out in the proximity of Singara, and one cannot fully establish to what extent a potential overlapping of catchment areas between the city and the surrounding villages in the countryside might have affected the agricultural and economic scenario. I do believe, however, that – as in the case of early imperial Italy (Horden, Purcell 2000: 270-277) – the landscape of settlements around major cities of Roman Mesopotamia acted within an integrated market economy, rather than being independent and economically isolated.[9] Small and rural sites indeed participated actively in the continuous transaction between agricultural surplus and manufactured goods which defined the urban-rural relationship. There is no apparent reason to believe that this process was not in place also at the very end of the Roman territory, and particularly when the region was firmly in Roman hands, between the end of the 2nd c. and the mid-4th c. AD.

From the Jebel Sinjar to the Tigris

The steppe land that lies between the Singara and Hatra and then towards the Tigris has received attention by the scholars, mostly in connection with the identification of possible tracks linking the Sinjar area to Hatra. Mark Altaweel and Stefan Hauser (2004) analysed the satellite images for this region, rendering an interesting picture that has shed a new light upon the trade connection in this part of North Mesopotamia. I have discussed elsewhere the relevance of the site of Ain Sinu within the context of Roman period Mesopotamia (Palermo 2019: 131-145), here I would like to present spatial data for the area South of the Sinjar and immediately East of Ain

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[7] On the surveys carried out in the region see, in particular, Wilkinson, Tucker 1995; Wright *et al.* 2002; Morandi Bonacossi, Iamoni 2015; Palermo 2016; Ur *et al.* 2020; 2021; Palermo, de Jong, and Ur 2022.

[8] This model has been based on ethno-archaeological evidence from modern Iraq (Adams 1965). Adams calculated that, excluding the area of Baghdad, the sustaining area for half a million people in the Diyala basin averaged 1.4 hectare per year (Adams 1965: 23 and ff.). See also Kramer 1982: 188-189 for other regional figures.

[9] The strict correlation between major cities and their sustaining countryside in the Near East during the Classical Age has been also postulated for the Seleucia hinterland (van der Spek 2008).
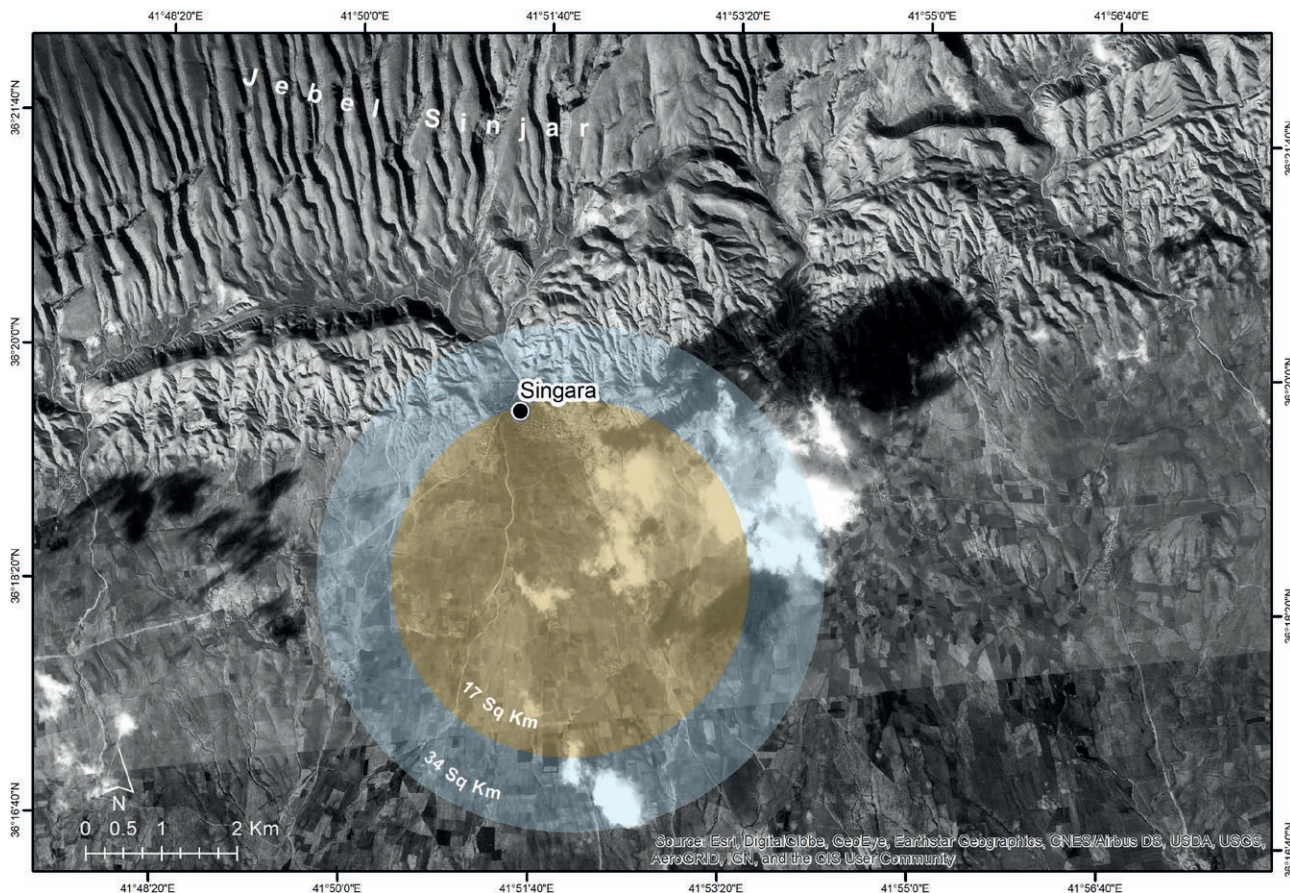
Fig. 3: Possible agricultural catchment area of Roman period Singara. Map by the author.

Sinu, towards the Tigris (Fig. 4). This region is particularly interesting for the understanding of the mobility of people, troops, and goods between the fortified city – as seen with a strong military presence in Roman period – of Singara and Hatra, further to the South. At least two major routes connected Hatra to the Sinjar, one that passes through the site of Tell Hatimiya (south-west of Singara) and another that passes through the site of Tell Hanu (south-east of Singara).

The most interesting site, in this area, is however Tell Hadhail. It is a sub-elliptical large mound, whose relevance was already noted by Ibrahim who briefly surveyed it to notice a consistent and large assemblage of Parthian-Roman material (Ibrahim 1986). The analysis of a 1967 CORONA image (Mission 1102-1025, December 1967) of the site provides some interesting insights (Fig. 5). It shows the presence of several radial linear features departing from gaps in what looks like to be a rampart around the site and that might as well indicate the presence of gates and entrances through the defensive walls. From the southeast part of the site, a couple of tracks are very well visible going towards the direcction of Hatra. Despite the challenge of dating these features, it is nevertheless intriguing to connect Tell Hadhail with Hatra, also considering the abundant Parthian material seemingly collected at the site. Also, based on the datasets from the Peutinger Map, it can be fairly said that Tell Hadhail might also be identified with the prong of *Dicat/Vicat*, marked on the itinerary from Singar (Altaweel, Hauser 2004: 75). In terms of spatial data, comparing the CORONA image of Tell Hadhail with one of the same sites obtained though commercially available datasets (ESRI Base Imagery, in this case) emphasizes once again the importance of declassified satellite data for the remotely driven investigation of Mesopotamia (Fig. 6). As Scardozzi and his team have noted (2014: 60) the same CORONA image from 1967 (Mission 1102-1025) shows traces of what looks like a squared moat that
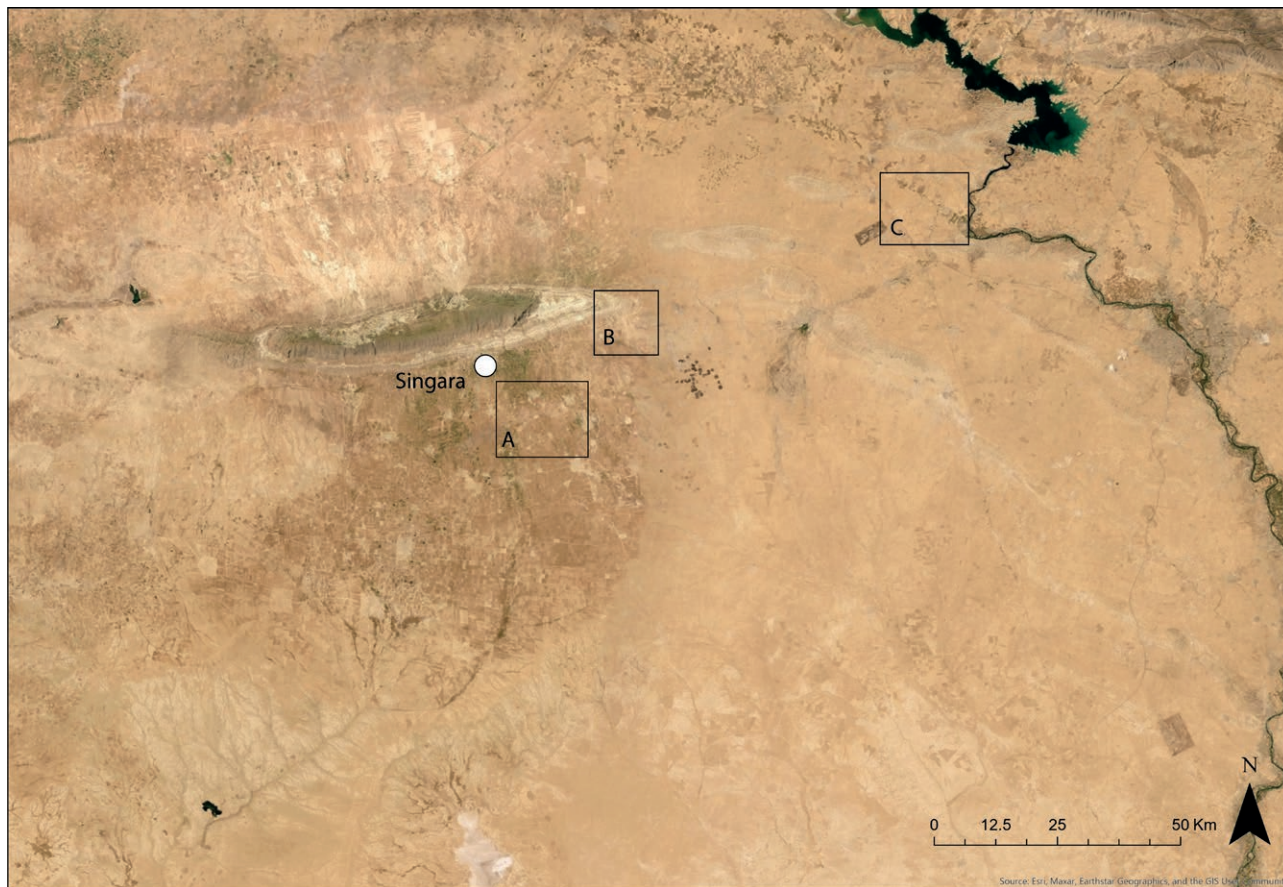
Fig. 4: The area between the Jebel Sinjar and the Tigris in Northern Iraq. The letter-marked blocks indicate the zones of the sites and features discussed in the text. (ESRI basemap / map by the author).

might have taken advantage of a former *wadi* or paleochannels to the West of the site. The comparison, regarding the squared structure, with more recent satellite data (ESRI Basemap) makes once again stand out the relevance of CORONA and declassified imagery to identify small-to-medium scale architectures in the dry landscape of North Mesopotamia. It is not clear what the squared moat would have encircled, but its position not far from what seems to be an important regional site, might also suggest a temporary presence in the area of a small (and seasonally displaced?) detachment of soldiers somewhere in the time of the major expansion of Tell Hadhail.

Further East of Singara lies the site of Ain Sinu (or Ayn Sind'), located not far from the modern tarmac road that connects Beled Sinjar to Tell Afar. I have discussed elsewhere the role and architecture of Ain Sinu (Palermo 2019), whose interpretation still relies on the excavations carried out by David Oates in the late 1950s (Oates 1968). In the interest of a comparative approach with other Roman/Parthian period sites that I will discuss further on in this paper, the *barracks* and the *castellum* of Ain Sinu should be considered as possible examples of military-related structures in the area. From a CORONA image (Mission 1039 – February 1968) the structures of Ain Sinu I and Ain Sinu II are visible with no modern coverage, unlike a relatively recent ESRI imagery where concrete buildings and other disturbance features are scattered over and around the site (Fig. 7). Based on the excavations carried out by David Oates, we are in possession of much more knowledge regarding the spatial organization of the barracks at Ain Sinu I. The fort is one of the largest in the region: it measures 342 x 310 m ca covering an area of approximately 10 hectares. The camp has no corner towers, although possible gate entrances have been identified on the four sides. The internal space featured 12 barracks arranged in two rows. These were constituted by 22

Fig. 5: CORONA image (Mission 1102-1025, December 1967) of the site of Tell Hadhail, South of Singara in Northern Iraq. Map by the author.

double rooms not communicating between them and with each entrance at the opposite end.[10] The remains of AS II, located immediately to the North-East of the barracks are smaller in size and remind of a commanding structure, perhaps the headquarters of the troops' commander stationed in what seems to recall a more proper *castellum*. U-shaped towers are clearly visible in the CORONA image, as well as partly still standing above the ground in the modern commercial shot (ESRI). Chronology for the entire Ain Sinu complex has been determined because of the pottery recovered during the Oates excavation as well as some numismatic evidence. The ceramic horizon of Ain Sinu places the site within the Parthian period sphere of culture for this part of northern Mesopotamia. Distinctive ceramics such as the so-called *Diamonds-stamped pottery* have been found at the site. These have a limited chronology that spans from the early 1st to the 3rd c. AD (Oates 1968: 149 and Appendix A).

The peculiar architecture of the Ain Sinu complex, and especially of AS I, barely fit within the scheme of the Roman-period forts and camps from the Western Mediterranean or central Europe. There is a striking similarity in terms of architecture, size, and other features with one of the dozens of Sasanian-period camps located along the Gorgan Wall in North-western Iran (Rekavandi *et al.* 2007). The most likely interpretation is that the camp was built (and occupied) by a cavalry detachment composed of local people and then, but this remains a speculation, taken by the Sasanians at the beginning of the 3rd c. AD during the successful campaign of Shapur I against the

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[10] Oates (1968: 82) interpreted the smaller room as a space for possibly accomodating horses. There is, however, no certain clue about its real function.

Fig. 6: ESRI image of the site of Tell Hadhail in 2021 (ESRI Basemap/ map by the author).

Romans. It is tempting to suggest the adjustment of the structures of Ain Sinu in that period, as the Iranian comparison seems to indicate.

Another interesting example of the application of satellite imagery for the identification of possible Roman period structures in the area comes from further East. It is most likely that from Singara (through Ain Sinu) the major route that cut this part of northern Mesopotamia from West to East reached the Tigris not far from the modern Iraqi town of Tell Afar. Its strategic location in a narrow *wadi* valley between two ridges made the city the gate towards the rivers for caravans and armies. Modern buildings cover a large part of the ancient settlement, but the fortified citadel at the centre of the city speaks for concrete evidence of its past. At Tell Afar, most likely, the route bifurcated. One route went towards Eski Mosul (Balad – perhaps *Ad Flumen Tigrim*) and the Tigris, whereas the other proceeded in a south-east direction, following the southern slope of the Jebel Sheikh Ibrahim. Indeed, circa 20 km south-east of Tell Afar lies the eponymous fort of Tell Sheikh Ibrahim (circa 90 × 85 m = 0.78 hectares). Internal rooms were visible to Kennedy and Riley (1990: 157), but they have since disappeared. However, an internal architectural organization can be seen in a CORONA image (Mission 1102, December 1967) (Fig. 8). As in other cases, there is no certain indication of the chronology. Sir A. Stein, however, suggested that the fort at Sheikh Ibrahim could be identified with an unnamed station on the Peutinger Map in the itinerary towards Hatra (Gregory, Kennedy 1985: 57). The inner layout of the site, as it is visible from space, does not suggest a precise chronological indication and the spatial organization of the badly surviving structures is difficult to read. At the moment, and lacking a proper field observation of the remains, the case of Sheikh Ibrahim rests as one of the many whose precise role in the understanding of the military organization of Roman (and post-Roman? Islamic? – difficult to say) landscape control remains obscure.
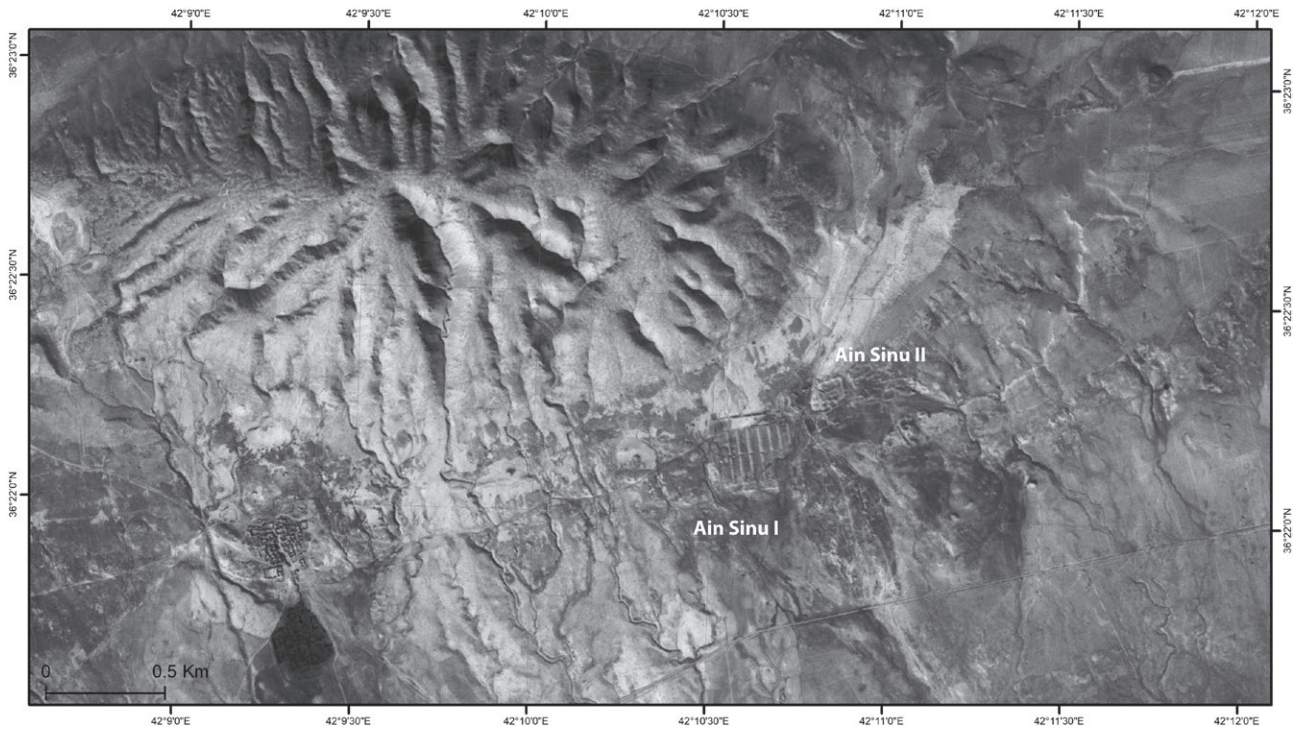
Fig. 7: CORONA image (Mission 1039-1025, February 1968) of the site of Ain Sinu, in Northern Iraq. Map by the author.

The Upper Khabur basin. From Tell Brak to Tell Barri

Besides the Sinjar–Tigris line, another crucial area for the Roman control of Mesopotamia is the Upper Khabur basin and, particularly the area of one of its tributaries, the *wadi* Jaghjag , which also includes, in its uppermost part, the provincial capital of Nisibis. Forts and several squared structures were already identified, specifically in the lower course of the *wadi* Jaghjag, by Poidebard, who linked the structures with the Roman army (Poidebard 1934: pl. CXXXIX). Poidebard also suggested the existence of a (micro) regionally important centre at the village of Al-Hol, close to the Khathunyieh lake (the *lacus Beberaci* of the Peutinger Map) (Poidebard 1934: 1818: see also Scardozzi 2014: 46). Sir Aurel Stein, few years after Poidebard, also photographed the settlement at Al-Hol (Kennedy, Riley 1990: 148). Poidebard recognized a fortified place 4 km north of Al-Hol (not too far from the lake, < 10 km) (Poidebard 1934: 157). The importance of this fortified site is related to the fact that it apparently lies along a road arriving directly from *Thannouris*, which marks the second route reaching the lake besides the one passing via Hassan Aga. The site is extremely interesting in terms of architecture. It is formed by a large enclosure that covers almost 6 hectares, and which also includes, within its walls, a second squared fort (80 m per side) in the proximity of the southern side of the larger enclosure. Circa 1 km east of this walled area, a second squared fort is visible (approximately 140 m per side). Both structures are very clearly visible in the CORONA image (Mission 1102, December 1967, see Fig. 9), as well as in commercial satellite pictures, although the recent shots show the inevitable marks of time in terms of architectural preservation. Comparatively speaking, the fort North of Al-Hol is reminiscent of the fortification of Sura, where an early, smaller fort was later enlarged by adjoining to it a much larger walled structure, presumably in the 6th c. AD, and the fortification at Eski Hendek (Algaze *et al*. 2012: 44-45). D. Oates also suggested that the smaller squared structure could be interpreted as a *mansio* (i.e., a small fort) (Oates 1982: 198).

A unique comparison between different sets of declassified data, namely HEXAGON and U2 imagery, supports the discussion regarding the case of two nearby squared structures in the lower Jaghjag basin. Fig. 10 shows

Fig. 8: CORONA image (Mission 1039 -1025, February 1968) of the squared structure of Tell Sheikh Ibrahim.

the overlap of HEXAGON (ref) on the left and U2 (ref) on the right. From the image it is easy to spot the two squared structures (A and B). A is the so-called *castellum* of Tell Brak (Oates, Oates 1990: 226), located ca 400 m from the large pre-classical mound of Tell Brak. The site was noted and the briefly excavated by Poidebard in 1928 who made soundings at the corners and in the middle area of the built space (Poidebard 1934: 144-146). His aerial picture of the structure is also particularly relevant about the possible existence of linear features (track-ways and canals) around the site. Poidebard dated the *castellum* to the time of Justinian (6th c. AD) mostly on the base of the architecture, while later visits by David and Joan Oates recovered several Roman period sherds (includ-ing a Roman-type lamp) (Oates, Oates 1990: 226). From 2003 to 2006 the Brak Suburban Survey Project carried out intensive on and off-site collection at Brak, mapping both the main mound and the surroundings area (Ur, Kasgaard, Oates 2011). The sherd-collection around the *castellum* yielded a large amount of Abbasid period ceram-ics, with little or no presence of Roman and post-Roman materials despite the earlier identification by David and Joan Oates (Ur, Kasgaard, Oates 2011: 15). This discrepancy in the datasets might be explained by the fact that a finer-grained chronology of the late-antique materials (often labelled as Roman or post-Roman/Byzantine) collect-ed at the site allowed a more accurate identification as early Abbasid ceramics, whose similarity with 6th and 7th c. pottery (e.g., Byzantine Brittle Ware) might have induced earlier investigators to date the *castellum* to the pre-Ab-basid era. This, ultimately, does not necessarily mean that there was no earlier phase at the *castellum*, but its visibili-ty and chronology remain to be fully assessed.

Indeed, the abundant presence of Abbasid period ceramics – which coincided with a period of renewed growth for the nearby site of Tell Brak, certainly speaks for an intense occupational phase of the structure, but it is diffi-cult to say whether the Abbasid occupation was the sole one at the *castellum* or rather a phase of re-occupation of a pre-existing structure.
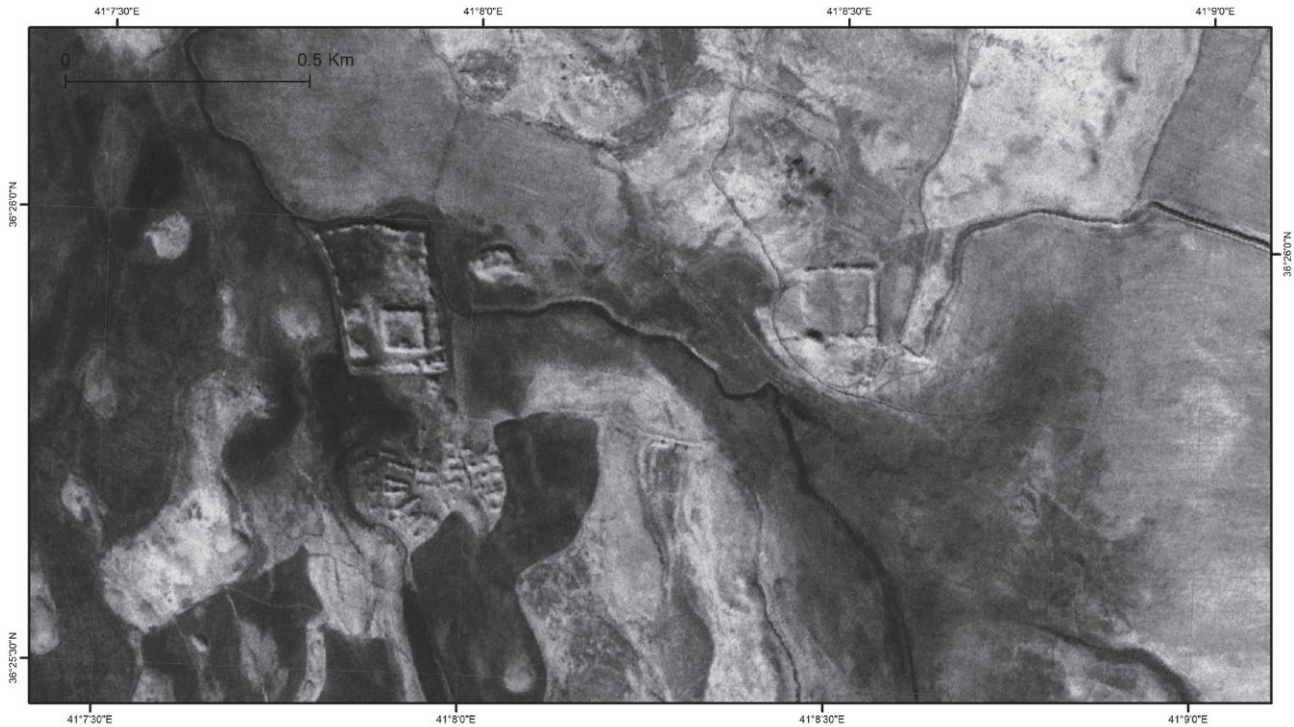
Fig. 9: CORONA image (Mission 1102, December 1967) of two possible forts in close proximity of the modern Syrian village of Al-Hol. Map by the author.

Already Poidebard noted that the structure at Brak was part of a possible wider system of forts in this area of the Jaghjagh river, and indeed the nearby evidence at Saibakh (at the other side of the *wadi*), ca 4 km East of the *castellum* temptingly speaks for a system of forts and camp-like structures in this part of North Mesopotamia. Saibakh is the name of a village located East of the *wadi* Jaghjagh ca 4.5 km from the large mound of Tell Brak, in Northeastern Syria.

The first remote reconnaissance of the possible camp at Saibakh was made by Poidebard. The 1928 aerial picture show a sub-squared site with linear internal divisions, clearly spaced out and seemingly planned. Also, around the site (already then occupied by modern supposedly mudbrick houses) the remains of a moat or a ditch with a possible opening to the East are visible.

A U2 aerial image (September 1959) over the area shows quite clearly what looks like a small, squared camp with internal subdivisions (Fig. 11). The disposition of the modern mudbrick houses suggests the superimposition of the recent buildings to some pre-existing architecture. The built space of modern Saibakh seems to be enclosed by a moat or ditch that recalls the same type of the one already discussed for the Brak *castellum*.

The village of Saibak was briefly visited by David and Joan Oates during their low-resolution and non-systematic reconnaissance of some *Graeco-Roman period* sites in the lower Jaghjagh basin and in close proximity of Tell Brak. Surface collection – performed in a very no-strategic manner- yielded some unspecified Roman period pottery. No further indication of other possible occupational period is given (Oates, Oates 1990).

Further to the East of Tell Brak, and close to the Bronze Age city of Tell Beydar, immediately to the East of the Syrian village of Tell Bati, there is another sub-squared feature – very similar to the remains of Brak and Saibakh. The remains of the structure measure ca 230 x 250 m. In the aerial picture that Poidebard took in 1928, potential internal divisions are visible at Bati, also very similar to the spatial organization of Saibakh and, to a lesser extent, Ain Sinu II. Poidebard himself noted that the linear features visible from the air could have been interpreted as remains of earth embankments for the accommodation of temporary tents (Poidebard 1934: pl. CXXXIX).
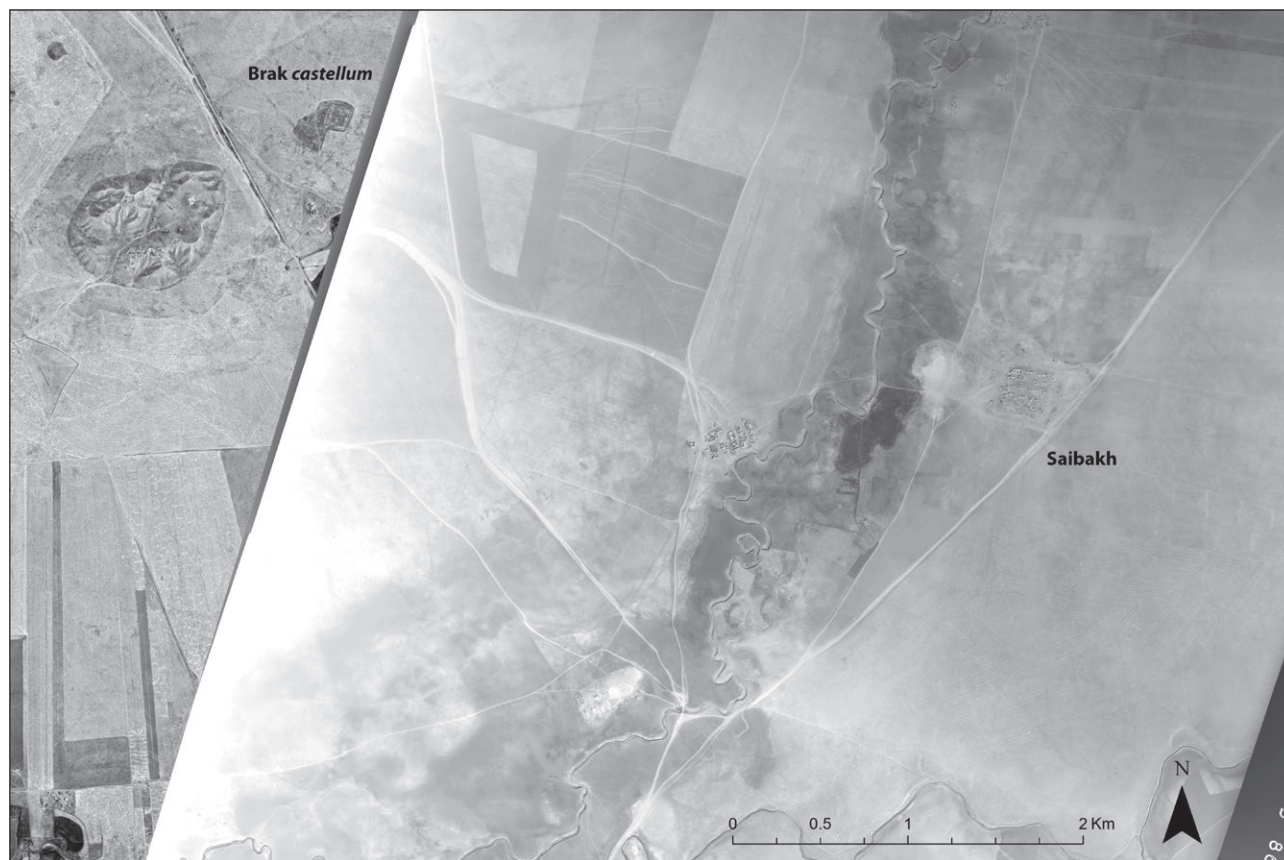
Fig. 10: Comparative image between a HEXAGON image (Mission 1212, 1976) and U2 aerial image (Mission B8638, September 1959) of the so-called *castellum* at Tell Brak and the supposed camp at Saibakh. Map by the author.

The case of the *squared structures* at Saibakh and Tell Brak, are particularly interesting for the scope of this paper, as they allow a proper comparison between three different remote datasets: HEXAGON, U2 aerials, and the recent ESRI Base Imagery. The first thing that strikes the eye is the incredibly high resolution of the U2 records, which provide an unprecedented level of detail for the steppe-like area around the two sites. It is also very peculiar to note now modern houses at Saibakh have been almost precisely superimposed to the potential layout of the barracks (?). HEXAGON and even modern commercially available satellite data do not offer the same resolution of the U2 and yet, in the case of the HEXAGON picture mostly, a large anthropic area is visible to the North of the site, possibly to be put in connection not only with the squared structure, but most likely with the small *tell* located immediately to the West of the modern village.

An additional example of the potential of satellite declassified data for the archaeological research in North Mesopotamia and within the time frame of the Roman period occupation of the region comes from the well-known and thoroughly excavated site of Tell Barri. Tell Barri lies along the eastern bank of the *wadi* Jaghkagh, ca 8 km North of Tell Brak and thus within the same micro region of the Brak *castellum* and the supposed fort at Saibakh. The site has been systematically excavated since the 1980s and the works only suffered a halt due to the political turmoil in the region in 2010 (Pecorella, Salvini 1982; Pecorella 1998; Pierobon Benoit 1998; 2008; Palermo 2019). Explorations at Tell Barri have revealed the long history of the settlement, almost continuously inhabited from the early Bronze Age to the late Islamic period. The Parthian-Roman period (late 2nd c. BC – early 4th c. AD) is particularly well represented with domestic structures, large-scale buildings and the massive defensive wall unearthed on the *tell*, the *acropolis* of the classical town (Palermo 2019 for an overview of the results of the exca-

Fig. 11: U2 image (Mission B8638, September 1959) of the village of Saibakh. Map by the author.

vations at Barri). Despite the extremely interesting results from the site itself, however, no systematic intensive on and off-site survey was never performed. And yet recently the remote analyses of declassified satellite and aerial documents show that the site size was significantly larger than the area interested by the *tell* with an extended lower town topping almost 450 hectares. The measure is based on the potential extension of the anthropogenic soils visible in the imagery (Fig. 12). While it is impossible to securely determined in which historical periods the lower town was occupied and for how long – considering that no artefact-collection was ever carried out – it is tempting to link the occupation of the large area South and East of the *tell* the major historical phases documented by excavation. It is a matter of fact that Tell Barri – *Kahat* in the Iron Age, name unknown in later periods – was a centre of a certain importance in the Parthian and Roman period. Occasional soundings were performed prior to the civil war of Syria in the lower town (Pierobon Benoit 2008), whereas the only relatively-large area excavated off the mound, ad close to the *wadi* Jaghjagh to the South-West of the *tell* – Area M – has yielded a large and architecturally articulated complex with possible administrative and economic functions dated to a period in between the very end of the 1st millennium BC and the 1st millennium AD, namely the Parthian phase (Pierobon Benoit 1998). It is henceforth tempting to relate the architectural anomalies visible in the U2 and HEXAGON pictures to the South and South-East of the *tell* to the later periods of occupation on the site. Indeed, this, extended, signature in satellite and aerial imagery has been proved to be specifically connected with low-density, large, Byzantine-Sasanian settlements in the plain of Erbil, where similar remote-sensing analyses have been carefully ground-truthed (Ur *et al*. 2021). It is difficult to interpret this large and extended anomaly with no ground control, but some hypotheses can be formulated, nevertheless. Fig. 13 shows signatures of what seems to be architectural evidence and open-air spaces (e.g., roads, courtyards, squares, etc.). Possible entrances into the city walls are also marked in the pic-

Fig. 12: U2 image (Mission B1554, January 1960) of the site of Tell Barri, in northeastern Syria. Map by the author.

ture. Interestingly, an 80 x 80 sub-squared structure is visible immediately to the East of the northern slope of the mound. As in the previous cases its chronology and function remain however cloaked in darkness.

CONCLUSIONS

There is no further indication or any proven evidence that all the squared structures widespread in the steppe lands between north-eastern Syria and north-western Iraq can be dated to the Roman (or post-Roman, e.g., Byzantine) period. Most of these structures have only been remotely identified. Some have been surveyed, and only a very small number (such as the already mentioned Brak *castellum*) have been subjected to systematic archaeological investigation. In this context of uncertainty, however, the remote analysis of declassified aerial and satellite data can provide new insights into the comparative approach to many structures (and infrastructures) widespread in Northern Mesopotamia. The examples discussed in the text are only some of the dozens and dozens of similar forts, camps, and barracks that have been built and used in the steppe lands of Syria and Iraq for a quite long period of time. At the current stage of archaeological research on the Roman period eastern borderland it is difficult to suggest both a systematic spatial organization of the landscape or an opportunistic and strongly connected to the events plan regarding the supposed existence of said military structures. It is tempting to propose however – as new trajectories of research – a thorough analysis of the scattered, multiple evidence of squared structures, isolated forts, and possible camps through an accurate remote investigation. I am under the impression that – notwithstanding the difficulty in putting the feet in the ground in some zones of the discussed area – the typological and comparative approach
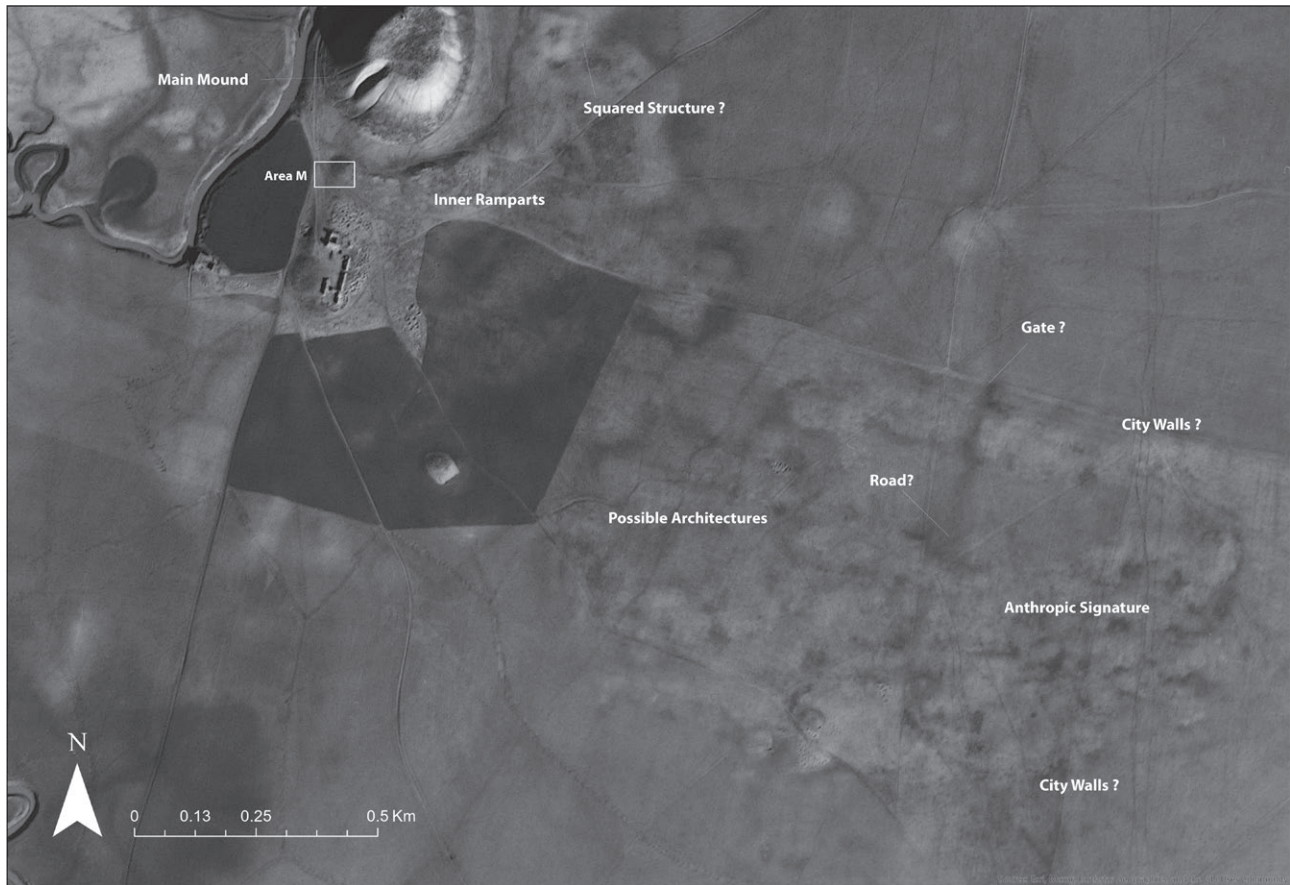
Fig. 13: Possible anthropic features and signatures at Tell Barri. Map by the author.

might indeed lead to new interpretations of the easternmost areas of the Roman world, where the imperial connections and interactions impacted greatly on the daily life of civilian and military communities.

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Reviving the Reading of an Old Phrygian Seal[1]

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Abstract. A recent revision of an inscribed Old-Phrygian stamp seal of the Borowski Collection is nullified by new photographic documentation.

Some forty years ago Roberto Gusmani and I published an inscribed Old Phrygian pyramidal stamp seal of white chalcedony belonging to the Elie Borowski collection.[2]

After a careful scrutiny of the inscription – we had the original piece at our disposal –, our decoding of the text was, unhesitantly,

pserkeyoyatas

which we divided into *pserkeyoy atas*.

The second member clearly reflects the widespread Anatolian *Lall-name*[3] in the sigmatic Nominative, while the initial element was interpreted either as an adesinential Optative – so that the whole text *might* mean '*valeat* (?)[4] *Atas*' (Gusmani, Poetto 1981: 66) –, or as the Dative Sg. of a P(ersonal) N(ame), in which case the sense should be '*Atas* to *Pserkeyo*' (Gusmani, Poetto 1981: 66 n. 16), with the assumption that we were dealing with "un dat[ivo] 'genitivale'": '*A.* (figlio) a = di *P.*'.

However, such a rendering of the initial constituent did not remain without dissent:[5] the first to cast doubts – albeit in a decent way – were

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[1] For useful interventions I am indebted to an anonymous reviewer.

[2] Gusmani, Poetto 1981, reproduced here Pl. I.1a and 1b (impression). Presently the object is part of Jonathan Rosen's private collection (New York): see Obrador-Cursach 2018b: 666 with n. 7.

[3] Gusmani, Poetto 1981: 65; Orel 1997: 417 ad ate-; Brixhe 2013: 58; Oreshko 2021: 290-291 (also on the variants) and, primarily, Zgusta 1966: 105-108.

[4] Or the like, at any rate an auspicious phrase.

[5] Yet acknowledged by Orel 1997: 455 (with the following commentary: "Derived from

Brixhe, Lejeune 1984: 271 ad **1**: "La perte d'un éclat de la pierre a endommagé le sommet de la lettre; les éditeurs donnent *ṛ* [*recte*: *r*] sans hesitation (bien qu'on puisse songer aussi à *u* ?)."[6]

This incertitude was heeded by Lubotsky 1994 in *TITUS* ad Dd-101 ("pser?keyoyatas"), but the most recent position in such a direction, with apparent proclivity to rehabilitate a reading "*pseukeyoy*", was repeatedly advanced, although in a somewhat inconsistent and misleading perspective, by Obrador Cursach in 2018a, 2018b, 2019 and 2020: "Malauradament, un cop en la part superior de la inscripció fa que sigui difícil saber si hem de llegir el primer mot [...] com *pser*ʾ*keyoy* o *pseu*ʾ*keyoy*" (2018b: 666), "The current reading of the text is: *pser*ʾ*keyoy atas* or *pseu*ʾ*keyoy atas*" (2019: 205 n. 3), but with decided propensity for "*pseukeyoy*" in 2018a: 273 "***pseṛkeyoy*** see *pseukeyoy*", with the subsequent annotation (2020: 338 s.v. "*pseṛkeyoy*"): "sg.dat. *pseṛkeyoy* or *pseukeyoy* [...[7]] Read on a stamp seal before a clear PN in sg.nom: *pseu*ʾ*keyoy atas*. Although the reading of the fourth letter is not at all clear because of a dent (but given the shape of the end of the strokes a ***u* can be preferred** [boldface mine[8]]) [...], perhaps related somehow to *pseik-* [!]. Since no parallel can be found, a very attractive possibility suggested by Pisani (1982) is to consider *pseṛkeyoy*[9] a PN borrowed from Gr. Σπερχειός, a PN found in Roman Caria [...]" (= 2018a: 273).[10]

Nonetheless, an unpublished image of this document (Pl. I.2a and 2b [enlarged]) taken from my photographic dossier, appears to be crucial thereon: the script incontestably shows

<div align="center">

pserkeyoy[11] *atas*

</div>

Our original reading is thus vindicated; both exegeses of *pserkeyoy* – Optative or anthroponym – are likewise defensible, depending on the present context; a conclusive result could only be offered by a textual framework beyond debate.

<div align="center">

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pserk- ["A name of a god somehow connected with lions. The stem is preserved in Pisid Ψερκιοκωμητης", p. 454]," yet duly criticized by Obrador Cursach 2018a: 273 and 2020: 337; the correct rendition is *pseik-*: see Brixhe, Lejeune 1984: (42-)43 ad W-02, Pl. XXI.1); Pisani 1982; Boardman 1998: 3a with Pl. I.2 (photograph of the impression reproducing that in Gusmani, Poetto 1981: Pl. I.[4]); Bernheimer 2007: 51b ad GP-1.

[6] What presented in Diakonoff, Neroznak 1985: 75 ad *A90*: "x *SERKEJoJATAS*" and the remark (n. 1): "The publishers read *P*; dubious" concerning the initial letter, deserve no consideration.

[7] But with the inversion "*pseukeyoy* or *pserkeyoy*" a few lines above (p. 337 s.v. *pseika*ʾ).

[8] Envisaged already in Obrador Cursach 2018b: 666: "Només ho seria si s'acceptés que per un error el gravador de W-02 s'oblidà del traç oblic d'una prestesa <u> *pseu̲k..*ʾ, i que en Dd 102 [*recte*: 101] la lectura vàlida és *pseu*ʾ*keyoy*," though here in connection with the improper link with *pseik*ʾ in W-02 by Orel 1997: 41.

[9] Understood by Pisani as a genit. in **-o-syo* to be compared with the Armenian Genitive Sg. in *-oy* (as in *getoy* < *get* 'river'). This explanation is recognized by Witczak 1991-1992: 159 ("Addition"), with the integration that "*pserkeyoy* stands for *pserkeyoyo with an [*sic*!] usual elision of the final vowel *-o* before initial *a-* of the Phrygian man's name Atas."

[10] Strictly speaking, Pisani did not assert that *pserkeyo-* is a PN borrowed from Gk. Σπερχειός as indicated by Obrador-Cursach 2020: 338, but that "possa essere la stessa cosa che Σπερχειός, secondo il Pape-Benseler nome di fiume in Tessaglia, località della Doride e antroponimo, probabilmente di origine pre-greca."

[11] Validated, incidentally, also by the excellent photograph GP-1a in Bernheimer 2007: 52.

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Pl. I

1a

1b

2a

2b

Tracing Regime Change during the Transition from the Neo-Babylonian to the Achaemenid Empire at Nippur: Reconstruction of Archives Excavated in 1889

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Abstract. It is generally assumed that the takeover of Babylonia by the Persian king Cyrus II in 539 BC went relatively smoothly. The current study suggests that at Nippur there might have been hitherto overlooked changes among the higher-ranking officials during the transition of 539 BC. A collection of Neo-Babylonian tablets from the 'Tablet Hill' at Nippur is analyzed and its original trench of excavation is pinpointed on the map of the site. Focusing on several dossiers of tablets at 'Tablet Hill' from the time of transition around 539 BC it can be shown that further insights can be gained from the unpublished archaeological documentation.

Keywords. Nippur, Neo-Babylonian to Achaemenid transition, Tablet Hill, Pennsylvania expedition.

INTRODUCTION

This article deals with the transition from the Neo-Babylonian to the Achaemenid period at Nippur, more precisely with the evidence covering the end of the reign of Nabonidus in the autumn of 539 BC and continuing into the Early Achaemenid period.[1] Through a combination of material

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and written evidence from the Northwestern part of "Tablet Hill" (Mound V)[2] it is the aim of the paper to put the available information into its proper historical position.

Only rarely, one gets a glimpse through archaeology of the everyday life (and death)[3] of those who profited by the new possibilities. The opportunity presented here is an unlikely one. As is known also for other sites the early excavations of Nippur have the nimbus of being badly excavated and documented, or that, besides the physically preserved tablets, its results are entirely lost to science. It will be shown that some information can yet be gained from the unpublished archaeological documentation.

In the historical standard work of the period by Pierre Briant (2002: 71-72) as the seeming proof of a smooth transition from Nabonidus to Cyrus serves, for example, the private cuneiform archive of the Egibi family in Babylon.[4] This archive ran without interruption from the reign of Nebuchadnezzar II (605-562 BC) until early in the reign of Xerxes (486-465 BC). Too often historians accepted the narrative provided by the seemingly 'native' chronicles and uncritically adopted the 'fact' that the inhabitants of Babylonia received the new overlords with open arms. It is more than likely that these sources were politically influenced (Waerzeggers 2015b). As Caroline Waerzeggers has pointed out elsewhere, it was still one of the biggest turning points in ancient Mesopotamian history (Waerzeggers 2015a: 181-222). The vast Achaemenid Empire stretched from 'the Saca who are beyond Sogdiana, from there as far as Kush, from the Indus as far as Sardis' (Darius, *Apadana foundation tablets*) (Waerzeggers 2015a: 185). This gave an opportunity to at least some Babylonians to take part in longer distance business activities (Jursa 2010: 224-225) and to profit from a participation in the land-for-service system, as for Nippur most prominently exemplified by the later Murašû archive, 454-404 BC (Stolper 1985; Jursa 2005: 113-114). It is suggested here that there might have been some upheavals among the high-ranking officials in the course of the transition of 539 BC which, so far, have been overlooked or were underemphasized. The article tries to provide a local perspective for Nippur which properly highlights the existing documentation from this transition.

HISTORY OF EXCAVATIONS AT NIPPUR UNTIL 1889

More than 130 years have passed since the beginning of intensive excavations at Nippur in 1889, without even counting the short explorations around 1850. Therefore, it is necessary to start with an introduction including the history of research as well as on the archival material from the excavations.

After the early explorations by Rawlinson, Layard and Loftus around the 1850ies (Rawlinson 1849/50; Layard 1853; Loftus 1856), only few antiquities from Nippur appeared on the antiquities market until attention was directed to the site again by the so-called "Wolfes Expedition to Babylonia" in 1884/85 (Hilprecht 1903: 290-293). It was a survey conducted by members of the American Oriental Society, connected to the American Institute of Archaeology, in order to choose a valuable site for excavations and to arouse such public interest through follow-up lectures that an American institution would be able to finance such excavations (Hilprecht 1903: 292-293). The expedition was led by William H. Ward and accompanied by John Henry Haynes as photographer, the later Nippur field director. More and more objects kept coming on the antiquities market until 1888 (Hilprecht 1908: 201-204) and it was

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[2] The numbering follows the excavator J. P. Peters (1897) which was chosen in the order of excavations and does not take into consideration the randomly changed version presented by Hilprecht (1903).

[3] Schneider forthcoming a.

[4] To this archive and further bibliographic references see for example Wunsch 1999; Jursa 2005.

around this time that Nippur tablets arrived in different collections (*Ibid.*). During the first campaign led by J. P. Peters, excavations in the Southeastern part of Nippur on Mound V, the triangular mound which became known as 'Tablet Hill', were started on 12th February 1889 (Peters 1897: 245-246; Clayden 2016: 1).[5] Following Peter's Journal entry 'work was stopped suddenly' a bit more than two months later on 15th April 'on account of the shooting by a 'zaptiyeh' (i. e. a gendarme of the Ottoman Empire) of a thieving Arab of the Es-Seid tribe' in the aftermath of which the camp was set on fire by local Arabs (Peters 1897a). That already during the first campaign finds were stolen (Hilprecht 1908: 279), part of which probably originally were unearthed from 'Tablet Hill' can be better understood from the following excerpt of Peters' Journal (p. 184-185) entry of 15th April 1889, (Westenholz 2020):

> Since my return [i. e. since 5th of April] there has been a find of stolen objects, but from what trench we cannot ascertain. One of them was a stamp for bricks, bearing the name of Naram Sin, & the city of Nippur; another was a stone tablet, astronomical, with archaic characters. Several were unbaked tablets of the Hammurabi dynasty, & the remainder small unbaked tablets of the late Babylonian or Persian period. There were 14 objects in all. (Westenholz 2020).

That means already at this time some objects might have reached the antiquities market directly from the excavation trenches. To illustrate how fast antiquities found their way into different collections via the antiquities market may serve the following example from the third campaign led by John H. Haynes. After the excavation of the main part of the Murašû archive at Nippur during the third campaign led by J. H. Haynes from 27th May until 7th June 1893, already in 1894, a few tablets arrived at London which went through the hands of antiquities dealers in Baghdad and finally reached the collection of the British Museum in 1896 as well as several other final destinations (Stolper 1985, 11; Jursa 2005: 113).

BEFORE THE EXCAVATIONS: FROM 'PALACE HILL' TO 'TABLET HILL' (MOUND V)

To get a better idea of the situation of the site before excavations started on Mound V, later known as 'Tablet Hill', it might be of interest to look at the unpublished documentation nowadays preserved in Philadelphia. According to the first preliminary report by Peters from 11th February 1889 the excavators originally named this part of the site 'Palace Hill' as obviously a bigger structure was supposed to be hidden in this part of Nippur. This original name could derive from wall structures which were visible on the surface of 'Tablet Hill' but which failed to have the characteristics of a palace after closer examination, probably comparable to the corner of a later building (McCown and Haines 1967: Pl. 76) which was identified in TA ('Tablet Hill' trench TA). Only after more and more business tablets appeared in the trenches, Mound V was called 'City of the Living' already within the following (second) preliminary report by Peters just a week later on 18th February 1889.

STUDIES CONCERNING EXCAVATED NEO-BABYLONIAN CUNEIFORM ARCHIVES FROM NIPPUR

In his study of Neo-Babylonian archives Pedersén (1998: 198 n. 87) left out for Nippur such archives which were reconstructed by Zadok (1986) solely through inscriptional evidence 'without provenances' as according to him 'it is rather questionable if they represent archives found in findgroups and not just dossiers of texts reconstructed by means of prosopography'.[6] It is therefore also the task of this article to reconstruct the context in which some of these tablets were found.[7]

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[5] Hilprecht (1903: 309-311) gives 11 February as the beginning of excavations of two trenches. This is not confirmed by the existing documentation.
[6] But see now Waerzeggers 2018: 97.
[7] In 2019 the burnt fragment of a tablet was found on the surface of the North-slope of 'Tablet Hill' by the current director of the

THE STATE OF THE ARCHIVAL MATERIAL FROM THE ARCHAEOLOGICAL DOCUMENTATION

Through the cooperation with Aage Westenholz[8] and Inger Jentoft of the project 'Nippur Digitized' as well as with the help of Alex Pezzati (senior archivist) whose team recently reorganized the Nippur archive at the University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, it is possible for me to start extracting some degree of information from a, so far, disconnected documentation. A few further insights can be also gained from the massive archive which constitutes the "Schriftlicher Nachlass" of Prof. Hermann V. Hilprecht in Jena of which access was provided to me by Manfred Krebernik and Kai Lämmerhirt in 2014.[9]

During the first campaign of 1889 at least two lists of tablets, which included besides a description (with measurements) of the tablet also the date when it as found, were compiled by the first Assyriologist of the first campaign Robert Francis Harper,[10] who just two years later became professor of Assyriology in Chicago. Therefore, Harper's lists[11] can be helpful to identify single tablets, for example, if one combines the information from the excavation journals with the finding date of the tablets including the description of each tablet. The two preserved lists contained a short description of tablets found throughout the mounds. A number of 185 fairly or well-preserved tablets was documented in this way. This number could not be matched by any of the latter three campaigns including the fourth one with direct involvement, for the first time since his engagement in 1889, by Hilprecht during the last six weeks of the campaign in 1900.[12]

The find numbers of the tablets from the two lists have been referred to partially also by Clay in his publication better known to Assyriologists as BE 8/1 (here Clay 1908) concerning Assyrian, Neo-Babylonian and Persian texts.

DATE RANGE OF TEXTS FROM NORTH-WEST 'TABLET HILL'

According to Harper's lists as well as Peter's reports the earliest datable texts from this part of 'Tablet Hill' come from the reign of Hammurabi, with a textual gap in the Middle Babylonian period when this part of the mound seems to have been used as a graveyard. The use of formerly built area as burial ground belongs to a normal cycle within a historically grown core of a city (Baker 2008). Also, the proximity to the temples of Enlil, Ninlil and Inanna might have been a reason to choose this spot.

The most recent texts from the Northwest part of 'Tablet Hill' are dated in the reign of Artaxerxes I/II (466–425 BC//404 BC–358 BC) and can only serve as an approximate timeframe for occupation during the later Achaemenid period. The same date range exists for the results from 'Tablet Hill' trench A (TA), excavated during the post-World War II expedition, nearly 100 m to the South-East (McCown and Haines 1967: 76).

The focus of this article, the transition from the end of the Neo-Babylonian period until the Early Achaemenid period is covered at TA mainly through contexts with a date range of the main occupation from the reign of Naboni-

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Nippur expedition Abbas Alizadeh (Paulus 2021). After a short briefing about the findspot of the tablet (personal communication), I was able to inspect the surroundings of the findspot by myself in November 2021. This tablet comes from the sloping surface of excavation dump of the 1889-1890 expedition led by Peters. It is therefore possible that it will join to an unpublished tablet fragment, probably nowadays in Istanbul, Philadelphia or probably even Jena although a first survey through the tablets (https://cdli.ucla.edu/) proved unsuccessful.

[8] The bigger part of tablet identifications concerning V A were made by Aage Westenholz.

[9] The digitized archive is now available under https://hilprecht.mpiwg-berlin.mpg.de/ (last access on 5 May 2022).

[10] As second (appointed) Assyriologist served Hermann Vollrath Hilprecht. In reality both Assyriologists were given equal status. Hilprecht 'was asked to examine the pottery, coffins and other objects discovered' (Hilprecht 1908: 200-201; 278-279).

[11] UPMAA Nippur 10.04.

[12] Even the over 730 Murašû tablets were not listed in any comprehensible way (Stolper 1985). The context of them would have been lost without Hilprecht's efforts of identification in the Museum which began already at Constantinople during the summer of 1894.
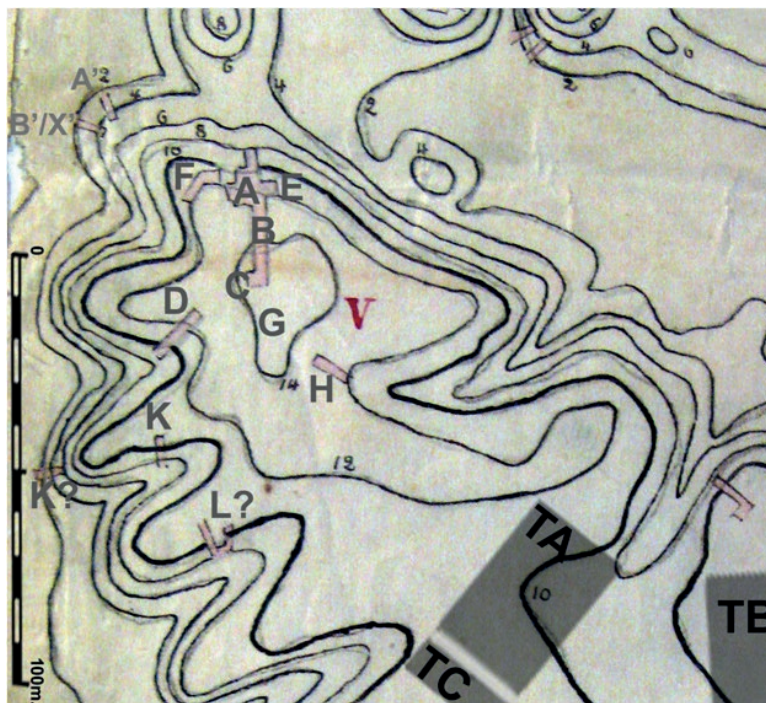
Fig. 1: Detail of the original relief plan (red Legrain number "316") of the excavations of 1889 by Field (measured with help of Hilprecht), with the operations on the Northwest tip of Mound V, following the sketch of 21 March 1889 (Clayden 2016: Fig. 4c) as well as the position of TA/TC (oriented towards North) and TB added by B. Schneider. Compare Peters 1897: opposite 242. About 50 m to the east of Section H lies the Northwest corner of TA (surface = 100 m relative TA-niveau). Photo of plan by B. Schneider, 2008. © University of Pennsylvania Museum of Archaeology and Anthropology archives. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence.

dus (556-539 BC) onwards until late in the reign of Xerxes (486-465 BC). A later occupation has to be expected also in this part of Nippur as a few stray tablets from the time of Artaxerxes I/II (465-424 BC/404-358 BC) were found, although as it seems in secondary context (Armstrong 1989, 155). This later Achaemenid period is covered more broadly by the evidence on the northern 'Westmound' (Mound I) with the Murašû-archive as the most famous example (Stolper 1985, 157-168; Jursa 2005: 113-114).[13] Just to the North-East of the latter, also the excavations led by McGuire Gibson (1973; Gibson et al. 1978) could trace Neo-Babylonian and Achaemenid layers in trench WA ('Westmound' trench A). Because of the high degree of erosion on this slope of the mound (see below) the re-examinations in trench TC ('Tablet Hill' trench C) immediately to the South-East of trench TA by Armstrong could not further elucidate the dating of the levels later than TA level III, and therefore the timeframe concerned in this article (TA level II-I), as not a single dated tablet was found in this limited sounding (Armstrong 1989).

THE RECONSTRUCTION OF TABLET ARCHIVES VIA THE UNPUBLISHED DOCUMENTATION FROM THE EXCAVATIONS OF 1889

Through the help of the unpublished excavation journals from the University of Pennsylvania excavations of 1889 it is possible, for example, to reconstruct a small archive of several texts which can be pinpointed to the trench of excavation (Mound V trench D) (Schneider forthcoming b). One of the texts which could not be iden-

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[13] For a single Murašû-text deriving from the Ekur temple excavations see Schneider 2018a: 348-349.
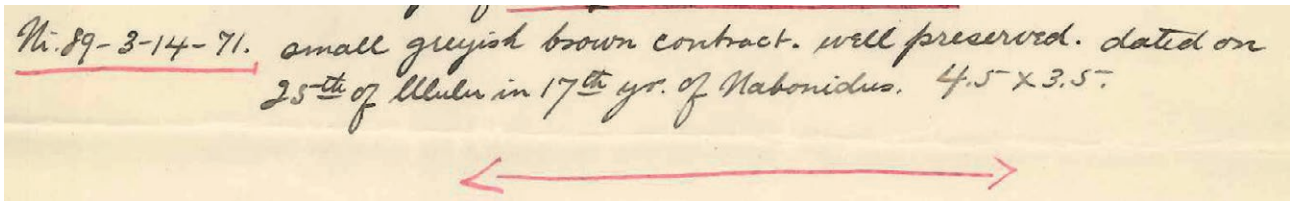
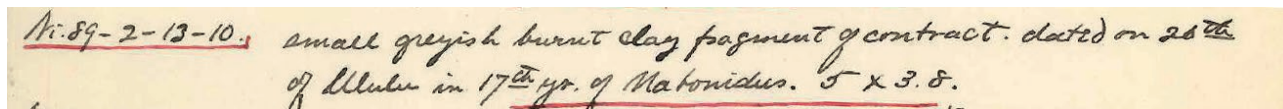**Fig. 2:** Detail of entry no. 71 (Hilprecht Istanbul 1894 transcript no. 349) from Harpers 'List II' (Nippur 10.04). © University of Pennsylvania Museum of Archaeology and Anthropology archives. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence.

tified is of concern here because of the date given by Harper in his list (see below). Some of the texts might have ended up in Istanbul where about half of the excavated material of 1889-1900 stayed after a split of the finds, conducted by John P. Peters and later Hermann V. Hilprecht under the supervision by Hamdi Bey. Other texts found their way into private collections.

1. A late Nabonidus tablet from Mound V trench D (V D),

- Ni. 89-3-14-71: Unidentified, 4.5 x 5.3 cm, is dated on 25th of Ulūlu in the 17th year of Nabonidus (22nd September 539), according to Harper (Fig. 2).

Peters Journal entry of 14th March concerning trench V D (Westenholz 2020):

In this trench were also found a number of tablets, all belonging to the Persian kings, excepting one of Nabonidus. They were found together about 1½ metres below the surface, close to a little hole full of ashes.

Combining the information from the documentation of 1889 an 'archive V D' (Fig. 1) could be separated from the rest of the tablets listed by Harper and identified by me as the archive of the sons of Līšir (Schneider forthcoming b).[14] The earliest tablet from this context dates from the end of the reign of Nabonidus (22nd September 539 BC). The rest of this archive is dating from year 5 of Cyrus until the reign of Darius I (Jursa 2005: 115). Until an identification of this tablet it is not sure if it belongs to the same archive although the finding circumstances make this possibility quite likely (Schneider forthcoming b).

2. A late Nabonidus tablet from V A' (Fig. 5 and Fig. 6):

- Harper (List II) Ni. 89-2-13-10 (5 x 3.8 cm) = Clay 1908: No 55 (3.6 x 5.1 x 2 cm) CBS 3597 is dated on 20th Ulūlu in the 17th year of Nabonidus (17th September 539 BC).

Another tablet (Clay 1908: no. 55) dated towards the end of Nabonidus reign can be provenanced by trench.[15] According to Clay it comes from the first expedition (1908: 77). The CBS catalogue gives the Harper number as: 'Harper Ni 10 -2-13-89' which fits to Harper (List II) Ni. 89-2-13-10 (5 x 3.8 cm) 'small greyish burnt clay frag-

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[14] Furthermore, archaeological finds from the environs of this archive can be traced and therefore reconnected with the texts (Schneider forthcoming b). The results concerning Mound V trench D were presented at the workshop in honor of Manfred Krebernik 'Die Hilprecht-Sammlug vorderasiatischer Altertümer und ihre Bedeutung für die Altorientalistik' on 18 March 2022 and will be published in the proceedings in the dubsar series of Zaphon, Münster.

[15] Another tablet from Nippur dated in the last year (17) of Nabonidus exists: FLP 1606 (4.7 x 3.4 cm), 26th Ayyāru (28th May 539 BC) which belongs to the archive of Bēl-eṭēri-Šamaš (Dillard 1975: 19; 183-184; Jursa 2005: 236-237). It found its way into the John Frederick Lewis Collection, donated to the Free Library of Philadelphia in 1930 (Dillard 1975: 3) and as the other tablets from this archive at Yale most probably derives from the antiquities market.

Fig. 3: Overview of the Northwest tip of 'Tablet Hill' shot from the ziggurat in November 2021 (view to the North), during Nippur Expedition, Season 21. Photo: B. Schneider. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence.

Fig. 4: The remains of the main trench (V A) of 1889 at the Northwest edge of 'Tablet Hill' (Mound V) with part of the post-World War II excavation house in the right background in November 2021 (view to the North), during Nippur Expedition, Season 21. Photo: B. Schneider. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence.

ment of contract'. Also because of the size and date provided by Harper it can be confidently identified with his number 10 (List II, Fig. 6). Even a copy of part of the tablet is preserved in the Nippur archive in Philadelphia (Fig. 5). This tablet belongs to the Arad-Gula dossier of the Ekur archive (see below).
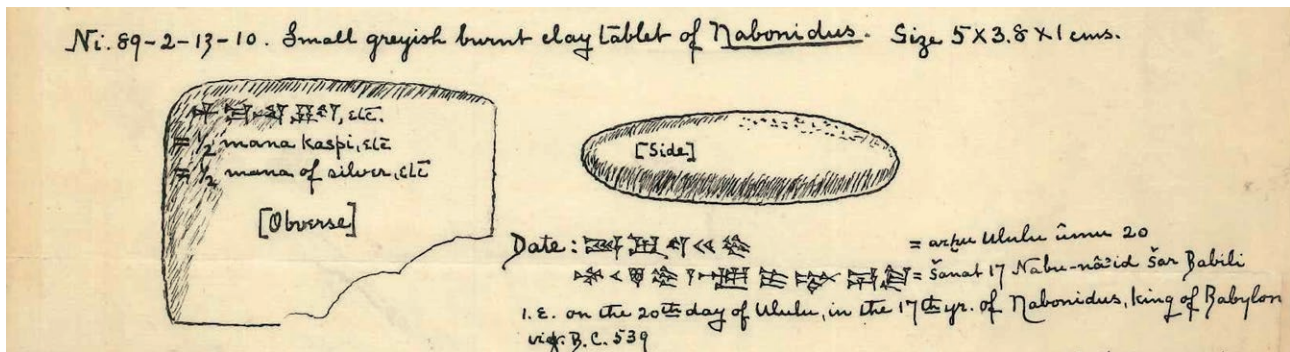
Fig. 5: Detail of copy of part of tablet Ni. 89-2-13-10 from Section A' (Harper: 5 x 3.8 x 1 cm; Clay: 5.1 x 3.6 x 2 cm) from R. F. Harpers 'Report I' of 6th March 1889 (UPMAA Nippur 10.04). © University of Pennsylvania Museum of Archaeology and Anthropology archives. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence.

According to Peters, Journal of Excavation (Westenholz 2020), the provenience can now be defined as the beginning of Trench/Section V A (Fig. 1), situated downhill on the northwest slope of 'Tablet Hill' (see Fig. 4). To distinguish this lower section from trench A, it will be called trench A'. Following the entry of Peters on 14th February (Westenholz 2020) trench V A' was the beginning of a long narrow search trench (A) cutting uphill on a ridge of Mound V to reach the highest part of 'Tablet Hill' (Fig. 2). It therefore derives from the same excavations on the Northwest-tip of 'Tablet Hill' dated on 13th February 1889 and therefore from trench V A' (i. e. the beginning of trench V A, Fig. 1). Section V A', an initial cut along a nose of the northwesternmost part of 'Tablet Hill' was begun on 12 February 1889 alongside another similar cut on the opposite side of the same nose called 'X' by Peters (Clayden 2016: 1).

3. The texts from the Ekur archive including the dossier of Arad-Gula from Section V A'

Two tablets from the Ekur-archive were excavated on 13th February (Clay 1908: nos 69 and 78) and therefore come from Mound V trench A', whereas two more from 16th February (Clay 1908: nos 78 and 88) cannot be securely narrowed down to the trench but the fact that they belong to the same archive makes it quite reasonable to assume a similar provenance (Zadok 1986).

Additionally, at least four of the tablets (Clay 1908: nos 55, 70-71; Hilprecht's Istanbul no. 349) from trench V A', excavated on 13th February, belong to the dossier of Arad-Gula son of Šamaš-iqīša, who's activities mostly belong to the sphere of the so-called 'Ekur archive' as described by Zadok (1986; Jursa 2005: 110-111). According to Jursa, Arad-Gula, at least in one text attested (Clay 1908: no. 87; Jursa 2005: 110-111), acted as an agent, *mār šipri* (Akk.), for Širikti-Ninurta, descendant of the Nippurean family Ḫanbu whose members are attested as early as during the reign of Sargon II (706 BC) (Jimenez 2022: 20). He is known from several texts as the governor, *šandabakku* (Akk.) of Nippur. Arad-Gula was mainly involved in the administration of agriculture and taxation (Jursa 2005: 110-111).

Preserved on the earliest Arad-Gula tablet identified as coming from Section V A' (Clay 1908: no. 55, see above) was the rest of a sealing, belonging to the native Babylonian style of seals according to Zettler (1979). This dossier will be the focus of the rest of the paper. It is probable that most of the other texts which belonged to the Arad-Gula dossier (Zadok 1986; Jursa 2005) would have derived from the same location. Hopefully, further study of the unpublished archaeological documentation can provide more identifications of tablets belonging to this dossier as well as to others.

After a year of further study, three more tablets can now be identified and shown to belong to the same 'Ekur archive' because of their finddate provided by Harpers lists (Westenholz 2020): a letter sent by Širikti-Ninurta (to a certain Gimillu) CBS 3632 (Harpers list I, Ni. 89-2-13-6, 4.8 x 3 cm) first published by Lutz (1919: No. 89;

Fig. 6: Detail of entry no. 10 from Harpers 'List II' (Nippur 10.04). © University of Pennsylvania Museum of Archaeology and Anthropology archives. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence.

Hackl, Jursa, Schmidl 2014: No. 204). CBS 3631 (Harpers List I, Ni. 89-2-13-12, 5 x 3 cm) (Lutz 1919: No. 87; Hackl, Jursa, Schmidl 2014: No. 203) belongs to the same group.

The letter order CBS 3626 (Harper List I, Ni. 89-2-13-4, 4 x 3 x 1.25 cm) published by Lutz (1919: No. 88; Hackl, Jursa, Schmidl 2014: No. 202) which was already identified by Westenholz as coming from V A, can now be shown to belong to the same group from V A'. Herewith, also the tentative assignment of this group to the 'Ekur-archive' by Hackl, Jursa, Schmidl (2014) can be confirmed from an archaeological point of view.

4. An Istanbul text mentioning Arad-Gula, transcribed and collated by Hermann V. Hilprecht from Section V A'

While several tablets transcribed by Hermann V. Hilprecht at Istanbul (then Constantinople) in the summer of 1894 mention Širikti-Ninurta there are also at least two more texts from Nippur mentioning the same Arad-Gula, son of Šamaš-iqīša.[16] One of them, Hilprecht's no. 349 (entry of 2nd August) dated in the reign of Cyrus (year not preserved) 24th Abu (July/August), even carries the Harper number Ni. 14, 2-13-89 and therefore can be positively identified as coming from 'Tablet Hill', trench A'. Nowhere else at Nippur were tablets reported to be excavated on 13 February 1889. The tablet with the questionable 'Artaxerxes (??)' date given by Harper for his Ni. 89-2-13-14 (List I, Fig. 6) does not fit the reading of Hilprecht's no. 349. The reading of the latter was probably only possible after cleaning the tablet at Constantinople in 1894. Harper's description of 19 lines is a hint towards such an identification.

5. Provenances according to Clay (1908)

According to Clay (1908) both nos 55 and 100 were found 'probably' at Mound V. All tablets from the Arad-Gula dossier, with the exception of no. 101 which following Clay (1908) was excavated probably during the 3rd campaign of 1893-96 and no. 89 without any campaign indicated, were excavated during the first campaign in spring 1889 and come therefore from the Northwest part of Mound V. Concerning all the available sources it is quite unlikely that Clay 1908: no. 101 was excavated not during the same excavations in 1889. Everything speaks for a provenance of this tablet from trench A' at Mound V.

THE 'EKUR ARCHIVE' AND THE POSITION OF ARAD-GULA AT NIPPUR

Arad-Gula, son of Šamaš-iqīša is one of the individuals who had business relations with the Enlil Temple of Nippur and was therefore added to the environs of the 'Ekur archive' by Zadok (1986, 282-286). In at least one text he is even entitled as the messenger, *mār šipri* (Akk.) of the *šandabakku* with whom he had close connections according to other texts. It was probably his domestic archive with deep business relations into the Enlil temple, which was found by Peters in 1889 at the Northwest tip of 'Tablet Hill' (Mound V) in trench V A' rather than the

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[16] This transcription is nowadays in the Schriftliche Nachlass of the Hilprecht Collection, Jena and was accessed by the author with the kind assistance of Manfred Krebernik and Kai Lämmerhirt in 2014.

actual archive of the Ekur temple itself. Part of such an archive was found within the Ekur complex itself, nearby the Western corner of the ziggurat, on the level of the so-called 'Ashurbanipal pavement' of the ziggurat courtyard (Schneider 2018a, 348; Schneider 2018b: 1001-1003). For this purpose, it was for sure useful that the house of this Arad-Gula was situated down the hill near the bank of the Mid-City-Canal, the nowadays dried out Shatt en-Nīl canal, which separates the mounds of Nippur in its two main recognizable parts (Schneider 2022). In a recent study it was stated that this canal was existing for much of the history of Nippur, at least up until the Sasanian period (Altaweel *et al.* 2019).[17]

THE SIGNIFICANCE OF THE DOSSIER OF ARAD-GULA FOR THE HISTORY OF NIPPUR IN 539 BC

Clay 1908, no. 55 (CBS 3597) is the earliest tablet (17 September 539 BC) belonging to the archive of Arad-Gula son of Šamaš-iqīša. It includes also the earliest mention of the *šandabakku* Širikti-Ninurta (Joannès 1982: 3).[18] This *šandabakku* is the last person during the Achaemenid period known to occupy the office. He is attested until the beginning of Darius' reign (521 BC, see below). The durability of his office is often explained with the stability and continuity that the Achaemenids brought, as, for example, stated by Briant (2002: 71-72), giving also the Egibi archive of Babylon as an example.[19] At Nippur it remains at least suspicious that Širikti-Ninurta came into office at the very end of Nabonidus' reign. Therefore, it will be tried to set into perspective his role in connection to the available historiographic material at a later step in this article.

1. The context of the last tablet (2NT 29) mentioning a šandabakku of Achaemenid Nippur from trench TA ('Tablet Hill' trench A)

The last tablet mentioning Širikti-Ninurta as *šandabakku* (2NT 29) dated to 'year 1' of Darius I (521 BC) according to the final publication of the excavation results was reported to be found in TA level I Locus 20 (McCown and Haines 1967, 76). Following the entry of 22nd November 1949 from an unpublished typescript copy of the original tablet register of Season 2 (1949-50)[20] it concerns an 'Achaemenid contract (promissory note) dated to accession year of Darius.' Hence tablet 2NT 29 dates to the accession year of Darius I (522/521 BC), and therefore earlier than stated in the publication (McCown and Haines 1967, 76). In the same tablet register it is also stated that the tablet was originally found '30 cm. under I.' Therefore, it predates the construction of this building in TA level I (TA I). Without this knowledge the rest of the dated tablets from within the house in TA I range from Cyrus, year 8 (531/530 BC) until Darius I, year 18 (504/503 BC) a period of nearly a generation could give the wrong impression that they are *in situ*.

Locus TA 20 was a brick paved courtyard within a massive building or rather manor of the 'Achaemenid' level TA I of about 400 m² (preserved). It was even extended in a later phase of construction to at least double the documented building to an estimated 800 m². This would make it a perfect candidate for a 'double courtyard house' (Baker 2014: 19-20; Baker 2015: 382-385). The original extension of the house can only be estimated because of the extensive erosion on the slope towards trench TC (McCown and Haines 1967: Pl. 76). As this erosion affected already parts of the house within the borders of the trench TA not much was preserved towards Southeast (Armstrong 1989).

Oppenheim provides information about one more text (2NT 93) which mentions a *šandabakku* (Oppenheim 1985: 569 n. 2), although he does not give any information concerning the precise findspot of the tablet. Accord-

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[17] It should be noted here that the trench cutting through the supposed bed of the canal ("Trench 2") might have missed the original canal by position as well as depth and might therefore only have cut the place of the "moat" as indicated by the middle Babylonian city map. This would explain also the uniformity of the deposit.
[18] See also Zadok 1978, 274f; Zadok 1986, 282-283.
[19] For a summary of the Egibi archive see Wunsch 1999.
[20] Stored in the archive of the University of Pennsylvania Museum of Archaeology and Anthropology.
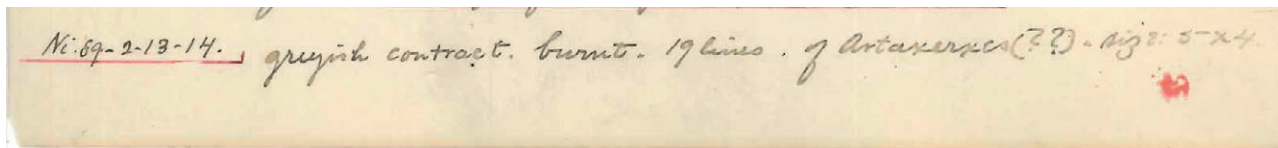
Fig. 7: Detail of entry no. 14 (Hilprecht Istanbul 1894 transcript no. 349) from Harpers 'List II' (Nippur 10.04). © University of Pennsylvania Museum of Archaeology and Anthropology archives. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence.

ing to the tablet register the Achaemenid legal fragment 2NT 93 (3.9 x 3.6 cm, 6&7 lines) derives from TB 34 level B1 and was found on 10th December 1949. Regrettably, the tablets are not published and we don't know the exact connection of these tablets to the rest of the Ekur archive.

2. Manor in TA level I not the residence of the šandabakku of Nippur

That three of the nine tablets within an 'extensive and important-looking house' (McCown and Haines 1967: 71) in trench TA level I mention the *šandabakku* of Nippur even led Oppenheim (1985: 569 n. 2) to see in it the residence of the same.

Luckily, in this instance the archaeological evidence provides us with an easy tool to discredit this identification. The findspot of the very last tablet mentioning a *šandabakku* (2NT 29) 30 cm below the foundation of TA level I alone is proof enough that the very same dignitary was not in office anymore when this manor was erected. A second phase of construction even doubled the size of this building which is unsurpassed by any other private building of this period at Nippur. Such a manor situated at the top of 'Tablet Hill' (Mound V), with a direct view to the ziggurat (Fig. 3), would suggest that some official could have lived here. Still, a building which was erected at an even later point of time at this spot documents the continued importance of this location (McCown and Haines 1967: Pl. 76).

One could think of an important person inhabiting this spot as for example an official such as the *qīpu,* the commissioner sent by the crown. Another possible identification for the resident of this place would be the šaknu (Stolper 1988), although, if he indeed had to take over the tasks of the šandabakku, his residence would have to be searched somewhere at the southern part of the 'Westmound' (Schneider 2022) as it was there in trench WB ('Westmound' trench B, Mound IX) where Cole states that a governors' (Akk. šandabakku) archive from around second half of the 8th century was found in the filling of the pit of a jar grave (Gibson et al. 1978, Figs 52-53; Cole 1996b).[21] Until further study of the texts an identification of the original inhabitant of this building is not possible.

3. Širikti-Ninurta, a pro-Achaemenid-Persian as šandabakku of Nippur?

Might the later durability of Širikti-Ninurta's position as *šandabakku* be connected with some sort of collaboration with the upcoming invaders even before the official end of the Neo-Babylonian Empire? The dating formulae of the texts from Nippur don't give a clue, as there a tablet was dated five days later still according to Nabonidus' reign (Ni. 89-3-14-71 (List II), 25th Ululu, year 17 of Nabonidus = 22nd September 539 BC). After Širikti-Ninurta's office ended in 522/521 BC, the position of *šandabakku* ceased to exist, only to reappear in later times where it is attested until 73 BC (Zadok 2015: 105). Instead, there were *šaknus* and *paqdus* designated as the highest local

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[21] Beaulieu challenges the identification of this archive as that of a governor because its content is mainly concerning merchants' activities. It has to be pointed out here that only in the bilingual excercise tablets of the archive the equation is (LÚ.)GÚ.EN.NA= *šandabakku* is given (Cole 1996b: 1 n. 6). Therefore, a person holding the title *šandabakku* is missing within the main core of this archive.

Fig. 8: View from the top of Mound V with the remains of TA ('Tablet Hill' trench A) to the right and the ziggurat in the left background, November 2021 (view towards North), during Nippur Expedition, Season 21. Photo: B. Schneider. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence.

political offices (Zadok 1978: 275; Stolper 1988; Dandamayev 2006: 376).[22] The *šaknu*, unlike the *šandabakku* (Cole 1996a: 45-55), was a short-term position, designated for only a few years and recruited within the local citizens of Nippur which makes it comparable to the chief of a *ḫaṭru* (Stolper 1988: 137-139). A *paqdu* could, for example, be the chief/manager of one of the four city quarters of Nippur (Stolper 1988: 129 n. 9) known from the later Murašû texts who sometimes also could serve as '*paqdu* of Nippur' (Stolper 1988: 129 n. 8). These quarters were named after the gate to which they were attached, giving the impression that the *paqdu* might have had his office at the gate which was designated to him.

4. The city quarters of Nippur and the 'Kassite' city map of Nippur

The city quarter in which 'Tablet Hill' was situated would have been the one connected to the 'Ur-facing-gate' (sum. KÁ.GAL IGI.BI.ÚRI.KI.ŠÈ) which is shown on the so-called 'Kassite' city map of Nippur (Oelsner and Stein 2011: 106) and, as its name says, pointing towards the direction of Ur which lies 152.9 km Southeast of Nippur.[23] This quarter is not mentioned in the Murašû texts (Stolper 1988: 129 n. 9) which could be explained by the possibility that the latter only provide names of the four quarters on the 'Westmound' and therefore excluding East Nippur. Instead of the Nergal gate which is depicted on the city map, the Murašû texts mention a gate of Ninurta (sum. KÁ(.GAL) LUGAL.(GU$_4$.)SI.SÁ) which would support an identification of the location of the Ninurta temple at the northern part of 'Westmound' (Oelsner and Stein 2011: 106; Schneider 2022).

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[22] During Neo-Assyrian times the title *šaknu*, translated as 'prefect' designated either a military official or a provincial governor (Gross 2020: 160). At this earlier period there was even a *šaknu* mentioned in connection with a delegation of Nippureans (Gross 2020: 81). Concerning a Neo-Assyrian *šaknu* at Nippur see Cole (1996b: 76-77: n. 51).
[23] Measured from the point suggested by Oelsner and Stein 2011: 106, Abb. 2 until the outer Northwest limits of Ur on Google Earth Pro (2022).

HISTORICAL CONTEXTUALIZATION

1. *The Persian takeover of Babylonia according to the Nabonidus Chronicle*

The main Mesopotamian source concerning the events leading to the fall of Babylon is the so-called Nabonidus Chronicle (Waerzeggers 2015b). On 10 October 539 (14 Tašrītu, year 17 of Nabonidus) the Persian takeover of Babylonia began with the battle of Opis, won by Cyrus, according to the *Nabonidus Chronicle* (III.12-13). This was followed by a massacre of the resisting people (III.14). The Chronicle continues with the information that Sippar was taken without a fight and Nabonidus took flight (III.14-15). At some point after this the troops of Cyrus joined forces with Ugbaru, the governor of the district of Gutium (Waerzeggers 2021b: 81). Cyrus eventually entered Babylon without a battle (29 October 539 BC) which only means that whichever magnitude of fighting took place must have happened earlier. When Nabonidus was captured in Babylon the end of the Neo-Babylonian Empire was reality. Considering the evidence at cities like Uruk (see below) it would be not unthinkable that the crown prince Belshazzar was still holding out in the palace, a stream of tradition which is preserved in the Book of Daniel (chapter 5).

It is exactly this aforementioned Ugbaru, governor of the supposedly Babylonian province of Gutium, who probably was, at some point prior to the invasion of the Babylonian heartland, changing the sides to save his skin (Briant 2002: 41-42). Therefore, a key strategy might have been to pursue the political leaders on the provincial and local level to change the side or to support the supplanting of people who favored the Persian cause, a scenario which might have taken place at Nippur and other cities. This would have been nothing unexpected in Achaemenid Persian warfare, thinking of the earlier change of sides of the Median army under Cyaxares to Cyrus which left Ecbatana undefended. The takeover of Babylonia, therefore, might have been more comparable to a tactical victory than is anticipated by the current research.[24]

When Cyrus took out Media (550-549 BC) (Beaulieu 2018, 240) and with it probably also its neighbors Urartu or Lydia and eventually also Gutium, until then serving as a buffer zone between the two empires, the strategic advantage shifted dramatically in favor of Persia. From that moment on, the possibility of an invasion for Babylon must have been apparent. It seems also that this was the decisive blow to the defense strategy of Babylonia built on alliances and buffer states.

2. *Further evidence from the Nabonidus Chronicle*

Latest from the start of the campaign led by Cyrus whether against Urartu or Lydia (Rollinger 2008; Rollinger and Kellner 2019) in 547 BC (Nisannu/April 547 BC), during the 9th year of Nabonidus the Persian army crossed the Tigris below Arbela, onwards the Babylonian military forces must have been on highest alert. As a consequence of the fall of Media one has to at least consider a possible Babylonian support of Urartu, Lydia or whoever was the opponent of Cyrus in April/May (Ayyāru) of the same year.[25] The king of the invaded country was killed by the Persian king whose army stayed there, and maybe logistically this was the reason why the Persian army then advanced from North via Arbela. This in turn would point also towards an identification of Urartu as the goal of the campaign of 547 BC.

It is noteworthy to point out that according to the chronicle explicitly only the army of Cyrus 'did battle at Opis on the [bank of] the Tigris against the army of Akkad' (Grayson 1975: 109; Glassner 2004: 237-239; Van der Spek 2020: iii.12-14). Eventually, the Persian army unified with the units of Gutium before entering Babylon. Concerning the question of undermining the Neo-Babylonian state it is also interesting that the governor of the province Gutium, Gobryas/Gubaru, is mentioned to have entered Babylon on 16th Tašrītu 539 BC! But what about Southern Babylonia and Nippur?

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[24] Concerning the Teispid-Achaemenid army see now Manning 2021.
[25] Concerning the situation of Media see Lanfranchi, Roaf, Rollinger 2003.

3. The Southern Babylonian evidence in the Nabonidus Chronicle

Regrettably, the parts which treat this part of Babylonia are preserved only fragmentarily in the Nabonidus Chronicle. For the entry for the 10th year of Nabonidus (546/545 BC) there are only bits preserved mentioning the district governor of Uruk in connection with possible incursions by troops from the east ('Elamites') in Babylonia ('Akkad').

Here it would have been interesting what the report of the 16th year of Nabonidus (540/539 BC) had to offer. The preserved parts offer much space for speculation. The only thing which is sure is that someone was defeated in combination with the mention of a river and then the immediate mention of Ištar of Uruk with whether Persia or the Sealand probably following in the next line (Grayson 1975: 104-111; Glassner 2004: 232-238; Zawadzki 2012; Van der Spek 2020: iii.1-4).[26]

4. Longer resistance in temple strongholds

The early confrontations with Persia in the South seem to have had little consequences at Uruk itself, where at least until 13th October 539 BC, three days after the defeat of Sippar and one day after the arrival of Ugbaru/Gobriyas at Babylon, the tablets in the Eanna were still dated according to Nabonidus' reign (Waerzeggers 2021b: 81). Here the earliest preserved tablet dated to Cyrus reign is dated to 20th January 538 BC (Clay 1925: 43, no. 1). This tells us of an interruption of the usual administrative activities of the temple for nearly three months. At the Ebabbar temple of Sippar the last preserved tablet dated to Nabonidus is dating to 11th October 539 BC (Waerzeggers 2021b: 81), a day after the surrender of the city as reported in the Nabonidus Chronicle. At Babylon even the last stronghold of the Esagil temple of Marduk was besieged by the Gutian troops until the end of the month according to the Nabonidus Chronicle (Grayson 1975: 109; Glassner 2004: 237-239; Van der Spek 2020: iii.16-17).

The evidence of Sippar, Uruk as well as Babylon seems to point towards considerable resistance in the well-fortified main temples. But what does this tell us about the situation at Nippur? From the lack of direct written or material evidence to answer how heavy a resistance was, or if the Persian invaders met any resistance at all would be nothing more than speculation. From archaeological point of view there seems to be no noticeable hiatus of occupation in the late levels at 'Tablet Hill' (TA I) as well as on the 'Westmound' (WA II).

CONSEQUENCES OF THE INVASION FROM THE PERSPECTIVE OF THE ARCHAEOLOGICAL EVIDENCE

Besides the more famous 'Cyrus Cylinder' commemorating the foundation of Imgur-Enlil,[27] the inner fortification wall at Babylon, there are only two more Achaemenid building inscriptions preserved in Babylonia: namely stamped bricks from Ur and Uruk.[28] One explanation could be that only cities considered as collaborators profited from public building projects in the immediate aftermath of the invasion. For Nippur the picture is not so clear. There were renovations in the ziggurat courtyard of the Ekur which can only be postdated by stamped bricks of Nebuchadnezzar II (Schneider 2018a; Schneider 2018b; Schneider 2023). This construction work could have been continued well into the Achaemenid period with a possible continuation until the late Seleucid period when

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[26] For further evidence concerning the statue of Ištar of Uruk in Babylon see Sandowicz 2015.

[27] The implementation of Enlil as the eponymous deity of the city walls of Babylon and in turn Marduk for the walls of Nippur was already established in the 11th century BC.

[28] For two examples of stamped brick with an inscription of Cyrus from Ur see https://cdli.ucla.edu/search/archival_view.php?ObjectID=P269870 and https://cdli.ucla.edu/search/archival_view.php?ObjectID=P269872, for a single example with an inscription of Cambyses from Ur see https://cdli.ucla.edu/search/archival_view.php?ObjectID=P452096 (CDLI entries accessed on 12th May 2022). The latter is stored in the British Museum, BM 118362 with the accession number 1923-11-10, 0231 (https://www.britishmuseum.org/collection/object/W_1923-1110-221, accessed on 12th May 2022). See also Mallowan 1972.

Ekur is last mentioned (Van der Spek 1992: 254-256).[29] If Dandamayev (1994: 35) would be right in connecting the object (é.kur) of an undated letter sent by the crown prince Belšazzar to the royal commissioner of Eanna in Uruk (553-544 BC) with the Ekur of Nippur, then we would have written evidence for state financed constructions at the religious infrastructure of Nippur during the time immediately preceding the Achaemenid period. The continuation of this work would then probably fall already into the latter period. But in the context of other letters, it seems that rather the repair work on the temple (é.kur) Eanna in Uruk and not the Ekur in Nippur is concerned also within this letter (Kleber 2008: 182). The recent on-site study of the ziggurat clearly shows that the last major reconstruction of the ziggurat clearly post-dates Assurbanipals rebuilding project (Schneider 2023). This fits well into the picture of Nippur as belonging to the group of profiteers of the invasion.

THE END OF THE ARAD-GULA ARCHIVE AS A CONSEQUENCE OF COLLABORATION WITH BARDIYA/SMERDIS?

1. Excursus: The last tablet dated according to Cambyses reign at Nippur

According to the Behistun inscription Bardiya/Smerdis claimed the throne on 14th Addar (11th March, 522 BC). At Nippur the last text from the reign of Cambyses (Clay 1908: no. 71, CBS 3601)[30] belongs to the Arad-Gula dossier within the Ekur archive and is dated to 15th (?) Nisan of year 8 (Clay 1908: 81), 10th April, 522 BC.[31] According to the recording date (89-2-13) from Harpers list (I) we can tell that it comes from the same context of trench V A' (Mound V, trench A') as the other tablets from the archive of Arad-Gula. This means that nearly a month after the proclamation of Bardiya/Smerdis as king according to the Behistun inscription, in Nippur still the texts were dated according to the reign of Cambyses. Could it really be that for such a long time no one heard any news from Persia? As the Ekur archive has to be considered as an official archive, one could conclude that in Babylonia at least one was careful to pledge allegiance too early. Further data might bring forward different arguments concerning this aspect.[32]

Concerning the fate of Arad-Gula, it would be an irony of history, if the reason for the end of his career would be connected with an involvement in the revolt of Bardiya/Smerdis (Vogelsang 1998: 196-197; Schwinghammer 2021), in whose reign (year 1/522 BC)[33] two tablets of the dossier (Clay 1908: nos. 100-101) are dated. Interestingly enough, they are dated to the 13th and 15th of Ulūlu (2nd and 4th September 522 BC) respectively, less than a month before Gaumata, the supposed imposter as Bardiya/Smerdis, was killed on 10th Tašrītu (29th September 522 BC) according to the Behistun inscription (Zawadzki 1994: 127; Beaulieu 2014: 17). After the accession year of Darius I (522/521 BC), information concerning both Arad-Gula and the last Achaemenid *šandabakku* of Nippur Širikti-Ninurta are lost in the fog of history.[34]

That high dignitaries were put out of office during the first year of the reign of Darius I would not be so uncommon as, for example, the legacy of a family which held the position of the 'bishop,' *šatammu,* of the Eanna temple at Uruk, from the last year of Nabonidus (14th Du'ūzu, 14th July 539) onwards, ended in the same year (Jur-

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[29] Furthermore, it has to be pointed out here that the generally assumed 'purposeful neglect' of Nippur by the Neo-Babylonian dynasty as a consequence of its late loyalty to the Neo-Assyrian king Sîn-šar-iškun does not find its expression in the archaeological evidence. At least until the interregnum of Bardiya/Smerdis (522 BC) there were still Assyrians (Aššur-nādin-ahhē) at Nippur which would speak against a big cleansing in revenge of Nippur's loyalty (Clay 1908: no. 101).

[30] It was identified as Clay 1908: no. 71 by Westenholz (2020) within the framework of the project Nippur Digitized.

[31] According to the list of tablets by Harper 1889, this text (List I: No. 13) was dated to 13th Nisan of the same year.

[32] According to an entry in CDLI (https://cdli.ucla.edu/P470442 accessed 16th May 2022) the unpublished Princeton text PTS 2350 is dated on 3rd Tašrītu of year '18' which might be a mistake for year '8' and would lead to a date of 22nd September 522 BC. Alternately, the year and day could have been written in the wrong order and then it would be from the 3rd year of Cambyses which would make it irrelevant for our discussion.

[33] Zawadzki 1994: 131, n. 25.

[34] Only once a son of Širikti-Ninurta is mentioned in a text from Cyrus year 5, 533 (Petschow 1980-83: 557; Hackl 2010: 720).

sa 2007: 79). A year later (521 BC) the *qipu, šatammu,* and *bēl piqitti* were removed after the revolt of Nebuchad-nezzar IV/Arakha, son of Ḫaldita when Darius I resumed his rule (Beaulieu 2014: 24).

SOME PRELIMINARY CONCLUSIONS CONCERNING THE DOCUMENTATION OF 1889

The archaeological evidence of the Nippur expeditions by the University of Pennsylvania from the end of the 19th century still enables us to assign single texts to certain trenches and sometimes even to certain layers or horizons.

It is worthwhile to reconstruct the archaeological evidence for the excavated tablets. Even relatively small archives help to focus on chronology and history of the site.

This work-in-progress report which stands at the beginning of the study of the archaeology of the early excavations on 'Tablet Hill' of Nippur. The identification of a single tablet in the otherwise not very detailed reports can often elucidate the context of a whole archive. It can be expected that definitely more results can be awaited in focusing on the reconstruction of the context of the tablets from the early excavations at Nippur.

FURTHER HISTORIC CONSIDERATIONS AND CONCLUSIONS

It seems that it was no accident that exactly a few weeks before the Persian invasion key positions were filled with fresh people, like the *šandabakku* at Nippur. Exactly then also the dossier of Arad-Gula son of Šamaš-iqīša began. In having similar Neo-Assyrian practices in mind (Dubovský 2006; Dubovský 2014), it seems to be reasonable to assume that the invasion was planned ahead and that the Persian army intelligence tried to destabilize the prospected target through espionage[35] and probably also sabotage. Another still inconclusive aspect such as the in-advance support of people to get into certain offices who are in favor of establishing a new overlord should be at least kept in mind here.

As could be approved in this article the house in trench TA level I could not have been, as was suggested by Oppenheim, the residence of the *šandabakku* whose last tablet was found clearly below this level. The date of this last tablet mentioning a *šandabakku* under Achaemenid rule from the accession year of Darius I (522/521 BC) might prove one more thing: that the tide changed very fast within such a system of clients. Already Darius I, probably as the effect of an often-assumed reform, tried to prevent the local elite to become too powerful.

I hope this article could dissolve some of the doubts expressed by Pedersén (1998: 198 n. 87), as quoted above. At least for one of the archives (Ekur archive) as reconstructed by Zadok (1986), according to the archaeological evidence both the texts from the Arad Gula dossier as well as its parent archive, the texts considered to belong to the administration of the Ekur, derived from the same part of the trench, downhill the Northwest corner of 'Tablet Hill'. Although, as it is the suggestion here, the texts from this trench should rather be seen in connection with the position of Arad-Gula as agent/messenger (Akk. *mār* šipri) of the governor (Akk. šandabakku) than the actual archive of the Ekur temple. It is hoped that further comparable studies conducted by the author will also help to enlighten the situation of other archives excavated at Nippur.

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[35] This is a well-known practice during the Neo-Assyrian period. See for example Dubovský 2006; Dubovský 2014; Dezsö 2014.

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Context and Shape: Geographical and Chronological Distribution of Handled Stamp Seals in Anatolia and Northern Levant

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Abstract. This article focuses on handled stamp seals, their typological classification, archaeological contexts and geographic distribution. By analyzing a total of 679 seals (302 from good archaeological contexts) over a time period from the Early Bronze Age to the Iron Age, it was possible to point out that specific shapes can be considered typical for the Anatolian region, while others were adopted from Anatolia in the Levant or belong to specific site productions. The data have shown that of the three predominant types (Stalk, Domed and Modelled Domed Knob Seals), probably only one passed from Anatolia to the Northern Levant with a consequent proliferation of variants. All other types of handled stamp seals didn't provide sufficient data in archaeological contexts to better define the dynamics of production or geographical displacement: therefore, it was only possible to present the general data and propose some hypotheses.

Keywords. Stamp seals, handled stamp seals, typology, Anatolia, Northern Levant, stalk seals, knob seals.

INTRODUCTION

The focus of this study is on a specific type of stamp seal called 'handled', characterized by the presence of a shaped handle. The aims of this paper are: to propose a more defined typology and to identify the origin and development of specific morphologies over time and geographical areas.[1]

Handled seals are a well-known artefact in Anatolia and Northern Levant during the 2nd and 1st millennium BC. These seals were first studied by David G. Hogarth (1920: 18-23), who create a typological classification based on the handle-base distinction and the seal body shape. Briggs

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[1] For issues relating to the realization of seal typologies refer to Meyer 2008: 33-34; Von Wickede 1990: 10.

Buchanan and Peter R.S. Moorey (1984: XI-XVI) accomplished in 1988 a more accurate subdivision based on Hogarth's classification (Buchanan, Moorey 1988: X). This work was then resumed by Jan-Waalke Meyer some years later (2008: 33). In our study has been used a method that consider the archaeological contexts of the objects in addition to their morphological features. This helped to identify a possible chronological and geographical origin of certain types, their development over time and the materials used for their production.

To this purpose, only handled stamp seals published in catalogues and excavation reports related to Anatolian and Northern-Levantine sites have been taken under consideration. Was then possible to reconstruct an hypothetical chrono-morphological evolution for each type. Specimens without a clear stratigraphic context were used to provide information on the morphology and geographical area even they didn't help to establishing a chronology. It should be emphasized that the dating of the stratigraphic context in which the seals were discovered is considered relevant for the use of the seals. Obviously, the production date of the piece could precede that of the context's one. In addition, the contexts dating considered for this study is based on the information recovered from the excavation reports.

This study can give new insights with the analysis of iconographies shown on the stamp surfaces and of their shapes, giving information about the existence of relationships with the seal's body shape. The other existing stamp seal types should also be considered with particular attention to the stratigraphic contexts.

Eight morphological types were identified. Stalk (ST), Domed (PMa) and Modelled Domed Knob Seals (PMb1) are the predominant ones and are analyzed here below in detail. Other types will be considered only for the general analysis.

1. HANDLED STAMP SEALS TYPOLOGY

For the seals typology the documentary base consists of 679 specimens, of which 302 come from dated contexts.

The first characteristic considered in the creation of the typology is the handle shape (Buchanan, Moorey 1984: XI-XIII), which should be distinguished and well recognized from the seal base bearing the stamp surface (Buchanan, Moorey 1984: XI). The second is the base and stamp surface shape: this characteristic is neglected for some typologies with some exceptions (e.g., von Wickede 1990: 11-12 or Nunn 2000: 1-5).

The correlation of these two characteristics allowed in some cases to verify a relationship between handle and base shapes and the stamp surface.[2] Thus, the stamp surface shape may be capable of defining further sub-divisions, but it remains a secondary element that cannot define by itself new types (Meyer 2008: 35).

Table 1

STALK SEALS			
Code	Pieces	Description	
ST	Total: 93 In context: 47	The simplest type of handled seal is characterized by a variable length handle without distinctive elements at the upper end. We can distinguish two sub-types according to the shape of the handle and the base.	
STa	Total: 42 In context: 22	'Thin' variant (e. g., Fig. 2.10): the handle is elongated and mostly rounded, not always drilled, with a smooth surface. The thin base is cylindrical or parallelepiped, with circular and squared stamp surfaces.	
STb	Total: 51 In context: 25	'Thick' variant (e. g., Fig. 2.20): the more or less elongated handle is rounded or squared, generally drilled, with a smooth surface. The thick bases have truncated-conical, cylindrical or parallelepiped shapes, with circular and squared stamp surfaces.	

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[2] This has been helpful for the relocation of particularly fragmentary manufacts.

Table 2

KNOB SEALS			
Code	Pieces	Description	
PM	Total: 468 In context: 230	Group characterized by a differently shaped apical element at the upper edge of the handle.	
PMa	Total: 276 In context: 148	'Domed' Knob Seals: specimens characterized by a round apical eyelet, always perforated, and conical handle. The surface treatment of the handle allows the identification of a: • smooth variant (e. g., Fig. 3.12); • faceted variant (e. g., Fig. 3.6); • variant with more or less dense horizontal incisions (e. g., Fig. 3.17). The bases are mainly cylindrical, and in lower quantity lobed and elliptical: the surface is more frequently smooth, but it is engraved only in some specimens of the second variant.	
PMb		'Modelled' Knob Seals include a great variety of forms with thick bodies. Based on the conformation of the apex, three sub-types can be distinguished.	
PMb 1	Total: 144 In context: 58	'Domed' variant: the smooth or engraved rounded apex often shows a relationship with some base shapes. The most numerous variants have a hole on the handle. Overall, we can identify two specimens: • with apex not engraved, various body length and base shape (e. g., Fig. 4.11); • with predominantly engraved or sculpted apex, thick bodies and cylindrical, triangular or lobed bases (e. g., Fig. 4.17).	
PMb 2	Total: 24 In context: 14	'Pyramidal' variant (e. g., Fig. 5.3): the truncated-pyramidal apex is placed on a predominantly parallelepiped handle, both with a smooth surface. Bases and stamp surface have parallelepiped, cylindrical or triangular shapes.	
PMb 3	Total: 24 In context: 10	'Squared' variant (e. g., Fig. 6.5): the squared apex is placed on a parallelepiped handle, usually perforated. All the bases have a squared shape, and therefore only produce squared image fields.	

It is also relevant how some cases of irregular conformation or drilling may result from fractures, modifications or reuse over time (von Wickede 1990: 12).

For Stalk and Knob Seals we can note that some specimens have a body shape that differs from the most common one.

A morphology excluded in this typology is defined as 'bell-shaped' in the online catalogue of the MET Museum of New York. It is represented by nine glyptic specimens, characterized by the presence of an apical loop placed

Table 3

HAMMER SEALS		
Code	Pieces	Description
MR	Total: 51 In context: 14	Group with a shaped apex like a hammer head. We can define three types: • a smooth conical handle with variable shape bases (e. g., Fig. 7.5); • a faceted conical handle with cylindrical base (e. g., Fig. 7.2); • a faceted conical handle with an engraved prismatic base (e. g., Fig. 7.13). Five pieces out of context allow us to identify another less elaborate variant, with a rounded appearance and smooth surface.

Table 4

HUMAN FIST SEALS		
Code	Pieces	Description
PG	Total: 32 In context: 4	Specimens with a human fist shape apex. The most realistic pieces have: • smooth truncated-cone, globular or parallelepiped shape bases (e. g., Fig. 8.2); • elliptical-cylindrical bases engraved with horizontal lines (e. g., Fig. 8.4). The less elaborate specimens have a sketchy and more rounded shape, with a smooth surface. The image fields are predominantly circular and elliptical. The perforation can be between the fingers of the fist, or between the hand figure apex and the base.

Table 5

ANTHROPOMORPHIC HEAD SEALS		
Code	Pieces	Description
TA	Total: 4 In context: 0	The small quantity and aesthetic variability of these seals make their classification complicated. Their only common element is the apex made like a human head (e. g., Fig. 9.1). When present, the handle can be truncated-conical or hemispherical and the treatment of the surfaces can be variable. The image field is only circular. The hole is drilled in an outer suspension ring on the upper end of the head.

Table 6

FRAME SEALS			
Code	Pieces	Description	
SO	Total: 12 In context: 2	Type with the body made by joining some segments to an apical ring and a basal element. We can define two sub-groups based on the manufacture.	
SOa 1	Total: 5 In context: 1	The 'Double-frame' variant has two segments connected to the apex and the base, and it can be: • monomaterical (SOa1; e. g., Fig. 10.1), made in a single stone block without perforation;	
SOa 2	Total: 3 In context: 0	• polymaterical (SOa2; e. g., Fig. 10.6), composed of a hemispherical stone at the metal support base and an apical suspension ring. The image fields are all elliptical.	
SOb	Total: 4 In context: 1	The 'Triple-frame' variant (e. g., Fig. 10.7), in literature 'Tripod Seals', is made by welding three metal segments to a disc base and an apical suspension ring: the body is therefore empty. Image fields can only be circular.	

Table 7

DOUBLE-STAMPS SEALS			
Code	Pieces	Description	
DS	Total: 10 In context: 4	Seals united by the presence of two different stamp surfaces on the body. Some similarities between the bodies allow to identify three variants.	
DSa	Total: 2 In context: 0	'Cylindrical' variant (e. g., Fig. 11.1): the body has a horizontally shaped rings surface, not always perforated. The image fields are only circular.	
DSb	Total: 5 In context: 3	'Hourglass' variant (e. g., Fig. 11.5): despite the different shapes, the bodies share a median narrowing in which the perforation is always placed. We can have a different base shapes, and therefore image fields.	
DSc	Total: 3 In context: 1	'Flattened' variant (e. g., Fig. 11.8): the large and flattened bodies have a variable shapes and based. The hole is drilled in the middle of the handle.	

on a cylindrical body with raised edges.[3] Only one example in the collection catalogued by von der Osten (1934: 7, 57, n. 377) is defined as 'Hittite' and placed approximately in Asia Minor and Syria in the Middle Bronze Age (*c.* 2000-1200 BC). This type hasn't been considered despite the similarity to the Pendant Seals because its attribution belonging to the area under control of the Urartu Kingdom in the 1st millennium BC.

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[3] E.g., https://www.metmuseum.org/art/collection/search/326628?searchField=All&sortBy=Relevance&ft=stamp+-seal&offset=800&rpp=20&pos=806.

Table 8

PENDANT SEALS		
Code	Pieces	Description
PN	Total: 8 In context: 1	This group of heterogeneous glyptic shapes is characterized by a perforated apical loop placed on a base. The bodies have variable appearance, although the stamp surfaces are all circular. The specimens out of context could suggest: • for the Levantine area, a more rounded shape production (e. g., Fig. 12.1); • for the Anatolian area, a more tapered shape production (e. g., Fig. 12.3).

2. CHRONO-MORPHOLOGICAL ANALYSIS OF MAIN TYPES

In Fig. 1 are indicated all the archeological sites from which come all the glyptic manufacts used in this work.

Fig. 1: Location of the investigated archaeological sites.

2a. Stalk Seals (ST)

Table 9: Stalk Seals.

	NORTHERN LEVANT	ANATOLIA	
TYPE	STb	STa	STb
TOTAL	13	38	29
IN CONTEXT	12	22	13
OUT OF CONTEXT	1	16	16

The regions of the investigated sites yielded many Stalk Seals (Fig. 2; Tab. 9). These findings confirm in part that the Anatolian and Iranian plateaus are the original area for this type as indicated by von Wickede (1990: 14).

The North-Levantine sites yielded 13 artefacts, of which 12 from contexts datable between the Iron Age I and II at the sites of Tell Judaidah, Tell Tayinat and Çatal Höyük. 67 seals (35 in archaeological context) were found in Anatolian sites.

The three oldest pieces in context coming from Alişar Höyük are dated to a phase between the Chalcolithic and the Early Bronze Age I-II (3500-2500 BC), and we can note a recurrent use of metal as a manufacturing material. The largest group of this king was found in Early Bronze Age II-III contexts (2500-2000 BC) while only a few were identified in later phases as remnants from previous periods or as a marker for a diminishing production. In contrast, Stalk Seals were found only in Iron Age I North-Levantine contexts, suggesting that this specific shape was not used in earlier periods.

Based on the two identified variants the pieces in context show:

- a considerable quantity of the STa variant in Anatolia (22), including one specimen that can be defined as 'spiked' due to the thinness of the stem (Fig. 2.8), and a smaller amount of the STb variant (13), including two seals with lobed base (Fig. 2.15; 2.16);
- the exclusive presence of the STb variant in the Northern Levant (12). It should be noted the presence of one seal with a squared stem but a particular engraved apex (Fig. 2.18), which constitutes a unique specimen.

The unstratified pieces correspond to the STa and STb variants, including those types with unknown origin (13); once again, we can see one 'Spiked' Seal (Fig. 2.11) and one unique STb specimen with incised base (Fig. 2.23).

The Anatolian stalk morphology changes in the Northern Levant: in fact, the Northern-Levantine seals' morphology (STb) is homogeneous as opposed to the variety of shapes present in Anatolia in the previous periods (STa and STb).

Regarding the variations of the material the seals in context show an exclusive use of stone in the Northern Levant. In Anatolia the most represented material is metal, followed by terracotta, bone and ivory and lithic materials (note that metal is used only for some Anatolian STa seals). The unstratified Levantine seals confirm this situation, while the Anatolian highlight a prevalent use of stone and terracotta.

Looking at the materials the Stalk Seal production in context shows:

- the prevalent use of metal and terracotta, but also the presence of stone and organic materials in the Early and Middle Bronze Age;
- that the only seal found in Anatolian Late Bronze Age contexts was crafted in metal (Fig. 2.10);
- in the Iron Age, the exclusive use of metal in Anatolia and of lithic materials in Northern Levant.

2b. Knob Seals (PM)

Table 10: Knob Seals.

TYPE	NORTHERN LEVANT				ANATOLIA		
	PMa	PMb1	PMb2	PMb3	PMa	PMb1	PMb2
TOTAL	4	74	23	20	243	24	1
IN CONTEXT	2	44	14	10	146	14	–
OUT OF CONTEXT	2	30	9	10	97	10	1

A conspicuous documentary base was available even for the Knob Seals of the Northern-Levantine and Anatolian sites (Tab. 10). In Northern Levant a total of 121 seals, of which 70 in context, has been identified for all variants, while in Anatolia a total of 268 seals, of which 160 in context, has been founded (except for the PMb3 variant). This type has been defined in literature as a characteristic of the Hittite area of the 2nd millennium BC (von Wickede 1990: 14).

Domed Knob Seals (PMa)

The North-Levantine area yielded 4 seals, of which two belonging to datable contexts from the end of the Iron Age (III) and later periods, in the sites of Tell Tayinat (Fig. 3.26) and Tell Judaidah (Fig. 3.27). The highest number of glyptic artifacts have been found in the investigated Anatolian sites, for a total of 243 (146 in context).

The ten oldest pieces in context come from Anatolian site of Alişar Höyük, dated to the Early Bronze Age (2500-1900 BC): among these, three specimens have a morphology that differs from the common one and aren't made of lithic materials (Fig. 3.3-5). The North-Levantine pieces in context allow to place the first attestation of the PMa type between the end of the Iron Age and later periods.

Based on the three variants identified the context pieces show:

- in the Anatolian sites the massive presence of incised (52) and smooth (51) variant seals, with cylinder and lobed bases. Is also present a minor quantity of faceted variant seals (32), even with incised bases with vertically lines. Noteworthy two pieces differs from this kind of type (Fig. 3.4,19), while one specimen is comparable to that, despite having no comparisons (Fig. 3.20). For nine pieces remain only the cylindrical bases, so it can only be presumed that they belong to the PMa type.
- in the Northern Levant, the presence of two smooth variant pieces with a different body shape if compared to Anatolian pieces.

The unstratified seals can be compared with the identified variants, including those domed knob type of unknown origin (30): however, there are some specimens with anomalous shape (e.g., Fig. 3.28, 29 and 31).

The presence of the domed knob morphology at the end of the Iron Age in Northern Levant shows a change in the body shape compared to the Anatolian area.

Regarding the variations of the material the seals in context show a prevalent use of stone and terracotta, with very few seals in metal, for Anatolia, while in the Levant the exclusive presence of lithic materials. This situation is confirmed by the out of context seals: in Anatolia is encountered a prevalent use of stone, followed by metal and terracotta, and a very few pieces in organic material.

Looking at the materials the Domed Knob Seal production in context shows:

- the prevalent use of stone, with some pieces in backed clay and metal, in the Early Bronze Age;
- the prevalent use of stone and terracotta, with very few pieces in metal, in the Middle Bronze Age;
- the prevalent use of stone, with few specimens in backed clay, in the Late Bronze Age;

- in the Iron Age and later periods the use of stone and metal in Anatolia, and only the stone in Northern Levant.

Modelled Domed Knob Seals (PMb1)

The North-Levantine sites of Çatal Höyük, Tell Judaidah and Tell Tayinat have yielded 74 artefacts, of which 44 by datable contexts from the start to the end of the Iron Age and later periods. The Anatolian sites investigated have returned 24 glyptic artifacts (14 in context).

The two oldest pieces in Anatolian context, dated between the Chalcolitic and the Early Bronze Age (3500-2500 BC), come from Alişar Höyük (Fig. 4.1) and Küllüoba Höyük (Fig. 4.2): these belong to the variant without engraved apex. The North-Levantine in context pieces allow to place the first attestation of the PMb1 type at the start of the Iron Age (I).

Based on the two variants identified the pieces in context show:

- some non-engraved apex variant pieces with a quite variable body shape (11) in Anatolia. Three seals have a more particular forms and aren't comparable with the others (Fig. 4.2, 6 and 7).
- the presence of specimens with (29) and without (15) engraved apex in the Northern Levant. The seals in the first group show all the body shape variations.

The out of context pieces, including those modelled domed knob type of unknown origin (46), are recognizable within the identified morphological variants, but three specimens aren't attributable to any group (Fig. 4.25, 29 and 34).

The acquisition of the modelled domed knob type from Anatolia shows some differences in the Northern Levant: in fact, these seals develop many new forms during the Iron Age compared to the Anatolian.

The glyptic materials show the exclusive use of stone for both geographical areas: only in Anatolia there are few specimens in metal, terracotta and organic materials.

The material analysis on the Modelled Domed Knob Seal in context shows:

- an equal use of stone and terracotta in the Early Bronze Age;
- the prevalent use of stone, with some pieces in terracotta and organic materials, in the Middle Bronze Age;
- in the Iron Age and later periods the use of stone and metal in Anatolia, while only stone in Levant.

3. GENERAL ANALYSIS

Tab. 11 shows an overview of the seal distribution according to their context of retrieval. The numerical data provided by the stratified seals (209 Anatolian; 93 North-Levantine) allow to trace patterns of development for single morphological type, and to verify the possible existence of a connection between types found in the two geographical areas. Some types allow us to hypothesize a plausible connection between seal morphologies, seal materials, geographical areas and chronological range without a necessarily passage from Anatolia to the Southern territories.

The most numerous group of Stalk Seals (ST; Fig. 2) is placed in Anatolia between Early and Middle Bronze Age and disappeared in the Iron Age I. In the Levant appears only the STb sub-type from the Iron Age I onwards: this variant is here found only in these contexts, while in the Anatolian plateau it was already identified in Middle Bronze Age contexts. The scarcity of STb seals in Late Bronze Age Anatolian contexts hinders us from a direct link between the Anatolian and Levantine productions. By contrast, the STa seems to be produced only on the Anatolian plateau until the Iron Age I.

The largest production of Domed Knob Seals (PMa; Fig. 3) is placed in Anatolia between Early and Late Bronze Age, with particular relevance in the Middle Bronze Age, while it disappears in the Iron Age I. In the Northern Levant we can't talk about production because there are only two specimens dated from the end of the Iron Age III. The morphological difference between the seal's body shapes demonstrates that the PMa production

Table 11: Seals found in stratigraphic context per region and period.

			EARLIER PERIODS	EBA	MBA	LBA	IA I	IA II	IA III	LATER PERIODS	
ST	a		3	10	5	1	3				ANATOLIA
	b		4	9							
PM	a			10	123	11	2				
	b	1	1	1	10		2				
		2	none in context								
		3									
MR					10	3	1				
PG											
TA											
SO	a	1	none in context								
		2									
	b										
DS	a										
	b										
	c										
PN											
ST	a		none in context								NORTHERN LEVANT
	b				1		1	5	3	2	
PM	a								1	1	
	b	1					1	25	12	6	
		2					1	9	3	1	
		3					1	5	3	1	
MR			none in context								
PG								3	1		
TA			none in context								
SO	a	1							1		
		2	none in context								
	b						1				
DS	a		none in context								
	b								3		
	c								1		
PN								1			

was born originally in Anatolia: afterwards, at the end of the Iron Age, seals with similar body composition arrived or were made in North-Levantine territories.

The Modelled Domed Knob Seals (PMb1; Fig. 4) production is very scarce in Anatolia between Early and Middle Bronze Age, while large quantities of seals are visible in Northern Levant in the Iron Age II-III. The morphological characteristics of PMb1 in these two geographical areas are very similar, but stratified seals don't allow us to reconstruct a continuity between the Anatolian Middle Bronze Age tradition and the North-Levantine Iron age one. The Late Bronze Age documentary void constitutes an unsolvable problem but allows us to figure out two different scenarios. The absence of Late Bronze Age evidence for this shape could be related to archaeological randomness or different origins. In the first scenario it is possible to hypothesize in the passage from Late Bronze to Iron Age a transfer to Northern Levant of manufacturing traditions, artisans or artefacts, who introduced this specific shape in the local Iron Age production. In the second scenario the productions of the two groups (Anatolian and North-Levantine PMb1) had different origins and developed independently at different times.

Pyramidal (PMb2; Fig. 5) and squared (PMb3; Fig. 6) variants of the Modelled Knob Seals were produced mainly in the Northern-Levantine area during Iron Age II-III, as seems to suggest their complete absence in Anatolia.

The only Hammer Seals context production (MR; Fig. 7) is placed between Middle and Late Bronze Age: despite the similarity between all the documented specimens, even without provenience, we can only support a sure production in Anatolia for this chronological range. This type is already considered as typically Hittite by Hogarth (Buchanan, Moorey 1984: XVI) due to the presence on some stamp surfaces of Luwian hieroglyphs peculiar to the Anatolian epigraphic tradition (Buchanan, Moorey 1988: 33).

None of the fist (PG; Fig. 8), anthropomorphic head (TA; Fig. 9), frame (SO; Fig. 10), double-stamps (DS; Fig. 11) and pendant (PN; Fig. 12) types were found in the Anatolian stratigraphic context, while only 11 were found in the Levantine one: this lack of data may suggest that these seal types were created in Northern Levant. Moreover, it should be emphasized that the stratified objects are very few, and for some types are none (e.g., TA). For these types it could be argued that they are:

- special or experimental morphologies rarely produced, by specific requests or for specific activities;
- site-specific morphologies: for example, the only two Frame Seals identified were found in Zincirli (SOa2; Fig. 10.5, 6);
- specimens imported from other geographical areas: for example, the out of context monomaterical variant of the Double-frame Seals (SOa1) is made only in calcedonium or in stones that can imitate the precious one. This could be attested by the fact that a black limestone specimen can imitate diorite (Fig. 10.4): this is an out of context piece attributed on a stylistic basis to the Assyrian cultural sphere of the 7th century BC.

The most uncertain group is represented by the TA type, since none of them was found in context and two outsiders were bought in Egypt (Fig. 9.3, 4).

About the Fist Seals type (PG), we can observe that its finding in the North-Levantine sites and its morphological characteristics suggest a similar production method to PMb1; moreover, the complete absence in Anatolia suggest a North-Levantine origin as in the case of PMb2 and PMb3.

The materials used in the handled stamp seals production can give some additional information regarding the chronological and geographical location of the specimens. Some materials used in Anatolia are completely absent, abandoned or never used in Levant. The exclusive use of lithic materials in the second area may be due to:

- their greater availability on the Levantine land;
- a better knowledge of their processing by the craftsmen;
- a specific request based on their better durability.

However, it should be considered that organic and plastic materials are certainly worse preserved than stones, and that metals have always been subject of remelting. Therefore, metals could occur more frequently in Anatolia due to their massive presence in the area and a developed knowledge of metallurgical processing. These observations allow us to hypothesize that:

- the discovery of stone seals can be ascribed to both geographical areas and each chronological range taken into consideration;
- the presence of other materials is attributable to the Anatolian area and, based on the context data, to an older chronological range.

In conclusion, the analyzed data prove that the only handled stamp seal type that passed in the Northern Levant from Anatolia during Iron Age I is the PMb1 variant: afterwards, the Levantine craftsmen added the PMb2 and PMb3 variants in the Iron Age II.

The passage of the Anatolian PMb1 type in the Levant around the 12th century BC could correspond to the displacement of the Hittite ruling class from the imperial capital Hattuša, perhaps intending to arrive in the centre

of royal power in Syria, Karkemiš (de Martino 2016: 109-115). This is supported by the discovery of morphologies comparable with Anatolia and not with other geographical areas or belonging to other cultural spheres. Therefore, these glyptic stamp forms, with the cylindrical seal commonly used in Levant, may have accompanied the performance of some administrative practices as a traditional Hittite cultural element (Herbordt 2005: 25-39).

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INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
2.1	b 898	Metal, copper		Complete	ST 1; STa	Alişar Höyük (Turkey), Layer I	3500 - 2500 BC	SCHMIDT, 1932, pp. 55 - 56, fig. 64, b 898.	
2.2	b 295	Metal, copper		Complete	ST 2; STa	Alişar Höyük (Turkey), Layer I	3500 - 2500 BC	SCHMIDT, 1932, pp. 55 - 56, fig. 64, b 295.	
2.3	b 294	Metal, copper		Frag. < 50%	ST 3; STa	Alişar Höyük (Turkey), Layer I	3500 - 2500 BC	SCHMIDT, 1932, pp. 55 - 56, fig. 64, b 294.	
2.4	AG 22-82	Terracotta	(30+x) x 30 x 30	Frag. = 50%	ST 6; STa	Küllüoba Höyük (Turkey), trench AG 22	2800 - 2500 BC	TÜRKTEKI, 2020, p. 25, fig. 2:i.	
2.5	e 456	Stone, serpentine or diorite		Complete	ST 7; STa	Alişar Höyük (Turkey), Citadel, Level 8	pre-XXIV cent. BC	VON DER OSTEN, 1937, p. 184, fig. 186, e 456.	
2.6	b 2366	Terracotta		Frag. < 50%	ST 8; STa	Alişar Höyük (Turkey), HH 9, Layer II, Level 2, Building complex I	2500 - 1900 BC	SCHMIDT, 1932, p. 147, fig. 184, b 2366.	
2.7	501/o	Stone, green stone	23 x 24 x 24	Frag. < 50%	ST 9; STa	Boğazköy (Turkey), Unterstadt J/21, g/10d, Level 4c	XIX - XVIII cent. BC	BERAN, 1967, p. 18, pl. 1, n. 4.	
2.8	102/s	Metal, bronze	19 x 17 x 17	Complete	ST 10; STa	Boğazköy (Turkey), Unterstadt 4 L/18	XIX - XVIII cent. BC	BOEHMER, GÜTERBOCK, 1987, p. 17, pl. I, n. 2.	
2.9	Kt. i/k 46	Organic, ivory	24 x 30 x 30	Complete	ST 11; STa	Kültepe (Turkey), p/14, Level Ib	XIX - XVIII cent. BC	ÖZGÜÇ, 1968, p. 70, pl. XXX, n. 1a-b; ÖZGÜÇ, 1959, pp. 47 - 48, pl. III, a-b.	
2.10	d 2372	Metal, bronze or copper		Complete	ST 14; STa	Alişar Höyük (Turkey), S 28, Levels 9-10 T	XVI - X cent. BC	VON DER OSTEN, 1937, p. 422, fig. 478, d 2372.	
2.11	c 1824	Metal, bronze or copper		Complete	ST 15; STa	Alişar Höyük (Turkey), R 29, Levels 8-9 T	XII - VII cent. BC	VON DER OSTEN, 1937, p. 421, fig. 478, c 1824.	
2.12	Al. c. 3	Stone, black stone	20 x 15 x 15	Complete	ST 20; STa	Alaça Höyük (Turkey)		KOSAY, 1951, pp. 191 - 192, pl. LXXX, fig. 1.	
2.13	1890.94	Stone, steatite	27 x 23 x 14	Complete	ST 23; STa			BUCHANAN, MOOREY, 1988, p. 30, pl. VII, n. 204; HOGARTH, 1920, n. 268 - 269.	
2.14	AM 450	Metal, copper	35 x 16 x 16	Complete	ST 25; STa			DELAPORTE, 1923, p. 198, pl. 98, 12a-b A.964.	
2.15	Al. t. 4	Terracotta	28 x 32 x 32	Frag. < 50%	ST 4; STb	Alaça Höyük (Turkey), Levels V-VI	Early Bronze Age	KOSAY, AKOK, 1973, p. 109, pl. LXV, LXXXII, Al. t. 4.	
2.16	AI 23-52	Terracotta	31 x 28 x 28	Complete	ST 5; STb	Küllüoba Höyük (Turkey), trench AI 23	3000 BC	TÜRKTEKI, 2020, p. 25, fig. 2:b.	

Fig. 2: Stalk Seals (ST) examples.

2.17	Kt. s/k 1	Organic, ivory	32 x 28 x 28	Complete	ST 12; STb	Kültepe (Turkey), bb/21-22, Level Ib	XIX - XVIII cent. BC	ÖZGÜÇ, 1968, p. 71, pl. XXXI, n. 1a/c.		
2.18	x-2208	Stone, serpentine	26 x 23 x 22	Complete	ST 13; STb	Tell Judaidah (Turkey), k-6, Layer 3	L	MEYER, 2008, pp. 486 - 487, n. 187.		
2.19	t-3107	Stone, green steatite	25 x 20 x 17	Complete	ST 16; STb	Tell Tayinat (Turkey), XIV, sub-Layer 3	Oa	MEYER, 2008, pp. 484 - 485, n. 181.		
2.20	b-1092	Stone, serpentine	28 x 25 x 22	Complete	ST 17; STb	Çatal Höyük (Turkey), k-6, Layer 1	O_Late	MEYER, 2008, pp. 484 - 485, n. 183.		
2.21	z-545	Stone, serpentine	33 x 24 x 24	Complete	ST 18; STb	Tell Judaidah (Turkey), f-7, Layer 1	Oc-S	MEYER, 2008, pp. 390 - 391, n. 25.		
2.22	z-780	Stone, steatite	22 x 23 x 23	Complete	ST 19; STb	Tell Judaidah (Turkey), f-7	Oc-Q	MEYER, 2008, pp. 480 - 481, n. 176.		
2.23	2134	Organic, bone	17 x 14 x 8	Complete	ST 21; STb	Alişar Höyük (Turkey), Plot XI		VON DER OSTEN, SCHMIDT, 1932, p. 47, fig. 42, n. 2134.		
2.24	329	Stone, black steatite	19 x 21 x 19	Complete	ST 22; STb	Ras Shamra (Syria), RS, 30.X.68, 30.289		NUNN, 2000, pp. 128 - 129, pl. 1.		
2.25	Schmidt 177	Stone	31 x 31 x 27	Complete	ST 24; STb			KEEL-LEU, 1991, p. 147, n. 181.		

Fig. 2: (continued).

INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
3.1	b 2439	Stone, limestone		Frag. < 50%	PMa 1	Alişar Höyük (Turkey), GG 9, Layer II, Level 1	2500 - 1900 BC	SCHMIDT, 1932, p. 144, fig. 180, b 2439.	
3.2	b 1478	Stone, brown limestone		Frag. = 50%	PMa 2	Alişar Höyük (Turkey), FF 11, Layer II	2500 - 1900 BC	SCHMIDT, 1932, pp. 144 - 145, fig. 182, b 1478.	
3.3	b 2423	Metal, bronze or copper		Frag. < 50%	PMa 3	Alişar Höyük (Turkey), GG 9, Layer II, Levels 1 - 2	2500 - 1900 BC	SCHMIDT, 1932, p. 149, fig. 187, b 2423.	
3.4	b 1484	Terracotta		Frag. < 50%	PMa 4	Alişar Höyük (Turkey), FF 11, Layer II	2500 - 1900 BC	SCHMIDT, 1932, p. 146, fig. 183, b 1484.	
3.5	b 2754	Terracotta		Frag. < 50%	PMa 5	Alişar Höyük (Turkey), J 33, Layer II, Levels 1 - 2	2500 - 1900 BC	SCHMIDT, 1932, p. 147, fig. 184, b 2754.	
3.6	219/o	Stone, green serpentine	28 x 21 x 21	Complete	PMa 6	Boğazköy (Turkey), Unterstadt J/20, k/1a West, Level 4a	XIX - XVIII cent. BC	BERAN, 1967, p. 21, pl. 4, n. 40.	
3.7	Kt. k/176	Stone, green stone	27 x 20 x 20	Frag. < 50%	PMa 7	Kültepe (Turkey), Level Ib	XIX - XVIII cent. BC	ÖZGÜÇ, 1968, p. 71, pl. XXXIII, n. 1a-b.	
3.8	181/m	Stone, black serpentine	22 x 14 x 14	Complete	PMa 8	Boğazköy (Turkey), Büyükkale y-z/12, Building G, Levels IVc-d	XIX - XV cent. BC	BERAN, 1967, p. 19, pl. 2, n. 12.	
3.9	270/o	Stone, serpentine	27 x 21 x 21	Complete	PMa 9	Boğazköy (Turkey), Unterstadt J/20, k/1a East, Level 4b	XIX - XVIII cent. BC	BERAN, 1967, p. 21, pl. 4, n. 35.	
3.10	259/p	Stone, black serpentine	18 x 14 x 14	Complete	PMa 10	Boğazköy (Turkey), Unterstadt J/20, h/7b, Level 4	XIX - XVIII cent. BC	BERAN, 1967, p. 21, pl. 4, n. 36.	
3.11	491/o	Stone, grey marl	32 x 29 x 29	Frag. < 50%	PMa 11	Boğazköy (Turkey), Unterstadt J/20, Level 4, Trench C	XIX - XVIII cent. BC	BERAN, 1967, p. 24, pl. 7, n. 69.	
3.12	75/169	Stone, green steatite	26 x 19 x 19	Complete	PMa 12	Boğazköy (Turkey), Unterstadt 4 I/20, House 15, VII/75-East	XIX - XVIII cent. BC	BOEHMER, GÜTERBOCK, 1987, p. 26, pl. V, n. 50.	
3.13	71/272	Stone, blue marble	27 x 21 x 21	Complete	PMa 13	Boğazköy (Turkey), Unterstadt 4 J/19, House 10	XIX - XVIII cent. BC	BOEHMER, GÜTERBOCK, 1987, p. 26, pl. VI, n. 58.	
3.14	75/398	Terracotta	29 x 21 x 20	Complete	PMa 14	Boğazköy (Turkey), Unterstadt 3 I/20	XVII - XV cent. BC	BOEHMER, GÜTERBOCK, 1987, p. 42, pl. IX, n. 103.	
3.15	70/20	Stone	18 x (x) x (x)	Frag. < 50%	PMa 15	Boğazköy (Turkey), Stadtplanquadrat J/19, Bauschicht	XIX - XVIII cent. BC	NEVE, 1975, p. 28, fig. 15b.	
3.16	Kt. g/k 129	Metal, gold	13 x 10 x 10	Complete	PMa 16	Kültepe (Turkey), v/23, tomb, Level Ib	XIX - XVIII cent. BC	ÖZGÜÇ, 1986, p. 34, pl. 71, n. 5a-b; ÖZGÜÇ, 1968, p. 70, pl. XXX, n. 2a-b.	

Fig. 3: Domed Knob Seals (PMa) examples.

3.17	Kt. n/k 161	Terracotta	26 x 19 x 19	Complete	PMa 17	Kültepe (Turkey), aa/20, Level Ib	XIX - XVIII cent. BC	ÖZGÜÇ, 1968, p. 72, pl. XXXVI, n. 4a-b.		
3.18	Kt. i/k 289	Metal, bronze	(17+x) x 17 x 17	Frag. < 50%	PMa 18	Kültepe (Turkey), N/23, Level Ib	XIX - XVIII cent. BC	ÖZGÜÇ, 1968, p. 73, pl. XXXIX, n. 1a-b.		
3.19	Kt. p/k 173	Metal, bronze	33 x 22 x 22	Complete	PMa 19	Kültepe (Turkey), bb/24, Level Ib	XIX - XVIII cent. BC	ÖZGÜÇ, 1968, p. 74, pl. XXXIX, n. 4a-b.		
3.20	e 2310	Stone, limestone		Frag. = 50%	PMa 20	Alişar Höyük (Turkey), Level 10 T	XX - XII cent. BC	VON DER OSTEN, 1937, p. 226, fig. 249, e 2310.		
3.21	303/p	Stone, brown flint	39 x 27 x 27	Complete	PMa 21	Boğazköy (Turkey), Unterstadt K/20, a/6c, Level 2	XV - XIV cent. BC	BERAN, 1967, p. 20, pl. 3, n. 29.		
3.22	Al. t. 120	Stone	22 x 20 x 20	Complete	PMa 22	Alaça Höyük (Turkey), Level IIIb	middle-hittite	KOSAY, AKOK, 1973, p. 83, pl. XLIII, LXXXII, Al. t. 120.		
3.23	13546	Stone	39 x 30 x 30	Complete	PMa 23	Beycesultan (Turkey), Trench A, Level II	XIII - early XII cent. BC	MELLAART, MURRAY, 1995, p. 146, fig. O.33, n. 292.		
3.24	c 162	Metal, bronze or copper		Complete	PMa 24	Alişar Höyük (Turkey), J 29, Level 8 T	XII - VII cent. BC	VON DER OSTEN, 1937, p. 421, fig. 478, c 162.		
3.25	c 1677	Stone, diorite		Complete	PMa 25	Alişar Höyük (Turkey), CC 24, Level 8-9 T	XII - VII cent. BC	VON DER OSTEN, 1937, p. 421, fig. 478, c 1677.		
3.26	t-1028	Stone, steatite	15 x 15 x 15	Complete	PMa 26	Tell Tayinat (Turkey), I, Layer 3	Oc	MEYER, 2008, pp. 486 - 487, n. 188.		
3.27	z-759	Stone, serpentine	15 x 17 x 17	Complete	PMa 27	Tell Judaidah (Turkey), e-7	Oc-Q	MEYER, 2008, pp. 488 - 489, n. 189.		
3.28	d 1822	Stone, steatite		Complete	PMa 28	Alişar Höyük (Turkey), O 33-34		VON DER OSTEN, 1937, p. 225, fig. 248, d 1822.		
3.29		Stone		Complete	PMa 29	Kuşakli (Turkey), Acropolis		MÜLLER-KARPE, 2017, p. 50, fig. 44b.		
3.30		Metal, silver	22 x 18 x 18	Complete	PMa 30	Boğazköy (Turkey)		BERAN, 1967, p. 25, pl. 8, n. 81.		
3.31	38.1644	Metal, bronze	34 x 17 x 17	Complete	PMa 31	Tarsos (Turkey)		MORA, 1982, p. 214, fig. 3, n. 38; GOLDMAN, 1956, p. 237, pl. 392, n. 15.		
3.32	1872.826	Stone, black serpentine	20 x 11 x 11	Complete	PMa 32			BUCHANAN, MOOREY, 1988, p. 30, pl. VII, n. 206.		

Fig. 3: (continued).
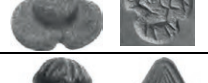
INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
4.1	b 853	Stone, serpentine		Complete	PMb1 1	Alişar Höyük (Turkey), Layer I	3500 - 2500 BC	SCHMIDT, 1932, pp. 55 - 56, fig. 64, b 853.	
4.2	AD 20-106	Terracotta	13 x 23 x 23	Complete	PMb1 2	Küllüoba Höyük (Turkey), Trench AD 20	2800 - 2500 BC	TÜRKTEKI, 2020, p. 25, fig. 2:e.	
4.3	75/481	Stone, black stone	33 x 22 x 22	Complete	PMb1 3	Boğazköy (Turkey), Unterstadt 4 I/20, XI/75, surface	XIX - XVIII cent. BC	BOEHMER, GÜTERBOCK, 1987, p. 30, pl. VIII, n. 80.	
4.4	73/483	Stone, steatite	14 x 19 x 18	Complete	PMb1 4	Boğazköy (Turkey), Unterstadt 4 J/20	XIX - XVIII cent. BC	BOEHMER, GÜTERBOCK, 1987, p. 17, pl. I, n. 1.	
4.5	Kt. n/k 165	Organic, ivory	19 x 22 x 22	Complete	PMb1 5	Kültepe (Turkey), Z/26, Level Ib	XIX - XVIII cent. BC	ÖZGÜÇ, 1968, p. 73, pl. XXXIX, n. 3a-b.	
4.6	Kt. j/k 98/96	Stone, steatite	11 x 19 x (x)	Complete	PMb1 6	Kültepe (Turkey), P/26, Level Ib	XIX - XVIII cent. BC	ÖZGÜÇ, 1968, p. 74, pl. XL, n. 2a-b; ÖZGÜÇ, 1959, p. 48, pl. III, e.	
4.7	e 1126	Metal, bronze or copper		Complete	PMb1 7	Alişar Höyük (Turkey), O 12, Level 4a M	XII - VII cent. BC	VON DER OSTEN, 1937, p. 422, fig. 478, e 1126.	
4.8	e 2203	Stone, serpentine		Complete	PMb1 8	Alişar Höyük (Turkey), P 10, Level 4a M	XII - VII cent. BC	VON DER OSTEN, 1937, p. 423, fig. 478, e 2203.	
4.9	Ant (no reg.); b-2057	Stone	13 x 17 x 17	Complete	PMb1 9	Çatal Höyük (Turkey), II_09	03_N_Beg	PUCCI, 2019, p. 119, n. 861; MEYER, 2008, pp. 538 - 539, n. 302.	
4.10	OIM_A127 20; a-0285	Stone, grey steatite	15 x 18 x 18	Complete	PMb1 10	Çatal Höyük (Turkey)	O_Beg	PUCCI, 2019, p. 132, n. 953; MEYER, 2008, pp. 516 - 517, n. 252.	
4.11	Ant (no reg.); a-2444	Stone	16 x 22 x 22	Complete	PMb1 11	Çatal Höyük (Turkey), I_05	07_O_Mid	PUCCI, 2019, p. 120, n. 868; MEYER, 2008, pp. 532 - 533, n. 286.	
4.12	OIM_A126 96; a-2373	Stone, black serpentine	18 x 26 x 22	Complete	PMb1 12	Çatal Höyük (Turkey), I_05	07_O_Mid	PUCCI, 2019, p. 120, n. 867; MEYER, 2008, pp. 484 - 485, n. 182.	
4.13	OIM_A269 76; e-0045	Stone, black stone	19 x 27 x 27	Complete	PMb1 13	Çatal Höyük (Turkey), IVa_03a	06_O_Beg	PUCCI, 2019, p. 119, n. 865; MEYER, 2008, pp. 524 - 525, n. 272.	
4.14	x-1999	Stone, steatite	15 x 30 x 30	Complete	PMb1 14	Tell Judaidah (Turkey), f-7, Layer 4	Oa	MEYER, 2008, pp. 498 - 499, n. 210.	
4.15	t-2755	Stone, steatite	21 x 38 x 34	Complete	PMb1 15	Tell Tayinat (Turkey), XIII	Oa	MEYER, 2008, pp. 526 - 527, n. 274.	
4.16	OIM_A127 25; a-0461	Stone, green stone	18 x 22 x 19	Complete	PMb1 16	Çatal Höyük (Turkey), I_02	08_O_Late	PUCCI, 2019, p. 123, n. 890; MEYER, 2008, pp. 524 - 525, n. 270.	
4.17	x-1509	Stone, serpentine	21 x 30 x 26	Complete	PMb1 17	Tell Judaidah (Turkey), g-12, Layer 5	Ob/c	MEYER, 2008, pp. 526 - 527, n. 275.	
4.18	t-2321	Stone, steatite	26 x 42 x 36	Complete	PMb1 18	Tell Tayinat (Turkey), VII, 1, surface	Oc	MEYER, 2008, pp. 526 - 527, n. 273.	

Fig. 4: Modelled Domed Knob Seals (PMb1) examples.
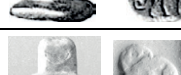
4.19	t-2435	Stone, green steatite	17 x 22 x 22	Complete	PMb1 19	Tell Tayinat (Turkey), XV, Layer 2	Oc	MEYER, 2008, pp. 550 - 551, n. 325.	
4.20	1938.282	Stone, steatite	20 x 14 x 14	Complete	PMb1 20	Al Mina (Turkey), Level 4	VI - V cent. BC	BUCHANAN, MOOREY, 1988, p. 2, pl. I, n. 6; WOOLLEY, 1938, p. 160, pl. XV, MNN 144.	
4.21	OIM_A127 12; a-0066	Stone, orange stone	18 x 21 x 21	Complete	PMb1 21	Çatal Höyük (Turkey), I_00	09_P-S	PUCCI, 2019, p. 124, n. 899; MEYER, 2008, pp. 382 - 383, n. 11.	
4.22	Ant_4802; c-0130	Stone, grey steatite	21 x 29 x 29	Complete	PMb1 22	Çatal Höyük (Turkey), I_01	10_T	PUCCI, 2019, p. 125, n. 900; MEYER, 2008, pp. 528 - 529, n. 278.	
4.23	z-332	Stone, steatite	20 x 33 x 33	Complete	PMb1 23	Tell Judaidah (Turkey), f-7	S	MEYER, 2008, pp. 520 - 521, n. 260.	
4.24	o.Nr.	Stone, black serpentine	19 x 20 x 18	Complete	PMb1 24	Boğazköy (Turkey)		BERAN, 1967, p. 18, pl. 1, n. 2.	
4.25	117	Stone, brown jasper	(17+x) x 15 x 14	Frag. < 50%	PMb1 25	Alişar Höyük (Turkey)		VON DER OSTEN, 1936, p. 17, pl. X, n. 117.	
4.26	OIM_A174 66; b-1788	Stone, grey stone	19 x 23 x 23	Complete	PMb1 26	Çatal Höyük (Turkey)		PUCCI, 2019, p. 132, n. 950; MEYER, 2008, pp. 518 - 519, n. 257.	
4.27	1913.752	Stone, steatite	26 x 17 x 17	Complete	PMb1 27	Deve Höyük (Turkey)		BUCHANAN, MOOREY, 1988, p. 11, pl. III, n. 79; MOOREY, 1980, pp. 113 - 114, fig. 19, n. 480; pl. II, n. 480; WOOLLEY, 1914-16, pl. 29, A. 15.	
4.28	S 26	Stone, serpentine		Complete	PMb1 28	Zincirli (Turkey)		ANDRAE, LUSCHAN, 1943, p. 157, pl. 37, b.	
4.29	S 2883 - VAN 9684	Stone, steatite	21 x 23 x 16	Complete	PMb1 29	Zincirli (Turkey)		JAKOB-ROST, 1975, p. 37, pl. 8, n. 152; ANDRAE, LUSCHAN, 1943, p. 157, pl. 37, f.	
4.30	1890.93	Stone, steatite	27 x 21 x 17	Complete	PMb1 30			BUCHANAN, MOOREY, 1988, p. 33, pl. VIII, n. 242; HOGARTH, 1920, n. 142.	
4.31	1920.67	Stone, steatite	45 x 35 x 26	Complete	PMb1 31			BUCHANAN, MOOREY, 1988, p. 32, pl. VIII, n. 230.	
4.32	1952.49	Stone, black steatite	15 x 22 x 21	Complete	PMb1 32			BUCHANAN, MOOREY, 1988, p. 31, pl. VII, n. 218.	
4.33	AM 452	Stone, grey steatite	16 x 19 x 15	Complete	PMb1 33			DELAPORTE, 1923, p. 200, pl. 99, 13a-b A.996.	
4.34	26.31.219	Stone, steatite	18 x 21 x 21	Complete	PMb1 34			https://www.metmuseum.org/art/collection/search/322546	

Fig. 4: (continued).

INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
5.1	Ant (no reg.); a-2251	Stone, steatite	15 x 25 x 25	Complete	PMb2 1	Çatal Höyük (Turkey), II_08	04_N_Mid	PUCCI, 2019, p. 119, n. 862; MEYER, 2008, pp. 498 - 499, n. 212.	
5.2	Ant (no reg.); a-1817	Stone	22 x 23 x 23	Complete	PMb2 2	Çatal Höyük (Turkey), I_04	07_O_Mid	PUCCI, 2019, p. 122, n. 883; MEYER, 2008, pp. 536 - 537, n. 297.	
5.3	Ant (no reg.); a-1047	Stone	16 x 20 x 17	Complete	PMb2 3	Çatal Höyük (Turkey), II_06	06_O_Beg	PUCCI, 2019, p. 119, n. 864; MEYER, 2008, pp. 536 - 537, n. 296.	
5.4	Ant (no reg.); e-0051	Stone	15 x 19 x 19	Frag. < 50%	PMb2 4	Çatal Höyük (Turkey), IVa_03b	06_O_Beg	PUCCI, 2019, p. 119, n. 863; MEYER, 2008, pp. 538 - 539, n. 303.	
5.5	x-801	Stone, steatite	21 x 28 x 28	Complete	PMb2 5	Tell Judaidah (Turkey), f-8, Layer 4	Oa	MEYER, 2008, pp. 540 - 541, n. 306.	
5.6	t-2856	Stone, serpentine	12 x 13 x 13	Complete	PMb2 6	Tell Tayinat (Turkey), XIII	Oa	MEYER, 2008, pp. 540 - 541, n. 305.	
5.7	t-3197	Stone, green steatite	14 x 15 x 14	Complete	PMb2 7	Tell Tayinat (Turkey), T-11, 1, surface	Oa	MEYER, 2008, pp. 512 - 513, n. 246.	
5.8	OIM_A12701; a-1247	Stone, black stone	21 x 23 x 23	Complete	PMb2 8	Çatal Höyük (Turkey), I_03	08_O_Late	PUCCI, 2019, p. 123, n. 887; MEYER, 2008, pp. 540 - 541, n. 308.	
5.9	x-1802	Stone, serpentine	11 x 16 x 16	Complete	PMb2 9	Tell Judaidah (Turkey), f-15	Oc	MEYER, 2008, pp. 532 - 533, n. 289.	
5.10	t-568	Stone, steatite	13 x 26 x 26	Frag. < 50%	PMb2 10	Tell Tayinat (Turkey), I	Oc	MEYER, 2008, pp. 532 - 533, n. 287.	
5.11	OIM_A12740; c-0129	Stone, black steatite	19 x 24 x 21	Complete	PMb2 11	Çatal Höyük (Turkey), I_01	10_T	PUCCI, 2019, p. 125, n. 901; MEYER, 2008, pp. 538 - 539, n. 299.	
5.12	d 2242	Stone, tuff		Complete	PMb2 12	Alişar Höyük (Turkey), R 28		VON DER OSTEN, 1937, p. 225, fig. 249, d 2242.	

Fig. 5: Modelled Pyramidal Knob Seals (PMb2) examples.

INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
6.1	x-325	Stone, steatite	12 x 20 x 17	Complete	PMb3 1	Tell Judaidah (Turkey), d-8, Layer 1	N	MEYER, 2008, pp. 548 - 549, n. 320.	
6.2	Ant (no reg.); b-1074	Stone	12 x 24 x 19	Fram. < 50%	PMb3 2	Çatal Höyük (Turkey), II_04	07_O_Mid	PUCCI, 2019, p. 120, n. 871; MEYER, 2008, pp. 502 - 503, n. 218.	
6.3	Ant (no reg.); a-1045	Stone	15 x 22 x 22	Fram. < 50%	PMb3 3	Çatal Höyük (Turkey), II_06	06_O_Beg	PUCCI, 2019, p. 119, n. 866; MEYER, 2008, pp. 542 - 543, n. 309.	
6.4	x-1140	Stone, steatite	6 x 12 x 12	Fram. < 50%	PMb3 4	Tell Judaidah (Turkey), f-8, Layer 4	Oa	MEYER, 2008, pp. 500 - 501, n. 216.	
6.5	t-2800	Stone, green steatite	13 x 15 x 14	Complete	PMb3 5	Tell Tayinat (Turkey), XV	Oa	MEYER, 2008, pp. 538 - 539, n. 301.	
6.6	Ant (no reg.); c-0260	Stone, grey steatite	15 x 20 x 20	Complete	PMb3 6	Çatal Höyük (Turkey), I_03	08_O_Late	PUCCI, 2019, p. 123, n. 892; MEYER, 2008, pp. 522 - 523, n. 264.	
6.7	OIM_A12707; a-1397	Stone, green serpentine	24 x 43 x 43	Fram. < 50%	PMb3 7	Çatal Höyük (Turkey), I_03	08_O_Late	PUCCI, 2019, p. 122, n. 885; MEYER, 2008, pp. 532 - 533, n. 288.	
6.8	327	Stone, limestone	40 x 30 x 15	Complete	PMb3 8	Khan Shaykhun (Syria), Level 4D	V - IV cent. BC	NUNN, 2000, pp. 128 - 129; MESNIL DU BUISSON, 1932, p. 184, n. 7.	
6.9	330	Stone	11 x 20 x 19	Fram. < 50%	PMb3 9	Ayn Issa (Syria)		NUNN, 2000, pp. 128 - 129, pl. 1.	
6.10	OIM_A17451; b-1431	Stone, green serpentine	21 x 20 x 19	Complete	PMb3 10	Çatal Höyük (Turkey)		PUCCI, 2019, p. 128, n. 921; MEYER, 2008, pp. 536 - 537, n. 298.	
6.11	328	Stone, limestone	20 x 32 x 24	Fram. < 50%	PMb3 11	Tell Ahmar (Syria)		NUNN, 2000, pp. 128 - 129.	
6.12	1911.272	Stone, grey serpentine	19.5 x 19 x 11	Fram. < 50%	PMb3 12			BUCHANAN, MOOREY, 1988, p. 33, pl. VIII, n. 240; HOGARTH, 1920, n. 211.	

Fig. 6: Modelled Squared Knob Seals (PMb3) examples.

INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
7.1	Al. t. 124	Metal, bronze	30 X 24 X 24	Complete	MR 1	Alaça Höyük (Turkey), Level IIIa	middle-hittite (XX - XV cent. BC)	KOSAY, AKOK, 1973, p. 83, pl. XLIII, LXXXII, Al. t. 124.	
7.2	78/4	Metal, bronze	30 x 23 x 23	Complete	MR 2	Boğazköy (Turkey), Unterstadt 3 J/21, Stadt-Tor	XVII - XV cent. BC	BOEHMER, GÜTERBOCK, 1987, p. 50, pl. XIV, n. 136.	
7.3	256/p	Terracotta	21 x 20 x 20	Complete	MR 3	Boğazköy (Turkey), Unterstadt J/20, i/7c-d Est, Level 3	XVII - XV cent. BC	BERAN, 1967, p. 19, pl. 1, n. 11.	
7.4	77/443	Terracotta	32 x 26 x 19	Complete	MR 4	Boğazköy (Turkey), Unterstadt 4 K/20, House 11	XIX - XVIII cent. BC	BOEHMER, GÜTERBOCK, 1987, p. 21, pl. II, n. 22.	
7.5	76/291	Terracotta	34 x 28 x 28	Frag. < 50%	MR 5	Boğazköy (Turkey), Unterstadt 4 J/20, I/1	XIX - XVIII cent. BC	BOEHMER, GÜTERBOCK, 1987, p. 26, pl. V, n. 56.	
7.6	62/124	Metal, bronze	22 x 25 x 25	Complete	MR 6	Boğazköy (Turkey), Unterstadt 3, surface	XVII - XV cent. BC	BOEHMER, GÜTERBOCK, 1987, p. 51, pl. XIV, n. 142.	
7.7	376/o	Stone, limestone	(21+x) x 23 x 23	Frag. = 50%	MR 7	Boğazköy (Turkey), Unterstadt J/20, Level 2, Trench C	XV - XIV cent. BC	BERAN, 1967, p. 22, pl. 6, n. 53.	
7.8	133/o	Stone, brown flint	11 x 21 x 14	Complete	MR 8	Boğazköy (Turkey), Unterstadt J/20, i/1b, Level 1b	XIV - XIII cent. BC	BERAN, 1967, p. 20, pl. 3, n. 28.	
7.9	13545	Organic, ivory	38 x 28 x 28	Complete	MR 9	Beycesultan (Turkey), Trench M, Level Ib	XII - XI cent. BC	MELLAART, MURRAY, 1995, p. 150, fig. O.41, n. 343.	
7.10	Al. c. 379	Metal, bronze or copper	(x) x 21 x 19	Complete	MR 10	Alaça Höyük (Turkey)		KOSAY, 1951, p. 195, pl. LXXIX, fig. 2.	
7.11	114	Metal, bronze	24 x 28 x 28	Complete	MR 11	Alişar Höyük (Turkey)		VON DER OSTEN, 1936, p. 17, pl. X, n. 114.	
7.12	1896 - 1908.0.5	Stone, white limestone	19 x 19 x 18	Complete	MR 12			BUCHANAN, MOOREY, 1988, p. 35, pl. IX, n. 250; HOGARTH, 1920, n. 254.	
7.13	AM 422	Stone, hematite	38 x 24 x 22	Complete	MR 13			DELAPORTE, 1923, p. 201, pl. 101, 3a-b-c-d-e-f A.1028.	
7.14	AO 3758	Metal, silver	25 x 18 x 18	Complete	MR 14			DELAPORTE, 1923, p. 202, pl. 101, 6a-b A.1034.	

Fig. 7: Hammer Seals (MR) examples.

INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
8.1	1954.229	Stone, limestone	(9+x) x 20 x 20	Frag. < 50%	PG 1	Al Mina (Turkey), Level 8-7	early VII sec. a.C. (O_Mid)	BUCHANAN, MOOREY, 1988, p. 2, pl. I, n. 7; WOOLLEY, 1938, p. 161, pl. XV, MN 451.	
8.2	Ant_4829; a-0251	Stone, green stone	30 x 25 x 25	Complete	PG 2	Çatal Höyük (Turkey), II_04	07_O_Mid	PUCCI, 2019, p. 121, n. 880; MEYER, 2008, pp. 550 - 551, n. 326.	
8.3	t-2866	Terracotta	20 x 21 x 21	Frag. < 50%	PG 3	Tell Tayinat (Turkey), XIII, Layer 2	Oa	MEYER, 2008, pp. 548 - 549, n. 322.	
8.4	OIM_A127 04; a-1318	Stone, green stone	14 x 13 x 8	Complete	PG 4	Çatal Höyük (Turkey), I_03	08_O_Late	PUCCI, 2019, p. 122, n. 884; MEYER, 2008, pp. 548 - 549, n. 323.	
8.5	Ant (no reg.); b-1048	Stone, green stone	15 x 20 x 20	Frag. < 50%	PG 5	Çatal Höyük (Turkey)		PUCCI, 2019, p. 130, n. 939; MEYER, 2008, pp. 516 - 518, n. 255.	
8.6	WA 108683	Terracotta	20 x 18 x 18	Complete	PG 6	Deve Höyük (Turkey)		MOOREY, 1980, pp. 113 - 117, fig. 19, n. 499.	
8.7	S 1334-857 - VAN 8655	Stone, limestone	20 x 20 x 17	Complete	PG 7	Zincirli (Turkey)		JAKOB-ROST, 1975, p. 28, pl. 6, n. 90; ANDRAE, LUSCHAN, 1943, p. 158, pl. 37, c.	
8.8	Al. d. 190	Terracotta	30 x (x) x (x)	Complete	PG 8	Alaça Höyük (Turkey)		KOSAY, 1951, p. 195, pl. LXXX, fig. 2a-b.	
8.9	1984.175.17	Stone, black chlorite	20 x 23 x 28	Complete	PG 9			https://www.metmuseum.org/art/collection/search/326916	
8.10	VA 2499 - VAN 3816; 3817; 8726	Stone, yellow marble	24 x 20 x 17.5	Complete	PG 10			JAKOB-ROST, 1975, p. 49, pl. 10, n. 207.	
8.11	1889.967	Stone, steatite	14 x 21 x 20	Complete	PG 11			BUCHANAN, MOOREY, 1988, p. 31, pl. VII, n. 216; HOGARTH, 1920, n. 209.	
8.12	VA 759 - VAN 9650	Stone, steatite	21 x 20 x 20	Complete	PG 12			JAKOB-ROST, 1975, p. 26, pl. 6, n. 81.	
8.13	N 2288	Metal, silver	23 x 21 x 21	Complete	PG 13			LAMBERT, 1979, pp. 32 - 33, pl. XII, n. 107.	
8.14	1952.154	Organic, ivory or bone	25 x 18 x 16	Complete	PG 14			BUCHANAN, MOOREY, 1988, p. 37, pl. IX, n. 264.	

Fig. 8: Human Fist Seals (PG) examples.
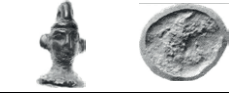
INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
9.1	WA 108697	Metal, bronze	22 x 14 x 14	Complete	TA 1	Deve Höyük (Turkey)		MOOREY, 1980, pp. 113 - 114, fig. 19, n. 481; WOOLLEY, 1914-16, p. 118, pl. 29, A. 3.	
9.2	1966.1142	Metal, bronze	26 x 15 x 13	Complete	TA 2			BUCHANAN, MOOREY, 1988, p. 37, pl. IX, n. 268.	
9.3	1921.1196	Metal, bronze	23 x 15 x 15	Frag. < 50%	TA 3			BUCHANAN, MOOREY, 1988, p. 37, pl. IX, n. 270.	
9.4	1922.6	Metal, bronze	23 x 16 x 16	Complete	TA 4			BUCHANAN, MOOREY, 1988, p. 37, pl. IX, n. 269.	

Fig. 9: Anthropomorphic Head Seals (TA) examples.

INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
10.1	t-784	Organic, bone	25 x 23 x 10	Frag. < 50%	SO 1; SOa1	Tell Tayinat (Turkey), I, Strato 1	Oc	MEYER, 2008, pp. 552 - 553, n. 328.	
10.2	1891.340	Stone, blue chalcedony	18 x 15 x 10	Complete	SO 2; SOa1			BUCHANAN, MOOREY, 1988, p. 63, pl. XIV, n. 428.	
10.3	1911.247	Stone, white chalcedony	28 x 18 x 14	Complete	SO 3; SOa1			BUCHANAN, MOOREY, 1988, p. 63, pl. XIV, n. 429.	
10.4	99.22.17	Stone, black limestone	23 x 22 x 17	Complete	SO 4; SOa1			https://www.metmuseum.org/art/collection/search/322286	
10.5	S 3704	Polymaterial, gold, black stone		Complete	SO 4; SOa2	Zincirli (Turkey)		ANDRAE, LUSCHAN, 1943, p. 166, pl. 45, n.	
10.6	S 3942	Polymaterial, silver, black stone	20 x (x) x 12	Frag. < 50%	SO 5; SOa2	Zincirli (Turkey), North Palace		ANDRAE, LUSCHAN, 1943, p. 159, pl. 38, e.	
10.7	OIM_A57200; b-2523	Metal, bronze	29 x 22 x 22	Complete	SO 6; SOb	Çatal Höyük (Turkey), II_10	03_N_Beg	PUCCI, 2019, p. 242.	
10.8	85/302	Organic, ivory	26 x 22 x 22	Complete	SO 7; SOb	Boğazköy (Turkey), Oberstadt M/8-e/1, House 21		DINÇOL, DINÇOL, 2008, p. 62, pl. 30, n. 308a-c.	
10.9	VA 3455 - VAN 9716	Metal, silver plated copper	38 x 32 x 32	Complete	SO 8; SOb			JAKOB-ROST, 1975, p. 24, pl. 5, n. 78.	

Fig. 10: Frame Seals (SO) examples.
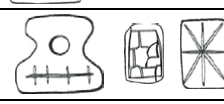
INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
11.1	AM 753	Stone, green serpentine	30 x 14 x 14	Complete	DS 1; DSa			DELAPORTE, 1920, p. 91, pl. 58, 23a-b-c C.20.	
11.2	AM 483	Stone, brown marble	24 x 11 x 11	Complete	DS 2; DSa			DELAPORTE, 1923, p. 200, pl. 99, 9a-b-c A.989.	
11.3	Ant (no reg.); a-2374	Stone, green stone	31 x 27 x 27	Complete	DS 3; DSb	Çatal Höyük (Turkey), I_03	08_O_Late	PUCCI, 2019, p. 123, n. 891; MEYER, 2008, pp. 482 - 483, n. 177.	
11.4	x-1315	Stone, tuff	25 x 25 x 22	Complete	DS 4; DSb	Tell Judaidah (Turkey), j-9, Layer 3	Ob/c	MEYER, 2008, pp. 528 - 529, n. 280.	
11.5	t-742	Stone, steatite	20 x 17 x 17	Complete	DS 5; DSb	Tell Tayinat (Turkey), T-1, 1, surface	Oc	MEYER, 2008, pp. 428 - 429, n. 89.	
11.6	332	Stone, jasper	25 x 22 x 20	Complete	DS 6; DSb	Khan Shaykhun (Syria)		NUNN, 2000, pp. 130 - 131, pl. 1; MESNIL DU BUISSON, 1932, p. 185, n. 8.	
11.7	333	Stone, serpentine	17 x 15 x 12	Complete	DS 7; DSb			NUNN, 2000, pp. 130 - 131.	
11.8	z-502	Stone, steatite	18 x 49 x 49	Complete	DS 8; DSc	Tell Judaidah (Turkey), j-15	Oc	MEYER, 2008, pp. 544 - 545, n. 313.	
11.9	1889.317	Stone, steatite	21.5 x 20 x 12	Complete	DS 9; DSc			BUCHANAN, MOOREY, 1988, p. 30, pl. VI, n. 200; HOGARTH, 1920, n. 71.	
11.10	1889.321	Stone, brown marble	31 x 20 x 16	Complete	DS 10; DSc			BUCHANAN, MOOREY, 1988, p. 30, pl. VI, n. 197; HOGARTH, 1920, n. 264.	

Fig. 11: Double-Stamps Seals (DS) examples.

INV. N.	MUS. N.	MAT.	SIZE	CONS.	CODE	SITE	CONT. DATE	BIBLIOGRAPHY	PICTURE
12.1	t-2059	Terracotta	23 x 22 x 22	Complete	PN 1	Tell Tayinat (Turkey), XXI, Layer 1	Ob	MEYER, 2008, pp. 552 - 553, n. 327.	
12.2	1913.659(1)	Glassy, green faience	19 x 17 x 17	Complete	PN 2	Deve Höyük (Turkey)		BUCHANAN, MOOREY, 1988, p. 11, pl. III, n. 73; MOOREY, 1980, p. 114, fig. 19, n. 474; pl. II, n. 474.	
12.3	302/n	Terracotta	31 x 27 x 27	Frag. < 50%	PN 3	Boğazköy (Turkey), Büyükkale s/17		BOEHMER, GÜTERBOCK, 1987, p. 89, pl. XXXIV, n. 268; BERAN, 1967, p. 23, pl. 6, n. 58.	
12.4	AOD 163	Stone, brown limestone	32 x 17 x 17	Complete	PN 4	Susa (Iran)		DELAPORTE, 1920, p. 78, pl. 54, 34a-b D.140.	
12.5	VA 507 - VAN 9664	Stone, hematite	20 x 17 x 16	Complete	PN 5			JAKOB-ROST, 1975, p. 26, pl. 6, n. 80.	
12.6	AO 7285	Stone, blue stone	18 x 14 x 11	Complete	PN 6			DELAPORTE, 1923, p. 200, pl. 99, 16a-b A.998.	
12.7		Stone, red jasper	27 x 16 x 15	Complete	PN 7			VON DER OSTEN, 1934, p. 57, pl. XXV, n. 374.	
12.8	AO 7201	Stone, serpentine	40 x 16 x 15	Complete	PN 8			DELAPORTE, 1923, p. 206, pl. 104, 19a-b A.1129.	

Fig. 12: Pendant Seals (PN) examples.

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