

Introduction

The "Mesopotamian Ancient Placenames Almanac" (MAPA) is planned as a long-term project for the historical geography of Mesopotamia in the age of Empires, aiming to incorporate both textual and remote-sensing data for large scale relational mapping of the landscape. The core of the project is a gazetteer of place names assembled from 6th & 5th Century BCE cuneiform texts from southern Babylonia, and in line with World Historical Gazetteer protocols, as well as ground, aerial, and satellite surveys of the area.

Nar-Sumandar

Sumandar

^usu-ma-an-dar 1-11) Tigl Summ 6, 9 (^[íd] su¹-) [*nārtu*; Sippar-ša-Šamaš]

^{id}šu-man-da-ar 1-11) Tigl Ann 9, 6 (-^rar¹) [Kala'in, Pașītu]

¶ NAT, 338 (Šumandāši); RGTC 3, 310 (aB Šumundar); RGTC 5, 316 RGTC 8, 382f. (nB/spB Nār-Sumandar) mit Ermidoro (2016) 159.

Kanal im Großraum \rightarrow Sippar/ \rightarrow Babylon/ \rightarrow Barsip, RIA 13, 306f., s. v. Sumundar §2 (E. Gehlken); vgl. \rightarrow Sumandir.

Gazetteers – Phase 1

The digital gazetteer at the heart of the MAPA project's textual analysis is drawn mainly from two sources: *Geographical Names* According to New- and Late-Babylonian Texts by Ran Zadok, and Die Orts- und Gewässernamen der Neuassyrischen Zeit, Teil 3: Babylonien, Urartu und die Östlichen Gebiete by Ariel M. Bagg. These two volumes are part of the Répertoire Géographique des Textes Cunéiformes series. They collect and present toponyms from the period and geographic region in question. The first step in assembling the MAPA gazetteer is a systematic survey of these volumes, first for toponyms explicitly listing a connection to the city of Uruk, the center of the project's interest. In the illustration, the Sumandar Canal is listed in both Bagg (left), who cites Neo-Assyrian sources, and Zadok (right), who cites Neo-Babylonian sources. A secondary survey is made at the end of the first, seeking those places listed in connection with results from the first (for example,

Kala'in, listed in connection with Sumandar).

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282	283		Nār-Šapputtu	{uru}/{uru.I7}šap-pu-ut-t	Water	RGTC-8	384	Not far from URUK	
283	284		Nār-Šaqillati	I7-ša-qil-la-at	Water	RGTC-8	384	URUK Region	
284	50	RNSR	Nār-Šarri	I7-LUGAL; others	Water	RGTC-8	384-385	Flows to URUK	
285	281	RNSN	Nār-Sîn	various	Water	RGTC-8	381-382	***	
286	165	RSUM	Nār-Sumandar	various	Water	RGTC-8	382-383	***	
287	285		Nār-Turnu	I7-tur-nu	Water	RGTC-8	386	Not far from URUK	Possible
288	287		Nār-Ullāja	I7-ul-la-a-a	Water	RGTC-8	389	Not far from URUK	Perhaps
289	370	NUQN	Nār-Uqnû	*none*	Water	Ermidoro	160	URUK Region	
290	371	NNBR	Nāru nēberu	1D né-bé-ri	Water	Ermidoro	161	URUK Region	

Gazetteers – Phase 2

The results of these surveys are collected in Excel format, for ease of organization and export to the various needed formats, primarily CSV (Comma-Separated Values) and TSV (Tab-Separated Values). Information about each place name is gathered here, including variations of the toponym, its relationship to Uruk, literary and research citations, and a number of identifying markers for ease of integration with online databases, such as the Cuneiform Digital Library Initiative (CDLI) and the World Historical Gazetteer (WHG; whgazetteer.org). Each toponym receives a three- or four-letter code, which serves to identify all references to this particular place name in network analysis (Rattenborg 2016, 99). This file is maintained locally, and is used to export iterations as needed, with a focus on the specific data for the application in question (see Gephi, below). In the above illustration, the initial entry for the Sumandar Canal is seen, with the various data recorded in Zadok and Bagg organized into the gazetteer.

285	NNSR_127	Nār-Šarri	RGTC-8	Water			-0625	-0350
286	NNSN_200	Nār-Sîn	RGTC-8	Water			-0625	-0350
287	NSUM_111	Nār-Sumandar	RGTC-8	Water			-0625	-0350
288	_477	Nār-Turnu	RGTC-8	Water			-0625	-0350
289	_478	Nār-Ullāja	RGTC-8	Water			-0625	-0350

Gazetteers – Phase 3

When Bagg (Bagg 2020) and Zadok (Zadok 1985) were satisfactorily surveyed into the gazetteer, the gazetteer was published on GitHub (DOI: 10.5281/zenodo.4540616), and then incorporated into World Historical Gazetteer. With the dearly appreciated assistance of Karl Grossner of the WHG, the locally relevant data in the gazetteer was amended to match the needs of the WHG, which meant removing empty cells, adding "start," end," and "type" data, and removing data describing the toponym's connection to other toponyms in the gazetteer. This gazetteer is now ready for assimilation into WHG, and use with related projects, notably Recogito.

Contact

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MAPA: A Linked Open Data Gazetteer of Ancient Babylonia

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In-su-man-dar Evetts, Ner.70, 14 (-da[r]); Nbn.910, 3 mu-šá-ni-tuu ša Iz-su-man-dar (copy TI) Nbn.910,4 Iz-su-man-dur CT 57,197 Rs.2'

Iz-su-un-dur Nbk.267,2 (poss. -dar., see A.L.Oppenheim, OrNS 9,1940,25:

HOME	CATALOGUE PLACES & MAP A
tablet AO 10337	
NaBuCCo No.	Museum No.
5395	AO 10337
Period	Babylonian date
ENB	10.III.14 Ššu
Publication	Frame 2013 18
Place of issue	Babylon city
Archive	Sîn-nāșir
Type and content Paraphrase	Purchases

Purchase of land and an empty house: A purchases three parcels of land for 34(+?) minas of silver in pieces (šibirtu) from B. The three

Text Digitization with *Recogito*

Recogito (recogito.pelagios.org) plays a central part of enriching the gazetteer with data accumulated from thousands of Akkadian everyday records, which are available in multiple formats: in transliteration, as summaries in both English and German, and in English translation. This will eventually be done in parallel pipelines; a manual pipeline centered around digitizing texts, and then using Recogito to create a TEI/XML file that can be incorporated into the gazetteer is the current process. A semi-automated process is in development, which will scrape digitally available texts.

Image 1, above, is taken from *NaBuCC*o, the Neo-Babylonian Cuneiform Corpus (https://nabucco.arts.kuleuven.be/). This online database presents summaries of cuneiform texts along with various metadata. In this case, the metadata of tablet AO 10337 is presented.

Image 2, below, shows the same text within the Recogito interface. With Recogito's annotation tools, place names within the text can be easily selected and annotated. When the gazetteer is connected to the Recogito engine, these tools can be put to use annotating toponyms within texts from the Neo-Babylonian and Achaemenid Periods. When annotation is complete, the newly assembled data can be exported as TEI/XML or as a GeoJSON, and added to the gazetteer, adding the text list to the metadata held there on each toponym.

Ao10337.txt

♀ 1 Annotations · ■ No Other Contributors

ANNOTATION MODE: NORMAL 💡 QUICK 🗸 RELATIONS COLOUR: BY ENTITY

Purchase of land and an empty house:** A** purchases three parcels of I 34(+?) minas of silver in pieces (*šibirtu*) from **B**. The three parcel land include the half share (*ahu*) of an orchard (*kirû*), an empty hou (*bītu* *kišubbû*) and a piece of grain-cultivated land (*zēru pî šulpi*). orchard is located in the meadowland (*ugāru*) of Uruk. Its upper side,

lower side and its upper front borders on the hou of **C1**, **C2** and **C3**. Its lower front šarri*). No cardinal directions for the sides of th empty house plot is located in the district (*erset mahīri*) inside Uruk. Its upper side (in the west) (*mūtaqu*) of the god and the king and its lower of **C4**. Its upper front (in the north) borders of **C5** and **C6** and its lower front (in th (*sūqu* *qatnu*). The plot of cultivated land is

S	♥ ⁺ Place
f(Uruk/Orchoe/Erech/Orik
u ı	Uruk was an ancient Sumeriar Uruk, Warka, Orchoe, Erech, Or 6200 BC - 2100
	shmuliko less than a minute
0	Add a comment
e	Add tag
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ny	

the Angillu irrigation district (*tamirtu*) and along the upper (et a) 10; canal (*nār šarri*) in the meadowland of Uruk. Neither cardinal direction the sides nor any other information about the bordering areas are given. lengths are given for any of the three plots. All this is the (inheritance) share (*zittu*) which **B2**, the father of the seller, received from **B3**, the grandfather of the seller. 15 witnesses (including the priest [*šangû*] of Larsa) and the scribe. Fingernail impressions (*supru*) of the seller.

Multiple Iterations; In ALT 1; In ALT 2 & ALT 3 Not far from ALT 1: Presumably near ALT 2 Multiple Iterations, Attested near ALT 1, ALT 2 w/ ID Multiple Iterations; ALT 1 Region; Not far from ALT 2 Flows from Alt 1 and Alt 2, poss. ALT 3 Unclear Location!!

ARCHIVES | BIBLIOGRAPHY | GLOSSARIES

CDUNo	Duplicate	
P387077	Dupneate	
Julian date	Join	
654 BCE		

163 RNRS	Nāru-Eššetu	check RGTC-8	Cf. Nāru-eššu					RNGM	RNIN
164 RNRS	Nāru-Eššu	check RGTC-8	Cf. Nāru-eššetu; ALT 1 spec. to Enlil Gate	BAB				RNIN	RNSR
165 RSUM	Nār-Sumandar	various	Flows from Alt 1 and Alt 2, poss. ALT 3	BAB	Possible	SIP	BOR	RNDO	
166 RGZT	Nār-Gizzēti	I7-giz(!)-ze-ti(!)	Flows in ALT 1	DGZT	Possible			KNPQ	HPQD
167 RDJ	Rudāja	ru-da-a-a; {garim}ru-da	Multiple Iterations; on ALT 1; borders ALT 2 & ALT 3	RTKK		DUG	RNSR	RNRS	BAB
168 KNN	Kār-Nanâ	various	On ALT 1	RKNN	Probable			RQS	LAR
169 RHRK	Harri-kibbi	{i7}har-ri-ki-ib-bi; {i7}ha	Parallel or North of ALT 1; not far from ALT 2 & ALT 3	RTKK	Possible	RNPQ	EUP	SEA	BJKN
170 RKNN	Nār-Kār-Nanâ	l7-kar-{d}na-na-a	Flowed in ALT 1	KNN	Probable			SLH	DSJT
171 DLB	Dilbat	Dilbat	RGTC-8 pp. 118-119						-

those of the toponyms connected to it.

The initial graph generated is fairly uninteresting, simply showing each connection as a thin, dark line. This visualization is of limited use, as it portrays the connections randomly, and in one color, making deriving any meaning from the graph exceedingly difficult. To alter the graph, the terms by which the graph is rendered must be specified. Gephi uses a "Force-based" algorithm. The force in question is such that "linked nodes attract each other and non-linked nodes are pushed apart." (Golbeck 2018) Gephi is equipped with an easy application of this principle, dubbed the "Force Atlas." (Ibid) Applying it to the graph pushed connected nodes together, making more tightly connected regions easy to identify by sight. Once the Force Atlas is enabled, the statistical analysis tools within Gephi allow further analysis of the connections among the various nodes in the dataset.

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The final diagram produced by the analysis of the gazetteer with the above method resulted in geographically logical placements of a number of toponyms, showing promise for this technique. Other techniques could be applied, as well. One promising layout is the OpenOrd layout, which focuses on identifying clusters in the data, which could be extremely useful in identifying regional groupings. It is also more useful with larger datasets, which may come in handy as the master dataset grows through the project. GEPHI also allows the addition of latitude and longitude to specific nodes. This analysis can anchor these nodes to an objective geographic place, and ease the integration of the GEPHI network analysis and the larger image analysis and GIS work.

Works Cited

Bagg, Ariel M. 2020. Die Orts- und Gewässernamen der Neuassyrischen Zeit, Teil 3: Babylonien, Urartu und die Östlichen Gebiete; RGTC 7. Reichert Verlag. Golbeck, Jen. "Updated Gephi Quick Start Tutorial for 0.9." slideshare.net, accessed June 9, 2018. https://www.slideshare.net/golbeck/updated-gephi-quick-start-tutorial-for-v-09. Rattenborg, Rune. 2016. "The Scale and Extent of Political Economies of the Middle Bronze Age Jazirah and the Bilad Al-Sam (c. 1800-1600 BCE)." Ph. D. Thesis, Durham University. Zadok, Ran. 1985. *Geographical Names According to New- and Late-Babylonian Texts*; RGTC 8. Reichert Verlag.



Gephi Introduction

Gephi (gephi.org/about) is a network analytic tool which easily analyses the connections between toponyms in the gazetteer. A preliminary analysis showed great promise, and as data regarding the number of recorded connections, the strength of these connections, and the (lack of) doubt surrounding these connections accumulates, this analysis can be made more and more accurate. These connections will serve as a bridge to the final step of the project, a remote-sensing survey of S. East Mesopotamia and an attempt to assign these toponyms to a physical geographic feature.

Gephi Phase 1

Because Gephi analyzes networks, any dataset must first be stripped of information irrelevant to the connections within the network. In the case of the MAPA gazetteer, this means any information besides the three- or four-letter code assigned to each toponym, and

This data, which can list at times up to six connections for a single toponym, is then reduced to two columns, listing each connections individually. That is, if A is connected to B and C, then A—>B and A—>C are listed in separate rows. This allows Gephi to establish source-target relationships, and identify those nodes in the network that are central.

Gephi Phase 2



Gephi Phase 3