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**THE ANCIENT MEDITERRANEAN WORLD: HISTORY,
ARCHAEOLOGY, AND ART**

Salt: A Philological Analysis of a Mineral in the Selected Administrative, Cultic, and Literary
Corpora of Late Bronze Age Hittite Anatolia (1595–1170 BCE)

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Writing a thesis is a journey. We are obliged to set on the reader through the academic jargons to a destination. The sojourn must not be burdened only with scientific terminologies but a minute weaving of observations, speculations, and an unbiased presentation of sources available. I took much time to pen down the thesis while wondering how to construct a bridge between the academic masterminds and enthusiastic readeobv. In 2026, when we are still mesmerised with the seminal publications of ‘1177 B.C.: The Year Civilization Collapsed’ and ‘After 1177 B.C.: The Survival of Civilizations’ by Eric H. Cline (2021; 2024), simultaneously we are handed down a responsibility of catering a delectable platter of data coped with scientific understanding.

Where to delineate the imagination? Even after being exposed to a rigorous training of archaeology and philology for a couple of years, I still take a sigh of dismay to believe the civilization builders in Ancient Near East were random humans like us, negotiating with everyday emotions and finding newer ways to express them. In the era of Netflix dramas like ‘Queen of the Desert’ (on life and works of Gertrude Bell, 2015) and ‘The Dig’ (on Dark Age, 2021), the scene outside the academic fraternity is not so convincing, this is where we need to dwindle. The closing decades of twentieth century was thus significant for the archaeologists to investigate the civilizations stepping out of the closet of political uplifts and socio-economic pursuits, we started to broaden our horizons on paleopathology and medicines, emotions, senses and so forth, presenting us with the seminal studies like *Die babylonisch-assyrische Medizin in Texten und Untersuchungen* (the *magnum opus* by Franz Köcher, started in 1963, later continued by Markham J. Geller till 2015, BAM hereinafter) and *The Routledge Handbook of Emotions in the Ancient Near East* (eds Karen Sonik and Ulrike Steinert, 2023). I would merely try to pen down my inspiration from these works.

I would like to express my gratitude to my colleagues and professors at the *Institut für Ur-und Frühgeschichte und Vorderasiatische Archäologie* and *Ägyptologisches Institut, Universität Heidelberg*, for their kind support during my exchange program. I humbly remember Prof. Dr Joseph Maran and Prof. Dr Joachim Friedrich Quack for kindly supervising my studies in Germany. I am grateful to Prof. Dr Doris Prechel and Dr Ulrike Steinert of *Johannes Gutenberg-Universität Mainz*, I never thought that my honest reaction after reading her book

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In the end, Maa, this is for you.

Saikat Mukherjee

Pavia, Jan 2026

ABBREVIATIONS (Technical)

:- glossenkeil

√- verbal root

Abl.- ablative

Acc.- accusative

Ahd.- Althochdeutsch (Old high German)

AthV- AtharvaVeda

Av.- Avestan

BCE- Before Common Era (before C.)

BRB: Bevelled Rim Bowl

^d- Divine name

Dat.- dative

Deriv.- derivational

EBA- Early Bronze Age

Gen.- genitive

Got.- Gothic

GN- Place name

Gr.- Greek

Instr.- instrumental

infl.- inflection

Lat.- Latin

LBA- Late Bronze Age

Loc.- locative

^m- Personal name

MB- Middle Babylonian

MBA- Middle Bronze Age

mil.- millennium/ millennia

MPeobv.- Middle Persian

Nom.- nominative

OA.- Old Assyrian

OAkk.- Old Akkadian

OB- Old Babylonian (period and language, not kingdom)

OAv.- Old Avestan

Pass.- Passive

Part.- Participle

Peobv.- person

PIE- Proto Indo-European

Plur.- plural

Pret.- Preterit

Pres.- Present tense

RV- ṚgVeda

Sans.- Sanskrit

Sing.- singular

ABBREVIATIONS (Bibliographical)

AHw: Wolfram von Soden, Akkadisches Handwörterbuch. Unter Benutzung des lexikalischen Nachlasses von Bruno Meissner (1868-1947) – Wiesbaden 1965-1981.

AMC: The Assur Medical Catalogue

AmJPh: Basil Gildersleeve, The American Journal of Philology, Baltimore 1880ff.

AOAT: Alter Orient und Altes Testament: Veröffentlichungen zur Kultur und Geschichte des Alten Orients und des Alten Testaments – Kavelaer/Neukirchen-Vluyn, Münster 1968ff.

ARM: Les Archives Royales de Mari, 1983ff.

BAM: Franz Köcher and Markham J Geller, Die Babylonisch-Assyrische Medizin in Texten und Untersuchungen – 1963-2015.

BiMes: Bibliotheca Mesopotamica, California, 1975ff.

Bo: Inventarnummern von Tontafeln aus Boğazköy.

BSA: Annual of the British School at Athens.

CDLI: Cuneiform Digital Library Initiative.

CAD: The Assyrian Dictionary of the Oriental Institute of the University of Chicago – Chicago 1921ff.

CHD: The Hittite Dictionary of the Oriental Institute of the University of Chicago – Chicago 1980ff.

ChS I/3-2: Ilse Wegner, Hurritische Opferlisten aus hethitischen Festbeschreibungen. Teil II: Texte für Teššub, Ḫebat und weitere Gottheiten – 2002.

ChS I/4: Ilse Wegner und Mirjo Salvini, Die hethitisch-hurritischen Ritualtafeln des (h)išuwā-Festes – 1991.

CTH: Emmanuel Laroche, Catalogue des textes hittites – Paris 1971 (mit Ergänzungen in RHA XXX, 1972, 94-133 = CTH Suppl., und RHA XXXIII, 1973, 68-71).

DBH: Dresdner Beiträge zur Hethitologie – Dresden 2002ff.

DLL: Emmanuel Laroche, Dictionnaire de la langue louvite – Paris 1959.

ETCSL: The Electronic Text Corpus of Sumerian Literature, Oxford, 1997ff.

ePSD2: electronic Pennsylvania Sumerian Dictionary version 2.7.2, 2024ff.

EWA: Manfred Mayrhofer, Etymologisches Wörterbuch des Altindiarischen – Heidelberg 1986-2001.

FsBeckman: Beyond Hatti. A Tribute to Gary Beckman – Atlanta 2013.

FsFreydank: Beiträge zur Kenntnis und Deutung altorientalischer Archivalien: Festschrift für Helmut Freydank zum 80. Geburtstag (dubsar 6) – Münster 2019.

GsNeu: Investigationes Anatolicae: Gedenkschrift für E. Neu. Hrsg. J. Klinger et al. (StBoT 52) – 2010.

GsNeu²: Studia Anatolica in memoriam Erich Neu dicata, edenda curavit R. Lebrun (Hethitica 16) – 2010.

HED: Jaan Puhvel, Hittite Etymological Dictionary – Berlin, New York 1984ff.

HKM: Sedat Alp, Hethitische Keilschrifttafeln aus Maşat (TTKY VI/34) - Ankara 1991.

HL: Hittite Law.

HPM: Hethitologie Portal Mainz – Wiesbaden 2005ff.

HZL: Ch. Rüster - E. Neu, Hethitisches Zeichenlexikon: Inventar und Interpretation der Keilschriftzeichen aus den Boğazköy-Texten (StBoTB 2) -1989.

IBoT: İstanbul Arkeoloji Müzelerinde bulunan Boğazköy Tabletleri(nden Secme

Metinler) - İstanbul 1944, 1947, 1954, Ankara 1988.

JANEH: Journal of Ancient Near Eastern History – Leiden 2014ff.

JANES: Journal of the Ancient Near Eastern Society of Columbia University - New York.

JAOS: Journal of the American Oriental Society – Baltimore, Maryland 1851ff.

JCS: Journal of Cuneiform Studies – New Haven 1947ff.

JNES: Journal of Near Eastern Studies - Chicago 1842ff.

KAR: Erich Ebeling, Keilschrifttexte aus Assur religiösen Inhalts, 1919-1923.

KBo: Keilschrifttexte aus Boghazköy – Leipzig 1916-1923, Berlin 1954ff.

KEWA: Manfred Mayrhofer, Kurzgefasstes Etymologisches Wörterbuch des Altindischen – Heidelberg 1953-1980.

Kp: Inventarnummern der Tafeln aus Kayalıpınar.

KUB: Keilschrifturkunden aus Boghazköy – Berlin 1921ff.

LAPO: Les lettres anciennes du Proche-Orient – Paris 1987ff.

LSU: Christel Rüster and Gernot Wilhelm, Landschenkungsurkunden hethitischer Könige, StBoTB 4 – Wiesbaden 2012.

MDOG: Mitteilungen der Deutschen Orient-Gesellschaft zu Berlin – Berlin 1899ff.

MSL: Benno Landsberger et al., Materialien zum sumerischen Lexikon – Roma 1937ff.

Mst.: Inventarnummern der Tafeln aus Maşat.

OLA: Orientalia Lovaniensia Periodica – Leuven 1970ff.

Oracc: Jamie Novotny, Eleanor Robson, Tinney, and Nike Veldhuis, Open Richly Annotated Cuneiform Corpus, 2014ff.

RGTC 6, 6/2: G. F. del Monte and J. Tischler, Répertoire Géographique des Textes Cunéiformes (Band 6 und 6/2, das Supplement von nur G. F. del Monte), Wiesbaden 1978, 1992.

RdA: Reallexikon der Assyriologie (und Vorderasiatischen Archäologie) - Berlin 1928ff.

StBoT: Studien zu den Boğazköy-Texten – Wiesbaden 1965ff.

StBoTB: Studien zu den Boğazköy-Texten: Beihefte – Wiesbaden 1988ff.

UF: Ugarit-Forschungen. Internationales Jahrbuch für die Altertumskunde Syrien-Palästinas - Kevelaer 1969ff.

VAT: Inventarnummern der Texte der Vorderasiatischen Abteilung der Staatlichen Museen zu Berlin.

ZA: Zeitschrift für Assyriologie und verwandte Gebiete – Vorderasiatische Archäologie – Leipzig, Berlin 1887ff.

AUTHOR'S NOTE

As the title indicates, the current thesis focuses on *selected* administrative, cultic, and literary corpora of the Hittites. The Late Bronze Age, which was coeval with the Imperial Hittite period, saw a burgeoning of textual data produced in Ḫattuša. While a significant portion of the corpora consists of translations of Old Hittite texts into Middle and Neo-Hittite, a substantial amount of new literature was also produced during this period. References to salt, in various attributes, appear throughout the Hittite text corpora. Before 2019, the general consensus was that the Hittites used Sumerogram MUN to denote salt in its various forms with the Akk. equivalent *tābtu* appearing in several treaties and inventories. Prechel subsequently proposed that the word *išuwān-* might also have been used by the Hittites to denote salt, in addition to the terms previously mentioned.

The rationale for selecting these particular tablets requires an explanation. These texts not only represent the less-discussed facets of the socio-political life of the Imperial Hittites but also contain every possible term related to salt known to current academia. These attestations are diverse in terminology, language and also in mass denomination. The analysis is strictly confined to Anatolia due to the limitations of space and time allocated for this master's thesis. Further research is required to develop a comprehensive picture of the salt production and consumption patterns during the Late Bronze Age Hittite Anatolia. Some inventory have been excluded from discussion due to unavailability of transcription or translation or due to obscure orthography, or for the sake of avoiding redundancy. The festive ritual fragments in Hittite constitute a different line of research, i.e. HFR or *Hethitische Festrituale*, which are excluded from discussion. Similarly, the inventories on Hittite white and black magic rituals (see Luwili) and cleansing rituals (see Trameri 2022) are enumerated by scholars with minute precision which does not need further redundancy here. The thesis predominantly deems to propose a new explanation of the terms related to salt hitherto unexplored. Moreover, it also tries to geographically locate the salt manufacture workshops and the agencies involved with the mineral's exploitation.

1. INTRODUCTION

1.1 ‘Salt’: Boundary, Independence, and Prospects of the Research Area

“What’s in a name?”¹

It is no way a new discussion amongst the academic fraternity whether the phrase ‘Ancient Near East’ should now be replaced with ‘Ancient Western Asia’ or ‘Ancient Southwest Asia’. The handbooks that one may come across in his premier days of orientation to the Western Asian history and archaeology are already filled with scholarly disposition why terms like ‘Near East’ or ‘Orient’ are fossils of colonial amnesia. Even this present work deems to use ‘Eastern Mediterranean’, a term geographically as meaningful as Western or South-western Asia to refer the landmass under discussion- as one may already have noticed from the title. But is the current academia ready to cast off the jargons which are in practice for more than a century and start afresh? The answer is multifaceted and apprehensive for both the traditions those who want to retain the name and those who want a sanction to it. One may find in dismay that in the following sections an unnoticed shift took place, from ‘Eastern Mediterranean’ to ‘Near East’, despite the concise choice of sticking to the former term. The students, practitioners, and even the academicians are not more than human beings and a constant exposure to literatures with terms like ‘Near East’, ‘Vicino Oriente’, ‘Vorderorient’, or ‘Proche-Orient’ often shapes their own vocabulary unknowingly. It is thus tempting to claim that the term ‘Near East’ still bequeaths an academic comfort and holds a century-old memory despite its colonial association, and arguably the current academia would need some more time to revise it. Be what it called as, it enumerates a landmass spanned from western Iran in the east to Levant and Cyprus in the west, from Anatolia and Black sea in the north to the Arabian peninsula and Red Sea in the south. Egypt, another matter of concern, is brought within the Near Eastern fold upon the preference of the authors. Convincingly enough, the handbooks of the history of Ancient Near East are not necessarily confined to discuss the political framework of the Late Bronze Age only, when Egypt was in its heyday. From the second half of 4th mill

¹ Shakespeare, *Romeo and Juliet*, Act II, Scene II

BCE onwards, the political waxing and waning largely took place in Mesopotamia and Levant; Anatolia, entered into the political scenario from the first half of the upcoming millennium. It was only the closing centuries of the Middle Bronze Age when Egypt ventured into the trans-Levantine politics for the first time. The current of Egyptological research also developed simultaneously with that of Assyriology and Hittitology, which also became a potent argument for some scholars to not include Egypt in the conventional Near Eastern frame. As for the present literature, though LBA Egypt yields the lion-share documents on salt; predominantly magico-therapeutic and literary texts, it is excluded due to the limited scope and space. This thesis confined itself to study the salt procurement and its usage documented in Hittite Anatolia during the LBA. Due to the absence of any royal archive from Waššukanni, no Mittanian treatment of salt is known yet. However, the Hittite documents frequently refer to Hurro-Luwian myths and deities, which might turn useful to create a convincing picture of the Mittanian world too. Alašiya or Cyprus has been taken within the Hittite fold upon necessity, the same applies for Aḫḫiyawa or the Hittite west. Along the Eastern Mediterranean coast, the modern states of Jordan, Lebanon and Israel in south are also excluded due to its vastness and diversity of documents. The conventional late-neo Hittite documents have also been taken into discussion due to its parallel to Middle and Old Hittite languages. Nevertheless, the thesis deems to be coherent with the timeline of the LBA, i.e. from 1595 BCE to 1177 BCE with some chronological independence to provide a comprehensive outline.

In chemistry, salt is a substance produced in a neutralisation reaction between an acid and a base that contains a positively charged cation of a base and a negatively charged anion of an acid in an electrovalent bond. Owing to this definition it is totally safe to argue that ancient Mesopotamians and Hittites had an access to several silicate, cuprite, chloride, argentite, and aurumite salts. Egypt had a greater reliance and exploitation of Natron ($\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$, sodium carbonate decahydrate) for funerary purposes, so much so that the compound found its way into ‘Standard Babylonian’ and Neo-Assyrian language as *nitiru/ nitru* (from Egyptian *ntrj*, i.e. divine compound retrieved from Wadi el-Natron) upon the contact of the Egyptian folks with the Akkadian *ecumene*. But the current thesis entirely revolved around the conventional salt i.e. table salt or sodium chloride (NaCl) and its multifaceted meanings and usages in the LBA Eastern Mediterranean.

The terminologies dealt here are Sumerian MUN, often written as Sumerogram , the Akkadian equivalent of the Sumerian is *ṭābtu*. The abl. of *ṭābtu*, *ṭābāti* and *ṭābtāti* are taken as loyalty, goodness and kindness, written with phonetic complement DÜG.GA and MUN^{HIA}. As

receiving salt from someone was seen as an act of benefaction, loyalty, and allegiance, these two words are semantically connected. It was conventionally accepted that the Hittites also took the Sumerian loanword and referred salt as MUN until Prechel's identification of *išuwān-* as the Hittite word for salt. But the present author argues that *išuwān-* was not simply the Hittite equivalent of MUN rather a specific type of salt prevailed in Hittite domain. Similarly, *:lapana-* the celebrated Luwian word for salt is again not a term to refer generic salt but to refer that found in a rocky and mountainous context; a parallel could be Sumerian NA₄.MUN or rock salt (see chapter 2.1 below). In Ugaritic, the term is *mlḥt* stemming from the proto-Semitic root *m-l-* which is loosely connected to bitterness and sea, the prime quality of unrefined sea salt.

Having the geography, terminologies, and chronology explained, the following sections try to provide a comprehensive picture of how salt gained its multifaceted semantics in LBA Anatolia. A similar mechanism could be employed to the preceding MBA and EBA to achieve a complete biography of the mineral in Near East. Though the last decade saw a remarkable growth of concern in the western academia to pen down a history and archaeology of salt, but sadly enough, the endeavour is totally confined to the European pre and protohistory². The Roman treatment of salt is again a redundancy to the discipline. The current model can be extended geographically and chronologically to posit salt *Sitz im Leben*. It is relatively hard to locate salt in an archaeological stratum due to its high solubility if not impossible, but a transdisciplinary approach of using written evidences and archaeology hand in hand, like this current literature, might turn out to be useful.

1.2 *Forschungsgeschichte* of Salt in the Past Centuries

‘Salt arises from the purest sources, the sun and the sea’³.

When Paracelsus conceptualised the nature of disease and medicine as comprised of *tria prima* (three primes) i.e. a combustible element (*Sulphuris* or sulphur), a fluid and changeable element (*Mercurii* or mercury), and a solid and permanent element (*Salis* or salt) in his *Opus paramirum*

² See Brigand and Weller 2015, a remarkable stride to write an analytical and archaeological biography of the mineral. But the edition is entirely based on European pre and protohistory. Hence the book is excluded from discussion in the following *Forschungsgeschichte* section.

³ Pythagoras, *Diogenes Laertius*, VIII, 35.

(ca. 1530)⁴ seldom he knew that his principle was echoing ancient Egyptian pathology where *mtw* or vessels raptured by *whd.w* caused the disease and the purpose of medical treatments is to eliminate, control, or localize this *whd.w*⁵. Paracelsus' *tria prima* or the relationship of macrocosm and microcosm was heavily influence by the medical Neoplatonism and trinitary reflections in theology⁶. Later, the Paracelsianism or the Baroque "science" conceived salt to be a representation of human body whilst mercury and sulphur were spirit and soul respectively; stemming from medieval alchemy and Christian theology. Paracelsus' idea had been heavily criticised by Robert Boyle in his *The Sceptical Chymist* in 1661 who described both Paracelsian principles and Aristotelian elements to be unfavourably trustworthy⁷. With the advent of 18th century industrial revolution was conceived in Great Britain (1760's) and later it was spread throughout the borders of Europe; Belgium adopted the British method in early 19th century and later was followed by France and German states. This industrial revolution demanded an uninterrupted supply of raw materials and a steady market for finished products what led the European colonisers to set on expeditions beyond European boundaries. The steady inflow of mercantile wealth enabled these European settlers to employ curiosity to the ancient civilizations beyond Europe and a systematic study of civilizations in near and far east was conceived by private and institutional ventures. The second half of the 18th century also saw the consolidation of Classical studies or the history of the Greco-Roman literary traditions. Though the foundation in earnest was laid by humanist scholars in 14th and 15th century but by the second half of 19th century it was developed as a scientific discipline by incorporating architectural and natural sciences.

The first attempts to study the Classical world were through political and economic histories and the study of salt as an economic commodity fit into the early-modern curiosities. The late 18th and early 19th century studies on the antiquity of salt concentrated more onto recent eras such as Medieval, Modern and Contemporary periods largely because of the availability of economic documents and burgeoning humanist texts covering social, political, and cultural aspects. The studies, however, took a rapid turn towards anthropology since the 1860's with the advent of *Origin of Species* (1859) and *Primitive Culture* (1871). This socio-anthropological approach was sooner taken by German anthropologists and was applied on salt

⁴ Strunz 1904, pp. 194, 226, see *Tractatus Tertius* and *Tractatus Sextus* for *tria prima* and salt.

⁵ Barr 2014, pp. 260-61.

⁶ Webster 2008, pp. 132 and 153.

⁷ Boyle 1661, pp. 23-24.

studies. In 1873 and 1875 Victor Hehn and Matthias Jacob Schleiden wrote a cultural history of salt and its semiotics in human society respectively⁸. This new anthropological discourse did not however contempt the development of Classical studies. Cagnat, studied the history of Rome exclusively from a fiscal point of view and wrote an economic history divided into Monarchy, Republic, and Early Empire periods⁹. Following the accounts of Livy and other historians, Cagnat studied the significance of salt in Roman world extensively, e.g. salt monopoly, lessors of the saltworks, price and taxes on salt in literary sources and epigraphic evidences¹⁰- what had shaped the current and upcoming trends of Oriental studies in the close of 19th and the beginning of 20th century.

1.2.1 ‘State of Art’: From Colonial Exploration to 21st Century

The second half of 19th century saw the coming of what must be called as Oriental Studies; a discipline stemmed from the colonial exploration of the Orient with measures to provide a relative chronology of a certain group of people and their culture. Botta’s discovery of Dur-Šarrukin in March 1843 or that of Layard for Nineveh and Nimrud between 1845 and 1851 and ultimately Sarzec’s discovery of Girsu and statuette of Gudea of Lagaš in 1877 drew attention of the European scholars who embarked on studying the history of the western Asia. Cuinet followed his European precursors of early 19th century and studied the current mineral resources of Ottoman Mesopotamia, Syria, and Turkey as a part of geo-administrative survey and mentioned about the salt deposits there¹¹. Cuinet’s work could be called as the first systematic study of salt in Near East (despite having a totally different objective) that provided a model for obtaining a geological and mineralogical assessment of a given land aside

⁸ For cultural history see Hehn 1873 and for semiotics see Schleiden 1875.

⁹ Cagnat 1882, pp. 238.

¹⁰ Cagnat, following Livy’s *History of Rome*, mentions salt to be one amongst the decisive factors behind economic superiority of Rome during Monarchy and the formation of Republic; the creation of saltworks by Ancus Marcius (Livy I, 33, 9); conflict with the Etruscans and with Veii (Livy V, 45, 8; VII, 17, 6; 19); creation of tax on salt by Livius Salinator in 204-203 BCE (Livy XXIX, 37, 3); Paulus Emilius’ prohibition on importing salt in Macedonia (Livy XLV, 29, 13).

¹¹ Cuinet 1894, pp. 427.

philological observations. The model, however, was later developed by scholars like Durand and Guichard (1987-97) who correlated current geological data with literary sources.

Studies on the history of salt in Near East was initially confined to the Greco-Roman accounts due to three self-explanatory reasons: 1) formulated by non-native Europeans who provided little or no access to the native oral/ literary traditions to transmit, 2) availability of Greco-Roman sources and a general consensus about understanding Greek and Latin, and finally 3) an ambiguity around recently deciphered Sumerian or Akkadian Cuneiform inscriptions unlike Hieroglyph Egyptian. These Greco-Roman sources hence provided a facade to enter into the seemingly robust and rugged world of Western Asia. Resultantly, Herodotus on bitumen, salt, and oil exportations from Persepolis to Susa¹², Polyaeus on the banquet of Alexander in the palace of Cyrus listing the various uses of salt and salt-cured preparations¹³, and Pliny on the different regional categories of salt prevailed in Mesopotamia¹⁴ provided a firm ground to establish salt in Near Eastern antiquity. Historians working at the Ottoman court, on the other hand, meticulously preserved accounts from Middle Ages, e.g. that of Ibn Khaldun. European academia with an access to these literary traditions were trying to reconstruct an economic history of Near East throughout the 19th century. But the tradition of overreliance on Greco-Roman historiography like Pliny and Diodorus or Cicero and Arrian permeated at least till the second half of 20th century¹⁵. Though Forbes' study on ancient technology is one of the premiers in its own merit, but employing a Greco-Roman model on studying Near Eastern technologies seems academically unapproachable, moreover, as a couple of decades had been passed after the Assyrian and Sumerian lexical studies a preference for Greek and Roman historiographies possess questions of scholarly discontent. However, it was not the same with the researches from 1970's onwards. Moorey and Oppenheim developed a different methodology than its precursors like Forbes' and relied extensively on native epigraphic and archaeological analyses. Patterson and Moorey worked on salt usage in cupellation-cementation of gold and silver supported by literary evidences in Sumerian and Akkadian

¹² Herodotus, *Historiae*, VI, 119, 2-3.

¹³ Polyaeus, *Strategemata*, IV, 3, 32.

¹⁴ Pliny, *Naturalis Historia*, XXXI, 39-45.

¹⁵ Forbes 1955, pp. 157-73.

glossaries¹⁶, Oppenheim¹⁷ edited the Mesopotamian Glass Texts what facilitated a typological analyses of Mesopotamian and Egyptian glasses later on.

By the beginning of 20th century, the discipline what was essentially based on literary sources, is now further supplemented by the development of scientific archaeology; a shift from colossal artefacts to more nuanced methodology. Archaeological findings in turn facilitated the disciplines of Assyriology and Near Eastern Philology. The history of Western Asia is now recomposed with native epigraphic evidences studied on their own merits without foreign Greco-Roman comparisons. Contemporary to or even before Ebeling's KAR¹⁸, the need of a concise lexical study of Akkadian and Sumerian was felt. Meissner's RdA¹⁹ in 1922²⁰ on Assyrian lexicography, Landsberger's MSL on Sumerian in 1937²¹ and von Soden's AHW²² to supplement Meissner are the first dictionaries used till date with modifications. But von Soden's work as a supplement concentrated much on Akkadian lexicon without specifying the dialects whilst CAD collates entries from various periods and dialects in transliteration²³ which makes it more accessible for a philological and topographical analysis. Readers may notice the current developments in salt studies by the inclusions of topics like 'in topographic references' and 'in geographical names' in CAD and correlating those information with archaeological and archaeometric analyses may turn useful- which have been coming to the surface recently²⁴. But both the dictionaries viz. AHW and CAD, justifiably aligned to their methodology, only attested the mentions of salt found in and/or complemented by secondary literatures and observed a

¹⁶ Patterson 1971, pp. 286; Moorey 1985, pp. 71, 108-09.

¹⁷ Oppenheim *et al* 1970.

¹⁸ Ebeling 1919-23, *Keilschrifttexte aus Assur religiösen Inhalts*.

¹⁹ [Reallexikon der Assyriologie](#)

²⁰ For earlier works see Delitzsch 1896; Meissner 1898 and Bezold 1926.

²¹ Landsberger *et al* 1937, vol. I-XVII.

²² von Soden 1959-81, vol 1-3.

²³ Goetze 1960, Review [Untitled], *Language* 36(3), pp. 464.

²⁴ Potts 1984, pp. 225-71 concentrated predominantly on different modes of salt gathering compared philological and epigraphic findings with modern day saltpans, Durand 1987, pp. 201 identified the saltpan in Ḫatta in ARM 10, 160 with Saba'a in left bank of Euphrates which works as a salt pan till date. Studies on salt in Hittite domain has been greatly facilitated by these archaeometric and transdisciplinary analyses, for south-central Anatolia see Maner 2021, pp. 327-46; for central and north-eastern Anatolia see Carnevale and Torri 2022, pp. 305-15; for third and early-second millennia BCE see Dardeniz 2023, pp. 39-56.

chronological order for the publications discussed. However, CAD²⁵ obtained a topical arrangement of entries with their occurrences and chronology, e.g. ‘in adm. and letters in Oakk’, followed by ‘in OB Mari and Alalakh’- which was absent for the previous lexical studies. These dictionaries may also turn useful in obtaining a geological or mineralogical study if a concrete transdisciplinary methodology is employed to reconstruct a mineral like salt, natron, or antimony, its findspots, associated agencies or monopolies, or its multifaceted usage and not only the philological observations.

RdA²⁶ rather followed this transdisciplinary approach in including salinization into question, however, the method is still overreliantly philological and refers to Old Babylonian literary traditions like poems, laments and curse formulae. Salinization study in Near East is a result of late 20th century research when environmental science raised questions like desertification and settlement abandonment in the close of Holocene and later in EBA and LBA. This particular research question was approached both by environmental scientists and philologists and the result is convincingly satisfactory. Jacobsen and Adams on salinization phases in Mesopotamia, Butz on OB Ur’s irrigation system and increased salinization, Charles on soil management in lower Mesopotamia and Butzer and Gilbert on salinization and landscape modification and flora and fauna²⁷ approached this salinization problem through geological and environmental sciences. A similar transdisciplinary approach must be taken for the entries on medicine. Since 1963 BAM had been dedicated to the study of Babylonian and Assyrian medicine which had later been complemented by series like *Science, Technology, and Medicine in Ancient Cultures* (2013), *Medical Traditions* (2020), and *Scientific Traditions in the Ancient Mediterranean and Near East* (2023). The volumes consulting Western Asian medical traditions in these series are hitherto primarily based on philological observations and took an encyclopaedic turn. These literatures might be useful for obtaining a primary research what should further be complemented by modern pharmacological analysis; in ground reality the endeavour is rare if

²⁵ Chicago Assyrian Dictionary 2006, *T*, pp. 10-15.

²⁶ Streck and Potts 2006-08, Salz, Versalzung, *RdA* (11), pp. 592-600.

²⁷ Jacobsen and Adams 1958, Salt and Silt, *Science* 128 (3334), pp. 1252; Butz 1979, Ur in altbabylonischer Zeit, *OLA* 5, pp. 257-409 (pages under discussion 265-80); Jacobsen 1982, Salinity and Irrigation Agriculture in Antiquity, *BiMes.* 14; Charles 1988, Irrigation in Lowland Mesopotamia, *BSA* 4, pp. 1-39; Butzer and Gilbert 1995, Environmental Change in the Near East and The Flora and Fauna of the Ancient Near East in Sasson (ed.) *Civilizations of the Ancient Near East*, vol 1, pp. 123- 174.

not absent²⁸. Experimental archaeology offered a new horizon to salt research. Hopkinson and Buccellati worked out the *briquetage* method on BRBs from Tell Qraya in western Syria and proposed a salt industry and trade network in the 3rd mil BCE, Stöllner *et al* worked on the salt exploitation methods from Douzlākh rock salt deposit and its economic significance in MIA, whereas Alessandri *et al* provide an analytical method to detect the salt production²⁹. Though Alessandri's work is focused on Western Europe and selected Northern Egyptian saltern salt pans and *briquetage* industry but a similar approach could be employed on Near East.

The development of Hittitology as a discipline was parallel to that of Assyriology yet it showed some authentic trends. Origin of the discipline can be traced back to 1906-1915 when Winckler discovered more than 10000 clay tablets of the Boğazköy archive in 1906 and later in 1915 Hrozný recognized the Hittite language belonging to the Indo-European family. The current trends in Hittitology is yet largely based on philological and lexicographic analyses obtained in 1920's and 1950's. One cannot help but to look at the history of the discipline in 20th century as essentially two highly specialised subgroups. The first subgroup consists of Hittite cuneiform culture and epigraphic comparandum like KBo and KUB of 1916-23 and again 1945 onwards and CTH of Laroche in 1971, whilst the other contained lexical analyses e.g. HW of Friedrich in 1952 later supplemented in 1970's by Kammenhuber *et al* or etymological dictionary of inherited lexicon in Hittite language by Kloekhorst in 2008. CHD, highly fragmented but apparently obtained a similar methodology like CAD, thus providing a scope of research on topics those facsimiles covered. Some co-currents of this discipline like studies on Hittite law by Hoffner, diplomatic texts by Beckman, or Hittite literacy by van den Hout, Hittite ritual by Mouton or gender, sexuality and pederasty by Peled³⁰, seem predominantly philological. Unlike Mesopotamia, until the last decade little to no interdisciplinary approach has been taken to study Hittite metallurgy or industries associated with luxury product manufacture and how they contributed to state monopoly. Siegelová and Tsumoto's study of metallurgy in Hittite Anatolia attempts to bridge this gap and tries to overview Hittite metal industry both from an archaeological as well as philological point of view³¹. This

²⁸ The *Journal des Médecines Cunéiformes* (2003-) is primarily focused on studying therapeutic texts with the pharmacological interpretations. A successful forerunner of JMC could be Scurlock 2005 and 2014.

²⁹ Hopkinson and Buccellati 2023, pp. 17-32; Stöllner *et al* 2024, pp. 61-140; Alessandri *et al* 2024, pp. 1-12.

³⁰ Hoffner Jr 1997; Beckman 1999, 2nd edition; van den Hout 2020; Yakubovich and Mouton 2023, StBoT 72, vol 1 Edition and Commentary, vol 2 Discussion and Glossary; Peled *et al* 2024, pp. 43-62.

³¹ Siegelová and Tsumoto 2020, pp. 275-300.

transdisciplinary approach in Anatolian studies has been recently facilitated by a constant dialogue between disciplines like bioarchaeology or ceramic studies and textual data, but it still holds a great potential to be permeated into other branches of Hittite studies. For example, White and Miller's study on viticulture in 2nd and early 1st mil. BCE Anatolia provides an excellent archaeobotanical and material culture observation with little or no textual reference³². On the contrary, Casucci correlated archaeological data of fire installation and burn marks in cooking pots from Uşaklı Höyük with textual references of Hittite food vocabulary to understand domestic foodways during imperial Hittite³³. Dardeniz not only collected 20th century archaeological data associated with salt production in 3rd and early 2nd mil. BCE Anatolia but also facilitated the research with her own findings. Whilst Maner correlated textual data and archaeometric findings to establish economic and political significance of salt springs in Hittite south-central Anatolia, Carnevale and Torri's recent work emphasizes on salt trade in imperial Hittite domain (see above). These works have been extremely helpful in creating methodology of this present research which will be explained below.

More than 50 years have been passed after Güterbock's comment, 'there is no Hittite medicine!'³⁴ which might have been an objective overview of its own merit. However, it is statistically true that relatively less works have been done in order to establish a *Hittite* medicine due to 1) little or no knowledge of native Hurro-Luwian medicine transmitted into therapeutic treatises discovered from Hattuša and 2) Sumerian and Akkadian therapeutic texts found in the Hittite capital have already been collated by Assyriologists. Studies on Hittite medicine hence hitherto revolved around semantics and lexicographic analyses³⁵ but still there is a room left to investigate 1) if different prescriptions were observed to cure the same disease in Mesopotamia and Hattuša depending on their availabilities and 2) a transdisciplinary approach towards these recipes recovered where material analyses from archaeobotany, ceramic studies or archaeometry may turn useful to learn more about Hittite medicine.

1.2.2 Methodology and Scope of the Present Work

³² White and Miller 2018, pp. 209-24.

³³ Casucci 2023, pp. 289-300.

³⁴ Güterbock 1962, pp. 109-13.

³⁵ Michael 2004, pp. 667-90; Lupo 2020, pp. 603-18 and 2022 are few to name.

Having reiterated the ‘State of Art’ in Assyriology and Hittitology within its limited capacity, where does the present work want to establish itself? Choosing salt over any other mineral has its own rationale. Not only because it was a commodity of state intervention and prestige in Hittite domain³⁶ or it was available in abundance in Anatolia but for the fact that salt has had its own silent yet significant contribution to economic, political, sociocultural and cognitive spheres in these civilizations what barely any other mineral had served. It comes, moreover, as a surprise that little to no endeavour has been taken to create a concise and transdisciplinary study on salt in Hittite empire; for Egyptology, the situation is comparatively better and has been an inspiration behind this present research. Convincingly enough, the author wants to delineate the research primarily within medicinal and magico-therapeutic prescriptions and cultic inventories as not only these branches of evidence constitute the lion-share of textual data but it also mentions different types of salts. The present work revolves around two observations and deems to answer them: 1) a transdisciplinary approach would be devised to posit the toponyms and other salt types on geographical map of Anatolia in during the Hittite empire, and 2) agencies and institutions associated with salt production and consumption and how did they operate within the state paradigm. Precursors like AMT, BAM, or *Materia Medica* by Haas provide an excellent lexical groundwork, combining evidence from historical geography may open new possibilities to look at those ancient agencies involved with salt procurement. The observations and research question rely extensively on philology, geological sciences, and studies on inland and transregional trades. Salt toponyms can be found in two corpuses, one to be bureaucratic whilst other is medical. Bureaucratic corpus like inscriptions, diplomatic treaties, and business documents inform about salt mines and saltpans producing different types of salt scattered across Anatolia. The salt-gatherers employed to extract or mining a specific type of salt oftentimes were referred with that ‘salt determinative’, e.g. ^{LÚ.MEŠ}*lapanalli* or simply ^{LÚ.MEŠ}MUN. Similar measures were taken for salts coming from different cities or regions, e.g. ^{MUN URU}*Ka-wa-ar-na* or ^{‘LÚ’.MEŠ}*la-p[a-na-l]i-‘uš* ^{‘URU}*Har-ia-ša* etc. Dardeniz’s survey of 3rd and early-2nd mil. BCE salt pans and rock salt deposits in Anatolia can be extended to survey the situation in LBA, and comparing those data with lexical evidences like that of Carnevale and Torri may provide a convincing picture of salt production

³⁶ Dardeniz 2023, pp. 39 argues salt never to be a commodity of prestige amongst the Hittites, however the present author does not support this view wholeheartedly. Salt was of fiscal benefit and hence a diplomatic tool in Hittite domain.

during imperial Hittites. Maner's work, on the other hand, is confined to south-central Anatolia but the analytical model can be employed to study other salt deposits in Hittite domain.

For Hittites, the current situation is *niche*. The first step should be of pointing out Mesopotamian and Egyptian elements in medicinal corpus and ingredients if they were transformed from those lands. If not, then what indigenous ingredients were used to achieve the outcome might be investigated. The following section works as a thematic offset for these cross-cultural connections. Not only LBA is characterised with large territorial states across Anatolia and Eastern Mediterranean interacting with each other as equals or rivals and maintaining a *status quo antebellum* (with some dispersed turmoil and dethronement in Syro-Palestinian peninsula), but this period is also characterised with the highest concentration of consolidating wisdom literature from Early Babylonian and Akkadian periods. The following pages are dedicated to analysis of the corpus and transdisciplinary approach to solve the research questions. Hence the following section discussing innovations that shaped LBA would bridge the gap between research aptitude and operations.

1.3 Socio-Political turmoil and innovation: Late Bronze Age

‘No land could stand before their arms: from Hatti, Qode, Carchemiš,
Arzawa and Alašia on, being cut off at one time’³⁷.

Civilization, the utmost achievement of mankind, is a mechanism that survives through the instincts of war and peace. The history of the Ancient Near East is not an exception to this. All the innovations that paved the way of so-called MB Period in the Eastern Mediterranean coast and Mesopotamian alluvium, evolved after the waxing and waning of the socio-political system that once existed during the OB and Akkadian Period- figuratively speaking. The end of 17th century BCE brought forth a political vacuum that conceived what is known as the ‘Age of Internationalism’; the period when a number of large territorial states interacted with one another as equals and rivals. This vacuum could be ‘long’ or ‘short’ upon the preference of the historians. The supporters of a long chronology emphasize the drastic cultural change between the OB Period and MB Period whereas the short chronology aspires the cultural continuity between the two phases albeit a scarcity of documentation due to the lack of a centralised authority. One may trace the drastic cultural shift between these two phases from a so-called ‘middle’ and ‘dark’ point of this hiatus (which is neither middle nor dark anymore due to the new studies of the Old and Middle Hittite evidences), but he may not overlook the prospective elements of change already existing in the OB Period. However, the objective hereinafter is not to advocate for the long or short chronology of this hiatus, but to have a cursory look to the elements that shaped the upcoming four centuries. This ‘Age of Internationalism’ is characterised with a political system which was unique to the history of Ancient Near East so far: large territorial states with different cultural and geo-ethnic³⁸ identity participating in a common system without one of them dominating all the others makes this an unforeseen period

³⁷ Ramesses III, Funerary Temple at Medinet Habu

³⁸ During a personal conversation with Prof. Buccellati and Prof. de Pietri, we three had been wondering how to call a nation when there was no nation. However we are unanimous with the idea that though there was no linguistic evidence of ‘nation’ being termed, a nationalistic impulse was there, at least semantically. I personally consider this idea of nation was heavily rooted in individual perception of territory and culture a person or a group of people were belonging to. For other explanations on nation, see Grosby 2023, pp. 13-14 and Buccellati 2024, pp. 80.

of ancient history. The history of the preceding eight centuries was characterised by an expansionist impetus where the new and exploitable world had been ventured to bring under a territorial and cultural homogeneity. The dynasty of Akkad, Ur III dynasty, or the Old Babylonian Kingdom under Hammurabi undertook an expansionist model to establish *one* ecumenical homogenous territory governable from a heartland of a kingdom, i.e. city. The territorial states in the MB Period, on the contrary, participated in a culturally heterogeneous system that spanned from western Iran in the east to the Aegean Sea in west and from Anatolian Plateau in the north to Nubia in south. The entire region saw a remarkable consistency in the division of power for moreover four centuries with some dethronements in Syrian and northern Mesopotamian highlands. The great kingdoms of Kassite Babylonia, Hittite Anatolia and the New Kingdom Egypt dominated the political scenario in eastern Mediterranean over three centuries, the Syro-Mesopotamian highland was first dominated by the Mittani state which was later overthrown by the Middle Assyrian Kingdom, the easternmost extent saw the dominance of powerful Elamite kingdom whilst the Aegean archipelago to the west and Mycenae had a political system lesser known due to the absence of relevant textual evidence. The Syro-Palestinian coastline was dotted with smaller states that worked as a vassal to the great powers and owed a political and cultural allegiance to their overlords. These courts remained in a close contact to each other by exchanging international chancelleries and maintained a diplomatic relationship. The highly codified and stylised scribal production of these states and extensive use of Akkadian as a *lingua franca* for these inter-regional correspondences make this period truly an international age. These territorial states, without dominating each other, formed a ‘club of great powers’ which was somewhat unique to the MB Period; Age of Expansionism was followed by Age of Internationalism.

Until the close of 20th century, the idea of the incursion of the Hittites, Hurrians, and Kassites to the greater Mesopotamian alluvium, had been celebrated among the scholars as a single event that changed the socio-political dynamics of LBA³⁹. These people being migrated from the Anatolian and Iranian highlands led them to call the ‘mountainous people’ and mistakenly considered to be belonged to the same ethnolinguistic group. However, there are certain differences between the Indo-European groups of Anatolian highland and the Indo-Iranian

³⁹ See Meyer 1914 and Götze 1928, pp. 13; Schmökel 1957, pp. 142-53; Gadd 1971, pp. 624-25.

groups of Hurrians, and the Kassites.⁴⁰ The Hittites⁴¹, Hurrians⁴², and Kassites⁴³ were not a new population to the Near East during the mid-2nd mil. BCE. Onomastic evidences speak of Hurrians already existing in the Anatolian and Upper Mesopotamian highlands from the mid-3rd mil. BCE, whereas the Hittites and Kassites in the early second mil. BCE.

Liverani presumes 16th century onwards specific terminologies linked to the breeding and training of horses (*E. caballus*) for the two wheeled horse-drawn chariots first appeared in Near East, a true stride towards innovation. More or less, it is the same period when horses were introduced to Near East and rapidly spread till Egypt⁴⁴. Some *equidae* but horse were already in widespread use in Near East as draft animals. The Sumerian designation of horse ANŠE.KUR.RA (lit. mountain donkey) led Liverani to identify horse remained undomesticated, historically unattested, and perceived as a wild variation of docile donkey until the end of 17th century BCE⁴⁵. Zarins has identified at least three terms predated the ANŠE.KUR.RA those were used to denote *E. caballus* in Sumerian; however the attempts to reconstruct the history of true horse in this period received lesser attention due to the fact that the later lexical evidence is silent on the majority of the terms used to describe the equids of the 3rd and early 2nd mil. BCE⁴⁶. Though terms like ^{anše}ŠUL-GI (or DUN-GI) or ANŠE.LIBIR⁴⁷ were in existence from the ED I/II to the OAkk. and OB Period, ^{anše}SI₂-SI₂ (or ZI-ZI) had a relatively long history of usage with a concentration during the Ur III and the succeeding Isin/Larsa period. Oppenheim's reading of Ur III economic texts suggested that ^{anše}SI₂-SI₂ is a specific equid and synonymous to the later ANŠE.KUR.RA or true horse. Tsouparopoulou's reading of cuneiform texts from Puzriš-Dagan (mod. Drehem) in Ur III period has shown horse was also included among other slaughtered (ba-ug₇) animals and its hide (KUŠ) was frequently

⁴⁰ Liverani 2014, pp. 271-272.

⁴¹ Gurney 1980 and Yakubovich 2022, pp. 3-44.

⁴² Mayrhofer 1966; Haas 1988; Wilhelm 1989; for Urkesh see Buccellati and Kelly-Buccellati 1997, pp. 77-96.

⁴³ Brinkman 2017, pp. 3-29; Malko 2020, pp. 177.

⁴⁴ Liverani 2014, pp. 272, 274.

⁴⁵ For *equidae* in third mil. BCE, see Zarins 1978, pp. 3-17.

⁴⁶ *ibid*, pp. 5.

⁴⁷ Zarins has shown how ANŠE.LIBIR (or ANŠE.Ù) is connected to the Sumerian reading 'dussa' (DUSU₂) and the Akkadian equivalent *agālu(m)*: *ibid*, pp. 7-8. On DUSU₂ see, Sigrist 1992, pp. 30-31; <http://oracc.org/epsd2/o0026513>; version 2.7.2 (built 2024-08-31, checked 2025-05-05). For ANŠE.LIBIR as donkey, see Mackawa 2006, pp. 1-19.

despatched under official surveillance during the reign of Šulgi, Amar-Suena and Šu-Suen⁴⁸. Archaeozoological analysis (mainly mitochondrial haplogroup genotyping carried over 111 equid remains from Anatolia), on the other hand, elucidates that around 2000 BCE an allochthonous population of horse were introduced from northern Eurasia that gradually replaced the local wild horse population in Anatolia and Caucasus⁴⁹. Thus to conclude that true horse was neither undomesticated nor historically unattested around or after 2000 BCE, plausibly it is the linguistic innovation linked to the breeding and training of horse and its assimilation to martial culture can be attributed to 17th century BCE.

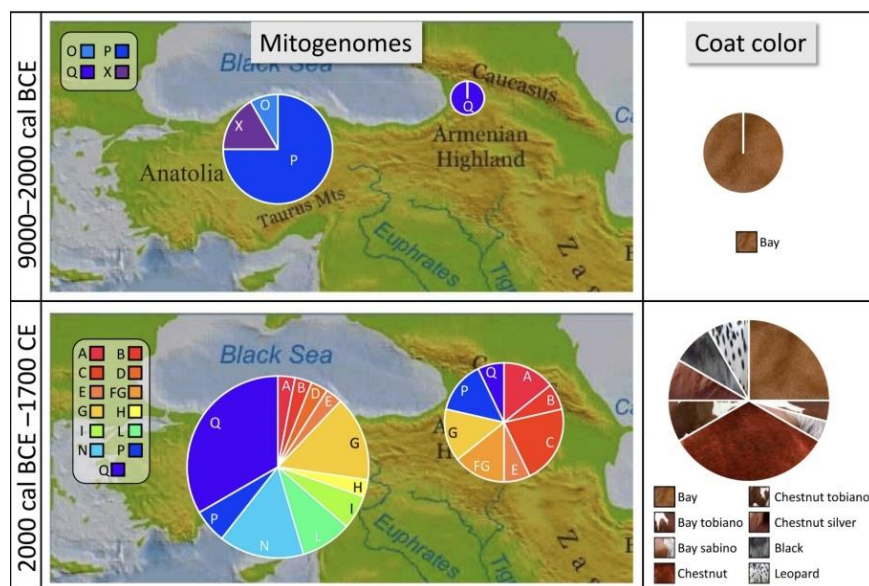


Fig. 1: Mitochondrial and coat colour diversity before (top) and after (bottom) 2000 BCE. (Left) Evolution of mitochondrial haplotype diversity of horses in Anatolia and the southern Caucasus. (Right) Evolution of coat colour genetic diversity in these two geographic regions. After Guimaraes *et al.* 2020.

The horse was already an indispensable part of the economic life of the Eastern Mediterranean by the advent of OB Period, though the breeding and training of horse during this period is sparsely documented but it can be said with certainty that Kikkuli's training instruction in MB Period is not the most ancient of its kind⁵⁰. The holistic assimilation of horse and light two-wheeled chariot in the martial culture of Eastern Mediterranean revolutionised the fighting techniques during LBA. The wars fought in the 3rd and the first half of the 2nd mil. BCE were

⁴⁸ Tsouparopoulou 2013, pp. 153, 170-78.

⁴⁹ Guimaraes *et al.* 2020, pp. 5.

⁵⁰ Raulwing 2006, pp. 61-75.

mainly fought in the battlefield supported by the throwing arrow and javelins. The introduction of horses and light weight chariots accelerated the agility and movement for the troops at battlefield, in the time of peace, horse and chariot also facilitated into greater connectivity amongst courts which was a feature of the upcoming four hundred years' bureaucracy. The OB Period saw the widespread usage of both four wheeled and two wheeled war-cart for military purpose, later on, the two-wheeled chariots gradually replaced the four wheeled carts during the MB Period. The reason behind opting for a two-wheeled chariot than to a four-wheeled war-cart was mainly bifold:

- 1) The major limitation for the four wheeled cart was its weight; Sumerian war-carts being a heavy wooden frame fixed onto four solid disk wheel provided lesser agility in the battlefield. Moreover, the cart was long and narrow which allowed only one person abreast, the driver in front and the warrior behind. The cart was surrounded by a high front and lower side panels for protection and for the driver and rider to hold to stabilize themselves.
- 2) Another limitation of the Sumerian war-carts was that the front wheels of the cart could not pivot independent of the vehicle as a whole, giving it a wide turning radius. The war-carts were generally drawn by donkey-onager hybrid, being larger and stronger than donkey yet more docile and manageable than the onager.

Around the 19th century, the artistic representations of four wheeled war-cart became sparse and were gradually replaced by the representations of two wheeled chariot drawn by a pair of equids, possibly this is the period when true war-chariots were introduced into Near East and were rapidly assimilated into a pan-Eastern Mediterranean martial culture. Hamblin⁵¹ dated these representations into Early and Late MBA that spanned across four centuries. These representations clearly attest the fact that neither the two-wheeled chariots were first introduced around 17th century BCE nor it was an innovation rather a conscious choice of the war-elites. Despite being a MBA evolution, the two-wheeled war-chariots show remarkable consistency of carrying a single rider, as it was during the EBA. The Early MBA (ca. 2000-1800 BCE) representations show a shift from disk wheels to spoked wheels where spokes may vary from four to six⁵². Late MBA (ca. 1800-1600 BCE) chariots were more durable than the former one with a provision of carrying two people: a cylinder seal from Syria, dated to Alalah VII, shows

⁵¹ Hamblin 2006, pp. 147.

⁵² Littauer and Crouwel 1979, fig. 28,29,30 and 31.

a chariot of two four-spoked wheels drawn by two horses; driver has a quiver on his back, while a man behind him with an axe and a dagger is either attacking him, or, most probably, stepping into the chariot to ride with him. Another representation from Syria shows a chariot with two eight-spoked wheels drawn by two horses, the rider carrying a quiver on his back and is shown shooting a bow while driving. The evidence from the late MBA attests to a number of fundamental innovations in chariot warfare what is hitherto attributed to the LBA. The shift from the use of the nose ring to bit and reins enabled the rider a more efficient driving. The use of lighter frame and spoked wheels decreased the weight of the chariot sufficiently to allow the cart eventually to be widened enough to allow two riders, yet remain light enough to be faster than an enemy on foot.

Despite all these innovation, chariot might not have been an integral part of MBA warfare till the second half of 18th century BCE. The Palace G archive of Mari does not mention of chariots being extensively used in warfare but some reference that might point to the limited use of it during combat. Chariots were obviously valuable and somewhat rare and considered to be a mark of social hierarchy throughout the LBA. The relative scarcity of both chariots and skilled craftsmen necessary to build and repair them is emphasized in one of the Mari texts, where a nobleman Ila-Salim, requests a new chariot from the king Yasmah-Addu⁵³:

The king gave me a chariot, but when I went away between the country and the mountains, the chariot broke in the middle, and now as I travel to and fro there is not chariot for me to ride. If it please my lord, may lord give me another chariot, so that I can organize the country until my lord comes. I am my lord's servant; may my lord not refuse me another chariot. (ARM 5.66)

Ila-Salim being a nobleman could afford to enjoy a chariot gifted by the king. This Mari letter is significant for bifold reasons: firstly, it assures the fact that being a part of nobility one may have an access to one or more chariots, secondly, the war-elites had developed a close bond of friendship or kinship with the throne to receive such accolades. These martial innovations during the mid- and late MBA also facilitated the social hierarchy and military prestige: the infantry, constituted of the largest share of soldiers, was overshadowed by the chariotry who essentially shared the elitist ideals of bravery and valiance with the king. The ideological conception of war, neither being won by the king nor by a divine ordain or a patron deity of a city but by the valiant troops of charioteers with specific instruments and training facilitated

⁵³ Dossin 1951, ARM, vol V, pl. LVII.

into the proximity of the chariot elites and the king during the late MBA⁵⁴. According to Liverani, to maintain the logistics and associated expense for the charioteers the LBA palaces restored to the old system of assigning plots with farmers in exchange for the charioteers' service, aka royal land grants. Statistically, it is the LBA Babylonia where one may find the highest concentration of land donation inscriptions under the royal patronage; the *Kudurrus* or the land donation inscriptions of the Kassites is one of the lenses to understand Babylonian economy during this period. The historical roots of this land donation system can be traced back to the OB Period where parts of land were allocated as sustenance fields in exchange of service⁵⁵. This land donation or so called *ilku*⁵⁶ in Babylonia collapsed with the Hittite raid in Babylonia; Kassites, being the usurpers quickly established the rule and resorted to the ancient system with some minor modifications. This land donation system facilitated royal jurisdiction and stronghold to penetrate even in the provincial region that constantly posed a threat to the central hegemony so far. This led to the inclusion of a 'military' elites in the socio-economically privileged class for the first time in its history, that was hitherto enjoyed by the functionaries, scribes, priests, and merchants of the near eastern society. Therefore, the key elements in the formation of common interests between the king and the elite at the expense of the farming population were: the new solidarity between the palace and the military aristocracy; the shift of the military class from groups of farmers providing a *corvée* type of service to military specialists; and the role of the palace and the military as main money lenders and acquirers of debt servants. Consequently, the farming population was obliged to incur substantial debts and become debt slaves, without any support from the palace. The ideal of the 'just and fair king' thus left the LBA kingship ideology⁵⁷.

Apart from the martial and economic innovations or revival, the LBA saw some advancements in architectural and production techniques. These innovations in the fields of pottery making, pyrotechnology, and metallurgy are sometimes *silent* as they did not bring forth much changes that could be discussed as markers of a certain archaeological period. But one has to keep in mind that these changes, albeit did not contribute much to the socio-political fabric of a given

⁵⁴ Liverani 2014, pp. 275-76.

⁵⁵ For general introduction to Old Babylonian land donation see Steinkeller 1999, pp. 300; Schloen 2001, pp. 267-283.

⁵⁶ Paulus 2017, pp. 234; Stol 2004, pp. 732-38, 783-90; Charpin 2003, pp. 249-70; Klengel 1999, pp. 137-51; Renger 1987, pp. 49-62.

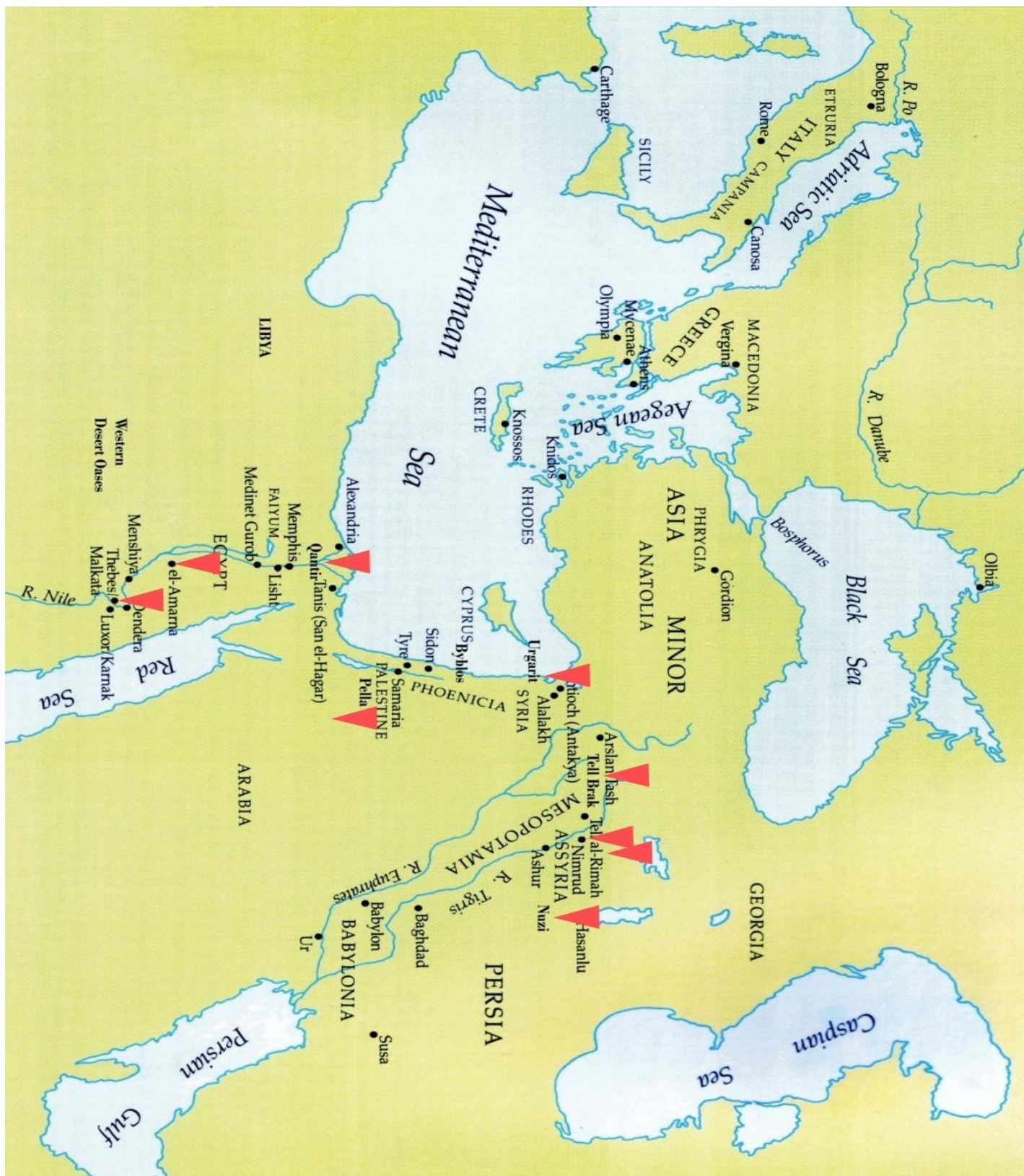
⁵⁷ Liverani 2014, pp. 276.

period, were potent markers of a changing economic system. It is the LBA when for the first time coloured glasses appeared to replace the semi-precious stone. Until the mid-2nd mil. BCE, the production of the glass objects in the Ancient Near East appears to have been limited, with very few examples recovered from the archaeological excavations. From the late 16th century BCE the volume of glass production increased markedly and gradually replaced the semi-precious stones like lapis lazuli. The evidences for this glass industry can be found in glass beads, inlays, and ingots discovered in the archaeological strata. Though the LBA marks the increasing concentration of glass artefacts in Mesopotamia and Egypt, the practice dates back to an already complex pyrotechnological industry whose origin have been much debated⁵⁸. The product of this industry include glaze, faience and frit including glass. Oppenheim⁵⁹ contended that the glass manufacturing was not a new invention in mid-2nd mil. BCE, but evidently this period marks the appearance of new production techniques such as fusing, marvering, trailing and core forming, and the creation of wider range of colours than had previously been used⁶⁰.

⁵⁸Reade 2021, p. 1; Lilyquist et al. 1993; Nicholson 1993; Shortland and Eremin 2006, pp. 581.

⁵⁹ Oppenheim 1973, PP. 262.

⁶⁰ Moorey 1999, pp. 193.



Map 1: Map showing glass manufacture and glass working industries in LBA and EIA Eastern Mediterranean.

After Tatton-Brown and Andrews 1991 and Reade 2021. Highlighted by author.

It was the Syro-Mesopotamian states in the upper and middle Euphrates alluvium that showed a development and proliferation of glass-manufacturing industry during the LBA. The cosmopolitan cultural framework of the Hurrian dominated Syro-Levant and upper Mesopotamia facilitated into glass making industry and later through the political and cultural exchange with Egypt led to glass making technology taking its first strides in Egypt- as perceived by Moorey and van De Mierop⁶¹. The origin of glass making in Egypt is rather obscure and conventionally parallel to the Egyptian connection with the Hurrians. Archaeological specimens of glass making are only found at couple of sites but in comparatively better condition due to the arid climate of the region. Tell el-Amarna, Malkata and Qantir-Piramesses are one of those sites that unearthed remains of glass making industry in LBA Egypt⁶²; either these glass artefacts were imported from trans-Euphratic region or manufactured in local industries by Mesopotamian or ‘Asiatic’ artisans⁶³.

Nevertheless, that the nascent glass making industry was gradually replacing the demand of semi-precious stone is also attested in linguistic evidence. During this period terms like ‘lapis lazuli of the kiln’ and ‘boiled lapis lazuli’ came to replace the genuine ‘lapis lazuli from mountain’ with elaborate making manuals. Due to the downfall of settlements and commercial networks in the Iranian plateau, importation of lapis lazuli and other semi-precious stones from Badakhshan faced a crisis during this period. Hence the glass beads and other artefacts appear gradually to meet the need of the elites; if the genuine stones continued to be of a higher value, the artificial ones became much more widespread in the production of jewellery, seals and small vases, becoming more affordable alternatives.

Another matter of fact is that these innovations were not developed in Lower Mesopotamia, which had been the epicentre of technical advances until then, but in Upper Mesopotamia and Syria. This phenomenon of the shift of the cultural nexus northward can surely be attributed to the LBA. Since the late 4th and early 3rd mil. BCE southern Mesopotamia had been applauded to be the cultural epicentre of the greater eastern Mediterranean landmass. But with the arrival of the MB Period the momentum appeared to shift northward in the upper and middle Euphrates

⁶¹ Moorey 1999, pp. 5-6, 10; van De Mierop 2016, pp. 237.

⁶² For el-Amarna see Nicholson 1995a; 1995b; 1996; Shortland and Tite 1998; Shortland 2000; Nicholson 2007; for Malkata see Mass et al. 2002, 68; Nicholson 2007: 21; for Piramesses see Rehren and Pusch 1997; 1999; 2005; 2008; Rehren et al. 1998; Schoer and Rehren 2007.

⁶³ For importation of Near Eastern glass in Egypt see Lilyquist *et al* 1993 and Bryan 2000; for local Egyptian glass workshops see Nicholson 2007 and Jackson 2005; for Egyptian Blue Cobalt glass see Shortland 2001.

valley and Jazeera. Horse training was centred in Mittani, glass working in the area extending from Upper Mesopotamia to the Levant and purple dye in the Lebanese coast. From these original centres, these techniques quickly spread throughout the Near East. Since these were all high quality, refined and expensive techniques, they appealed to the palaces and their elite. This aspect explains the extraordinary pace of their diffusion, which developed through the contacts and exchanges between specialised artisans and royal palaces that would characterise the LBA; the fragmented political and socio-economic milieu of the pre-MB Period made this shift conceived. These developments, aside the so-called ‘club of great powers’ were a response to the new needs of the royal courts or re-evaluations to old problems, located in the new epicentres of technical advances and commercial interactions, such as Syria, Anatolia and the Jazeera. As such, these new types of texts constitute a clear expression of a cultural environment that was increasingly technical and practical, rather than scientific and scholarly.

The following chapter discusses the findings of salt in Hittite Anatolia. Textual evidences prove salt was rather of ubiquitous importance and were found in every possible spheres of Anatolian life. The study deliberately refrains itself from discussing the culinary aspects and concentrates in therapeutic and bureaucratic evidences. Geology and archaeometric analyses have greatly facilitated the study of salt in Hittite domain but a pharmacological approach to study the medicine is yet less which this present work deems to address.

2. SALT IN ANATOLIA

2.1 On *lapana-*, *li-ki*, and *i-šu-wa-an*

‘As the salt has no seed, let me, Šattiwaza together with the second wife I might take, and we Hurrians, together with our territories, our wives, our sons, like salt have no offspring.’⁶⁴

The imperial Hittites enjoyed the farthest expansion of territory under Šuppiluliuma I and his successor Muršili II, however later on, Ḫattušili III tried to consolidate Hittite rule over a vast region but it was not as aggressive as his predecessors. Alongside the lush green forests donned by wild animals, fertile alluvium and irrigable land toiled by domesticated bovines, the landscape of the imperial Hittites was dotted with salt reservoirs and rock salt mines⁶⁵. Salt was available and extracted in abundance in Hittite Anatolia compared to the neighbouring Mesopotamia⁶⁶ and Syria and had a significant contribution to the socio-political setting of imperial Hittites. The occurrence of salt in different categories of therapeutic texts and cult inventories alongside royal treatise and festive rituals suggests that it was an indispensable part of the Hittite daily life. Over the years little attention appears to have been paid to this natural resource in the context of Hittite economic and political endeavours, however, studies reconstructing the salt production locales and trade routes dispersed in Hittite Anatolia are coming into surface recently⁶⁷. So far it was believed that Hittites referred to salt solely through the Sumerogram MUN and the Akkadian equivalent *ṭābtu*, however Prechel’s reconstruction of HL §163 suggested the new word ‘*išuwān-*’ (*i-šu-wa-an-*) in 2019⁶⁸:

⁶⁴ CTH 52.1 rev. 51.

⁶⁵ For a general idea about the Hittite imperial landscape see Matessi 2016, pp. 117-62; for fauna see Collins 2010, pp. 59-74; for flora see Roberts 2017, pp. 17-27 and della Casa 2022, pp. 258-69.

⁶⁶ Dardeniz 2023 claims that due to the abundance of Salt in Hittite Anatolia it never played a significant role in their political economy i.e. accumulating wealth and was never a prestige good for the Hittites, see pp. 39.

⁶⁷ For south-central Anatolia see Maner 2021, pp. 327-46; for central and north-eastern Anatolia see Carnevale and Torri 2022, pp. 305-15; for 3rd and early-2nd mil. BCE see Dardeniz 2023, pp. 39-56.

⁶⁸ Prechel, FsFreydank 2019, pp.241-46, identifies the correspondence between *išuwān-* and MUN through the duplicate fragment of the paragraph of the Hittite Laws, KBo 67.269. Whereas, Hoffner 1997, pp. 131, previously suggested this to be “mud” instead of salt.

*takku šuppala=ššet kuēlqa šiunijahta t=at parkunuzi n=at arḫa pennāi išuwanalli=ma=kan
išuwan dāi ari=šši=ma=at UL tezzi arašš=a UL šakki šuppala=ššet pennāi n=at aki šarnikzil*

-If anyone's livestock are smitten (with disease) by a god, and (the owner) cleanses them, drives them away, but (then) pours (/leaves) the salt into the saltlick and says nothing to his colleague. (If his) colleague—unwittingly—drives his own livestock (there; i.e., to the same saltlick) so that they die, there will be compensation.

HL §163 also mentions the word *išuwanalli-* which Prechel translates as *Salzlecke* or saltlick. Prechel suggests this *išuwanalli-* to be a parallel to the Luwian word *lapana-*, which some scholars have similarly translated especially after Watkins⁶⁹. Carnevale and Torri preferred to use, however, a generic definition 'stockpile of salt' for *išuwanalli-* and *lapana-* for 'saltlick' in their recent study⁷⁰ of Hittite salt production. Güterbock, in his edition of HL §163, translates *išuwanalli-* as a 'place for depositing the remnants of a purification ritual'⁷¹, whereas Goetze took the word as 'clan' or 'communal herd'⁷². Considering these aforementioned translations, taking *išuwanalli-* as saltlick for livestock to lick the salt is more convincing. The 'ari=šši=ma=at UL tezzi arašš=a UL šakki šuppala=ššet pennāi'- "(If his) colleague-unwittingly- drives his own livestock (there)..." suggests that these saltlicks were a shared communal deposit or conjointly owned by more than one person. LSU 39 mentions of a donation of certain IKU *išuwanalli-* saltlick to Nakkiliya under Zidanza II (KBo 32.184 Rev. 5')⁷³. Rüster and Wilhelm identify the beneficiary Nakkiliya to be identical to Nakiliyat/Nakiliyet, the "commander of the wine-bearers" and "commander of the cupbearers" (KBo 3.34 ii 30) in the Palace Chronicle (KBo 13.45 6'// KBo 3.35 i 15)⁷⁴. But the Nakkiliya, "the commander of the [...] people" under Zidanza II might not be identical to the Nakiliyat/et of the Palace Chronicle who was an official during the reign of Ḫattušili I/ Muršili I, as Giorgieri presumed⁷⁵. Nevertheless, one can derive the fact that Nakkiliya, "the commander of the [...] people" was an influential officer under Zidanza II to receive such an accolade. Siegelová⁷⁶

⁶⁹ Watkins 1997, pp. 29-35.

⁷⁰ Carnevale and Torri 2022, pp. 306

⁷¹ Güterbock 1961, pp. 70, cited from Hoffner and Diamond 1997, pp. 240.

⁷² Goetze 1966, pp. 130.

⁷³ Rüster and Wilhelm 2012, pp. 176-78.

⁷⁴ *ibid.* pp. 96.

⁷⁵ Personal communication, dated Oct 8 2025.

⁷⁶ Lorenz 2021, pp. 438; Siegelová 2011, pp. 175.

identifies these documents to be a remnant of imperial Hittite tax administration, if so, then it can be assumed that the beneficiary Nakkiliya might have also enjoyed fiscal benefits from this amount of plot including its mobile and immobile inventory, even from the *išuwanalli*- saltlicks assigned to him.

Prechel, however, does not explain further about physical properties of *išuwanalli*- saltlicks or *išuwan*- salt. KBo 1.45 Rev. I 3 (CTH 299) mentions *i-šu-wa-ni-it(-)wa-a-tar* i.e. water mixed with *išuwan*- “mud, mire” or “salt”. Both Scheucher and Prechel’s interpretation (see below) are crucial to understand physical characteristics of *išuwan*- salt. As *išuwanalli*- is not an artificial saltlick, it may occur as wall or mud saltlick in nature. Mud saltlicks with higher concentration of sand and silt, occur as swamp where wild animal or livestock consume mud or muddy water from the surface of the terrain to sustain⁷⁷. The salt obtained from mud saltlick is hence mire-like and the sedimentation of silt makes it opaque and dull. The *i-šu-wa-ni-it(-)wa-a-tar* is water mixed with mire-like salt what looks like mud due to silt sediments. Hence *išuwan*- is probably a mud-like salt which is opaque and dull with lesser nutrient levels and predominantly used for livestock geophagy.

The paradigm of the Hittite word *išuwan*- can be reconstructed as follows based on the selected text passages. So far, the singular forms are known:

Nom.-Acc.	<i>i-šu-wa-an</i> (KBo 6.26 Rev. I 24), <i>MUN-an</i> (KBo 67.269 3’; KBo 53.33+ Rev. II 5), <i>MUN-aš</i> (KBo 53.33+ Rev. II 9) ⁷⁸
Gen.	<i>MUN-aš</i> (KBo 53.33+ Rev. II 15)
(Abl.	<i>MUN[?]-az</i> (KBo 33.131 10’)
Instr.	<i>i-šu-wa-ni-it</i> (KBo 1.45 Rev. 3’)
Deriv.	<i>i-šu-wa-na-an-za</i> (KBo 2.4 Obv. III 28’, IV 5’), <i>i-šu-na-an-za/ i-šu-wa-an-za</i> (KBo 2.4 Rev. II 23) <i>i-šu-wa-an-da-aš</i> (KUB 40.101 Obv. 13), <i>i-šu-wa-an-za</i> (KUB 56.49 Obv. 14’)

⁷⁷ See Panichev *et al* 2012, pp. 137; Molina *et al* 2013, pp. 4-5, 7.

⁷⁸ *MUN-aš* in KBo 53.33+ Rev. II 9 is certainly not a genitive as it is not governed by postposition *i-ua-ar* unlike KBo 53.33+ Rev. II 15, thus left to be identified as Nom. and not Gen. For *MUN-aš* in Rev. II 9, See Oettinger 1976, *StBoT* 22, pp. 31, 122.

i-šu-wa-na-al-li (KBo 6.26 Rev. I 24), *iš-wa-na-al-li-aš* (KBo 32.184 Rev. 5)

MUN-zi (KBo 11.32 Rev. 26), *MUN-an-zi* (KBo 11.32 Rev. 5, 11, Obv. 49)⁷⁹

In what follows, all the available attestations of *išuwān-* and its derivatives in their respective contexts will be discussed. These passages are offered in bound transcription and accompanied by a translation. The translations are based to a large extent on previous authors:

KBo 6.26 rev. I 24 (CTH 292). Hittite Laws: “If a Vine...”. Based on the edition by Hoffner and later by that of Prechel (KBo 67.269 3’). Contains the Nom. Acc. form *i-šu-wa-an*, *MUN-an*, and Nom. of a stem *i-šu-wa-na-al-li*.

rev. I 22 *ták-ku šu-up-pa-la-aš-še-et ku-e-el-ka₄ ši-e-ú-ni-aḥ-ta*

rev. I 23 *ta-at pá-r-ku-nu-zi na-at ar-ḥa pé-en-na-a-i*

rev. I 24 *i-šu-wa-na-al-li-ma-kán i-šu-wa-an* (*MUN-an*: KBo 67.269 3’) *da-a-i*

rev. I 25 *a-ri-iš-ši-ma-at Ú-UL te-ez-zi ^{LÚ}a-ra-aš-ša*

rev. I 26 *Ú-UL ša-ak-ki šu-up-pa-la-aš-še-et` pé-en-na-a-i*

rev. I 27 *na-at a-ki šar-ni-ik-zi-il*

-If anyone’s livestock are smitten (with disease) by a god, and (the owner) cleanses them, drives them away, but (then) pours (/leaves) the mud (salt: Prechel 2019, KBo 67.269 3’ or mud-like *išuwān-* salt) into the mud pile (saltlick: *ibid.*) and says nothing to his colleague. (If his colleague— unwittingly—drives his own livestock (there) so that they die, there will be compensation.

KBo 53.33+ (CTH 427). Military Oaths: “...whoever violates these oaths...”. Based on the edition by Oettinger. Contains the Nom. Acc. form *MUN-an* (rev. II 5) and *MUN-aš* (rev. II 9), the *MUN-aš* in Rev. II 15 is Gen. as it has postposition *i-ua-ar*. *MUN-ia* in Rev. II 16 contains an ambiguous form different from Dat. Lok. as interpreted by Oettinger⁸⁰. *MUN* not being an

⁷⁹ Kitazumi 2023, pp. 164.

⁸⁰ Oettinger 1976, pp. 122.

i- stem noun, cannot have a Dat. Lok. in -ia/i=ya. However, Oettinger in StBoT 22 has taken the Dat. Lok. form in his translation of the tablet under discussion.

- rev. II 1 *na-aš-ta* ¹*A-NA*¹ [LUGAL KUR^U]^{RU} *HAT-TI ap-pa-a-li da-a-i*
- rev. II 2 *na-aš DUḪ.LÀL-[aš-i]-wa-ar šal-li-it-ta-ru*
- rev. II 3 ^{UZU}*Ì.UDU-m[a-w]-a i-wa-ar mar-ri-e-it-ta-<ru>*
- rev. II 4 *a-pí-e-ma da-ra-an-zi a-pa-a-at e-eš-du*
- rev. II 5 *nu-¹uš¹-ma-aš* ^{UZU}*SA MUN-an I-NA QA-TI-ŠU-NU*
- rev. II 6 *da-a-i na-at ḫa-ap-pí-na pé-eš-ši-ia-zi*
- rev. II 7 *nu ki-iš-ša-an te-ez-zi ki-i-ua-kán* ^{UZU}*SA*
- rev. II 8 *ma-aḫ-ḫa-an ḫa-aš-ši-i an-da ḫu-ur-ša-ak-ni-e-¹et¹-ta*
- rev. II 9 *MUN-aš⁸¹-ma-kán GIM-an ḫa-aš-ši-i an-da*
- rev. II 10 *pár-ši-it-ta-¹ri¹ na-aš-¹ta ku-iš¹ ku-u-uš NI-IŠ*
- rev. II 11 *DINGIR^{LIM} šar-ra-¹ad-da na-aš-ta¹ [A-NA LUGAL]KUR^{URU} HAT-TI¹*
- rev. II 12 *ap-pa-a-li da-a-i nu-za-an A-NA KUR^{URU} HAT-TI LÚKÚR-li*
- rev. II 13 *IGI^{HI.A}-wa da-a-i na-an ke-e NI-IŠ DINGIR^{LIM}*
- rev. II 14 *ap-pa-an-du na-aš-^{UZU}SA-aš i-wa-ar*
- rev. II 15 *ḫu-ur-ša-ak-ni-ia-ad-da-ru MUN-aš-ma i-wa-ar*
- rev. II 16 *pár-ši-it-ta-ru MUN-ia GIM-an NUMUN-ŠÚ NU.GÁL*
- rev. II 17 *a-pé-e-da-ni-ia-kán UN-ši ŠUM-ŠU NUMUN^{HI.A}-ŠU*

...und sich gegen den [König des Lande]s Hatti hinterhältig betrügt, wie Wachs schmelzen, wie Schaffett aber soll er zerlaufen!” Jene aber sprechen: “Das soll (so) sein!” Nun gibt er ihnen Sehnen und Salz in die Hände und wirft sie in die offene Flamme und spricht folgendermaßen: “Wie diese Sehnen auf dem Herd verschmoren, wie aber Salz auf dem Herd zerprasselt, so sollen nun den, der diese Eide ubertritt und sich gegen den König des Landes Hatti hinterhältig betrügt und auf das Land Hatti feindlich den Blick richtet, diese Eide ergreifen! Und er soll wie

⁸¹ See note 77 above.

Sehnen verschmieen, wie Salz aber soll er zerprasseln! Und wie vom Salz kein Same existiert, so sollen auch jenem Menschen Name, Nachkommenschaft...

...and who acts treacherously against the [king of the land of] Hatti, shall melt like wax, but shall he run like grease!” But they said: “So be it!” Then he gave them fat and salt and threw them into the open flame and said thus: “As these fats scorch on the hearth, and as salt crackles on the hearth, so shall these oaths seize him who breaks these oaths and acts treacherously against the king of the land of Hatti and casts hostile eyes upon the land of Hatti! And he shall run like fats, but shall he run like salt! And as no seed exists from salt, so shall that person’s name, descendants... (translation from German by the present author)

KBo 33.131 10‘ (CTH 628). (*h*)išuwa Festival: “... the priest...” Based on the edition by Wegner and Salvini, translation by Giorgieri. Contains the Abl. form MUN[?]-az.⁸² Wegner and Salvini transcript Abl. MUN-az uncertainly, whilst Giorgieri proposes the sign to be a variation of BAL/ PAL⁸³, but arguably BAL’s available translations i.e. ‘offering’, ‘spindle’, ‘small spindle’, or ‘bronze spindle’ fits into the description. Hence the present author maintains the reading MUN as salt.

9‘ [na-aš-ta ^{GIŠ}EREN A-NA Ì.GIS a]n-da- šu-ú-ni-e[z-zi

10‘] a-na-a- *hi* MUN[?]-az d[a-a-i

-[He] (the king) dip[s cedarwood i]n [oil...

[he] tak[es] a taste of the salt [.

KBo 1.45 rev. 3‘ (CTH 299). S^a vocabulary text: “miller ^{to curse}⁸⁴... (to be) hostile...” Based on edition by Landsberger *et al*, Scheucher and Prechel. Contains Instr. form *i-šu-wa-ni-it*. Landsberger *et al* translated *i-šu-wa-ni-it(-)wa-a-tar* as “water mixed with...”⁸⁵ whilst Scheucher took it as “water with dirt” taking Akkadian *liḫmu* (hapax legomenon) *luḫummû* and

⁸² Wegner and Salvini 1991, pp. 108.

⁸³ Personal communication, dated Dec 3 2025 cf. HZL 4, pp. 90.

⁸⁴ For *arraru* “miller” and *arāru* “to curse” see Scheucher 2012 Diss., pp. 465.

⁸⁵ Landsberger *et al* 1955, pp. 59 Fragm. H.

its variant *luḥmû*⁸⁶ as mud and mire or mud⁸⁷. Prechel contests this interpretation by saying its only conditionally useful as *liḥmû* is an unclear hapax and having same root consonants with common Semitic word for salt, *mlḥ*⁸⁸ (see above for *i-šu-wa-ni-it* and *i-šu-wa-an-*).

rev. 1‘	KU] ¹ eb ¹ -lu ₄ ¹ iš ¹ -ḥi-ma-na-aš
rev. 2‘	KU] aš-lu ₄ šu-ma-an-za
rev. 3‘	KU] li-iḥ-mu i-šu-wa-ni-it wa-a-tar
rev. 4‘	KU] el-lu ₄ a-ra-u-wa-ni-iš
rev. 5‘	KU] ú-te-eq-qú iš-ta-ma-aš-šu-u-wa-ar
rev. 6‘	] KU ru-bu-ú LUGAL-uš
rev. 1‘	-String
rev. 2‘	Reed
rev. 3‘	Water with (salt: Prechel <i>ibid</i>) mud-like <i>išuwān-</i> salt
rev. 4‘	To hear
rev. 5‘	To become king (/prince ⁸⁹)

KBo 2.4 Obv. III 28‘, IV 5‘, rev. II 23 (CTH 672). Monthly festival for the weather gods at Nerik: “bread out of moist flour...” Based on edition by Součková⁹⁰. Contains Deriv. of *išuwān-* as *i-šu-na-an-za/ i-šu-wa-an-za* (rev. II 23) and *i-šu-wa-na-an-za* (Obv. III 28‘, IV 5‘).

rev. II 23 1 NINDA.GUR₄.RA BA.BA.ZA ŠÀ-er i-šu-na-an-za (i-šu-wa-an-za: cf. Kitazumi 2023) tar-na-aš

obv. III 27‘-28‘ * <<1>> <<UP-NI>> * 1 NINDA.GUR₄.RA BA.BA.ZA ŠÀ-er i-šu-wa-na-an-za ½ UP-NI

obv. IV 5‘ [1 NINDA]. ¹GUR₄.RA¹ BA.BA.ZA ŠÀ-er i-šu-wa-na-an-za tar-na-aš

⁸⁶ Scheucher 2012, pp. 467.

⁸⁷ AHw pp. 562, CAD L pp. 239 respectively.

⁸⁸ Prechel, FsFreydank 2019, pp. 243.

⁸⁹ Landsberger *et al* 1955, pp. 59.

⁹⁰ Součková 2010, pp. 281-87.

-rev. II 13-40 is complete offering list for goddess Zahpuna at *dahanga*, rev. II 23- 1 bread loaf made of barley porridge whose core (lit. heart ŠÀ) is salted⁹¹ with a *tarnaš* salt-slurry.

obv. III 8'-36' sacrifice to weather gods' temple on 15th day, obv. III 27'-28'- 1 *UPNU* ...cf. rev. II 23

obv. IV 1'-15' offering list for goddess Zahpuna, obv. IV 5'- cf. rev. II 23.

Another fragment. of CTH 672, KUB 56.49 Obv. 14' also shows Deriv. *i-šu-wa-an-za* like KBo 2.4 Rev. II 23.

obv. 14' 1 NINDA.GUR₄.RA BA.BA.ZA ŠÀ-er *i-šu-wa-an-za* wa-a[r-na-aš]

-1 bread loaf made of barley porridge whose core is salted with a handful of salt-slurry.

KUB 40.101 Obv. 13 (CTH 682). Festival of ^DKAL or protective deities: “[for ^DAla of Tud]haliya...” Based on edition by McMahon⁹². Contains Deriv. *i-šu-wa-an-da-aš*.

obv. 12 [1 ^{NINDA}*tu-ḫu-ra*]-¹i¹ 1 ^{UZUŠÁ}

obv. 13 []x-ar *i-šu-wa-an-da-aš*

-1 *tu-ḫu-ra(i)* bread loaf, 1 heart salted(?).

KBo 11.32 Rev. 26 and Rev. 5, 11, Obv. 49 (CTH 645). Festivals for the netherworld deities: “the king approach the hearth...”. Rev. 26 contains Deriv. *MUN-zi* whereas Rev. 5, 11, and Obv. 49 contain *MUN-an-zi*.

rev. 5 *MUN-an-zi* GAL DUMU^{MEŠ}.É.GAL 12 ^{NINDA}*tu-uḫ-ra-i*

rev. 11 GUNNI-kán *pa-ra-a a-ni*-¹an¹-*zi* *MUN-an-zi*

obv. 49 IZI-i *pa*-¹ra-a *a-ni*¹-a[n-z]i ¹MUN¹-*an-zi*

rev. 5 the palace servants carry 12 big salted *tu-uḫ-ra* bread loaf.

rev. 11 (for ^{GUL}zanika- deities, to pour libation) in hearth, to salt (2 bread loaf broken into *ḫa-zi-la* units)

⁹¹ Hagenbuchner-Dresel *et al* 2014-17, pp. 282 *išu(wa)nant*: salted in context of bread.

⁹² McMahon 1991, pp. 126-27.

obv. 49 (for storm god, to pour libation) and 'salt' in fire

rev. 26 ^{LÚ}Ú.ḪÚB *a-ra-aḫ-za-da ú-da-i* 'MUN'-zi

-deaf man to bring (here), to 'salt'....

On Luwian *:lapana-*, another frequent occurrence amongst Hittites to refer salt, Adiego has worked extensively upon the two divergent readings of *:lapana-* “Sommerweide” and “Salzlecke”⁹³ which does not need any further redundancy here. But Adiego’s hypothesis on *:lapana-* *:waniya* (*ṽa/wa-ni-ia*) is linguistically significant and deserves some further considerations. In what follows, a cursory remark on *:lapana* would be provided followed by a lexical observation and a hypothesis on *:waniya*. Adiego’s *lavanam* *:lapana-* decipherment is constructed upon four rudiment observations: 1) intervocalic non-geminate *-p-* in Cuneiform Hittite and Luwian sounded *-β-*, 2) dental nasal *n* replaced by retroflex *ṇ* owing to a spontaneous cerebralization in IA⁹⁴, 3) Luwian acceptance of *l* from donor IA dialect, and 4) conspicuous treatment of PIE **r* and **l* in Indo-Aryan and Vedic Sanskrit dialects⁹⁵. However, interpreting Luwian *:lapana-* as saltlick or place for obtaining salt is not entirely based on this very argument. Watkins’ etymology interprets *:lapan(a)* to be saltlick. Melchert *passim* Watkins maintained the same reading and its derivations⁹⁶, and Puhvel followed the same reading of Watkins-Melchert in his etymological dictionary⁹⁷. However, Rieken and Hawkins⁹⁸ maintained the previous interpretation and translated *:lapana-* and Hieroglyph Luwian verb *:lapani(ya)-* as “sommerweide” and “to (summer-) pasture⁹⁹” respectively. On the contrary, *:waniya* (*ṽa/wa-ni-ia*) obtained a straightforward interpretation after Laroche as derivation of *wani-* or *wanid-* “rock”, “stone”, or “stele” by a seemingly conspicuous Cuneiform Luwian

⁹³ Adiego 2021, pp. 45 *passim* Rieken 2014, pp. 49 and Cammarosano 2019, pp. 64.

⁹⁴ Adiego 2021, pp. 62 referring Mayrhofer 1968, pp. 511

⁹⁵ For more information on **r-*/l* treatment see rules on *Pratyāhāra* and *Chandasī* in *Pāṇini*.

⁹⁶ Melchert 1993, pp. 125.

⁹⁷ Puhvel 2001, *HED V/L*, pp. 60-2.

⁹⁸ Hawkins 2000, pp. 516.

⁹⁹ Watkins 1997, “to take to the saltlick” (with horses as direct object), pp. 34.

word ^{NA4}*u-wa-ni-i-ta-im-ma-an*¹⁰⁰ where NA₄ is already a determinative for rock or stone. “Salt rock” seems more of a circumstantial development rather than a secondary one, what Adiego explains. However, the following section would try to argue how both of the divergent interpretations of *:lapana-* are linguistically correct and how looking at *:wania* from a different perspective could facilitate it. Whilst Watkins-Adiego (cf. Mayrhofer 1996: 476) correctly argued *:lapana-* either to be a derivation of PIE **leb-* “to lick” → Hittite-Luwian(?) *lipae-*, *lip(p)-*, *lilip* “to lick”, or PIE **leyH-* “to cut” → $\sqrt{lav^i}$ → *lavana-* “cutting” with *-ana* derivative → *lavana(m)* → *:lapana* but consequently overlooked *:wania-* as probably it was already established by Laroche as *wani-* or *wanid-*. But if a similar diachronic analysis on *:waniya* is obtained, a completely new picture appears. There is a possibility that *wan-* or *wa-an-* is a derivation of PIE **yen-* “to strike” and “fodder/ pasture”¹⁰¹ and not of *:wani* or *:wanid*. The first step is to rule out the Hittite Dat. Loc. infl. *-ia* on Luwian *:wan* what would be discussed in following. Now, **yen* ($\neq$ **yenh-* to love, desire or **g^{wh}en* to strike, hit, kill → Sans. $\sqrt{han}$ → 3rd Peobv. Sing. Pres. *hanti* he/she kills, 3rd Peobv. Plur. Pres. *ghnanti* they kill) derives three dominant meaning in amphidynamic and proterodynamic formations¹⁰²: 1) to overpower or to win, “überwältigen” and “gewinnen”, RV *van-oti*, *van-vanti*, *van-avat*, OAv. *van-aē-mā*, MPeobv. *vānītan*, Ahd. *gi-winnan*, to win, but not “to rape”¹⁰³, 2) to strike, to cut, to hew down, “schlagen”, Sans. *vana(m)*, tree, wood, forest as a place of hewing (wood), Av. *vanā*, tree, Ir. *benim*, to strike or cut (as auxiliary modifier)¹⁰⁴, and 3) fodder or pasture, “weide”, Got. *winja*, fodder, Ahd. *winne*, pasture¹⁰⁵, though, *vanam* lost its meaning as pasture in RV, but it remained as a tamed and exploited woods whilst wilderness remains as *aranya* and *kāntāra*. However, at a certain point **yen* underwent the following development amongst the Indo-European speaking people in Anatolia and Indo-Aryan subgroup in India was derived into *:wan-* and *van-/ vana* respectively, a place to hew, strike or graze.

¹⁰⁰ Laroche 1959, *DLL*, pp. 106

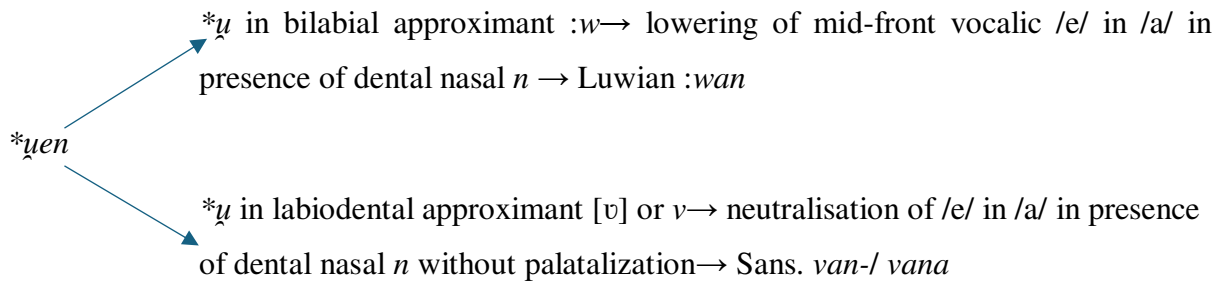
¹⁰¹ Mayrhofer 1976, *KEWA*, vol III, pp. 139 and 1996, *EWA*, vol II, pp. 500.

¹⁰² For amphidynamic and proterodynamic *-van-* see Gotō 2013, pp. 41.

¹⁰³ For **yen* as *yen-zi* ‘rape’ see Melchert 1984, pp. 10 and Oettinger 2006, in *PUGrItt*, pp. 242 note 16.

¹⁰⁴ Pârvulescu 1987, in *AmJPh* 108 (1), pp. 493-4.

¹⁰⁵ Mayrhofer *ibid*.



Laroche referring Puriyanni ritual (KUB 35.54 III 18+ KUB 35.54 III 21+ KUB 35.47 3': CTH 758) ... [M]UN-ša-pa a-a-la-a-ti u-wa-a[(-ni-ya)-ti] ú-pa-am-ma-an ... MUN-ša=pa-a=[t-ta z]i-la [(a-a-)]li-i u-wa-a-ni-ya na-a[-wa i-t]i derived that salt is obtained from :*wania*-, stone block or stele. Whilst Carruba took the word :-*wani(a)* to be mountain or rock, hence salt mines¹⁰⁶- which seems to be a secondary development. On the other hand, Sasseville and Reiken suggested :*wania*- as a reconstruction of Proto-Luwic **uon*- 'rock-carving' and connected it to Proto-Anatolian **g^{uh}en*- 'to strike'¹⁰⁷. But this 1) **uon*-→ :*wania* reconstruction is based on a rare Lydian word *wāna*- '(rock-carved) grave' studied by Lehrman¹⁰⁸, 2) moreover, this Proto-Anatolian **g^{uh}en*- 'to strike'→ Hittite *kuen*- 'to strike, destroy or kill' (*kuenzi*- 3rd Peobv. Sing. Pres. he/she kills/ strikes, *kunanzi*- 3rd Peobv. Plur. Pres. they kill/ strike, *kuenta*- 3rd Peobv. Sing. Pret. he/she killed/ stroked, *kunant*- Part. Pass. killed), semantically denoting a violent operation than hewing a rock, and finally, 3) **uon*- does not derive to fodder or pasture unlike **uēn*, denoting to the possibility that :*wania*- might not have been a derivation of the former but the latter. When inflected with Dat. Loc. Sing. -*ia* indicating the direction/ recipient :*wan-ia* is '(something) of hewing or striking' or '(something) off/from the pasture', added to :*lapana*- it thus derives to 1) 'salt of hewing or striking' or a 'rock salt quarry' and 2) 'salt of pasture' or the 'saltlick'. It seems convincing that :*lapanawania*- is a specific kind of salt deposit, plausibly a wall saltlick, that was equally exploited for livestock and human needs. This assumption intensifies even more from IBoT 2.131 (CTH 530) rev. 17'-19', Urḫi-Teššup and the vineyards of Pirwa¹⁰⁹:

rev. 17' *ta-^Γeš^{siC}-ti-ia-an-zi nu^{LÚ.MEŠ}:la-pa-na-al-li^{HI.A}-uš*

¹⁰⁶ Carruba 1982, pp. 47.

¹⁰⁷ For Proto Anatolian **g^{uh}én*-/**g^{uh}n*- '(ti)' to Proto-Luwic **uén-ti*/*kⁿ-énti* see Sasseville and Reiken **uon*- [eDiAna Dictionary](#), retrieved on Feb 9, 2026.

¹⁰⁸ Lehrman 1998, pp. 167

¹⁰⁹ Cammarosano 2018, pp. 266-67.

rev. 18' 3 ME NINDA.GUR₄.RA ŠA MUN 1 ME NINDA^{HLA} 2 DUG KAŠ 20 UDU 10
EM-ŠÚ

rev. 19' 10 GA.KIN.AG 3 PA ŠE.NAGA-ia MU^{KAM}-ti-li pé-eš-ker

-The ^{LÚ.MEŠ}*lapanalli* used to supply annually 300 loaves of salt, 100 breads, 2 vessels of beer, 20 sheep, 10 (portions of) sourdough, 10 cheeses, and 3 *PARĪSU*-measures of *soap herbs*.

It clearly shows that the *:lapana* workers were not only working in salt quarries but were herdsmen and associated with dairy production. It would be tempting to state that *:lapana* was only meant for sheep but such a conclusion is not necessary. But what is ascertained is that as *:lapana-* is denser in nutrition than *išuan-* (mud-like salt only for livestock, see above), it was conjointly shared by humans and cattle: what might have made the legal prohibition on exploiting the saltlick more intense.

For *li-ki(-in)* the interpretation is rather straightforward. Watkins suggests PIE **leiǵʰ-* ‘to lick’ to be etymologically connected to Luwian *:liki* adhering a place of licking. And as the context of the word is a donation of *whole :lapana* of Pantarwanta and Maḥrimma beside Šarmana, either *:liki* can be synonym or legalese repetition, after Puhvel’s interpretation, otherwise, as Adiego takes, it could be a saltlick devoted to livestock rearing and not for human exploitation. Maner suggests, on the other hand, that the *:liki* in the *bronzetafel* between Tudḫalia III (IV) and Kuruntiya to be identified with lake Meke (Meke Gölü), hence a place of lacustrine salt and not rock saltlick. Maner’s understanding is as follows:

‘If one assumes a directional approach i.e. from southwest to northeast, or from the ‘Hulaya river to the large saltlick near the rock’ then, Šarmana, Pantarwanta, and Maḥrimma are located on the western side of Karacadağ, hence the Karapınar Gölü lake. Thus one could assume that these are Alitepe Höyüğü, Tilkili Höyük, Kızık Höyük, Göynük Höyük, or Yağmapınar Höyük. As per the text, Šarmana is the closest to the saltlick- which can be Alitepe Höyüğü as the settlement lies approximately 8km southeast of lake Meke... On the other hand, assuming a description from northeast to southwest, Šarmana, Pantarwanta, and Maḥrimma would be located south, southwest and west of *Meke Gölü* where Alitepe Höyüğü, Sırçan Höyük, Sırnık Höyük, Yeşiltepe

Höyük, Rakka Höyük, Erkinlik Höyük, Eşektepesi Höyük, Gedemen Höyük, and Gökgöz Tepesi are located.’¹¹⁰

Maner’s understanding of *liki* as lacustrine salt needs some further considerations. First of all, she draws a comparandum with the lithic remains of Yerleşimi prehistoric settlement in Yağmapınar Höyük and Aşıklı Höyük. However, the sites were not only aceramic Neolithic workshops, but also obsidian workshops. Maner *presumes* that similar kind of mortar-pestles and grinding stones had been used to crush salt. Secondly, her presumptions are based on eyewitnesses that states that salt crust is first broken up with iron tools and later crushed with mortar and pestles¹¹¹. But incorporating ethnological analyses or eyewitnesses to solve a philological question might have its own peril. If *:liki* too, like *:lapana*, was obtained by hewing a petrified evaporated salt block, it would have been followed by *wan-* (or *kuen-*) to denote the act of hewing, which is absent in this case. Similarly, if *:liki* was petrified lacustrine salt and collected in blocks or lumps, the determinative of NA₄ as stone, or measurements like *puti-* or NINDA.GUR₄.RA (lump or loaf) would precede¹¹². Thus, with the current state of information, interpreting *liki-* as a saltlick reserved for cattle rearing seems more appropriate.

Having explained *:lapana-*, *:liki*, and *i-šu-wa-an* not only as synonyms to sumerogram MUN or Akkadian *ṭābtu* but also as different types of salt prevailed in Hittite domain, can a provenance of these salts be conceived? For bureaucratic and cultic inventories, Hittites referred salt with a toponym, usually a city name (^{MUN}.^{URU}GN). However, the texts also refer to groups of salt-workers belonging to a particular city (LÚ^{MES}*lapanalli* ^{URU}GN), for the latter, there is a possibility that the salt was not quarried in that place rather was transported from vicinity.

KBo 11.73+ rev. III 4’-6’ (CTH 626), during the fourth day’s ritual observed in *nuntarriyašḫaš* festival, the priest offers king salt from Durmitta on the way to another city of Taḫurpa:

rev. III 4’ [ŠA] MUN *ku-gul-lu-uš*

¹¹⁰ Maner 2021, pp. 344; translated from German and rephrased by present author.

¹¹¹ *ibid*, pp. 341, *passim* Erdoğan and Fazlıoğlu 2006 and Erdoğan and Özbaşaran 2008.

¹¹² For measurements see van den Hout 1987-90, for salt see pp. 525.

rev. III 5' [U]^{RU}*dur-mi-it-ta-az*

rev. III 6' *hi-in-ku-wa-an-zi*

The location of Turmitta/ Durmitta (OA Durḫumit) has been a long-standing discussion amongst the scholars and not yet gained a consensus. To start with, Forlanini proposed Durmitta to be situated in the west of river Kızılırmak somewhere south of Çankırı¹¹³, the existence of Çankırı-Balıbağ salt deposit rather strengthens this claim further that the Durmitta salt in KBo 11.73+ might have been exported from there. Later Forlanini proposed a location on the crossing over river Halys up north in the Pontic region and thus he identified modern Karakeçili to be the best candidate for it. However, he kept the possibility open for Kırıkkale too, further north to Karakeçili and in the bank of Kızılırmak, upon newer evidences¹¹⁴. On the contrary, Barjamovic was first inclined to locate Durḫumit in the region east of the Kızılırmak river and in north of modern Çekerek, the region of Merzifon (after Goetze who proposed a location between Çorum and Merzifon). What led Barjamovic to posit Durḫumit in the eastern Kaska frontier is a 'remarkable concentration of place-names with ancient Hittite suffix *-itta* in modern day Tokat-Amasya province in Turkey'¹¹⁵. Noteworthy is that though Barjamovic first acknowledged the fact that Durḫumit of Kültepe-Kaneš inventory is identifiable to Durmitta of the imperial Hittites, but he eventually negated this interpretation in his following publication¹¹⁶. Meanwhile Kryszewski proposed Durmitta to be moved to the western bank of Kızılırmak, again Çankırı-İskilip, what though seems convincing from Hittite corpus but not compatible with Kültepe-Kaneš data¹¹⁷. Finally, Barjamovic argues that taking Paphlagonia (with capital in ancient Gangra, modern day Çankırı) as ancient Durmitta is less likely a compromise as it not only accounts for the high-quality Durmitta copper in Kültepe corpus but also allows to posit twin-sites of Ninašša and Uwalma in the greater Durmitta trajectory¹¹⁸. But the only problem appears to take Çankırı as ancient Durmitta is that the settlement is not on the eastern bank of Kızılırmak but on the western¹¹⁹. Nevertheless, some words here on a hitherto

¹¹³ Forlanini 1977, pp. 203-205.

¹¹⁴ Forlanini 2008a in Dercksen (ed.), pp. 74.

¹¹⁵ Barjamovic 2011, pp. 261.

¹¹⁶ Barjamovic 2017 in Weeden and Ullmann (eds), pp. 317

¹¹⁷ Kryszewski 2016, AOAT 437, pp. 385.

¹¹⁸ Barjamovic 2017, pp. 316 *passim* Matthews and Glatz 2009a and 2009b.

¹¹⁹ This *nuntarriyašhaš* itinerary is also connected to another city of Taḫurpa where the priest offers salt to the king. Identification of Taḫurpa, needless to mention, is also ambiguous. After Forlanini 2008b pp. 155 and de

rarely discussed city of Ḫaryaša may turn useful to ascertain a northward location of Durmitta. KBo 12.53+ (see below) obv. 22' mentions about the allocation of 10 transportees (NAM.RA^{MEŠ}) from the Palace of Ḫaryaša for the town of Ḫat-...nu by 'His Majesty' to perform the TUKUL-service. The following section mentions about an allocation of 30 NAM.RA^{MEŠ} from the town of Zippalanda which is unmistakably located east of Ḫattuša between the Ortaköy-Şapinuwa, Maşat Höyük-Tapikka, and Kayalıpınar-Şamuha trajectory¹²⁰. The intention behind mentioning Zippalanda is 1) the NAM.RA^{MEŠ} list entitle a geographic coherence, 2) if so, then the town of Ḫaryaša must be situated east of Ḫattuša within the same trajectory. However, Ḫaryaša is again mentioned in Kp 14/95+ (see below) for annual and monthly festivals of sun goddess observed in Kayalıpınar-Şamuha. In rev. iv 42' a supply of 18 sheep and 3 *PARİSU*-measures of salt was allocated on the ^{LÚ.MEŠ}*lapanalli* of the town of Ḫaryaša. The preceding line mentioning the allocation determined for the Frontier Post Governor of Şamuha ascertains the geographic proximity between the two cities. In KBo 12.53+ a sum of 1,680 NAM.RA people were allocated alone for the district of Durmitta. The NAM.RA people were fugitives and/or prisoners of wars and were assigned to perform obligatory TUKUL-service. They were confiscated from various places and were dispatched to the preferable cities depending on the need of the central authority. It is therefore hard to imagine a westernmost location for Durmitta as far as Çankırı or Kırıkkale as the question of transporting more than 1,500 fugitives may hinder this interpretation irrespective of the efficacy of Hittite transport. Situating Durmitta in Tokat-Amasya province and specifically in Merzifon solve this issue. It is however plausible to imagine the span of district of Durmitta from Gangra-Çankırı in west to Merzifon in east, but locating the town of Durmitta in Merzifon seems convincing.

But as per the current state of research, both Çankırı and Kırıkkale are located in mountainous terrains and have elevation of approximately 2300-3200 ft msl. The salt from Çankırı contains 98% NaCl and considered to be one of the purest salts quarried even in modern day Turkey. The Baraklı-Kırıkkale mine is again a rock salt quarry and still in use. Be what may the location

Martino 2010 pp.194, Yozgat seems to be the fittest candidate, however, recent discoveries reinforce Eşkiyapar Höyük in north of Yozgat to be the ancient Taşurpa. Identifying Taşurpa is crucial to determine the location of Durmitta too, as the salt offered to the king must have been transported from Durmitta to Taşurpa. But Durmitta has no mention in neither of the two *reisefeste* i.e. AN.DAḪ.ŞUM and *nuntarriyašhaš* itineraries, see Kryszeń 2016, pp. 383.

¹²⁰ For location of Zippalanda see Kryszeń 2016, pp. 252 ff.

of ancient Durmitta, one thing can be ascertained with confidence that in Durmitta there was a rock salt quarry during the imperial Hittites and undoubtedly was a strategic locale for them in the Kızılırmak basin. 34 different CTH entries on cultic and bureaucratic endeavours attest Durmitta for 77 times which speaks of the significance it held in Hittite political landscape. It can be an imperial reconciliation of preceding Kültepe-Kaneš period where Durḫumit was an apex copper transporter in the Halys basin and enjoyed a strategic position in trans-Pontiac trade route. Durmitta salt, being offered in *kugulla* or circular bread-like shape, advocates more for it being a rock salt quarry where chunks of salt were hewed in those shapes for ritual purposes¹²¹. A group of workers or artisans might have been responsible for quarrying salt in those required shapes, but no information on ^{LÚ.MEŠ}MUN ^{URU}*dur-mi-it-ta* has been handed down so far.

Moving to the middle Kızılırmak basin, IBoT 2.131 speaks about the revival of the Cult of Pirwa under Urḫi-Teššup (Muršili III)¹²². The ‘saltlick wardens’ or ^{LÚ.MEŠ}:*lapanalli* were mentioned 4 times in the cult inventory and 2 out of 4 times they were associated with sheep and dairy products. The only mention which has a direct provenance, does not yield what produces the ^{LÚ.MEŠ}:*lapanalli* were used to supply due to broken signs, plausibly livestock and/or dairy.

obv. 42‘ 3 UDU ^{LÚ.MEŠ}:*la-pa-na-al-li*-ḪI.A-uš ŠA ^É1.GAL *pé-eš-ker*

obv. 42‘ The ^{LÚ.MEŠ}:*lapanalli* of the palace used to supply 3 sheep.

The following rev. refers ^{LÚ.MEŠ}:*lapanalli* not supplying sheep or dairy produces but taking part into cultic activities. Most probably, the slaughtered sheep in rev. 10‘ is also supplied by them.

rev. 10‘ ^{GIŠ}ZAG.GAR.RA-ni ^{da}1-ni-nu-wa-an-zi nu ^{LÚ.MEŠ}ṛ^{la-pa-na}1-al-li-^é1-
[eš]

rev. 11‘ 1 UDU *ḫu-u-kán-zi* ^{LÚ}SANGA ŠA DUMU.NITA ^{LÚ.M}[^{EŠ}*la-p*]a-na-al-
ṛ^{li}1ḪI.A-ṛ^{ša}1

¹²¹ For *kugulla* and *NARKABU* see Carnevale and Torri 2022, pp. 307 and their references.

¹²² Cammarosano 2018 suspects the geographic setting to be the Cappadocian area of middle Kızılırmak basin referring Imparati 1990, pp. 172-72 and Forlanini 2009, pp. 39-42, in his introduction pp. 260.

rev. 12⁺ ŠA DUMU.MUNUS^{MEŠ} nu lu-uš-ša-nu-an-zi LÚ.MEŠ{x} wa-al-wa-al-
la^{HI.A1sic}

rev. 10⁺ The LÚ.MEŠ: *lapanalli*...

rev. 11⁺ ...slaughter one sheep. The priest (is on the side?) of the young men, the
LÚ.MEŠ: *lapanalli* (are on the side?)...

rev. 12⁺ ...of the young women. They do *luššanu-*. The lion-men turn around...

rev. 17⁺-rev. 19⁺ speak of LÚ.MEŠ: *lapanalli* used to supply sheep and dairy produces to the temple of Pirwa what they do not do since the days of the ‘father of His Majesty’ (for translation see above). The only mention of LÚ.MEŠ: *lapanalli* with a provenance is as following, however, it is not known what produces they were responsible for that they have ceased supplying 6 years ago:

rev. 22⁺ [(ca. 3 signs) LÚ.MEŠ]: *la-pa-na-al-^{HI.A}li^{uš} URU pu-la-an-ta-ri-iš-
ša¹ pé-eš-[ker]*

rev. 23⁺ [*ki-nu-na ka-a-a*]š MU ⁶KAM-^{TI} *ku-it Ú-UL SUM-an-zi*

rev. 22⁺ [ca. 3 signs missing] the LÚ.MEŠ: *lapanalli* of Pulantarišša [us]ed to supply...

rev. 23⁺ [...Now, thi]s is the 6th year that they do not supply (it).

However, parallel Bo 3245 obv. 2⁺-3⁺ mentions supplies the LÚ.MEŠ: *lapanalli* from Pulantarišša were entitled to contribute¹²³:

rev. 2⁺]*x-mi-iq-qa-aš* 25 MÁŠ.GAL LÚ.M^(EŠ) [*la-pa-na-al-li*]

rev. 3⁺ URU *pu-la-an-ta-ri-iš-ša-az pé-eš-[(ker)]*

rev. 2⁺]*x-mi-iq-qa-aš* 25 goats from Pulantarišša the LÚ.MEŠ: *lapanalli*

¹²³ Imparati 1990, pp. 166 n. 2.

rev. 3' used to supply.

Unfortunately, no modern city could be interpreted as Hittite Pulantarišša with confidence. Moreover, as stated above, there is a thin possibility that the salt quarry were located in that city where the quarrymen belonged to. But if, Cammarosano's interpretation happens to be true, then Pulantarišša must have been located somewhere along the middle Kızılırmak basin through a *chaîne opératoire*:

1) Imparati locates a city called Gaparša of Bo 3245 to be in the south of modern Yozgat province. Gaparša is also mentioned in the parallel IBoT 2.131 (obv. 33'), which may help, though plausibly, to locate the Pulantarišša between Gaparša and Šippa as they might have belonged to the same trajectory.

2) According to Cammarosano, the mentions of Tiwalia (obv. 12'), Šippa (obv. 28'), Šaššuna (obv. 30'), and Ikšuna (obv. 45') led him to interpret the cultic setting to be Cappadocia. Unlike Tiwalia and Šippa, Šaššuna and Ikšuna can securely be located in the middle Kızılırmak basin¹²⁴. But the list must have some geographic value.

While there are not many reasons to associate the ^{LÚ.MEŠ}:*lapanalli* of IBoT 2.131 with Tuz Gölü what Cammarosano suspects, the Nevşehir-Hacıbektaş mine could also be a new candidate to consider beside Kayalıpınar-Şamuha and Çankırı-Balıbağ salt deposits. The ^{LÚ.MEŠ}:*lapanalli* in rev. 10'-rev. 12' and rev. 17'-rev. 19' were probably located in or around Šippa as they took part in cultic activities in the temple of Pirwa in Šippa.

In obv. 42', the ^{LÚ.MEŠ}:*lapanalli* are rather of obscure origin, however, the associate mentions of Hapušna (obv. 39') and Ala (obv. 41') may shed some light on it. Ala, in the area of Harziuna¹²⁵, was entitled to supply 2 vessels of wine annually. KUB 26.43 rev. 12'-24'= KUB 26.50+ KBo 22.58+ rev. 1'-rev. 16' speak of a donation of Ala in Harziuna under Muršili II promoting their geographic proximity. Harziuna is unarguably situated in the greater Kayseri

¹²⁴ Locating Tiwalia with certainty is hindered by the existence of multiple towns or villages under the same name in Hittite domain, see *RGTC* 6, pp. 431; Kryszeń 2016 pp. 135 n. 360 interprets Šippa= Šippuwa, which is not identifiable with Šappuwa= Šappa, arguably around modern Güdül, see Corti 2017, pp. 234. Šaššuna is brilliantly studied through itinerary Bo 2004/1 by Lorenz-Rieken 2007, pp. 467-86, and town of Ikšuna in middle Kızılırmak by Forlanini 1992, pp. 171-79 and in 2009, pp. 41.

¹²⁵ CTH 225 obv. 23': Imparati 1977, pp. 26-27; *RGTC* 6, pp. 5.

plain: Forrer identified it with modern Herzana in 10 km northeast of Kayseri, whilst Gesch with Aksaray on Tuz Gölü¹²⁶. Forlanini situates ̕arziuna in Lycaonia plateau, north of the Taurus range¹²⁷, what Barjamovic finds obscure¹²⁸. If the cultic setting of IBoT 2.131 is correctly confined to Cappadocian region, then situating ̕arziuna and Ala as far as north of Taurus seems less convincing, however not impossible.

̕apušna is yet unidentifiable with any middle Kızılırmak settlement, but it should be associated with ̕upišna or Heraclea Cybistra i.e. Ereğli in Konya province. KUB 6.45 ii 10-19 (CTH 381) mentions the storm god of ̕upišna alongside the Telipinu of Durmitta, the storm gods of Ninašša (Nenašša), and Tuwanuwa. Now, this tablet is of particular interest. Unlike other Hittite itinerary, Muwatalli II's prayer follows a geographical order¹²⁹ and refer to the settlements west to the Hittite capital anticlockwise. In this manner, ̕upišna must have been situated in southwest of Durmitta-Ninašša or Kırıkkale. IBoT 2.131 obv. 38'-39' mention about a terminated supply of ^mPittazzi for the storm god of the army who were settled in ̕apušna. No mention of a storm god cult in Ala is recorded (but in ̕arziuna, cf. KUB 6.45 ii 34), hence taking the storm god of ̕apušna identical to that of ̕upišna in Muwatalli II's prayer is logically inferred. Obv. 42' mentions a supply by the ^{LÚ.MEŠ}:*lapanalli* of the palace, it seems no wrong to equate the palace of ̕apušna to that of ̕upišna in *nuntarriyaššaš* festival of KUB 10.48 ii 6'-8': '[on 12th day] foods and drinks will be given to him from 3 palaces, viz. palace of Ninašša, house of T[uwanuwa], and the palace of ̕upišna'. The palace of ̕apušna owned a band of ^{LÚ.MEŠ}:*lapanalli* who were also associated to husbandry and took part in cult of Pirwa. Having said this, it is convincing to situate ̕apušna/̕upišna west to Boğazköy and southwest to Kırıkkale. The associate mention of Ala, plausibly located in Kayseri-Aksaray trajectory, also advocates to geographic proximity of both the sites.

Thus Ereğli in Konya province is the fittest candidate to argue as the location of ^{LÚ.MEŠ}:*lapanalli* in obv. 42'. Cammarosano suggested that the ^{LÚ.MEŠ}:*lapanalli* of IBoT 2.131 operated too in Kayalıpınar-Şamuha and Çankırı-Balıbağ deposits if not only in Tuz Gölü, one of the main sources of salt for the Hittites. But with the current trajectory, Nevşehir-Hacıbektaş deposit in the Kayseri-Aksaray plain could also be a candidate worth considering, not only for

¹²⁶ *ibid* pp. 93.

¹²⁷ Forlanini 2014, pp. 240.

¹²⁸ Barjamovic 2011, pp. 253, comment on KUB 53.42.

¹²⁹ *ibid*, pp. 251-52; Kryszewski 2016, pp. 374-76.

its relative proximity to middle Kızılırmak but also for the distance between Kayalıpınar-Şamuha and Cappadocia. Finally, it can be argued that the ^{LÚ.MEŠ}:*lapanalli* of IBoT 2.131 were operating into two different regions, viz. Yozgat and Ereğli. Carnevale and Torri locate them in further south in the vicinity of Yay Gölü¹³⁰.

KBo 12.53+ (KUB 48.105) is a significant and intricate cult inventory in this list. Not only it records the measures taken by Hattušili III¹³¹ to revitalise the cult supplies in four specific districts, viz. Wašhania, Durmitta, Gaššia, and Tapikka, but this inventory was also important to ascertain the geographical location of Durmitta. Obv. 1'-18' of this tablet is assigned to the measures taken to the district of Wašhania, obv. 12' speaks of a supply by the 'salt men' of Kipitta (?):

obv. 10' *INA* ^{URU}*ki*¹-*pí-it-ta* *A-NA* ^d*UTU-AŠ* ^r*d*¹[*UTU-ŠI*] *ki-i* *ME-iš* 1 *É-TUM* *ŠÀ* 10
^r*NAM*¹.*RA*^{MEŠ} (erasure) [(*vacat*?)]

obv. 11' ^r*ŠA* *É*¹ ^m*la-ba-ar-na* *LÚ*^{MEŠ} ^{UR}[*U*_{x-x-x}]-*x-na* ^m*in-na-ra-u-wa-a*¹-*aš* *pa-a-i* 4
*GU*₄.*APIN*.*LÁ* [(*vacat*?)]

obv. 12' ^r70¹ *U*[*DU*^{HLA}] *ŠA* ^{URU}*uš-ḫa-ni-ia* *GAM*-[*an ḫ*]*a-ma-an-kán-zi* 1 *ME* *UDU*^{HLA}
^r*ŠA* *LÚ*^{MEŠ} *MUN* [(^{URU})¹³² (space for a few sign)¹³³]

obv. 13' 20 *U*[*Z*₆] ^m*pí-ḫa-na-na-ia-aš* *KUR-e-za* *pa-a-i* ^{GIŠ}*TUKUL* *DÙ-an-zi* 15
NUMUN *KISLAḪ* *DÙ-z*[*i*]

obv. 10' In the town Kipitta, for the Sun Deity, [His] Ma[jesty] instituted the following:
1 household composed of 10 transportees

obv. 11' belonging to the House of Labarna, men of the to[wn ...]-*na*-. ^m*Innara**uwa*
supplies (them). They fix 4 plough oxen (and)

¹³⁰ Carnevale and Torri 2022, pp. 308.

¹³¹ This inventory is still assigned to the reigns of Muwatalli II, Muršili III and Hattušili III. Archi and Klengel 1980, pp. 152 and Kryszewski 2016, pp. 358 assign this inventory to Tudḫalia IV's reign. For general discussion and dating KBo 12.53+ to Hattušili III see Cammarosano 2018, pp. 272.

¹³² Archi and Klengel 1980, pp. 143.

¹³³ Cammarosano 2018, pp. 276.

obv. 12' 70⁷ sh[ee]p of the town Ušḫania. 100 sheep of the LÚ.MEŠ MUN [...]

obv. 13' ^mPiḫananaya supplies from the district 20 goats. They perform the TUKUL-service. The threshing floor produces 15 (*PARĪSU*-measures) of seed.

The space-case in obv. 12' is not similar to the preceding obv. 10'-11'. Cammarosano translates the two spaces in obv. 10' and 11' were either an erasure or *vacat*¹³⁴, whilst for 12' the translation is 'space for a few signs.' Archi and Klengel suspect a GN to be restored at the end of the line, what they also maintained in their transcription of the tablet. But neither Cammarosano nor Giorgieri¹³⁵ acknowledge the possibility of having a GN at the end of obv. 12'. If so, then the LÚ^{MEŠ} MUN were belonging to the town of Kipitta. The town Kipitta, mentioned alongside Ušḫania¹³⁶, must have been situated near the border of the latter if both the towns were taken contiguous. Ušḫania/ Wašḫania was identified with modern İncesu by Landsberger and Finkelstein and with Nevşehir by Lewy, whilst Orlin proposed an eastern location: south of Kayseri towards Niğde. Kipitta, within or contiguous to the border of Wašḫania, is located immediately west to Kayseri by Forlanini with confidence¹³⁷. Although his explanation of Kappitta/Kapitta ≠ Kipitta is poignant and comprehensible but why Kipitta must be situated immediately west to Kayseri remains unclear. The uncertainty is also strengthened with the fact that no Hittite inventory mention Kipitta jointly with Mašīkà, Forlanini's Kaisareia/Kayseri. Nevertheless, if the aforementioned sources are reliable, then it can be inferred that the LÚ.MEŠ MUN were probably living in Kipitta and had access to salt sources nearby the town. Carnevale and Torri *passim* Barjamovic 2011 suspect the Wašḫania-Kipitta salt-men associated with Tepesidelik salt mine and also had an access to the salt of Seyfe Gölü which is more convincing¹³⁸.

The district of Tapikka must have been dedicated more than 10 lines in KBo 12.53+ that commences from rev. 37' after the incipit 'In the town Gaššia (the inventory) is completed'. But after rev. 48' the tablet breaks off and the incipit for Tapikka is lost. However, rev. 38'

¹³⁴ See commentary for obv. 11': 'the traces of a wedge at the end of the line, drawn as such in the hand copy, are not visible on the photo'. *ibid*, pp. 288.

¹³⁵ Personal communication dated Mar 4, 2026.

¹³⁶ *RGTC* 6, pp. 210.

¹³⁷ Landsberger 1954, pp. 127 and Finkelstein 1956, pp. 104; Orlin 1970, pp. 87; Forlanini 1992, pp. 174.

¹³⁸ Carnevale and Torri 2022, pp. 312.

mentions the supply by the LÚ.MEŠ MUN of Ḫappala for the Storm God and other gods of the district:

rev. 38⁶ 3 GU₄ ÉRIN^{MEŠ URU} *iš-ḫu-pí-it-ta pé-eš-ká[n-z]i* 20 UDU LÚ^{MEŠ} MUN ^{URU} *ḫa-ap-pa-la* [*pé-eš-kán-zi* (?)]

rev. 38⁶ The troops of Išḫupitta regularly supply 3 oxen. The LÚ.MEŠ MUN of Ḫappala [regularly supply (?)] 20 sheep.

Ḫappala, different from Ḫapalla in Arzawa¹³⁹, is a town in Tapikka (identifiable to modern Maşat Höyük) in the east of Ḫattuša. The other towns mentioned in the incipit of Tapikka i.e. Gaggaduwa, Zapīṣḫuna, Ištarwa and Anzilia are customary to take as constituent of the district itself what Forlanini opposed¹⁴⁰. Nevertheless, it can be assumed after Forlanini that even if the towns mentioned were not confined within the border of the Tapikka from the beginning, at least they were included within the district by the reign of Ḫattušili III. Though Ḫappala is not surely located within the boundary of Maşat Höyük yet but the connection of Maşat Höyük and salt has already been established by other administrative texts from the settlement¹⁴¹.

obv. 1 41 ½ MUN ^m[

obv. 2 1 ME 105 MUN ^mx[

obv. 3 89¹ MUN ^m[

obv. 4 83 MUN ^mm[a[?]-

bd. ŠU.NIGIN 2[+1] M[E]+ 10+ [8] [1/2

obv. 1 41 ½ (sacks) of salt

obv. 2 105 (sacks) of salt

¹³⁹ For Ḫapalla in Arzawa see *RGTC* 6, pp. 80; for location see Gurney 1992, pp. 220; for recent philological observation see Gander 2017, pp. 269f.

¹⁴⁰ Forlanini 2002, pp. 259.

¹⁴¹ Mst 77/8= HKM 114 in del Monte 1985, pp. 134.

obv. 3 89 (sacks) of salt

obv. 4 83 (sacks) of salt

bd. Grand total of 318 [1/2 (sacks) of salt...]

In his transliteration, del Monte situates 𐎶𐎶𐎶𐎶 within Maşat Höyük and argues the city to be a major supplier of salt in Tapikka. But he could not provide a modern geographic location for the city within the boundary of Maşat Höyük. Strikingly Carnevale argues this Happala is a scribal error or an alternative spelling of 𐎶𐎶𐎶𐎶, a city mentioned in other letters from Maşat but also falls outside the centre of Tapikka. Carnevale situated this 𐎶𐎶𐎶𐎶 in the Sivas province, SE of Maşat Höyük. Another possibility argued by Carnevale is that, if the LÚ.MEŠ MUN were not indigenous to 𐎶𐎶𐎶𐎶, they might have obtained an eastward migration from somewhere in west to provide specialised labour¹⁴². Nevertheless, Carnevale locates this kingdom of 𐎶𐎶𐎶𐎶 in the region of Acıgöl between the provinces of Denizli and Afyonkarahisar. The LÚ.MEŠ MUN were possibly accessing the Acıgöl lake, the second largest lacustrine salt deposit after Tuz Gölü in Turkey¹⁴³.

Another inventory mentioning the cultic revival measures taken by 𐎶𐎶𐎶𐎶 III in the Hittite east is the so-called ‘Kayalıpınar-Şamuha’ tablet. The intricacy and uniqueness of Kp 14/95+ lie in the fact that every allocation of offerings or supplies to a certain temple by ‘His Majesty’ has been documented and determined by wooden *kwanzattar* boards in the dossier of the local temple as well as those from the central archive in 𐎶𐎶𐎶𐎶. The allocations determined in the 𐎶𐎶𐎶𐎶 boards are oftentimes more intricate and laudatory in details than the provisions recorded in (or requested by?) the local temple dossier¹⁴⁴.

¹⁴² Carnevale and Torri 2022, pp. 311.

¹⁴³ Carnevale 2018, pp. 457-66 and 2020, pp. 80-81.

¹⁴⁴ Comparing the details of provisions in obv. i 1'-12 (the local dossier) and obv. i 13'-24' (the central archive, determined in and brought from 𐎶𐎶𐎶𐎶 by ^mUkkura) may shed light on the intricate and laudatory provisions that the central authority envisaged for the local cults. It was elsewhere argued by Cammarosano 2018 (on KBo 12.53+, pp. 272) that 𐎶𐎶𐎶𐎶 III was indeed a charismatic ruler who tried to obtain the most out of the districts entrusted to him during the reign of Muwatalli II and Muršili III, and the present inventory is no exception to it. But the existence of a central archive in this text points out that the current inventory was composed following 𐎶𐎶𐎶𐎶's coronation as the sovereign but not during his governorship.

The monthly allocation for the festival of the Storm God of Lightning and the Sun Goddess of Arinna is mentioned between obv. i 25' and i 50'; amongst them, obv. i 25'-32' are assigned to the allocation recorded in the wooden board of the local temple, whilst the obv. i 33' - 50' are dedicated to the provisions allocated by Ḫattuša. The Ḫattuša inventory first records the monthly exploit of sources and then calculates an annual expenditure assigned to the temple. The 72 sheep allocated annually to the monthly festivals (6 sheep a month) were assigned to the frontier post governor of Šamuḫa, 'Palace of the House of His Majesty' in Kummarna, and Palace of Karaḫna respectively. This allocation was ascertained by Muwatalli II'. The following obv. i 51' - obv. ii 8 mention the annual festival of the same gods and the necessary so and so number of sheep were assigned only to Kummarna and not to other parties. Noteworthy is the mention of the :*lapana*- of Kummarna which was responsible for supplying the sheep of 'the Palace of the House of His Majesty'. Usually, it is the LÚ^{MEŠ} *lapanalli*- who were responsible for flocking and supplying the sheep and dairy products in cultic inventories discussed herein. The mention of :*lapana*-(aš) instead of LÚ^{MEŠ} *lapanalli*-(aš) here is striking. The possibility is that :*lapana*- in obv. i 40' is the metonym for LÚ^{MEŠ} *lapanalli*- that enumerates those associated with the saltlick, if not, then it could also be possible that :*lapana*- is referred to as an institution supervised under the Palace of Kummarna: after Giorgieri¹⁴⁵. Nevertheless, both rev. are as follows:

- obv. i 39' *nu* GU₄^{HIA} KUR *a-am-pa-ra-aš kat-an ti-ia-an-za*
- obv. i 40' *A-NA* UDU^{HIA}-*ma* ^{URU}*ku-um-mar-na-aš la-pa-na-aš*
- obv. i 41' KUR ^{URU}*ša-mu-ḫa-aš-ša kat-an ti-ia-an-za*
- obv. i 42' ŠÀ.BA 24 UDU^{HIA} EN *MAD-GAL₉-TI* ^{URU}*ša-mu-ḫa*
- obv. i 43' *pé-eš-ke-ez-zi* 24 UDU^{HIA}-*ma* ŠA É.GAL É ^dUTU-ŠI
- obv. i 44' 24 UDU^{HIA} ŠA É.GAL ^{URU}*ka-ra-aḫ-na*
- obv. i 45' ^{URU}*ku-um-mar-na-aš la-pa-na-aš pé-eš-k[e-e]z-zi*
- obv. i 39' and for the oxen the land of Ampara is appointed

¹⁴⁵ Personal communication dated Mar 11, 2026.

- obv. i 40‘ for the sheep, the saltlick of Kummarna’
- obv. i 41‘ and the land of Šamuḥa are appointed
- obv. i 42‘ of these, 24 sheep by frontier post governor of Šamuḥa
- obv. i 43‘ are regularly supplied, 24 sheep by the Palace of the House of His Majesty
- obv. i 44‘ 24 sheep by the Palace of Karaḥna
- obv. i 45‘ the salt-lick of the land of Kummarna regularly supplies

The following section determines the allocation for the yearly festival for the Storm God of Lightning and the Sun Goddess of Arinna.

- obv. ii 6‘ *ki-nu-na* ^{LÚ}UGULA.10 A-NA GU₄ KUR *am-pa-ra-an* <*kat-an*> *da-a-iš*
- obv. ii 7‘ A-NA UDU-*ma* ^{URU}*ku-um-mar-na-an* :*la-pa-na-an* [obv. ii 8‘: *kat-an da-a-iš*]
- obv. ii 6‘ But now the Commander of the Ten <ap>ointed the land of Ampara for the oxen
- obv. ii 7‘ for sheep the saltlick of the land of Kummarna [obv. ii 8‘: is appointed]

The inventory proceeds further and assigns the supply of sheep to the ‘people of Kummarna and the salt-lick of the Palace of the House of His Majesty’ for the ‘SUM *itkamna*’ festival for the Storm God of Lightning. It would be no exaggeration to take these ‘people of Kummarna’ as the ^{LÚ}^{MEŠ} *lapanalli-* of Kummarna.

- obv. ii 13‘ ‘2?’¹ UDU-*ma-kán* ^{LÚ}UGULA.10 EGIR-*an-da* *da-a-iš* [(vacat)]
- obv. ii 14‘ [*n*]a-*aš-kán* A-NA ^{LÚ}^{MEŠ} ^{URU}*ku-um-mar-na* :*la-na-n[i]*
- obv. ii 15‘ ŠA É.GAL É ^dUTU-ŠI *ša-ra-a IŠ-BAT*
- obv. ii 13‘ 2 additional sheep the Commander of Ten fixed (as offering and)
- obv. ii 14‘ assigned it to the people of the land of Kummarna (and?) the saltlick of

obv. ii 15‘ the Palace of the House of His Majesty

The same allocation was ascertained again in obv. ii 22‘ and 23‘ for the Festival... for the Storm god of Lightning.

obv. ii 22‘ ʽ4ʽ UDU^{HLA}-*ma-kán* LÚ^{MEŠ} UGULA.10 EGIR-*an-[da da-a-iš]*

obv. ii 23‘ [*n*]a-*aš-kán* A-NA LÚ^{MEŠ} URU^{URU}ku-*[um-mar-na :la-pa-ni]*

obv. ii 24‘ [Š]A É.GAL É dUTU-ŠI [*ša-ra-a IŠ-BAT*]

obv. ii 22‘ 4 sheep were fixed by the Commander of Ten people

obv. ii 23‘ addition[ally] and assigned to the people of Ku[mmarna (and?) the saltlick] of

obv. ii 24‘ the Palace of the House of His Majesty

The reverse¹⁴⁶ of the tablet is dedicated to various festivals of the Sun Goddess of Arinna and the necessary expenditure for the celebrations. The tablet concludes with a grand total of the exploits where the LÚ^{MEŠ} *lapanalli-* of Ḫaryaša are stated as regular supplier of sheep and salt. At the colophon of the tablet, the parties associated with this cultic inventory validate the expenditure determined by the local dossier and the central archive. Noteworthy is the omission of the Frontier Post Governor of Šamuḫa and the Palace of the House of His Majesty from the list of emissaries countersigned.

rev. iv 41‘ 18 UDU^{HLA}-*ma* ʽ3ʽ PA ʽMUN-iaʽ

rev. iv 42‘ [L]Ú^{MEŠ} la-ʽpaʽ-[na]-ʽli-ušʽ URU^{URU}ḫar-ia-ša pé-eš-kán-zi

rev. iv 41‘ 18 sheep and ʽ3ʽ PARĪSU-measures ʽof saltʽ

rev. iv 42‘ the [L]Ú^{MEŠ} laʽpaʽ[na] ʽlliʽ- of the land of Ḫaryaša regularly supply

¹⁴⁶ rev. iii 4‘-6‘ also mention a supply by the saltlick (of?). The upper portion of the column is missing and is followed by a large gap. Due to the uncertainty of decipherment and very fragmentary condition the lines are hereby out of the discussion. For transliteration and translation see Cammarosano 2018, pp. 392-93. A risky endeavour would be to connect the saltlick with preceding Šamuḫa in rev. 2‘ but the present author refrains to do so.

As the geographic setting of Kp 14/95+ is unmistakably situated in Kayalıpınar-Šamuḫa after Reiken, both Kummarra and Ḫaryaša must also be located within the trajectory. The mention of Karaḫna in obv. i 44' just before Kummarra in obv. i 45' further narrows down the span as it was identified as a settlement around modern Sulusaray by Barjamovic and Mouton¹⁴⁷. For Kummarra, Reiken refers to the namesake river Kummarra (pointed out by Forlanini) and its associated mention with the protective deities of the city of Šarišša and mount Šunnara in KBo 2.1 i 49' f. The tablet was found from Karakuyu, modern Pınarbaşı of Kayseri which led her to locate Kummarra around the settlement. According to Reiken, the supplies from Kummarra was transferred to Šamuḫa through the river Kızılırmak, however, she keeps the question open on the connection between the river Kummarra and the town of Kummarra¹⁴⁸. Convincingly, Kayseri indeed had some rock-salt quarries (see above) during the Hittite realm what might have been exploited by the people of Kummarra¹⁴⁹.

A striking mention of a city Lapana comes in KUB 38.1+. This cult inventory with the description of cult images or *Bildbeschreibung* was composed between the reign of Muṣili II and Tudḫalia IV, likewise KUB 38.3, if the scribe was only one and the same as Cammarosano suggests¹⁵⁰. The inventory records the cult imageries, shrines, personnel and other agencies associated with the towns of Tammeka, Kunkunia, Wianawanta, Tiura, Pirwaššuwa and Lapana. Like the city Lapana, Iyaya had another major cult centre in Tiura which is discussed in the succeeding paragraphs. The rev. iv starts after a long gap:

- rev. iv 1' ^{URU}la-pa-na ^di-ia-^ṛia¹-aš DINGIR-LIM-tar (erasure)
- rev. iv 2' 1 ALAM GIŠ MUNUS-TI TUŠ-an ^ṛ:¹ḫu-u-pí-ta-a-u-wa-an-za ŠA 1 [SIG.KUŠ]
- rev. iv 3' SAG.DU-SÚ KÙ.SI₂₂ GAR.RA ^ṛNÍ¹.TE^{MEŠ4}-ma GIŠDAG-iš-ša NAGGA
GA[R.RA]
- rev. iv 4' 2 UDU.KUR.RA GIŠ NAGGA ^ṛḫa¹-liš-ši-ia-an A-NA DINGIR-LIM GAM-an

¹⁴⁷ Barjamovic 2011, pp. 151, 154 and 282-84 and Mouton 2011, pp. 101-11. However Carnevale provides a NE location of Karaḫna in the Niksar valley see Carnevale 2020, pp. 65-76.

¹⁴⁸ Reiken 2014, pp. 50.

¹⁴⁹ For Ḫaryaša and its proximity to the city of Durmitta see above.

¹⁵⁰ Cammarosano 2018, pp. 306.

- rev. iv 5' ZAG-na-za GÙB-la<-za> TUŠ-an-zi 1 TI₈^{MUŠEN} NAGGA GAR.RA
- rev. iv 6' 2 ^{URUDU}GIDRU 2 GAL ZABAR Ú-NU-UT DINGIR-LIM Ì.GÁL-iš
- rev. iv 7' É DINGIR-LIM GIBIL-ši^{LÚ} SANGA-ši^{LÚ} KUŠ₇ an-na-al-liš
- rev. iv 1' Town of Lapana. Iyaya: the divine image
- rev. iv 2' 1 statuette of wood, of a woman, seated; she is veiled (the statuette's height is)
1 [short cubit]
- rev. iv 3' head plated with gold, limbs and throne are pla[t]ed with tin
- rev. iv 4' 2 wild sheep made of wood, plated with tin, seated under the goddess
- rev. iv 5' right and left (of her), 1 Eagle, plated with tin
- rev. iv 6' 2 copper scepters (and) 2 bronze cups as accoutrements of the goddess
- rev. iv 7' (she has) a new shrine, as a priest (or: and) a new chariot-fighter, in place since
of old.

The URU *lapana* has its only mention in KUB 38.1+. The geographic setting of this cultic inventory is situated in central Cappadocia after Forlanini¹⁵¹. CTH 225 mentions Tiura and Pirwaššuwa alongside Wašḫania in the land grant of Šahurunuwa. Wašḫania was located in central Cappadocia with certainty by scholars (see above). By following along, one can also locate both Tiura and Pirwaššuwa around the same trajectory. Cammarosano connected the cult of Pirwa with the town of Pirwaššuwa elsewhere, whilst, Forlanini *passim* Güterbock connected the city with mount Pirwašši in a broken context of the Annals of Šuppiluliuma¹⁵². IBoT 2.131, Urḫi-Teššup and the vineyards of Pirwa, and other cult inventories establish a connection between mountainous terrains and the cult of Pirwa. Similarly, Tiura and Lapana, connected to the goddess Iyaya, presumably the spring/ nature goddess after Taracha and Giusfredi, must also be located in the mountainous terrains to be her major cult centres¹⁵³.

¹⁵¹ Forlanini 2009, pp. 45 took a parallel to KUB 38.6/10 and KUB 2.7/13 to ascertain the location of KUB 38.1+.

¹⁵² *ibid passim* Güterbock 1956, pp. 64; fragm. 11 A ii, 13-15.

¹⁵³ Taracha 2009, pp. 106-7; Haas 2015, pp. 502; Giusfredi 2019, pp. 117.

Deducting in this way also strengthens the possibility of Lapana being situated in central Cappadocian terrains, somewhere between Yozgat in north and Kayseri in south.

Another supply of sheep by the salt-men is mentioned in KUB 38.19+ IBoT 2.102 (CTH 527) obv. i 5'. The cult inventory is another *Bildbeschreibung* and a constituent of the Lallupiya-Ištanuwa corpus. The KUB 38.19+ is not a festival texts unlike the other tablets of this corpus but an offering list to the Storm God of Ištanuwa¹⁵⁴.

obv. i 5' ʽŠU.NÍGINʽ 30 UDU LÚ^{MEŠ} E-PIŠ MUN p[é-eš-kán-zi ...]

obv. i 5' The LÚ^{MEŠ} E-PIŠ MUN [usually] g[ive] 30 sheep

No provenance of these LÚ^{MEŠ} MUN was referred in the inventory, however, obv. i 6' mentions of the town Šukzia in reference to the people of the palace: LÚ^{MEŠ} É.GAL URUʽšu¹-uk-zi-ia x [...]¹⁵⁵.

The first amongst the two tablets mentioning a suspended shipment of salt is KBo 14.142+ KBo 64.356 (CTH 698). The obv. iii 29' mentions about the salt shipment from Kawarna in wooden wagons. This tablet speaks about the necessary supplies obtained from different cities for the cult of Teššup and Ḫebat of Aleppo. In obv. iii 29' and 30' the tablet mentions the shipment of Kawarna salt is now suspended.

obv. iii 29' IŠ-TU ʽMUNʽ URU¹ka-wa-ar-na-az 1-NU-TUM GIŠMAR.GÍD'.DA []

obv. iii 30' pé-eš-ker ki-nu-na-at Ú-UL pí-an-zi kar-aš-ša-a[n]

obv. iii 29' a wooden cart with ʽsaltʽ from the city of Kawarna

obv. iii 30' they used to supply (but now) they no longer give this: it has been cut off

Kawarna has its mention in KBo 16.83 for the cult offerings for the Ištar of Laḫuwazantia and in KBo 13.234+ KUB 51.69 for the cult offerings for an unspecified deity¹⁵⁶. KBo 13.234 has

¹⁵⁴ Mouton 2016, pp. 122.

¹⁵⁵ If the translation to be taken as 'the salt makers [usually] g[ive] 30 sheep (and) the people of the palace of Šukzia (supply so and so)' then it is plausible to connect the salt makers with the same town. Šukzia is mentioned in CTH 13, dated to Muršili I, in reference to the invasion by the Hurrians who matched westward from Hatra to Šukzia and Hurma in Eastern Anatolia: Gander 2017, pp 264. Šukzia is located in Boybeyipınarı near Adıyaman in SE Anatolia by Bossert 1959, pp. 273.

¹⁵⁶ RGTC 6, pp. 204 and RGTC 6/2, pp. 77.

the mention of Kawarna with the cult of Zawalli and the cities of Zithara and Hanhana. Carnevale and Torri interpret Kawarna to be the starting point of an ancient salt trade route what later might have been disrupted during the time KBo 14.142+ was drafted, especially, when the area north/ northwest of the Hittite heartland was ravaged by the Kaška people. Hanhana was taken as İnandıktepe by Alp, Laroche proposed a northward location in Çankırı whilst Forlanini the site of Alaca Höyük. Corti took Çorum as Hanhana in reference to the KBo 23.89++ itinerary which enumerates king's sojourn from Hanhana to Nerik in four days. Camatta's proposition of an area between Çorum and Merzifon is also convincing due to Hanhana's mention with Durmitta in KBo 17.13+¹⁵⁷. For Zithara the location was given near Çorum by Cornelius, whilst von Schuler proposed an eastward location, between Zippalanda and Arinna. Corti proposes the area of Cemilbey at the confluence of Çorum Çay and its main tributary Alaca owing to the fact that Zithara was situated near a crossroads that connect Hattuša in SW with Hanhana in NW and Ištaḫara in NE¹⁵⁸. However, having reiterated the current state of research it is convincing to take a location of Kawarna somewhere between Çorum and Merzifon.

The next tablet concerning a suspended shipment is IBoT 2.129. Carnevale and Torri enumerate this tablet to be the unique one to mention the city of Duḫdušna¹⁵⁹. The rev. 12'-15' mention the salt shipment from the city of Duḫdušna is now suspended.

rev. 12' GEŠTIN-ia-wa A-NA DINGIR-LIM ^{URU}na-ḫi-ta-za ^{URU}ḫi-li-ik-ka₄-za pé-e
 'ḫar-ker'

rev. 13' ki-nu-un-ma-wa-ra-at kar-aš-ša-nu-er MUN-ia-wa A-NA DINGIR-LIM

rev. 14' ^{URU}du-uḫ-du-uš-na-za pé-e ḫar-ker ki-nu-un-ma-wa-kán UN^{MEŠ}-uš

rev. 15' A-NA ^{LÚ.MEŠ}KUŠ₇.KÙ.SI₂₂ pár-ra-an-da pa-a-er MUN-ma kar-ša-nu-
er

rev. 12' Wein lieferte man der Gottheit aus Naḫita und aus Ḫilika

rev. 13' jetzt aber haben sie es unterlasen. (Auch) Salz lieferte man der Gottheit

¹⁵⁷ See Corti 2017, pp. 222-23 *passim* Laroche 1985, pp. 92-95; Forlanini 2008b, pp. 164-65; and Camatta 2006, pp. 263-70.

¹⁵⁸ Corti 2017, pp. 221.

¹⁵⁹ Carnevale and Torri 2022, pp. 307, n. 22.

rev. 14' (aus) Tuḫtušna. Jetzt aber sind die Leute unter

rev. 15' die Goldknappen hinübergegangen, die Salz(lieferung) aber haben sie unterlassen¹⁶⁰

Like Duḫdušna, Ḫilika also has its only mention in IBoT 2.129 in reference to Naḫita. The latter, of a more convincing provenance, comes with the mention of ^{URU}kuwalapaša in KUB 21.6a. Naḫita was located on Taurus in the south of modern day Karaman by Forrer whilst Cornelius connected it with gr. Nagidos in the coast of Cilicia. But this Naḫita (or EIA Naḫitia) can confidently be established as Niğde after Gurney and Forlanini¹⁶¹. Thus, if any geographic value could be employed on this list the it is safe to conclude that Duḫdušna was also situated around Niğde.

A striking mention of ‘cowhide salt’ comes in the following KUB 29.1¹⁶². The text is a long inventory of Hittite invocation ritual, which is a part of a foundation ritual for a palace. The cowhide salt is interpreted by Carnevale and Torri as the salt remainder after drying up the cowhide. This interpretation goes parallel to that of Mouton who translated KUŠ. GU4 MUN as “une peau de bœuf, du sel”, i.e. cowhide salt¹⁶³. Whereas Görke took it as two different elements, viz. cowhide and salt¹⁶⁴. Though Carnevale and Torri keep the possibility open for the latter interpretation, but the present author relies on Görke’s interpretation more. One may argue the ritualistic context of the ingredient, but if so, then the provenance is unique and only of its kind. However, the transcription is as follows:

obv. iv 4' IŠ-TU É.GAL-LIM-ma ki-i da-an-zi 1 wa-ak-šur Ì.ŠAḪ

obv. iv 5' 1 wa-ak-šur LÀL 1 GA.KIN.AG 1 EM-ŠÚ SÍG BABBAR SÍG GE₆

obv. iv 6' 1 SA₂₀-A-TU BAPPIR 1 SA₂₀-A-TU DIM₄ ^{GIŠ}ša-ma-ma ^{GIŠ}GEŠTIN.ḪÁD.DU.A

obv. iv 7' ^{GIŠ}le-e-ti ^{GIŠ}šu-wa-i-tar KUŠ GU₄ MUN ma-ši-wa-an-ša-an

¹⁶⁰ rev. 12' wine delivered to the deity from the cities of Naḫita and Ḫilika/ rev. 13' now they refrained from supplying it. (Also) Salt delivered to the deity/ rev. 14' (from the city of) Duḫdušna, (but) now the people are/ rev. 15' over the gold-miners, the salt supply is refrained: Laroche 1961 in *RHA* 19, pp. 88 (translated from German by the present author).

¹⁶¹ Gurney 1997, pp. 137 and Forlanini 1998, pp. 230-240, n. 73.

¹⁶² For palaeography, dating, duplicate, parallel and thematic orientation see Torri and Görke 2013, pp. 282-300.

¹⁶³ Mouton 2016, *LAPO* 21, pp. 115; Carnevale and Torri 2022, pp. 313.

¹⁶⁴ Görke 2017, *Ein Palastbauritual (CTH 414.1)* hethiter.net/: CTH 414.1 (INTR 2017-01-12).

- obv. iv 8' *ḥa-aš-ši-i an-da ḥa-an-da-et-ta-ri*
- obv. iv 4' This is taken from the palace: a *wakšur* measure of lard
- obv. iv 5' a *wakšur* measure of honey, a cheese, a (measure of) leaven, white wool, black wool
- obv. iv 6' a *SŪTU* measure of beer bread, a *SŪTU* measure of malt, of *šamama*- nuts, raisins
- obv. iv 7' of *lēti* nuts, of *šuwaitar* nuts, of cowhide salt (or, of cowhide, of salt) as much
- obv. iv 8' as can be found in the hearth

As the geographic setting of this inventory is situated in Ortaköy-Šapinuwa¹⁶⁵, it is customary to take that the salt was manufactured there.

The next KBo 26.213 (CTH 530) is a fragmented cult inventory that probably mentions the LÚ.MEŠ MUN of Šarišša-Kuşaklı Höyük. The inventory is mostly dedicated to the Storm God of Šarišša with a mention of the Sun Goddess. The LÚ.MEŠ MUN were offering 1 KA.GAG vessel of ..., and 1 BÁN Measure of milk:

- obv. ii 1' [...] x 1 ^rDUG KA¹. [GAG ...] x [...]
- obv. ii 2' [...] ^r1 BÁN¹ GA
- obv. ii 3' [... LÚ^{MEŠ(?)} URU¹ *ša-r*] e-^r eš¹-ša pé-eš-kán-zi
- obv. ii 4' [... LÚ^{MEŠ} MU] N[?] ú-e-te-er
- obv. ii 1' [...] x 1 ^rKA¹. [GAG] ^rvessel¹ (of) ...
- obv. ii 2' [...] ^r1 BÁN (measure of)¹ Milk
- obv. ii 3' [... the people of Šar]išša regularly supply
- obv. ii 4' [... the salt-men[?]] bring to...

A rare mention of *lapana* salt with Sumerian determinative MUN comes in KBo 49.168. The tablet is fragmented with its illegible incipit. The obv. 6'-9' mention about the offering made to the deities by a salt-man (LÚ MUN). It is a rare mention of a single person as salt-man and

¹⁶⁵ See Süel and Soysal 2007, pp. 1-22 for the ritual setting of CTH 725 and 726; for parallel see Torri and Görke 2013, pp. 287-88.

not a group of workers or specialists in salt quarrying. If this LÚ MUN is not taken as a polyvalence or scribal error to LÚ^{MEŠ} MUN, then it is arguably the unique mention of a single salt-man.

- obv. 6‘]x ʾZÌ.DA 3 GAL 2 DUG KAŠ^{1(?)} x[]x[
- obv. 7‘ x x A-NA LÚGILIM [IGIʾ]-ʾan-da¹ [
- obv. 8‘ nu-kán DINGIR^{MEŠ} PA-NI MUN la-pa-x[
- obv. 9‘ LÚ MUN [] INA É DINGIR-LIM ha-x[
- obv. 10‘ []x e-eš-zi ki-nu-[
- obv. 6‘]x ʾflour 3 cups, 2 vessels of beer^{1(?)} x[]x[
- obv. 7‘ x x the wreath binder goes to the opposite
- obv. 8‘ direction of the deities, :lapana salt,
- obv. 9‘ by the salt-man, in the temple
- obv. 10‘ is placed

It is no way a surprise that the Hittite corpus currently available at scholars’ disposal yields much more mentions (and plausibly, toponyms) of salt than those discussed herein. The reason behind selecting these texts is to enumerate how salt sources were dispersed throughout Anatolia and how they were minutely controlled under royal and/or provincial prerogatives. The exclusion of the *Bronzetafel* in this section is solely due to its seemingly conspicuous place names (not yet located with certainty) and it has been dealt separately as a royal document (see chapter 2.6.1 below). Dardeniz 2023 provides a remarkable list of locations and types of salt resources in central and north-central Anatolia what is as follows. But as enumerated above, unfortunately her study is confined to ethnological analyses (and secondary literatures) with fewer epigraphic and philological observation. Nevertheless, the list is very important to create a coherent picture known till date.

Location	Resource type	References
Çankırı	Rock salt	Karajian 1920; Taşman 1937
Balıbağ	Rock salt	Karajian 1920
Taylak	Spring saltpan	Taşman 1937

Bayat	Rock salt	Taşman 1937
Yerli	Spring saltpan	Taşman 1937
Koçeç	Spring saltpan	Taşman 1937
Çayan	Rock salt	Hamilton 1842; Karajian 1920; Taşman 1937
Alibaba (Çavuşçu Köyü?)	Spring saltpan	Taşman 1937
Boncuk	Spring saltpan	Taşman 1937
Sarıkaya (Sungurlu)	Spring saltpan	Taşman 1937
Akçakoyunlu (Sungurlu)	Spring saltpan	Taşman 1937
Baraklı (Kırıkkale)	Rock salt	Taşman 1937
Sekili (Yozgat)	Rock salt	Taşman 1937
Tepesidelik (Kırşehir)	Rock salt	Karajian 1920; Taşman 1937
Tuzköy, Nevşehir (Hacıbektas)	Rock salt	Ainsworth 1842; Karajian 1920; Taşman 1937; Barjamovic 2011
Palas (Yassıdağ)	Rock salt	Karajian 1920; Barjamovic 2011
Tuz Gölü	Lacustrine	Ainsworth 1842; Hamilton 1842; Karajian 1920

Table 1: Table showing types and location of salt resources in central and northcentral Anatolia in Bronze Age, after Dardeniz 2023, pp. 41.

Dardeniz's study can further be complemented with findings by Carnevale and Torri, not only because it is more inclined to philology and epigraphic evidences, but also because it goes further on to create a trade route that the imperial Hittites might have used. The current study, however, does not envisage such a trade/ dispersal route as it is highly speculative and author's scope and expertise in Hittite Historical Geography (or Cartography) is limited. However, a map is attached below with the place names discussed herein. The map combines the study undertaken by Dardeniz and Carnevale and Torri with the current study's topography. The map unequivocally shows Hattuša's strategic location that enabled it to supervise the salt production in central and provincial scales. The following sections are dedicated to rather a thematic treatment of the documents with occurrences of many terms of salt. Unlike Mesopotamia, the Hittite medicine corpus is precise and contains recipes transmuted from the Akkadian *ecumene*.



Map 2: Map showing salt-locales potentially exploited by the imperial Hittites. 1) Maşat Höyük-Tapikka, 2) Durmitta-Merzifon, 3) Çorum, 4) Ortaköy-Şapinuwa, 5) İskilip, 6) Bayat, 7) Çayan, 8-9) Balıbağ-Çankırı, 10) Hattuşa, 11) Yozgat, 12) Baraklı, 13) Sekili, 14) Tepesidelik, 15-16) Tuzköy-Gölşehir, 17) Tuz Gölü, 18) Aksaray, 19) Acıgöl, 20) Niğde, 21) Ereğli-Konya, 22) Yay Gölü, 23) Palas-Tuzla Gölü, 24) Pınarbaşı, 25) Kayalıpınar-Şamuha, 26) Tuzhisar, 27) Tuzlagozu, 28) Kuşaklı Höyük-Şarişsa. Map created on the basis of studies referred and personal arguments. Highlighted and numbered by the author.

2.2 Salt in Hittite Medicine

‘What is this, o gods, that you have done? A plague you have let into the land. The land of Ḫatti, all of it, is dying...’¹⁶⁶

Little harm is there to imagine this desperate plague prayer of Muršili II to the Sun Goddess of Arinna once created a perfect occasion for Güterbock’s emphatic comment, ‘there is no Hittite medicine!’ Though it is true that the advancement of medical knowledge in Ḫattuša was rather slower than that in neighbouring Mesopotamia and Egypt, it was not totally absent. It is even harder to argue that an empire that remained in its heyday for more than a couple of centuries, mostly through warfare, was totally reliant on foreign medicines and practitioners at its disposal. Arnott’s precise and valuable study not only addresses this question but goes further on to provide a thematic diagram upon which the available data on Hittite medicine can be typologically analysed and developed onwards¹⁶⁷. But his study is somewhat multifaceted and transcends the boundary of conventional ‘analytical medicine’. For example, Arnott’s reference to HL §10 i.e. legal provisions for a freeman’s head injury or KBo 10.47 i.e. dilapidated condition of Hittite drainage system does not conventionally fall under the study of medicine, at least the definition it carries in the fields of Assyriology and Egyptology. Lupo’s dissertation, on the other hand, is a marked advancement on the study of Hittite medicine, characterised by a nuanced understanding of Hittite medical corpus and a dissection of the foreign and indigenous therapeutic knowledge that prevailed and were practiced amongst the Hittites. Lupo’s dissertation develops an earlier study undertaken by Burde¹⁶⁸. Nevertheless, the present study deems to understand whether the various types of salt available in Hittite kingdom played a role in their medicine. The attestations of salt in Hittite medicine are few and can only be found in the Akkadian medical corpus found in Ḫattuša¹⁶⁹ - the mainstay of the Hittite pharmacopoeia. On the contrary, the treatments indigenous to Ḫattuša are fewer and are devoid of salt in any form. The Hittite scribes used the Sumerogram MUN to denote the salt. The absence of any Sumerian determinative like NA₄ or *emesallu*, makes it unclear whether the salt

¹⁶⁶ KUB 24.3+ obv. ii 3’/10-4’.

¹⁶⁷ Arnott 2002, pp. 41-52.

¹⁶⁸ Burde 1974 is arguably the first to collate medicine texts indigenous to Ḫattuša.

¹⁶⁹ See Lupo 2020, pp. 603-17 for the transmission of Mesopotamian medical knowledge in Ḫattuša.

was obtained as rock salt and then pounded into fine powder for treating the eyes- as it was in practice in Mesopotamia, or was made into a concoction for oral administration. Nevertheless, the attestations are as follows.

2.2.1 Akkadian Recipes in Ḫattuša

Three out of the five diagnostic texts those attest salt are therapeutic treatments against impotence¹⁷⁰ (CTH 802), ophthalmological ailments (CTH 809) and fever (CTH 811). The remaining two texts are the UDUG.ḪUL (CTH 805) and incantations (CTH 812).

KUB 4.48 deals with the treatment of a man who has lost his sexual desire (or afflicted to impotence?) in the month of Nisannu¹⁷¹.

- | | |
|----------|--|
| col. i 1 | DIŠ LÚ ŠÀ.ZI.GA <i>ina</i> ITU.BÁR.ZAG |
| col. i 2 | TIL NAM.ḪABRUD.TA NÍTA <i>ta-ša-bat</i> |
| col. i 3 | <i>kap-pa-šú ta-bá-ka-an-šú ta-ḫa-na-aq-šú-ma</i> |
| col. i 4 | <i>tu-ra-ka-aq</i> MUN <i>ta-za-ru</i> |
| col. i 5 | <i>tu-bal</i> NUMUN GIŠÚ.GÍR.ḪAB.KUR.RA |
| col. i 6 | UR.BI <i>ta-sàk ina</i> KAŠ NAG-šú-ma |
| col. i 7 | LÚ BI ŠÀ.ZI.GA TUKU-ši |
| col. i 1 | If a man's sexual desire has finished in the month of Nisan[nu]: |
| col. i 2 | You take a male partridge |
| col. i 3 | you pluck its wings, you strangle and |
| col. i 4 | flatten (it), you spread (over it) the salt, |

¹⁷⁰ The present author argues that this text deals with 'loss of libido' instead of impotence as both diagnoses commence with the formula DIŠ LÚ ŠÀ.ZI.GA, 'if a man's libido/sexual desire has finished...' and finish with LÚ BI ŠÀ.ZI.GA TUKU-ši 'this man will get libido/ sexual desire'.

¹⁷¹ For orthography and parallels see Zisa 2021, pp. 436 ff.

col. i 5 you dry (it), together with the seeds of *dadānu*-acacia

col. i 6 you pulverize (it), he drinks (it) in beer and

col. i 7 this man will get sexual desire.

The diagnosis runs further with alternative treatments (DIŠ KI.MIN, if ditto). Col i 29 yields a unique mention of *amānu* salt (MUN *amāni*). This *amānu* salt was red in colour and was used alongside a bulbous herb Ú.KUR or Akk. *nīnû* to treat the loss of libido. This plant was not available in Hattuša and received its mention only in the Akkadian prescriptions in non-Hittite script. Surprising is the absence of a scribal gloss on this plant¹⁷².

col. i 23 DIŠ KI.MIN AL.DI.RÍ.GA^{MUŠEN} *ta-ba-qà-an*

col. i 24 *ta-zar-ra-ak-ma* MUN Ú.KUR.RA

col. i 25 TAG.GA-*sú tu-bal ta-sàk*

col. i 26 *ina* ^{zi!}NÍG.ŠE.SA.A HI.HI-*ma*

col. i 27 NAG-*šú-ma* ŠÀ.ZI.GA TUKU-*ši*

col. i 28 DIŠ KI.MIN NAM.GEŠTIN^{MUŠEN} *ta-ba-qà-an ta-za-ra-ak*

col. i 29 MUN *a-ma-ni* Ú.KUR.RA *ta-la-pat*

col. i 30 *ta-sàk* ŠE ^{zi!}NÍG.ŠE.SA.A

col. i 31 [gi]Š KIŠI₁₆.H AB.KUR.RA *bá-lu₄ pa-tan*

col. i 32 [N]AG-*šú-ma* ŠÀ.ZI.GA TUKU-*ši*

col. i 23 If ditto (= man's sexual desire has finished in the month of Nisannu): you pluck
a wren

col. i 24 you eviscerate (it) and you apply salt and *nīnû*-plant (on it)

col. i 25 you dry, you pulverize.

col. i 26 you mix (it) with toasted grain and

col. i 27 he drinks this and he (var.: that man) will get sexual desire.

¹⁷² For a similar scribal gloss on *šalabitu*-plant see KUB 37.1 rs 9'.

- col. i 28 If ditto (= man's sexual desire has finished in the month of Nisannu): you pluck
and eviscerate a NAM.GEŠTIN-bird
- col. i 29 you apply *amānu* salt (and) *nīnû*-plant
- col. i 30 you pulverize (it) with barley, roasted flour,
- col. i 31 mountain *dadānu*-[plan]t, on an empty stomach
- col. i 32 [he d]rinks (it) and he will get sexual desire.

KUB 37.80 also deals with the loss of libido in a man but due to the broken condition of the incipit it is not clear whether the loss occurs in the month of Nisannu. But as KUB 37.80 1'-16' (Manuscript B of *nīš libbi* N in Zisa 2021) is a parallel to KUB 4.48 col. i 1-i 27 (Manuscript A of the same), probably KUB 37.80 also deals with a person afflicted to *nīš libbi* in the month of Nisannu.

- 11' KI.MIN AL.DI' <<IŠ>>.RÍ.GA^{MUŠEN} *ta-[ba-qà-an]*
- 12' [] / MUN ^ÚKU[R.R]A *tá-lap-pa-at-[šú]*]
- 13' [] / ZA BI [ŠÀ.ZI.G]A TUKU-*ši*
- 11' [If] ditto, you p[luck] a wren
- 12' [] salt (and) *nīnû*-plant
- 13' [] will get sexual desire.

As for CTH 809, it is a collection of Akkadian formulae for eye diseases. Three fragments of them viz. KUB 37.3, 37.13, and 37.15 attest the use of salt as an ingredient for preparing a concoction for the affected eye. The latter two fragments are transcribed and edited by Savino¹⁷³, whilst KUB 37.3-9, according to Schwemer, probably belongs to the same tablet as KUB 37.2¹⁷⁴.

KUB 37.3

- 3' [] IGI^{ME.EŠ}-*šú iṣ-ša-nu-du*
- 4' [] -*l]u UZU^{ME.EŠ}-{šú} ši-im-ma-ta*

¹⁷³ Savino 2023 pp. 135-38.

¹⁷⁴ For parallels and orthography see Schwemer 2013, pp. 156 ff.

5‘	[	B]I <i>ka-ši-ip</i>
6‘	[	] <i>u ÉLLAG ša UDU.NÍTA ša GÙB</i>
7‘	[	] <i>ta-sàk a-na ŠÀ A^{ME.EŠ}</i>
8‘	[	<i>i-ra]-muk-ma KI A MUN u NAGA</i>
9‘	[	]-šú <i>tu-ša-ad-ma ŠUB-ma</i>
10‘	[	] <i>i-ne-eš</i>
3'	[If a man ...] his eyes keep rolling continuously	
4'	] or his muscles are paralyzed (lit. (have) a paralysis)	
5'	] he is bewitched	
6'	] and the left kidney of a sheep	
7'	] you pulverize, into water	
8'	he wa]shes himself, and together with water, salt, and alkali	
9'	] his[...] you turn and throw	
10'	] he will recover ¹⁷⁵	

As can be seen, the salt in 8‘ is not used for making a saline solution or as an ingredient for making an oral concoction but for a ritual cleansing of the bewitched person. KUB 37.13, a fragmented tablet, consists of a ritual offering together with a recitation and a concoction for the patient to drink. Savino *pace* Schwemer prefers to relocate it under CTH 813 or Akkadische magische Fragmente. She points out the use of *azallû* plant for the concoction, a plant potent in counteracting witchcraft and for the mental well-being of the patient¹⁷⁶.

obv. 1’	[	] x []
obv. 2’	[	] x TI- <i>qé</i>
obv. 3’	[	PIŠ ₁₀ - ^d ÍD.L]Ú.RU.GÚ
obv. 4’	[	K]I.SÌ.GA

¹⁷⁵ Trans. Giorgieri, personal communication dated: 12th May 2026.

¹⁷⁶ Savino 2023, pp. 137-8.

obv. 5'	[	ŠI]D- <i>nu</i>
obv. 6'	[	ú]ᵀA¹.ZAL.LA NAG- <i>ma</i>
obv. 7'	[	<i>inêš</i>] (uninscribed)
obv. 8'	[	] 8 ^{kam}
broken		
rev. 1'	[	k]i? id x
rev. 2'	[	]x ŠÀ- <i>bi</i>
rev. 3'	[IGI ^{meš} -šú? <i>teqqima</i> ?]	] ki a MUN
rev. 4'	[	] x
rev. 5'	[	<i>i</i>]-ᵀ <i>ne</i> ¹- <i>e-eš</i>

obv. 1'	lost
obv. 2'	[...] you take
obv. 3'	[... ... sul]phur
obv. 4'	[... ...] funerary offering
obv. 5'	[... ...you] recite
obv. 6'	[... ...] <i>azallû</i> -plant, you give (it) to him to drink and
obv. 7'	[he will recover]
obv. 8'	] 8 th
broken	
rev. 1'	[<i>you rub</i> ?]
rev. 2'	[] into
rev. 3'	[<i>his eyes</i> ?...]... salt
rev. 4'	[lost]

rev. 5' [... ... (and) he] will recover.

KUB 37.15, on the contrary, is dedicated to the *birratu* disease¹⁷⁷. The treatment is to make a saline solution, possibly for ophthalmic application, which is followed by the preparation of a concoction with butter. The text breaks after rev. 7.

r. col. 1'	BAD LÚ	IGI ^{meš} -šú [	]
r. col. 2'		ina Ì.NUN [	]
r. col. 3'		TI.[LA	]
r. col. 4'	[BA]D LÚ	IGI ^{meš} -šú bi-i[r-ra-tum (...) ašâ]	
r. col. 5'		MUN me-e x[(...) taballal	]
r. col. 6'		ina ŠU.S[I-ka?	]
r. col. 7'		ina Ì.NU[N	]

(Text breaks)

r. col. 1'	If the eyes of a man [	]
r. col. 2'	in butter [	]
r. col. 3'	he will rec[over].	
r. col. 4'	[I]f the eyes of a man [suffer from] bi[rratu-disease (...)]	you mix together]
r. col. 5'	salt, water (and)	
r. col. 6'	[... ...] with [your?] fing[er... ...]	
r. col. 7'	in butt[er...]	

(Text breaks).

Moving on to CTH 811 is a collection of two Akkadian tablets against fever, one amongst the two, i.e. KUB 37.84+ attests the use of salt to cure it.

(Frg. 1) rev. V 1 *e-ma ú-šú-ra-a-ti NINDA ab-la ša {1 SÌLA} GAR-an*

(Frg. 1) rev. V 2 *ana EGIR-ka la-a ta-pal-la-as*

¹⁷⁷ For *birratu* disease see CAD B, pp. 260 ff.

(Frg. 1) rev. V 3	<i>ni-iš DINGIR^{MEŠ} GAL-ti ana pí-šu GAR-an</i>
(Frg. 1) rev. V 4	<i>ABUL i-na e-re-bi-ka</i>
(Frg. 1) rev. V 5	<i>i-dá-na-i-dì ZÌ.DA</i>
(Frg. 1) rev. V 6	<i>ŠUB-di ù ši-ir-qà ina MÚRU-ti₄ ŠUB-di</i>
(Frg. 1) rev. V 7	<i>ù ana 2 GIŠIG^{MEŠ} ša ABUL i-dá</i>
(Frg. 1) rev. V 8	<i>ana i-dì ta-at-ta-na-an-di-ma</i>
(Frg. 1) rev. V 9	<i>ú-tam-mi-ka DINGIR^{MEŠ} GAL.GAL šá ŠÀ^Ú e-še-gi₅</i>
(Frg. 1) rev. V 10	<i>KÁ pé-te-tam la-a i-ru-ub-am-ma</i>
(Frg. 1) rev. V 11	<i>EGIR-ša na-ad-nu-ku lu-ú ta-at-tal-lak</i>
(Frg. 1) rev. V 12	<i>ana lib-bi ZÌ.DA šá in-na-aq-qú-ú</i>
(Frg. 1) rev. V 13	<i>MUN ù ZÀ.ĦI.LI^{SAR} ĦE.ĦE</i>
(Frg. 1) rev. V 1	you lay out baked bread of 1 SÌLA and set it down
(Frg. 1) rev. V 2	you shall not look back
(Frg. 1) rev. V 3	place an offering of the great gods before him
(Frg. 1) rev. V 4	(at) the gate, when you enter
(Frg. 1) rev. V 5	set down the ZÌ.DA on the right and on the left
(Frg. 1) rev. V 6	cast (it) down and scatter (it)
(Frg. 1) rev. V 7	and at the two doorposts of the gate place (it)
(Frg. 1) rev. V 8	into the hands you shall continually give
(Frg. 1) rev. V 9	I will instruct you (in the rites) of the great gods who calm the heart
(Frg. 1) rev. V 10	may no one cross the open gate
(Frg. 1) rev. V 11	afterwards, when it is set (in place), you shall go
(Frg. 1) rev. V 12	within the midst of the ZÌ.DA where they will pour (it)
(Frg. 1) rev. V 13	salt and zaḥḥīlu-resin, you shall mix

The following group consists of a two different tablets, viz. CTH 805, i.e. UDUG.ĤUL incantations (for CTH 805, see below) and CTH 812, i.e. incantations against the maladies. The division is quite self-explanatory. CTH 800-812 are grouped as Mesopotamian *medical* corpus in Hattuša¹⁷⁸. Whilst the former 3 tablets or tablet fragments are associated with medical treatments, the latter two tablets consist of incantations against maladies and are not a constituent of Mesopotamian pharmacopoeia. Nevertheless, the fragments are as follows:

KBo 9.50 (Akkadian ritual against ghost and demons: partial duplicate of KBo 36.29¹⁷⁹) obv. 10' mentions about salt. Schwemer identifies obv. 17ff., preceding the rev., consist of a diagnosis against the *bennu*-disease, whilst the rev. is of seemingly unclear nature¹⁸⁰. However, the rev. is as follows:

rev. 1	[	]x x[
rev. 2	[	]x-me-ti et-x[
rev. 3	[	]x le-sìr li-iš-še ² -[
rev. 4	[	]x i-zi-iz-ma la i-d[e-e
rev. 5	[	] ^{LÚ} a-ši-pu ARAD-x[
rev. 6	[	] i-ib-bi-ma [
rev. 7	[	]x qa-du [
rev. 8	[	] AN-e nap-ḥa-ta-ma[
rev. 9	[	]x a-na *na-qa-az*[
rev. 10	[	M]UN [?] i-pu-šu-ni x[

rev. 1 fragmented

rev. 2 fragmented

rev. 3 may he/it

rev. 4 he/it stood, and he does not know

¹⁷⁸ Lupo 2020, pp. 607.

¹⁷⁹ Schwemer 2013, pp. 155.

¹⁸⁰ Schwemer 1998, 129.

rev. 5 the *a-ši-pu*, the servant of [GN

rev. 6 he says/ does (something) and

rev. 7 at the side (of)

rev. 8 sky has flared up/is furious

rev. 9 for the *slaughter*

rev. 10 salt[?] they performed/ made

KUB 37.9 is another fragment of the tablet with a mention of salt. The fragment is a duplicate of KUB 37.55+¹⁸¹ and is a prescription against witchcraft induced illness (*šumma amēlu kašip*: if a man is afflicted with witchcraft). The obv. i 6⁺ mentions the usage of salt for treating the afflicted person, i.e. counteracting the witchcraft. Abusch and Schwemer consider the obv. too fragmentary to translate¹⁸². However the text is as follows:

obv. i 1⁺] x x [

obv. i 2⁺]-*ma-šú* [†]*šu*¹ [

obv. i 3⁺] x *mi-ḫi-ir*[?] [

obv. i 4⁺ [†]SIK]IL[?] ^{GIŠ}SINIG x [

obv. i 5⁺ GI]Š[†]EDIN.NA PA GIS[†]

obv. i 6⁺]-*ḫi a-šar-mu*^{SAR}*sic*[?] MUN

obv. i 7⁺] x KI NAGA *i-ra-muk*

obv. i 8⁺]x [†]*ti-ia-ti ina* GANAG-*šú*

obv. i 9⁺] TI.LA

obv. i 1⁺ fragmented

obv. i 2⁺ -*ma* his hand

obv. i 3⁺ uncertain

¹⁸¹ Abusch and Schwemer 2011, pp. 67ff.

¹⁸² *ibid*, pp. 79.

obv. i 4' the SIKIL plant, the SINIG wood

obv. i 5' woods from the plain

obv. i 6' in a place of salt (*mu*^{SAR}*sic* uncertain meaning)

obv. i 7' in the place of irrigated field where one soaks(?)

obv. i 8' (he) drinks it with milk

obv. i 9' (he will be cured)

These five tablets contain the mentions of salt used in diagnosis and treating patients afflicted with so and so diseases and in magical exorcisms. KBo 36.11+, the tablet fragment of CTH 805 yields a rather conspicuous transliteration of the word MUN so it is not included in the discussion. It can be assumed from the context of the prescriptions that the salt (*tābtu*, denoted by Sumerogram MUN) was mainly used in its solid, granular state to treat several physical maladies. If not, then lumps of salt were pulverised to use in concoction. In KUB 37.15, the only exception, the salt was used to make a saline solution presumably for ophthalmic application. Another point worth of discussion is to distinguish between diagnosis led therapeutic prescriptions and DÙ.DÙ.BI or magico-medical applications. The definition of DÙ.DÙ.BI is beautifully explained by Geller as:

“On the surface this appears to be a magical act without any obvious medical utility, since knots and bonds are often associated with magic. On the other hand, the distinctive pattern appears to be that magic is utilised to untie the harmful knots or bonds of demons or witches, while, by way of contrast, medical prescriptions tend to engage in knotting and binding either the patient or the *materia medica* for protective or therapeutic usage. It appears, in fact, that the act of untying is magical while the act of tying is (medical) therapeutic. From a modern perspective, there may not be any great distinction between these two acts, but from the psychological viewpoint of an ancient patient, this difference may have been quite significant.”¹⁸³

In this given context, looking at the prescriptions dealing with *nīš libbi* may turn helpful to understand the situation. The *materia medica* for treating the loss of libido in a human male shows a remarkable concentration of bodies or bodily fluids of male animal such as semen.

¹⁸³ Geller and Panayotov 2020, pp. 43 on DÙ.DÙ.BI in IGI

The use of male partridge wing in KUB 4.48 or an eviscerated wren or NAM.GEŠTIN bird or wren in KUB 37.80 is barely of a therapeutic usage. The use of entire bodies or bodily fluids from male animals to cure a sexual malady in a human male is entirely a sympathetic magic and hence a DÙ.DÙ.BI.

In conclusion, from a surface level it can be argued that both the Mesopotamian and Hittite medicine integrated empirical treatments with magical rituals and Hittite medicine is largely a localized and cursory adaptation of highly systematised Babylonian and Assyrian medicines. However, a closer look at both of the pharmacopoeia exhibits some considerable differences between the two medical traditions in terms of diagnosis and treatment. The Mesopotamian tradition is highly systematised and a collection of meticulous clinical observation by the *asû* physicians, whilst the Hittite medicine is less structurally developed as an independent tradition. The Mesopotamian tradition shows a categorization of healers as *asû* or physicians and *āšipu* or exorcists. The Hittite tradition, on the other hand is largely practiced by local ‘wise women’ and ritualists. The Mesopotamian therapy contains a detailed knowledge of internal medicine with some degree of surgical intervention, whilst the Hittite medicine is largely based on external medicine coupled with some degree of inflammatory treatment.

2.3 SALT IN ROYAL SPHERE

2.3.1 Treaty

‘And the towns of Šarmana, Pantarwanta and Maḥrimma, with fields, grounds, and meadow(s), sheep pasture, the whole :*la-pa-na-an* (and) the whole :*li-ki-in*, my father Ḫattušili gave to Kurunta, the king of Tarḫuntašša, and My Majesty Tuthaliya, the great king, has given it to him’¹⁸⁴.

The aforementioned verses are constituents of one of the most celebrated treaties of the Imperial Hittites, the *Bronzetafel*, between Tuthalia and Kurunt(i)a of Tarḫuntašša. But even before this treaty there was another diplomatic text that mention salt, CTH 52.1 (KBo 1.3 + KUB 3.17), or the peace treaty between Šattiwaza of Mittani and Šuppiluliuma I of Ḫatti. Unlike Bo 86/299, this treaty use salt as a metaphor. Interestingly this metaphor of salt only appears in the Akk. version of the (56A rev. 51) treaty and not on the Hittite version (56B)¹⁸⁵, however, the reason behind this omission is not clear. Nevertheless, the bound transcription and translation are as follows:

- rev. 49⁺ *qa-du aššati^{ti} ša-ni-ti ša a-ḫa-zu ù ni-e-nu mārē Hur-ri qa-du mimmu-ni ki-i qu-ut-ri a-na šamē i ni-il-li ki-ma ṭābtu*
- rev. 50⁺ *zēra la i-šu-ú ù ^mŠat-ti-ú-a-za qa-du aššati^{ti} ša-ni-ti ša a-ḫa-zu ù mārē Hur-ri qa-du mātātē-ni aššātē-ni ù mārē-ni*
- rev. 51⁺ *ki-ma ṭābti zēra lu-ú la ni-i-šu a-ki-i kirban ṭa-ab-ti a-na aš-ri-ni la ni-tu-ra a-na-ku ^mŠat-ti-ú-a-za šum-ma aššata^{ta} ša-ni-ta*
- rev. 49⁺ (may I, Šattiwaza) with another wife whom I might take, and we Hurrian people with our property, disappear into the sky like smoke. As salt...

¹⁸⁴ Bo 86/299 ii 4'-15', Otten 1988, pp. 16-17

¹⁸⁵ For orthography see Kitchen and Lawrence 2012, vol. 1, pp. 365 ff.

- rev. 50' has no offspring, so may (we), Šattiwaza, with another wife whom I might take, and (we) Hurrian people with our lands, our wives and our sons...
- rev. 51' like salt indeed have no offspring; (just) like a lump of (rock⁷)-salt¹⁸⁶, let us not return to our places.

This treaty has been used by many scholars to elucidate the arrival of the personal names and divine names of Indo-Iranian etymology in Ancient Near East¹⁸⁷. But one observation to be made here is the triplication of self-curses by Šattiwaza. The rev. 44'-53' of KBo 1.3 + KUB 3.17 (6^{cii} in Kitchen and Lawrence's orthography) are dedicated to the self-curses by Šattiwaza over him and the people of Mittani. The metaphors he has used are of cut-down fir tree, water of a drainpipe (?), smoke disappearing in the sky, and of salt. Though the fir tree, the water of a drainpipe, and smoke had received a formulaic single-utterance, only the metaphor of salt was triplicated. Supposedly a distinction could be made between a declaratory singular utterance of the curses and a ritualistic triplicated repetition.

The following fragment Bo 86/299 is a constituent of CTH 106 and a treaty between Tuḫḫalia IV of Ḫatti and Kurunt(i)a of the appanage kingdom of Tarḫuntašša. The fragments of CTH 106 which refer to the :*lapana-wania* or saltlick are KBo 4.10+ obv. 33'-5', and Bo 86/299 ii 8, 14. The KBo 4.10+ is a treaty between Tuḫḫalia IV of Ḫatti and Ulmi-Teššup of Tarḫuntašša, whilst the latter is between Tuḫḫalia and Kurunt(i)a. At first, the transcription and translation would be presented here, following a comparison between the nature of the two donations.

KBo 4.10+ obv. 33'-5' after van den Hout's edition¹⁸⁸:

- obv. 33' ZAG KUR ^{URU.d}U-ašša *kuiš n=ašta* LÚ.MÁŠ.GAL ŠÀ KUR^{TI} *lē paizzi mānn=a IŠTU* KUR ^{URU.ID}hūlaya *šalli :la-pa-ni :wa-ni-ya pennanzi*
- obv. 34' *nu=šši=kan :la-pa-na-li-ya-an-za lē danzi ANA LUGAL KUR ^{URU.d}U-ašša=(a)t piyan MUN=ma daškiddu ^{URU.Š}Sarmanann=a URU-an IŠTU A.ŠÀ A.GÀR 'Ú.SAL'*

¹⁸⁶ The present author takes *kirban ṭābti* as a lump of salt, for *kirbānu* as lump (of salt, stone, metal or slag) see CAD K, pp. 401.

¹⁸⁷ Liverani 2014, pp. 272.

¹⁸⁸ Van den Hout 1995, pp. 30-33.

- obv. 35‘ Û *IŠTU RĒT* UDU :*la-pa-na-an-n=a* *ḫumantan* LÚ.GAL.GAL ANA LÚ.GAL
KUR ^{URU.d}U-*tašša piḫḫun* ANA MUN ^{URU}Šarmana=*kan tamaiš* UN-*aš anda lē*
p[ai]ddu
- obv. 33‘ As for the territory of the country of Tarḫuntašša, let no goatherd enter the
country! And if they drive there to the great :*la-pa-ni :wa-ni-ya* [Kitchen and
Lawrence (2012)¹⁸⁹: upland pasture and salt-lick (addendum by the present
author)]from the country of the Ḫūlaya river
- obv. 34‘ let them not take the :*la-pa-na-li-ya-an-za* [Kitchen and Lawrence (2012):
pastures-(rights)] away from him: it has been given to the King of Tarḫuntašša.
And let him take the salt [Güterbock and Hoffner (1980): salt lick; Kitchen and
Lawrence (2012): salt]!
- obv. 35‘ The town of Šarmana with its fields, grounds, and meadow(s), and with sheep
pasture and the whole :*la-pa-na-an* [Kitchen and Lawrence (2012): upland
pasture²] I, the great king, have given to the king of Tarḫuntašša. Let no other
man enter the salt [Güterbock and Hoffner (1980): salt lick; Kitchen and
Lawrence (2012): salt] of Šarmana!¹⁹⁰

Kitchen and Lawrence’s edition seems inconsistent in translating :*lapana-wania* as upland pasture and salt-lick and :*lapanalianza* as pasture-rights. The Luwian :*wania* cannot singularly be translated as ‘salt-lick’ if :*lapana* is taken as ‘summer pasture’ or simply ‘pasture’. A further passage from the treaty KBo 4.10+, obv. 44-45 mentions the Luwian :*la-pa[-n]a-al-la-ḫi-ti* is attested in the fragmentary tablet KUB 40.69, obv. 6. It was later joined to KBo 4.10+ by Hoffner. But as the translation of :*la-pa[-n]a-al-la-ḫi-ti* is uncertain, it is excluded from the discussion.

The following Bo 86/299 ii 8, 14 is a constituent of the treaty between Tuthalia IV and Kurunt(i)a.

- ii 4‘ ZAG KUR ^{URU.d}U-*tašša=ya kuiš* KUR ^{id}ḫūlayaš *n=ašta* LÚ MÁŠ.GAL
- ii 5‘ *anda lē paizzi mānn=a IŠTU* KUR ^{id}ḫūlaya

¹⁸⁹ Kitchen and Lawrence 2012, vol. 1, pp. 635 ff.

¹⁹⁰ Adiego 2021, pp. 47 *passim* Güterbock and Hoffner 1980.

- ii 6' *šalli :la-a-pa-ni :wa-a-a-ni-ja ūnnanzi nu=šši=kan :la-pa-na-li-an-za*
- ii 7' *lē danzi ANA LUGAL KUR ^{URU}dU-tašša=(a)t piyan*
- ii 8' *MUN=ma daškiddu ^{URU}Šarmanann=a URU-an*
- ii 9' *^{URU}Pantarwantan ^{URU}Maḥrimmann=a*
- ii 10' *IŠTU A.ŠÀ A.GÀR Ú.SAL RĒT UDU :la-pa-na-an*
- ii 11' *ḫūmandan :li-ki-in ḫūmandan*
- ii 12' *ANA ^mdLAMMA LUGAL KUR ^{URU}dU-tašša ABU=IA ^mḪattušiliš*
- ii 13' *pešta ^dUTU^{ŠI}-i=an=ši ^mTuḫaliaš LUGAL.GAL piḫḫun*
- ii 14' *n=ašta ANA MUN ^{URU}Šarmana tamaiš antuḫšaš parā lē paizzi*
- ii 4' And as for the territory of the country of Tarḫuntašša, which (is) (part?) of the country of the Ḫūlaya river
- ii 5' let no goatherd enter. And if they drive here from the country of the Ḫūlaya river
- ii 6' to the great :la-a-pa-ni :ua-a-a-ni-ja, let them not take the :la-pa-na-li-an-za away
- ii 7' from him. It has been given to the king of Tarḫuntašša
- ii 8' and let him take the salt! And the towns of Šarmana,
- ii 9' Pantarwanta and Maḥrimma
- ii 10' with fields, grounds, and meadow(s), sheep pasture
- ii 11' the whole :la-pa-na-an (and) the whole :li-ki-in, my father Ḫattušili gave
- ii 12' to Kurunt(i)a, the king of Tarḫuntašša, and My Majesty
- ii 13' Tuḫaliya, the great king, has given it to him.
- ii 14' Let no other man go to the salt of Šarmana!

The two aforementioned donations are similar in essence besides there proposed temporal proximity: Bo 86/299 in c. 1230 BCE and KBo 4.10+ in c. 1210 BCE. In Bo 86/299 Kurunt(i)a is conferred with the absolute sovereignty over fields, grounds, and meadows of Pantarwanta and Maḥrimma alongside the town of Šarmana. Striking is the mention of 'whole :lapana-' and

and ‘whole :*liki*-’ which Puhvel takes as a legalised repetition. However, Adiego interprets :*liki*- either to be associated exclusively with the towns of Pantarwanta and Maḥrimma or alluded to the salt-licking right. But for the salt of Šarmana it is exclusively protected for the king of Tarḫuntašša. KBo 4.10+ is relatively straightforward in verdict and revalidates the :*la-pa-na-li-an-za* (or salt-lick right) to the king of Tarḫuntašša. If the proposed chronology of these two treaties happens to be true, then it can be assumed that either certain encroachments to Šarmana had breached the vow of the treaty after 1230 BCE, or the strategic location of Šarmana demanded a reconfirmation of the treaty in 1210 BCE. The current state of Hittitology does not acknowledge the location of the appanage kingdom of Tarḫuntašša unanimously. The three towns mentioned in the donative treaties presumably were located within the Tarḫuntašša trajectory or along the Ḫūlaya river. Mayer and Garstang wanted to equate Ḫūlaya with river Halys in 1923, but the derivation is not convincing. Until the location of Tarḫuntašša or Ḫūlaya river receives a unanimous acceptance, deriving the locations of these three towns seems to be logically tedious.

2.3.2 Political Testament and Royal Myth

A NARKABU- measure of salt (is placed before the gods)¹⁹¹

The reference of salt in Royal myths is surprising but the following tablets i.e. CTH 8, CTH 24, and CTH 324 withhold the mentions of salt. The CTH 8 (KBo 3.34 i) or palace chronicles has received subsequent interest since 2010. It was earlier argued that the Old Hittite palace chronicles was composed during the reign of Muršili and elucidates the reign of his predecessor Ḫattušili I¹⁹². Forlanini, on the contrary, states that the prospographic arguments linking the palace chronicles to the texts stemming from the reign of Ḫattušili I can no longer be upheld¹⁹³. In 2020, Kloekhorst proposed a more earlier date for the palace chronicles, ascribable to the

¹⁹¹ KBo 32.7

¹⁹² Dardano 1997, pp. 10-11.

¹⁹³ Forlanini 2010, pp. 118.

reign of Anitta. According to him, the palace chronicle recounts the reign of Anitta's father Piṭḫāna¹⁹⁴:

- obv. i 5 ^mpa-ap-pa-aš ^{LÚ}u-ri-an-ni-iš e-eš-ta ^{URU}[ta-a-ru-u]k²-ki-ma
- obv. i 6 NINDA.ÉRIN^{MEŠ} mar-nu-an-na ma-ra-ak-ta ^{NINDA}šar-r[u?-wa(-)]
- obv. i 7 ^mpa-ap-pa-na ^{LÚ}u-ri-an-ni-in ša-ra-a š[(ar-te-er) A-NA GAL mar-nu-a]n-da-aš
- obv. i 8 MUN-an šu-uḫ-ḫa-a-er ša-na-aš-ta [(eukta ^{DUG}diššumin=a)]
- obv. i 9 A-NA SAG.DU-ŠU tu-wa-^{ar}ni-er ^{URU}ḫa-a[t-tu-ši-ma
- obv. i 10 ma-ra-ak-ta ^{DUG}ša-ak-ka-a-an da-a-er nu [A-NA SAG.DU-ŠU tu-wa-ar-n]i-er
- obv. i 5 ^mPappa was an *urianni*- man. In [Tāru]kkaa he distributed
- obv. i 6 the soldiers' bread and *marnuant*- beer. The *šarr*[uwa-... bread ...] and they *šarta*-ed
- obv. i 7 ^mPappa, the *urianni*- man, up. In a cup of *marnuant*- beer
- obv. i 8 they sprinkled salt, and he drank it. And the cup they broke over his head
- obv. i 9 In Ḫattuša he distributed *uwalḫi*- beer to the troops
- obv. i 10 and they took the jug[?] and broke it over his head

The chronicle runs further but Kloekhorst makes a significant comment here. He raises a question regarding the status of Ḫattuša as the state capital:

“An interesting point about this passage is that Ḫattuša functions as the same level as Tārukka, namely as a place where Pappa distributed foodstuffs to the troops that were present there. There is no indication in the text that Ḫattuša would be more important than Tārukka, or that it would have some specific status. This seems strange for a capital city: why would it be paired to a small, unimportant town like Tārukka? To my mind,

¹⁹⁴ Kloekhorst 2020, pp. 146 FF.

this would only makes sense if Hattuša at the time of composition of this text was not (yet) the capital of the Hittite kingdom. I therefore regard this passage as an indication that the Palace Chronicle was composed in the period before the establishment of the Hittite court at Hattuša.”

On the other hand, the texts KBo 41.5 (CTH 24) and KBo 32.7 (CTH 324) refer to two different measurement of salt, viz. *puti-* and *NARKABU*. Carnevale and Torri refer to another middle Hittite text KBo 21.47+ (CTH 652) rev. iii 3’-6’ instead to attest the measurement of salt in *puti-*. They take *puti-* to be ‘lump’ after van den Hout¹⁹⁵. Whilst del Monte takes *puti-* as ‘brick’ of salt; a measurement also observed in Mesopotamia and Egypt.

However, the fragment of CTH 24 is as follows:

obv.? (i) 1’] *x-šu-ra-aš-ša* ¹*a-ú*[-
obv.? (i) 2’] *x-da-an-za a-aš-šu-ra-an*[-
obv.? (i) 3’] *x SAR*^{Hl.A} *SIG₅-an-za x* [
obv.? (i) 4’] *x-za-an-da-aš wa-aḫ-nu-wa*[-
obv.? (i) 5’] *x i-it nu le-e x* [
obv.? (i) 6’]-*aḫ-ḫa-an iš-tal-ga-an x* [
obv.? (i) 7’ -*r*] *e-er-kán an-dur-za x* [
obv.? (i) 8’ NAM.ÉRI]M^{Hl.A} *pár-ku-i-e-eš a-š*[*a-an-du*
obv.? (i) 9’ M]UN *pu-u-ti-iš ki-it-t*[*a*

Moving onto KBo 32.7 (CTH 324) is a fragment of Telipinu myth. The edition of CTH 324 is done by Reiken under the CTH number 324.8¹⁹⁶. The manuscript A represents KBo 32.7 (Bo 83/93) and manuscript B stands for KUB 54.85 (Bo 1780). The bound transcription and translation is done by Rüster¹⁹⁷. The fragment is as follows:

obv. 4’ [*nam-ma ša-a-ḫi-i*]š *ḫa-ap-pu-ri*[-*ia-aš*]

¹⁹⁵ Carnevale and Torri 2022, pp. 306 *passim* van den Hout 1987-1990, pp. 525.

¹⁹⁶ E. Rieken et al. (ed.), hithiter.net/: CTH 324.8 (TRde 2009-08-26)

¹⁹⁷ Rüster 1992, FsAlp, pp. 475-481.

obv. 5'	[] [P]A- ¹ NI ¹ DINGIR-LIM <i>da-a-i x</i> []
obv. 6'	[... <i>SA₂₀-A-T</i>]Ú ¹ ZÌ ¹ .DA ZÍZ IŠ-TU[]
obv. 7'	[... _DI]NGIR-LIM <i>da-a-i mar-nu-wa-an wa-al-[hi]</i>
obv. 8'	[PA]-NI DINGIR-LIM <i>da-a-i</i> 1 ^{DUG} KA. ¹ GAG ¹ NAG []
obv. 9'	¹ 9 GI ^{HLA} <i>ša-a-i</i> 2 GI ^{HLA} ¹ ŠA ¹ <i>pa-</i> []
obv. 10'	1 ^{DUG} KU-KU-(UB) GEŠTIN 1 N[A]-AR-QA-BU MUN 1 ^{DUG} []
obv. 11'	<i>šu-wa-a-ru ša-ḥa-a-an PA-NI DINGIR-LIM da-a-i</i>
obv. 4'	(Then he) fills <i>šaḥi-</i> (and) <i>ḥappuri[a</i>
obv. 5'	and places (them) before the deity
obv. 6'	He places half a measure of emmer flour with [...] before the deity
obv. 7'	<i>marnuwan</i> (and) <i>wal[hi-</i> [...] He places before the deity
obv. 8'	A vessel (containing a type of beer) for drinking [...]
obv. 9'	he shoots nine arrows, two arrows of the [...]
obv. 10'	A jug of wine, a <i>NARKABU-</i> [Reiken <i>et al</i> 2009: small] measure [?] of Salt
obv. 11'	He places a [...] vessel – (into which) <i>šuwaru</i> is stuffed

2.3.3 Military Oath

The military oaths in Hittite language are two in number and are constituent of a long array of Hittite ritual inventories (CTH 390 onwards), which leaves a room open to call these two military oaths as military rituals. Kühne takes CTH 428 as *ritualfragment*¹⁹⁸. The same idea is also proposed by Oettinger who describes the second military oath to be entirely based on magic ritual and calls it a constituent of White Magic¹⁹⁹. The KBo 53.33+ (CTH 427) is

¹⁹⁸ Kühne 1973, pp. 161.

¹⁹⁹ Oettinger 1976, pp. 86.

enumerated above with bound transcription and translation (see pp. 36 ff.). Here the discussion is entirely limited to CTH 428 to omit the redundancy. The oath inventory is presumably in middle Hittite language and dispersed into two fragments. KBo 16.56 represents the fragment 2 of the tablet and mentions salt. Kühne's transcription provides some more signs compared to the current version of the tablet. For the sake of understanding, Kühne's reconstruction is referred here with an underline:

- (Frg. 2) 1']x[
- (Frg. 2) 2' [_____ pu²-u²-]x [-ri²]-ia-az-x[
- (Frg. 2) 3' [ŠA-PAL ZI-ŠU-ma-aš²]x [-šī]-ša-an i-d[a-a-lu _____ -x-zi]
- (Frg. 2) 4' [nu a-pé-e-el-la i]-da-a-la-u-aš an-¹tu-uḫ¹-[-ša-aš _____]
- (Frg. 2) 5' [ki-iš-ša-an² šal-l]a x-at-ta-ru na-at wa-a-x[t]a[r² _____]
- (Frg. 2) 6' [nu-uš-ša-an² ku-iš ke]-¹e¹-da-ni A-NA DUMU.LÚ.U₁₉.LU ¹tu¹-[
- (Frg. 2) 7' [_____ nu²] a-pé-e-el-la i-da-a-la-u-[aš _____]
- (Frg. 2) 8' [an-tu-uḫ-ša-aš _____] QA-TAM-MA šal-la-at-ta-ru na-[at? _____]
- (Frg. 2) 9' [_____ ke-e-da-ni²] ¹A¹-NA MUN ma-aḫ-ḫa-an NUMUN-an
NU.GÁ[L
- (Frg. 2) 1']x[
- (Frg. 2) 2' [_____] von der [_____ Lip]pe [_____]
- (Frg. 2) 3' [zu² Seiner Seele i]hm [aber] Bö[ses... t:]
- (Frg. 2) 4' [auch desjenigen b]ösen Mens[chen _____]
- (Frg. 2) 5' soll [auf diese Weise zerg]ehen und zu² Was[ser werden²¹]
- (Frg. 2) 6' [Und² wer di]esen Menschenkinde .[... _____]
- (Frg. 2) 7' [... t] aus desjenigen böse[n]
- (Frg. 2) 8' [Menschen ...] Soll auf diese Weise zergehen und [zu² Wasser werden²¹]
- (Frg. 2) 9' [_____] wie [dieses²] Salz keinen Samen ha[t und daraus]

[], Of the [Lip], [to[?] His soul him [but] evil...t], [also that of the evil person], shall [thus dissolve] and turn into water[?], [And[?] Who these human children [...], [... t] from that evil person's, [human ... (children[?])] shall thus dissolve and turn into water[?], [] how [this[?]] Salt has no seed [and from it]... (translation from German by the present author).

In both of the oath taking ritual, the melting of beeswax and mutton tallow in open flame symbolises the wrongdoer and magically determines his fate. The salt, in both CTH 427 and 428, is a metaphor of infertility intended for the offender. Oettinger's study is rather specific and driven towards establishing the Hittite military oath ritual, mainly the apodosis, within a broader Proto Indo-European framework²⁰⁰. According to him, using dropsy as a curse consequence for breaking an oath has a PIE background. Oettinger draws a comparison with RV and AthV myths to elucidate the shared PIE ancestry that might have worked behind the Hittite and Indic curse formulae. He further proposed a timeline that how around 15th century BCE the idea of dropsy as a curse formula originated in Anatolia and later was translocated parallelly to Kassite Mesopotamia and Vedic India around 12th century BCE. At first place, though the hypothesis seems convincing but at the foundation the parties involved in the oath-breaching and curse-consequences are different in Hittite Anatolia and, at least, in Vedic India. In Anatolia the wrongdoer is supposedly a military, whilst in India it was a sage/seer whose penitential hymn Oettinger has wrongly quoted²⁰¹. Nevertheless, the use of salt in Hittite military ritual is highly metaphoric. On one hand, throwing salt into the hearth caused it to crackle and scatter into completely unrecoverable fragments which symbolized the physical annihilation and scattering of the traitor's body, family, and possessions. On the other hand, as salt vanquishes the growth a plant, the curse invoked the sterile nature of salt to ensure the traitor's genetic lineage would permanently end, leaving him without descendants to carry forward his name.

²⁰⁰ Oettinger 1976, pp. 71.

²⁰¹ *ibid*, *passim* RV 7.89: Penance of Vasiṣṭha To Varuṇa for mercy, forgiveness and protection from the guilt of human misdeeds and sin.

2.4 SALZARBEITER: LÚ^{MEŠ} MUN, LÚ^{MEŠ} EPIŠ MUN, LÚ MUN, and LÚ^{MEŠ} *lapanalli*-

‘The LÚ^{MEŠ}:*lapanalli* of the palace used to supply 3 sheep (but now they don’t)’²⁰²

As can be seen in the previous sections, the present author does not propose any translation for the words denoting salt-related professions, viz. LÚ^{MEŠ} MUN, LÚ^{MEŠ} EPIŠ MUN, LÚ MUN, and LÚ^{MEŠ} *lapanalli*-. The state of art in Hittitology is still not unanimous on the available translations of these words, moreover, each of these various competing arguments is supported by convincing explanations and logics. This section argues, within its limited capacity, the categorization between the different salt-workers (or gatherers) existed in the Hittite realm. It also tries to stick to the most fitted translation of the terms while discussing the various agencies involved with the manufacture, dispersal and exploitation of salt. The workers are usually denoted by Sumerogram LÚ, man, with their designations. The LÚ MUN or a single salt-man is of a unique reference in the KBo 49.168 obv. 9‘. What makes this mention even more intriguing is the reference to the :*lapana* salt with a Sumerogram MUN in obv. 8‘. The bound transcription and translation are attested above (pp. 65) but the synopsis is as follows: ‘:lapana-salt, by the salt-man, in temple, is placed. Giorgieri inclines to take this LÚ MUN as a polyvalent for LÚ^{MEŠ} MUN (salt workers, in plural) or a scribal error. The possibility of a scribal error even intensifies to a great extent because of its only occurrence throughout the corpus. Carnevale and Torri *pace* Pecchioli Daddi 1982 have taken LÚ MUN in KBo 49.168 as LÚ^{MEŠ} MUN and equated it with the LÚ^{MEŠ} MUN in KBo 26.213 obv. ii 4‘ (see above) from the city of Šarišša without further explanation behind this interpretation²⁰³. The present author, however, deems to take it as a unique mention of a single salt-worker. Owing to the cultic context, it is possible for a single salt-worker to participate in a local cult ritual. Noteworthy is the mention of :*lapana*-salt the salt-worker is providing. Due to the loss of incipit the geographic location of this worker cannot be determined, and parallelly it cannot also be determined if the LÚ MUN was originally a :*lapana* gatherer by profession or providing :*lapana*-salt simply as a ritualistic gesture.

²⁰² IBoT 2.131 obv. 42‘

²⁰³ Carnevale and Torri 2022, pp. 313.

Pecchioli Daddi makes a clear distinction between LÚ^{MEŠ} MUN and LÚ^{MEŠ} EPIŠ MUN²⁰⁴. According to her, the LÚ^{MEŠ} MUN simply means ‘uomini del sale’ or men of salt, i.e. salt-gatherers, whereas, LÚ^{MEŠ} EPIŠ MUN is ‘fabbricanti del sale’ or salt-workerev. Pecchioli Daddi takes ‘EPIŠ’ as a derivation of Akk. *epēšum*, ‘to make’. Carnevale and Torri take LÚ^{MEŠ} MUN as synonymous, or specifically, a short form of LÚ^{MEŠ} EPIŠ MUN²⁰⁵ but the present author is not inclined to interpret in it the same manner. Pecchioli Daddi’s explanation is more convincing but lacks substantial evidence. The present author deems to take the word fabbricanti < fabbrica in its literal sense, i.e. factory/ workshop. It can be argued that the LÚ^{MEŠ} EPIŠ MUN were connected to a workshop dedicated to quarrying salt around the town of Šukzia (for Šukzia and the provenance of LÚ^{MEŠ} EPIŠ MUN see above). Unlike LÚ MUN, the LÚ^{MEŠ} EPIŠ MUN are connected with or were entrusted with the supply of sheep in KUB 38.19+: ʾŠU.NÍGIN 30 UDU LÚ^{MEŠ} E-PIŠ MUN p[é-eš-kán-zi ...]. However, this does not lead to the argument that the LÚ^{MEŠ} EPIŠ MUN were also connected to sheepherding or dairy production like the LÚ^{MEŠ} *lapanalli*-.

The attestations of LÚ^{MEŠ} MUN are three in number, viz. KBo 12.53+ (obv. 12’ and rev. 38’) and KBo 26.213 (obv. ii 4’). The LÚ^{MEŠ} MUN in KBo 12.53+ obv. 12 ‘are conspicuously located in the town of Kipitta and in rev. 38’, a group of LÚ^{MEŠ} MUN belongs to the town of Ḫappala (see above). In KBo 26.213 the LÚ^{MEŠ} MUN belong to the land of Šarišša-Kuṣaklı Höyük (see pp. 64 ff.). The LÚ^{MEŠ} MUN in KBo 12.53+ obv. 12’ are entrusted with providing 100 sheep for the Sun deity of Kipitta, whilst in rev. 38’ a group of this people are providing 20 sheep for the cult of the Storm god of Ḫappala and other gods of the district. In KBo 26.213 this LÚ^{MEŠ} MUN are associated with the local cult of the storm god of Šarišša and the Sun Goddess and are providing 1 KA.GAG vessel of ... (Beer?), and 1 BÁN Measure of milk.

The attestations of LÚ^{MEŠ} *lapanalli*- are copious and are discussed above. It can be safely argued that the LÚ^{MEŠ} *lapanalli*- were not solely connected to rock salt quarrying or salt gathering but also to cattle herding and dairy production. Carnevale and Torri connect the LÚ^{MEŠ} EPIŠ MUN with LÚ^{MEŠ} *lapanalli*- and argue both groups as herdsman and salt-gatherers, mostly for their similar type of offerings to (or offerings demanded by) the cult centres. The present author, however, does not want to conclude the same owing to the fact that

²⁰⁴ Pecchioli Daddi 1982, pp. 76.

²⁰⁵ Carnevale and Torri 2022, pp. 311 n. 44.

the wealth of knowledge about these groups is rather limited and must be updated upon newer discoveries.

A rather unique mention of a town named Lapana is discussed above (KUB 38.1+ pp 59 ff.). To conclude, a god name Lapana can be discussed here. This striking mention of ^dLapana comes in IBoT 4.309+ KUB 41.16 (CTH 424 Hittite summoning ritual) obv. 8'/ rev.? 3':

(Frg. 1+2) obv. 8/rev.? 2' [*na*] *m-ma-kán ke-e-da-aš* ^ṛ *A* ^ṛ *-NA* ^ṛ DINGIR ^ṛ [...]

(Frg. 1+2) obv. 9/rev.? 3' [...] [...] ^d*la-pa-na* DUMU.MUNUS ^d*ap-*
pa- ^ṛ *lu* ^ṛ - [*wa* ...] [...]

(Frg. 1+2) obv. 10/rev.? 4' [()] *x-ši-ma-aš-ma-aš* ER - ^ṛ *an* ^ṛ -*zi*

It can be determined from the colophon of KUB 41.16 + IBoT 4.309 that it is a constituent of a Hittite plague ritual. The list of animals in the second section corresponds to that of the other rituals belonging to CTH 424, although the very poor state of preservation precludes further comparisons. The ritual mentions two gods who are only attested in the parallel KBo 22.125 (CTH 424.6): Appaluwa and his daughter Lapana (verse 8'). The context is very fragmentary, but it can be assumed that these are the gods for whom the ritual is performed.. Nevertheless, the translation is as follows:

(Frg. 1+2) obv. 8/rev.? 2' Furthermore [...] for this god[...]

(Frg. 1+2) obv. 9/rev.? 3' [(...) ^dAppaluwa], ^dLapana, daughter of ^dAppalu[wa, ...]
[...]

(Frg. 1+2) obv. 10/rev.? 4' For them (i.e. the gods) they determine [...] through an oracle²⁰⁶

Fuscagni associates the ^{URU}Lapana of KUB 38.1+ with the name of the ^dLapana in KUB 41.16 + IBoT 4.309. He argues KUB 38.1+ as an inventory text of western Anatolian origin, moreover, these two gods, i.e. Appaluwa and his daughter Lapana, in Fuscagni's words, are certainly originated from a Luwian and Western Anatolian milieu.

²⁰⁶ F. Fuscagni (ed.), hethiter.net/: CTH 424.4 (TRde 25.07.2016)

3. CONCLUSION

The comprehensive study of salt in Hittite Anatolia through the aforementioned texts elucidates this mineral to transcend its primary utilitarian function to serve as a dominant element of the socio-economic, administrative and cultic life of the Hittites. The current thesis has stepped out of the scholarly consensus of framing salt as a peripheral component of the daily life in Late Bronze Age Anatolia by proposing a reassessment of the related terminologies found in cuneiform corpus. This research tries to re-evaluate the traditional treatment of salt as merely an element long maintained in Hittitology by bringing the evidences of Historical Geography and rigorous philological analyses of the terms related to salt extraction and exploitation under the lens.

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