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“Nu GIŠERIN Ì.NUN LÀL ḫu-u-uš-za-ʿšaʾ? ša-me-ši-ia-zi”: Representations of Incense on Cylinder Seals Impressions of the Kārum II Period

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Abstract The fragrant smoke produced by burning the bark, leaves, branches, resins, flowers and perfumed oils of fragrant plants has been used from past to present to bring people closer to the gods, thus alleviating their fears and calming them. Fragrant smoke, i.e. incense, has a purifying effect thanks to the chemical properties of aromatics. It has become a magical element that helps to cure diseases and to convey news from the gods to people with the different shapes it takes. By this means, it was included into everyday life, military matters, royal ceremonies, medical practices, festival celebrations, and religious matters such as funeral rites and rituals of penance. With regard to the effects of incense on human life in the Bronze Age various types of incense vessels, that may have been used in Anatolia in the 2nd millennium BC, were investigated. For this reason, vessel representations on seal impressions from the Kārum II Period, Hittite cuneiform texts, especially the *Ḫantitaššu* Ritual, and a lipid analysis of a Late Bronze Age chalice from Beycesultan were evaluated together.

Keywords Incense · Bronze Age · Ritual of *Ḫantitaššu* · Kārum Period Cylinder Seal Impressions · Lipid Analysis

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Introduction

Incense is the fragrant smoke produced by burning fragrant tree species, medicinal plants, resins and essential oils individually or together. It also refers to the substances that make up the source of the fragrant smoke.[1] "Incense" is derived from the Latin word *incensum*, which means *"set on fire or inflame"* (Ørberg, 1998: 18).

Incense is used to remove bad odors, transform negative energy into positive energy (Yadav et al., 2020: 1421), cure physical or psychological illnesses and repel insects (Yılmaz Çalışkan, 2022: 172, 173). It plays a role in the worship of God in early Islamic mosques such as the Dome of the Rock, the Kaaba, the Masjid al-Nabawi (Bursi, 2020: 206), in Catholic and Orthodox churches (Kenna, 2005: 6) and in the temples of Confucianism, Buddhism and Taoism (Staub et al., 2011: 1, 2). As it is believed to ennoble the body with its pleasant scent (Tatomir, 2016: 683), it became an integral part of rituals in polytheistic and monotheistic religions from past cultures up to the present.

In some regions of present-day Anatolia, the traditional custom of incense is still alive, e.g. when people burn wild rue (lat. *peganum harmala*) at noon on Fridays (Akkuş Mutlu, 2021: 222). At any time of the day important parts of human life like houses, barns, animals and even cars are incensed to protect them against the evil eye or the devil. The same applies to special celebrations, i.e. weddings or circumcisions, when the bride and groom or the circumcised child are protected from the evil eye by incense. But if someone is affected by the evil eye, the person is incensed with wild rue to heal her or him.

Holy writings prove that incense was used extensively throughout antiquity. Exodus 30:1-10 describes an altar of incense made of acacia wood for the Temple of Solomon in great detail. In Exodus 30:34-37, Moses is directly instructed by God to mix aromatics and burn them for incense.[2] According to Matthew 2:11, Jesus was given gold, frankincense and myrrh at birth (Herrera, 2012: 2). Luke 1:5-14 tells us that Zechariah prayed to God for a child by burning incense in the temple.[3] In other words, it is believed that prayers reach heaven through the smoke of incense. In the Orthodox and Catholic church, people and objects are incensed with thuribles (Yadav et al. 2020: 1430). The fact that the Holy Qur'an describes paradise as being scented with musk and camphora, and that Muhammad, according to the hadiths, requested that incense be burned in places of worship, has led to the use of fragrances being accepted as a sunnah in Islam (Can, 2020: 77). Amulets written in Arabic letters and numbers (Ebced Calculus), worn on clothing, dissolved in water and drunk or burned as incense (Alper & Czichon, 2019: 57) document the use of incense in magic and treatments.

Incense in Cuneiform Sources

The earliest written information on incense comes from Sumerian and Akkadian texts. To express "incense, to make an incense offering, fumigate, incense to billow, to smoke of fire, burn incense" *qatāru/ qutturu* was used (Brinkmann et al., 1995: 166-168; Black et al., 2000: 286). The words *rīqu* (Sum. *šim) and ḫīlu* (Sum. *a-kal*) are translated with "aromatic plant - aromatic substance" and "exudation of plant, resin" (Middeke-Conlin, 2014: 7). ^{DUG}*níg.na* and *nignakku* mean "censer or incense-burner". According to their type they were classified as *ša tēlilti*, small and portable, or *šēḫtu*, long and fixed (Neumann, 2023: 54). In

[1] Incense, (2024, 12 May). https://www.newworldencyclopedia.org/entry/Incense

[2] **(Exodus 30:1-10)** *"This rectangular altar was made of acacia wood measuring one cubit (about 18") wide, one cubit deep, and two cubits high, with a horn (keranot) on each corner whose top was sheathed in pure cold"*, **(Exodus 30:34-37)** *"Take sweet spices, stacte, and onycha, and galbanum, sweet spices with pure frankincense (of each shall there be an equal part) an make an incense blended as by the perfumer, ..."* (Herrera, 2012: 2, 3).

[3] Luke 1 (2024, 21 June). https://www.biblegateway.com/passage/?search=Luke%201&version=NIV

Hittite texts *tuḫḫuēššar* ("incense" ?)[4], *GIŠlueššar* ("bir çeşit tütsü maddesi" Ünal, 2016: 325) and *tahtumar* ("güzel kokulu madde, tütsü, buhurdan", Ünal, 2016: 500) as well as the above mentioned Sumerian and Akkadian loanwords were used.[5]

Incense was used for different purposes, e.g. to deliver prayers to the gods with its smoke (Erdem, 1992: 383) and to invite the gods to food offerings (Jursa, 2006-2008: 228) as well as for religious rituals with their scent[6] and for cultic purification.[7] Early Dynastic spells, which mention cleansing through fire and smoke, suggest, that the cultic purification function is an earlier feature than others (Jursa, 2006-2008: 226). For example, the text below describes a.o. the burning of plants for incense to cure a baby sick at birth. Also, the expression *"Beschwörungswasser"* at the end of the text indicates, that the same plants were probably mixed with water for purification or medicine:

> *"Als ein Kind geboren war, hat er (Enki?) ihm den (kranken) Leib gemacht. ... (Enlil:) 'Die betreffende Angelegenheit des Menschen weiß er/sie nicht. Möge die Leibkrankheit durch das Perienum herausgehen. ^{ĝeš}kiši$_{17}$-Unkraut ist ins Feuer zu legen; Euphratpappel(-Zweige) sind ins Wasser zu legen; in ..... ist ^{ĝeš}kiši$_{17}$-Unkraut zu legen. Nedag, das Kind von Eridu, hat (den Patienten) mit Beschwörungswasser wahrhaftig berührt"* (Rudik, 2011: 120).

In addition to these properties, due to its calming and purifying effects (Nielsen, 1986: 12, 13), incense has been included in medical treatments accompanied by spells and amulets[8] (Scurlock, 2014: 274) and funeral ceremonies.[9] It played a role in the consecration of an object[10], in sacrificial rituals, in hepatoscopy and in libanomancy, in which the shapes of the smoke were interpreted (Maul, 2013: 163, 165). Last not least incense was involved in mythological issues between gods and humans[11] and between gods only.[12]

In Hittite belief, incense was used for cultic purification and invitation of the gods. For example, if a crime was committed in a sacred building inhabited by ancestors, guardian spirits and house gods, the building would be polluted. For this reason, atonement rituals were performed both for the gods living in it and for the great gods of the country. The polluted structure was purified and sanctified with incense burned during the rituals. Attention was also paid to the temple furniture like the sacrificial table, incense pan and incense stand in the ritual area. According to the text of a consecration ritual for the Temple of Tešup, some procedures were first performed in a tent set up in front of the temple gate. Then, a bird was sacrificed to Tešup-ḫamri for atonement, a sheep to Ḫebat-ḫamri and a sheep to the incense altar (Haas, 1994: 258, 264).

Another example underlines the soothing effect of incense. When the gods, e.g. Telipinu, got angry with the humans and moved away from their temples, which resulted in disasters like the disappearance of light,

[4] According to Kloekhorst, the meaning of the word is not clear, but it is translated as "incense" because of its similarity to the word *tuḫḫuuai* - smoke (Kloekhorst, 2008: 892).

[5] Since there is no record of incense in the Kültepe texts (personal communication Prof. Dr. Cécile Michel, Kültepe, 29.07.2023), one has to fall back on Hittite texts, Mesopotamian cuneiform sources and offering scenes on the seal impressions of the Karum II period.

[6] Gudea preparing food for the gods in the temple he built in Girsu and the Eridu priest Nin-duba filling the building with incense (Edzard, 1997: 90, Cylinder B-Column III ve IV).

[7] At the Shebat-Adar Festival, the king ritually cleanses the Temple of Ašur and offerings by waving a censer (Neumann, 2023: 55).

[8] According to the Assyrian Medical Catalogue, *bennu* and AN.TA.ŠUB.BA diseases were treated with amulets, ointments and incense (Steinert, 2018: 203, 249).

[9] In the NAM.BÚR.BI ritual, beer offerings and incense burning were made during the funeral ritual for three days to prevent the evil of the ghost (Scurlock, 2006: 46).

[10] The consecration of salt is mentioned on tablet VI of the Maqlû Ritual (Abusch, 2016: 345, lines 119-126).

[11] Uta-Napištim was burning incense and making offerings to the gods after the flood in the Gilgameš Epic (Abulhad, 2020,10, https://academicworks.cuny.edu/oaa_pubs/17/ [12 June 2024])

[12] In the same epic the goddess Ninsun was burning incense and praying to Šamaš (Dalley, 2000: 65).

order and fertility, incense was burned and various rituals were performed to bring the lost gods back and to return order and peace to the country (Ünal, 2003: 84-86, 173-176).

How incense offerings were practiced in Hittite rituals can be learned best from the *Ḫantitaššu* text, in which the Sun God is intended to free a person from magic (Haas, 2003: 232). An incense burner made of terracotta, with burning charcoal was placed on the floor in front of the offering table. In different stages the aromatics required for the incense were thrown on the embers of the fire:

> *"Vor dem Tisch steht unten auf der Erde ein Tonbecher und Glut ist hineingeschüttet. Und sie räuchert darin Zeder(nspäne/harz), Butter, Honig (und) den (NA4)ḫust-Schwefel (S-Strich). Darüber schüttet sie Emmermehl und Salz und spricht in dieser Weise: 'Wie die Schafe [Sa]lz lecken, so soll der Sonnengott diese Beschwörungen (des Schadenstifters) ebenso auflecken! (KBo 11.14 Vs. I 17-22)"* (Haas, 2003: 233).

Different parts of the cedar tree, butter, honey, minerals like sulfur and salt, and emmer flour were used (Jursa, 2006-2008: 25, 26).

In addition, cuneiform tablets provide answers to various other questions like the quantities and prices of aromatics[13], when and where to make incense[14], what names were given to incense burners and what materials they were made of.[15] Unfortunately there is no description of the vessel forms used for incense. These have to be deduced from visual sources depicting fire or smoke.

Fire and/or smoke in Visual Sources

The representation of fire and/or smoke is a heavily debated topic in Near Eastern archaeology. Özgüç interpreted the lines of different forms and lengths coming out of the vessels depicted on the seals of the Kārum Period, as well as on the Mesopotamian seals, as fire (Özgüç, 1965: 13). In contrast Boehmer argued that on Akkadian seals the nearly straight lines rising from the inside of the vessels on the fire altars represent smoke (Boehmer, 1965: 101). Supporting Özgüç' view Pizzimenti considers the oblique, wavy, scattered stylized or real flame-like lines on the altars of Akkadian seals and of the vessels on Middle Assyrian as depictions of fire and adds that there is no standard in the depictions (Pizzimenti, 2014: 64). For comparison, on the contemporaneous Egyptian wall painting in the Tomb of Nefertari, which shows Queen Nefertari making an incense for Isis and Nephtis, the wavy lines rising from the vessel were characterized as smoke curling upwards (McDonald, 1992: 34). However, a decision between fire and smoke cannot be made on visual sources alone.

Therefore we carried out several experiments based on cuneiform texts, ethnographic information and our own experience in order to clarify some details. We recognized that thin leaves and flowers of linden, laurel and cedar burned in a flaming fire, while resin of salai-boswellia serrata and cedar, bark of cinnamon and seeds of wild rue and black seed burned with difficulty. Odorous smoke was produced after the flames have gone out, not when the flames were visible. But when we used embers as a basis, a method which is mentioned in Mesopotamian and Hittite incense texts[16], the situation changed. Regardless of their consistency the materials burned easily and scented smoke emerged immediately. When sülfür ($^{NA}_{4}$ *ḫust*)

[13] According to the Old Hittite laws, 1 zipattani of Ì.DÙG.GA-perfumed/fine oil (?) cost 2 silver shekels (Vigo, 2014: 27).

[14] In the Maqlû Series, at the Ekur in the underworld, rituals with meals accompanied by incense are held overnight in late July/August (Abusch, 2016: XIV, 345, lines 119-126).

[15] ^{DUG}*aḫrušḫi* vessel made of gold or silver, ^{DUG}*ḫuprušḫi* vessel made of wood, clay, bronze or copper (Çilingir Cesur, 2020: 333; Coşkun, 1979: 20, 28, 33).

[16] For example, the incense recipes recorded in the UGU Series for the treatment of head ailments, for example, specify *"... fumigate him (with it) over coals"* (Scurlock, 2014: 327) or detail the *Ḫantitaššu* ritual *"... und Glut ist hineingeschüttet"* (Haas, 2003: 233).

is sprinkled on the embers, malodorous smoke and blue flames arise at the same time, suggesting that smoke and flame could be depicted together. However, the good results with embers and especially their mentioning in the texts make it very likely that the oblique or wavy lines on the seals are depictions of smoke. Therefore "smoke" will be used hereinafter.

Although incense-related information appear in Hittite cuneiform texts, an incense scene with smoke has not yet been identified in Hittite representations on rock reliefs, orthostats, relief vases and seals. But there are several depictions similar to the Hittite *Ḫantitaššu* ritual in the seal impressions of the Kārum Period.

Incense on Karum II Seal Impressions

From the mid-20th to the late 18th century BC Ashur and Kültepe-Kaneš were – with a break - the economic centers of a wide-ranging network which comprised the entire Ancient Near East. Assyrian and Anatolian merchants lived door to door in *kārum* and *wabartum* called settlements, influencing each other socially, culturally and politically. Writing and cylinder seals were implemented in Anatolia during this period (Michel, 2011: 313, 326, 327). Their different styles, which reflect the wide trading area, were defined as Anatolian, Old Babylonian, Old Assyrian and Old Syrian by Özgüç for the first time.[17]

By comparison with well known Mesopotamian depictions of incense seal impressions from 16 seals[18] (15 from Kültepe, one from Acemhöyük) of Anatolian (10), Old Babylonian (3), Old Syrian Style (2) and Old Assyrian (1) were identified as incense scenes with certainty (fig. 1).

According to the representation style of the incense burners the seal impressions are divided into four groups:

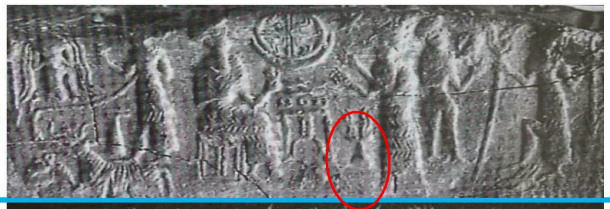
- Incense burners on the ground next to a votive table (seals 1-7)
- Incense burners next to a votive table, but in the hand of a figure (seals 8-10)
- Incense burners on the ground without a votive table (seals 11-13)
- Incense burners in the hand of a figure without a votive table (seals 14-16) Figure 1.

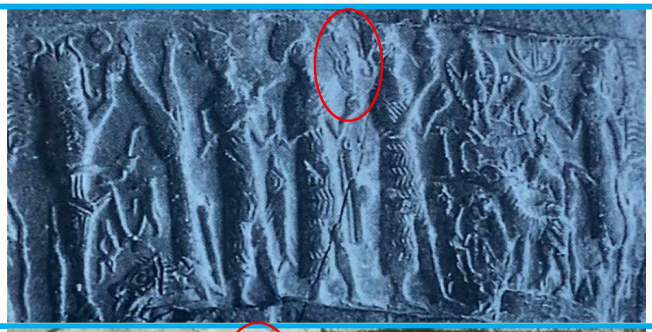
[17] Özgüç 1965 (Anatolian Group); Özgüç 1968 (The other groups)

[18] Due to the possibility that the drawings may have been corrected or completed, only seal impressions with photographs were evaluated. All seal impressions are samples from scientific excavations.

Figure 1

Seal impressions of the Kārum II Period (Alper & Czichon).

Seal No	Inv. No	Refs.	Incense burners on the ground next to a votive table	Style
1	Kt. g/t 22, 23; Kt. m/k 62; Kt. n/k 1779F; Kt. n/k 1804C; Kt. n/k 1825C 7 impressions	Özgüç, 1965: 8; Özgüç, 2006		Anatolian (Karum II)
2	a/k 494 2 impressions	Özgüç, 1965: 36		Anatolian (Karum II)
3	Kt. j/k	Özgüç, 1965: 42, 43		Anatolian (Karum II)
4	Kt. n/k 1816B Kt. n/k 1859B 4 impressions	Özgüç, 2006: 180		Anatolian (Karum II)
5	Kt. n/k 1831A 3 impressions	Özgüç, 2006: 193		Anatolian (Karum II)
6	Kt. c/k 768B	Özgüç & Tunca, 2001: 33, 34		Old Babylonian (Karum II)

7	Kt. n/k1836C Dozens of impressions on 8 envelopes	Özgüç, 2006: 199; Larsen, 2015, fig. 36; Lassen, 2024: 119-121, fig. 9.5		Old Syrian (Karum II)
Seal No	**Inv. No**		**Incense burners next to a votive table, but in the hand of a figure**	**Style**
8	Kt. n/k 1913A 2 impressions	Özgüç, 2006: 259		Anatolian (Karum II)
9	Kt. j/k 397	Özgüç, 1965: 38		Anatolian (Karum II)
10	Kt. j/k 403	Özgüç, 1965: 39; Özgüç, 2006		Anatolian (Karum II)
Seal No	**Inv. No**		**Incense burners on the ground without a votive table**	**Style**
11	Kt. n/k 1765 2 impressions	Özgüç, 2006: 139		Anatolian (Karum II)

12	Kt. n/k 2036 4 impressions	Özgüç, 2006: 312		Anatolian (Karum II)
13	Kt. 93/k 254 Kt. 93/k 255 Kt. 93/k 256 Kt. 93/k 257 7 impressions	Özgüç & Tunca, 2001: 102		Old Babylo-nian (Karum II)
Seal No	**Inv. No**		**Incense burners in the hand of a figure without a votive table**	**Style**
14	Kt. n/k 1702 Kt. n/k 2051 Kt. n/k 2060 15 impressions	Özgüç, 2006: 106; Özgüç & Tunca, 2001: 14		Old Assyrian (Karum II)
15	603	Özgüç & Özgüç, 1953: 99		Old Syrian (Karum II)
16	AC. i-800 4 impressions	Özgüç, 2015: 102		Old Baby-lonian (Karum II)

Incense burners on the ground next to a votive table: There are seven seals in this group, five Anatolian, one Old Babylonian and one Old Syrian. Similar to the *Ḫantitaššu* ritual text, the incense burners are depicted with a table on which offerings are placed.

Seal 1: The main scene of the seal impression Kt. n/k 1804C shows a seated god with his feet resting on a lion and a cup in his left hand opposite of a standing god with raised hands in a worshipping gesture. Both deities are represented in the typical Anatolian style of godly attire, combed with parallel lines to the right and left. However, their headdresses differ from each other. The seated god wears a hairy cap[19], while the praying god is depicted with a horned headdress.[20] Among them is a votive table with various kinds of food, and next to it at the same level, an incense burner. The scene is topped by a huge sun disc in a crescent and a litte star. The main scene is framed by a naked figure with a bird with turned head, a weathergod with the lightning symbol and a spear standing on a lion dragon, another weathergod behind an altar holding the reins of the bull he is standing on and a kneeling naked hero with an aryballos, well known from Akkadian seals (Boehmer, 1965: taf. XXI, fig. 232).

The incense burner consists of a shallow bowl on a high conical foot.[21] Two pairs of parallel wavy lines representing smoke arise vertically from the bowl.

Seal 2: Seal impression a/k 494 depicts a sitting god with a cup in his right hand worshipped by a standing person with raised hands. The antithetically placed goat fishes under the stool and the god's legs may characterize him as the Watergod. Both figures wear the typical Anatolian style dress and the hairy cap. Under the crescent sun, a votive table with animal thighs and food as well as an incense burner can be recognized. The side scenes depict, independently grouped, a naked hero struggling with a lion, a lion attacking a goat, a bull with a cone[22], a crouching monkey and a kneeling hero holding a water gushing vessel a.o. Lots of filling motifs like stars, animal heads, fish and birds complete the scene.

The low incense burner with its wide conical foot is depicted under the votive table, but actually stood next to it. Six lines of varying size and shape emerge from the flat bowl.

Seal 3: This seal is quite similar to the seals mentioned before. Again it shows a worshipping scene, but unlike the other seals, a bird and a bull's head lie on the votive table. A naked hero stepping on the head of the lion, a riding figure holding the reins of an equid, a vertical snake as well as several filling motifs (lions, fish, ungulates, animal heads and eight circles) complete the scene.

Position and size of the incense burner are similar to Seal 2, i.e. it is depicted close to the votive table and quite small. But it has a conical foot with a slightly concave base, which leads to a short vertical section ending up in a deep bowl. The smoke is rendered by three vertical strokes of the same size at the right half of the bowl and by a short and a longer slim stroke on the left half. The short stroke is probably the result of missing space.

Seal 4: The single-scene on the Anatolian Style seal impression Kt. n/k 1816B depicts three gods with horned and hairy caps worshipping the bull with the cone who is standing next to an offering table and an

[19] Özgüç interprets the serrated structure on the figures' heads as a "*takke*" (1965: 36), Collon as "*hair*" (1988: 41). However, this structure is wider and more raised than the head as if another object is resting on the head. For this reason, the name "*hairy cap*" will be used in the following descriptions.

[20] In Mesopotamian iconography, gods are always characterized by horned headdresses from the Early Dynastic to the Achaemenid Period (Boehmer, 1957-1971: 466-469). This does not apply to the Anatolian Style where gods can be depicted with hairy caps like humans (Boehmer, 1980-1983: 207). For a detailed discussion see p. 26.

[21] In contrast to Özgüç' *"meyvelik"* Ökse's expression "*ayaklı çanak*" is preferred (Ökse, 1993: 50.).

[22] Lassen has suggested that the " *bull with the cone*" may represent the god Ashur (Lassen, 2014: 112). B. Hrouda and P.Z. Spanos related the "*bull with the sugarloaf-like symbol*" with zoomorphic vessels, which have a spout on their back (Hrouda & Spanos, 1993: 199ff) An explanation as a humped bull is ruled out, because, the hump is located on the neck, not on the back (Lau, 2018: 160, 161).

incense burner underneath. The scene is complemented by the obligatory filling motifs (a ball-staff[23], two dots and a bird's head).

The incense burner consists of a shallow bowl with a massive almost cylindrical foot. It seems that in this case the piled up incense material consisting of one vertical and two oblique sticks is depicted instead of the usual smoke. An Old Syrian Style seal impression from Tell Suffane (Mazzoni, 2005: 9, fig. 7.3) provides a good comparison.

Seal 5: The Anatolian Style seal impression Kt. n/k 1831A shows the Weather God with a cup standing on a bull and a naked figure with a water gushing vessel as the main figures. Their relationship is not as clear as in the previously described worshipping scenes. Between them are a variation of the crescent sun motif, a votive table with an animal leg, a bird's (?) head and an incense burner flanked by two dots. In the side scene all figures are rendered upside down as if the seal was recut. There is a praying god sitting on a donkey (?), worshipping a god holding a halter, and a lion attacking a horned animal. The empty spaces are filled with birds, fish, animal heads and seven dots, perhaps a representation of the *Sebittu* called demons of the underworld (Black & Green 2004: 162).

The incense burner, which is depicted in a distance from the votive table, has the form of a bowl with a slightly incurved rim on a massive cylindrical foot sharply set off from a thick flat base. Four vertical strokes of different size and height represent smoke.

Seal 6: The Old Babylonian Style seal impression Kt. c/k 768B probably depicts two separate scenes. In the main scene, two antithetical bull-men are fighting with a bull standing in the centre. The side scene depicts an incense burner with a votive table nearby, well-known from the seals of the Anatolian Group. For the first time a plant, may be a stylized tree, appears next to the incense burner. A bird, an animal head and a large footed vessel serve as filling motifs.

The incense burner in the form of a bowl with a high conical foot and two pairs of vertical rising wavy lines reminds very strongly to the Anatolian Style Seal 1.

Seal 7: The Old Syrian Style seal impression depicts a single scene[24], concluded by an inscription, which mentions Iddin-abum, the son of Issu-arik. The seal was used by at least two different persons, and since the name on the first inscription has been erased, only the name of the second user is known (Lassen, 2024: 120).

The scene is divided into two parts by the inscription because the sealer did not pay attention to the motif while unrolling the seal.[25] When considered as a whole, a bearded god with a "*spiked helmet*" (Frankfort, 1939: 269) sitting on a throne and depicted en face (a rare representation!) receives offerings from four gods (?) who approach him from the left and from the right. To the right of the seated god a man in a fringed garment is performing a libation, i.e. pouring a valuable liquid into a high pedestal jar with a globular body. He is flanked by a god with a horned cap and a bowl (?) in his right hand standing on an animal. To the left are standing a god with a hairy cap, a thick bordered garment made of heavy material (Frankfort, 1939: 269), carrying a sacrificed animal in his left hand accompanied by a worshipping god in a pleated garment.

[23]It is a motif frequently encountered on seal impressions of the Kārum Period. Özgüç states that this motif has been given the names of measuring rod and scepter, but it is always depicted upright and next to a god on the seals, so it may be a vessel. She has used the name "*iksir kabı*" in her publications (Özgüç, 1965: 14). Collon called it *"ball-and-staff"* (1988: 44). It is common in Mesopotamian glyptic art with scenes of worship, and on seals of the Old Babylonian, Isin/Larsa and Mitanni Periods. However, the meaning of the motif is unknown (Costas, 2014: 19, 21). In her study, Otto explains that, "*the 'ball-staff' was an instrument like the staff called a strickle today which was used to smooth the contents in capacity measuring vessels*" (Otto, 2024: 45). Due to the shape of the motif, the term *"ball-staff"* will be used in the following descriptions.

[24]There are dozens of impressions on different ten envelopes and eight of them belong to the archive of Šalim-aššur's family (Lassen, 2024: 119). The name on the seal inscription is disputed (see, Özgüç, 2006: 199; Lassen, 2024: 120).

[25]In the seal impression used by Larsen in his article (2015: fig. 36), the entire scene is visible. However the incense burner is more clearly visible in the seal impression Kt. n/k 1836C.

Between the seated god and the god with the sacrifice animal two different kinds of incense burners were placed.

Above is a smaller high footed bowl with three unregular wavy lines rising upwards. At the junction, there seems to be an attachment extending to both sides, similar to the much younger Achaemenid silver example from Uşak-Güre (Inv. no Uşak 1.55.96; Özgen & Öztürk, 1996: 115, fig. 71). Below is a tower model with a high cylindrical foot and three pointed strokes rising up from the tower parapet. Incense burners in the shape of architectural models are known from Akkadian seals (e.g. Boehmer, 1965: fig. 387, 646). Examples of architectural terracotta models dating to the third and second millennium BC have been found at numerous sites in in Iraq, Syria and Anatolia, e.g. in Assur, Nuzi, Tell Munbaqa, Tell Faq'us, Emar, Tell Giricano and Boğazköy (Katz, 2016: 10, 16, 20, 21, 86, figs. 2.47, 2.49, 2.27, 4.35, 2.4 and 2.59). Especially the "Turmmodell Nr. 11 (Mbq 34/22-3)" from Tall Munbaqa seems to be used as an incense burner, because it has a round hole in the domed top which marks the upper end of a pipe leading to the rear wall of the tower (Czichon & Werner 1998: 1, 6, pl. 9-12). One could imagine that smoke produced at the back side of the tower model flowed upwards through the pipe and filled the room with fragrant scent.

Incense burners next to a votive table, but in the hand of a figure: This group includes three seal impressions belonging to the Anatolian Style. As mentioned in the *Ḫantitaššu* ritual text, the incense burner is accompanied by a votive table, but in contrast to the text, it is held by a person.

Seal 8: This seal impression shows an unusual variation of the well known worshipping motif. The Weathergod with a small cup and a snake in his hands standing on a double-peaked mountain with his left and on a bull with his right foot is receiving three worshippers in typical Anatolian dress. They offer him some kind of vessel, an incense burner and a sacrificial animal. In front of the main god where one would expect an offering table under the crescent sun different motifs are grouped in a chaotic manner: the nude goddess with her skirt raised, a bird with its head turned back, a seated animal, an altar (with offerings?) and a small kneeling figure. A side scene shows a bull-man stepping on the head of a defeated lion. Stars, animal heads, monkeys and turtles as well as a long fish and ball-staff, serve as filling motifs.

It cannot be decided with certainty whether the incense burner carried by the deity is footed or not, but due to the posture of the hand a bowl with a small base may be assumed. Due to the small distance to the head of the worshipping god in front, especially to the left horn of his cap and his big lock of hair, the wavy lines which arise from the vessel are not depicted in the symmetric manner as usual. Instead of the expected second pair of parallel wavy lines an undefinable object appears, may be a representation of the embers and aromatics that are in the bowl.

Seal 9: The single-scene seal impression of the Anatolian Style depicts a bull with cone standing on a lion-headed boat carried by a pair of heralded lions and three worshipping gods in front of a votive table filled with food. While the first god is raising his hands in a gesture of prayer the following gods are carrying an incense burner as well as a sacrificed goat. As in seal number 8 the god with the incenser burner appears between the other gods and before the god with the sacrificial animal. Human heads, heads of birds, fish, ball-staffs, monkeys and animals with their heads turned back are filling the empty spaces, leaving no gaps part.

In contrast to Özgüç' interpretation "*içinden kamışlar çıkan bir bardak*" (Özgüç, 1965: 38) the object in the left hand of the second god must surely be defined as an incense burner with rising smoke in the shape of five straight and slightly wavy lines of different size.

Seal 10: In the main scene of the Anatolian Style seal impression a standing god is handing over a spouted pitcher to a seated god, who is holding a goblet-like vessel in his outstretched left hand. Between them, under a sun in a crescent, a small person (servant?) with raised hands next to a high-footed altar with

offerings is filling the empty space. It seems as if he worships the seated god. Divided by a row of six vertical dots a second scene of worship is depicted. A warlike god holding a fenestred axe in his right and a bow in his left hand is standing opposite of the bull with cone standing on a lion-headed boat (compare seal 9) carried by two antithetic bull-men. Who worships whom is not quite clear. Between them a table with offerings and a (kneeling?) person carrying an incense burner are placed. Parallel to the main motif on the left a minor-sized figure is worshipping the vis-à-vis situated god.

The incense burner appears as a cup-shaped vessel with rising smoke in the form of four almost straight lines of the same width and lenght.

Incense vessels standing on the ground without a votive table: This group includes three seal impressions, two Anatolian and one Old Babylonian.

Seal 11: The single-scene seal impression depicts a god seated on a chair and another god with a votive cup in his left hand accompanied by a bullman worshipping him. The garment of the seated god and the thick cushion on which he sits are covered with the characteristic zigzag-pattern of the Anatolian Style. The scene ends with an upside-down monkey and a lion. Between the two gods the obligatory crescent sun as well as an incense burner are placed. Two ball-staff motifs, daggers, upright snakes, animal heads and birds serve as filling motifs.

The incense burner consists of a deep bowl on a high slightly conical foot. Four nearly straight lines of variable lenght arise from the bowl. The lenght of the lines increase from the side to the center of the bowl, probably intended to given the impression of a cloud of smoke tapering towards the top.

Seal 12: The seal impression of the Anatolian Style depicts two separate worship scenes, separated by a ball-staff. In the main scene, as on Seal 12, there is the god seated on a stool worshipped by a standing god with raised hands (on the far right of the seal impression). The side scene depicts a second god with raised hands worshipping a bull with cone standing on a pair of heralded lions. An incense burner is depicted under the right arm amidst the filling motifs. They include an upside-down horned animal, a bird, a monkey, a fish and animal heads.

The incense burner, which resembles the hourglass altars on Akkadian seals (e.g. Boehmer, 1965: 102, Abb. 578, 579, 584) has a concave retracted base. At least four curved lines, whose lenght rise to the center, characterise the smoke.

Seal 13: The Old Babylonian style seal impression (Kt. 93/k 255) depicts two worshipping scenes separated by a bull’s head and an incenser burner (!). In the left scene a standing goddess with a horned headdress is worshipped by a goddess in a long robe. The scene on the right side depicts a god with a long spear-like object in his right hand being worshipped by a short-clothed figure with a hairy-cap and a turban (German: *Breitrandkappe*). The worshipper holds a bucket in his left hand and a conical vessel in his projected right hand.[26]

The incense burner consists of a deep bowl with a rounded bottom on a very high cylindrical foot. Above the bowl, slightly turned to the right, is a rounded oval shaped object with two zip-shaped ends. On another impression of the same seal this unusual structure appears as three or four vertikal lines – the classical representation of smoke.

Incense burners in the hand of a figure, without a votive table: There are three seal impressions in this group, one in Old Assyrian, one in Old Syrian an one Old Babylonian Style.

[26]Among the four impressions of Seal 13, this is the only one in which the incense burner is clearly visible. However, since the objects held in the hands of the figures cannot be distinguished, other copies were used for identification.

Seal 14: The seal impression depicts a procession of worshippers bearing offerings and approaching a bull with cone. Below the bull and separated by a line three smaller worshippers in a row are represented. The front figure is holding an incense burner. A praying goddess is flanking the scene on the right. A rectangular box with a two-line inscription mentions the *laputta* Šu-Anum, son of Anum-Ili. It marks the end and the beginning of the motif. According to Özgüç the seal was used and recut by Hubitum (Özgüç 2006: 106; Özgüç & Tunca 2001: 14). Instead of the bull with cone and the three worshippers below a seated god or goddess has to be assumed. But this assumption is debatable, because there is no visible indication for a recutting, i.e. traces of the former seated figure. And why left Hubitum the inscription untouched? Would it not have been logical to replace the names in the inscription as well? Furthermore the 'fork-like' hands of the figure with the incense burner resemble the left hand of the worshipper bringing an animal. The raised right hand of the middle small figure shows the same style of a hand with three straight fingers as the "DINGIR.LAMA" figures. One won't expect such a similarity in the styles of different periods (see, Özgüç & Tunca, 2006: figs. D3, E1-5). Therefore one should ask whether the recut hypothesis is more convincing or the assumption that the same seal was used by different owners without any changes comparable to the dynastic seals in the Mitanni era.

The incense burner has the form of a shallow bowl or plate resting on a high foot which broadens a little bit to the bottom. The foot is divided in segments by three short horizontal incisions at equal intervals. Three slightly wavy lines, which rise quite high, are meant to depict smoke.

Seal 15: This seal impression, which was attributed to the Old Syrian Style depicts the worshipping of the Sun God, characterized by six wavy rays which emerge from his shoulders. Three figures approach him. A praying god with raised left hand introduces a male figure with a typical Syrian *polos*-like headdress by grasping his left arm. A bullman with an unidentifiable object in his hands is accompanying him. Directly in front of the sungod a crescent sun above a star and a little person holding an incense burner are placed. In ancient Anatolia, rituals were performed by people from different professional groups such as old women, oracles, sorcerers, doctors, midwives, priests of certain gods, temple prostitutes (Ünal, 1996: 37). The small figure may belong to one of these professions and may have been depicted small because of the hierarchy. Monkeys, ball-staffs, cups, birds and circles work as filling motifs.

The incense burner consists of two parts, a cylindrical foot, which broadens to the top and a high necked globular jar with a narrow base. The smoke is represented by three parallel wavy lines which rise up straight first before they turn to the left in the space between the prayers hand and the crescent sun.

Seal 16: The Old Babylonian Style seal with four impressions on a bulla recovered from Acemhöyük depicts a single scene. Unfortunately the roughly cut figures cannot be clearly identified. A man in a long robe is worshipping a bearded warrior god in a slit skirt with a curved sword or scimitar and a mace in his hands. Behind him another figure with the same curve of hair, but a short garment, is depicted. In his right hand he holds an incense burner (not a mace as Özgüç assumed; Özgüç, 2015: 102), in his left hand another long cylindrical object. Özgüç identifies this figure as a lion-headed man, which is far from being clear, not least because of the lock of hair, which is atypical for a lion's head. Moreover lion-men never carry incense burner. The open spaces are filled with a monkey and four dots.

The incenser burner consists of a long cylindrical foot, which narrows to the top, and a deep bowl with a rounded bottom and an incurved rim. In contrast to the other depictions of incense vessels cloud-like smoke rises from the bowl instead of the usual straight or wavy lines.

Archaeometry Study

By analyzing the remains on the inner or outer surface of ceramics recovered in archaeological excavations, information such as the origin of those remains can be obtained. These residues can be in the form of visible sediment, charring and encrustation or invisible to the eye (in the pores of unglazed ceramics). Among the residues, resins, waxes and fats are less soluble than carbohydrates and proteins. The remains, especially in the pores of ceramics, have survived to the present day because they are protected from groundwater seepage and microbial spoilage. The analysis of these remains is commonly referred to as *“Organic Residue Analysis (ORA)”.* When the analysis results are supported by sufficient archaeological information, it is possible to gain insight into diet, storage and processing, trade, medical practices, rituals and daily life activities (Hammann et al., 2020: 14688; Irto et al., 2022: 1, 2). However, in the area where ORA is applied to the analyzed archaeological fragments, re-analysis is usually not possible. Or, depending on the scale of the application, the sample is completely destroyed (Hammann et al., 2020: 14692). For this reason, the samples to be determined for analysis should be evaluated from different angles and should be determined considering that they may disappear.

The incense scenes in the visual sources of Ancient Mesopotamia dating to the 3rd-1st millennium BC and in Anatolian Kārum Period seal impressions depict different types of vessels. In the light of these visual and archaeological information, 14 ceramic sherds (Table 1) recovered from the excavations in Boğazköy, Ortaköy, Beycesultan Höyük and Oymaağaç Höyük were identified. The samples dated to the Late Bronze Age and Early Iron Age include goblets, high footed deep bowls, libation arms, plates, perforated lids (?) and miniature vessel fragments. As a result of the lipid analysis (March 2024), only the Late Bronze Age goblet from Beycesultan contained plant remains.

Table 1

List of selected ceramic sherds for lipid analysis (Alper & Czichon).

	Late Bronze Age	**Iron Age**
Beycesultan Höyük	Goblet (1) Dish (1) Deep Bowl with a High Foot (1)	
Boğazköy	Libation Arm (4)	Perforated Lid (2)
Ortaköy	Libation Arm (1) Perforated Lid (1)	
Oymaağaç Höyük		Miniature Vessel (2) Perforated Lid (1)

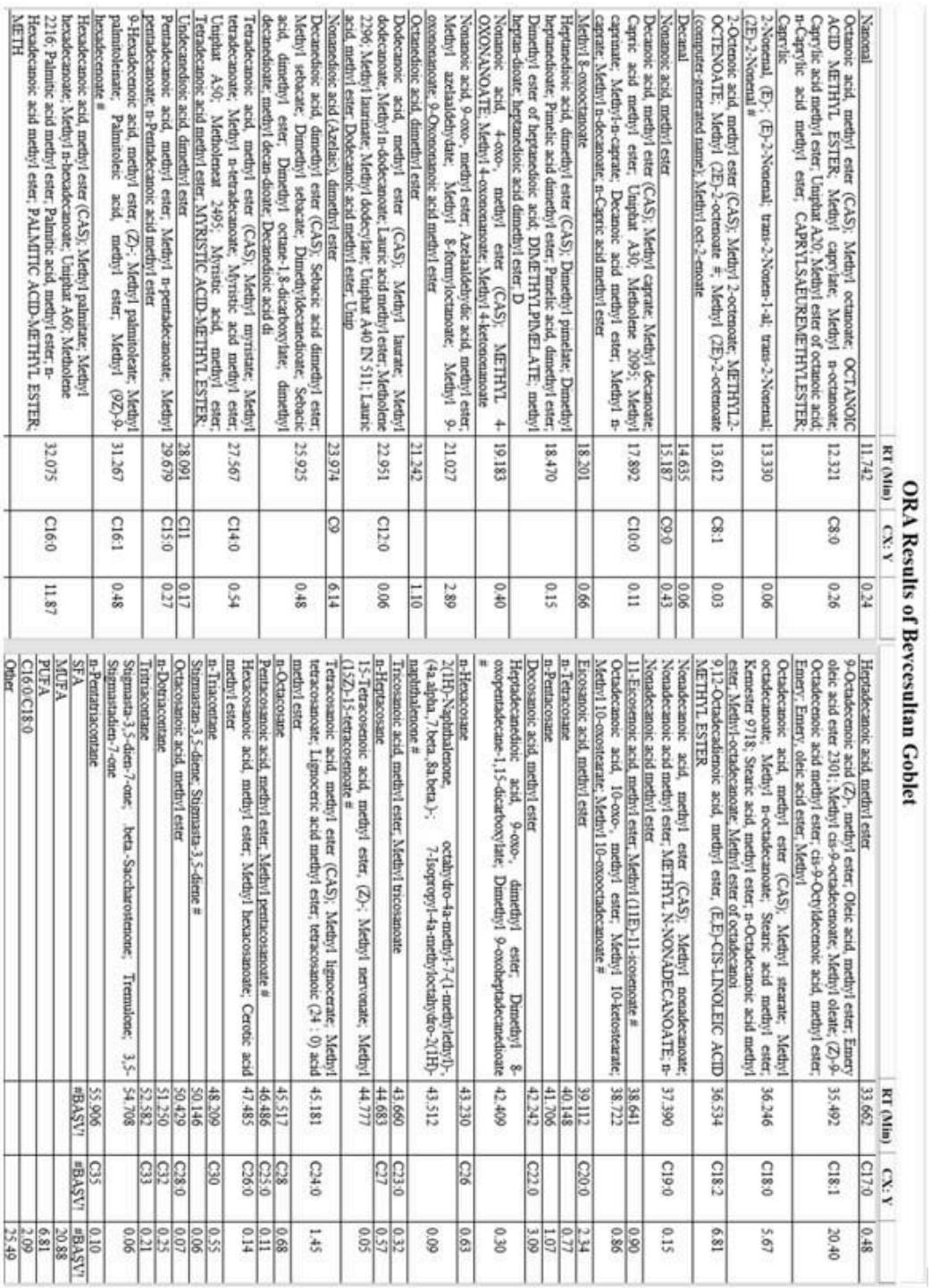
The Beycesultan sample was recovered during the excavations of Room 63 in plan square O27. It is wheel-made like the other Beycesultan goblets (Dedeoğlu, 2016: fig. 1). It has a reddish paste tempered with stoneware, reddish brown slip and is hard fired. The exterior surface of the vessel is decorated with horizontal groove decoration on the foot near the base and just below the bowl, and with wavy groove decoration below the rim.[27] There are no burn marks on any part of the vessel. Acid-catalysed extraction method was used in the lipid analysis:

> *“A one-step, acid-catalysed, direct extraction-methylation method, which has been successfully applied by many researchers analysing the lipid residues in ancient ceramics, especially from Sout East Europe*

[27] Beycesultan Höyük Excavation Archive. We would like to thank the director of the excavation Prof. Dr. Eşref Abay for the information.

and the Middle East, was employed for the samples under study. Lipid residues were extracted and methylated, following the protocol described by Papakosta et al. (2019) and Correa-Ascencio et al. (2014), with some modifications. According to the method, 2 g of the sample containing 50 µl of n-tetratriacontane (100 mg/l) added as internal standard were heated with 6 ml of a mixture of MeOH and 98% H_2SO_4 (5:1, v:v) at 70°C for 4 h, and then cooled. Lipids were extrcted with n-hexane (3 x 2 ml) and separated off after centrifugation (2500 rpm, 3 x 5 min)” (Tarhan et al., 2023: 837).

Figure 2
Results of ORA analysis (Tarhan).



Among the specimens in Figure 2, lipid residues were detected in two of them, but no interpretation could be made due to the low values of the residues in the libation arm from Boğazköy. Only the results of the Beycesultan goblet could be interpreted (Figure 2): *"Lipid residues, which may belong to coriander, dill, ginger, lemon/lime, sweet oranges, safflower and other plants from the families of these plants, in high concentrations that can be quantified. Residues of fish, cauliflower, citrus fruits, lemongrass, vegetable oil and animal fat were also found. However, their concentrations were too low to be quantified (Figure 2). The lipid concentration of 6255.82 µg/g indicates that this form was used for a long time or was very well preserved".*[28]

Experimental Study

In order to understand the effect of the incense on the people, the incense recipe given in the *Ḫantitaššu* (KBo 11.14) ritual was tested as described in the text. This ritual was chosen as an example since it contains similarities with the depictions on the seals of the Kārum Period. In order for the experiments to be close to Hittite conditions, care was taken to ensure that the incense materials were natural (Figure 3a). The butter is home-made using natural cow's milk. The flour is wheat flour milled in a black mill. The resin is from untreated cedar wood. The resin is from untreated cedar wood. The text of *Ḫantitaššu* does not specify how the sulfur is made. In order to get an idea, both refined sulfur and stone sulfur as found in nature were tried to be burned. The stone sulfur was taken from the Uşak-Kayaağıl sulfur deposit[29] and ground on a grinding stone (Figure 3b). Rock salt from the shop was also crushed in the same way. Refined powdered sulfur was purchased from an agrochemical store.

Experiments according to the *Ḫantitaššu* text were conducted on five different days in two miniature vessels. One of them is made of clay from Oymaağaç Höyük (h: 3.5 cm, d: 7.5 cm), the other of industrial clay (h: 5 cm x d: 9 cm).

Since the text of the ritual specifies the combustible material as embers, the experiments were conducted only with charcoal embers. However, as the embers were extinguished during each experiment as the incense ingredients were added, the embers had to be constantly replenished. This shows that a large amount of embers is needed to complete a ritual without interruption. It is likely that the Hittites either used larger vessels or kept embers in another vessel, such as a brazier, and replaced them when the embers in the incense burner went out. Seal nr. 7, where a seperate vessel with flames (?) is depicted next to an incense burner may proove this hypothesis.

Since *Ḫantitaššu* does not specify the amount of aromatics, about 1 g of each ingredient was used in the first experiment. However, these measurement proved to be too much, and in subsequent trials, a pinch of each ingredient was burned. The embers were first sprinkled with cedar resin in large and small grains. As the tiny grains burned, there was very little smoke and a faint cedar smell. The smoke started as thin straight lines emanating from different points, converged in the center and then began to billow and dissipate (Figure 3c). In another experiment, cedar needles and thin splinters were used, since the translation of the ritual refers to cedar resin or splinters. Unlike the resin, the splinters produced dense smoke that curled up. It even formed cloud-like fluffy shapes after rising a little (Figure 3d). When a piece of butter, about 1 cu cm in size, was added, only the fragrance of the butter was felt. At the same time, as the butter melted and spread over the embers, wavy smoke rose from the larger surface from the first moment (Figure 3e). When a teaspoon of honey was put on it, it didn't burn and the smoke became a very thin line because the

[28]We would like to thank Assoc. Prof. Dr. İsmail Tarhan, faculty member of Selçuk University Faculty of Science, for his contributions in interpreting the ORA analysis results.

[29]Stone sulfur was obtained through Assoc. Prof. Dr. Selahattin Polat, a faculty member of the University of Uşak, Department of Geography, and we thank him for his help.

butter ran out (Figure 3f), and there was no odor other than the smell of butter. Even when one puts the nose very close to the incense burner, the sweet smell of honey was barely perceptible. When the powdered pure sulfur was sprinkled,[30] large blue flames (Figure 3g) suddenly appeared. As the temperature increased, honey and coarse resins started to burn.[31] At the same time, an extremely unpleasant odor appeared, similar to the smell of rotten eggs. When the flame was visible, no smoke was visible, but after the flame was extinguished, gray smoke came out in wavy lines from the surface where the sulfur had spread. As the flame disappeared, the sulfur odor intensified and the embers began to die out. When flour was sprinkled, there was very little smoke and the smell of toast for a short time, but the smell of sulfur could still be felt. When salt was sprinkled, tiny grains exploded, but there was no distinct odor. Soon the embers were completely extinguished before the flour and salt were used up (Figure 3h). At this stage, it is necessary to add more embers to burn the flour and salt. In all our experiments, the dominant odors were flour, butter and sulfur.

It is noteworthy that in the fragrant flour, butter and resin sulfur is extremely foul-smelling.[32] The purpose of the *Ḫantitaššu* ritual is to attract Šamaš to come to the incense burning area to get rid of the disease. In order for the god to come there, it is expected to smell good, because the fragrance of food and incense was used to calm angry gods and summon them to the ritual site (see, Haas, 2003: 257, 258). Therefore, it should be considered that "$^{NA}_{4}$ *ḫust*" may be another substance.

Conclusion

From the past to the present, incense has been used for different purposes in religious rituals and daily life due to its bonding, soothing and purifying properties between gods and humans. Information on incense has been recorded since the early periods of writing. One of these records is the *Ḫantitaššu* text.

According to the *Ḫantitaššu* text, the incense burner is made of clay and stands on the ground next to the offering table. The same scene or similar scenes, where the incense vessel is held in the hands, are found on 16 seals of the Kārum II Period: Nr. 1-5, 8-12 in Anatolian Style, 6, 13, 16 in Old Babylonian Style, 7 and 15 in Old Syrian Style and 14 in Old Assyrian Style. Although the same subject is addressed in all styles during the Kārum II Period, the fact that the incense burner is especially preferred in the Anatolian Style raises the question of whether the incense burner is characteristic of the Anatolian Style. If so, are the owners of the seals in the other styles Anatolian? Could it be that they purchased the seals elsewhere and therefore preferred both the motifs of the place of purchase and their own local motifs at the same time?[33] If the seal owners were not of Anatolian origin, could they have had the Anatolian motif added to their seals due to intensive trade? Or was it preferred because it was a fashionable motif during the Kārum II period? Such questions cannot be answered yet. However, it seems that the incense burner disappeared with the loss of popularity of the Anatolian Style in the Kārum Ib Period.

[30] We tried stone sulfur but it never burned, probably because of the clay content. The powdered sulfur was first poured about 1 g, but it produced an extremely unpleasant smoke and odor. This smoke and odor caused severe coughing and burning in the windpipe 15 minutes after inhalation. In fact, the burn in the windpipe lasted for more than 24 hours. This is because when sulfur burns, sulfur dioxide (SO2) and hydrogen sulfide (H2S) gases are released along with the blue flame (Kükürt (2024, 12 March). https://www.mta.gov.tr/v3.0/bilgi-merkezi/kukurt). Therefore, a smaller amount of sulfur was reduced and sprinkled in subsequent trials, one pinch at a time. There was still an unpleasant odor, although not as much as in the first trial, but no burning was felt.

[31] Haas also suggested that sulfur may have been used as a flammable substance (2003: 238).

[32] Today, in rural Anatolia, sulfur is burned in the courtyards of houses, barns and poultry houses in spring and summer. Refined powdered sulfur is also sprinkled on the door sills and windows of barns and poultry houses. The purpose is to protect the environment from pests such as snakes and mice.

[33] Lassen states that there are examples of all styles among the seals of the Šalim-Aššur family, with Old Syrian seals being particularly common. However, since the connection of the family members with Syria could not be proven, he made a speculative comment on the origin of the seals: They may have been purchased by Iddin-Abum somewhere in Syria and distributed to the family (Lassen, 2024: 127).

Figure 3
The experiment of Ḫantitaššu *ritual (Alper).*

The subject of 14 of the 16 seals of the Kārum II period is worship accompanied by an offering. Seal 5 differs from the other 14 seals in that the figures are independent of each other, while Seal 6 depicts a lion fighting a lion in the main scene. The seals were divided into four groups according to the presence or absence of a votive table and the position of the incense burner. The first group with seals 1-7 show exactly the same scene as described in the story of *Ḫantitaššu*. The incense burner appears in front of a seated god (1-3), a divine bull with a cone (4) or a god standing on a bull (5). On seal 6 the god is missing, because the incense burner and the offering table near by appear in the side scene. On Seal 7 two incense burners are shown next to a seated deity. One of them seems to be a model of a tower (German: Turmmodell), which is known to have been used for both burning incense and making offerings, and the other incense burner is depicted above it. The second group with seals 8-10 show a similar scene, but the incense burner is in the hand of a male figure standing in front of the offering table. The god on a bull (8) or a bull with a cone (9, 10) stand next to him. In the seals of the third and fourth group a votive table does not exist. The only commonality with *Ḫantitaššu* is the incense burner in a worship scene. In the third group (11-13) the incense

burner is on the ground, i.e. in front of the seated god (11), in front of a bull with a cone (12) or two different worship scenes (13). In the last group (14-16) the incense burner is carried by a figure. On seal 14 it is in the hand of the foremost of the small figures below the bull with cone. On seal 15 it is in the hand of the small figure in front of the seated god. On Seal 16, it is in the hand of a short-skirted figure standing in front of a standing figure, which may or may not be a god. Among the scenes in which the incense burner is carried by a person, only Seal 10 shows a single figure. On Seals 14 and 15 the first person carries the incense burner, while on Seals 8, 9 and 16 the second person carries it. The fact that different numbers of figures are depicted indicates that there is no set number of people making the offering. In addition, the incense burner is placed in different places in the sequence of the motifs, indicating that the incense burner does not have a special place during the offering.

Some of the figures on the seals can be identified with certainty as gods. Only six figures can be identified with special gods: DINGIR.LAMA (8, 14), praying with raised hands, well known from Mesopotamia; DINGIR.ALAD (1), the male counterpart of DINGIR.LAMA, praying with raised hands, but with a beard (Black and Green, 2004: 115); the Watergod Ea (2), seated on a throne, which is placed on his sacred animal, the goat-fish; the Sungod Šamaš (15), seated on his throne with the rays of the sun coming out of his shoulders; the Weather God stepping on the back of his sacred animal (1, 5, 8); and the War God holding an axe and a bow (10). While the known gods are normally depicted as standing, Ea and Šamaš are represented as seating, may be as an reminiscence to the representation of Šamaš as the god of justice and sacrifice (Maul, 2013: 165) on the Code of Hammurabi. Nine seals (2-4, 7, 9, 11-13, 15) depict a figure of a prayer, dressed as a god, but with a hairy-cap in the Anatolian style or with a plain head (7, 15) and with both hands raised like DINGIR.LAMA. On seals 4, 7, 9 and 15, the praying figure accompanies the other worshipping figures, while on the other five seals only the praying figure is worshipping alone. On seal 14 DINGIR.LAMA is both the worshipping and the worshipped goddess, i.e. there are two different DINGIR.LAMA representations (Black & Green, 2004: 115) on the same seal. This is the only seal in Old Assyrian style with the depiction of an incense.

It cannot be decided whether the other figures on the seals are gods or humans. In the Mesopotamian style, the gods are separated by clothing and horned headdress, while in the Anatolian style, both the seated figures and the figures facing them are depicted with the same clothing and headdress. Otto suggests that the figures on Anatolian seals from the Kārum Period may be gods, deified kings or ancestors (2024: 33, footnote 2). This could mean that the Anatolian Style does not pay much attention to the distinction between gods and humans. Finally, the figures carrying the incense on Seals 14 and 15 are smaller than the others. May be they are filling motifs, may be they are of a lower rank.

Neither the seals nor the *Ḫantitaššu* text provide any information about the identity of the performer of the ritual. Haas states, that it was a woman (Haas, 1994). Ünal argues, that *Ḫantitaššu* is the name of the god of the city of *Ḫurma*, and therefore the ritualist must have been a man (Ünal, 1996: 78, 79). On the Kārum seals, the incense burner stands between both male and female figures.

The seals (except 6) do not indicate the area where the incense ritual was performed. *Ḫantitaššu* also lacks an explanation. However, it is known from other Hittite rituals that incense was used in temples (the ritual of AN.TAḪ.ŠUM^{ŠAR} Festival; Reyhan, 2016: 102) and burial contexts (mortuary temple rituals; Haas, 1994: 271). Archaeological excavations have yielded incense burners in temples and tombs as well. For example, plastered incense pits were found in Rooms E and F of the Early Bronze Age burial complex at Sanliurfa-Gre Virike (Ökse, 2005: 21, 42). A limestone pedestal of a censer was found among the rubble of another contemporary grave (Ökse, 2006: 21). In Assyria, terracotta incense stands were found in layer G of the Temple of Ishtar (late 3rd millennium BC), along with statues of prayers and house models (Andrae, 1922: 41). The presence of a tree (?) next to an incense burner on Seal 6 suggests that incense rituals may have been

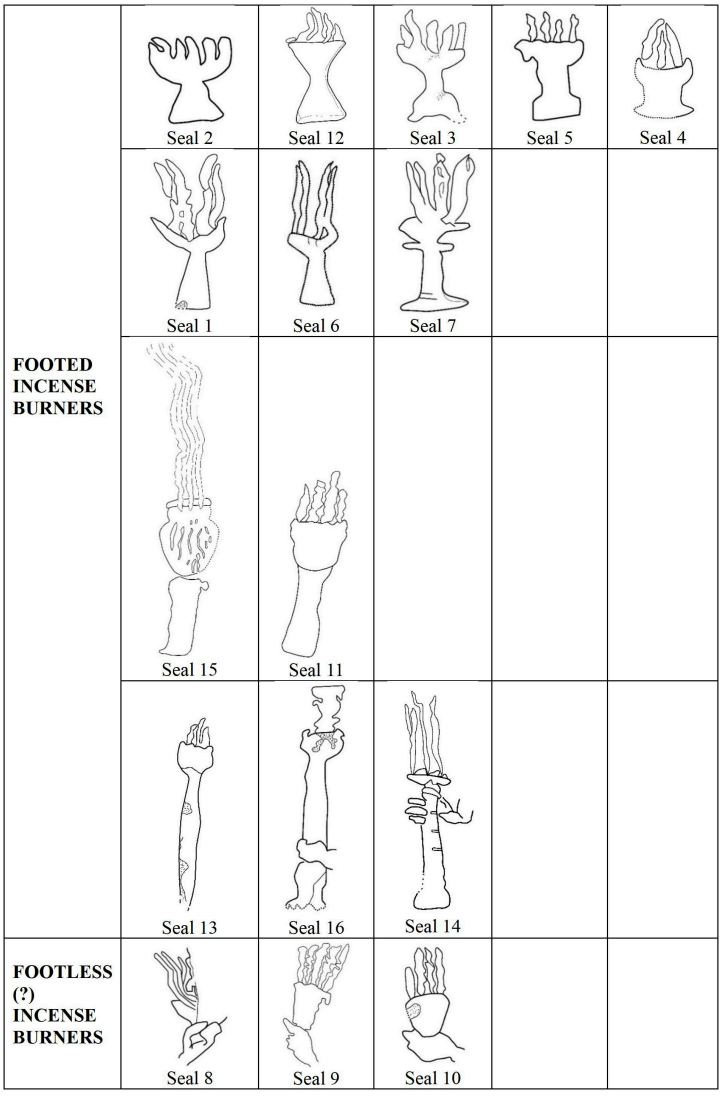
performed in open places as well, e.g. in the open-air sanctuary at Hattuša-Yazılıkaya or at the "Oak of Telipinu" in Nerik, mentioned in the *purulliya* festival (Haas, 1994: 699, 700).

The number of scenes varies on the seals. Seven of them (4, 7-9, 14-16) bear a single scene, while the others have two separate worship scenes. The incense burner is in the main scene on Seals 1-3, 5 and 11, in the side scene on Seals 6, 10 and 12, and between two scenes on Seal 13. On Seal 5, the motifs are independent of each other, but the incense burner stands near the votive table. In Seal 6, the main scene is in the Old Babylonian Style, but the side scene with the incense burner is recognizable from the Anatolian Style (fig. 1).

Incense burners were identified by the depictions of smoke rising from them in the form of short and long lines with nearly straight, wavy and cloud-like fluffy forms. Our experiments have shown that the different shapes and lenghts of smoke depend on the aromatic substance burned. Long wavy lines (Seals 1, 6-8, 14 and 15) may represent the smoke of cedar resin and splinters. The short and wavy lines on the incense burners of seals 9-11 and 13 resembles the powdered flour spread over a large surface. The short and wavy lines in 2, 3, 5 and 12 look similar to smoke, which diminishes when honey or sulfur is added to the ingredients. Seal 16 shows a cloud-like fluffy smoke, which resembles to the dense smoke produced when butter or cedar needles and splinters are burnt.

Figure 4

Form typology of incense burners on seals (Alper & Czichon)



As the typology table shows, the incense burners are of different forms (Figure 4). 13 of them are footed (1-7, 11-16), three are footless or perhaps with a small base (8-10). 15 seals (1-14, 16) depict open forms, one seal (15) a closed form. It is thought that the form on seal 15 does not allow sufficient air to enter the vessel. Unfortunately no other seal impression depicts a similar incense burner. But a supporting form was discovered in the Hittite levels (15th/14th century BC) of the temple area at Oymaağaç Höyük. An unique jar with narrow vertical openings on the entire surface (Czichon et al., 2019: 75, Abb. 19,1-2), resembles the pot with the vertical wavy lines pretty good.

The cup-shaped vessels in the hand on seals 8-10 suggest that they may have had a small base hidden in the palm of the hand. Similar forms have been found throughout Central Anatolia in the Kārum and Old Hittite levels (Türker, 2008: 60, 61). Since the seals depict incense scenes these cup-shaped vessels may be interpreted as incense burners.

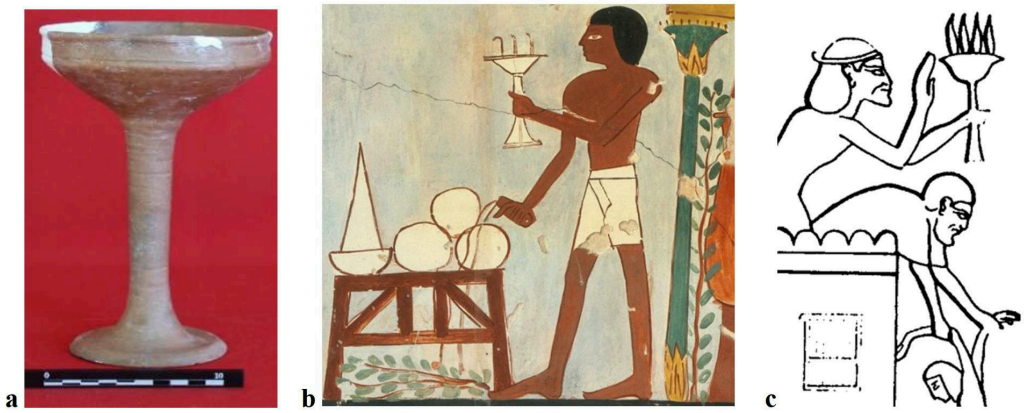
The forms on seals 11, 13-16 have very high feet. Seal 14 has a shallow dish on the foot, the others have deep bowls. Except Seal 15 it is not clear whether the feet are separate or united with the vessel above. However, examples of both forms are known from excavations. High footed bowls with S profile were recovered from the Gre Virike Early Bronze Age grave complex (Ökse, 2005: fig. 13). These jointly produced examples are similar to the forms on Seals 13 and 16. At the same time, the feet of the forms on Seals 13 and 16 are very high and slightly widened at the top and bottom, like the incense stands found in the Temple of Ishtar G in Ashur (Andrae, 1922: abb. 18). Similar incense burners with separate stand and bowl are known from some Late Bronze Age-Early Iron Age sites in the Levant such as Tell Qiri, Tell Qasileh, Lachish and Megiddo. Some examples are called "*incense stands*" because they are found with a bowl. Some were named "*pottery stand/pottery model*" due to the supportive function of the legs (Fowler, 1984: 184, 185). The form on Seal 11 shows a horizontal line between the foot and the bowl, extending halfway up the bowl. This line indicates that the form may have been produced separately. It is also similar to the combined forms found in the Old Hittite temple deposit at Inandıktepe. The 34-75,5 cm high forms have deep bowls and high conical feet. Three of them with burnt surfaces are labeled as "*sunak/buhurdanlık*" (Özgüç, 1988: 14, Cat. 8-10). Since there is no trace of separation between the bowl and the foot on the similar, but smaller forms of Seals 1 and 6, they were probably produced in combination, like the examples from Inandıktepe. In Seal 14, the fact that the high footed form with a slightly widened downward leg has a shallow plate, distinguishes it from the others. A parallel was found in Kültepe, in the burial chamber belonging to Level III of the House of Adad-Sululi (see, Kt. a/k 794; Kulakoğlu & Kangal, 2011: fig. 96). Özgüç states that there is a hole covered with soot at the junction of the foot and the shallow plate and that it may have been used for incense (Özgüç, 1950: 65, 66). As in the NAM.BÚR.BI ritual (see footnote 12), it may be indicative of the practice of incense in a funerary context.

Finally, small goblet-like forms are depicted on Seals 2-5, 7 and 12. They are distinguished from each other by the fact that their feet are either completely conical or partially conical. They stand out as the most numerous form type in the incense burner typology of Kārum seals. It is noteworthy that the Beycesultan specimen, in which lipid residues were detected in the ORA analysis, has a goblet form as well.

Figure 5
Goblets from Beycesultan (Dedeoğlu, 2016: fig. 1)

At Beycesultan Höyük, the Late Bronze Age levels 5b (1700-1595 BC) and 5a (1600-1500 BC)[34] were destroyed by fire, resulting in the recovery of many goblets *in situ*. The goblets were found extensively in the living quarters of dwellings, in the storerooms of elite buildings and in buildings associated with local cult. The goblets are wheel-made and hard-fired, and are usually slipped in red, reddish brown, brown and buff colors. They have a shiny appearance thanks to the silver mica mixed into the slip (Figure 5). They are similar to goblets recognized from cult contexts at Late Bronze Age and Iron Age sites in the Levant such as Hazor, Tel Mor, Tell Mevorakh, Lachish, Tell Dan, Megiddo, etc. (Dedeoğlu, 2016: 14-18).

Figure 6
eycesultan chalice (Archive of Beycesultan Höyük), Minnakht Tomb wall painting detail (Winlock & Arnold 2010, fig. 6), Ashkelon Campaign Relief detail (Kletter et al., (Eds.) 2015: fig. 18.19)



Dedeoğlu compared the Beycesultan goblets with their counterparts from the Upper Menderes Basin and the Levant and evaluated them in terms of their functions as "drinking vessels, incense burners and lamps". As there are no traces of soot on their inner surfaces, she suggested that they were probably not used as incense burners or lamps. She also emphasized the idea that these forms may have been drinking vessels associated with banquets since their inner and outer surfaces are generally burnished (Dedeoğlu, 2016: 19). The very high level of inclusions in the sample selected for ORA (Figure 6a) indicates that the form was used for a long period of time. Like other Beycesultan goblets, the well-preserved surface suggests that it may have been a drinking vessel. However, the combination of fragrant herbs and lipid residues of animal and vegetable oils suggests that this vessel may have had a different function. The reason for the well-

[34]The stratigraphy of Beycesultan Höyük has been reconstructed according to the data obtained from the new excavations. Level 5 corresponds to levels II and Ib in the first period excavations carried out by James Mellaart and Seton Lloyd in 1954-1959 (Dedeoğlu & Abay, 2014: tablo 1).

preserved surface of the vessel may be the preservation treatment of the inner surface of the vessel, as suggested by Stockhammer. Today, in the Levant, incense burners are protected from soot or burn marks by first putting sand inside the incense burners (Stockhammer, 2012: 30). Similarly in Somalia, the inner surface of the incense burners is covered with aluminum foil etc. before the incense is burned. In this way, there is no trace on the incense burner and the residues of aromatics do not penetrate into the container, preventing the formation of bad odor during the next incense burning.[35] A similar practice is mentioned in a text from Maşat Höyük. In a ritual performed by Goddess Ḫapantali(ya) for the calming of Telipinu, pebbles are first placed on the hearth and then herbs and incense resin are added (Haas, 1994: 441). This suggests that, as with traditional practices today, incense burners may have been treated in some way to keep them clean:

> *"Die gewichtige Ḫapantali(ya) [brachte vom ...] ... karašaniya-Holz/Frucht; die [groß]e Ḫapantali(ya) nahm [Kieselsteine] von einem [reinen(?)] Ort und schüttete sie auf den Herd. [Es] kochen [die Kräuter]. [ ] Die Königin der Heilmittel [ ] fügt Eichenholz, [Weiß]dorn (und) šamaliya-Kraut hinzu; [sie] schüttet [kalwišn]a-Substanz, Räucherharz und eine Schnur [ ] der Kieselsteine dazu"* (Haas, 1994: 441).

The Yavneh excavations yielded goblet-shaped incense burners with burn marks only on the rim (but not on the interior).[36] For this reason, we conducted experimental studies (in accordance with the Ḫantitaššu text) in order to determine the number of burns after which the soot trace is formed. Although incense was burned in the same vessel five times (the embers were renewed several times in each experiment) without placing any object for protection, no soot or burn marks were observed. Only the heat-melted butter left an oil stain. In addition, if the embers are stirred before the resins are completely burnt, the resin sinks to the bottom of the vessel and sticks there (Figure 3i). If not, the resins burn completely without any trace. It is the fuel that may create soot in the incense burner. If freshly cut branches are used, grey-black stains appear at the bottom of the vessel. Therefore the villagers use dry woods for baking bread to keep the oven clean. Since there are no traces in the incense burner, it is thought that dry wood may have been used like today's bread bakers.

Additionally there are ancient Egyptian wall paintings which support our hypothysis that forms similar to Beycesultan goblets may have been used for incense. In a funeral ritual scene in the wall paintings of the Tomb of Minnakht[37] (Figure 6b) and of the Tomb of Kenamun, as well as in the reliefs of Pharaoh Merneptah's Ashkelon Campaign at Karnak (Figure 6c; Dedeoğlu, 2016: 18), bowl-shaped goblets with cylindrical, downward slightly expanding legs are depicted with curled smoke rising from them. Besides that the incense ritual in the Tomb of Minnakht is performed in front of a votive table, quite similar to the story of *Ḫantitaššu* and the Kārum Period seals 1-7.

The combination of citrus fruits, animal and vegetable oils and fish remains in the ORA results of the Beycesultan goblet is another factor supporting the use of incense burners. *Citrus bergamot* and *coriander* were found in the analysis of vessels recovered from a perfume production area destroyed by an earthquake around 1850 BC during the excavations in Pyrgos, Cyprus (Cousin, 2016: 521). In the Beycesultan chalice *coriander* was detected as well. Lime/lemon[38] and sweet oranges[39] belong to the same family (*Rutaceae*)

[35] Nasteha A. Moallim Ahmed, student at the Department of Archaeology, Uşak University (personal communication, Uşak, 19.04.2024).

[36] The ORA results of the Yavneh goblets revealed a combination of vegetable and animal oils and fragrant plant residues, indicating that Yavneh goblets were used for fragrance production. Since there are no burn marks on the inside of the goblets, It is thought that these chalices were used to burn plants for incense, but vegetable and animal fats were used as fuel (Kletter, 2015: 232; Namdar et al., 2010: 169).

[37] Wilkinson, (2024, 25 May). https://www.metmuseum.org/art/collection/search/544601

[38] Citrus lim group (2024, 25 May). https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomydetail?id=10683

[39] Citrus sweet orange group (2024, 25 May). https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomydetail?id=10782

as *citrus bergamot*[40]. Therefore the presence of animal fat and vegetable oil remains in addition to citrus fruits suggests the use of perfumed oils described in Mesopotamian and Hittite cuneiform texts. From the 3rd millennium BC, perfumed ointments and oils containing fragrant trees and plants were produced in Mesopotamia and Syria using cold maceration and hot preparation methods. These ointments and fragrant oils are prepared using milk, beer, animal fats, sesame oil and olive oil (Battini, 2018). Hittite texts also mention a type of "perfumed oil(?) / fine oil(?)" named Ì.DÙG.GA. It was presented as a gift to the king at coronation ceremonies, sprinkled on the road during the rituals of summoning Telipinu, and used at different stages of the 14-day funeral rituals. Referring to the burning of fragrant oils in Hittite contexts, Vigo suggests that the scent of Ì.DÙG.GA may have been seen as incense in funerary settings (Vigo, 2014: 27, 29-32). In addition to all these, the discovery of fish among the remains of the Beycesultan chalice suggests prescriptions containing fish oil. In the following example of therapeutic treatments recorded on UGU tablets, an incense recipe for burning head is given. According to the recipe, the ingredients mixed with rancid oil and fish oil should be burned in the embers of thorns and the patient's head should be incensed:

> *"(ii 10-11) [If a person's] ˹crown of the head˺ is continually hot, you mix [together] gaṣṣu-gypsum, indar-type (?) uḫḫūlu qarnānu, kibrītu-sulphur, bone, uḫḫūlu qarnānu, rancid oil and fish oil. You fumigate his head (with it) over ašāgu-thorn coals"* (Scurlock, 2014: 322).

In conclusion, the appearance of the ritual context (incense burner near votive table), mentioned in the Hittite Ḫantitaššu text, in the seal impressions of the Kārum II period indicates the existence of an unchanging incense tradition in Anatolia throughout the 2nd millennium BC. This incense tradition receives support through archaeological evidence. A goblet from the Hittite levels of Beycesultan, which resembles the incense burners on the seals very much, was analyzed with ORA and yielded animal fat and fragrant plant remains indeed. By this multidisciplinary approach it is proven that the goblet form was really used for burning incense.

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