



*xšnaoθrahe ahurahe mazdā*

Detail from above the entrance of Tehran's fire temple, 1286š/1917–18. Photo by © Shervin Farridnejad

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# Contents

## Notes

1- Samra <b>Azarnouche</b> : A Third Exegesis of the Avesta? New Observations on the Middle Persian Word <i>ayārdag</i>	<b>1</b>
2- Alberto <b>Cantera</b> : Textual performative variation in the Long Liturgy: the ceremonies of the last ten days of the year	<b>16</b>
3- Touraj <b>Daryaee</b> : Kərəsāspa's Wet Dream	<b>50</b>
4- Stephanie <b>W. Jamison</b> : A Golden Amulet in Vedic and Avestan	<b>57</b>
5- William <b>W. Malandra</b> : Artaxerxes' 'paradise'	<b>67</b>
6- Antonio <b>Panaino</b> : Temper and self-control in the Persian King's ideal Portrait	<b>72</b>
7- Antonio <b>Panaino</b> : The Avestan Priestly College and its Installation	<b>86</b>
8- Daniel T. <b>Potts</b> : Arboriculture in ancient Iran: Walnut ( <i>Juglans regia</i> ), plane ( <i>Platanus orientalis</i> ) and the "Radde diċtum"	<b>101</b>
9- Nicholas <b>Sims-Williams</b> : A Newly Identified Sogdian Fragment from the Legend of Saint George	<b>110</b>
10- Martin <b>Schwartz</b> : A Preliterate Acrostic in the Gathas: Crosstextual and Compositional Evidence	<b>116</b>
11- Daštūr Firoze M. <b>Kotwal</b> : The Zoroastrian Nīrangdīn Ritual and an Old Pahlavi Text with Transcription	<b>125</b>
12- Michael <b>Witzel</b> : (On) The reimport of Veda traditions to Kashmir in the early 15th century	<b>134</b>
13- Jamsheed K. <b>Choksy</b> and Narges <b>Nematollahi</b> : The Middle Persian Inscription from a Shipwreck in Thailand: Merchants, Containers, and Commodities	<b>144</b>
14- Mahmoud <b>Omidšalar</b> : Of Teeth, Ribs, and Reproduction in Classical Persian	<b>151</b>
15- Velizar <b>Sadovski</b> : Nominalkomposita, Neowurzelbildungen und zugrundeliegende syntaktische Konstruktionen im Veda und dem Avesta	<b>156</b>

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**Hanns-Peter Schmidt (1930-2017) Gedenkschrift**

The 6<sup>th</sup> volume of DABIR is a Gedenkschrift to honour Hanns-Peter Schmidt (1930-2017), an excellent German scholar of Indo-Iranian studies, who mainly worked on the Vedas and the Gāthās, as well as Indian mythology and the Zoroastrian religion.

**This volume of Dabir was supported by Ms. Mary Oloumi in memory of her father, Iradj Oloumi**

## The Middle Persian Inscription from a Shipwreck in Thailand: Merchants, Containers, and Commodities

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Seafaring contacts between Iran and China via South and Southeast Asia—i.e., the Indian Ocean trade along the Maritime Silk Road—appear to have been well-established by the first century CE.<sup>1</sup> The Southwest or summer monsoon winds and rains from June and July through September and October blow from southwest to northeast, propelling ships from the Persian Gulf coastline over the Arabian Sea, down the west coast of India, to Serendib (Ceylon, Sri Lanka) and then across the Indian Ocean and Bay of Bengal through the straits of Southeast Asia and onward to the South China Sea. That was the path and time of year for journeys from Iranian to Chinese ports. The Northeast or winter monsoon winds and rains from November and December through March generally carried ships westward from China via Southeast Asia to the Maldiv Islands and then northwestward to the Persian Gulf, although ships could also dock in the harbors along the southern shore of Serendib if cargo transfer or other mission goals warranted such a stop. The period of the Tang Empire (618–907) of China, which overlapped with the Sasanian Empire (224–651)

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1- All dates are Common Era (CE) unless specifically noted as Before the Common Era (BCE).

and Umayyad (661–750) and Abbasid (750–1258) Caliphates of Iran was one of intense maritime trade. Pearls, coral, amber, ambergris (as a substrate for perfumes), ivory, tortoise shells, and spices were shipped between Persian Gulf and Indian Ocean ports such as Basra, Siraf, Muscat, Mantai, and Galle to Burma (Myanmar) and Siam (Thailand), then initially through the Sunda Strait and later through the Malacca (Melaka) Strait to Chinese ports like Canton (Guangzhou) and Nanjing. From China, the ships brought silks and porcelain, in particular, to the consumers of Southeast Asia, South Asia, and the Near East.<sup>2</sup>

Samut Sakhon on the northcentral shoreline of the Gulf of Thailand (approximately 28 km southwest of modern Bangkok) appears to have served as one of the ‘string of pearls’ or chain of safe harbors for the east-west water-borne trade as attested by cargo surviving from a shipwreck, named Phanom Surin, there. Although now approximately 8 km inland, the site originally lay ideally located along the shoreline between the Chao Phraya River and its western branch the Tha Chin River. Via those two rivers, mercantile trade from the Indian Ocean would connect to the river network that extended northward throughout Thailand and into the rest of the Southeast Asian hinterland. Accidentally discovered in September 2013, an early medieval small trading ship missed the estuary leading from and to the Dvaravati dynastic capital at Nakhon Pathom, then along the Tha Chin River, and foundered in the adjacent marshland at Samut Sakhon.<sup>3</sup>

Professor Henry T. Wright (University of Michigan and Santa Fe Institute), who examined the shipwreck and its extant contents in October 2014 at the invitation of the Government of Thailand, Ministry of Culture, Fine Arts Department, and is collaborating with Thai archeologists on analysis and publication of the wreck, noted the planks had been cross-stitched together with cord in the manner of sewn ships or dhows serving Persian Gulf and Indian Ocean entrepôts from at least the first century onward. The wreck’s cargo included swathes of rattan ready to be made into baskets and headwear, and betel nuts stored in some of the pots for consumption and sale.<sup>4</sup> Radiocarbon samples made on the cordage, rattan, and nuts date the ship and its cargo, collectively designated the Phanom Surin shipwreck, to the seventh or eighth century.<sup>5</sup> According to Professor Wright there is some evidence that, when the mariners gave up on re-floating the ship, much of the cargo was salvaged although damaged items were left behind. The abandoned commercial goods include groups of containers: diverse non-elite carinated earthenware bowls, jars, and pots from Southeast

2- Jamsheed K. Choksy, “Sailors, Soldiers, Priests, and Merchants: Reappraising Iran’s Early Connections to Ceylon,” *Iranica Antiqua* 48 (2013), pp. 364–367. For a survey of the literary sources see also Arianna M. DiMucci, *An Ancient Iran Cargo in the Indian Ocean: The Godavaya Shipwreck* (College Station, Texas A&M University, MA Thesis, December 2015), pp. 14–32. On the Indonesian straits, including traversal of the Sunda Strait up to the ninth century and the Malacca Strait thereafter, see Stephen G. Haw, “The Maritime Routes Between China and the Indian Ocean During the Second to Ninth Centuries C.E.,” *Journal of the Royal Asiatic Society*, 3rd Series, 27, 1 (2017), pp. 53–81.

3- Preeyanuch Jumprom, “The Phanom Surin Shipwreck: New Discovery of an Arab-style Shipwreck in Central Thailand,” *Southeast Asian Ceramics Museum Newsletter* 8, 1 (2014), pp. 1–4, online at [http://museum.bu.ac.th/Newsletter/SEACM\\_V8\\_n01.pdf](http://museum.bu.ac.th/Newsletter/SEACM_V8_n01.pdf) (last accessed June 20, 2018). See also Noel Tan, “A Visit to the Phanom Surin Shipwreck Site, Samut Sakorn Province,” *SEAArch: The Southeast Asian Archaeology Newsblog* (2015), online at <https://www.southeastasianarchaeology.com/2015/03/16/a-visit-to-the-phanom-surin-shipwreck-site-samut-sakorn-province/> (last accessed on June 20, 2018); and Nareerat Preecharpeechaupt, “The Phanomsurin Shipwreck,” *Silpakorn Journal* 57, 3 (2014), pp. 22–35.

4- Email correspondence dated November 9, 2014 from Wright to Choksy.

5- Email correspondence dated November 9, 2014 from Wright to Choksy provided seventh century radiocarbon dates. John Guy, “The Phanom Surin Shipwreck, a Pahlavi Inscription, and their Significance for the History of Early Lower Central Thailand,” *Journal of the Siam Society* 105 (2017), p. 192, wrote that preliminary dates were mid-eighth century. Jumprom, “The Phanom Surin Shipwreck,” pp. 3–4, estimated the shipwreck to the ninth century based on Chinese pottery.



Asia largely of Mon-Dvaravati types, small glazed Tang period stoneware jars from Guangdong in South China, turquoise glazed earthenware jars of Iranian origin, and large transport pithoi—so-called torpedo jars—well attested from production and distribution sites in southern Iran and Iraq. Still-viscous bitumen is present in the bases of several of the pithoi.<sup>6</sup> Indeed the Chinese and Iranian storage vessels found at Samut Sakhon are well attested in the Indian Ocean trade from ports as widespread as Siraf and Mantai.

One green glazed Chinese jar bears an incised pre-firing, possibly two character (only the second character is legible) word which may represent either the interjection “lucky, good fortune”—and thus can be compared to contemporaneous and later Persian Gulf sgraffiato including those from the eleventh through thirteenth centuries with brief (and often incorrectly written) exclamatory Qur’anic quotes—or the locatory designator “branch office.”<sup>7</sup> An ostraca, apparently written in black ink, has also been recovered and awaits restoration and decipherment.

One of the pithos shards bears an engraving approximately 10 cm long.<sup>8</sup> Professor Wright determined this very brief inscription was etched into still-soft clay with a push-pull/stab-and-drag motion prior to firing of the jar. There is a vertical bow-tie shaped mark with a central black impregnation, probably from bitumen, at the left end of the writing—a post-inscribing, perhaps even post-firing, discoloration which cannot be considered part of the text. On behalf of the Thai Fine Arts Department, and at the recommendation of his colleague Professor Gernot Windfuhr, in November 2014 Wright sent images and details of the text to Choksy whom identified it as Middle Persian and in collaboration with Nematollahi submitted a preliminary report with decipherment two days later.<sup>9</sup> The text (figures 1a and 1b) has between 7 and 9 characters, written mostly horizontally in a late cursive Middle Persian, almost Book Pahlavi, script as expected from right to left. The script correlates well with seventh to eighth century radiocarbon dates from the wreck. The nature of the Middle Persian script where a single character or letter can represent more than one consonant and/or long vowel provides several possibilities for decipherment of the inscription.

The simplest decipherments are exclamatory, producing interjections. The most direct reading is *yazad bamīg* [yzt bmyk’] “lofty god,” from *yazad* “worship-worthy spirit, divinity, god” with *bam* “high, over, above” (also Middle Persian *apam*, *abam*, < Old Persian \**upama-*) + *-īg* adjectival ending “lofty.” A less likely interjection, if a spelling error occurred in the second word, is *yazad bāmīg* [yzt b(‘)myk’] “brilliant god, radiant god” (< Middle Persian *bām* “brilliance, radiance”).<sup>10</sup>

A second set of possible decipherments is onomastic, yielding theophoric proper names—perhaps of the

6- Email correspondence dated November 9, 2014 from Wright to Choksy. See further details on the items in Jumprom, “The Phanom Surin Shipwreck,” p. 2, figs. 3–6.

7- Email correspondence dated November 9, 2014 from Wright to Choksy. On this Chinese sgraffiato as meaning “lucky” see further Jumprom, “The Phanom Surin Shipwreck,” pp. 3–4. The alternate reading as “branch office” is cited by John Guy, “The Phanom Surin Shipwreck,” p. 188 with n. 30.

8- A photograph of the inscription was reproduced by Jumprom, “The Phanom Surin Shipwreck,” p. 2, fig. 6, but incorrectly designated as “Arabian.”

9- Email correspondences dated November 9, 2014 between Wright and Choksy, and report sent by email on November 11, 2014 from Choksy and Nematollahi to Wright. Choksy and Nematollahi are most grateful to Professor Wright and the Thailand Ministry of Culture, Fine Arts Department, for including them in the shipwreck project and providing essential data and photographs.

10- Henrik Nyberg, *A Manual of Pahlavi*, pt. 2 (Wiesbaden: Otto Harrassowitz, 1974), p. 20; Wilhelm Eilers, “Bam,” *Encyclopaedia Iranica*, vol. 3 (London: Routledge & Kegan Paul, 1989), pp. 649–650, online at <http://www.iranicaonline.org/articles/bam-also-written-bam-bass-the-lowest-pitched-string-in-music> (last accessed on June 20, 2018).

merchant who commissioned the pithoi and/or the shipment or of the potter who produced those jars. Most probable among these possibilities is *Yazadbampur* [yztbmpwr, with the final character written phonetically as r rather than the customary l] “The high god’s son.” Less probable is *Yazadbaypur* [yztbg’pwr, with an unusual curved word-ender vertical stroke instead of a straight one after g and with the final character written phonetically as r rather than the customary l] “The lord god’s son.” Indeed pre-firing lettering on ceramics are known to name potters or merchants who manufactured or commissioned storage vessels. Another possible nominal reading has been proposed by P. Oktor Skjærvø: *Yazd-bōzēd* [y’tbwcyt’] “God delivers, God saves.”<sup>11</sup> Skjærvø’s reading, however, separates the fifth character into *w* and *c* even though only a single character is actually written and there was more than sufficient space to write *w* and *c* independently.

The most intriguing possibility for the inscription’s meaning is a quotidian label.<sup>12</sup> Close examination reveals the second character of the engraving does not ligature with the third one as occurs in the word *yazad* between the letters *z* and *t*. This scribal disjunctive action could indicate that the first two characters are not connected to the third character as part of one word but are the sign for the numeral 40 (which resembles the letters *yz*). If the text begins with the numeral 40, then an item or commodity could follow shortly. The word that comes after the numeral is probably *tab* [tb] “heat, hot, warm,” hence “molten, viscous.” It is unlikely to be *nēw*, “good,” written as the Aramaic ideogram TB, because the B in the ideogram should have a short horizontal tail, not a long one as in this inscription. The final word appears to be written as an Aramaic ideogram QYR’. The writer may have misspelled initially, omitting the R (written in the Middle Persian script using the character for L) and had to subsequently insert it at the top of the tail of the Y. It is a loan word, not previously attested in Middle Persian. QYR’ would have been pronounced in Middle Persian as *γīr*, indeed is attested in New Persian as *ghīr*, “bitumen, pitch, tar, asphalt” (< Aramaic *qīr*, *qīrā* [qyr, qyr’, also qyrw] < Greek *kēros*, “wax”).<sup>13</sup> So the Middle Persian writing on the shard from the Phanom Surin wreck at Samut Sakhon seems to reference the presence of bitumen in the pithos: 40 *tab γīr* [40 tb QYR’], “40 hot/viscous bitumen.”

Petrochemical seeps have long been exploited commercially in western Iran especially near Susa and in southern Iraq near Basra.<sup>14</sup> Some pithoi produced at sites along the Persian Gulf during the first millennium indeed were sealed on the interior surface with a thin layer of bitumen and those liquid-proofed jars then were utilized for the long distance Indian Ocean trade. For instance, third to ninth century pithoi recovered at the inland capital city of Anuradhapura in Sri Lanka had been lined with bitumen specifically from seeps close to Susa probably during their production.<sup>15</sup> As mentioned, the pithoi from the ship found at Samut

11- Personal communication dated 2016 from Skjærvø to Guy quoted in full by the latter in his “The Phanom Surin Shipwreck,” p. 188 with n. 31 and fig. 13.

12- Email discussions between Choksy and Wright from November 9, 2014 through June 21, 2018.

13- *The Comprehensive Aramaic Lexicon* (Cincinnati: Hebrew Union College, 1987–), online at <http://cal.huc.edu/oneentry.php?lemma=qyr%20N&cits=all> (last accessed June 20, 2018); Ali Akbar Dehkhoda and others, eds., *Loġhat Nāme* (Costa Mesa: Mazda Publishers, 1995), vol. 11, p. 15720. The term also was borrowed into Arabic, see Robert J. Forbes, *Studies in Early Petroleum History*, vol. 1 (Leiden: E. J. Brill, 1958), p. 150.

14- Robert F. Marschner and Henry T. Wright, “Asphalts from Middle Eastern Archaeological Sites,” *Archaeological Chemistry* 2 (1978), pp. 150–171; Rasoul Sorkhabi, “Pre-Modern History of Bitumen, Oil and Gas in Persia (Iran),” *Oil-Industry History* 6, 1 (2005), pp. 153–177; and Forbes, *Studies in Early Petroleum History*, vol. 1, p. 152.

15- B. Stern, J. Connan, E. Blakelock, R. Jackman, R. A. E. Coningham, and C. Heron, “From Susa to Anuradhapura: Reconstructing Aspects of Trade and Exchange in Bitumen-coated Ceramic Vessels between Iran and Sri Lanka from the Third to the Ninth centuries AD,” *Archaeometry* 50, 3 (2008), pp. 411–413, 416–420, and especially 425.

Sakhon contain bitumen residue coating their interiors. Therefore the Middle Persian label could designate “40 (jars lined with) hot bitumen.” Sealed with a bitumen coating, the pithoi onboard the Phanom Surin shipwreck may once have held oils and perfumes for transportation and sale.

However, bitumen use was not limited to lining the interior of liquid-bearing trade jars. As early as the fifth century BCE, Herodotus referred to the use of *ασφάλτος* (*asphaltos*), “asphalt, hot/viscous bitumen” as a mortar during construction of the city walls of Babylon.<sup>16</sup> Due to its liquid-proofing, adhesive, and binding capabilities, use in embalming for preservation, and a belief that despite toxicity it aided in maintaining and regaining health, bitumen was traded by weight in solid form and by volume in liquid form across the ancient and medieval Near East and Asia.<sup>17</sup> Bitumen in the pithoi from the Phanom Surin shipwreck appears to be more than a fine homogenous coating or liquid-proof lining.<sup>18</sup> It is possible, therefore, that the torpedo jars contained hot bitumen or viscous asphalt as a liquid trade commodity. In such a scenario, the numeral 40 could have referred to the number of pithoi in the shipment and the rest of the phrase to its content, i.e., “40 (jars of) hot bitumen.” Alternatively, because liquid bitumen was traded by volume, the numeral may have designated the quantity within each individual pithos with the rest of the phrase referencing the type of commodity, i.e., “40 (volumes) hot bitumen.” These practices of denoting quantities would have continued and paralleled practices attested on the more detailed Parthian wine-list ostraca from Nisa and which still persist.<sup>19</sup>

Yet it should be noted that Middle Persian and New Persian adjectives usually are placed after the noun with an *ezafe* (ī, -i) sign connecting the two. However, the adjective precedes the noun in technical terms (for example, *zard*, “yellow,” + *ālu*, “plum,” > “apricot”). Bitumen has long been categorized according to chemical consistency, specifically its viscosity, hardness, or penetration value. Hence the phrase *40 tab yir* might very well have referred to a specific grade or type of viscous bitumen, “40 (grade) hot bitumen.”

A handheld bill of lading (Middle Persian *bār nāmag*, New Persian *bār nāme*) rather than an individual container would be expected to list qualities and commodities. But whereas a bill of lading could be altered, a pre-firing inscription could not be—thereby ensuring the shipment would not be tampered. This practice has centuries of previous history in the Near East. Moreover while placement of a quantity and commodity label on a breakable container is not an ideal location, etching it on a single pithos would permit all the other jars to be reused as indeed they routinely were.

Construction techniques indicate the Phanom Surin merchant ship was produced at a late Sasanian or very early Caliphate period port on the Persian Gulf. Its final cargo suggests the ill-fated voyage to Samut Sakhon involved transporting commodities and containers, including the pithoi, from ports as far-ranging as south China, southern Thailand, and southwestern Iran. Bitumen from the pithoi of the Phanom Surin

16- Herodotus, *History*, ed. and trans. Alfred D. Godley, 4 vols. (London: William Heinemann, reprint 1981–1982), 1.179, vol. 1, pp. 222–225.

17- Jacques Connan and Odile Deschesne, *Le bitume à Suse: collection du Musée du Louvre* (Paris: Réunion des Musées Nationaux, 1996), pp. 30–31; Jacques Connan, “Use and Trade of Bitumen in Antiquity and Prehistory: Molecular Archaeology Reveals Secrets of Past Civilizations,” *Philosophical Transactions of the Royal Society B: Biological Sciences* 354 (1999), pp. 33–50.

18- See images in Jumprorn, “The Phanom Surin Shipwreck,” fig. 6; and Guy, “The Phanom Surin Shipwreck,” fig. 10. On the fine texture of bitumen liquid-proof interior lining in torpedo jars see Stern and others, “From Susa to Anuradhapura,” pp. 424–425.

19- Numerous examples in Igor M. Diakonoff and Vladimir A. Livshits, *Parthian Economic Documents from Nisa*, Texts 1, ed. David N. MacKenzie, *Corpus Inscriptionum Iranicarum*, Pt. II, Vol. II (London: Lund Humphreys, 2001).

shipwreck is undergoing analysis at Bradford University and Ghent University <sup>20</sup>. Those results will help determine if the petrochemical is indeed of Near Eastern origin (for which reference samples are available) and represents long distance maritime trade or whether it came from South or Southeast Asian seeps and indicates localized sources for regional markets with Iranian pithoi serving as standard storage and transportation jars and Iranians functioning as middlemen. In either scenario, the involvement of Iranian merchants and sailors is not surprising, and the pithoi, bitumen, and engraving serve not only as markers of early medieval maritime transportation but of the importance of petrochemicals in trade which has bound together the peoples and economies of Iran, South and Southeast Asia, and China.<sup>21</sup>

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20- Email correspondence dated May 31, 2018 from Wright to Choksy.

21- For transportation and use of liquid petrochemicals by the Eastern Roman Empire, specifically the military deployment of naphtha in "Greek fire" sprayed from Byzantine naval vessels onto invading Arab ships, starting in the mid-seventh century, see John Haldon, Andrew Lacey, and Colin Hewes, "'Greek Fire' Revisited: Recent and Current Research," in *Byzantine Style, Religion and Civilization: In Honour of Sir Steven Runciman*, ed. Elizabeth Jeffreys (Cambridge: Cambridge University Press, 2006), pp. 290-325. The petrochemical came from seeps in the southern Ukrainian steppe and Caucasus (now part of the Karakum oil and gas field that yields Azeri light sweet crude oil) which was collected and transported across the Black Sea in bitumen-lined amphorae to Constantinople.

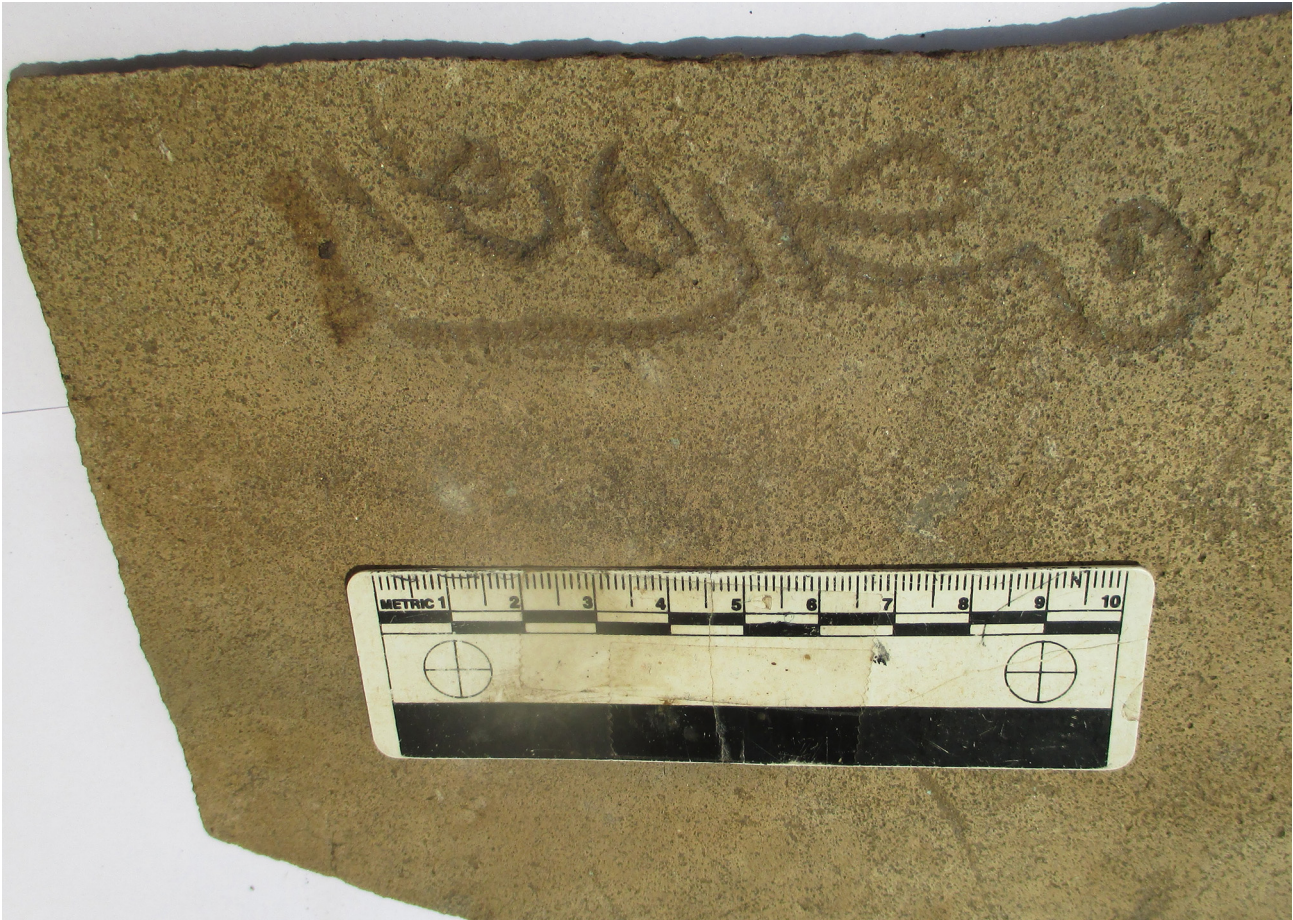


Figure 1a (Courtesy of Thailand Ministry of Culture, Fine Arts Department, and Henry T. Wright)



Figure 1b (Courtesy of Thailand Ministry of Culture, Fine Arts Department, and Henry T. Wright)