

# Two tin ingots with Sarasvati hieroglyphs

Two other rosetta stones are the two late bronze age tin ingots (see end notes) from the harbor of Haifa, Israel contain Sarasvati hieroglyphs used in epigraphs of Sarasvati civilization!



Liquid measure: **ran:ku**; homonym: **ran:ku** = antelope; rebus: **ran:ku** = tin..

Thus both liquid measure glyph and antelope glyphs are graphonyms (graphically denoting the same rebus substantive: ran:ku, 'tin').

**ran:ku** a species of deer; ran:kuka (Skt.)(CDIAL 10559). ra\_n:kava made from the hair of the ran:ku deer (Ka.lex.) ra~\_kat. big and boorish (M.)(CDIAL 10538). cf. ran:ka slow, dull (Skt.)(CDIAL 10538). cf. ro\_hi a kind of deer (R.)(CDIAL 10870). rauhisa, ro\_hisa a kind of deer (Ka.lex.) **ran:ku** 'antelope' (Santali) **ran:ku** = a species of deer (Skt.); ran:kuka id. (Skt.)(CDIAL 10559). ra\_n:kava belonging to the ran:ku deer (MBh.); made from the hair of the ran:ku deer, woollen (R.); coming from ran:ku (said of animals) (Pa\_n. 4.2.100); a woollen cover or blanket (MBh.R.); ra\_n:kava ku\_t'a s'a\_yin lying on a heap of woollen rags (MBh.); ra\_n:kavajina a woollen skin; ra\_n:kavastaran.a a woollen coverlet (R.); ra\_n:kavastr.ta covered with a woollen rug (Skt.); ra\_n:kavaka coming from ran:kiu (said of men) (Pa\_n. 4.2.134); ra\_n:kava\_yan.a coming from ran:ku (said of animals) (Pa\_n. 4.2.100). ran:ku a species of deer or antelope (Skt.lex.) ran:ku = a species of deer or antelope, the spotted axis (mare)(Ka.lex.) **kurunga** = a kind of antelope; kurunga miga = the antelope deer (Pali); kulunga, kulanga (Skt.)(Pali.lex.) kulan:ga (MaitrS.); kulun:ga (TS); kuran:ga, kurun:ga (Pkt.); kuram.ga (Pali); kuran:g (P.); karam.gi\_ (OG.); kura~g (G.); kurunga (Si.); kurangu the elk *Rusa aristotelis* (Si.)(CDIAL 3320). cf. kuran:g light chestnut colour (Kho.)(CDIAL 3321). **kuran:ga** = a species of antelope, antelope or deer (in general); kulun:ga = an antelope (VS 24; TS 5); kuran:gaka, kulan:ga = antelope; **kuran:gama** = an antelope; **kuran:ga\_yate** to take the shape of an antelope (Skt.lex.) **kurahu** antelope (Kuwi), kuran:ga (Ka.) kulanga, kulunga = going in a herd, antelope (VS.); kulmi = a herd (TS. ii.4.5.2)

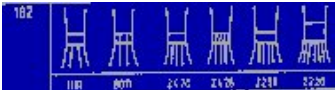
The **X** sign (with a ligatured perpendicular short linear stroke) is common on both the tin ingots. **X** glyph which is common to epigraphs on both the tin ingots may refer to

**kulhi** 'the village street' (Santali) Rebus: **kol** metal (Ta.)


Thus, the glyphs which appear on the two ingots may be read as:

1. ran:ku kulhi (liquid measure + street); rebus: ran:ku kol 'tin metal'.
2. ran:ku kulhi (antelope + street); rebus: ran:ku kol 'tin metal'.


# Glyphs on tin ingots compared with Sarasvati hieroglyphs



V182




V184

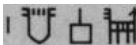


Signs 182, 183, 184


The sign 182 is used on a copper plate epigraph and substitutes for an 'antelope' glyph.



m-1336a




2515 (Mahadevan)

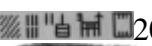


m-1097


appears in the middle of the inscription; it is normalised as a 'sign', Sign 184 and variants].




m1341




2092




m0516At




m0516Bt




3398




m0522At



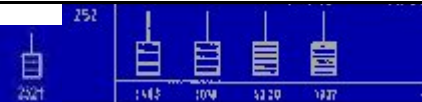
m0522Bt




3378




Sign 249



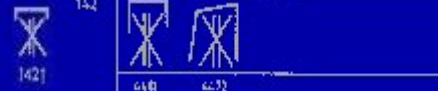
Sign 252 and variants



[Let us refer to these glyphs from the Haifa tin ingots (from l. to r.) as, 'liquid measure', 'antelope' and X]



Sign 137 and variants



Sign 142 and variants

**End notes:**

The picture of these two ingots was published by J.D. Muhly [New evidence for sources of and trade in bronze age tin, in: Alan D. Franklin, Jacqueline S. Olin, and Theodore A. Wertime, *The Search for Ancient Tin*, 1977, Seminar organized by Theodore A. Wertime and held at the Smithsonian Institution and the National Bureau of Standards, Washington, D.C., March 14-15, 1977]. Muhly notes: "A long-distance tin trade is not only feasible and possible, it was an absolute necessity. Sources of tin stone or cassiterite were few and far between, and a common source must have served many widely scattered metallurgical centers. This means that the tin would have been brought to a metallurgical center utilizing a nearby source of copper. That is, copper is likely to be a local product; the tin was almost always an import...The circumstances surrounding the discovery of these ingots are still rather confused, and our dating is based entirely upon the presence of engraved signs which seem to be in the Cypro-Minoan script, used on Cyprus and at Ugarit over the period 1500-1100 BCE. The ingots are made of a very pure

tin, but what could they have to do with Cyprus? There is certainly no tin on Cyprus, so at best the ingots could have been transhipped from that island. How did they then find their way to Haifa? Are we dealing with a ship en route from Cyprus, perhaps to Egypt, which ran into trouble and sank off the coast of Haifa? If so, that certainly rules out Egypt as a source of tin. Ingots of tin are rare before Roman times and, in the eastern Mediterranean, unknown from any period. What the ingots do demonstrate is that metallic tin was in use during the Late Bronze Age...rather extensive use of metallic tin in the ancient eastern Mediterranean, which will probably come as a surprise to many people." (Muhly, J.D., 1976, *Copper and Tin*, Hamden, Archon Books, p.47)

<http://www.hindunet.org/saraswati/rankutin1.pdf>

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