# BU! <br> Robert K. Englund <br> UCLA 

REMARKABLE NEW CONTRIBUTIONS to our understanding of Ur III social history are found in the publication of the Garshana archives in CUSAS 34 , co-edited by the honoree of this volume and by his close associates Rudolf H. Mayr and Alexandra Kleinerman in 2007. Wolfgang Heimpel (2009) has recently published the first of two planned commentary volumes dealing with the new Garshana material (cf. CUSAS 3, v-vi). His CUSAS 5 is a sovereign, if on occasion overly ambitious discussion of the records of labor management at Garshana, in which the author reviews, above all, the documentation of brick construction work at this Umma province outpost. There is much in this and other discussions of the Garshana archives that harkens back to the initial reaction to the discovery of a major archive of administrative and scholarly tablets at Tell Mardikh, ancient Ebla, by Italian excavators in the 1970s. Subsequent philological research and publications of those documents have radically changed our view of ancient Syria, and the texts from Garshana may well assume a similar role in ongoing debates about the organization of the Ur III empire, with specific focus on the development of potential labor markets within a highly centralized economy, and on the role of women among these laborers. These are big topics and deserving of the attention given them in recent publications, including a very welcome review of slavery based on the Garshana evidence by Bob Adams (2010). At the same time, the discussions of Garshana made possible by Owen's work are leading to matters, though of a less-encompassing nature,
still of philological and technical interest to Ur III specialists. One such lingering issue came to my attention with Heimpel's translation of the term guruš má gíd as "unskilled slaves, boat towers,"1 which resulted in a friendly email correspondence on the meaning of gíd-not of ĝuruš!-, and our communication serves as a gateway to a short discussion here of the cuneiform sign BU and its various readings, including Sumerian gíd, about whose conventional interpretation of "to tow" when found in translations of Ur III barge accounts I would like to raise some concerns. I dedicate this note in friendship and respect to David Owen, whose enthusiastic participation in the CDLI and whose unstinting insistence on open access to the world's collections of cuneiform artifacts, both large and small, public and private, has deepened our contact in past years. David has dedicated much of his academic career to the often selfless publication of primary resources, as author, editor, and now curator, and has fought to ensure that all texts, published and unpublished, reach the broadest possible set of users. This latter effort deserves the field's particular gratitude.

I was reminded of the wrath that can be visited upon the Assyriologist who takes lightly the task of translating some Sumerian term according to established philological practice (Powell 1978), for instance one interested in the semantic field associated with the sign BU, when many years ago for another publication (Englund 1990: 75, 132) I first attempted to understand the word gíd in texts describing the movement of water craft. As

1 Heimpel 2009: 7, and see pp. 45, 63-64.
we know, boat, or rather certainly barge movement in the waterways of ancient Mesopotamia, was described in the Ur III documents as either diri (=SI.A) or gíd (=BU) by most accounts dependent on whether the vessel was headed downstream or upstream, respectively. Steinkeller (2001) exploited this opposition in a strong contribution to the riverine geography of late-thirdmillennium Mesopotamia, employing a standard format $n_{1}$ ĝuruš $\mathrm{u}_{4} \mathrm{n}_{2}$-šè $/ \mathrm{GN}_{1}$-ta $/ \mathrm{GN}_{2}$-šè / má še ( $\mathrm{ku}_{6}$, ĝeš, etc.) gíd-da, " $\mathrm{n}_{1}$ workmen for a period of $\mathrm{n}_{2}$ days, from $\mathrm{GN}_{1}$ to $\mathrm{GN}_{2}$ did gíd a boat loaded with barley (fish, lumber, etc.)." Scribes registered cargo boat traffic from one settlement to another, generally indicating with the sign gíd that $\mathrm{GN}_{2}$ is upstream and thus as a rule to the northwest of $\mathrm{GN}_{1}$. Longer itineraries of such traffic that record several towns on a gíd-string can be used to generate and triangulate multiple sites that must have been connected by waterways. The same calculations apply to any movement qualified with diri and, again generally, indicat-
ing movement downstream. Since the records often give the explicit number of workdays required to accomplish gíd or diri movement between named towns, it is easy to imagine the power of a full analysis of such texts in establishing a credible, if still floating network of alluvial settlements that can then be mapped against physical topographies. With these and other cargo texts, there has never been any particular controversy about Sumerologists' translation of "to tow" for gíd. Quite aside from the lexical evidence, we need simply imagine a crew of strong workmen with strong ropes (Sumerian éš) attached to a barge and wrapped round their shoulders, marching on one or both dikes of an alluvial canal. An excellent overview of the bookkeeping format employed to record such activity is offered, for instance, with the exacting parallels of the Ur III texts SNAT 459 (A), UTI 5, 3455 (B), UTI 4, 2896 (C) (receipts of three different foremen) and TCL 5, 5676 (D) rev. iv 11-21 (the account into which the receipts were logged).

A obv. 1 [1-2(diš) ğuruš $\left.u_{4}\right]$ (diš)-šè [kar (Together) 4 workmen, 4 workdays, from umma] ${ }^{\text {ki }}$-ta Umma-harbor
B obv. 1-2 1(diš) guruš $u_{4} 4$ (diš)-šè kar umma ${ }^{\text {ki-ta }}$
C obv. 1-2a $\quad\left[1-2\right.$ (diš)] ĝuruš $u_{4} 4$ (diš)-šè / kar umma ${ }^{\text {ki }}$-ta
D rev. iv 11-12a 4(diš) ĝuruš $u_{4} 4$ (diš)-šè kar-umma ${ }^{\text {ki-ta }}$
A obv. 2
B obv. 3-4
${ }^{\text {「iri' }}$-[sa $\left.{ }_{12}\right]$-rig ${ }_{7}{ }_{7}^{\text {ki' }}$-šè má gíd-da
iri-sa ${ }_{12}$-rig ${ }_{x}(\mid \text { PA.MUNUS.HÚB.DU })^{\text {ki }}$-šè $/$
má gíd-da
C obv. 2b iri-sa ${ }_{12}$-rig ${ }_{x}(\mid$ PA.MUNUS.HÚB.DU $\left.)\right)^{\text {ki--šè }}$
má gíd-da

D rev. iv 12b iri-sa ${ }_{12}-\mathrm{rig}_{7}{ }_{7}{ }^{\mathrm{k}}$-šè má gíd-da
A obv. $3 \quad\left[u_{4}\right]$ (diš)-šè še bala-a ù še má-a si-ga
B obv. $5 \quad u_{4}$ 1(diš)-šè še má-a si-ga
C obv. $3 \quad u_{4} 1$ (diš)-šè še má-a si-ga
D rev. iv $13 \quad \mathrm{u}_{4} 1$ (diš)-šè iri-sa ${ }_{12}$-rig ${ }_{7}{ }^{\text {ki}}{ }^{-g a}$ še má-a si-ga
A obv. $4 \quad{ }^{\text {riri' }}{ }^{-\mathrm{sa}_{12}-\text { rig }_{7}{ }^{\text {ki }} \text {-ta }}$
from Irisarig
B obv. 6 iri-sa ${ }_{12}$-rig $\left(\mid\right.$ PA.MUNUS.HÚB.DU I) ? ${ }^{\text {ki- }}$-ta
C obv. $4 \quad$ iri-sa ${ }_{12}-$-rig $_{x}(\mid$ PA.MUNUS.HÚB.DU $\left.)\right)^{\text {ki }}$-ta
D rev. iv 14a $\quad u_{4} 2$ (diš)!?-šè iri-sa ${ }_{12}-$ rig $_{7}{ }_{7}{ }^{\text {ki }}$ ta
A obv. $5 \quad{ }^{\prime} \mathbf{u}_{4}{ }^{\prime} 2$ (diš)-šè kun-zi-da ${ }^{\text {ǧes }}{ }^{\text {kiri }}$ - -geštin-šè $\quad 2$ workdays to reservoir of Grape-orchard boat
B obv. 7-8 $\quad u_{4} 2$ (diš)-šè kun-zi-da / ǧškiri ${ }_{6}$-ĝeštin-šè má diri-ga

C obv. $5 \quad u_{4}$ 2(diš)-šè kun-zi-da ${ }^{\text {ĝess }}$ kiri $_{6}$ g geštin-šè
D rev. iv 14b má gíd-da
uri $_{3}$-rú-a-aš má diri-ga

A obv. 6
A obv. 7
B obv. 9-10a $\quad u_{4} 8$ (diš)-šè é-duru $u_{5}$ ùri-rú-a-ta / kun-zi-da $\mathrm{i}_{7}{ }^{\text {damar- }}{ }^{\mathrm{d}}$ suen-ni-tum-šè
Cobv. 6-7a
$u_{4} 1$ (diš)-šè é-duru uri $_{3}$-rú-a-ka še bala-a
$\mathrm{u}_{4} 7$ (diš)-šè é-duru ${ }_{5}$ ùri-rú-a-ta kun-zi-da $\mathrm{i}_{7}{ }^{\text {d amar- }}{ }^{\mathrm{d}}$ suen-ni-tum-šè
$\mathrm{u}_{4}$ '8(diš)'?-šè é-duru $\mathrm{u}_{5}$ ùri-a še bala-a / 'kun-zi'-da $\mathrm{i}_{7}{ }^{\text {d }}$ amar- ${ }^{[d]}$ rsuen'-ni-tum-šè
D rev. iv 15-16a $u_{4} 1$ (diš)-šè še bala-a $u_{4} 7$ (diš)!?-šè
A rev. 1
B obv. 10b
C obv. 7b
D rev. iv 16b
A rev. $2 \quad$ kun-zi-da $i_{7}{ }^{\text {d }}$ amar- ${ }^{\text {d }}$ suen-ni-tum-ta
B obv. 11 kun-zi-da $\left[\mathrm{i}_{7}\right]{ }^{\text {d }}$ amar- ${ }^{\text {d }}$ suen-ni-tum-ma-ta

D rev. iv 17a $\quad u_{4}$ 2(diš)-šè kun-zi-da ${ }^{\text {damar- }}{ }^{\mathrm{d}}$ suen-ni-tum-ma-ta

A rev. 3
B rev. 1a
$\mathrm{u}_{4}$ 2(diš)-šè iri-sa ${ }_{12}$-rig ${ }_{7}$-šè
$\mathrm{u}_{4}$ 2(diš)-šè iri-sa ${ }_{12}$-rig (IPA.MUNUS.HÚB.DU I)? ${ }^{\text {ki-šè }}$
C rev. 1a
${ }^{\prime} \mathrm{u}_{4} 2$ (diš)-šè iri'-sa ${ }_{12}$-rig ${ }_{x}$ (IPA.MUNUS.HÚB.DU ) [ki-šè]
D rev. iv 17 b
A rev. 4
B rev. 1b-2
má gíd-da ù bala aka
má gíd-da ù má bala aka
C rev. 1b
D rev. iv 17c
A rev. 5
B rev. 3a
$\mathrm{u}_{4}$ 2(diš)-šè iri-sa ${ }_{12}-$ rig $_{7}{ }_{7}{ }^{\text {ki }}$-ta
$\mathrm{u}_{4} 2$ (diš)-šè iri-sa ${ }_{12}$-rig ${ }_{x}$ (IPA.MUNUS.HÚB.DU I) ${ }^{\text {ki }-t a ~}$
C rev. 2a
[ $\mathrm{u}_{4} 2$ (diš)]-šè iri-sa ${ }_{12}$-rig ${ }_{x}$ (IPA.MUNUS.HÚB.DU।) ${ }^{\text {ki }}-t a$
D rev. iv 18a
$\mathrm{u}_{4}$ 2(diš)-šè iri-sa ${ }_{12}$-rig ${ }_{7}{ }^{\text {ki }}$-ta
A rev. 6 ka da-mi-ma-ma-šè má gíd-da
B rev. 3b ka da-mi-ma-ma-šè má gíd-da
C rev. 2b ka da-mi-[ma]-ma-šè má gíd-da
D rev. iv 18b ka tab-ni-ma-ma-šè má gíd-da!?(ID)
A rev. $7 \quad u_{4} 2$ (diš)-šè umma ${ }^{\text {ki}}$-šè 'má' diri-ga!(DA)
B rev. $4 \quad \mathrm{u}_{4} 2$ (diš)-šè ummal ${ }^{\text {ki-šè }] ~ m a ́ ~ d i r i-g a ~}$
C rev. $3 \quad{ }^{\text {' }}{ }_{4}{ }^{\prime}$ 2(diš)-šè umma ${ }^{\text {ki }}$-šè má diri-ga
D rev. iv $19 \quad u_{4}$ 2(diš)-šè má diri-ga
'má' gíd-da ù má bala aka
má gíd-da má bala aka

8 workdays (in Uriru-village barley transferred and) from Uriru-village to the reservoir of Amar-Suennitum canal
barley carried;
from reservoir of Amar-Suennitum canal

2 workdays from Irisarig
boat "towed" and transferred over;
to "mouth" of Tabnimama boat "towed";

2 workdays to Umma boat "floated"

| A rev. 8 | $\mathrm{u}_{4} 1$ (diš)-šè má ba-'al'-[la] | 1 workday boat unloaded, |
| :---: | :---: | :---: |
| B rev. 5 | $\mathrm{u}_{4} 1$ (diš)-šè má ba-al-la |  |
| C rev. 4 | $\mathrm{u}_{4} 1$ (diš)-šè má ba-al-la |  |
| D rev. iv 20a | $\mathrm{u}_{4} 2$ (diš)-šè má ba-al-la |  |
| A rev. 9 | $\mathrm{u}_{4} 1$ (diš)-šè še bala-[a] | 1 workday barley transferred (D: 2 workdays |
| B rev. 5 | $\mathrm{u}_{4} 1$ (diš)-šè še bala-a | boat unloaded and barley transferred); |
| C rev. 5 | $\mathrm{u}_{4} 1$ (diš)-šè še bala-[a] |  |
| D rev. iv 20a | še bala-a |  |
| A rev. 10 | ugula lugal-é-'mah'-[e] | (A-C:) foreman: PN1-3; |
| B rev. 7 | ugula $\mathrm{i}_{7}$-pa-è |  |
| C rev. 6 | ugula ur-mes |  |
| A rev. 11 | kišib a-du-'mu' | sealed (document): Adumu; |
| B rev. 8 | kišib a-du-mu |  |
| C rev. 7 | kišib a-du-mu |  |
| D rev. iv 21 | kišib a-du-mu [...] |  |
| B rev. 9 | iti ${ }^{\text {d }}$ dumu-zi | month: "Dumuzi," |
| A rev. 12 | mu má ${ }^{\text {d }}$ en-ki 'ba'-[ab]-du ${ }_{8}$ | year: "Boat of Enki caulked"; |
| B rev. 10 | mu má ${ }^{\text {d }}$ en-ki ba-ab-du ${ }_{8}$ |  |
| C rev. 8 | mu má ${ }^{\text {d }}$ en-ki ba-ab-du ${ }_{8}$ |  |
| D rev. vii 6 | mu má den-ki ba-ab-du ${ }_{8}$ |  |
| D rev. vii 4-5 | níģ-ka ${ }_{9}$ aka / ur- ${ }^{\text {d }}$ nin-su nu-bànda $\mathrm{gu}_{4}$ | (D:) account of Ur-Ninsu, plow-oxen manager |
| A seal 1 | ur- ${ }^{\text {d }}$ [suen] | Ur-Suen, |
| B seal 1 | ur- ${ }^{\text {d }}$ suen |  |
| C seal 1 | ur- ${ }^{\text {d }}$ suen |  |
| A seal 2 | dub-[sar] | scribe, |
| B seal 2 | dub-sar |  |
| C seal 2 | dub-sar |  |
| A seal 3 | dumu ur- ${ }^{\text {êeses }}$ gigir | son of Ur-gigir; |
| B seal 3 | dumu ur-ĝeş [gigir] |  |
| C seal 3 | dumu ur- ${ }^{\text {geses gigir }}$ |  |
| A seal 4 | šà-[tam] | official (seal) |
| B seal 4 | šà-[tam] |  |
| C seal 4 | šà-tam |  |

The more than 500 Ur III accounts that record workmen, workdays, and the activity of má-gíd refer to anywhere from one ${ }^{2}$ to as many as 20 to 24 workmen, ${ }^{3}$ rarely more, tasked with this job. Georgica 7.2 records 24 workmen assisting in a two-day

[^0]gíd transport; ITT 3, 5102, has 30 involved in cereal transport to Girsu, and DAS 34 attests a group of 33 gíd-workmen bringing a barge loaded with wood to the same city, though, as with other such transport records, the crew was charged with all

3 ITT 3, 5176; MVN 14, 360; MVN 16, 785; SNAT 280; Syracuse 6; TÉL 8; etc.
aspects of transportation, including loading, ${ }^{4}$ tying up (kéš), unloading (ba-al, literally "digging"), and, in some cases, with the term bala(-ak), apparently repositioning the boat itself into an adjoining canal, lifting it past some installation in the canal, or, since often in association with $\mathrm{ka}_{\mathrm{i}_{7}-}$ da, just hoisting the bow up and into the "mouth" of a forking canal. ${ }^{5}$ The verb bala refers to crossing some natural feature and corresponds on the high seas to gíd/diri inland. ${ }^{6}$ Anything above these numbers will invariably refer to workdays in general (with $n$ ĝuruš $u_{4} 1$-šè), and the texts usually do not record the numbers or sizes of barges used in one task unless their rental fees are included. Still, we may imagine an average crew of four to ten workmen involved in the transportation of boats and cargo that can have weighed upward of 13 tons. ${ }^{7}$ Such numbers are neither unrealistic nor unprecedented, as records from other regions attest. While prior to the use of steam engines draft animals were the main source of propulsion for canal transportation, a team of eleven Volga barge haulers of the 1870s was captured in a wellknown oil painting housed in the Russian Museum, St. Petersburg, and visitors to Papenburg in northwest Germany bordering Ostfriesland can admire the cast bronze statue of a workman towing a peat barge (so-called "Torfmuttje" without sail) on the Splitting Canalthese workmen kept up towing paths on either side of the canals and were replaced by horses only in the 1930s (figure 1). Where towing paths, without which this form of barge propulsion would be unthinkable, have been overgrown in past decades, civic clubs in Germany are beginning to reconstitute what, as part of the general maintenance of river banks and canal dikes, were once vital elements of transportation, including paths often laid out in sandstone to fulfill the requirements of the various navigation and toll

[^1]agreements that followed upon the 1815 Act of the Congress of Vienna.

But the primary argument for understanding gíd = "to tow" is philological, albeit weighted to the lexical sources gathered by and for Akkadian specialists. Sumerologists have traditionally been at a distinct disadvantage in consulting reference works to understand their texts. Once their Akkadian correspondences are known, the dictionaries Akkadisches Handwörterbuch (AHw) and The Chicago Assyrian Dictionary (CAD) have for many decades been the initial source of information for the meanings of Sumerian words, followed by Anton Deimel's still informative Šumerisches Lexikon (ŠL), published in four volumes from 19281950 and, since 1937, the volumes of the series Materials for the Sumerian Lexicon (MSL) conceived by Benno Landsberger and continued by Miguel Civil and other faculty members of the Oriental Institute of the University of Chicago, as well as their many collaborators. These four reference works can unfortunately represent substantial hurdles for specialists, let alone for interested researchers from other disciplines. The user of the dictionaries must know their citation idiosyncrasies, for instance that $A H w$ cites sources according to publication, whereas CAD usually cites compositions. And although both dictionaries generally give specific text references in chronological order, the often much more important chronology of the lexical attestations (above all "Listenliteratur") is missing, so that the non-specialist will simply be unable to form an overview of the lexical development of targeted lemmata. Even more catered to specialist use, ŚL and MSL remain crucial tools in making an initial assessment about the context of Sumerian words. The older of the two must be approached with great caution, of course, having been the result of limited access to cuneiform corpora in the early 1930s and the result of the work

[^2]

Figure 1
Top: Barge Haulers on the Volga.
Oil on canvas. $131.5 \times 281 \mathrm{~cm}$. The Russian Museum, St. Petersburg (image under fair use in Europe and the US; <http:// de.wikipedia.org/w/index.php?title=datei:Ilia_Efimovich_Reprin_(1844-1930)__-Volga_Boatman_(1870-1873).jpg\&filetimestamp=20070629220827>).
Bottom, statues depicting the towing of a peat barge on Splitting Canal in Papenburg
(from Arnold Plesse, GNU Free Documentation License, <http://de,wikipedia.org/w/index.php?title=datei: Treidelschiff _papenburg.jpg\&filetimestamp=20091101004054>).
of an individual instead of the powerful team of scholars that produced the more recent MSL. Thus, if we peruse ŠL II/3, no. $371=$ BU, we find first "The original form of this sign could be a 'rudder'; this would offer a simple explanation for the meanings 'to remove (from),' 'to be distant or long,'" etc., with 109 entries over six pages deriving from both the then known record of lexical compendia, as well as from the other genres of Sumerian texts. Lexical readings and translations of BU include here, among many other entries, bu$\mathrm{u}=b a-q a-m u$, "to pull out, tear apart" (and // nasähum, "uproot," for which see Civil 1984: 293; Geller 1998: 93); sír = gaṣāşum "to tear apart, cut off"'; and gíd = arākum. Similarly, SL II/3, 373, describes the derived sign sud as "a decorated rudder," but the next sign, 374: muš, is the "head of a snake with tongue" (for which cp. LAK 232236). Still, this is a starting point for an investigation of the meaning of Sumerian words, but no more. For the practice of Akkadian translations of Sumerian terms is fraught with the dangers of facile, often chronologically doubtful derivations due to the fact that the lexicon of Akkadian will not be a perfect match with that of Sumerian; that the Semitic etymologies of Akkadian words are still debated; and that meanings of words in both Akkadian and Sumerian change in time. We may compare many non-specialist translations of Sumerian terms drawn from lexical texts, from bilinguals, and so on with the use of shards of the topmost layer at some Mesopotamian site. This layer, through a myriad of forces, contains artifacts from all preceding strata, so that the archaeologist would not speak of a late Babylonian rationing system in Uruk that was based on the use of the beveled-rim bowl, because he knows that, though found on the surface of the mound, those vessels were a part of a much earlier assemblage that went out of use before 3000 BC . In like manner, the injudicious use of some neo-Babylonian interpretation of a Sumerian word can trip up the best of intentions in translations of thirdmillennium texts.

[^3]The first task in interpreting the sign BU in nautical terminology is to recognize the unambivalent correspondence of gíd with both arākum and šadādum, and indeed that the two are semantically related. Where the former means to be or make long, šadādum describes the action of pulling taut, and then pulling forward, that is performed, according to Akkadian texts, on boats, on wagons, on yokes, on a measuring rope, on the cow's teat at milking time-you may šadādum your lip or your tongue if you like, but usually that will end, in a Babylonian text, with your losing it to an unkind knife. The active participle šaddidum (byform of šādidum, Sumerian lú gíd-gíd-da) attested in MSL 12, 139, 1. 356, and in the late Babylonian texts TMH 2, 2021 (eleppētu u lú-gíd-da-meš), and Cyr. 180, 14 (ssá-di-de-e eleppi), further supports the pulling of boats for this term. The Akkadian equivalence of diri in water transportation, the final weak quadriliteral N -stem verb negelpûm, appears no less unambivalent in its designation of boat navigation downstream ${ }^{8}$ as is the Sumerian equivalence of šadādum, gíd, for movement upstream, and in the instance of Akkadian texts the verb neqelpûm describes, as the current a boat, the parallel effect on clouds by the wind. ${ }^{9}$ Thus the sense of diri/neqelpûm seems to be "carried by the current/wind," so far as we trust our transfer of Akkadian nuance to the late-third-millennium Sumerian administrative lexicon. At the same time, the gíd movement from Umma to Ur registered in the text TCL 5,5674 rev. iv 17-19, acts as fair warning to view these interpretations with some caution-we might hope that this and similar irregularities derive from a practice of choosing one or the other term to describe a longer boat itinerary that involved both.

In the case of the signs BU and DIRI, the lexical record is as complex as most other Sumerian signs. To give a sense of the resources now available for research, I offer below a selection of the many attestations found in the major series published in MSL, above all Ea / Aa, HAR-ra = hubullu (Hh), Sig-alan, Erimhuš, and Antagal (for which see conveniently Cavigneaux 1980-1983).

9 ACh Spl. 66, 6; RMA 139, 8, etc.; OECT 6, 9, 62 // LSS 1/6,34, 22: (the word, like the wind) ina neqelpiša.

Instances of BU (excluding secondary instances of arākum):
Proto-Ea (MSL 14, 50)

| 473 bu-ú | BU |
| :--- | :--- |
| 474 gi-id | BU |
| 475 | si-ir |
| 476 | sú(-ú) |

Secondary Proto-Ea / Aa no. 22 i' (MSL 14, 143)
2'-5' 'bu' BU
6'-7' gi-di BU
$=[\ldots],[\ldots],[\ldots], x-[. .$.
$=$ 'sa-na-qu'?, ša-da-du
8'-10' 'su' SUD
$=r a-a-q u ́, s a-l a-h \mathrm{~h} u, t c e-b u-u$
Aa 6/1 (MSL 14, 438-439)

184-193 [bu]-'u?'

194 'pi ${ }^{\text {-i }}$
195 bur
196-198 še-er
199 pu-u
200-201 gi-id
202-206 [...]
Sb Voc. 1 (MSL 3, 106) 120a [gi-id
antagal 3 (MSL 17, 155)
$137{ }^{\text {gi-id }} \mathrm{BU} \quad=e-l e-p u$
antagal 8 (MSL 17, 175)
141 gíd-da
antagal D (MSL 17, 207)
233 BU ${ }^{\text {gi-id-min }} B U$
antagal G (MSL 17, 225)
162 BU $^{\text {gida }}$
erimhuš $4($ MSL 17,59$)$
$49 \mathrm{BU}^{\text {gi-id-min }} \mathrm{BU}$
ana ittišu 1 iii (MSL 1, 8)
54 in-gíd
erimhuš $2($ MSL 17,38$)$
215 [šu]-'gíd'
216 šu-gíd-gíd
sig ${ }_{7}$-alan 16 (= K) (MSL 16, 142)
1 [šu-te-ĝe ${ }_{26}$ ] = [ma-ha-ru šá še $u$ kù-babbar]
4 [šu-gíd]
Hh $2($ MSL 5,66$)$
199 máš-[šu-gíd-gíd]
200 ugula máš-šu-gíd-gíd
sig--alan 1 (MSL 16, 57)
in the gap of 11. 298-325
5" [máš(-gíd)]-gíd $=\min (b a-r u-u)$ šá ba-re-e

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    6" [máš-šu]-'gíd'-gíd = min(ba-ru-u) šá ba-re-e
ĝeš-tablet B ii' (MSL SS 1, 99)
    14' [ĝeš]-gíd-da = ha-[...]
ĝeš-tablet B ii' (MSL SS 1, 100)
        15' 'ĝeš'-gíd-da =a-x-[...]
Hh 8-9 OB Forerunner (MSL 7, 187, 188)
        60 gi}pisan gíd-da
        61 \mp@subsup{}{}{\mathrm{ i}}\mathrm{ pisan gud}
        71 'i'ma-sá-ab gíd-da
        71a gỉma-sá-ab ninda gur }\mp@subsup{4}{4}{}\mathrm{ -ra
Hh}9(MSL 7, 40
            56 'ri
            57 gipisan gubšu =šu
            58 gipisan gíd-da = šad-du
            59 gipisan nu-gíd-da = gar-ru
Hh}10(MSL 7, 90
    gap A
        258 [dug gur] gíd-da = šad-[du]
        259 [dug] 'gur` nu-gíd-da = gar-'ru'
antagal F (MSL 17, 217)
        157 GÁN-gíd-da = muš ki-ki-it-ti
Hh4 (MSL 5, 173-174, 179)
    269 ह̂ešmá-gíd-da = ma-ak-ki-tum
    270 \hat{geešmá-gíd-da = ma-ak-ku-[tum] (BM 55215)}
    271 ĝešmá-gíd-da = sad-da-[tum]
    346 g̊ešmá-gíd-da =a-rik-tum
    347 ĝešmá-sig-ga = si-iq-tum
    348 ğešmá-diri-ga = né-bé-ru
OB lú A (MSL 12, 165, 167)
    2 4 3 ~ l u ́ ~ g i - g i ́ d ~ s ̌ a ~ e n - [ b u - b i - i m ]
    300 lú má-gíd ša ma-ki-it-tum
lú = ša iv (MSL 12, 139)
    355 éšlá =e-be-lu (VAT 9558 rev. ii 19')
    356 lú gíd-gíd-da = šad-di-du (VAT 9558 rev. ii 20')
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Instances of DIRI (excluding secondary instances of watārum):
Proto-Ea (MSL 14, 39)
183a di-ri SI.[A]
Secondary Proto-Ea / Aa no. 22 ii' (MSL 14, 144)
32' di-ri SI.A

$$
=a t-[r u]
$$

Ea 3 (MSL 14, 311)
199 [di-ri]
[SI.A] =at-ri
Aa 3/4 (MSL 14, 342)
231 di-ri
SI.A
wa-at-rum
sig -alan $^{2} 27$ (= M) (MSL 16, 236)
179 diri $=n e ́-q e l-p u-u ́$
erimhuš 3 (MSL 17, 51)
214 SI $^{\text {di-ri }} \mathrm{A} \quad=u b-b u-r u$
ana ittišu 1 iv (MSL 1, 13)
69 in-diri $=$ ú-wa-at-tar

70 in-diri $\quad=u \check{\text { š- }}[q e ́-e l-p i]$
Hh 4 (s. above)
346 ĝeš̀má-gíd-da $=a$-rik-tum
348 ĝes̆má-diri-ga = né-bé-ru
$348{ }^{\text {g̊eš }}$ má-diri-ga ba-BAD $=m u-q a l-p i-t u m$

These references, as expected, strongly support the correspondence of gíd (BU) = arākum and šadādum, with potential outliers sanāqum? (secondary Proto-Ea, "to inspect," with gíd possibly referring to the inspection, and then certainly measuring of a building), šapûm (erimḩuš 4, "to stretch out" [clouds, smoke]) and elēpum (Antagal, "to sprout"), which appear to share a common semantic field with arākum. The compound verb šu-gíd, literally "make the hand long," means idiomatically "to receive," with the extispicy officiant bārûm and his occupation qualified with (maš) šu-gíd-gíd, presumably a reference to the actual activity of exta inspection. We may also note that the boat described as má-gíd-da in $\mathrm{H} h 4$ translates the term into both a phonetic loan makki/utum (short a in /ma/) and the nominal forms of the feminine verbal adjectives šaddatum and ariktum, the "towed" and the "long" thing, respectively. Of passing interest are the further verbal adjectives šaddum, "pulled," and garrum, "wound" (in the sense of "rounded"), attached to gíd-da and nu-gíd-da, respectively, in $H h 9$ and 10, and referring to reed containers and clay vessels.

The compound sign diri (SI.A) is well attested in the cuneiform record at least since the ED IIIa period (ca. 2600 BC ), but it seems exclusively with primary meaning of the lexical lists, "to be extra/ in excess" (Akkadian watārum), for instance in the sale documents registering an "extra payment" (níĝ-diri) to family or clan members of a party selling a parcel of land (MC 4, 1 obv. i 4, WF 33 obv. i 7 , etc.). It appears that the use of diri to qualify the movement of boats is first attested in the Ur III period; gíd in the ED IIIa texts NTSS 296 obv. i 3 with $\operatorname{ma}_{x}($ SI) gíd, NFT p. 222 (AO 4397) obv. ii' 5'
with éš ma ${ }_{\mathbf{x}}($ SI) gíd, and the ED IIIb texts VS 27, 48 obv. ii 4 and 84 rev. i 2, does not qualify an activity, but rather boats and poles, thus is as likely to refer to their long form as to the method of their transportation. "Movement downstream" is, in any case, a confusing semantic transfer to the sign diri and may have something to do with the graphic similarity between the signs SI (horn) and MÁ (boat). Indeed, as Civil has noted (1989), SI prior to the ED IIIb period was indistinguishable from MÁ, which was formed by simply adding a short vertical wedge to the head of the upper horizontal wedge of SI. The references above, and for instance WF 11 i 3 with SI-gal-gal and NTSŠ 118 rev. i 3 with si-lab ${ }_{5}$, but also $A A I C A B 1 / 1$, pl. 4, 1928-16 obv. ii 6 with má-lab ${ }_{5}$, and OIP 99, 69 rev. iii 2 ' with má-gur ${ }_{8}$, together with other examples from the same publications, suggest that the Kish and Abu Salabikh texts described as ED IIIa represent a transition stage to ED IIIb, or a combination of chronological and geographical variation. The paleographic uncertainties with this sign are, by the way, to be noted to the Late Uruk pictographic references to a MÁ and MAGUR, none of which is contextually secure.

Beyond the Akkadian corpora, another source of lexical information on Sumerian words has been the various editions of Sumerian literary, legal, and administrative texts with their helpful, but oftentimes circular commentaries that included, next to lexical references, the bilingual literary citations of Sumerian words with Akkadian correspondences as well as a compilation of contextual references in Sumerian texts. These references were gathered together by an ambitious set of students from Yale ${ }^{10}$ and widely distributed among

[^4]Sumerologists. This compilation was entered to mainframe in the 1980s, and served as the starting point for Steve Tinney's substantially more comprehensive Index to the Secondary Literature, ${ }^{11}$ now merged into the pages of the electronic Pennsylvania Sumerian Dictionary also directed by Tinney. ${ }^{12}$ Other helpful compendia include HübnerReizammer 1984; Sallaberger 2006; and Halloran 2006. Nevertheless, the technical terminology of entirely too many semantic fields in Sumerian defies adequate translation. After more than a decade of living in Germany, before I took my car in for repairs, I would carefully study my Bilderduden ("Bildwörterbuch der deutschen Sprache") to have some sense of what the motor parts were called, and in like fashion anyone who has read the various editions of the Old Babylonian Sumerian composition known as "Šulgi and Ninlil's barge, ${ }^{13}$ with their many faltering attempts to translate the boat parts cited in the description of Šulgi's má-gur ${ }_{8}$, will understand the clear need for Bilderdudens in Sumerian studies.

Aside from the use of these various tools came the arduous task of gathering, on one's own, contextual references from primary Sumerian sources, until recently neatly parsed and sorted in the card catalogues that occupy the uppermost bookshelves of many established specialists. All of these sources were planned for obsolescence with the publication of the PSD that, unfortunately, has not progressed beyond two bound volumes (A1-3 and B), and much promise in the website of $e P S D$.

There is in all of these references no immediately compelling reason to doubt the conventional translation of gíd in Ur III cargo boat texts with "to tow." Indeed, there has been no real debate in the field as to the general sense of terms that describe boat navigation within the riverine/ canal network of the Mesopotamian alluvium. And the Akkadian record would appear to offer strong support for this interpretation. Yet something still seems amiss. We will often consider the potential meaning of a fairly technical term such as gíd with an eye to the physical realities of the

[^5]objects and actions that it conveys, and the broader context of use in the textual and archaeological record. Fortunately, our discussions of the realities involved in the management of Mesopotamia's main means of domestic transportation have been facilitated by the quite masterful general treatment of Babylonian watercraft in Potts 1997: 122-137, and, although of limited practical use in studies on uncertain ancient riverine geography, for technical questions of channel velocity and depth, and their effects on river barge transport, by a 1962 USGS Water Supply paper from Langbein. Since, in interpreting dense third-millennium technical terminology, we are often students of the sort of syntheses that Potts delivers, and are in a sense successors to the lexical traditions of Landsberger, who, in describing his work on the wild animals list Hh 14 (s. Landsberger 1934: 45-46, 71-72, and MSL 8/2, pp. 84-94), stated that he lined up in one column of his research table the names of animals attested in the cuneiform records, in the other a list of species from the faunal record of Mesopotamia and modern Iraq, and tried to match the two, we should imagine that our little table on boat propulsion would provide an overview of the archaeological and art historical record, and would include Sumerian terms for the use of oars, sails, simple gliding with the stream, towing, and punting.

Many years ago, on the mundane side of things, I gave some thought to the copious records of draft animals used to tow barges along canals in Europe and the United States, records reaching back to the Roman occupation of Britain and then in full form with the unfolding of the Canal Age in the mid-eighteenth century, as the result of which the cargo capacity of horses increased fifty-fold over that of wagons on roads -you can still take a mule-drawn canal boat ride operated by the National Park Service along the Chesapeake \& Ohio Canal in Washington, DC. It seemed strange, given the clear advantages of towing water craft, particularly in a region where waterways make wagon transportation very difficult, and given the thousand-year history of the

[^6]use of draft animals in Mesopotamia, that in the hundreds of Ur III texts describing the gíd and diri movement of boats, not one mentioned the use of animals, but exclusively of humans in either task. Neither BPOA 1, 1061 nor Georgica 7.7 appear to qualify as potential witnesses to this practice, since they describe workmen who "towed" boats filled with donkeys, and the same applies to such texts as MVN 3, 214, and Nik 2, 106, for boats loaded with presumably perfectly capable oxen! It is as if the notion of men-as-draft animals in the Sumerian plowing records were true, ${ }^{14}$ and, having discovered the power of laborers in this, all use of oxen and donkeys was abandoned. Such a use of human pulling power would at least make sense where animals were not available or on small plots where oxen-drawn plows, good on the long and straight run, might be cumbersome, but altogether gaba-tab sowing acreage accounted for a very small fraction of Sumerian fields, in apparent deference to the advantages of using draft animals. But why then were draft animals never-not once-recorded in the towing of boats?

Then too, the upkeep of firm towing paths on either side of the Mesopotamian canals would have required a substantial investment of labor resources, one that is, with the exception of line 264 of the Sumerian composition "Curse of Agade,"15 nowhere visible in the administrative accounts, unless that maintenance was merely a by-product of the reed harvesting records. A third hook that made me review the matter was the laborer designation ĝuruš ĝeš-gíd-da, which qualifies a fisheries worker tasked with a variety of jobs related to other water-bound duties. Since the geš-gíd-da worker is, in particular, occupied

14 This is the issue of ĝes gaba-tab gíd-da (about 20 attestations, for instance, AnOr 7, 368+ rev. 5 and MVN 2, 37 obv. 4; s. Maekawa 1989: 117).
15
gú ${ }^{\text {ǧeš }}$ má gíd-da $i_{7}$-da-zu ú gíd-da hé-em-mú, "may the grass grow long on your canal banks of the má gíd-da," followed by wagon pathways becoming overgrown (Cooper 1983: 62-63). The meaning in this connection of such passages as UTI 4, 2892 obv. 3: 1(ĝéš) 2(diš) ĝuruš $\mathrm{i}_{7}$-sal ${ }_{4}$-la $\mathrm{ku}_{5}$ gú-ba šu ùr-ra, " 62 workman(-days), having cut away the Isala canal and leveled off its bank" (/ /UTI 4, 2562 obv. 4 and UTI 4, 2884 rev. 3) and BPOA 7, 1964 obv. 1-2: 1(u) 2(diš) [ĝuruš] $u_{4} 1(u) 5$ (diš)-šè / gú idigna šu-luh
with waterway transport, we should take the gídpole designation seriously and consider whether the activity má-gíd might in many instances refer not to the conventional "towing," but rather "(to move a barge upstream) with a pole," "to punt (upstream),"16 despite the recording in both ED IIIb and Ur III administrative records of fairly substantial numbers of what, based again on lexical records, is considered the Sumerian designation of punting pole, namely ${ }^{\text {ĝeses gi-muš. The use of }}$ gesesi-muš in boat transportation is, again to the best of my knowledge, unattested in the available texts. For if punting is not visible in the administrative accounts of third-millennium Babylonia, where after all the punt itself, essentially a long and narrow box in water without a keel and thus with a very shallow draft (see below, figure 2), would seem to be the most favorable vessel to maneuver along the canals, there should be some rational explanation for it-again, merely following Landsberger.

Terminological ambiguities arise immediately with consideration of actual text references. Both VS 14, 186 (Old Sumerian), and BIN 8, 108 (Old Akkadian), deal with ĝeš-gíd-da:

VS 14, 186
obv. i

1. 1(aš ${ }_{c}$ ) lá-a ĝeš-gíd-da
2. é-nam
3. 3(aš) dam-dingir-mu
4. 3(aš ${ }_{c}$ ) šeš-tur
5. 2(aš $\left.{ }_{c}\right)$ ú-du
6. 2(aš $\left.{ }_{c}\right)$ sipa
7. ĝeš-gíd-da lá-a
obv. ii
8. amar-ki-kam
9. 1(aš $\left.{ }_{c}\right)$ ur- $^{\text {d šěšer }}{ }_{7}$-da
[aka] " 12 workmen over 15 days, having cleaned the Tigris bank" is unclear to me. The significance of the latter reference would in any case appear to be negated by $B P O A 2,2546$ obv. $7-8$, with gú $i_{7}$ ĝuruš-gin $7_{7}$ du / šu ùr-ra ù šà $i_{7}$ ĝuruš-gin ${ }_{7}$-du šu-luh aka, "(workman days,) having leveled off the Guruš-gindu canal bank and cleaned its 'stomach'?"; there are, unfortunately, no reasonable means available to specialists to collate the transliterations of the texts from Yale published in $B P O A$.
16 Tangentially, ĝes gaba-tab gíd-da would denote the "punting" of the gaba-tab by punching holes into seeding lines.
10. 2(aš $\left.{ }_{c}\right)$ šeš-lú-du $u_{10}$
11. 2(aš ${ }_{\mathrm{c}}$ ) inim-ma-ni-zi
12. 2(aš ${ }_{c}$ ) ĝeš-kin-ti
13. 1(aš ${ }_{c}$ ) lú-pà
14. 1(aš ${ }_{c}$ ) é-ì-gára-sù
obv. iii
15. $\mathrm{šu}^{-\mathrm{ku}_{6}}$
16. ĝeš-gíd-da lá-a
17. ur-sag-kam
18. 2(u) ĝeš-gíd-da lá-a
rev. uninscribed
BIN 8, 108
obv. i
19. $1\left(u_{c}\right)$ ĝeš-gíd-da
20. ugula nu-bànda é-gal
21. 2( $\left.u_{c}\right) 5\left(\right.$ aš $\left._{c}\right)$ ur- ${ }^{\text {d }}$ lum-ma ugula nu-bànda
22. 2( $u_{c}$ ) ad-da nita gal
23. 1( $\left.u_{c}\right) 5\left(\right.$ aš $\left._{c}\right)$ lugal-šà ugula nu-bànda obv. ii
24. $1\left(\mathrm{u}_{\mathrm{c}}\right) 5\left(\mathrm{as}_{\mathrm{c}}\right)$ lugal-KA ugula nu-bànda

25. 1( $\left.\hat{g}^{e} \check{s}_{c}\right)$ lá $3\left(\right.$ aš $\left._{t}\right)$ ĝeš-gíd-da
26. ur-é-tur 'énsi'
27. $1\left(\right.$ gés $\left._{c}\right)$ ur- $^{\mathrm{d} x} \mathrm{x}-[(\mathrm{x})]$ ugula nu-bànda $A B-x$
rev. i
blank
rev. ii
28. šu-níĝin $3\left(\hat{g}_{\text {és }}^{c}\right.$ ) $2\left(u_{c}\right) 2\left(a \check{s}_{c}\right)$ ĝeš-gíd-da 'érin šúm'-ma

The first text records deficits (lá-a, corresponding to Ur III lá-ià) of "poles." Possibly the named individuals and their foremen were liable for the objects made available to them by the temple household, just as was the case with, for instance, expensive metal tools loaned to field workers. The second subsection of this text records one to two poles as arrears of six individuals qualified as fishermen (šu-ku ${ }_{6}$ ), while the first section lists together eleven debited poles among a group connected with Amar-ki, who, according to DP 445 obv. i, and Nik 1, 281 rev. i and iv (contrasting ĝeš-gíd-da gibil and ĝeš-gíd-da kúr), was "loaned out" (e-ne-ta-si, usually from the depot é-ki-sal ${ }_{4}{ }^{-}$ la) large numbers of such poles by Eniggal, the

17 In the same publication and, for instance, in Salonen 1970, however, this method of fishing was shown to have been fairly improbable-with the potential ex-
chief administrator of the Baba temple household in Girsu. The second text with the notation rev. ii: šu-níĝin 3.20 ĝeš-gíd-da érin šúm-ma, "together: 200 wooden poles, given the érin," records the distribution of ten "poles" to a fisherman (obv. ii 2), but also to other persons who seem connected neither with fisheries nor with ship transportation. Since the geš-gíd-da in the first text occurred together with the shields E-ùr, which, as Dan Foxvog has written me, are probably the same as ${ }^{\text {kusus.íb-ùr, and together with } \text { dur }_{10} \text {-tab-ba axes in }}$ the second, they must be understood to be some sort of lance or spear (Akk. ariktum, mašaddum) in military contexts (this is the fourth year of UruKAgina, when violent contact with Uruk apparently commenced). The Ur III fragment ITT 5, 6789, records 12 geš-gíd-da zabar $2 / 3^{\prime \prime}$ ma-na-ta, " 12 ĝeš-gíd-da, bronze at $2 / 3$ mana (ca. eleven ounces) each," probably referring to a metal tip. These may relate to the ED IIIb-period designation igi geš-gíd-da ("face of the wooden pole"), which, according to Nik 1,298 , had a weight of $151 / 2$ shekels or ca. five ounces, of an unnamed metal.

The term ĝuruš geš-gíd-da clearly refers to fisheries workers in several Ur III Girsu accounts discussed in Englund 1990: chapter 4, and the pole could be interpreted as some sort of fishing spear. ${ }^{17}$ However, we may wonder, for instance, what need the workers designated ĝuruš ĝeš-gídda in such accounts as CT 9, pl. 46, BM 21348, would have for this wooden pole when they are simple reed harvesters. Since both fisheries workers and reed harvesters are associated with boat transportation, the designation in Ur III labor accounts seems most reasonably associated with their means of transportation. In this, "towing" would appear to make less sense than the "punting" of the transport boats and thus might imply that, at least in these and related instances, Sumerian má gíd was not "longboat" but rather a boat outfitted with a platform to facilitate the use of punting poles, as Heimpel (1987:33 n. 38) initially suspected but has apparently reconsidered. Adam Falkenstein's translation "bowman troops" (1956: $1,91 \mathrm{n} .5$ and $2,301-302$ ) of guruš geš-gíd-da is, therefore, not credible in an administrative or
ception of šu-ku 6 gi-gíd, "long-reed fishermen," recorded in the Lagash II text NFT 2, p. 184 (AO 4304) rev. i 5 .
legal context. The interpretation certainly goes back to the year name of Sulgi 20 (not known from actual account dating use), mu dumu uri ${ }_{5}{ }^{\text {ki}}$-ma lú geš-gíd-da ka ba-ab-kéš, "year: 'The sons (citizens) of Ur were conscripted as 'bowmen'," and the use of šagina lú geš-gíd-da next to šagina lú gesesti, "'general' of the 'arrowmen'" in the Maništušu Obelisk (OIP 104, 40) face i col. xiii 5-6, 13-14.

Perhaps there are in fact terms in the administrative record that would exclude the reinterpretation of geš-gíd-da as "punting pole" and of gíd in related Ur III cargo boat documents as "to punt." These would be technical terms referring to such poles, on the one hand, and to towing ropes, on the other. Civil (1989) in his treatment of the ED IIIa stone fragment NFT p. 222 (AO 4397) noted that éš má, "boat ropes," are followed by g̀esgi-mùš, which he identified as an early form of gi-muš, Akkadian gimuššum / parīsum, "punting pole." This ${ }^{\text {ĝes }}$ gi-mùš is already found in ED I-II texts in relatively high numbers ( 210 in UET 2, 25 obv. i 2, and 7 in UET 2, 230 obv. i 1'), but counted in the still confusing bisexagesimal system that Damerow and Englund 1987: 132-134 found to be exclusive to rationed comestibles in the archaic period, and that qualified numbers of ninda and gi in the ED I-II texts, but in the ED IIIa period the product sag si-NU $\times \mathrm{U}$, a fisheries catch delivered in ED IIIb texts together with sea turtles (DP 36). ${ }^{18}$ Civil translates NFT p. 222 ii 5 ': éš má-gíd as "towing rope," with reference to Ur III texts. ${ }^{19}$
ǧes gi-muš are common in ED IIIb and Ur III texts, and might have been punting poles, but, as seems more credible since they invariably show up in accounts describing boat construction, they were probably wooden parts used in some phase of this work; according to TCL 5, 5673 obv. iii 13 and rev. i 6 , they were apportioned at three per boat ( 30 or 10 gur capacity). In this scenario, we must imagine that shipyard workers were expected to outfit the boats with punting poles, which were then towed along the canals. Indeed, the ED IIIb text DP 428 records explicitly the disbursement of gُešgi-muš, also of the common tree ù-sub ${ }_{5}$ (Powell 1992: 117-118 "pine?"), to má-lab ${ }_{5}$

18 VAT 9052 cited LAK p. 71 is not available to me, but reported [personal communication] by Joachim Marzahn to be an incorrect reference; cf. Englund 1990: 98 n. 314.
má-gur ${ }_{8}$-ra-me, "boatmen of the cargo boats." TCL 5, 6037 obv. iii 18-19 and AAICAB 1/1, pl. 6768, Ashm. 1924-667 rev. ii 12, give an exchange rate of 30 ù-sub ${ }_{5}$ ĝeş gi-muš per shekel (SAT 2, 178 rev. 2-3 unclear), without mention of boat size, while a value of 12 per shekel is assigned in TUT 121 rev. iv 6'-7' (counted together with du $\mathbf{x}_{5}$ boxes). The early Old Babylonian text BIN 10, 96 obv. 1, states that ù-sub ${ }_{5}{ }^{\text {gess }} \mathrm{gi-muš}$ had a length of 10 kùš $=\mathrm{ca} .5$ meters. If these were stable terms through time, it is very hard to digest the notion that the very large numbers of ${ }^{\text {geses gi-muš attested in Ur III }}$ accounts can have represented punting poles that then found no mention in the cargo texts. For instance, Amherst 66 rev. 8 records a total of $1.16 .38=4,598$ gesesgi-muš from just two managers of the "tree farm of Gudea."

Hh 4, 407-408 (MSL 5, 184), equates ${ }^{\text {feses }} \mathrm{gi-muš}$ to $\operatorname{gimuššum~and~parīsum,~where~parīsum~is~reason-~}$ ably considered the Akkadian term for punting pole. The presumed punting poles that brought Gilgamesh across the waters of death to discover from Utnapishtim the secret of eternal life (cf. George 2003: I 280-281 and 688-689) were called parisum and were 5 ninda, that is 30 meters long each. While legendary and consonant with the epic narrative, certainly they needed to be long to reach the bottom of the waters Gilgamesh wanted to traverse-the standard wooden Collars of Oxford poles sold in the UK measure 5 meters. The Gilgamesh poles were, as today to protect the wood and to ensure a better "feel" for the river bottoms, outfitted with shoes called serretum in Old Babylonian (not likely "oar lock" as in the dictionaries), in Standard Babylonian tulûm (literally "teat"). Hh 4, 254 (MSL 5, 172), equates this parīsum with ${ }^{(\text {geses) }}$ má-rí-za, which, as a reinterpretation of ǧeş mi-rí-za in Old Babylonian Nippur $\mathrm{H} h$ 1, 263, and in the Ur III boat-building accounts, is found next to ${ }^{\text {geses }} \mathrm{gi} \mathrm{i}$ muš in the text Amherst 66 cited above, in MVN 10, 230 rev. iv 29, and in other instances associated with boats of specified capacity (20-60 gur). RA 16, 19 obv. iv 7, appears to assign the size of 6 cubits, or about 3 meters (rev. iv 2: 8 cubits $\approx 4$ meters) to this, then "junior"

[^7]gi-muš, valued for unclear reasons at 40 per silver shekel for 40 -gur boats, 60 per shekel for 30-gur boats, and 50 per shekel for 60 -gur boats (TCL 5, 5673 obv. ii 25-26, iii 19-22); both were made of the u -sub ${ }_{5}$ tree, but in such numbers ${ }^{20}$ that the term would most reasonably lend itself to a planking used in boat construction, in particular given such formulae as that of TCL $5,5673 \mathrm{obv}$. i 12, which assigns 195 mi-rí-za to the construction of just one 120 -gur boat ${ }^{21}$-until we locate the unlikely reference stating that gi-muš and mi-rí-za were but two sizes of the "long-pole" ĝeš-gíd-da.

Where though are all the ropes in the matter of Ur III towing? The easiest solution is to assume that they were, just as for instance the traps and nets of fishermen, the sole responsibility of the workers who used them and thus not recorded in the central accounting system of the households. There are, as we have seen, occasional references to éš má and even éš má-gíd, but with such infrequency, and in the context of boat construction and maintenance, that they more likely refer to the nautical ropes that any boatman will have on board or that, as we know from Egyptian boat construction, could have been an integral element of a boat hull's integrity (s. Potts 1997: 126-127). Further, one of the major tasks assigned to boatmen was the loading and securing of the freight, qualified with the verb kéš and almost certainly accomplished with ropes, and, if Heimpel is correct (2009: 203 n .144 ), the common má-lá-a might designate a "boat-train" secured by ropes. But where we do see references to the distribution of ropes, they seem destined for field surveys. For instance, in the text $M V N 13,598$, it seems that, if correctly interpreted, numbers of éš are distributed to various foremen, qualified in the total as éš gíd-da, and these foremen are field managers. It is disquieting that, if these are in fact ropes, they are totaled in grain metrology, with one rope $=$
one bán (cp. the parallel, but not well-copied text MVN 2, 183, which seems to have an expanded initial line of 24 éš ba-an-ta, " 24 ropes?, each of ban (size)"). This would lead to the need to reconsider quite a large number of attestations of presumed zì ("flour") in the textual record, together with a consideration of potential candidates for a rope metrology that one would have imagined would have been given in length notations. ${ }^{22}$

When lú éš gíd are recorded, the most natural designation of a "boat hauler," ${ }^{23}$ the term evidently refers to a high post (in ED IIIb texts assigned to the temple households of Ningirsu, Nanše, and probably Baba), and to just one man. In the Lagash II period (ca. 2200-2100 BC), these professional names designated field surveyors (ITT 4, 7333 rev. i 6), reflecting the use of surveying ropes amply described in the royal inscriptions of the ED IIIb and Lagash II periods. ${ }^{24}$ Nonetheless, it would not be surprising if there were no particular professional designation of boat haulers who formed a work team under the supervision of the boatman called má-lab ${ }_{5}$.

The same caveat applies to the attestations of éš má in the Ur III period. UTI 3, 2030 obv. 1 - rev. 1 has 1 éš má gíd / 5 peš-ga mangaga / é-kišib-ba é-maš-ta / ur-ab-zu šidim / šu ba-ti, where éš má gíd is dutifully explained by the authors as "rope, for towing a ship." However, the rope is followed by a designation of mangaga (cp. YOS 4, 238 obv. 4) date palm fibers and both are received not by some general workmen but by a builder (šidim) whose interest would rest in ropes used in construction, for instance of boats (cp. AnOr 1, 88 rev. iv 32 ) within the cargo boat center known as the mar-sa, of which in Umma the Lugalebansa mentioned above, but also Adumu of the administrative partitur at the beginning of this essay were two of the numerous attested receiving agents.

22 Cp. SAT 2, 196 // 233; the agent Lugalebansa in these texts very often received grain á má bun-ğà, "as boat rental fee," but also mats and building supplies for boat construction, e.g. the bitumen flavors ésir éA and hád.
${ }^{23}$ The persons labeled má-gíd in ITT 4, 7382 rev. 5, also qualified as "various cooks released from detention" (mubaldim didli en-nu-ta è-a), remain unclear to me.
24 FAOS 5/1, Ent. 28-29 i 11: és GÁN bé-ra; RIME 3/ 1.1.7, Gudea Cyl. A xvii 26: GÁN-zi-dam és ì ìgar-ĝar.

We see in the archaeologically preserved depictions of Mesopotamian boats the vessels of royalty, but not those of the cargo manager. The recently published Old Babylonian text Nisaba 19, 163 (IM 90465), from Ur, gives us, I think, our first remarkable glimpse at the real form of boats traversing the canals of third-millennium Mesopotamia:

$$
\begin{aligned}
& \text { 1(diš) má 3(u) gur } \\
& \text { gíd-bi } 1 \text { (diš) } 1 / 2(\text { diš) ninda } \\
& \text { 4(diš) } 1 / 2(\text { diš) kùš } \\
& \text { igi 8(diš)-gál gíd-bi dagal-bi } \\
& \text { 'dagal'-bi gi-na 3(diš) kùš } \\
& \text { [šu?]-'ri?'-a-bi dagal-bi sukud-bi } \\
& \text { [...] 'sukud'-bi 1(diš) }{ }^{1 / 2} \text { (diš) kùš } \\
& \text { [...] x-x-me-en } \\
& 1 \text { boat of } 30 \text { gur, } \\
& \text { its length } 11 / 2 \text { ninda } 41 / 2 \text { cubits (ca. 11m); } \\
& 1 / 8 \text { of its length (is) its width, } \\
& \text { its width is a firm } 3 \text { cubits (ca. } 1.5 \mathrm{~m} \text { ); } \\
& \text { one half its width (is) its depth, } \\
& \text {... its depth } 11 / 2 \text { cubits (ca. } 75 \mathrm{~cm} \text { ); }
\end{aligned}
$$

The boat described here in a simple mathematical problem text is very much in the form of a punt (figure 2), extremely stable in shallow waters, and, with a light frame and very shallow draft, easily maneuverable in alluvial canals in

Mesopotamia. The calculated volume capacity of the boat is $121 / 24$ ninda $\times 3 / 12$ ninda $\times 1 \frac{1}{2}$ kùs $\approx$ $0.7 \mathrm{sar}^{\mathrm{vol}}$ or ca. 42 gur capacity, where $1 \mathrm{sar}^{\mathrm{vol}}=60$ gur $\approx 18 \mathrm{~m}^{3}$. We may compare with this the Old Babylonian mathematical exercise MCT 88 (MKT 1, 193, and MKT 2, 43, BM 85196), problem 5 (Sachs 1944: 29-39), that records a ģase mállá of length 1 ninda, width 8 kùš and depth 6 kǔš, giving an irregularly wide and deep boat with 4 sar ${ }^{\text {vol }}$ capacity, about 240 gur and thus beyond Ur III norms. ${ }^{25}$ Such keelless flat boats, as would particularly be qualified with a "firm" (gi-na) width throughout their length, would make much better sense than a heavy cargo boat with keel, not just from the standpoint of maneuverability through canals that must have been of varying depth for the captains planning a longer voyage, but also from the standpoint of crews that apparently had to be prepared to unload and hoist the entire boat this way and that. The advantages of such a light and stable boat in shallow waters must of course be weighed against the records that document the construction of Ur III boats. Unfortunately, we are not well informed about the meaning of many of the materials that went into such boat building. For instance, TCL 5,5673, gives us the following numbers for one 60-gur boat (obv. i 27-ii 28): 3600




Figure 2

[^8] dím ( 0 ह̂ešgi-muš!), 131 gú ésir hád ("dry bitumen"), $83 / 4$ gú ésir gul-gul, 6 gú si-SAR, 1 gur ésir é-A, 30 sila ì-ku ${ }_{6}, 900 \mathrm{u}_{4}$ (= "workdays"), and 1 málah $_{5}$ (= "boatman," presumably the crew foreman). ${ }^{26}$ If these are meant to be canal boats, the amount of bitumen (ésir) alone might account for upward of 4 tons of weight and thus would not support an interpretation of má gíd-da = "punt"; we would look to the miriza planks, "foot boards" ( हैešgìri) and ${ }^{\hat{g} e s}$ eme-érin as major framing and outer hull components, obviously held together with large numbers of pegs (gेesk ${ }^{\text {kak }), ~ b u t ~ t h e ~ s i z e ~}$ and weight of the structural wooden parts is not recorded. A preliminary search of extant texts, however, has uncovered no evidence that the skippers of the boats recorded in these texts were in charge of gid-able craft.

Given this apparently ambivalent evidence, it may be wondered whether and under which circumstances the boat navigation term gíd may be confidently translated with "to tow" with a rope, or "to punt" with a pole for the Ur III period-I cannot see a third alternative. Technical considerations of canal depth, of the unlikelihood of adequate dike maintenance, of the need to lift boats out of and into another canal or just around weirs, of the maneuverability and stability of flat-bottomed keelless boats, of the specific tractive force (i.e., the ratio of a vessel's thrust in motion to its weight) and the velocity of currents that boatmen faced in navigating their craft upstream; and practical considerations of the presumed exclusive use of human rather than even one clear example of draft animal traction in hauling boats up waterways would tend to undermine the philological evidence equating parīsum with two or more Sumerian correspondences that would then make up the referents for "punting poles" in the Ur III texts. Regardless of how we understand either gimuš/mùš or mi-rí-za in boat-building texts, however, ĝeš gíd-da is likely, in laborer qualifications of Ur III boatmen, to refer not to a fisherman's spear or to a bowman's weapon, but to a punting
pole. How otherwise are we to imagine the work performed in maneuvering fishing boats along waterways or in the great southern marshes, or craft gathering in, and laden high with reed moving up and down dikes overgrown with their targeted plants, precisely the work involved in the accounts mentioning this profession? In contrast to the associations of barge transport with wooden instruments of propulsion, moreover, evidence of the use of ropes in moving boats upstream remains highly elusive; ropes were, according to our texts, employed in the construction of boats, and in tying down cargo. And yet we may tend to overstate the case for failing maintenance of dikes sufficient to support towing paths, as well as the lack of clear references to the distribution and use of towing ropes, in denying the probability that boats were towed in the Ur III period. In the first instance, it is today difficult to imagine a southern Iraq with well-tended and straight canals, dikes stabilized and paths cleared for the critical lifeline that was water transportation. Yet this was indeed the basis for both communication, and irrigation, and was thus evidently an issue of great concern to rulers with regional influence. Our fishermen too, according to the texts, received no, or very few, nets or sinkers from their household depots, and yet we cannot doubt that these, together with traps, were the main equipment used in the catch, and so the fisheries workers must have been responsible for their own work tools. It would therefore be prudent to leave the matter of third-millennium towing for such time as new sources offer a final clarification. Boats were likely towed, but aside from the verb gíd, there appears to be no compelling philological evidence to support that use of human labor.

I would like to end this note on the sign BU by returning to Deimel's speculation that the "original form of this sign could be a 'rudder'." As figure 3 demonstrates, the referent of the Uruk IVa period sign is much more likely to be a snake, based not just on its graphic form, including a
${ }^{26}$ Cf. OrSP 47-49, 249, with reference to many of the same eight boatmen recorded in this section of TCL 5,5673 , and with corresponding numbers of some, perhaps replacement boat parts, although both Umma texts date to Šulgi 45.


Figure 3
probable representation of the snake's forked tongue, but based also on the sign MUŠ that is this sign with lines drawn perpendicularly through its body, and an inexplicable fork of the tip of its tail. The presumed proto-cuneiform precursor of this sign is very poorly preserved in the archaic record, if at all, with badly abraded instances of the sign in the lexical lists Lú (1. 112, but very doubtful) and Birds (1l. 29 and 91; see ATU 3, p. 259). We might rather discount these attestations and assume that BU in the Late Uruk period was the pictogram of the snake. ${ }^{27}$ Krebernik (2007: 43) has pointed to the correspondences between the archaic and later versions of the City List (ATU 3, pp. 34-35, 145-150), where line 52 has Archaic ŠÀ BU // ED LAK50/ša-bu-nun / / OAkk ša-ab-bu-nu-um. This string would tend to support the reading both of ŠÀ =/ša/ as well as, based on -abof the Old Akkadian witness, of $\mathrm{BU}=/ \mathrm{bu}(\mathrm{nun}) /$ and thus, potentially, the reading /bu(nun)/, or even /bnun/, of the Late Uruk word for snake (note that City List l. 87 indicates an ED variant

NUN of archaic BU). The further attestations of the sign in Pig List 11. 9-10 ((ZATU686) BU ŠUBUR; W 12139) and Fish List 1. 2 (BU SUHUR; W 22101.7+) would also be consonant with an interpretation of the sign as "snake." The only credible Late Uruk precursor of the MUŠ sign is BU+DU ${ }_{6}$, that is, of a snake rising out of a mound of some sort. The next and then relatively clear attestation of muš is found in the ED IIIa (with no clear evidence in the ED I-II texts), for instance in the personal name ur- ${ }^{\text {d }}$ nu-muš-da, written AN MUŠ UR NU DA, or in the professional designation muš-lab ${ }_{5}$, both multiply attested (consult CDLI search).

But quite aside from speculation about the ultimate pictography and reading of BU in the archaic period, it is striking that the sign with a meaning paralleling our gíd is attested also in the texts. The definitive examples of this function of BU are found in the field survey texts from Jemdet Nasr (MSVO 1, 2-6; see conveniently Bauer, Englund and Krebernik 1998: 206-209). According to a standardized format, these accounts re-

[^9]cord on their obverse surfaces a number of apparent agricultural fields, measured by length and width and qualified with a surface notation derived from the so-called GÁN-system. One example is MSVO 1,2 obv. 3: $4 \mathrm{~N}_{34} 5 \mathrm{~N}_{14}$ AŠ NÁM DI / $1 \mathrm{~N}_{34} 3 \mathrm{~N}_{14} 3 \mathrm{~N}_{1}$ DIŠ / $1 \mathrm{~N}_{50} 5 \mathrm{~N}_{14}$ GÁN, " $240+50$ (ninda) length, (field of the official named) NÁMDI; $60+30+3$ (ninda) width: 1 bur'u 5 bùr irrigated field," calculated as $290 \mathrm{n} \times 93 \mathrm{n}=269.7 \mathrm{iku}$, or very nearly 15 bùr. The five surface measures, based evidently on the laying down and recording of some sort of measuring device in the fields of a set of elites at ancient Jemdet Nasr, were combined in a total surface area notation on the reverse of the text, and this notation was qualified with KI BU, certainly to be translated "measured/ surveyed land." This is in exact parallel to the meaning of gíd in later periods to qualify the use of a rope (éś) to measure fields; see, for instance, "Oxford" diri l. 564 (MSL 15, p. 49): GÁN BU = ša-di-id aš-li-im, "rope puller," the lú és gíd discussed above, and the many references to GÁN gíd in the online resources. If it were not considered flippant, I would call our archaic surveying device the "platinum snake."

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# Why Should Someone Who Knows Something Conceal It? 

Cuneiform Studies in Honor of David I. Owen on His 70th Birthday

edited by<br>Alexandra Kleinerman<br>Jack M. Sasson



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[^0]:    2 HLC 3, 384 (pl. 145) obv. i 7'; BAOM 2, 3055 obv. 1; CST 623 obv. 1.

[^1]:    4 Sumerian $\operatorname{si}(\mathrm{g})$ as a rule qualifies the loading of cereals and flour; gar refers to textiles, lumber, animal carcasses, etc.; and gub to livestock or humans (BPOA 1, 1309).
    5 See Foxvog 1986: 66 to má bala $\mathrm{a}_{5}[=\mathrm{ak}]$ "transferring of a boat from one watercourse to another"; Georgica 7.11 with 40 ' workmen may be considered atypical, since this crew is attached to what is called the má énsi, "boat of the governor."

[^2]:    6 See in the references under PSD B, pp. 52-53, and in the Akkadian dictionaries the similar uses of the Akkadian correspondence ebēru, "to cross (a waterway; S-stem: to send across)."
    7 Assuming a common 60-gur barge weighed no more than one ton; see below.

[^3]:    8 Confer, for example, JEOL 2, 136, 8: ištu eliš iqqalpu'a.

[^4]:    10 Including Renee Gallery Kovacs, Marcel Sigrist, Piotr Michalowski, and others; my photocopy of the original cut-and-paste binder dates from 1973.

[^5]:    11 Self-published in 1993, with description, pp. iii-v, of the work's genesis.
    12 Abbreviated as ePSD; see <http://psd.museum. upenn.edu/epsd/>.

[^6]:    13 Cf. Hurowitz 1992: 32-67; Klein 1990: 80-136; ETCSL 2.4.2.18, Šulgi R.

[^7]:    19 See, for example, RA 16, 19 obv. ii 6, ITT 3, 6351 obv. 6,6554 obv. 3, etc., and compare MEE 4, 336 1431' (Ebla witness TM.75.G.10023? +11301 rev. iii 14-15): éš má-gíd = a-sa-lum (Akk. ašlum), "rope."

[^8]:    25 This is to be noted to Heimpel 2009: 203 n. 144.

[^9]:    27 Such instances as IM 23434,a (unp., but available in CDLI) obv. i 2.b with $\mathrm{NI}_{\mathrm{b}} \mathrm{GI}_{6} \mathrm{BU}_{\mathrm{a}}$ and MSVO 3, 24 obv . i 4 with $\mathrm{GI}_{6} \mathrm{BU}_{\mathrm{b}} \mathrm{NI}_{\mathrm{a}}$ demonstrate that horizontal and vertical BU are simple orthographic variants.

