§7.5. Thanks to the dossier of 800 or so Drehem texts related to the "kitchen" (e2-muhaldim), which register livestock intended to supply, among others, some number of aga3-us2 with meat,[90] we get a first impression that there were garrisons of aga3-us2, as one would expect, at least in Ur, Nippur and Uruk, that is to say in the three capitals (political, religious, and historical) of the kingdom. Some of the available texts actually specify the place where the soldiers were provided with meat: ša3 uri5ki-ma (Ur), ša3 nibruki (Nippur), and ša3 unuki (Uruk). It may nevertheless be better to conclude that these regular soldiers (aga3-us2), who were fed at Ur, Nippur, or Uruk via the e2-muhaldim of Drehem, actually represented the same royal guard of aga3-us2, moving regularly with the king to escort him during his journeys to all three capitals.[91] The same may apply to journeys to sanctuary-towns in the kingdom such as Gaeš, Idlurugu, and Tummal, which the king had to visit frequently, especially for regular attendance at the rituals (Akiti, etc.) that are mentioned in these texts.[92] One example of such ceremonies is the a-tu5-a-"lustration" ceremony, for which the king was actually accompanied by a particular group of his soldiers, the aga3-us2 a-tu5-a-me. Finally, this particular unit of aga3-us2 provided through the Drehem e2-muhaldim can be understood as having represented a kind of Pretorian Guard at the king's disposal, like the one that would be constituted by Roman Emperors. Following the calculations made by L. Allred from the quantities of delivered livestock,[93] this contingent of royal soldiers perhaps consisted of a few hundred men.[94]

§7.6. According to the Ur III documentation as a whole, however, beyond the three major cities, the provincial capitals, and the king's royal guard, there were probably at least two other main garrisons of aga3-us2 soldiers in the core of the kingdom.[95]
1) One in Nigin, a town south of the province of Lagaš.[96] At least six Girsu tablets mention “regular soldiers originating from Nigin” (aga3-us2 dumu nigin6ki-me, TUT 111; TÉL 182; Orient 16, 87 129; TLB 3, 148; Amherst 21; MVN 6, 443[97]). Nowhere else in the Ur III archival texts do we find such an expression in the form “aga3-us2 dumu GN”[98] but unfortunately, we have no more evidence about this garrison.

2) And especially another in Garšana. This site of Garšana[99] has reappeared in recent research through a batch of nearly 1,400 tablets in the Cornell University collections, recently published. As with so many Ur III texts without contexts, unfortunately, neither their exact origin nor their archaeological context may ever be known.[100] This archive likely refers to the management of a private domain which was placed under the authority of a man named Šu-Kabta, who was probably the husband of a royal princess named Simat-Ištaran, sister of king Šu-Suen. In this context, it is worth noting that Šu-Kabta appears in these texts as being a “general” (sagina).

§7.7. Apart from this important new archive, a small group of tablets is particularly interesting concerning Garšana: mainly from the administration of Girsu, they show that one of the principal garrisons of soldiers in the core of the kingdom was located precisely at Garšana. The “Lagashite” origin of these texts is interesting, as Garšana generally depended on the province and governor of Umma, as did Nagsu, Apisal, and Zabalam, for example.[101] The tell of Garšana, which has not yet been identified, may have been located at the crossroads of the central provinces of Umma, Girsu and Uruk, and therefore south of Umma, perhaps in the area of Gu’edena.[102] This file comprises the following six texts (in chronological order):
The troop of royal soldiers of Garšana received 570 pairs of leather boots issued by the governor of Girsu. The captain is Elu-dan. At Uruk, through Lugal-amgal.

TEL 171 (=CUSAS 3, 1447). Date: IX/ŠS 6 (Girsu)
1. 438 še (2) gur lugal (3) nig2 ba lugal (4) aga3 us2 ša3 gar āa ne (6) ki al ta mu ta (rev. 5) šu iš li2 (7) šu ba ti (8) dub gešir ma nuna (9) šu ur šu ga lam ma (10-11) Date.

"The troop of royal soldiers of Garšana received 570 pairs of leather boots issued by the governor of Girsu.

ITT 3, 6174 (=CUSAS 3, 1453). Date: IX/ŠS 9 (Girsu)
1. 3000 šu udu a gar gu7 a (2) 600 kuš udu a gar nu gu7 a (rev. 3) ki nig2 u2 rum ta (4) mu aga3 us2 gar āa an naki šeš (5) iš-šu lišta (6) šu ba ti (7) Date.

"Ippalis received 3,000 tanned sheep skins and 600 non-tanned sheep skins, delivered by Nigurum for the soldiers of Garšana.

ITT 3, 5406 (=CUSAS 3, 1491). Date: IS 2 (Girsu). Collated by the author
1. 1897 še gur (2) aga3*-us2* gar-ša-na ke4 (3) šu ba ab ti (4) ki ensi2 gir2*-su*-ki*-ta (rev. 5) ba zi (6) kišib3 sukkal mah (7) Date. "569,100 liters of barley, received by the soldiers of Garšana. Expense by the governor of Girsu. Seal of the grand vizier."
§7.8. Despite its disparate character, we must emphasize the exceptional nature of this small dossier. [104] It has no equivalent elsewhere in the Ur III documentation, and it shows how these soldiers, who do truly appear to belong to a garrison at Garšana, were regularly supplied: 570 pairs of boots (text [R]), 3,600 sheep skins (text [T]), 600 kg wool (text [V]), 130,000 and then 570,000 liters of barley (texts [R] and [T]). These texts on the garrison of Garšana come from Drehem, Girsu, and Umma; they refer to Uruk, Girsu, and to the grand vizier (sukkal-mah), whose importance in the military affairs of the kingdom is well known and whose official titles show his ties to Garšana (RIME 3/2.1.4.12, p. 324). All this suggests that, in a central position within the kingdom, there was a key garrison of regular soldiers maintained by the Neo-Sumerian state (text [R] asserts that they were “soldiers of the king”). Further, it is not impossible to imagine that the general who commanded this garrison was precisely, at least for some time, Šu-Kabta, the man whose private archives were found, along with those of his wife. [105]

§7.9. The last tablet of this small dossier, text [W], provides useful evidence for the composition of units stationed in the garrison of Garšana, the whole dossier having shown that it consisted of both conscript troops (erin2) and professional soldiers (aga3-us2). Each of these units was commanded by a captain (nu-banda3) and included between 150 and 500 men. Also, we learn that the total number of troops identified in the Garšana garrison could reach 1,367 men (erin2).

§7.10. The rest of text [W], however interesting and unusual, is more difficult: it seems to break down the assignment of troops actually identified in several other places in the kingdom, as opposed to the personnel who had been originally anticipated [106]. The scribe eventually recorded a total deficit of 340 men from the 3,000 he had hoped to muster at an initial meeting, or approximately 10%, missing the call.

We must add to this list texts that mention a “general” (šagina) of Garšana, on an Umma tablet (SAT 3, 2073) and in the Garšana archive (CUSAS 3, 1424, and seal impression of Šu-Kabta, CUSAS 3, p. 436).
§8. The issue of numbers

§8.1. Text [W] offers a perfect transition to address one final point in this study. Albeit important, it is difficult to analyze, due to lack of adequate evidence: this is the question of numbers or force. If one accepts that the garrison of Garšana constituted a major barracks for the whole kingdom, the 1,300 troops (erin2) stationed there (text [W]) did not, in the final analysis, represent a very considerable number! We must nevertheless acknowledge that when units of soldiers, whether aga3-us2 or erin2, appear in our archives, they rarely consist of more than a few hundred men. It is rare to encounter groups of more than 1,000 soldiers in a military context. This contrasts with the large and exceptional mobilizations of labor during harvests, when up to 10,000 aga3-us2 may be gathered (see above §4.7, in ASJ 8, 118 33).

§8.2. In the absence of any explicit evidence, one possible method to reconstruct a more significant number of men gathered for some military occasion, such as departure to or return from campaign, is to take into account the texts recording distribution of food or drink to the soldiers, and to collect the quantities distributed and consumed. The problem in this case is that the duration of consumption is rarely mentioned: is the food or drink for one day, ten days or a hundred days? In documents relating to the army, distributions made in the framework of “banquets” to celebrate victory must take place at one time and therefore allow the following results:

* Text [C], Drehem: 155 head of cattle to feed the soldiers returning = 9,000 men (or 4,500 on two days, 3,000 on three days, etc.).
* Text [D], Umma: 1,200 liters of beer for quenching the thirst of soldiers returning from expedition = 600 men?
* Text:
  - Drehem: 3 cattle and 345 sheep to feed the soldiers returning from expedition = 22,500 men (or 11,250 on two days, 7,500 on three days, etc.)?
* Texts in the dossier concerning the naptanum-banquet at Umma[107] between 760 and 1,200 soldiers, beneficiaries of beer?
* UET 3, 1114, Ur: 1,450 liters of regular beer and 1,500 liters of bread and flour, shared (ha-la-a) between soldiers (aga3-us2) = 750 men?
* TUT 120, Giršu: 44,500 liters of beer on each day of a full month (for this text, and this is exceptional, the duration of consumption is therefore known), shared by soldiers (aga3-us2-e ha-la-a) = 750 men.
* STA 3 iii 7-8, Umma: 37,710 liters of beer delivered to the soldiers in the frame of the monthly bala duties = 628 men?
* Three typical Giršu texts (among others) record a še-ba delivery to the aga3-us2 for the 11th month of Š 46 (MVN 12, 118 and CM 26, 64) and the 11th month of Š 47 (MVN 12, 249). If we calculate 2 liters per day and per soldier during one month, we get: 1,950 soldiers in the first text (with 117,035 liters of barley), 2,023 soldiers in the second text (121,390 liters of barley) and 6,095 soldiers in the third text (365,710 liters of barley). But is this way of calculating reliable? And who are these Giršu aga3-us2?

¶83. Text [Q], Drehem: 1,200 bows distributed to arm 1,200 soldiers.
* Text [R], Drehem: 570 pairs of boots to put shoes on 570 soldiers.
* Text [W], Giršu: 1,300 men in the garrison of Garšana.
* TCTI 2, 3543 (remainder of the text [W]): breakdown of units between 360 and 820 men.
§8.3. In most cases and if we put aside the (exceptional) texts [C] and
   , we find that the sources indicate a range of unit size from 300 to 2,000 soldiers, with an average of around 600.[108] It
   may be objected that nothing is said here about the army composed of erin2-conscripts, when these were mustered en
   masse for military operations: adding these conscripts to the professional soldiers, the numbers would probably be much
   larger. But the problem is that they are hardly ever seen in our archives (see nevertheless below §8.6!)

§8.4. One more interesting account related to this issue is provided by an extract of the “historical” letter (its status is therefore
   literary) from Lipit-Èštar to Nanna-kiag, referring to the constitution and sending of a reinforcement army composed of three
   equal units of spearmen, bowmen, and soldiers armed with axes; the total reaches 6,000 men:

   [X] Letter from Lipit-Èštar to Nanna-kiag (ETCSL 3.2.4)
   ( a2-še3 2 li-mu-um erin2 lu2 geššukur (9) 2 li-mu-um erin2 lu2 gešban (10) 2 li-mu-um erin2 lu2 dur10-tab-ba im-mu-e-ši-
   sar
   “Now, I have sent to you in haste 2,000 spearmen troops, 2,000 bowmen troops, 2,000 double-axe wielding troops.”

The most interesting information here is the three-party distribution of the whole group (see above §6.2-3). For the rest, the total
   number of 3 × 2,000 = 6,000 is unfortunately not reliable, as demonstrated by the alternative numbers given by some copies of
   this text: for each unit, they alternate numbers between 2,000, 3,000 or 4,000 men.

§8.5. Regarding the reliability of numbers, the situation is probably similar for the one text that gives the largest number of
   soldiers explicitly attested in a military context, for all the documents we have seen for this period: the 10,000 aga3-us2 (2 ×
   5,000) commanded by Apillaša (text [F] above §3.2). Again, it must be kept in mind that this document from the royal
   correspondence of Ur is not an administrative tablet but a literary text. And even if an original letter was actually written by
   Aradmu, we cannot know how much reality resides in this breakdown of 10,000 regular soldiers: we have to consider the
   possibility that the author of the letter sought to impress his interlocutor, or that the scribes who “canonized” or “re-created” this
   letter may have rounded off the total number of soldiers, either to exaggerate or to minimize it.

§8.6. Finally, armies of several tens of thousands, as seen in documentation from the time of the Mari kings or from that of the neo-
   Assyrian empire, cannot in any case be seen explicitly in our Ur III texts. Therefore, we do not know ultimately with what means
   the kings of Ur were engaged in all these faraway fights that they undertook, as mentioned at the beginning of this work.
   Nevertheless, P. Michalowski recently pointed out a great number of erin2 troops stationed in Susiana, which can perhaps be
   glimpsed from administrative tablets dating to Šulgi’s final years. At that time, several tens of thousands troops (erin2) seem to
   have been stationed in such cities as Susa or AdamDUN. These cities could have thus been staging areas, virtually dominated by
   military personnel ready to go to war. And, according to Michalowski, “massive armies” were gathered there during the wars of
   Šulgi’s final years, this influx of soldiers having perhaps doubled the population of Susiana at that time: “some of these troops come
   from Sumer, some were local, and some came from other vassals, allies and provinces.” Ultimately and according to him, “the
   impact of a large military presence in the border areas should not be underestimated.”[109]

§8.7. Nothing is available for the army on campaign, nor on siege warfare (unlike the situation for the time of the Mari kings for
   example), or on military strategy. These are still questions for which the silence of our sources, because of their nature, is
   unfortunately almost absolute.[110]

§9. Conclusion

In reinforcing the institution of the aga3-us2 soldiers, already observable since the Pre-Sargonic period, the kings of Ur wished to
   have at their disposal, first, a force for administering and securing the territory of the kingdom, and second, a military intervention
   force ready for foreign conquest. Closest to the king, a specific contingent of royal aga3-us2 soldiers was used as his own
   household troops and elite infantry unit, as a kind of Pretorian Guard. For this Ur III period, the texts from the Girsu archives
   generally provide the greatest amount of evidence regarding the army and military affairs. If we are not misled by the random
   distribution of our sources and in particular by the fact that we do not have any central archive, it appears that this province of
   Girsu played a military role in the kingdom greater than that of its neighbors. And we must note in conclusion that the elements we
   have tried to gather and to describe briefly approximate a framework inherited from the Old-Akkadian period, one that would
   continue to be used in Mesopotamia until the end of the Old-Babylonian period, at least with regard to the constitution and
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A “crater” in Antarctica once thought to be the work of a meteorite impact is actually the result of ice melt, new research finds. The hole, which is in the Roi Baudouin ice shelf in East Antarctica, is a collapsed lake â€“ a cavity formed when a lake of meltwater drained â€“ with a “moulin,” a nearly vertical drainage passage through the ice, beneath it, researchers found on a field trip to the area in January 2016. East Antarctica has been a mysterious place when it comes to climate change. The region has been gaining ice due to increases in snow accumulation, according to 2015 research. Global warming can increase snowfall by boosting the amount of moisture in the air (warm air holds more moisture than cold). The Roi Baudouin crater was more mysterious still. U.S. News World News Voices. Odd News. Entertainment. Movies Music TV. PARIS, July 2 (UPI) -- A European satellite has spotted a vast crater in Antarctica’s icy surface scientists say they think was formed when a lake under miles of ice suddenly drained. Combining new measurements from the European Space Agency’s CryoSat spacecraft with older data from NASA’s ICESat satellite, researchers have mapped the large crater left behind by the lake, and even determined the scale of the flood that formed it, an ESA release reported Tuesday. Scientists attempting to understand water transport and ice dynamics beneath the frozen Antarctic surface are studying Natural Gem Under Icy Wilderness. The canyon system is speculated to be buried underneath Princess Elizabeth Land (PEL) in East Antarctica, one of the last unexplored land surfaces on Earth. It is composed of a combination of linear and winding features under kilometers of ice. The massive features appear to span from PELâ€™s interior to the coast surrounding the Vestfold Hills and the West Ice Shelf. A different study found that giant icebergs breaking off from Antarctic ice sheets â€“ once assumed to be another global warming sign â€“ may actually help keep climate change at bay as they melt. In a process revealed by satellite imagery and known as â€œocean fertilization,â€ the icebergs as large as Singapore can unleash nutrients into the ocean as they float and melt.
The evidence of this and some of the other tombs revealed an elaborate funerary ritual involving human sacrifice on a mass scale. Woolley talked of the death-pits of Ur. The Royal Tombs of Ur described the grave-goods of the Early Dynastic rulers of Ur were of two kinds. More shocking, however, was the presence of attendants. The burial of the kings explained Woolley, was accompanied by human sacrifice on a lavish scale, the bottom of the grave-pit being crowded with the bodies of men and women who seemed to have been brought down here and butchered where they stood.