Puzriš-Dagan: Organization of an Animal Concentration Center during Ur III Period

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Introduction
Sumerian writing

FROM PICTOGRAM TO CUNEIFORM WRITING

<table>
<thead>
<tr>
<th>Calculi</th>
<th>Pictogram (ca. 3100 B.C.)</th>
<th>III millennium B.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Udu</strong> = sheep</td>
<td><img src="image1" alt="Pictogram" /></td>
<td><img src="image2" alt="Cuneiform" /></td>
</tr>
<tr>
<td><strong>Maš</strong> = goat</td>
<td><img src="image3" alt="Pictogram" /></td>
<td><img src="image4" alt="Cuneiform" /></td>
</tr>
<tr>
<td><strong>Áb</strong> = cow</td>
<td><img src="image5" alt="Pictogram" /></td>
<td><img src="image6" alt="Cuneiform" /></td>
</tr>
<tr>
<td><strong>Ur</strong> = “dog”</td>
<td><img src="image7" alt="Pictogram" /></td>
<td><img src="image8" alt="Cuneiform" /></td>
</tr>
</tbody>
</table>
Sources

LEXICAL LISTS

➢ Widely used in Mesopotamia and the entire Middle East
➢ The first ones are date back to the beginning of writing (Uruk)
➢ Enumerations of signs on all kind of topics
➢ They follow a clearly definite classification order
➢ Divided into columns
➢ Attempt to catalog the knowledge about the world
➢ Scholar function
THE AKKADIAN EMPIRE

2334 a 2192 B.C.

SUMERIAN
Cuneiform writing
Language isolate
(no relationship with other languages)

AKKADIAN
Cuneiform writing
Semitic language
(related to Hebrew, Arabic…)

Sources

BILINGUAL LISTS: Har-ra = Hubullu

- Sumerian-Akkadian bilingual encyclopedic compendium
- Pelobabilónic period
- For learning purposes
- “Interest, in relation to a debt” (first term of the list)

➢ Tablets 4-5 ➔ Vehicles
➢ Tablets 13-15 ➔ Animals
➢ Tablet 16 ➔ Minerals
➢ Tablet 17 ➔ Plants
➢ Tablet 22 ➔ Stars
➢ Other tablets: ➔ Geographical names
### Political context

#### The Sumerian Renaissance (XXII-XXI B.C.)

<table>
<thead>
<tr>
<th>King</th>
<th>Reign</th>
<th>Years</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ur-Namma</td>
<td>18 years</td>
<td>18</td>
<td>2112–2095 BC</td>
</tr>
<tr>
<td>Šulgi</td>
<td>48 years</td>
<td>48</td>
<td>2094–2047 BC</td>
</tr>
<tr>
<td>Amar–Suen</td>
<td>9 years</td>
<td>9</td>
<td>2046–2038 BC</td>
</tr>
<tr>
<td>Šu–Suen</td>
<td>9 years</td>
<td>9</td>
<td>2037–2029 BC</td>
</tr>
<tr>
<td>Ibhi–Suen</td>
<td>25 years</td>
<td>25</td>
<td>2028–2008 BC</td>
</tr>
</tbody>
</table>

Taken from Liu, Ch., 2017

#### Administrative Organization

- **Strongly hierarchical organization**
- **Centralised power (the king and his throne)**
- **Work specialization**

![Map of ancient Sumerian locations](image)

- King
- Royal officers
- Officers in Puzriš-Dagan or other locations complexes
- Shepherds

Map created using data from [Liu, Ch., 2017](#).
Herds management: importance of the shepherd
State shepherds

Shepherd feeding sheep. Cylinderseal impression. Uruk period (Berlin).

Sipa(d) = Herder, keeper (all species)

Sipa(d)-lugal = royal shepherd
Sipa(d)-udu-siki-ka = shepherd of wool sheep
Sipa(d)-gu₄-niga = fattened bovines herder
Sipa(d)-ur-gir₁₅-ra = dog handler
Sipa(d)-mušen or mušen-du₃ = fowler
Sipa(d)-tur = shepherd’s assistant

Unu₃ = bovines herder
Na-gada = herdsman, shepherd (lowest level)

Rights & obligations

➢ Daily care and protection of the herds
➢ Annual census (classification by sex & age)
➢ Control of dead animals
➢ Control of grazing areas
➢ They had a salary (animals, milk…)

...
The Puzriš–Dagan complex
Puzriš–Dagan: administrative components

**OFFICES**

- Principal offices
  - Central office
  - Na-GaB-tum

- Live animals
  - Small ruminants
  - Bovids, except oxen
  - Oxen
  - Equids
  - Rare/Wild animals
  - Other animals (birds…)

- Dead animals
  - Carcasses
  - Animal by-products
    - Skin (leather, wool)
    - Horns
    - Tendons, sinew
    - Hooves
    - Tails

**OFFICIALS**

- Royal officials
- Giri
- Maškim

Species mentioned:
- Capra aegagrus
- Ovis orientalis musimon
**Puzriš–Dagan: administrative components**

**DOCUMENTS**

- Ovines delivery. Drehem (2054 a.C.)

**LABELS OR BULLAE**


- 35.7 x 48 x 14 mm

**SEALS**

- kišib

**Table:**

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mu-DU</td>
<td>Reception</td>
</tr>
<tr>
<td>I₃-dab₅</td>
<td>To take charge</td>
</tr>
<tr>
<td>Zi-ga</td>
<td>Withdrawal</td>
</tr>
<tr>
<td>Ba-zi</td>
<td>Dispatched</td>
</tr>
<tr>
<td>Šu ba-ti</td>
<td>Death animals received</td>
</tr>
</tbody>
</table>
Animals received
Mu–DU
Animals received: Mu–DU

**ORIGIN**

- Taxes
  - Bala
    - From local governors (ensi₂) to central government.
  - Gun₃-ma-da
    - From peripheral countries to central government.
- King’s herds
- Specific individuals
- Penalties
- War booties

**THE NA-GAB-TUM**

- Central office support of in animal management
- Animal supply in case of deficit
- Farmyard for the King’s animals
- Feedlot & birthing pen
- Deal with newborn animals

**Mu-DU Ḡul-gi-ra** (received for Šulgi)

**Ú-tu-da** (born)

_Gazella dorcas_
To take charge (processing)
$I_3$-dab$_5$
To take responsibility: $I_3 \text{-dab}_5$

- Inspection
- Classification
- Lot reorganization
- Accounts

**INSPECTION**

- Šu-gid$_2$
  - Hand
- Gurum$_2 = IGI \times GAR$
  - Eye

**Ki-bi gi$_4$-a ACCOUNTS**

- Estimates
  - Pisan dub-ba (basket with tablets)
  - The files
Wild animals classification

**CLASSIFICATION TRAITS**

- **Ur** *(kalbu)*
  - Quadrupedal predators of a certain scale.

- **Muš** *(seri)*
  - Elongated body, usually without appendages. They usually have venom.
  - Gudea’s libation cup (III millennium B.C.). Louvre Museum.

- **Mušen** *(essūru)*
  - Flying animals. They usually have feathers and beaks.

- **Ku₆** *(nūnu)*
  - Aquatic creatures of aerodynamic body, with fins and sometimes gills.
Wild animals classification

**CLASSIFICATION TRAITS**

**ETHOLOGICAL**

- **a** = aquatic
- **Ki** = from de ground
- **kur-ra** = from the mountains
- **sahar** = from the desert
- **na₄** = from the stones
- **izi** = from the fire
- **engur** = from the depths
- **bar-ra** = from the outskirts
- **ambar** = reed bed (from the marshes)

- **bird song onomatopoeia (Mušen gur-gur)**
- **Predators aggressiveness (snooper, ripper...)**
- **and in general, any distinctive behaviour**
  - **Ur nigin** = surrounding dog (hunting dog)
  - The bird that carries possessions
  - The bird that own the harmony (plumage/song?)
  - The fish that sweeps the entrance, runner fish, etc...

**Habitat**

- **Ur a** (otter)
- **Ur ki** (badger)
- **Ur bar-ra** (wolf)
- **Ur nim-ma**
- **Ur nigin**

**Other**

- **Muš a**
- **Muš kur-ra**
- **Muš sahar**
- **Muš izi**
- **Muš na₄**
- **Muš ur-a** (crocodile?)

- **Mušen a**
- **Mušen kur-ra**
- **Mušen edin-na**
- **Mušen ambar**
- **Mušen gi₆**

- **Ku₆ izi**
- **Ku₆ engur**

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**Canis lupus arabs**

**Canis lupus arabs**

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Domestic animals classification

**Classification traits**

- **Directly designated species**
  - Sheep
    - Udu (immeru)
  - Goat
    - Maš (bîru; urîşu)

**Uruk base** (3300-3100 B.C.)

- Tablet fragment with pictograms (IV millennium B.C.). IBO, León
- Cylindereal impression (IV millennium B.C.)
Domestic animals classification

**CLASSIFICATION TRAITS**

- **Cow**
- **Bull**

<table>
<thead>
<tr>
<th>Áb (arhu)</th>
<th>Gu₄(d) (alpu)</th>
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<tr>
<td><img src="image1" alt="Cow Icon" /></td>
<td><img src="image2" alt="Bull Icon" /></td>
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Cylinderseal impression (III millennium B.C.)

- **Anše (imēru)**

  - Animals used for transport

  ![Anše Icon](image3)

  Ur banner (XXVI century B.C.) British Museum.

- **Šaḥ (sahu)**

  ![Šaḥ Icon](image4)

  Suidae (domestic and wild)

Directly designated species
Domestic animals classification

**Classification traits**

- **Sex & reproductive state**
  - nita₂ = male
  - nim/munus = female
  - nú/un-a = pregnant/nursing
  - Ab₂-mah₂ = first-calf heifer

- **Age**
  - ú-tu-da = newborn
  - tur = small, young
  - bar-gal/sila₄ = lamb
  - ga = unweaned
  - gaba/gub = weaned
  - libir = old

- **Color**
  - babbar = white
  - gi₆ = black
  - Si₄ = brown/red
  - sig₁₇(GL) = yellow
  - gün-a = spotted

- **Blemishes**
  - ba-za = deformed
  - Umbin = lame
  - gur₈-gur₉ = meteorism?

- **Morphological and of productive interest**
  - Wool
    - bar-gál = with wool
    - bar-su-ga = without wool
    - sila₄/Kir₁₁ As-ur₄ = plucked for the first time
    - si-2-lá = plucked twice
  - Meat
    - niga o niga₂ = fattening animal
  - Purpose
    - Geographical → Simaski, Sarumiun, Lullubum…
    - Habitat/Wild → Edín (steppe), kur-ra (mountains)
  - **Origin**
    - Bar-gál = with wool
    - Bar-su-ga = without wool
    - Si₄/Kir₁₁ As-ur₄ = plucked for the first time
    - Si-2-lá = plucked twice
  - **Purpose**
    - Meat → niga o niga₂ = fattening animal
    - Different kinds of rituals
      - Más-hul-dúb-(ba) = animal de expiación
      - en-zi = leader animal
      - Anše-gu-za = saddle donkey (gu-za = throne)
      - Gu₄-giš = draught bull
      - Udu-a-udu-ḥur-sag = sheep x mouflon
      - Máš-a-darah/dara₄ = goat x bezoar goat
      - Udu-a-gukkal = sheep x fat tailed sheep
      - Ba-uš₂/ug₅ = death animal

- **Hybrids**
  - Udu-a-a-daraḥ = sheep x mouflon
  - Máš-a-darah/dara₄ = goat x bezoar goat
  - Udu-a-gukkal = sheep x fat tailed sheep

- **Blemishes**
  - Ba-uš₂/ug₅ = death animal
Fat tail in sheep:

- **Gukkal** = fat tailed sheep (short and wide tail)
- **Udu kun-gíd** = fat tailed sheep (long tail)
- **Udu gal-tab-bu-um** = fat tailed sheep (extra long tail)

Other traits:

- Wool kind and quality (ovines)
- Degree of fattering (bovines)
- Kind and training level (bovines/equines)

Domestic animals classification:

- Morphological and of productive interest
## Domestic animals classification

### Classification traits

**Wool and goat hair** *(siki)* grades of quality

- **siki-gir** → Native sheep wool
- **siki kur(-ra)** → Foreign sheep wool
- **siki aslum** → Wool from long wool sheep
- **siki udu-Šimaški** → Šimaški sheep wool
- **siki gi₆** → Black sheep wool
- **siki gír-gul** → Wool plucked with knife
- **siki mug** → Poor quality wool
- **siki ûz** → Goat hair

### Animals quality according to feeding

- **niga** → Barley feed
- **ú** → Grass feed
- **niga-sig<sub>5</sub>** → Barley (first quality)
- **niga-sig<sub>5</sub>-ús** → Barley (excellent quality)
- **niga 3-kam-ús** → Barley (third grade)
- **niga 4-kam-ús** → Barley (fourth grade)
- **niga gud-e-ús-a** → Barley, “following the ox”

### Names for draught oxen (team of four)

- **gud-sag** → Front ox
- **gud-murub** → Middle ox
- **gud-ûr-ra** → Rear ox
- **gud-ud-diри** → Rear/additional ox
Dispatch
ba-zi/šu ba-ti
Dispatch

LIVE ANIMALS

- Cultic purposes
  - For deities in the temples
  - The deified king and his throne
  - Rituals & festivities
- Royal household
- Specific individuals
- The kitchen
- Feedlot

DEAD ANIMALS

- The kitchen
- The storehouse
- The dogs
- Workshops

Animal by-products

- Skin (kuš)
- Tendons, sinew (sa)
- Hooves (umbin)
- Horns (si)
- Tails (kun)

Textile industry
Shoes
Ornaments
Musical instruments...
Conclusions
Conclusions

➢ Despite the limited availability of texts, we can appreciate the great management capacity of livestock resources the Sumerian civilization developed. To an expert management, we can add a well-integrated administrative system which was organized in an official hierarchy which presented important parallels with the current official control systems. These included well-established formularies, census, statistics, birth and death certificates and a type of quality control with possible implications in Animal Health.

➢ In the Ancient Near East the concept of Health is intrinsically linked to that of Holiness. Therefore, in order to fully understand the implications that inspections of animals intended for human consumption may have for health, we must take into account the religious aspect, always so present in Sumerian life.
Conclusions

➢ Although the lack of individual identification prevents exhaustive traceability, it exists in some lots due to political and/or economic interests. In this context, state shepherds emerge as guarantors of animal health from birth to reception in the animals concentration and reclassification centers.

➢ The limited availability of Drehem tablets creates a difficult bias to overcome when it comes to addressing such specialized topics as Veterinarian Medicine. We must remain watchful to new findings and unpublished texts revelation, as this type of studies contribute to the knowledge of a foundational culture, still largely unknown, as well as to a better understanding of the Sumerian people's relationship with animal species and their exploitation.