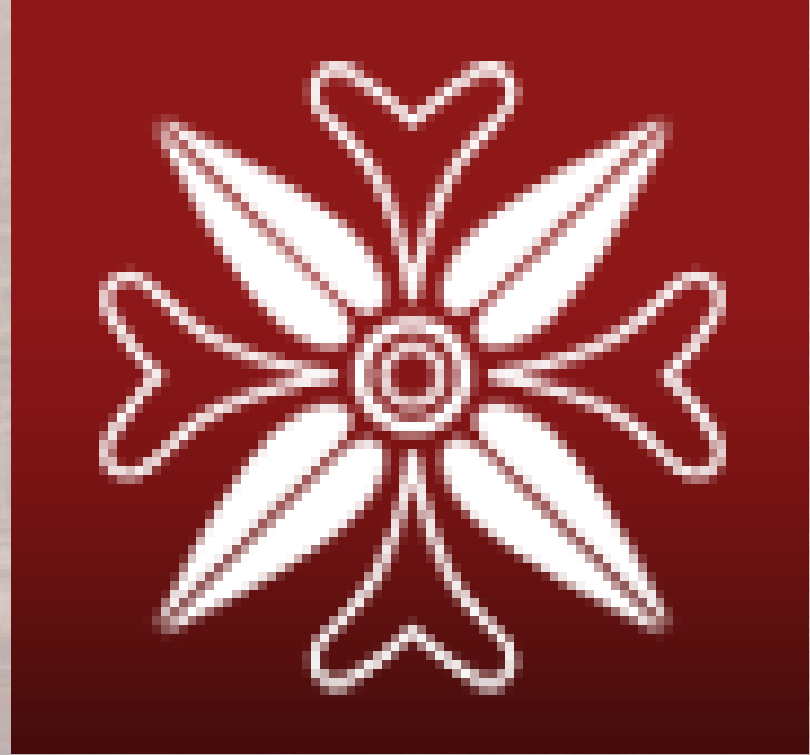


# Digitalizing ASA minuscule texts with the DASI-System: a work in progress

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Background image: X.BSB 1 = Mon.script.sab. 220 (P. Stein 2010, Tafel 1)

## Introduction

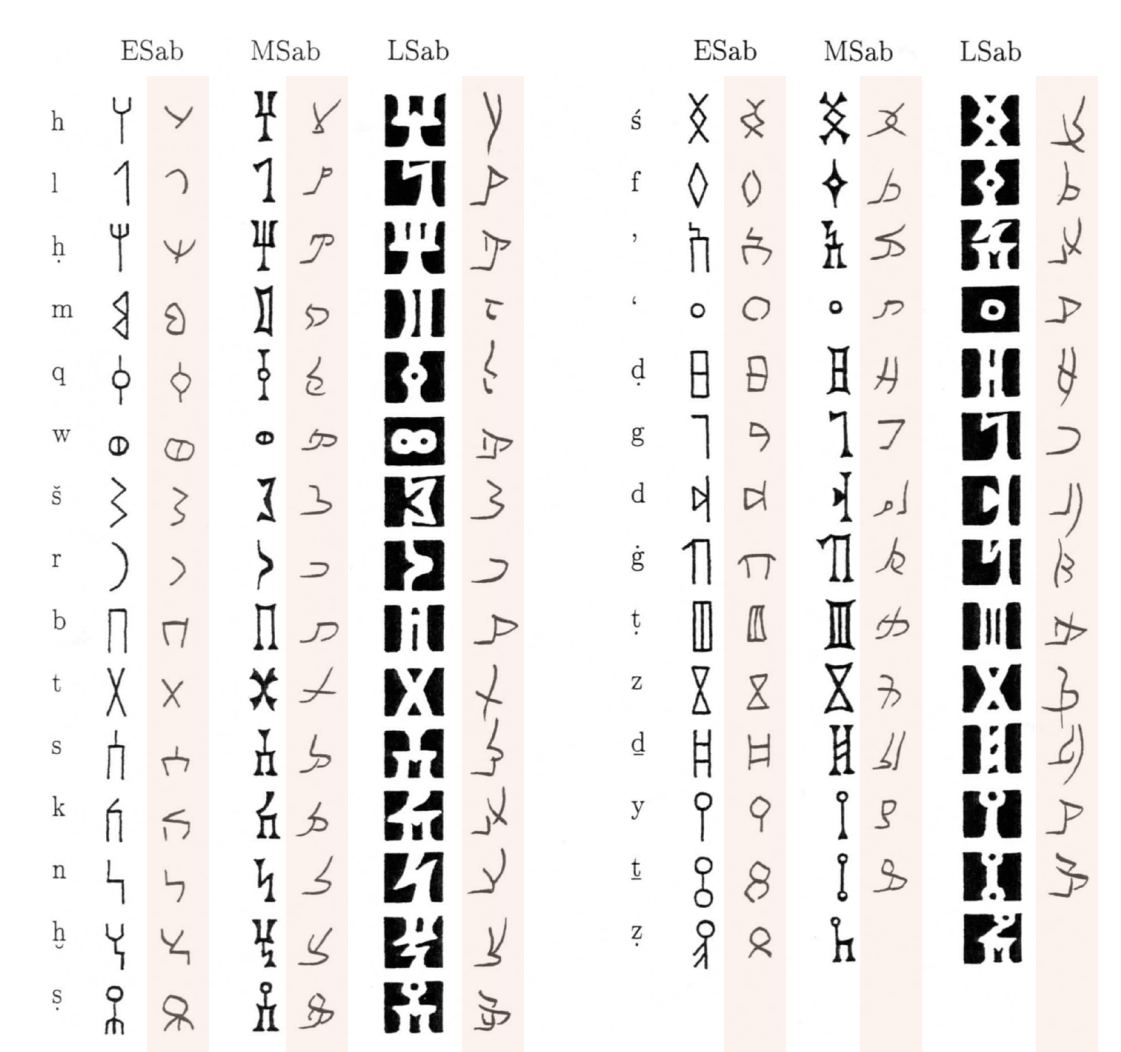


Fig. 1 | Development of ASA scripts compared (Stein 2010, fig. 2).

THE MINUSCULE SCRIPT is an informal form of **handwriting** of pre-Islamic South Arabia, which clearly differs from the other writing in use in ASA (formal), having its own development, independent from the monumental *ductus* (fig. 1). From a comparison with the monumental texts, specific linguistic and epigraphic characteristics of the minuscule inscriptions also emerge.

This script was first identified by M. al-Ghul on two wooden sticks from Yemen in the early 1970s. Al-Ghul proposed his partial decipherment of the minuscule script in late 1977, almost 140 years after the decipherment of the monumental script. From then on, more sticks carrying minuscule inscriptions were found. Their study was further undertaken by A.F.L. Beeston, W. Müller, J. Ryckmans, Y. M. Abdallah (Ryckmans - Müller - Abdallah 1994) and more recently by P. Stein (2010) and M. Maraqtan (2014).

The great majority of the minuscule texts recovered are written in **Sabaic** (a few in **Amiritic dialect**) and **Minaic**; nevertheless, there are some written in **Ḥaḍramitic** as well.

## The Corpus

The *Corpus of Ancient South Arabian Minuscule texts* counts more than 7000 texts, which are held in various institutions, such as the National, Militar and University Museums of Ṣana‘ā’ (c. 6000 texts), the Bayerische Staatsbibliothek in Munich (c. 800 texts) and the Oosters Instituut in Leiden (c. 300 texts). Of the total amount of published texts (c. 350), c. 100 are already available in DASI (www.dasi.humnet.unipi.it, fig. 2).

Most of the minuscule texts have been found in the **Jawf region** (as-Ṣawdā’/NS<sup>2</sup>N), while the few Ḥaḍramitic ones come from the **Ḥaḍramawt** (Raybūn). They are all carved on the same kind of support, namely **date palm-leaf stalks** and **wooden sticks**, which were both easily available. These measure in average 10 - 20 cm in length and 2-3 cm in diameter.

Reconstructing the paleographic development of the minuscule script (indicators are *d, h, m, , k, n*), J. Ryckmans (2001) suggested a relative chronology, which could roughly be absolutely dated combining stratigraphic associations from Raybūn, <sup>14</sup>C-analysis conducted on some sticks in Leiden and the content of some texts: they seem to cover overall a chronological span going from the **10<sup>th</sup>/8<sup>th</sup> century BCE to the 5<sup>th</sup> century CE**.

The minuscule texts are mostly documents stamming from the **everyday life** and thus introducing **textual categories** and specific **formulae** never attested before. Peculiarities in **syntax, style and lexicon** of the minuscule texts compared to the monumental ones are summarized below:

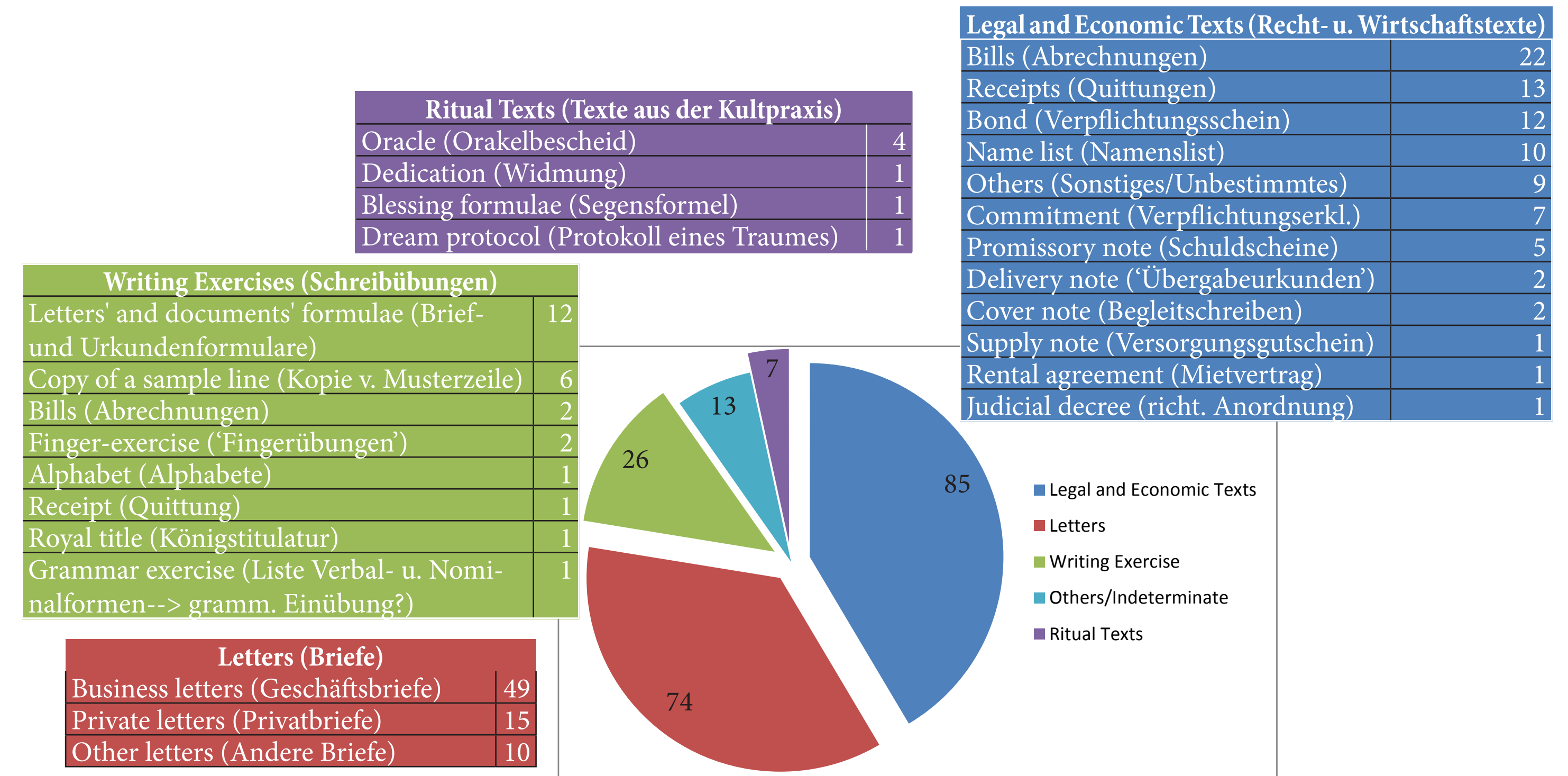
- **Writing System:** usage of ‘new’ signs never attested in the monumental texts, likely expressing **fractional numbers** — specific sign marking the end of a main paragraph — **no bustrophedic** inscriptions attested
- **Phonology:** stable usage of the letter */d/* **for the etymological /z/** after the RyIIa period, which suggests the blending of these two phonemes — clear tendency towards the **loss of y- in the prefix conjugation after the particle l-**
- **Morphology:** the most striking example is the use in minuscule texts (mostly in letters) of the 1<sup>st</sup> and even more frequently of the 2<sup>nd</sup> persons, in addition to the 3<sup>rd</sup>, thus permitting an integration of the corresponding forms in the **verbal paradigm** as well as in the forms of the **independent and enclitic personal pronouns** — further knowledge is gained on the **construction and vocalization of the weak verbs** — interesting is, finally, the early appearance of the **augmented infinitive**
- **Syntax:** the usage of the particle *dt* to introduce objective and subjective phrases is **not so frequent** as in the monumental texts — a large use of the enclitic particle *-m(w)* seems typical of the minuscule texts — **infinitive** with **paronomastic** use — **gerund** with **syntactic function** (like in Ethiopian) — construction of **adjectives with predicative use** in *status absolutus* — **anticipation of the nominal component** of a phrase to subdivide the content of a text (for instance in letters)
- **Amiritic dialectal features:** particularly important is the identification of the forms of the 1<sup>st</sup> and 2<sup>nd</sup> persons in the suffix conjugation, which end with *-t*, thus differing from the Minaic and Sabaic (*-k*) — the 1<sup>st</sup> persons (sing. and pl.) are known also for the prefix conjugation — finally, in X.BSB 97 a *N*-stem is attested.

## Issues

During the study and in particular the digitalization with the DASI-System of the minuscule Sabaic inscriptions preserved in the Bayerischen Staatsbibliothek in Munich and published by P. Stein in 2010, various issues emerged, which is aim of this poster to illustrate and try to solve.

### • TEXTUAL TYPOLOGY

One of the first problems encountered during the input of minuscule text in the database DASI was the presence among the minuscule texts of **new textual categories**, which are not, or only in part, attested among the monumental ones. The categories identified by Stein (2010) for the minuscule texts are summarized in the following tables:



For instance, several types of **letters** could be identified. Some of these (sub-)categories are already present in DASI too. Should we thus label, for ex., a business letter as “letter” (main category) and then specify its content/context as sub-category (“administrative”, “legal” etc.) or vice versa? The same problem is even more evident in the case of the **writing exercises**: should they be considered a main-category or a characteristic/sub-category of other kind of texts?

→ **re-define the text typologies in DASI, adding the new ones specific of minuscule texts**

→ **introduction of two levels of textual typology: main category with sub-categories**

Furthermore, the belonging of a text to a specific textual category isn’t always entirely clear (specifically in the case of fragmentary texts or writing exercises), so that it would be very useful to add in DASI the possibility to make this clear, for instance with a note or the introduction of one or more **variant(s) for the textual typologies** of a same text.

The minuscule texts also introduce **new formulae** which are typical of such new textual typologies and which are never attested in monumental texts.

→ **is it possible to better identify the ‘right’ textual classification based on the formulae contained in a text?**

### • COINS, UNITS OF MEASURE & FRACTIONAL NUMBERS

Many of the minuscule texts published by Stein (2010) contain **numbers** (both integer and fractional) and quantities of coins, which are often expressed by specific signs and **abbreviations of the coins’ names** (cf. X.BSB 6). Furthermore, a **special symbol (/I) for the unit of measure mḥḍr** is attested. The following question therefore arises: how to express such features? Should the fractional numbers be treated as integers (“numeral in ciphers”-tag)? And should the coins’ abbreviations be treated as values expressed with words (“numeral in letters”-tag)?

→ **introducun in DASI of a further tag for “coins’ abbreviation” and a numeral tag for “fractional numbers”**

→ **should signs for units of measure be considered in DASI as symbols or receive also the specific tag “unit of measure” (similarly to coins’ abbreviations)?**

### • SYMBOLS, SIGNATURES & SEALINGS

Two main types of **symbols** can be found in minuscule texts, which have **no parallels** in monumental texts or other objects. These symbols seem to have been used in **different time periods** (type I: Ry IIIa - beginning of Ry IVa; type II: Ry IVb; type III: transitional between type II and III). Apart from the fact that **new definitions are needed** in DASI to describe them, questions arise about the **function or meaning** these symbols may have had: do they refer to the sender or to the addressee similarly to a seal? Or rather to some kind of good? The regularity of appearance of the symbols could suggest the **presence of a higher authority** behind them, while the change from type I to type II could reflect a **change of power**.

→ **addition in DASI of a sub-category for symbols specific to minuscule texts (based on Stein’s typology) or rather extend the categories already present in DASI, adding definitions which better fit the symbols typical of the minuscule texts?**

→ **if specific functions and meanings of the symbols can be identified, it should be possible to highlight them within DASI (similarly to the symbols referred to gods and kings)**

The act of signing documents is sometimes attested in monumental texts where, however, actual **signatures** are never attested, contrary to their minuscule counterparts. They seem **all different from one another**, thus having a clear **personal and individual character**. Some of the sticks and palm-leaf stalks supporting minuscule texts also have **eyelets** or **notches** on the left side, which could have served either to fix a text to the documented good(s), to seal the text or to bind together more texts belonging to a same archive.

### • DATING & TRANSITIONAL PHASES

The single texts are sometimes difficult to date. Nevertheless, a dating range can be stated based on the paleographic sequence (Ryckmans 2001, Stein 2013, Drews *et al.* 2013). A critical point is represented, of course, by texts presenting paleographic characteristics of two groups (for ex. texts mainly belonging to the RyIIIa group which however already include traits of the RyIIb group), as well as by texts belonging to **transitional paleographic phases** (for ex. **Ry IIIa**, which corresponds to the transitional phase between eSab and mSab).

→ **addition of the transitional periods (eSab-mSab or Ry IIIa-b) to the list of chronologic periods in DASI**

### • ORIGIN & PROVENANCE

The main site of **provenance** for ASA minuscule texts is **as-Ṣawdā’/NS<sup>2</sup>N**, which is confirmed by proper names, toponyms and theonyms of regional deities mentioned in the texts (fig. 3). Regarding the place where a text **originated**, clues can be gained from the **content** of the same text (letters, economic texts) as well as by **researching the different wood types** of the support, their provenance and physical characteristics.

→ **further valuable data can be obtained by a reconstruction of the distribution patterns of the onomastics, crosschecking the names coming from both minuscule and monumental texts**

### • CLAN or TRIBE?

New lineage names and names of tribe, as well as **proper names**, often make their appearance in the minuscule texts and their reading, of course, is not always certain.

→ **introduction in DASI of variants for the onomastics’ tags to highlight the critical interpretation of lineage/tribe names**

### • SEASONS

One text (X.BSB 8) seems to include, in addition to the well-known decades, the mention of **seasons**, which is particularly interesting because it is included in an agricultural context.

→ **a tag for “name of season” in DASI is required**

## Conclusions

It is known that many monumental texts were copies of minuscule documents, which were preserved in a safe place (such as the temple in Raybūn), while their monumental counterparts were publicly exhibited. From the investigated material the possibility of the presence of an **archive of minuscule texts** in NS<sup>2</sup>N emerges, even though heterogeneous in the textual categories and time periods represented.

Compared to the monumental ones, ASA minuscule texts clearly have **specific needs and characteristics**. When digitalizing this *Corpus*, therefore, **implementations and adaptations** of the DASI-System are required, which is possible thanks to the **flexible nature** of the System. This allows to benefit from digital technologies without leaving the multiple facets of this heterogeneous *Corpus* unaccounted. The underlying fundamental principle is that **the texts should not be levelled out to respect the guidelines of a digitalization system but, on the contrary, the system should continuously be adapted to the new needs that emerge when working on the texts**.

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