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Too complicated for digital tools to be of much help?

The *Liber Aurelii* and Pseudo-Ptolemy's *Centiloquium*

Bergen

July 1, 2022

1. Tree plotting software
2. Practical data:
    (a) *Liber Aurelii*
    (b) Plato of Tivoli's *Centiloquium* translation
3. Limitations of automated stemma finding:
    (a) *chaque manuscript a son histoire*
    (b) contamination
    (c) rooting
4. Outlook

1. ‘Algorithm’ of critical editing

(i) Identify all direct and indirect witnesses,
(ii) Transcribe their texts,
(iii) Find significant errors,
(iv) Draw the *stemma codicum*,
(v) Edit the archetypal text according to the stemma,
(vi) Find errors in the archetypal texts and try to emend them.

1. Significant errors

Significant (‘relationship revealing’) edits are those that happened exactly once in the tradition. These will not
– be trivial variation (like spelling *quicquid* or *quidquid*),
– be easily mistaken palaeographically (like *ut* vs. *uel*),
– be synonyms (like *dominus* and *deus*),
– be meaningless (so that the next copyist will suspect that the text is corrupt).

Thus a significant variant should not be revertible even by a very smart scribe. Eye-skips are especially promising.

1. Eye-skips as significant errors

Example from *Liber Aurelii* (edition §19.2):

adeo ut curantur paralitici similiter curantur apoplectici AM²

adeo ut curentur apoplectici BCM?

1. Algorithmic formulation

$$L^{(r\times n)} \xrightarrow{\;m\;} \mathbb{R}^{(n\times n)} \xrightarrow{\;fitch\;} T_n$$

(texts of witnesses) (distance matrix) (tree graph)

m is a metric which calculates a 'distance' between any two texts $t_1, t_2 \in L^r$,

$$(t_1, t_2) \mapsto m(t_1, t_2) \in \mathbb{R}$$

1. ‘*Leitfehler*’-script

	+ *variant A*	- *variant A*
+ *variant B*	mss.	mss.
- *variant B*	mss.	NOTHING

← two significant errors

polyphyletic error(s) →

	+ *variant A*	- *variant A*
+ *variant B*	mss.	mss.
- *variant B*	mss.	mss.

1. Standardisation

Desired format of text strings (Latin):

Elimination of as much of trivial variation as possible. For mediaeval Latin this means:

- no punctuation
- no capital letters
- no letters j, v, y, w, k
- assimilate consonants: *quicquid* not *quidquid, assimilare* not *adsimilare.*
- standardise e, ae, oe, ę; ti, ci; h

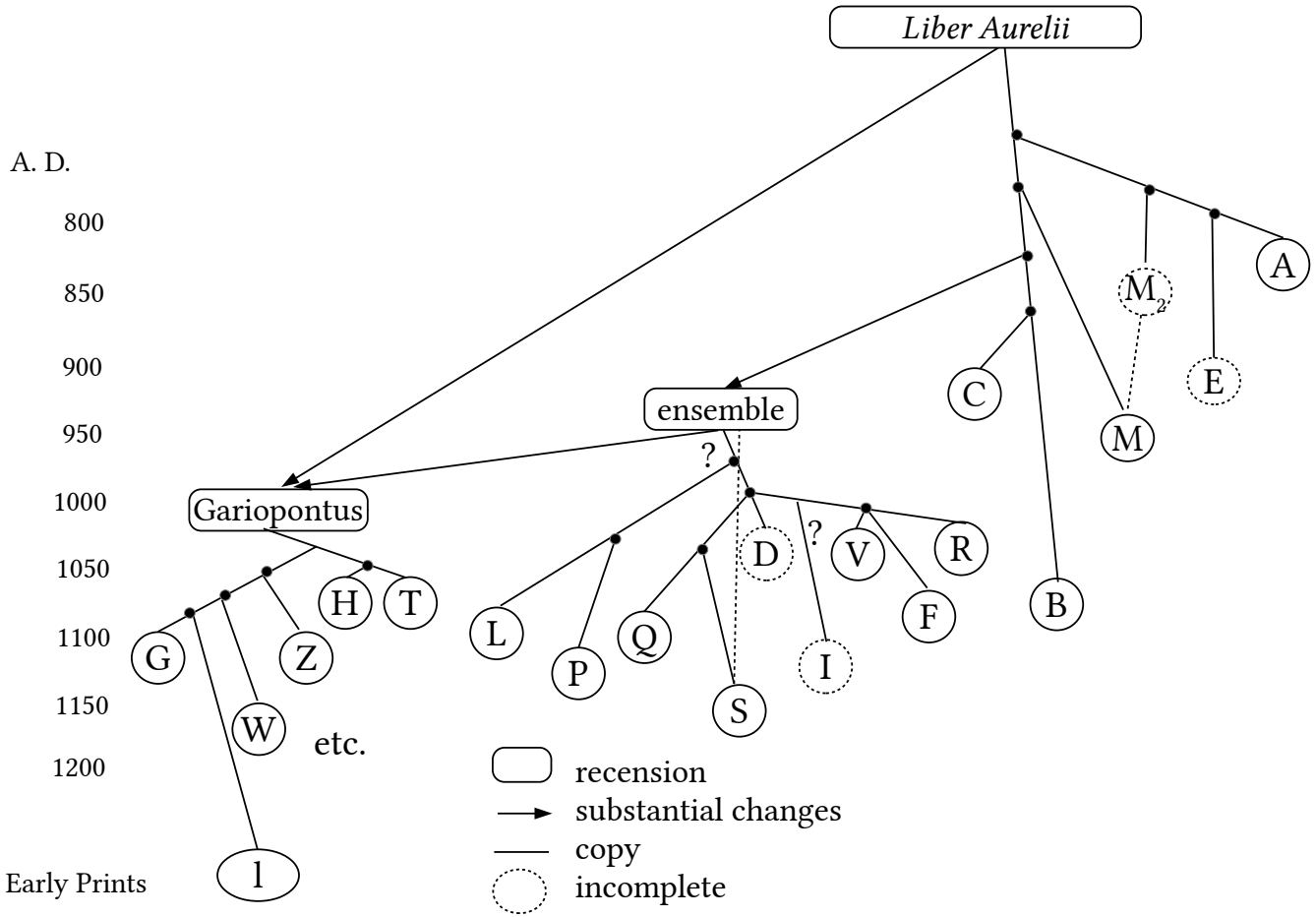
Thus such differences are defined as 0. E.g. *humiliatio* = *umiliacio* = …

2a. Practical example: *Liber Aurelii*

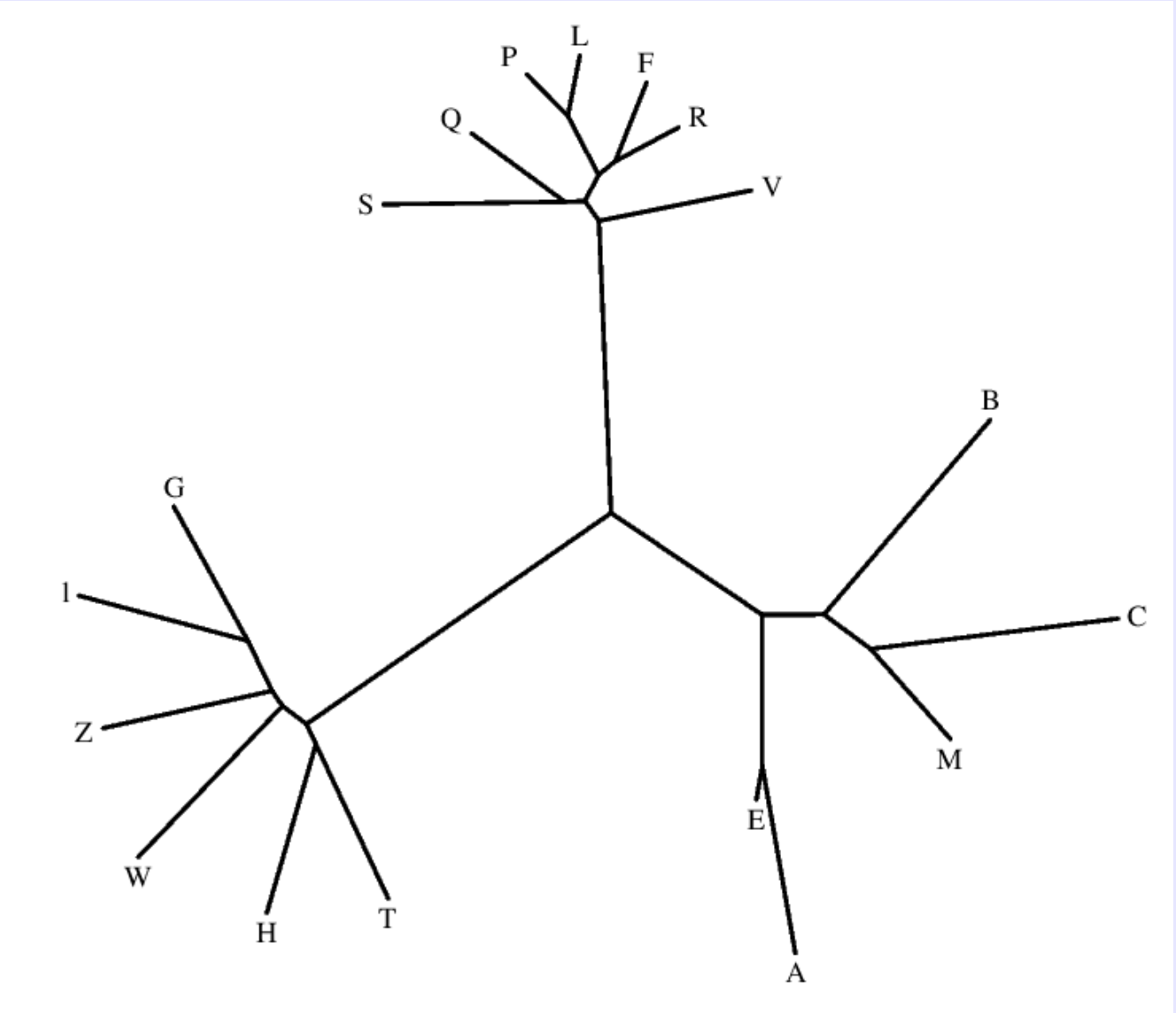
Edition of the *Liber Aurelii* (Roelli 2021)

- A medical Latin text from late antiquity
- Three versions in 5, 9, >65 witnesses
- Some witnesses are incomplete, one recension is much shorter
- Variable spelling
- Length: some 11’000 words

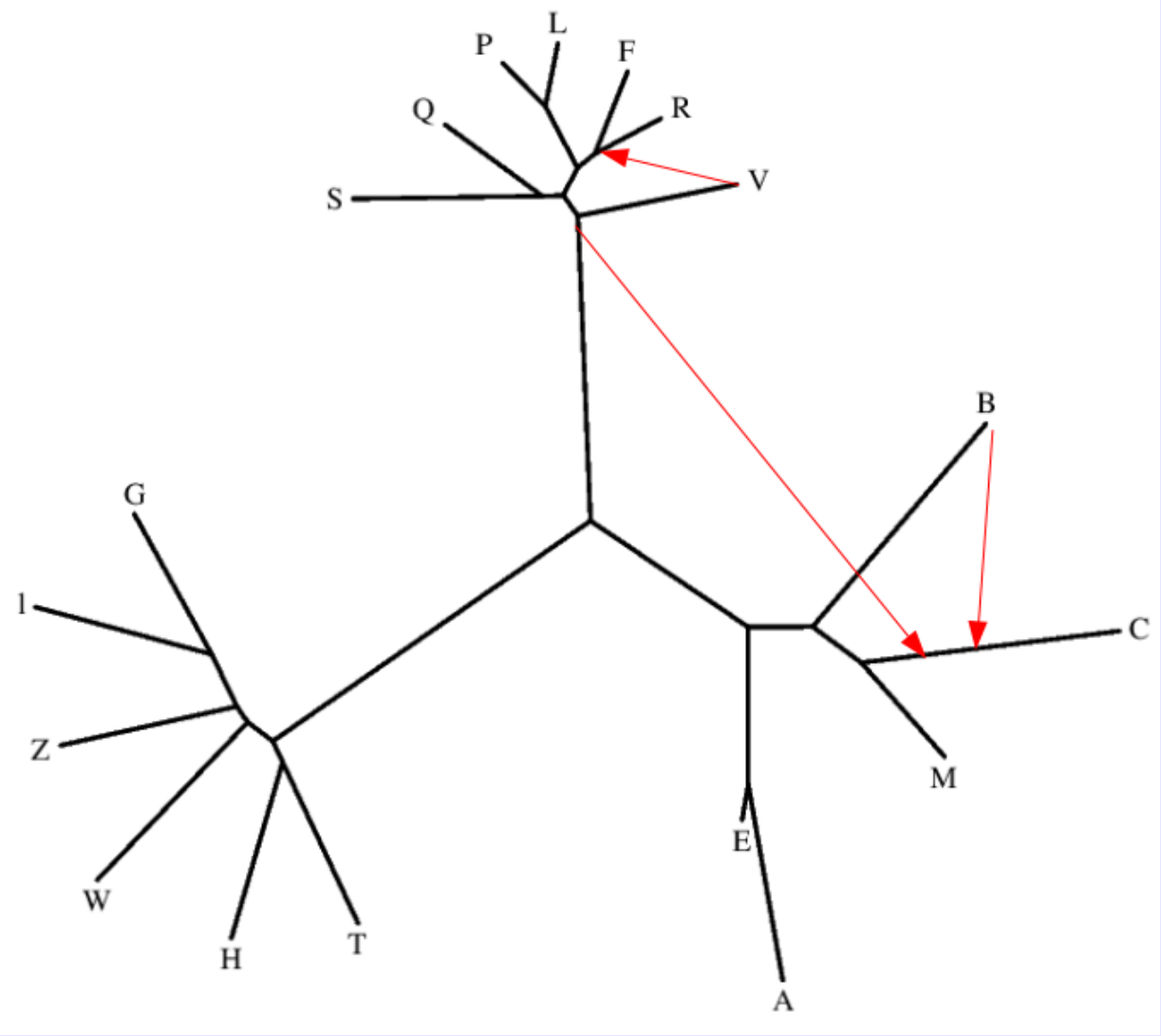
2a. *Aurelius* stemma



2a. *Aurelius* automated tree



2a. *Aurelius* automated tree (mistakes)



2b. Practical example: *Centiloquium*

Edition forth-coming by Emanuele Rovati

- Astrological text translated from the Arabic into Latin several times
- Often with commentary by Abū Jaʿfar
- 101 know Latin mss. of Plato of Tivoli's translation, plus 3 early prints
- Many witnesses are incomplete, contaminated
- One recension reworked
- Length: some 16'000 words

2b. *Centiloquium*

Plato:

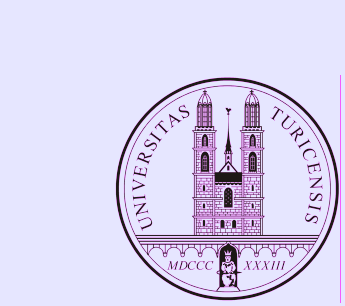
Obtinebit, inquid, locum patris et erit 10 annis fere in regno, sed erit sicut ille cui iubetur.

Redactor added in the margin:

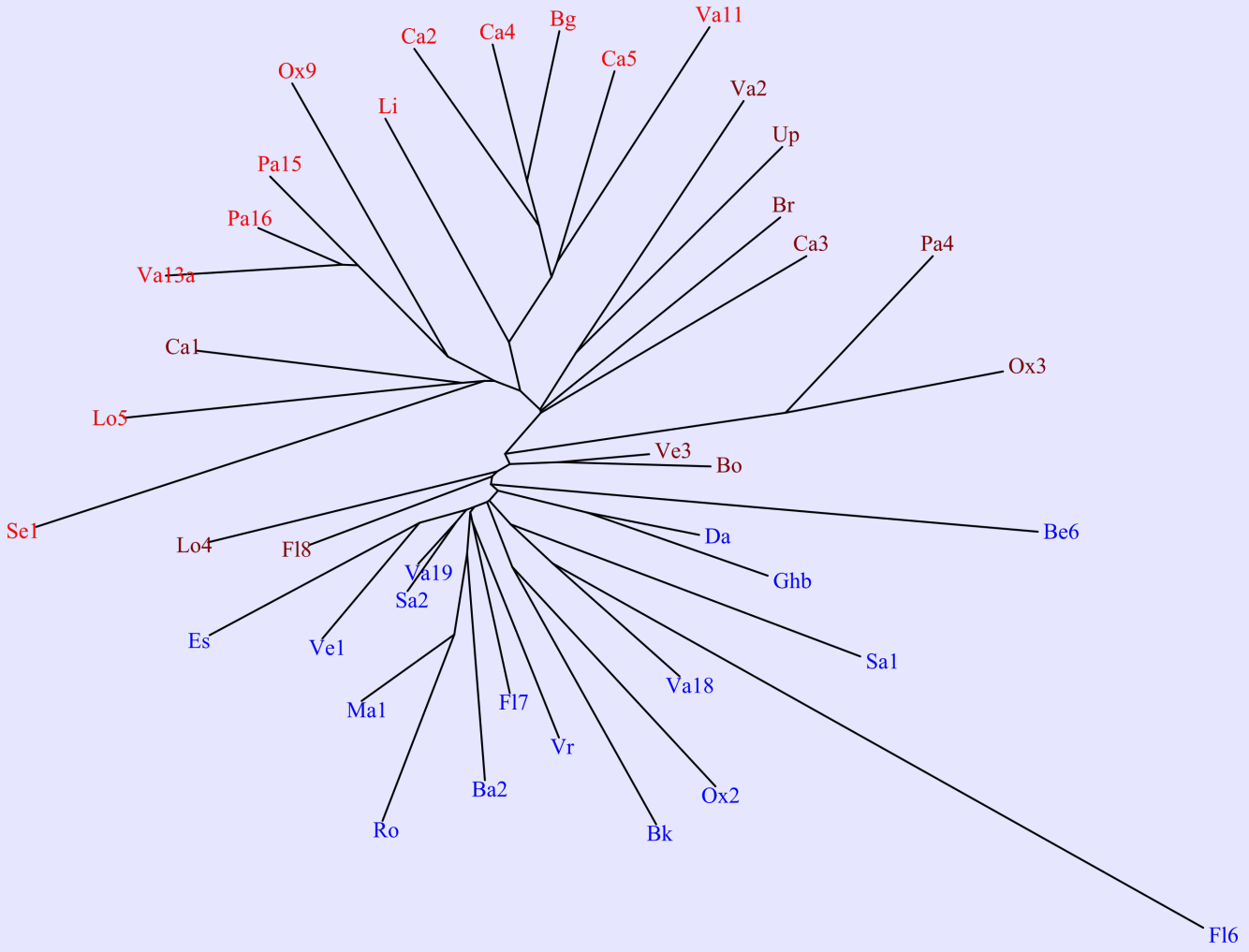
in alio: sub potestate vel regimine alterius.

Most β manuscripts now have:

Obtinebit, inquid, regnum patris et erit 10 annis fere in regno, sed erit sub potestate alterius.

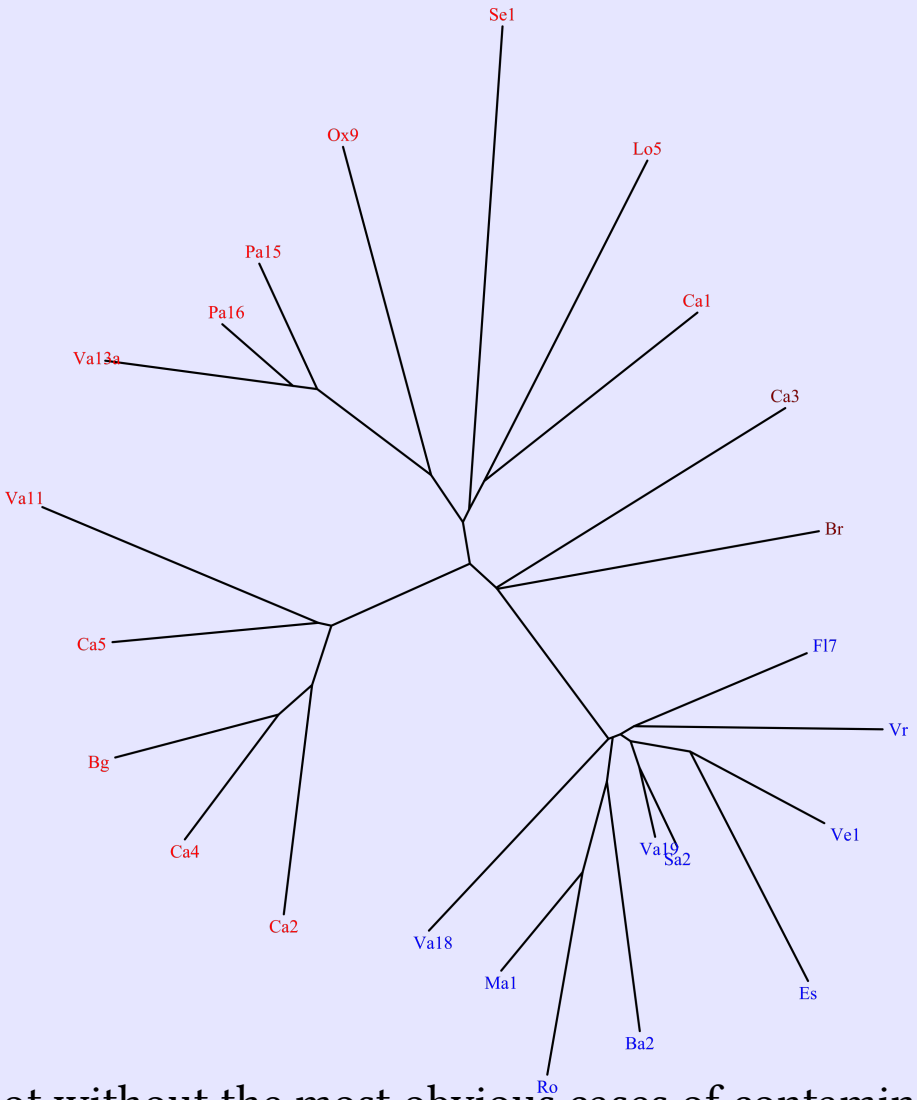


2b. *Centiloquium* automated tree



Centiloquium plot, the α group is depicted red (those from the threefold version light red), β blue.

2b. *Centiloquium* automated tree



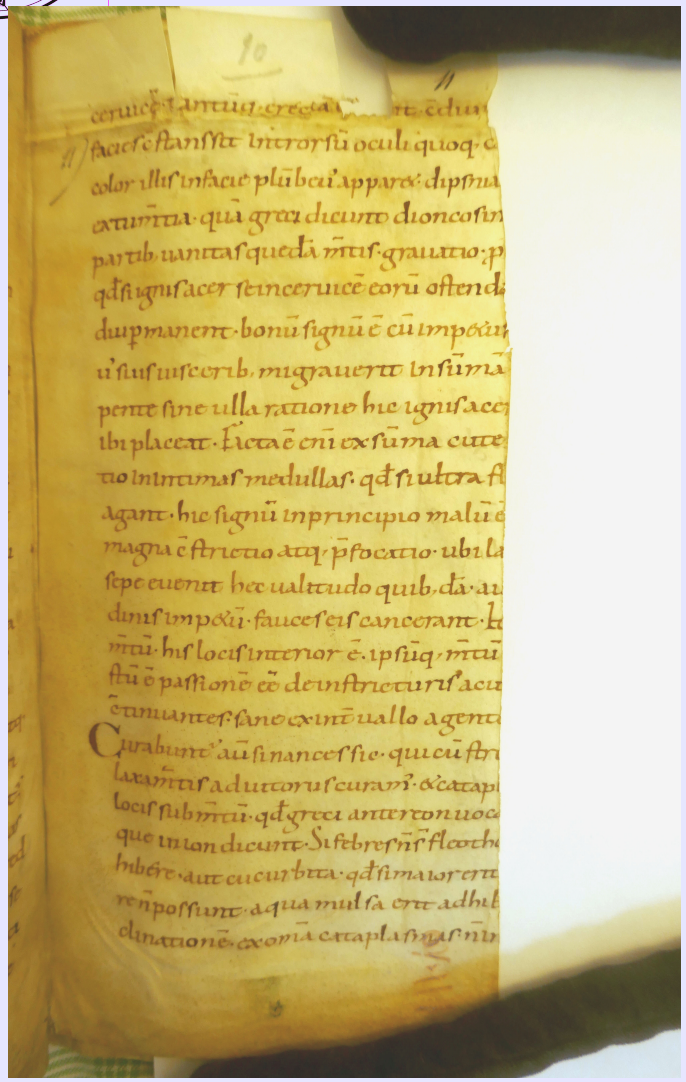
A second plot without the most obvious cases of contamination.

2b. *Centiloquium*

Most highly scoring automatically found ‘Leitfehler’:

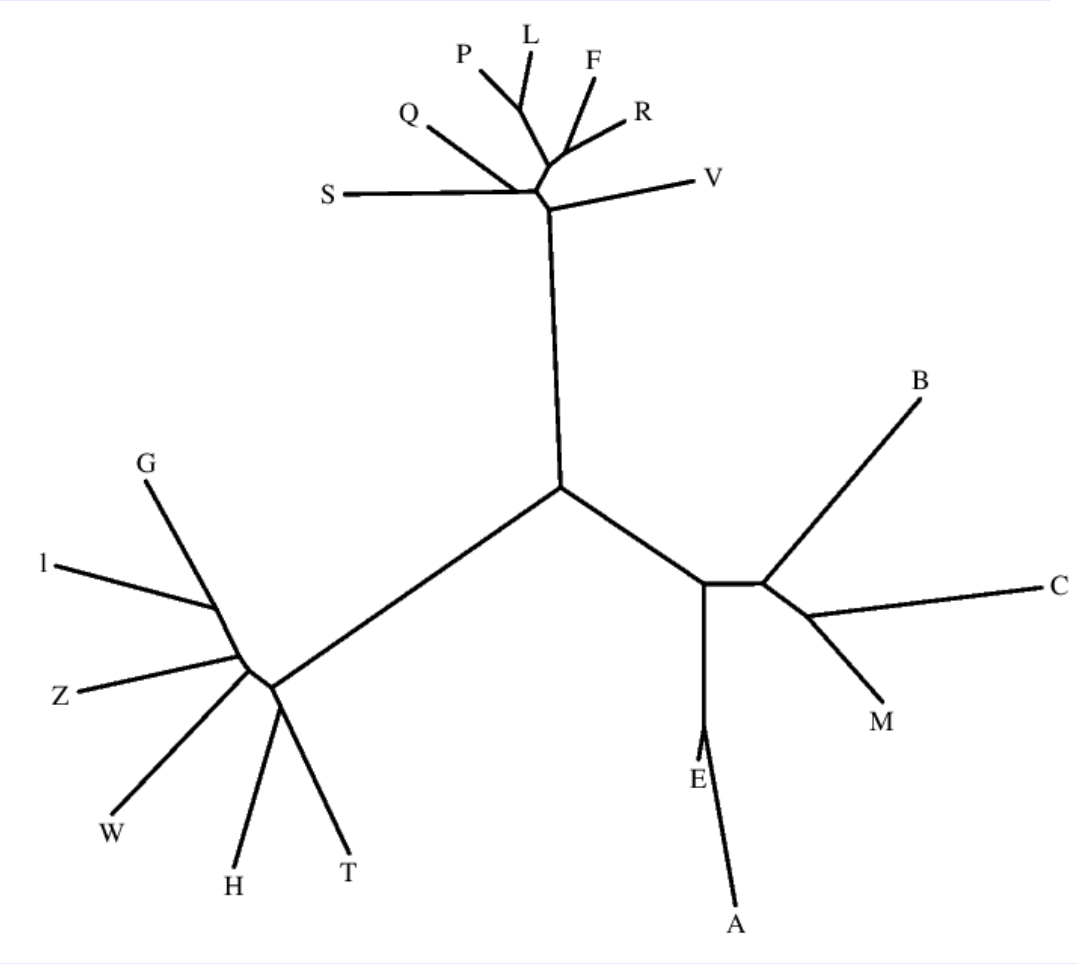
removebis -- 100%
auctor -- 85%
accepta -- 85%
fecit -- 82%
divise -- 82%
diutius -- 82%
libros -- 82%
perficitur -- 82%
sumitas -- 82%
sibique -- 81%
proximos -- 81%
contracta -- 81%
fortassis -- 81%
penitus -- 81%
pervenerunt -- 79%
inquisivi -- 79%
nequit -- 76%
relationis -- 76%
potavit -- 75%
perpendi -- 74%

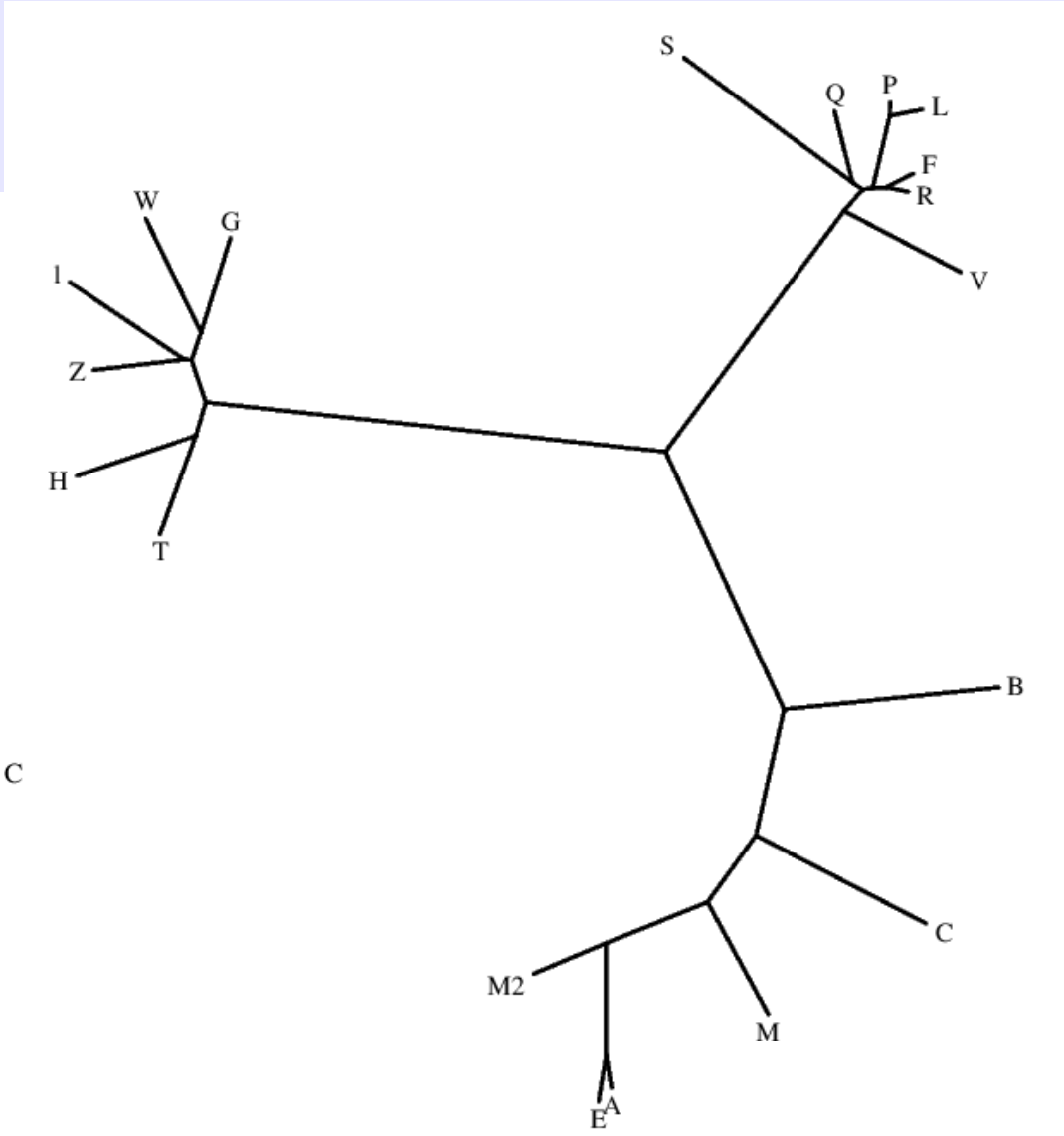
3. Limitations: missing bits



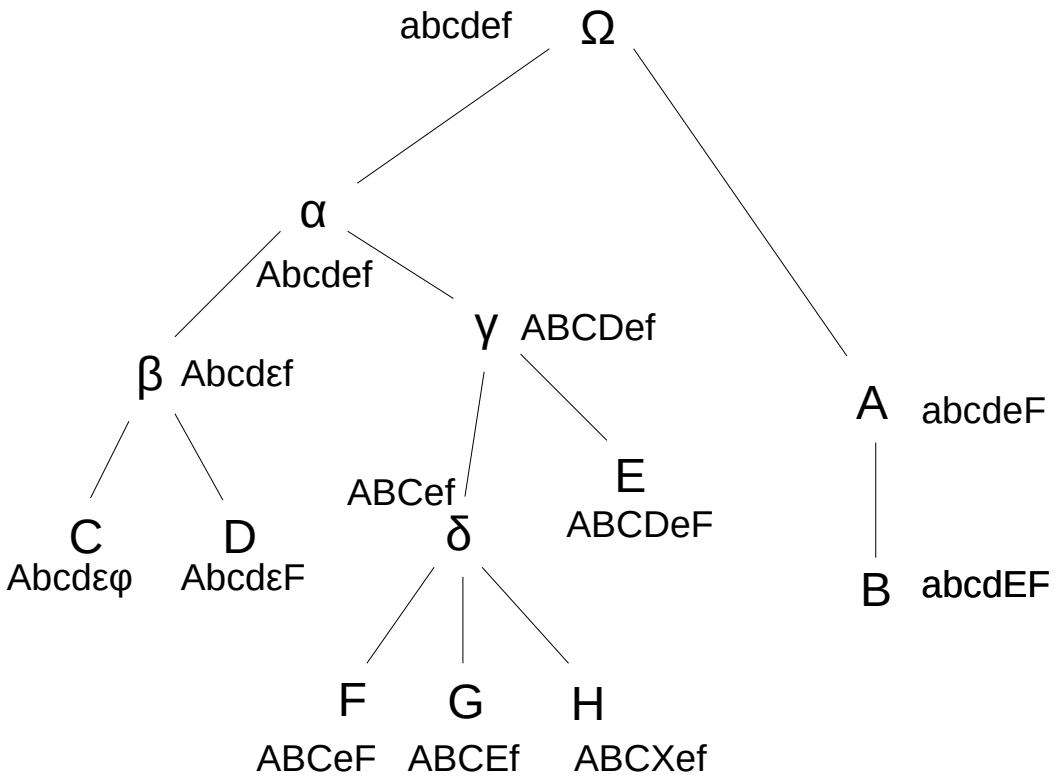
Aurelius: E

3. Limitations: contamination

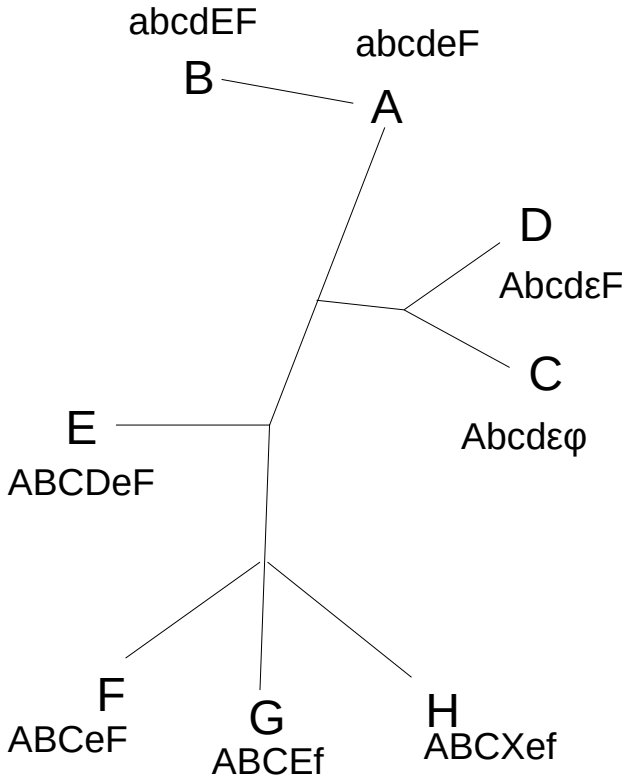




3. Limitations: the root

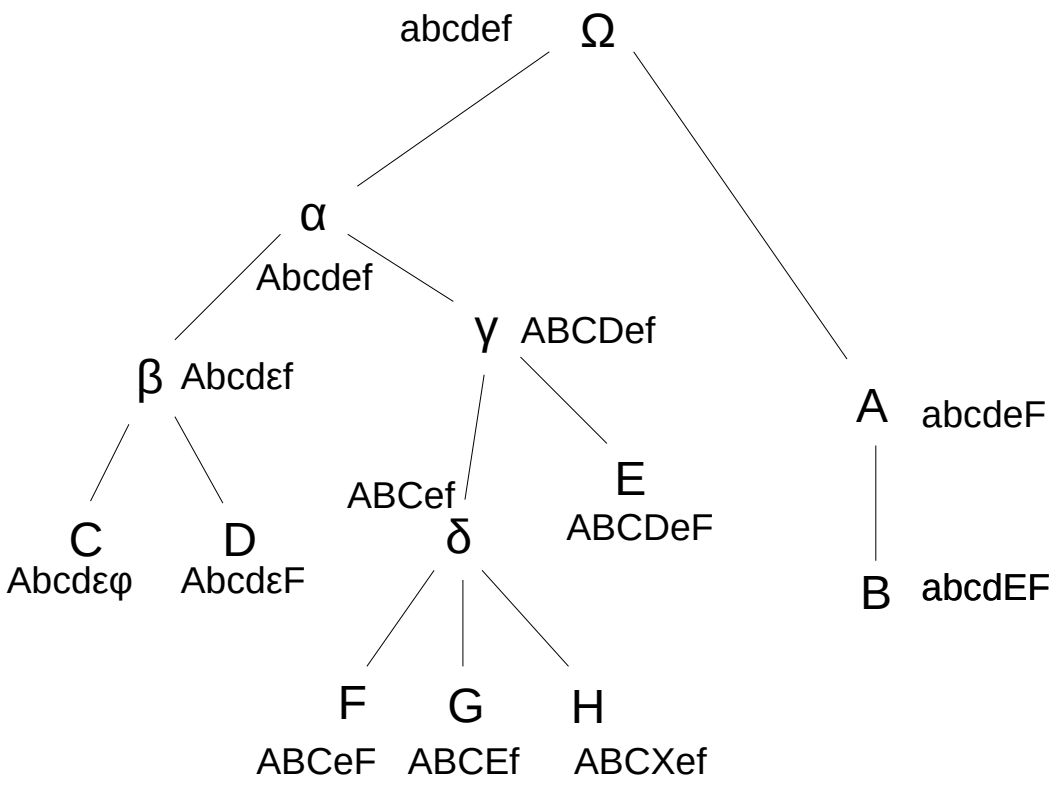


stemma
('truth')

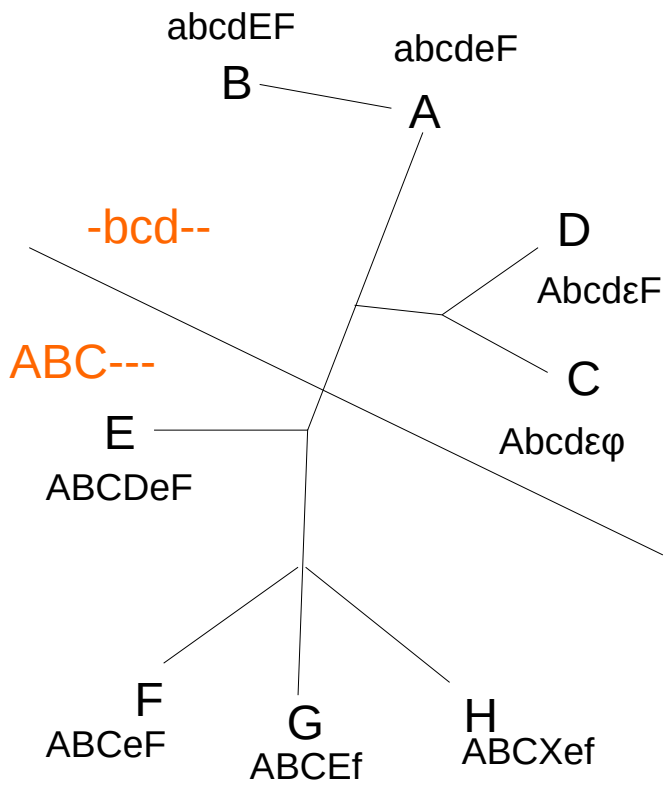


unrooted tree
(what software can at best produce)

3. Limitations: the root

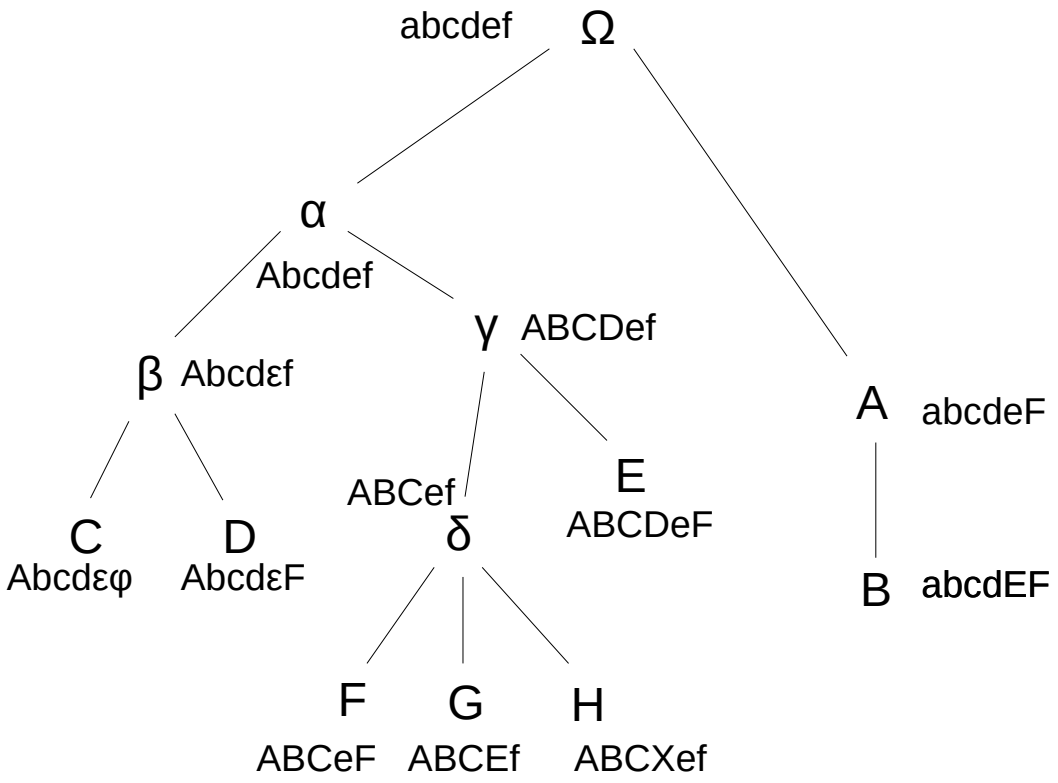


stemma (‘truth’)

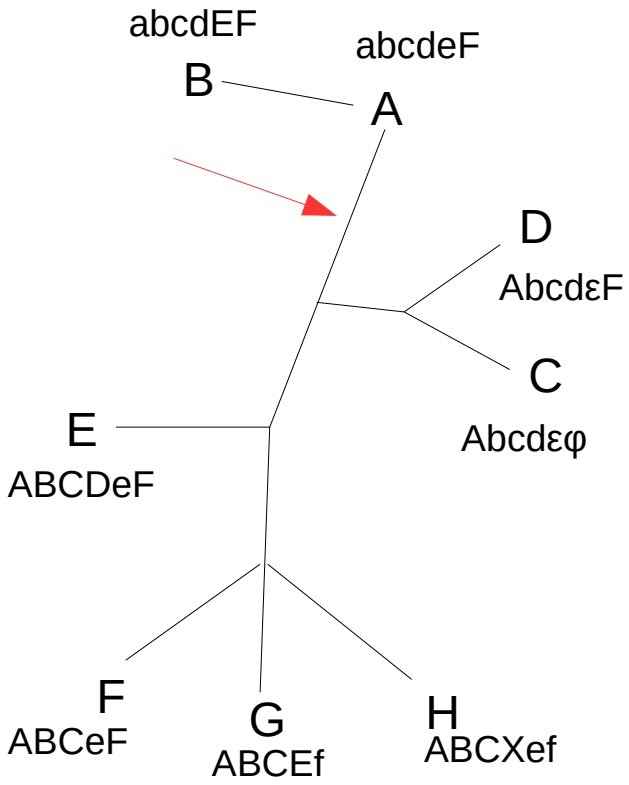


unrooted tree

3. Limitations: the root



stemma (‘truth’)



unrooted tree

4. Ideas for the Future

- Use of structural semantics?
- Automated stylistics?
- Automatically identify eye-skips?

→ Try to mimic the approach of a traditional neo-Lachmannian philologist