

TüBingen

Digital Critical Edition Of Medieval Music The Music of Hildegard von Bingen [1098-1179]



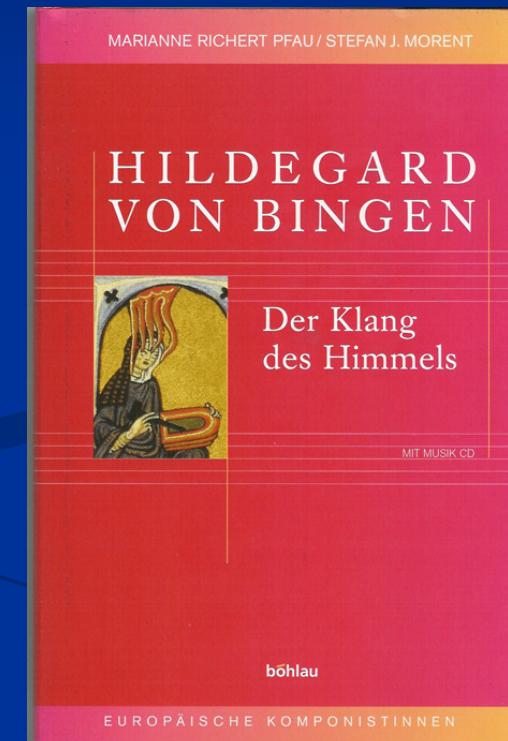
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„Digitale Medien und Musikedition“
Akademie der Wissenschaften Mainz
17.11.2006

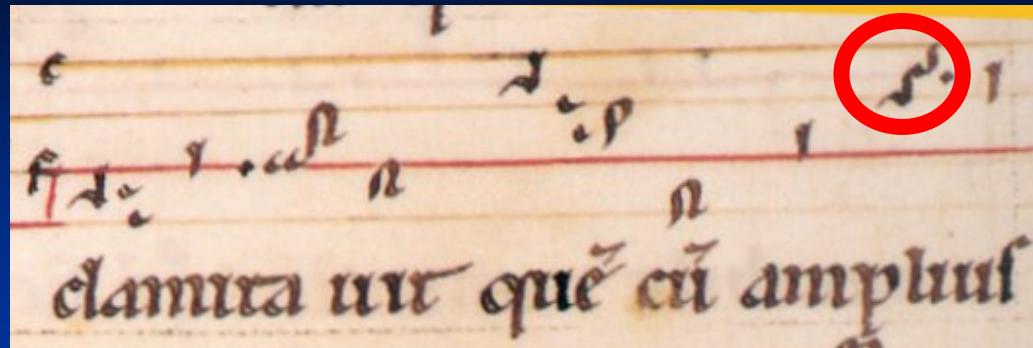
International Congress *Hildegard von Bingen/Bingen 1998:*

- „Deconstructing“ myths surrounding Hildegard
- Situating Hildegard in contemporary context
- Manuscripts: Identification of scribes
- Urgent need for new critical edition

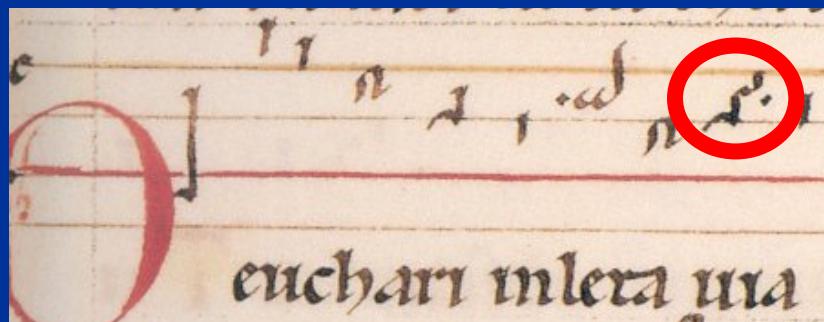


English version to appear at
University of Rochester Press

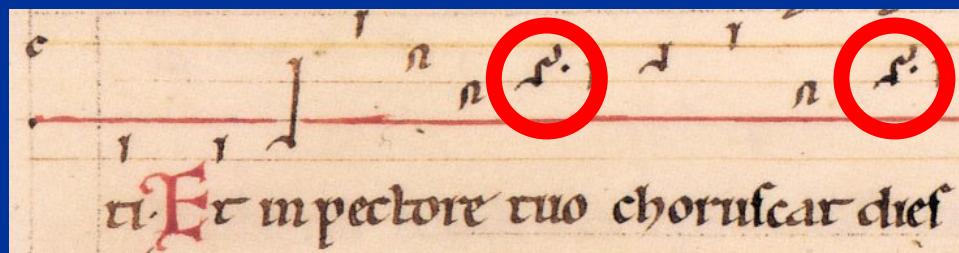




R f. 475 vb, 15: [R.] *O Euchari columba*

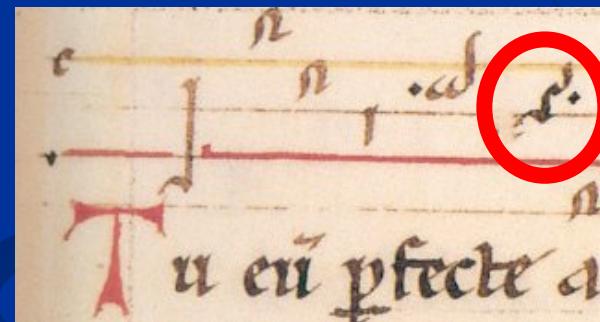


R f. 476, 3: Sequentia *O Euchari*

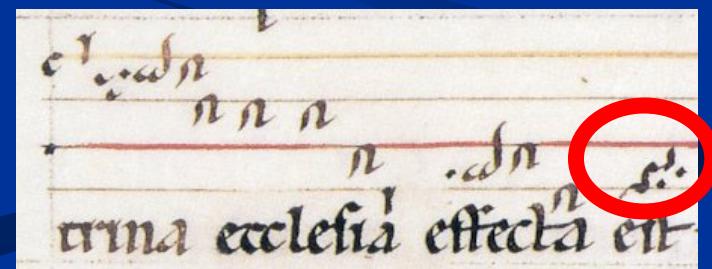


R f. 476, 15

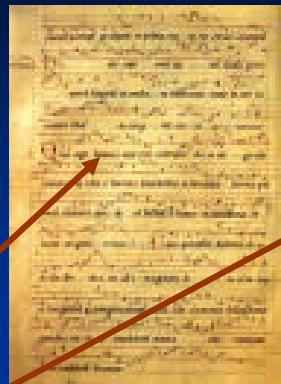
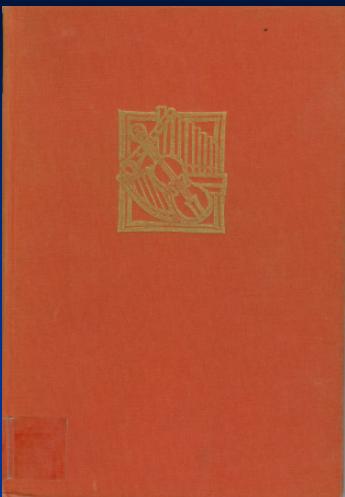
**Scribal habits:
„Special neume“
on B (E) in E-mode songs**



R f. 476, 6



R f. 476b, 3



Facsimile
Codex D

Facsimile
Codex R

28 LIEDER 29

instrumentum et lætum or — na-
mentum et ouice oo omni-um de-
lici-arum, que in te non defi-
ci-ent.* O — ra. Glo-ri — a
pa-tri et Filio et Spiritu-
i San — cto. * O — ra.

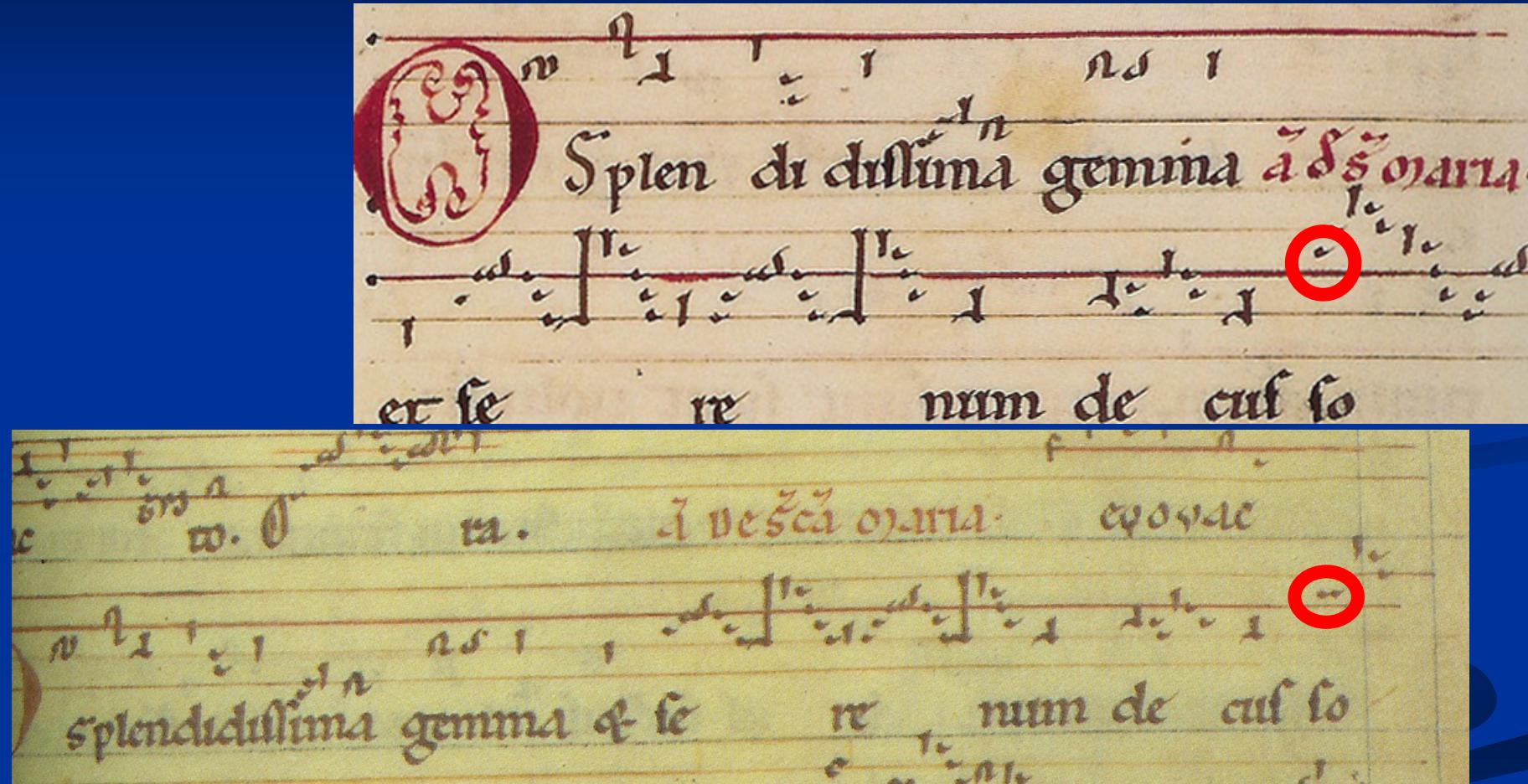
5 Oe Sancta Maria
Ant.
O splen-di-ois-si-ma gem-
ma* et se — re — num de —

Edition [1969]

5 O SPLENDIDISSIMA GEMMA
Vf. 154^{r-v}; Rf. 466^{vb}; Text außerdem Sc. ill. f. 229^{va}.
1 splendidi-si-ma: Scandicus AHC; Clivis HA V u. R.
3 so-lis: Punctum G, a V, Punctum G, a vor 1. Climacus R.
4 fons: [—] Virga D, — Rhombe C] V.
5 (sa)-li-ens: — Oriscus R; [— Pes EF] V.
de: — Rhomben ED R.
cor-de: — Oriscus R.
Pa-tris: + Clivis DC nach Pes subtrip. R.
6 quod V u. R.
Ver-bum: Climacus caG R, Virga a statt Epiphonus, Rasur, unleserlich V.
su-(um): — Punctum h vor Quilisma V.
7 suum per: Fleck unter dem Liniensystem R.
mun-(di): Virga D statt Epiphonus V.
8 prima V.
ma-te-riam: — Oriscus V.
9 tur-bavit: — Oriscus V.
hoc: [—] Porrectus aGa] V.
Ver-bum: Virga a V.
10 effabrica-vit: [— Pes EF] R.
ti-bi: Pressus min. aa R; Rasur, unleserlich V.
11 ob: Punctum R.
tu: — Rhombe F R.

Commentary [1969]

Codex R [„Riesencodex”]



Codex D [Dendermonde]



The Tübingen Project

- Hildegard von Bingen (1098-1179) in the computer
 - Remote repertory
 - Outside CWN
 - Neumes
 - Square notation
 - No definite concept of bars, meter, (pitch) etc.
 - Vital interest of musicology in editing early music
 - Test for flexibility, extensibility of a representation
- Collaboration of Departments at Tuebingen University
 - Musicology
 - Computer Science
 - Business Informatics
- Supported by DFG and CCARH





DCEM: Complete View

Video Audio Variant readings Commentary

Recording MIDI

Facsimile

Splendidi di düssiū gemma à d's maria

er se re num de cuf so

Source: D f. 154r

Editions Encoder: Stefan Morent, 03/01/04

Facsimile Highlight Variants

O splen- di- dis- si- ma gem- ma et se-

re- num de- cuf so- lis

Antiphon *O splendidissima gemma*, R f. 466vb

The screenshot displays the DCEM (Digital Critical Edition of Medieval Manuscripts) software interface. At the top, there are tabs for 'Video', 'Audio' (with 'Recording' and 'MIDI' buttons), 'Variant readings' (with navigation arrows), and 'Commentary' (with a search icon). Below these are two main sections: 'Facsimile' and 'Editions'. The 'Facsimile' section shows a medieval manuscript page with musical notation and Latin text. The 'Editions' section shows a modern musical score with the same text and notes. A central text area reads 'Splendidi di düssiū gemma à d's maria' and 'er se re num de cuf so'. Below this, it says 'Source: D f. 154r'. The bottom section is titled 'Antiphon O splendidissima gemma, R f. 466vb' and shows a musical score with lyrics. The software has a blue-themed interface with various buttons and icons for navigating between different views and functions.

Simulation of GUI





DCEM: Editions mode

The screenshot shows a digital edition of a musical manuscript. At the top, the title "DCEM: Editions mode" is displayed. Below the title, there are two staves of musical notation in G clef, with lyrics written underneath each note. The lyrics are: "O splen- di- dis-si- ma gem- ma et se- re- num de- cus so- lis". The notation consists of vertical stems with small horizontal dashes indicating pitch and rhythm. The software interface includes a toolbar at the bottom with various icons for file operations, and tabs labeled "Edition", "Encoder: Stefan Morent, 03/01/04", "Chant", "Performing", and "Antiphon". A brown banner at the bottom identifies the specific piece as "Antiphon O splendidissima gemma, R f. 466vb".

Simulation of GUI: Transcription Mode



Guidelines for representation:

- Encoding variant/parallel readings
- Encoding critical commentary
- Encoding neumes:
 - pitched, unpitched
 - no fixed duration/meter
 - neume forms
 - grouping of neumes
- Using existing/upcoming standards as far as possible
- Platform independency
- „Dynamic edition“



	**kern	**Hildegard	**silbe
R (<i>porrectus</i>)	*	*mode4	*LLatin
	!	!154,7	!
	*	*clefC5, F3	*
		R	O
C (<i>clivis</i>)	E	.	.
	D	.	.
	E	.	splen-
P (<i>pes</i>)	G	C	.
	E	P	.
	D	.	.
	E	.	.
M3 (<i>climacus3</i>)	F	M3	-di-
	D	.	.
	C	.	.
	E	v	-dis-
S3 (<i>scandicus3</i>)	AA	S3	-si-
	BB	.	.
	C	.	.
	BB	C	-ma
	AA	.	.
	E	C	gem-
d1P (<i>diminutive liqueficient pes</i>)	D	.	.
	D	d1P	.
	E	.	.
	E	v	-ma
	D	v	&
	E	p	se-
Q (<i>quilisma</i>)	F	Q	.
	G	.	.
	F	p	.
	E	p	.
	D	p	.
	D	p	.
I5 (<i>climacus resupinus5</i>)	A	.	.
	A	I5	.
	G	.	.
	F	.	.
	E	.	.
	D	.	.
	E	.	.
	D	p	-re-
	E	p	.
	F	Q	.
	G	.	.
M4 (<i>climacus4</i>)	F	p	.
	E	p	.
	D	p	.
	D	p	.
	A	.	.
	G	M4	.
	F	.	.
	E	.	.
P2 (<i>pes sub2punctis</i>)	D	P	-num
	E	.	.
	E	P2	de-
	F	.	.
	E	.	.

Encoding using *Hildegard* representation

D	.	.
G	M3	.
F	.	.
E	.	.
D	P	-cus
E	.	.
G	p	so-
G	p	.??
! [-R]	! [-R]	! [-R]
A	p	.
C	M3	.
B	.	.
A	.	.
!	!154,8	!
*	*clefC4,F2	*
A	M4	.
G	.	.
F	.	.
E	.	.
D	p	.
E	p	.
F	Q	.
G	.	.
F	C	-lis

Cf. Stefan Morent, Representing a Medieval Repertory and its Sources: The Music of Hildegard von Bingen, in: Computing in Musicology 12 (2001), 19-33.



MusicXML

So far:

- Variant readings stored in a single document
not intended, references possible with
<bookmark> and <link>
- Critical commentary not intended, maybe
with <editorial> and <footnote>
- Encoding of neumes not supported, possibly
with <other-notation>, if so specific to
application



MEI – Music Encoding Initiative

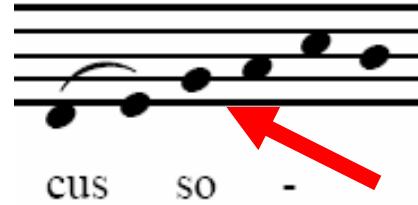
- Variant readings in a single document supported with <appst> and <srdg>
- Critical commentary for example with <annot>
- Encoding of neumes not supported, but under development



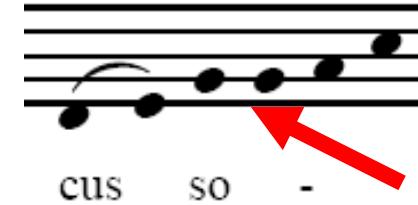
NeumesXML

- Variant readings in a single document not intended
- Critical commentary: editorial comments with <editorial_comment>
- Encoding of neumes realized, however no support of CWN
→ single encoding scheme without connection to other proposed formats (MusicXML, MEI)





MusicXML

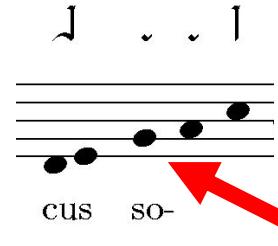


```
<note>
  <pitch>
    <step>G</step>
    <octave>3</octave>
  </pitch>
  <duration>2</duration>
  <voice>1</voice>
  <type>quarter</type>
  <stem>none</stem>
  <lyric number="1">
    <syllabic>begin</syllabic>
    <text>so</text>
  </lyric>
</note>
```

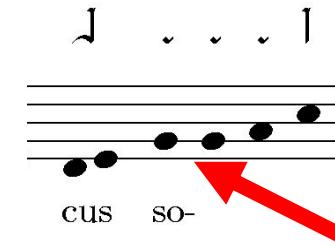
```
<note>
  <pitch>
    <step>G</step>
    <octave>3</octave>
  </pitch>
  <duration>2</duration>
  <voice>1</voice>
  <type>quarter</type>
  <stem>none</stem>
  <lyric number="1">
    <syllabic>begin</syllabic>
    <text>so</text>
  </lyric>
</note>
<note>
  <pitch>
    <step>G</step>
    <octave>3</octave>
  </pitch>
  <duration>2</duration>
  <voice>1</voice>
  <type>quarter</type>
  <stem>none</stem>
</note>
```

manuscript R

manuscript D



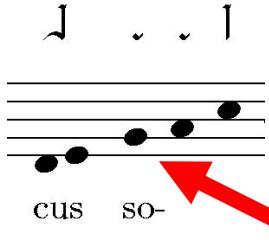
MEI



```
<staff>
  <neume type="pes">
    <verse>
      <syl>-cus</syl>
    </verse>
    <note pname="d" oct="3"/>
    <note pname="e" oct="3"/>
  </neume>
  <appst id="app1">
    <srdg source="n1">
      <neume type="punctum"
        pname="g" oct="3">
        <verse>
          <syl>so-</syl>
        </verse>
      </neume>
    </srdg>
  </appst>
```

one single file

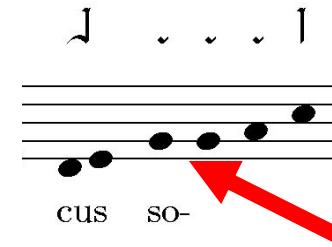
```
<srdg source="n2">
  <neume type="punctum">
    <verse>
      <syl>so-</syl>
    </verse>
    <note pname="g" oct="3"/>
    <note pname="g" oct="3"/>
  </neume>
</srdg>
</appst>
<neume type="punctum"
  pname="a" oct="3">
</staff>
<annot staff="1" start="app1"
  plist="n1 n2">
  <p>D: Two puncti G G</p>
</annot>
```



NeumesXML

```
<neumed_syllable>
  <syllable>cus</syllable>
  <neume>&STA;&pes;&D;&dn;
    &E;&up;&END;
  </neume>
</neumed_syllable>
&space;
<neumed_syllable>
  <syllable>so-</syllable>
  <neume>
    &STA;&punctum;&G;
    &up;&punctum;&a;&up;&END;
  </neume>
  <editorial_comment
    comment="D: Two puncti G G"/>
  <neume>&STA;&climacus3;&c;
    &up;&b;&dn;&a;&dn;&END;
  </neume>
...
...
```

manuscript R



```
<neumed_syllable>
  <syllable>cus</syllable>
  <neume>&STA;&pes;&D;&dn;
    &E;&up;&END;
  </neume>
</neumed_syllable>
&space;
<neumed_syllable>
  <syllable>so-</syllable>
  <neume>&STA;&punctum;&G;
    &up;&punctum;&G;&EQ;
    &punctum;&a;&up;&END;
  </neume>
  <neume>&STA;&climacus3;&c;
    &up;&b;&dn;&a;&dn;&END;
  </neume>
...
...
```

manuscript D

Conclusion

- Finding representation as close as possible to or extending an existing representation
- meeting the various needs of critical editions (not only for) medieval music

