

Full-text searching of music online: an update on progress in F-TEMPO

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IAML + DLfM Joint session, July 28, 2022

Cipriano de Rore (1515-65), 5-voice madrigal, 'Cantiamo lieti', Canto part-book (Venice, 1563)

Cipriano de Rore. I CANTO

Antiamo lie ti Cantiamo lie ti il fortunato giorno che strins
s'au nodo sacr'amo et tenace coppia si de gna et con ardente face il fe di
uino' amor leggiadro adorno et con ardente face il fe diuino' amor leggiadro adorno cantia mo
lieti che gia d'ogn'intorno s'allegr' il cielo l'aria el uento tace e' l' bel seren' appare et gia si
sface a tutti gli animanti un bel soggiorno et gia si sface a tutti gli animanti un bel soggiorno no et
gia si sface a tutti gli animanti un bel soggiorno.

Passage-Level Retrieval for Music

We have a large collection, from music libraries around the world, of ~500,000 images of pages of music from early printed collections.

We want to be able to do two main things:

1. Find pages of music similar to a query page (*document-level* retrieval)
2. Find occurrences of a specific musical pattern in all of these pages (*passage-level* retrieval of note-sequences)

We pre-create a *search index* because of scale. This results in fast searches, but at the expense of needing to define similarity measure ahead of time. Close analogy with Google Books, but indexing *musical* content, not text

Full-text searching of musical scores

Compared to scans, there is a shortage of machine-readable music notation

small collections of transcriptions, RISM incipits

We can automatically extract music from images using software

Google Books uses Optical Character Recognition (OCR)

We use Optical Music Recognition (OMR, Aruspix)



Note-names:

F A A G F G A B

Rest

Clef

OMR Errors

A Quatre Tylman Susato. Fo. viij

L

A grāt douceur de ta bōne nature Attire' a toy des gēs .ij. laffection des

gens las .ij. Forsseulement de celle creature Qui en amours te dōne .ij. te

donne passion Car ta vertu & douce' attractiō Ne fōt sinō Ne fōt si nō la rēdre plus Ne .ij.

The image shows a handwritten musical score on aged paper. The title at the top is "A Quatre Tylman Susato." and the page number is "Fo. viij". The score is written on three staves. The first staff begins with a large, decorative initial "L". The lyrics are written in French and are partially obscured by OMR annotations. These annotations consist of vertical stems and diamond-shaped markers placed above the notes on each staff. The lyrics are: "A grāt douceur de ta bōne nature Attire' a toy des gēs .ij. laffection des", "gens las .ij. Forsseulement de celle creature Qui en amours te dōne .ij. te", and "donne passion Car ta vertu & douce' attractiō Ne fōt sinō Ne fōt si nō la rēdre plus Ne .ij.".

Optical Music Recognition (OMR)

Two types of OMR errors:

1. those which affect a single note or symbol
2. those which affect all subsequent notes

Type 2 errors are more serious. They come in two forms, so we sidestep them:

Optical Music Recognition (OMR)

There are two types of errors that have a lasting effect:

1. Rhythmic errors (everything afterwards is offset in time)
2. Clef errors (everything afterwards is offset in pitch)

Workarounds:

1. Ignore rhythm
2. Use relative pitch – and ignore accidentals ('diatonic pitch')



Note-names:

F A A G F G A B

Intervals:

2 0 -1 -1 1 1 1

Encoding:

B - a a A A A

Cipriano de Rore. I CANTO

Antiamo lie ti Cantiamo lie ti il fortunato giorno che strins
s'aun nodo sac'amo et tenace coppia si de gna et con ardente face il fe di
uino' amor leggiadro adorno et con ardente face il fe diuino' amor leggiadro adorno Cantia mo
lieti de gia d'ogn'intorno s'allegri' il cielo l'aria el uento tace e'l bel seren' appare et gia si
sface a tutti glianimanti un bel soggiorno et gia si sface A tutti glianimanti un bel soggiorn no et
gia si sface A tutti glianimanti unbel soggiorno.

B-aaAAAaBa-aaaaAA-B-a--b-AbAAAcBAA-abAb-Aa-aAAbDbAaAaaaaAD-ac--CbBaBb--bAbaC--AA--AAbAa-
aA--B-aabAAAabd--b-aCaaa-bA-A-B---aa-aaaAAC-abD-a-a--aAAAAaDA-baCa-bCAAb-aaaE

Minimal Absent Words

A technique from genetics research, which we modified to work with pitch sequences

Identifies sequences from an alphabet which are *not present* in the document

Works well for full page to full page search, even in the presence of some OMR errors

Not as useful for other types of searches:

- Note sequences / phrases / incipits (especially with OMR errors)

- Sometimes some parts have multiple works on the same page

- No metadata-based search

M. Beal, F. Mignosi, A. Restivo and M. Sciortino: "[Forbidden words in symbolic dynamics](#)," Advances in Applied Mathematics, Vol 25(2), 163–193, 2000

Find same music but different layout

Early Music Online Search Search within Corpus Search with Image Upload

Show Examples Help

Previous Book Previous Page Show a Random Page Next Page Next Book

Query page: GB-Lbl_K2h7_092_1

CANTUS XXXIX

S'io potessi donna dir qualche nel mirar uio prou'et sento ioprou'et sento inuidioso farei
 chiunch'e contento splende nel uostro uis'un uiuo fo le Et da beigliocchi pioue foco d'amor che m'ard'et
 strugg'el core ij Et dagli acce si labbri un fiato mucue di si gra-
 te parole che piu l'accende Et fa dolce l'ardore o che felice amore uia piu d'ogn'altr' il mio di
 foc'et uento di foc'et uento beato uia arimirarui in tento be a to
 uia arimirarui inten to.

15 results - 234 words in query

Page ID	Match Score
GB-Lbl_K2h7_092_1	100.00
GB-Lbl_A220a_016_1	42.24
GB-Lbl_K2h3_010_1	41.40
GB-Lbl_K2h8_009_0	26.5
F-Pn_RES-VMC-167-0_4r_010	22.2
GB-Lbl_A324c_022_1	11.84
GB-Lbl_K2h8_016_1	11.80
PL-Wn_27517200_32144423	11.59
GB-Lbl_A220a_004_1	11.48
GB-Lbl_A277_123_1	11.44
PL-Wn_26426901_26771421	11.00
GB-Lbl_D33b_2_056_0	10.88
GB-Lbl_K4d14_015_1	10.86
GB-Lbl_K4g3_142_0	10.82
GB-Lbl_K3e19_098_1	10.76

Result Ranking Jaccard Distance

Results to display 10

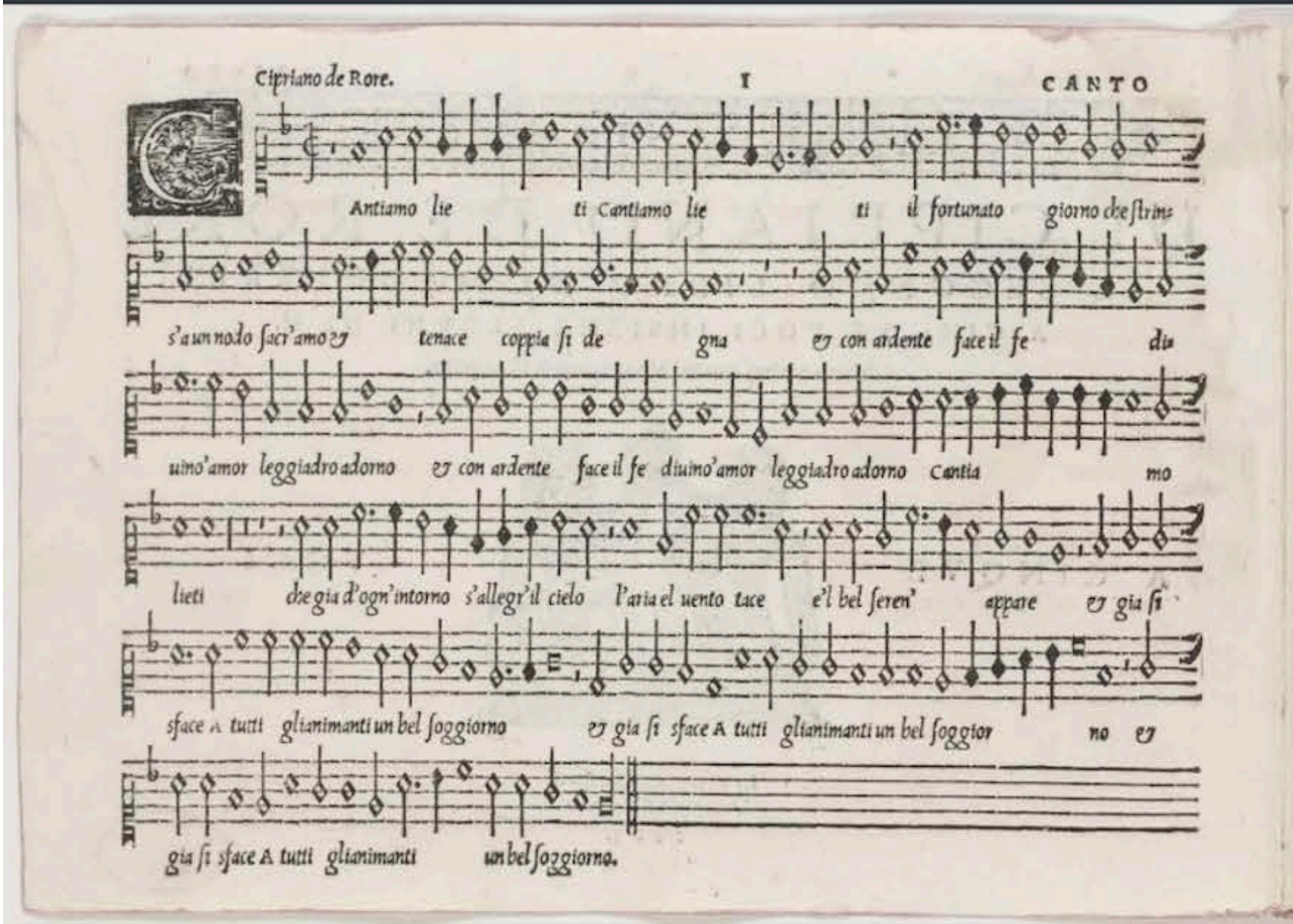
Provide judgements to help improve the system

Giachet Berchem. 15 CANTO

S'io potessi donna Dir qualche nel mirar voi prouo e fen-
 to voi prou'e sento Inuidioso farei chiunqu'è conten to Splende nel uostro viso un
 uiuo Sole Et da begliocchi pioue Foco d'amor che m'ard'et strugge'l core
 Foco d'amor che m'ard'et strugge' core Et da l'accesi labri un fiato moue Di
 si grate parole che piu l'accende e fa dolce l'ardore Oche felice Amore Via
 piu d'ogn'altr' il mio di foco e uento di foc'et uento Beato uiuo arimirar-
 ni inten to Beato uiuo arimirar ni inten to.

Unknown item search - image uploaded by user

Early Music Online Search Search within Corpus Search with Image Upload



Choose File _Rore_Cantiamo.jpg

Upload and Search!

20 results - 337 words in query

Page ID	Match Score
GB-Lbl_A70b_002_0	37.68
GB-Lbl_A70g_048_0	28.60
GB-Lbl_K3g11_033_0	16.32
GB-Lbl_K8b5_066_0	15.85
GB-Lbl_A70g_071_0	15.47
GB-Lbl_C215_007_1	15.31
GB-Lbl_A337b_064_1	14.96
D-Bsb_Paragon_03_1543_060_0	14.94
GB-Lbl_D33b_2_104_0	14.93
GB-Lbl_A254_013_0	14.87
PL-Wn_32432623_33526443	14.75
GB-Lbl_K2a4_214_0	14.60
GB-Lbl_A337b_017_0	14.59
GB-Lbl_A70n_024_0	14.58
GB-Lbl_A70b_044_0	14.52
PL-Wn_27315807_33917392	14.50
GB-Lbl_A239_020_1	14.48
GB-Lbl_A324c_050_0	14.47
GB-Lbl_A254_009_0	14.45
GB-Lbl_A70g_059_1	14.39



182/337 words in page match the query

Uploaded image

Best match in database

Unexpected 'concordance': Same music - different work title and text


Early Music Online Search Search within Corpus Search with Image Upload

Show Examples Help

Previous Book Previous Page Show a Random Page Next Page

Next Book

Query page: D-Bsb_Parangon_03_1543_inv_060_0




15 results - 171 words in query

Page ID	Match Score
D-Bsb_Parangon_03_1543_inv_060_0	100.00
GB-Lbl_K2h3_031_1	20.96
GB-Lbl_K2d19_006_0	14.43
PL-Wn_26426901_26771428	11.23
GB-Lbl_K2c3_065_0	10.97
GB-Lbl_K4g3_126_0	10.65
GB-Lbl_K8b7_006_0	10.58
GB-Lbl_A431_028_1	10.20
GB-Lbl_K3g4_197_0	10.04
PL-Wn_20209512_24063153	10.00
GB-Lbl_A251b_060_1	9.96
GB-Lbl_K3a15_179_0	9.88
PL-Wn_26426907_26770166	9.88
GB-Lbl_K3a14_118_0	9.83
GB-Lbl_K3f9_048_0	9.78

Result Ranking Jaccard Distance

Results to display 10

Provide judgements to help improve the system



70/233 words in page match the query

French chanson, 'Vous perdez temps' by Arcadelt (in database)

Best next match in database: Italian madrigal, 'Non ch'io non voglio' by Arcadelt

Identify composer for a previously anonymous work

Early Music Online Search Search within Corpus Search with Image Upload

Show Examples Help

Previous Book Previous Page Show a Random Page Next Page

Next Book

Query page: GB-Lbl_A569c_013_1



Instrumental recercar by 'Unknown composer'
(*Incerto Autore*)

15 results - 400 words in query

Page ID	Match Score
GB-Lbl_A569c_013_1	100.00
GB-Lbl_K3d8_010_1	40.60
GB-Lbl_A569c_029_1	14.06
GB-Lbl_K4g2_005_1	12.92
GB-Lbl_A70n_021_0	12.69
GB-Lbl_K8k1_011_0	12.00
GB-Lbl_A103a_015_1	11.81
GB-Lbl_K3d9_008_1	11.61
GB-Lbl_K3d5_022_0	11.59
GB-Lbl_K3d2_002_0	11.59
GB-Lbl_A251b_093_1	11.48
GB-Lbl_K4d14_096_0	11.47
GB-Lbl_K3d2_056_1	11.38
GB-Lbl_A296d_007_0	11.37
PL-Wn_26567886_27525148	11.37

Result Ranking Jaccard Distance

Results to display 10

Provide judgements to help improve the system



216/348 words in page match the query

Best next match in database: 'In die tribulationis'
by Damianus

Moving from a proof of concept

Update of the underlying software used to perform searches

Apache Solr

Optimised for text search (works well with a-z for intervals)

faster than our previous technique and scalable

easier to try new types of searches and add new similarity metrics

capability to do text search on metadata



Public API

Search automatically in bulk without needing to use the interface

Search for page of music

Upload image

Upload MusicXML / MEI

Manually providing a sequence of notes on the page

Search for note sequences / phrases

Talk to us if you want access to this

Search by sequence of notes (phrases)

Services such as RISM have incipit search, which has been a standard way of identifying works

However cadences/ends of works are also interesting - we have all notes so we can also search for these

However, OMR transcription errors also need to be considered

Other techniques from information retrieval on text documents can help here

Graphical interface or API



c4 a3 b3 c4 d4 c4 b3 c4

Use intervals

User-provided query

User-provided query

Use lower-case note name + octaves, separated by space, e.g. "c4 a3 b3 c4 d4"

For intervals, use diatonic pitch steps as numbers positive for up, negative for down, 0 for no change, e.g. "-2 1 1 1 0 -1"

Search

Search by sequence of notes (phrases)

GB-Lbl_A103b_025_0

TENOR. Moreau xliij.

O medetis carnes ij car nes Comē detis carnes ij
ij & saturabimini ij pa nibus
& saturabimini pa nibus. Iste est panis ij Iste est panis ij
quē dedit nobis dominus ad vescēdū ij ad vescen dum
ij ad vescen dum.

d4 c4 a3 b3 c4 c4 b3

D-Mbs_bsb00073123_00124

fruct9 uētris fruct9 uētris tui Ie sus fruct9 uētris tui Ie sus.
O Iesu fili De i, qui tollis peccata mūdi, ora pro nobis peccatoribus,
ij ut cū electis te uide amus. ut cū
lectis te uide amus, ut cū electis te uide amus.

Adding new catalogues

Automatic import of catalogues from IIF

<https://content.staatsbibliothek-berlin.de/dc/76900430X/manifest>

```
{} 76900430X.manifest.json X
Users > alastair > Downloads > {} 76900430X.manifest.json > [ ] sequences > {} 0 > [ ] canvases > {} 19 > [ ] images > {} 0
904
905 { "@id" : "https://content.staatsbibliothek-berlin.de/dc/76900430X-0020/canvas",
906   "@type" : "sc:Canvas",
907   "label" : "X [20]",
908   "height" : 4356,
909   "width" : 2880,
910   "images" :
911   [
912     { "@id" : "https://content.staatsbibliothek-berlin.de/dc/76900430X-0020/annotation",
913       "@type" : "oa:Annotation",
914       "motivation" : "",
915       "resource" :
916       { "@id" : "https://content.staatsbibliothek-berlin.de/dc/76900430X-0020/full/full/0/default.jpg",
917         "@type" : "dctypes:Image",
918         "format" : "",
919         "height" : 4356,
920         "width" : 2880,
921         "service" :
922         { "@context" : "http://iiif.io/api/image/2/context.json",
923           "@id" : "https://content.staatsbibliothek-berlin.de/dc/76900430X-0020",
924           "profile" : "http://iiif.io/api/image/2/level1.json" } },
925       "on" : "https://content.staatsbibliothek-berlin.de/dc/76900430X-0020/canvas" ] ],
926
927 { "@id" : "https://content.staatsbibliothek-berlin.de/dc/76900430X-0021/canvas",
928   "@type" : "sc:Canvas",
929   "label" : "XI [21]",
```


Adding new catalogues

Adding catalogue metadata

<https://stabikat.de/DB=1/XMLPRS=N/PPN?PPN=537561978>

Suchen **Suchergebnis** | Erweiterte Suche | Zwischenablage | Bibliothekskonto | Hilfe


suchen [und] v Alle Wörter (XALL) v ? sortiert nach Erscheinungsjahr v Unschärfe Suche

76900430X Suchen

Suchgeschichte | Kurzliste | **Detailanzeige**

Ihre Aktion

[perma](#)

 **Titel:** [Acis Et Galatée : Pastorale Heroïque / Mise En Musique Par Monsieur De Lully Sur-Intendant de la Musique du Roy. \[Textdichter: Jean Lully, Jean-Baptiste *1632-1687*\]](#)

VerfasserIn: [Lully, Jean-Baptiste *1632-1687*](#)

Sonst. Personen: [Campistron, Jean Galbert de *1656-1713*](#)

Ausgabe: [Partitur]

Sprache/n: Französisch

Veröffentlichungsangabe: Paris : Ballard, 1686

Drucker: [Ballard, Christophe](#)

Umfang: [2] Bl., LI, 183 S. : Druckerm.

Fingerprint: teus E.o- E.on BAjo 3 1686A // nach Exemplar von HAB Wolfenbüttel

Bibliogr. Zitate: RISM A, L 2932
Schmieder, W. Musik, Nr. 269

Einheitssachtitel: [Lully, Jean-Baptiste *1632-1687*. Acis et Galatée](#)

Anmerkung: Typendr.
Textdichter ermittelt in: LWV 73
Vorlageform des Erscheinungsvermerks: A Paris, Par Christophe Ballard, seul Imprimeur du Roy pour la Musique, ruë S. Jean de Bea LXXXVI.

Bibliogr. Zusammenhang: Digitalisierte Ausg.: [Lully, Jean-Baptiste: Acis Et Galatée](#)

Signatur: **N.Mus.ant.pract. 32**

Standort: Unter den Linden - Musikabteilung, Rara
[Kontakt](#)

Anmerkung: Mit hs. Namenszug auf dem Vorbl.: Madame Campan, sehr wahrscheinlich später erg.

Schlagwörter: [Provenienz: Mendelssohn, Franz und Marie von](#)

Status: Nicht online bestellbar. Bitte wenden Sie sich an die Auskunft.

Aktuelle Verfügbarkeit: Nicht ausleihbar

Signatur: **55 Depos SA 1131**

Standort: Unter den Linden - Musikabteilung, Rara
[Kontakt](#)

Status: Nicht online bestellbar. Bitte wenden Sie sich an die Auskunft.

Aktuelle Verfügbarkeit: Nicht ausleihbar

Metadata search

By importing metadata from existing databases (library catalogue, DIAMM, Cantus, RISM, ...) we can provide tools to more easily navigate the collection

works by a composer

works based on their catalogue number

works by vocal part

How can we provide search without re-creating existing databases?

Moving beyond printed scores

CPDL Catalogue

Based on work that we did during TROMPA

We have catalogue of 12,000 scores

Metadata from CPDL

Sometimes with links to other sources (RISM)

Scores in MusicXML (convertible to MEI)

CPDL Metadata



- Main Page
- Music scores
- Composer pages
- Texts & translations
- New pages
- Recent changes
- Random page
- Add scores to CPDL
- CPDL Contributors
- CPDL Admins
- CPDL Forums
- Multi-category search
- Help

Support CPDL



Please donate to CPDL
U.S.A. 501 (c)(3) tax deductible

Tools

- What links here
- Related changes
- Special pages
- Printable version

Page [Discussion](#)

De vous servir (Orlando di Lasso)

Music files

- (Posted 2015-10-29) **CPDL #37340:**

A4 size:

Letter size:

Editor: [Pothárn Imre](#) (submitted 2015-10-29). **Score information:** A4, 1 page, 57 kB **Copyright:**

Edition notes: Original pitch (chiavi naturali) and note-values. French spelling modernised. **Source:**

General Information

Title: *De vous servir*

Composer: [Orlando di Lasso](#)

Lyricist:

Number of voices: 4vv **Voicing:** SATB

Genre: [Secular](#), [Chanson](#)

Language: [French](#)

Instruments: *A cappella*

First published: 1570 in *Disieme livre de chansons*

2nd published: 1576 in *Le thresor de musique* (sacred contrafact), Edition 1, no. 54

Description:

External websites:



[DE](#) | [EN](#) | [FR](#) | [IT](#) | [ES](#)

[Content](#) [About](#) [Help](#) [Resources](#) [Data](#) [Partners](#)

RISM catalog 15709

[Change Advanced Search](#)

[Basic search](#) [Advanced search](#) [Previous Searches](#) [My Lists](#) [Search Help](#)



[Back to Results](#)

1/5



Collection Chansons

Work information

Scoring summary: V (4)

Genre: [Chansons](#)

Composer cross-reference: [Lasso, Orlando di <1532c-1594>](#)

Source description

Title on source: *Dizieme livre de chansons à quatre parties, d' Orlande de Lassus. et autres.* [Paris, A. le Roy et R. Ballard, 1575. 4 vol. in-8o obl., 16 f.]

Material:

- 4 parts: 16 f.

Print: 1575; Paris; A. le Roy et R. Ballard; in-8o obl.

Publisher

Publisher: [Le Roy, Adrian & Robert Ballard](#)

Further notes

Notes: Contains: = 1570⁹; —> 1583⁵

RISM series: R/I 1575⁶

Search CPDL

Metadata search by composer or title

Search the TROMPA early music database

 English

bon 

8 results

Composition	Tomás Luis de Victoria Doctor bonus, amicus Dei	 cpdl.org
Composition	Orlando di Lasso O bone Jesu	 cpdl.org
Composition	Orlando di Lasso Si vous n'estes en bon point	 cpdl.org
Composition	Orlando di Lasso Hai, Lucia, bona cosa	 cpdl.org
Composition	Orlando di Lasso Deus qui bonum vinum	 cpdl.org
Composition	Orlando di Lasso Bon jour, mon coeur	 cpdl.org
Composition	Giovanni Pierluigi da Palestrina Surrexit pastor bonus a 4	 cpdl.org
Composition	Josquin des Prez O bone et dulcis Domine Jesu	 cpdl.org

Cipriano de Rore (1515-65), 4-voice madrigal, 'Ancor che col partire', *modern score*

Canto: An cor che col par ti re

Alto: An cor che col par ti re

Tenore: An cor che col par

Basso: An cor che col par

4

Canto: Io mi sen to mo ri re, Par tir vor

Alto: Io mi sen to mo ri - - re, Par - tir vor -

Tenore: ti re Io mi sen to mo - ri re,

Basso: ti re Io mi sen to mo - ri - - re,

Index each voice:

Canto: abAAAa-bEbBaaaAa ...

Alto: BaAAA--cEaa---Aa ...

Tenore: aAbAAabbEbAAa ...

Basso: D-AAAcbbG-aAc ...

Cipriano de Rore (1515-65), 4-voice madrigal, 'Ancor che col partire', *modern score*

Search notes in voice:

Soprano: a4 g4 g4 e4 f4 g4 a4 a4 g4 g4 e4 c5 a4 c5 b4 a4 g4 a4 g4
 Alto: a3 c4 b3 c4 d4 e4 e4 e4 b3 g4 f4 e4 e4 e4 f4 e4
 Tenor: c4 b3 c4 a3 b3 c4 b3 g3 g3 e3 c4 a3 b3 c4 c4 b3
 Bass: a2 e3 e3 f3 g3 a3 e3 c3 a2 a3 a3 a3 g#3 a3 e3

Phrase search (API)

Searching for interval sequence "a - b E b B a" in database "cpdl"

1 cpdl_Cipriano_de_Rore_11-anchor_che_col_partire---0-score_Canto

Part Canto

1 match at position 7

a - b A A A - [a - b E b B a] a a A a a A b C - a A b a E a b A A A a A a b A A A a a d D - a
a A A B a b A - a a a A a B B A a a - a b A - a b D - a b a B A a E a A b a a a - B a A b a C A B - a a A d
C - a A A A a a - a b A - a b D - a b a B A a E a A b a a a - B a A b a C A B - a a - - a - A

https://solrdev.f-tempo.org/ngram/view/cpdl_Cipriano_de_Rore_11-anchor_che_col_partire---0-score_Canto?staff=1&start=7&count=7

2 cpdl_Cipriano_de_Rore_Ancor_che_col_partire_Rore_Soprano

Part Soprano

1 match at position 7

a - b A A A - [a - b E b B a] a a A a a A b C - a A b a E a b A A A a A a b A A A a a d D - a
a A A B a b A - a a a A a B B A a a - a b A - a b D - a b a B A a E a A b a a a - B a A b a C A B - a a A d
C - a A A A a a - a b A - a b D - a b a B A a E a A b a a a - B a A b a C A B - a a - - a - A a

https://solrdev.f-tempo.org/ngram/view/cpdl_Cipriano_de_Rore_Ancor_che_col_partire_Rore_Soprano?staff=1&start=7&count=7

Prev Page Next Page

Anchor che col partire
Primo libro di madrigali à 4 voci (1547)
Alfonso d'Avalos
Cipriano de Rore (c.1515-1565)
1

Canto
An cor che col par ti re

Alto
An cor che col par ti re

Tenore
An cor che col par

Basso
An cor che col par

4
lo mi sen to mo ri re, Par tir vor
lo mi sen to mo ri - - re, Par - tir vor -
ti re lo mi sen to mo - ri re,
ti re lo mi sen to mo - ri - - re,

Using transcriptions to search in F-Tempo

<https://trompamusic.github.io/music-scholars-annotator/#/annotate?resource=https://trompa-mtg.upf.edu/data/meiconversion/79f3e3c5-29b7-424f-9144-4cc6d720c206.mei>

The screenshot shows the TROMPA Music scholars annotation tool interface. At the top, the logo "TROMPA" is displayed next to the text "Music scholars annotation tool" and navigation links "Home" and "Help". A "Log in" button is in the top right corner. Below the header, there is a text input field for the annotation container path, containing "private/". A section titled "Search using F-TEMPO (experimental)" contains a search instruction: "Search this score on F-TEMPO: select a single voice from this list as query". Below this is a list of voice parts with radio buttons: Soprano (selected), Alto, Tenor, and Bass. A green "Search" button is located below the list. The search results show a dropdown menu with the selected score "GB-Lbl_A337b_021_1". The main area displays a musical score for the song "SUPERIVS". The score includes vocal parts for Soprano, Alto, Tenor, and Bass, and a Piano accompaniment. The lyrics are in French: "Bon - jour mon coeur, Bon - jour ma dou - ce vi - e, Bon - jour mon oeil, Bon - jour ma chè - re a mi - e! Hè! bon - jour, ma tou - te bel - le, Ma". The score is presented in a modern notation style with a piano accompaniment. A smaller, historical manuscript snippet is visible in the bottom left corner of the interface, showing the same musical notation and lyrics in a different style.

Summary of new features

Faster search

Import catalogues from IIF manifest

Import additional metadata and search

Import transcribed scores

search for prints

search for musical phrases

Features are becoming available at <https://search.f-tempo.org/>

Source code available at <https://github.com/TransformingMusicology/f-tempo>

Thanks

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<https://f-tempo.org>
<https://search.f-tempo.org>



Statistics

Scans of music from 6 libraries

D-Bsb: 1,215

F-Pn: 3,053

PL-Kj: 7,368

PL-Wn: 22,433

GB-Lbl: 35,378

D-Mbs: 497,096

~560,000 pages in total, 57,771,650 musical notes