Paper 4 Advanced Performance, Option B.

CHORAL PERFORMANCE

Sidney Sussex College Chapel
9 June 2015

1. Plainchant notation (Magnificat antiphon *O caelestis norma vitae*), from the *Antiphonale Monasticum*, (Solesmis, 2007), 145. Choose an appropriate starting pitch (depending on your own vocal range) and sing the entire passage. Pay particular attention to phrasing, word stress and breathing.

2. Mensural notation (Agnus Dei from *Missa O sacer Anthoni* by Pierre de la Rue). The facsimile is from Brussels, Koninklijke Bibliotheek, MS. 9126, fos 55v–56r; *Choirbook for Philip the Fair and Juana of Castile* (Alamire: Peer, 2002).

   Within a vocal ensemble (who will be reading from a modern score), sing your voice part from the provided facsimile choirbook. The performing pulse will be a semibreve. You will be given a starting pitch. Be mindful of rests and set your own word underlay.

3. Prepared pieces of standard choral repertory.
   a) William Byrd: *Laetentur coeli* (SATBarB). This work will be performed down one tone from written pitch.

   b) Gerald Finzi: *Nightingales* (SSATB).

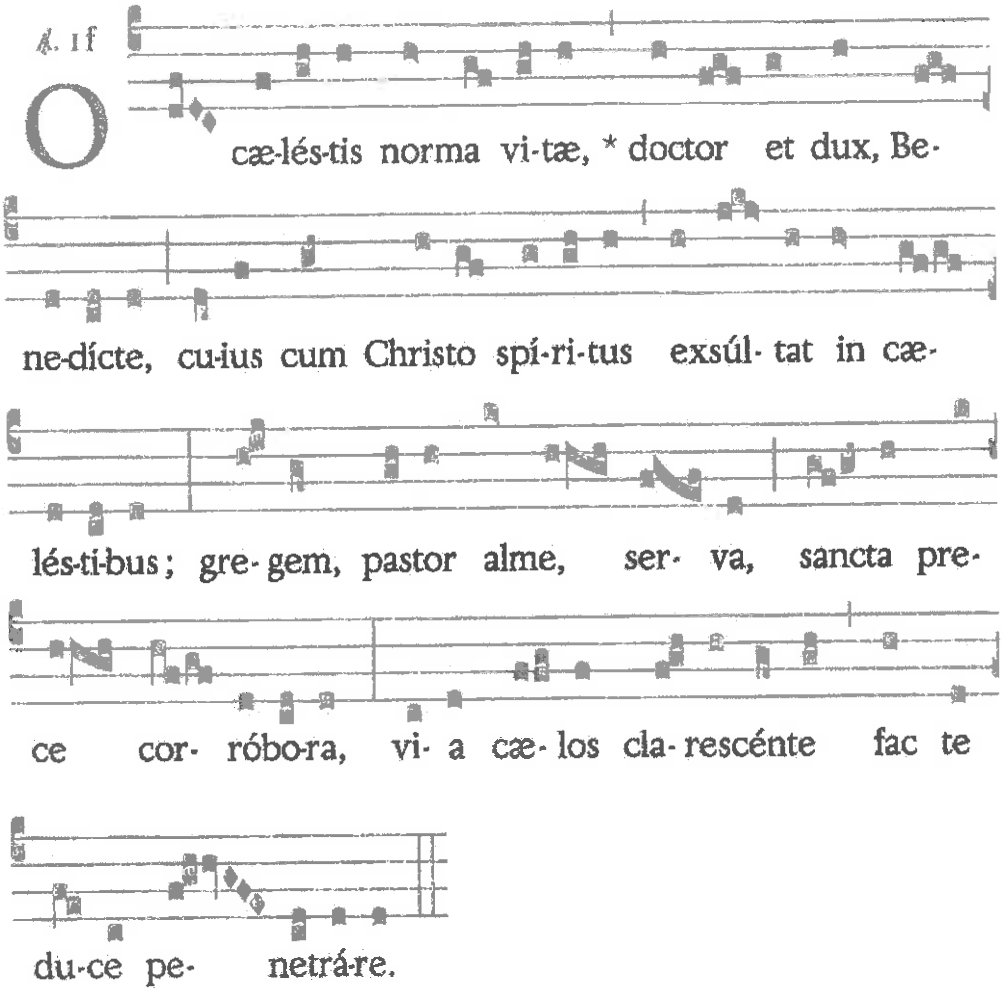
   These will be performed as part of a vocal ensemble. Candidates will be judged on accuracy of reading, intonation, quality of vocal timbre and general musicality.

4. Sight reading. To be distributed in the examination.

5. Lead a performance of a madrigal edited by the candidate from *Musica Transalpina* (London, 1588).

Ad Magnificat

℣. 1 f



Agnus dei

qui tollis pec

ca ta mundi

mise re re

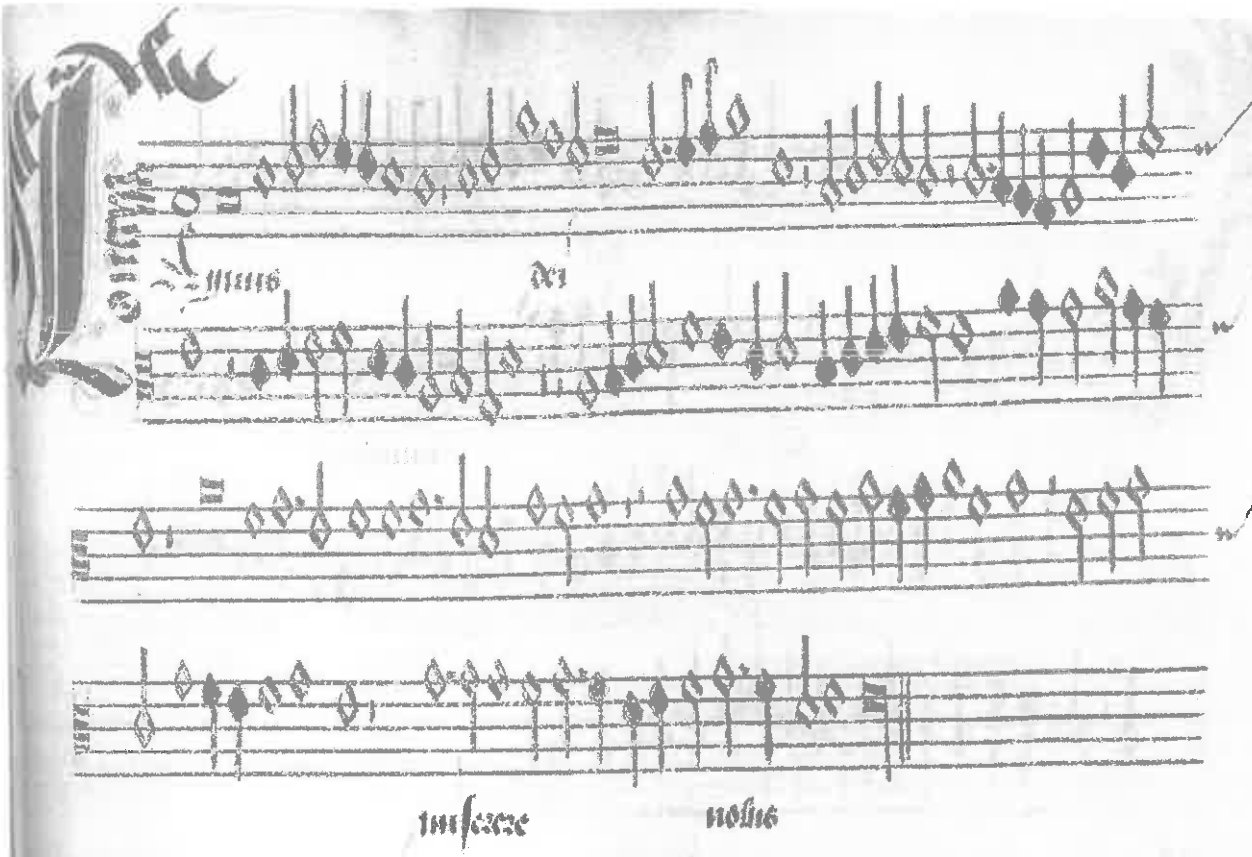
no bis

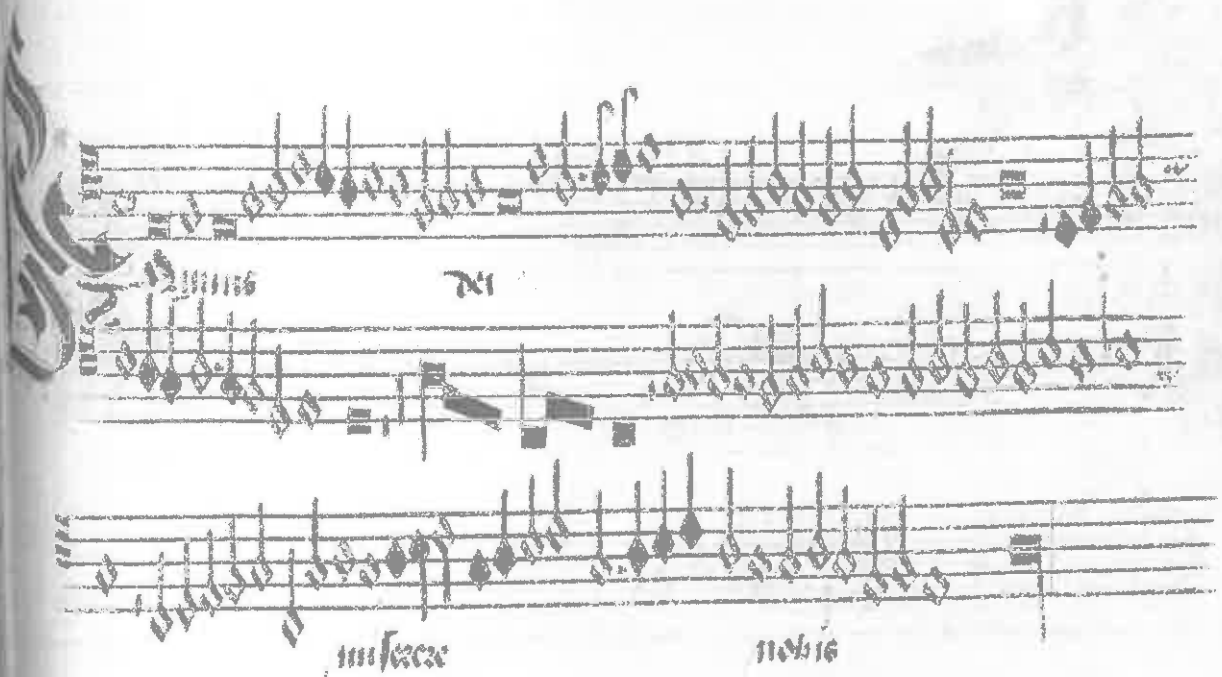
Agnus dei qui tollis pec

ca ta mundi

mise re re

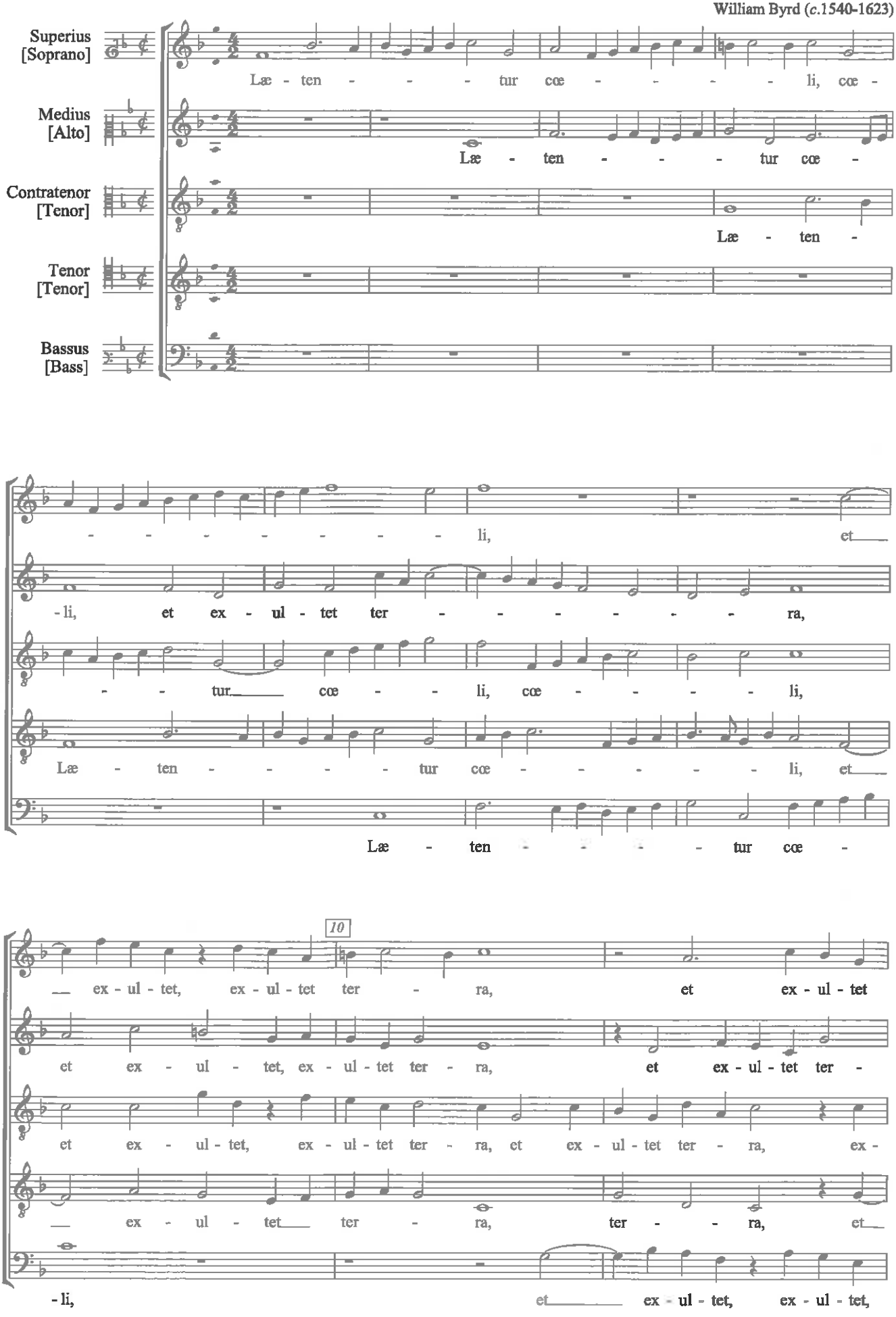
no bis

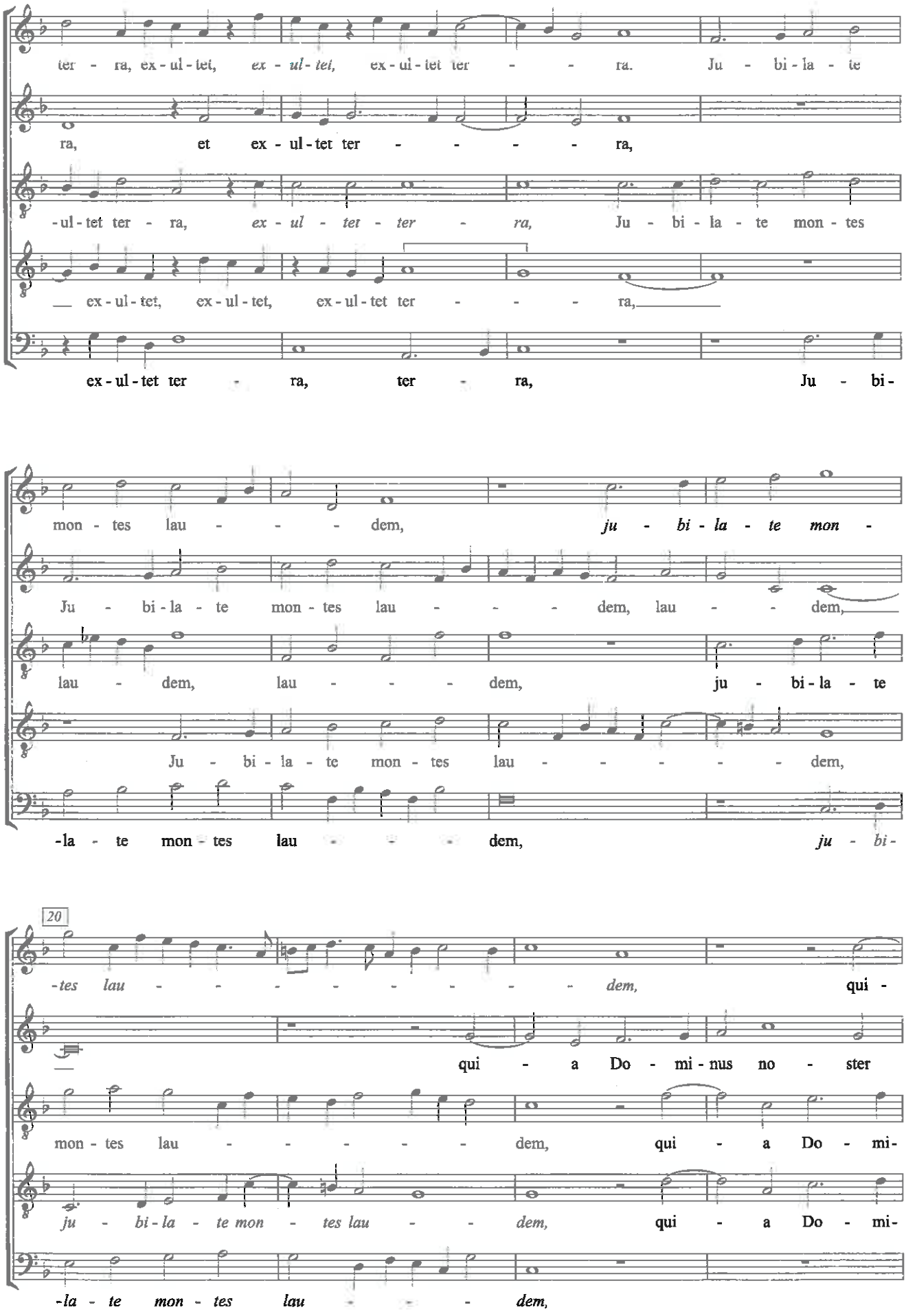

Kyrie
Christe
Kyrie
miserere
nobis

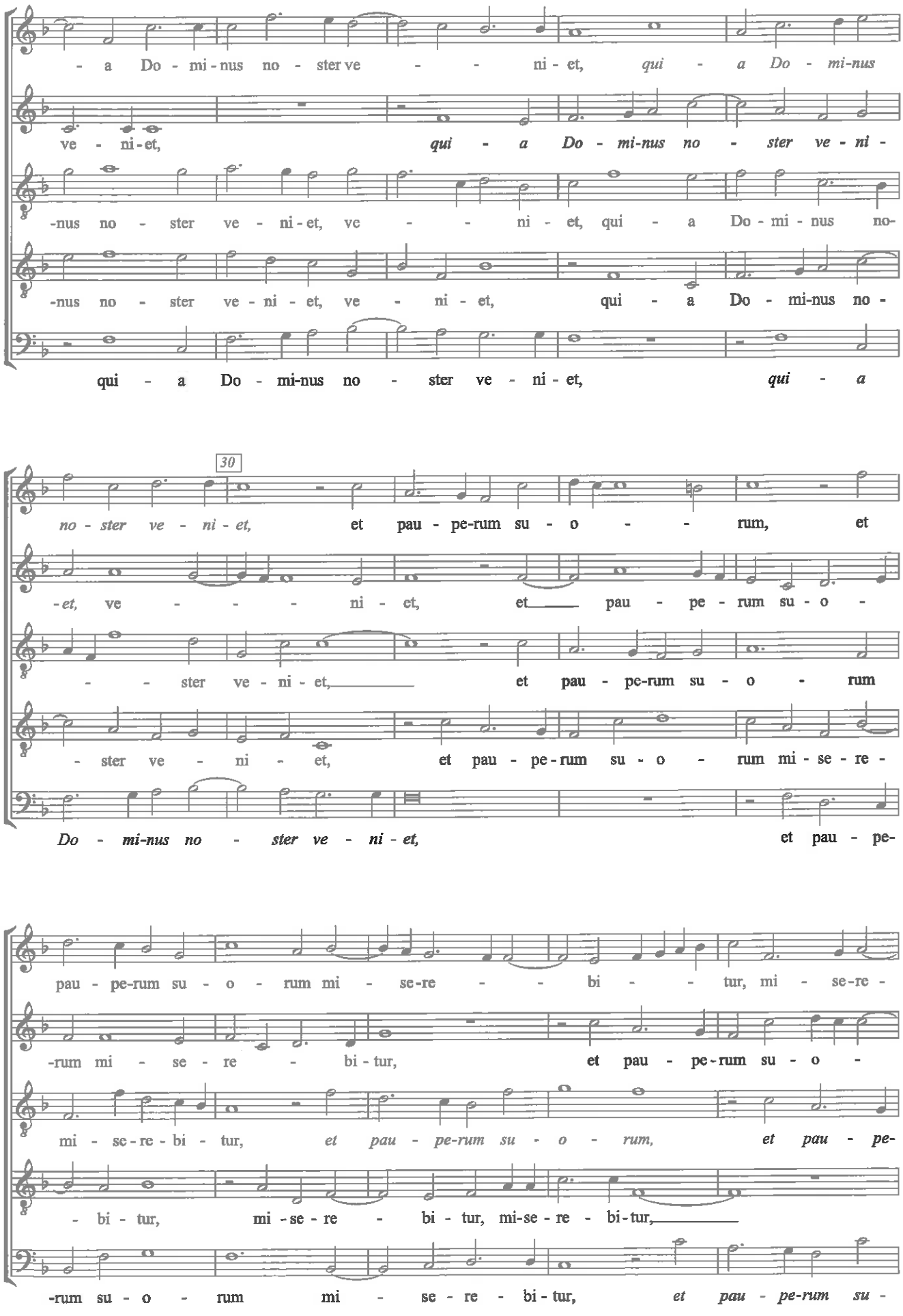

Kyrie
Christe
Kyrie
miserere
nobis

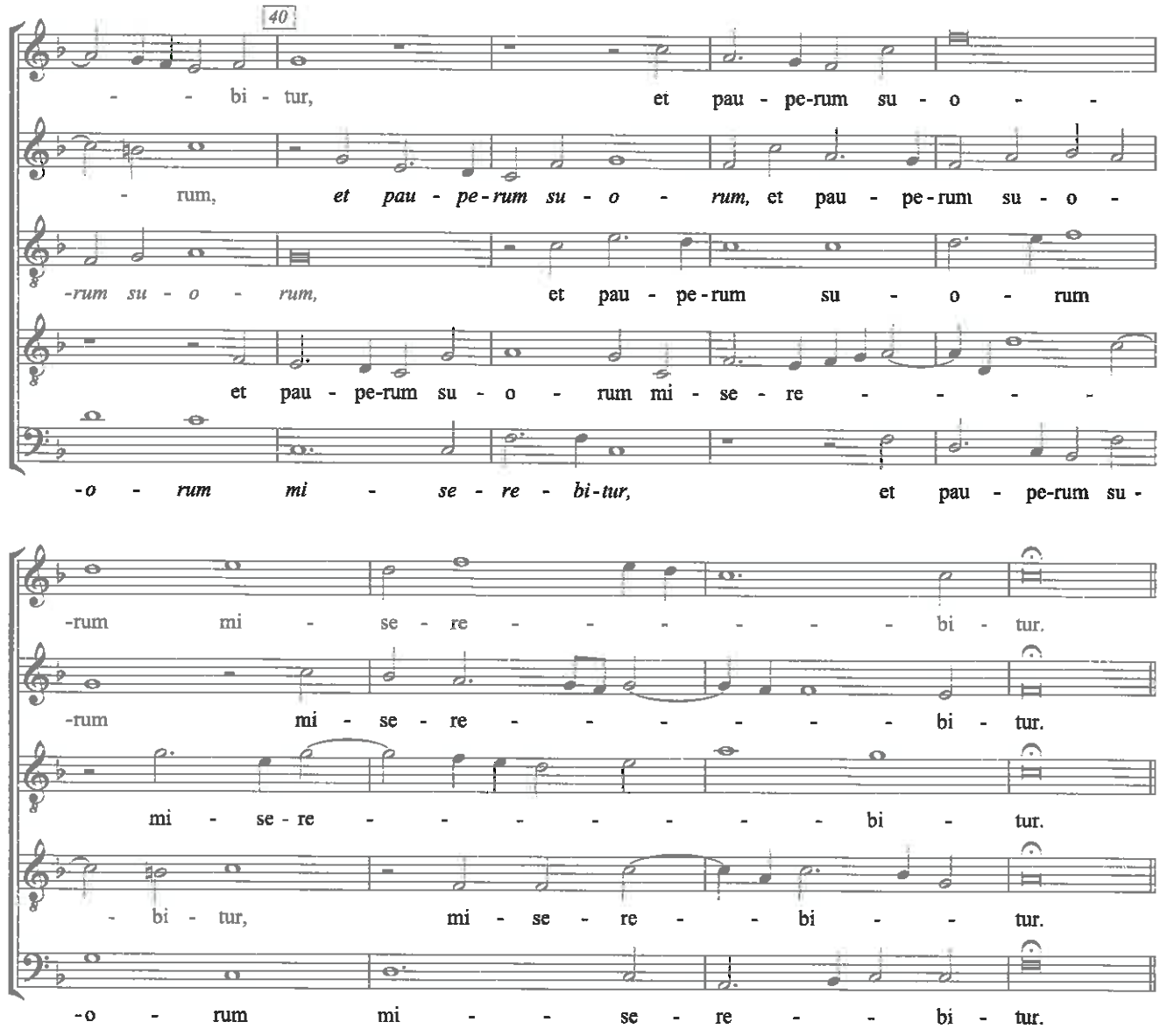
Lætentur cœli

William Byrd (*c.*1540-1623)

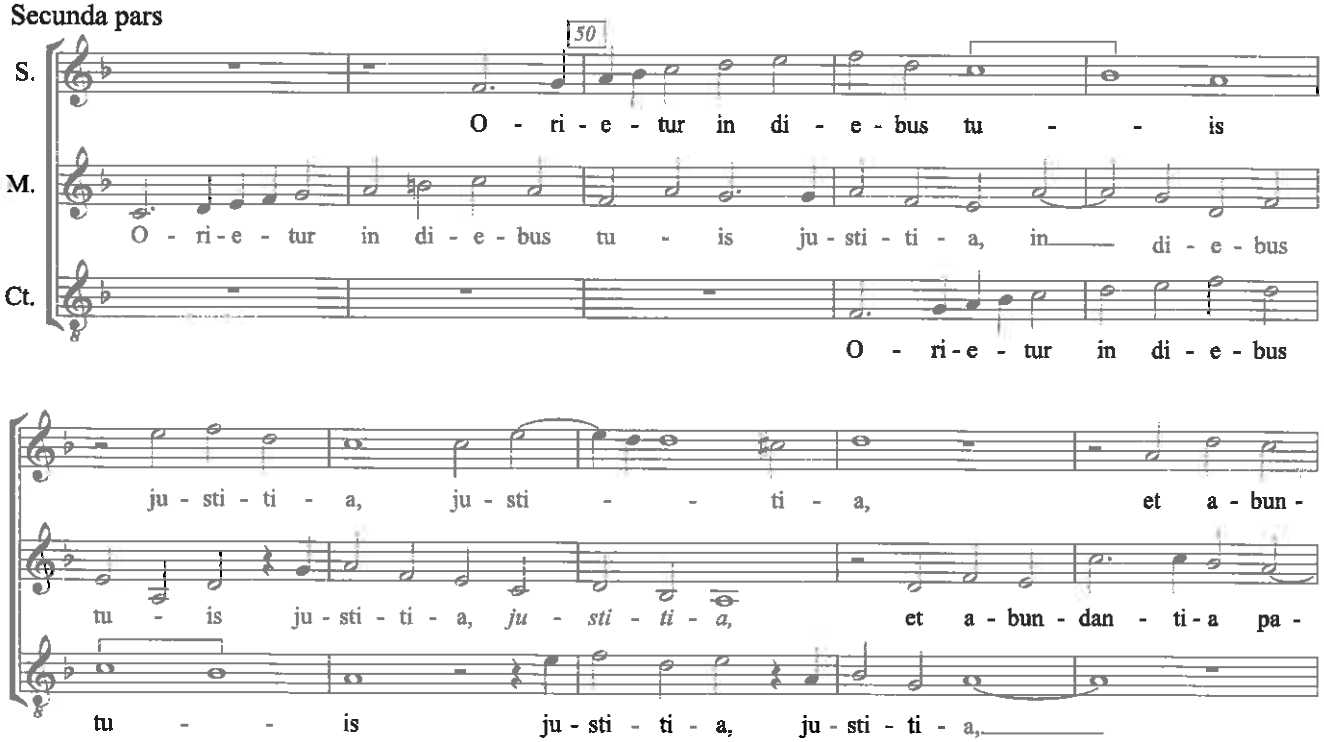


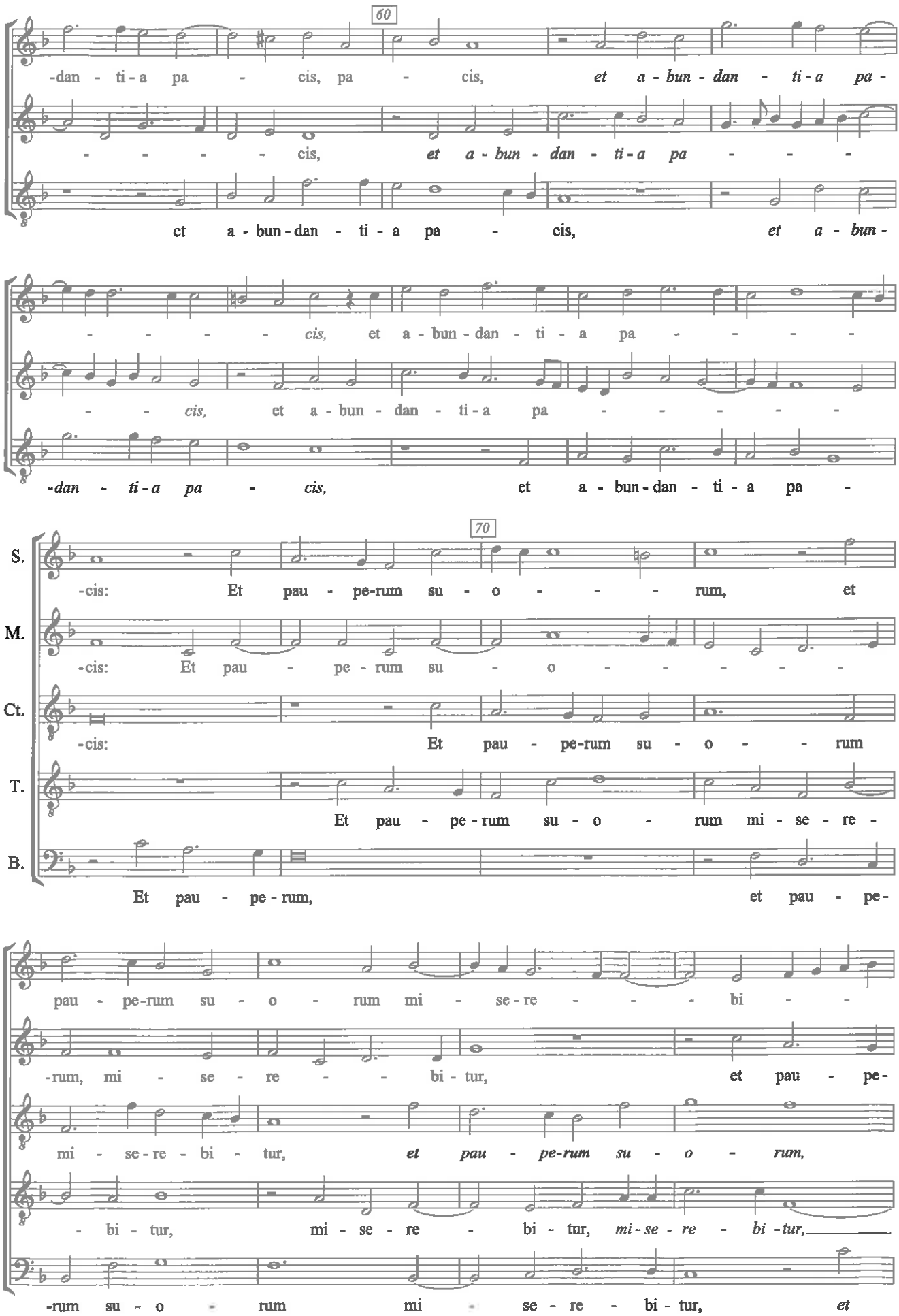

ter - ra, ex - ul - tei, ex - ul - tei, ex - ul - tet ter - - ra. Ju - bi - la - te
ra, et ex - ul - tet ter - - - - ra,
- ul - tet ter - ra, ex - ul - tet - ter - ra, Ju - bi - la - te mon - tes
ex - ul - tet, ex - ul - tet, ex - ul - tet ter - - - ra,
ex - ul - tet ter - ra, ter - ra, Ju - bi -
mon - tes lau - - - dem, ju - bi - la - te mon -
Ju - bi - la - te mon - tes lau - - - dem, lau - - dem,
lau - dem, lau - - - dem, ju - bi - la - te
Ju - bi - la - te mon - tes lau - - - - - dem,
- la - te mon - tes lau - - - dem, ju - bi -
20
- tes lau - - - - - - - - dem, qui -
qui - a Do - mi - nus no - ster
mon - tes lau - - - - - dem, qui - a Do - mi -
ju - bi - la - te mon - tes lau - - dem, qui - a Do - mi -
- la - te mon - tes lau - - - dem,

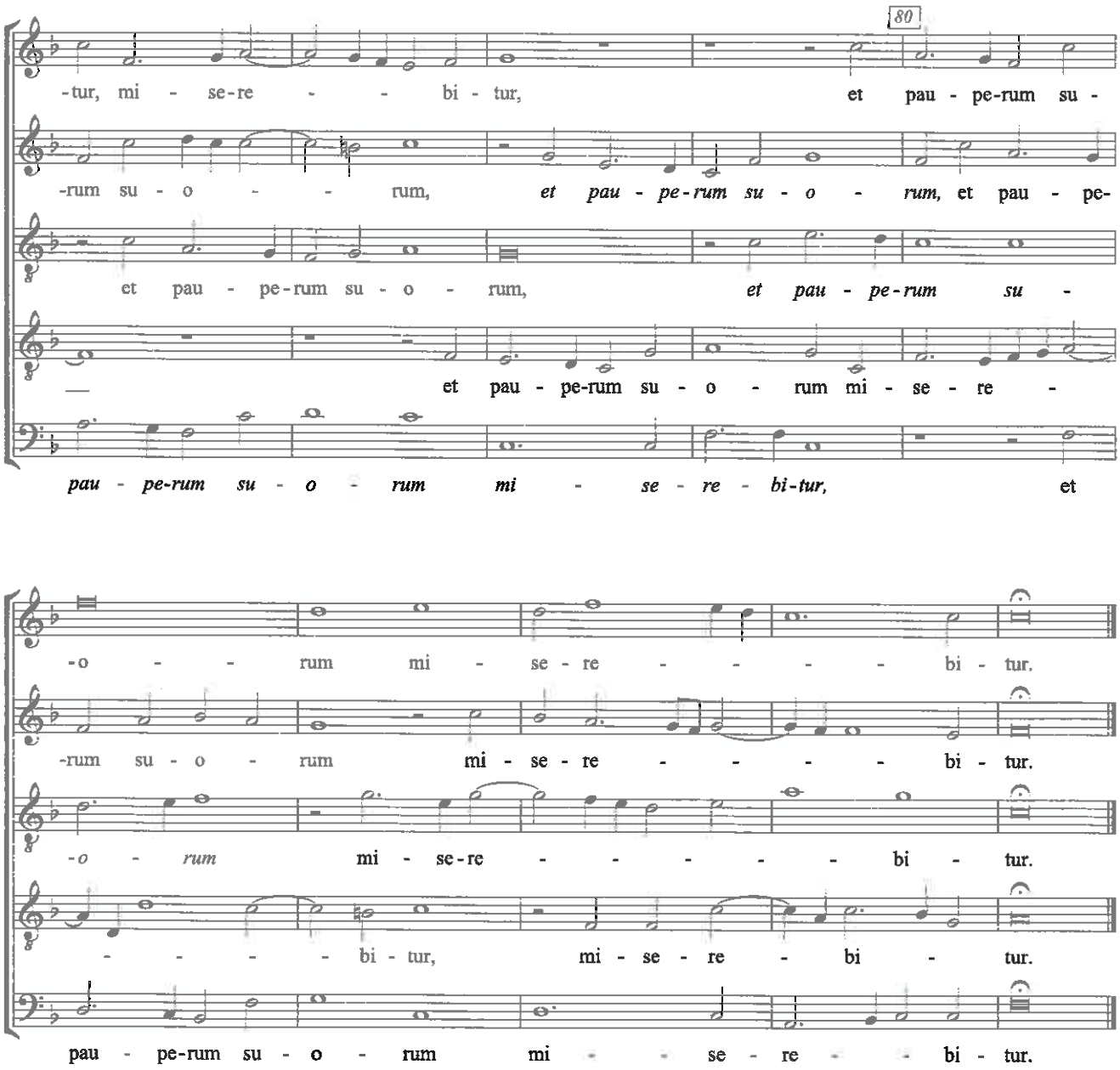

- a Do - mi - nus no - ster ve - - - ni - et, qui - a Do - mi-nus
ve - ni - et, qui - a Do - mi-nus no - ster ve - ni -
-nus no - ster ve - ni - et, ve - - - ni - et, qui - a Do - mi - nus no-
-nus no - ster ve - ni - et, ve - ni - et, qui - a Do - mi-nus no -
qui - a Do - mi-nus no - ster ve - ni - et, qui - a
30
no - ster ve - ni - et, et pau - pe-rum su - o - - rum, et
-et, ve - - - - ni - et, et pau - pe - rum su - o -
- - ster ve - ni - et, et pau - pe-rum su - o - rum
- ster ve - ni - et, et pau - pe - rum su - o - rum mi - se - re -
Do - mi-nus no - ster ve - ni - et, et pau - pe-
pau - pe-rum su - o - rum mi - se-re - - bi - - tur, mi - se-re -
-rum mi - se - re - bi - tur, et pau - pe-rum su - o -
mi - se - re - bi - tur, et pau - pe-rum su - o - rum, et pau - pe-
- bi - tur, mi - se - re - bi - tur, mi-se - re - bi-tur,
-rum su - o - rum mi - se - re - bi - tur, et pau - pe-rum su -



Secunda pars




60
-dan - ti - a pa - cis, pa - cis, et a - bun - dan - ti - a pa -
- - - - - cis, et a - bun - dan - ti - a pa - - -
et a - bun - dan - ti - a pa - cis, et a - bun -
- - - - - cis, et a - bun - dan - ti - a pa - - - -
- - cis, et a - bun - dan - ti - a pa - - - - -
-dan - ti - a pa - cis, et a - bun - dan - ti - a pa -
70
S.
-cis: Et pau - pe-rum su - o - - - rum, et
M.
-cis: Et pau - pe - rum su - o - - - - -
Ct.
-cis: Et pau - pe-rum su - o - - rum
T.
Et pau - pe - rum su - o - rum mi - se - re -
B.
Et pau - pe - rum, et pau - pe-
pau - pe-rum su - o - rum mi - se - re - - - bi -
-rum, mi - se - re - - bi - tur, et pau - pe-
mi - se - re - bi - tur, et pau - pe-rum su - o - rum,
- bi - tur, mi - se - re - bi - tur, mi - se - re - bi - tur,
-rum su - o - rum mi - se - re - bi - tur, et



Ye heavens praise, and earth rejoice, ye mountains give praise with jubilation: because our Lord hath comforted his people, and will have mercy on his poor ones.
There shall rise in thy days justice, and abundance of peace.

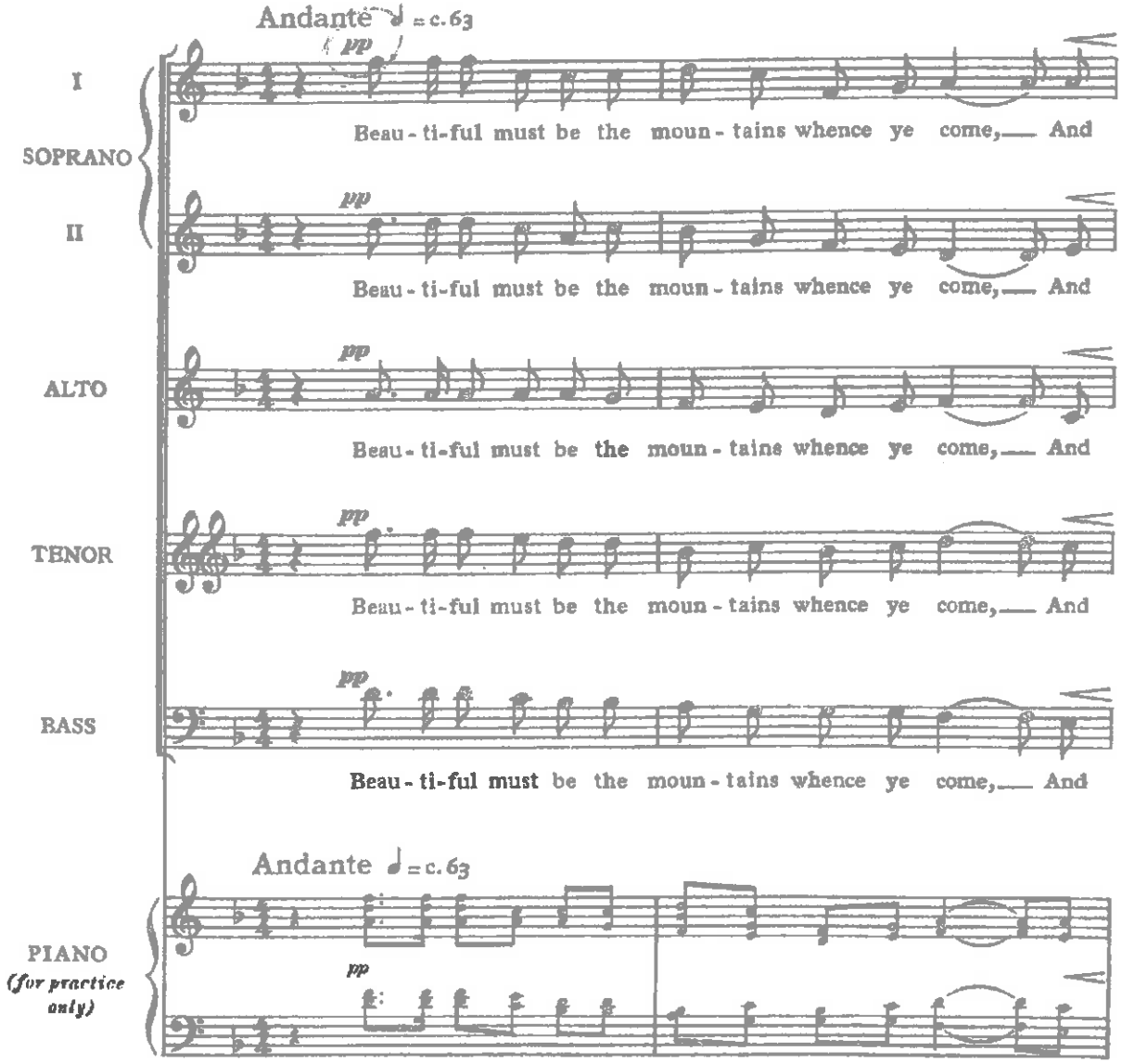
Source: William Byrd, *Liber primus Sacrarum Cantionum Quinque vocum* (London, 1589) nos.28-29
Text: Isaiah 49:13; Psalm 71: 7 (Processional Respond for Advent, Sarum rite)

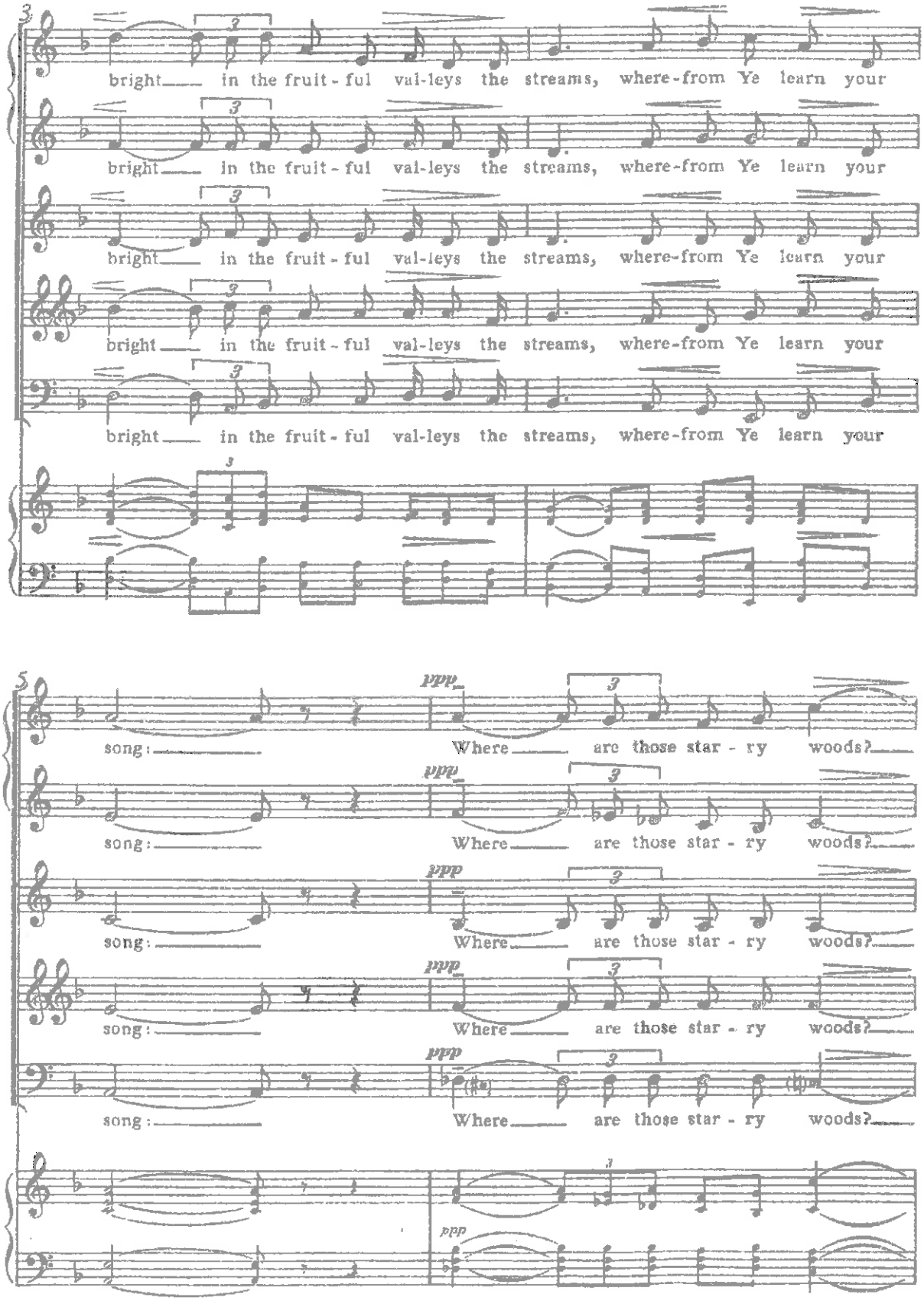
5. Nightingales

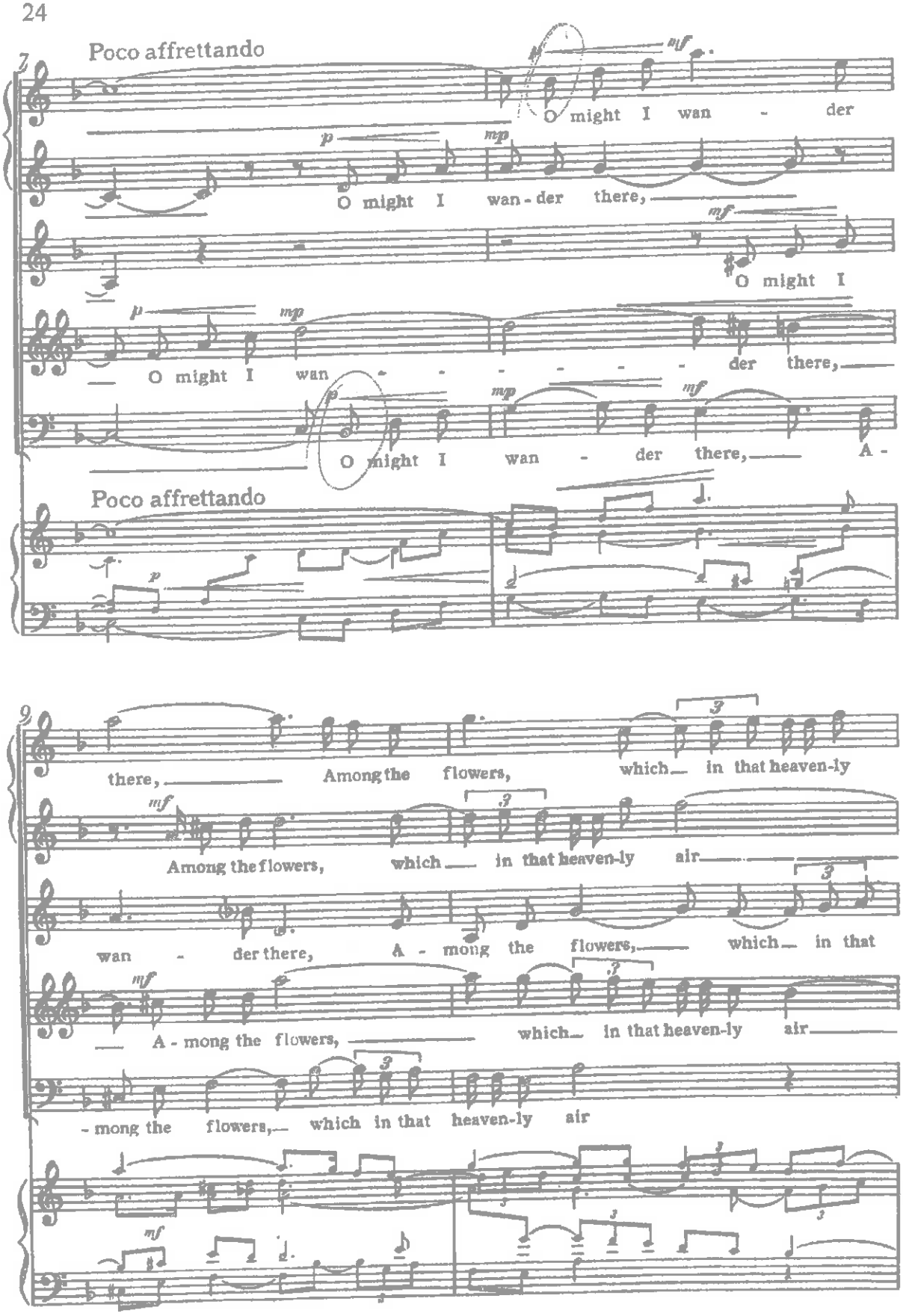
S.S.A.T.B.

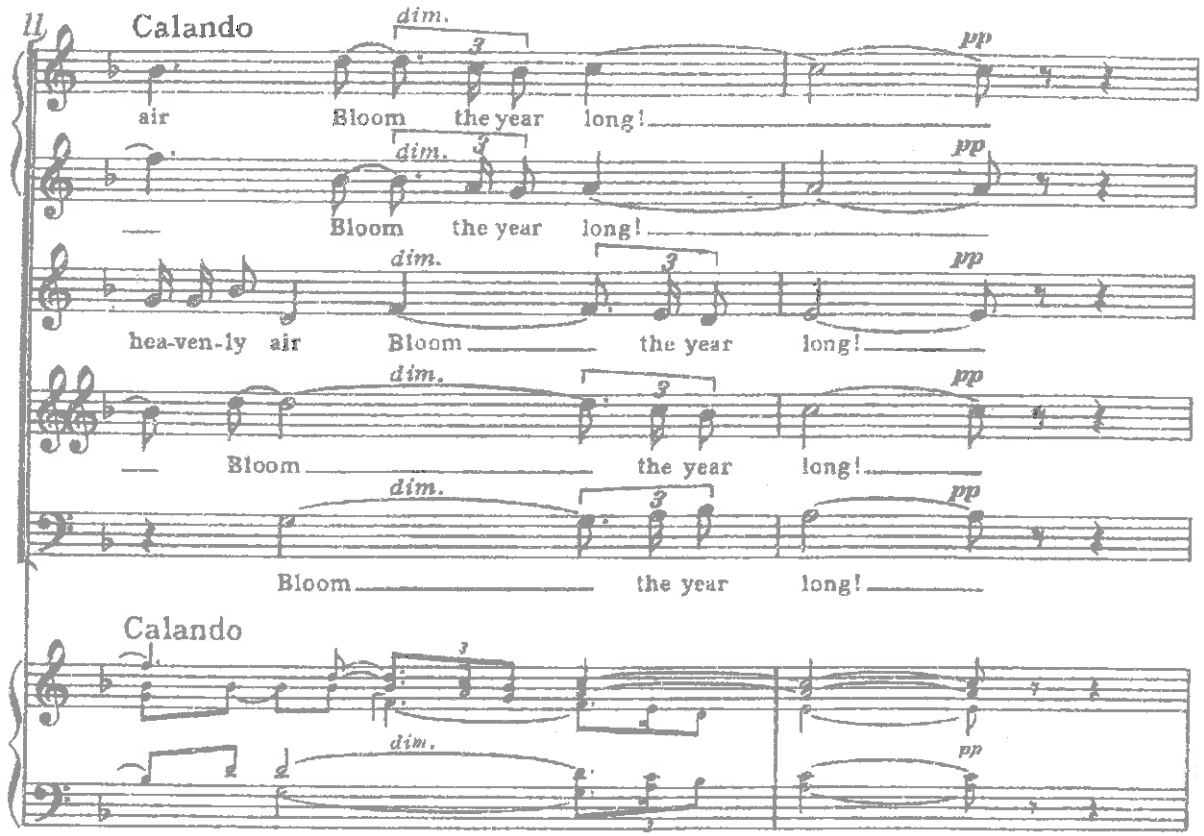
Words by
Robert Bridges

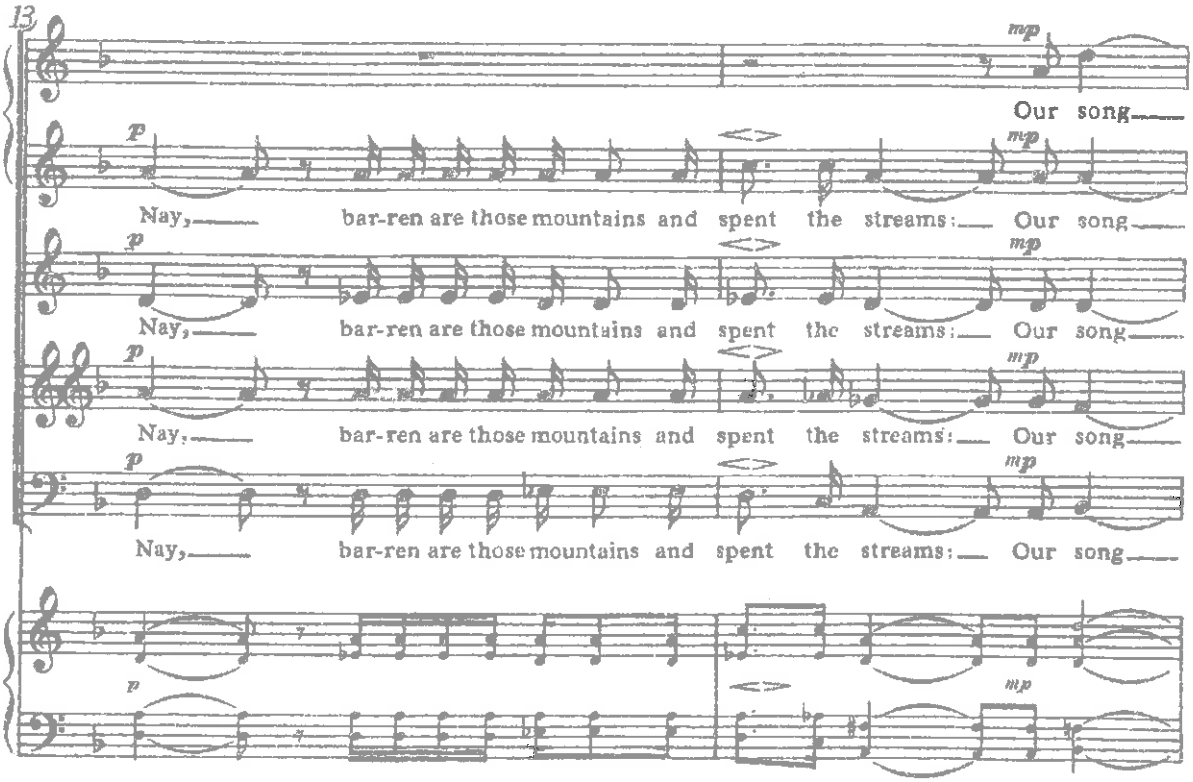
Music by
Gerald Finzi

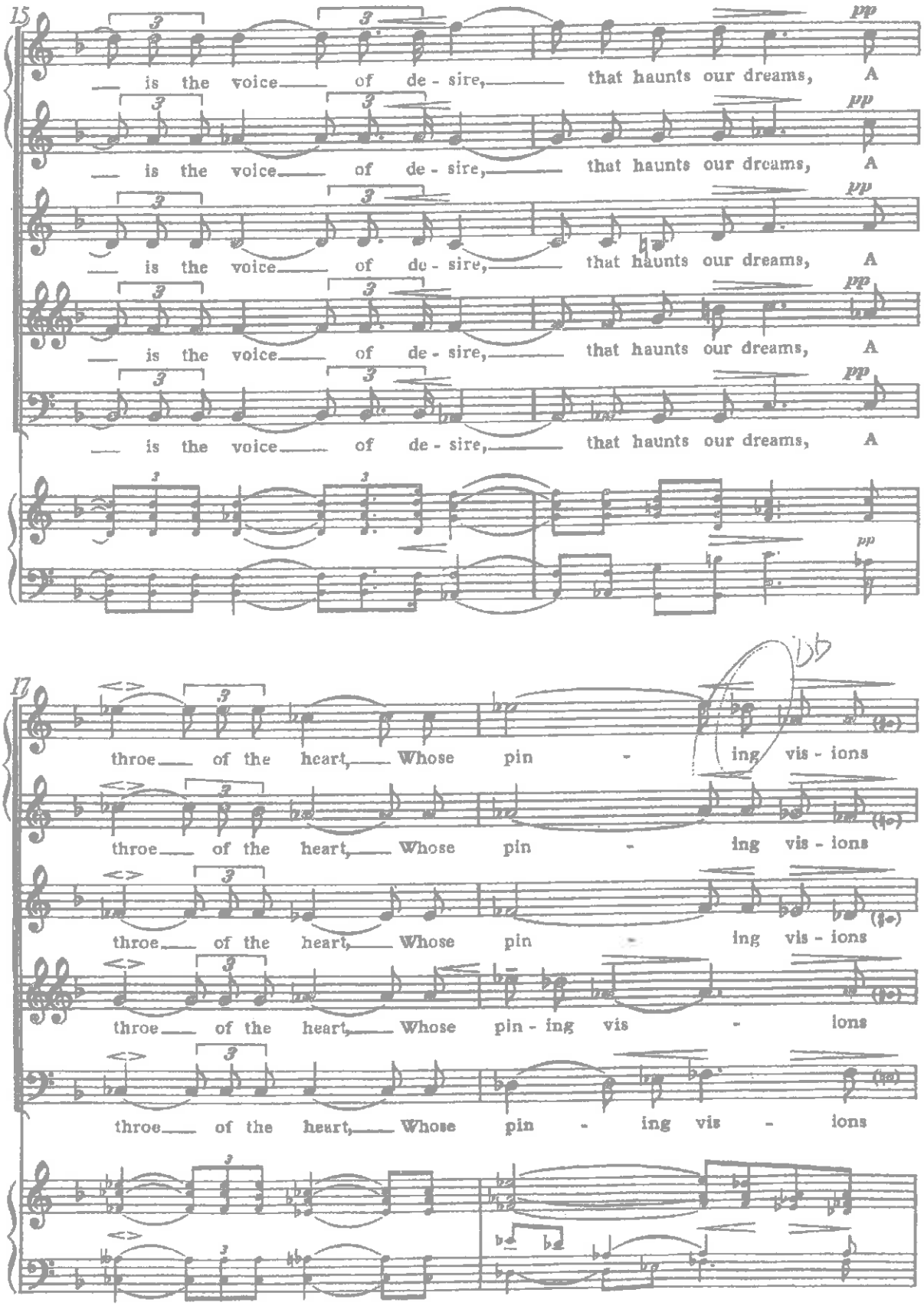


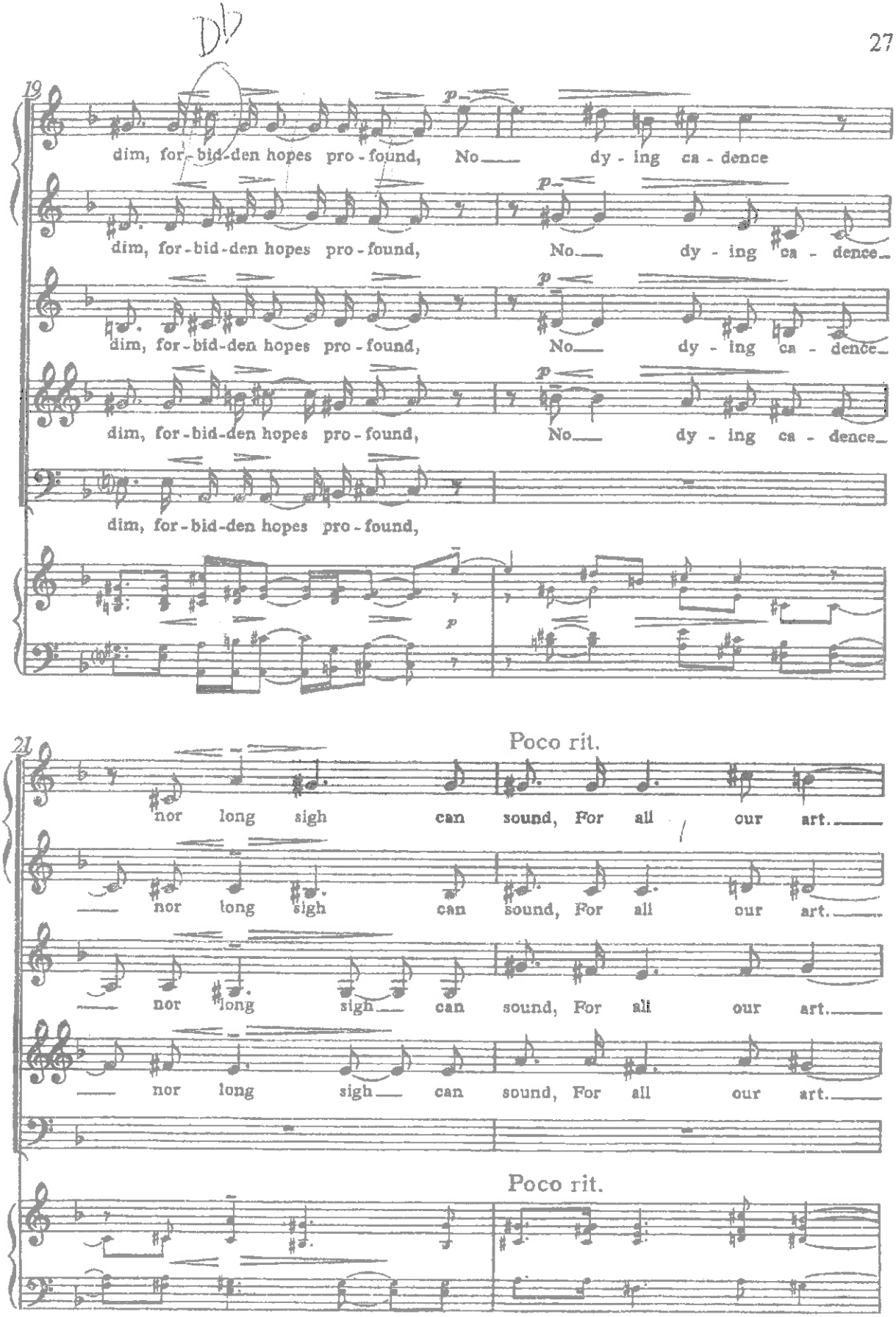

bright in the fruit - ful val-leys the streams, where-from Ye learn your
bright in the fruit - ful val-leys the streams, where-from Ye learn your
bright in the fruit - ful val-leys the streams, where-from Ye learn your
bright in the fruit - ful val-leys the streams, where-from Ye learn your
bright in the fruit - ful val-leys the streams, where-from Ye learn your
ppp
song: Where are those star - ry woods?
song: Where are those star - ry woods?
song: Where are those star - ry woods?
song: Where are those star - ry woods?
song: Where are those star - ry woods?
ppp

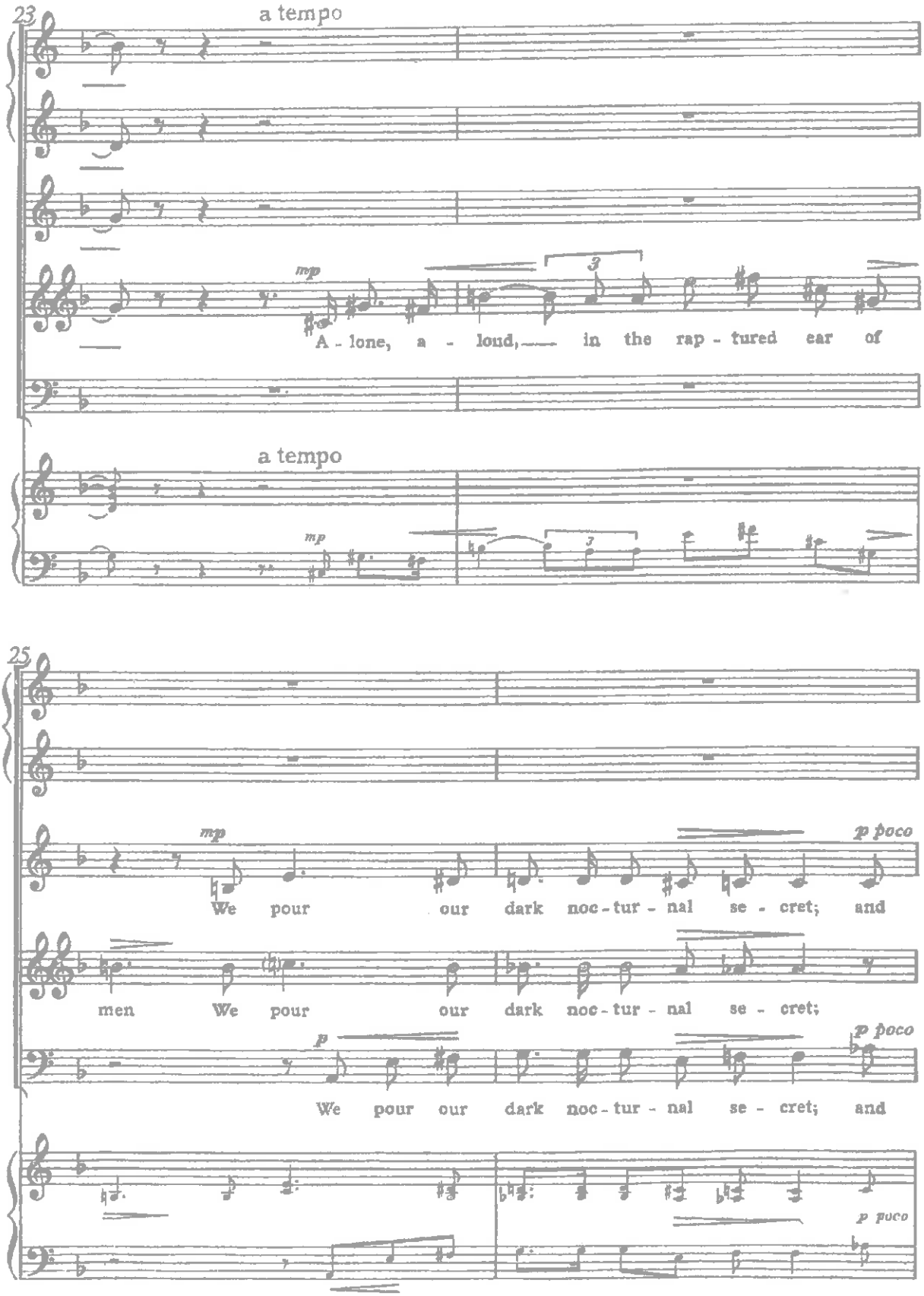

Poco affrettando
O might I wan - der
O might I wan - der there,
O might I
O might I wan - - - - - - der there,
O might I wan - der there, A -
Poco affrettando
there, Among the flowers, which in that heaven-ly
Among the flowers, which in that heaven-ly air
wan - der there, A - mong the flowers, which in that
A - mong the flowers, which in that heaven-ly air
- mong the flowers, which in that heaven-ly air

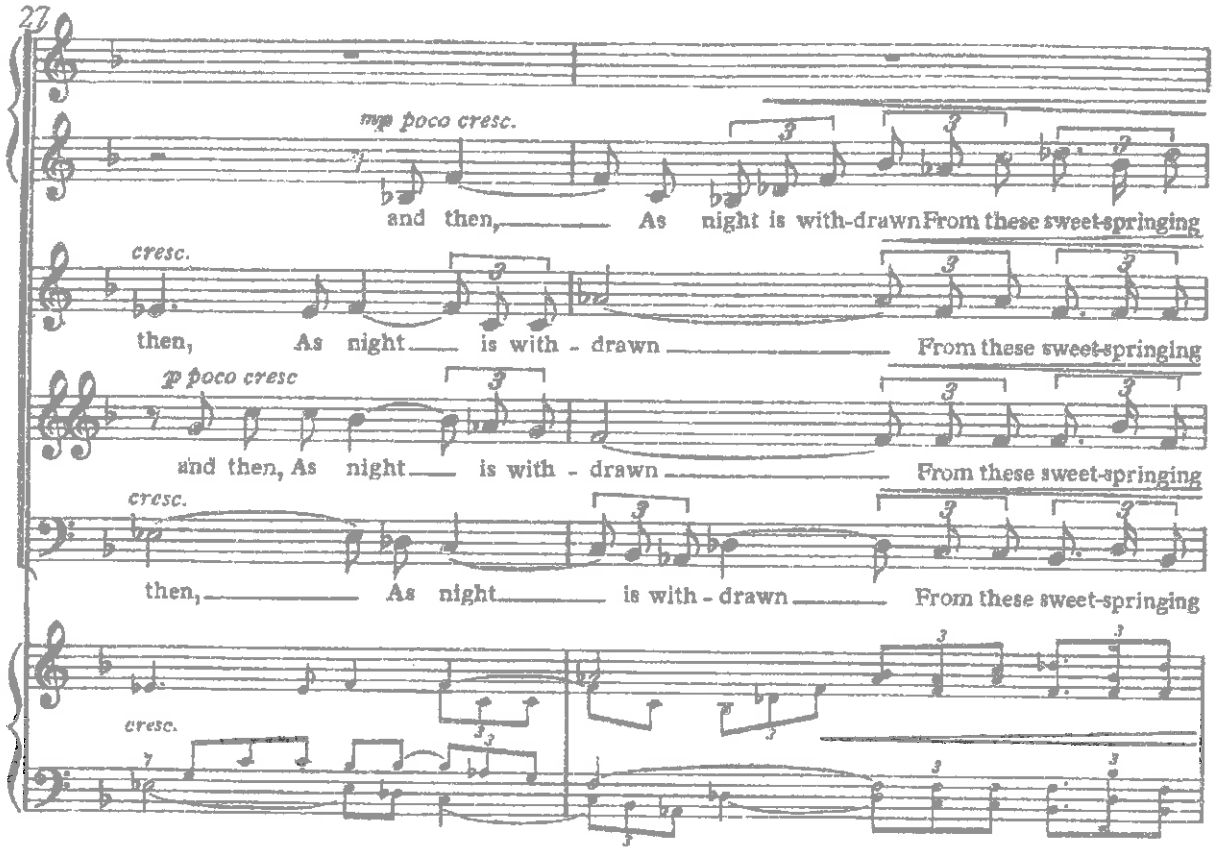

11
Calando
dim.
pp
air
Bloom the year long!
hea-ven-ly air
Bloom the year long!
Calando

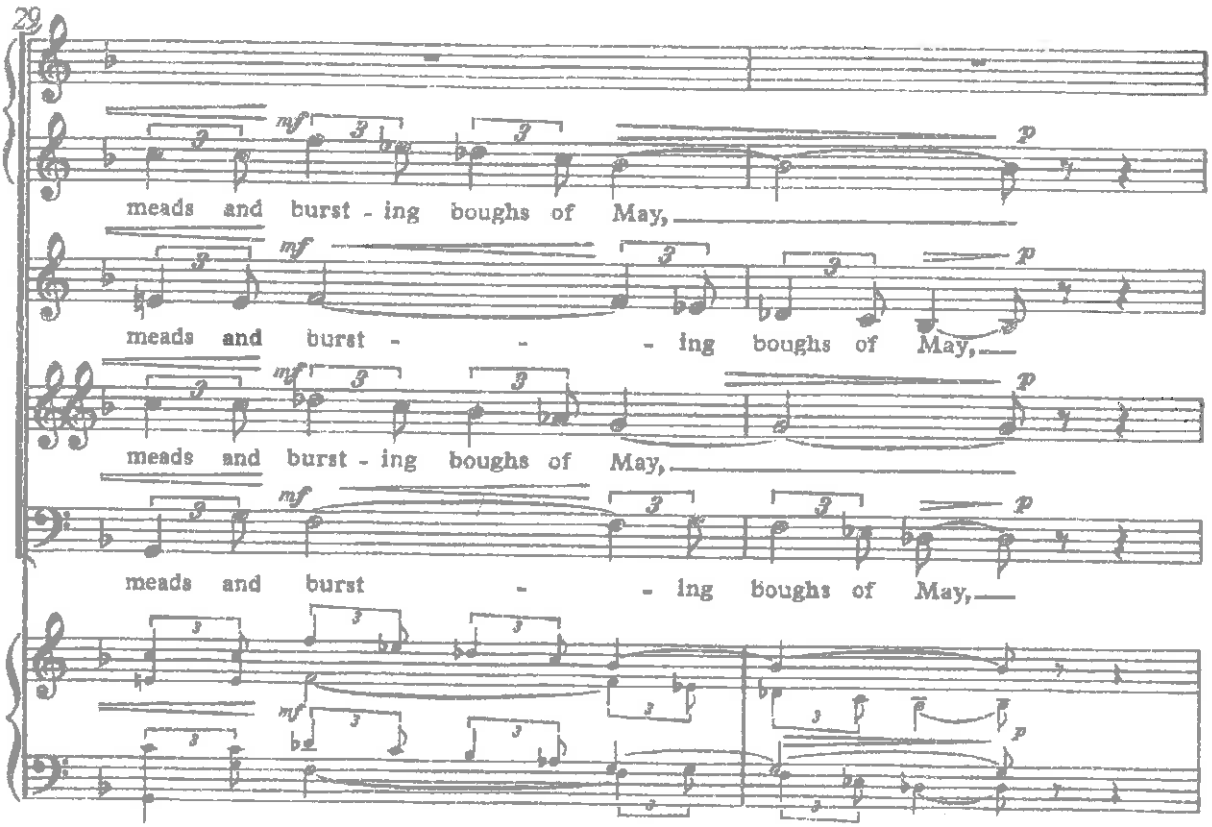

13
mp
Our song
p
Nay, bar-ren are those mountains and spent the streams: Our song

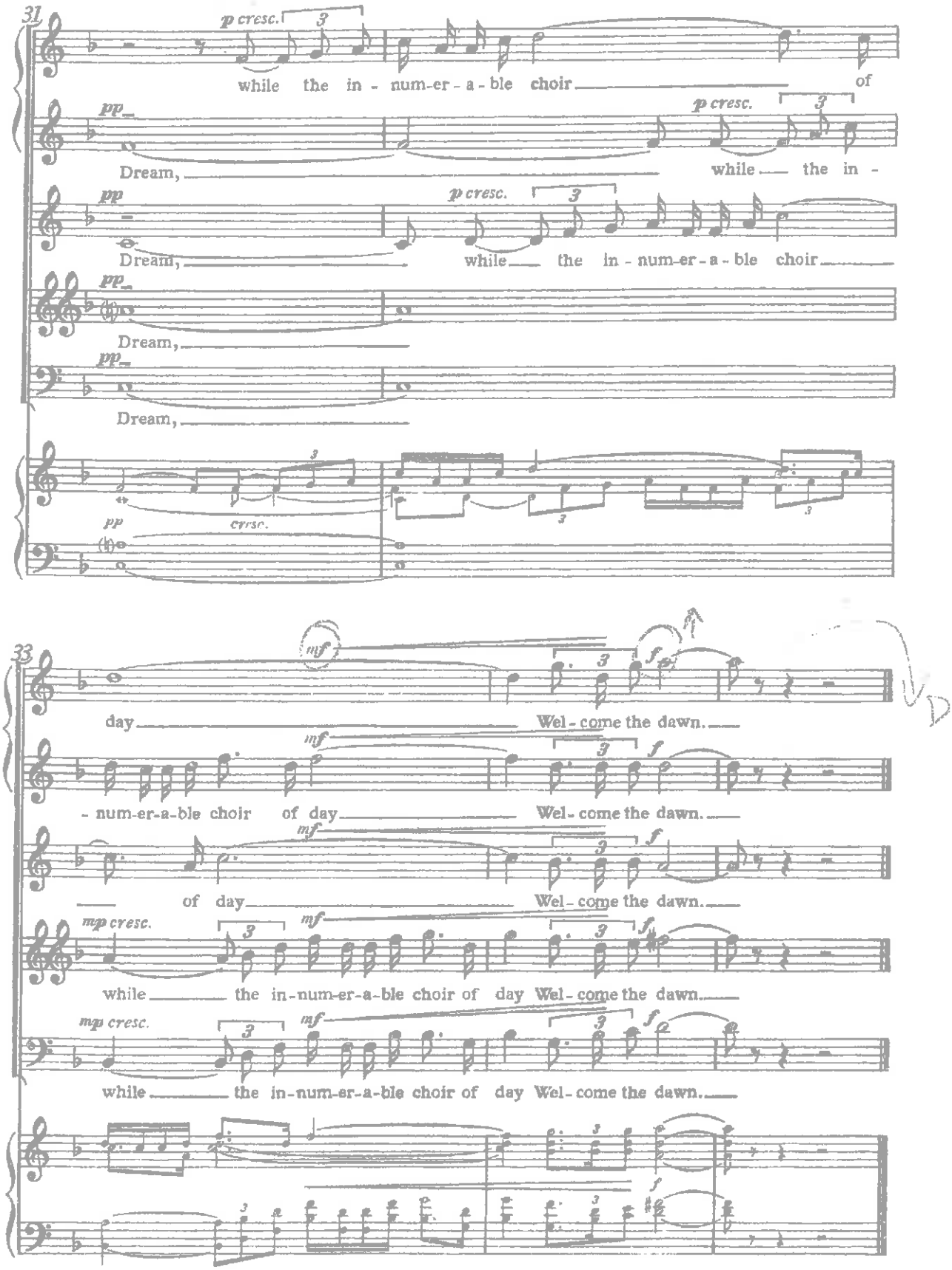

15
pp
— is the voice— of de - sire,— that haunts our dreams, A
— is the voice— of de - sire,— that haunts our dreams, A
— is the voice— of de - sire,— that haunts our dreams, A
— is the voice— of de - sire,— that haunts our dreams, A
— is the voice— of de - sire,— that haunts our dreams, A
17
throe— of the heart,— Whose pin - ing vis - ions
throe— of the heart,— Whose pin - ing vis - ions
throe— of the heart,— Whose pin - ing vis - ions
throe— of the heart,— Whose pin - ing vis - ions
throe— of the heart,— Whose pin - ing vis - ions


19
dim, for-bid-den hopes pro-found, No dy-ing ca-dence
dim, for-bid-den hopes pro-found, No dy-ing ca-dence
dim, for-bid-den hopes pro-found, No dy-ing ca-dence
dim, for-bid-den hopes pro-found,
21
Poco rit.
nor long sigh can sound, For all our art.
nor long sigh can sound, For all our art.
nor long sigh can sound, For all our art.
nor long sigh can sound, For all our art.
Poco rit.


23
a tempo
mp
A - lone, a - loud, in the rap - tured ear of
a tempo
mp
25
mp
We pour our dark noc - tur - nal se - cret; and
p poco
men We pour our dark noc - tur - nal se - cret;
p
We pour our dark noc - tur - nal se - cret; and
p poco
p poco

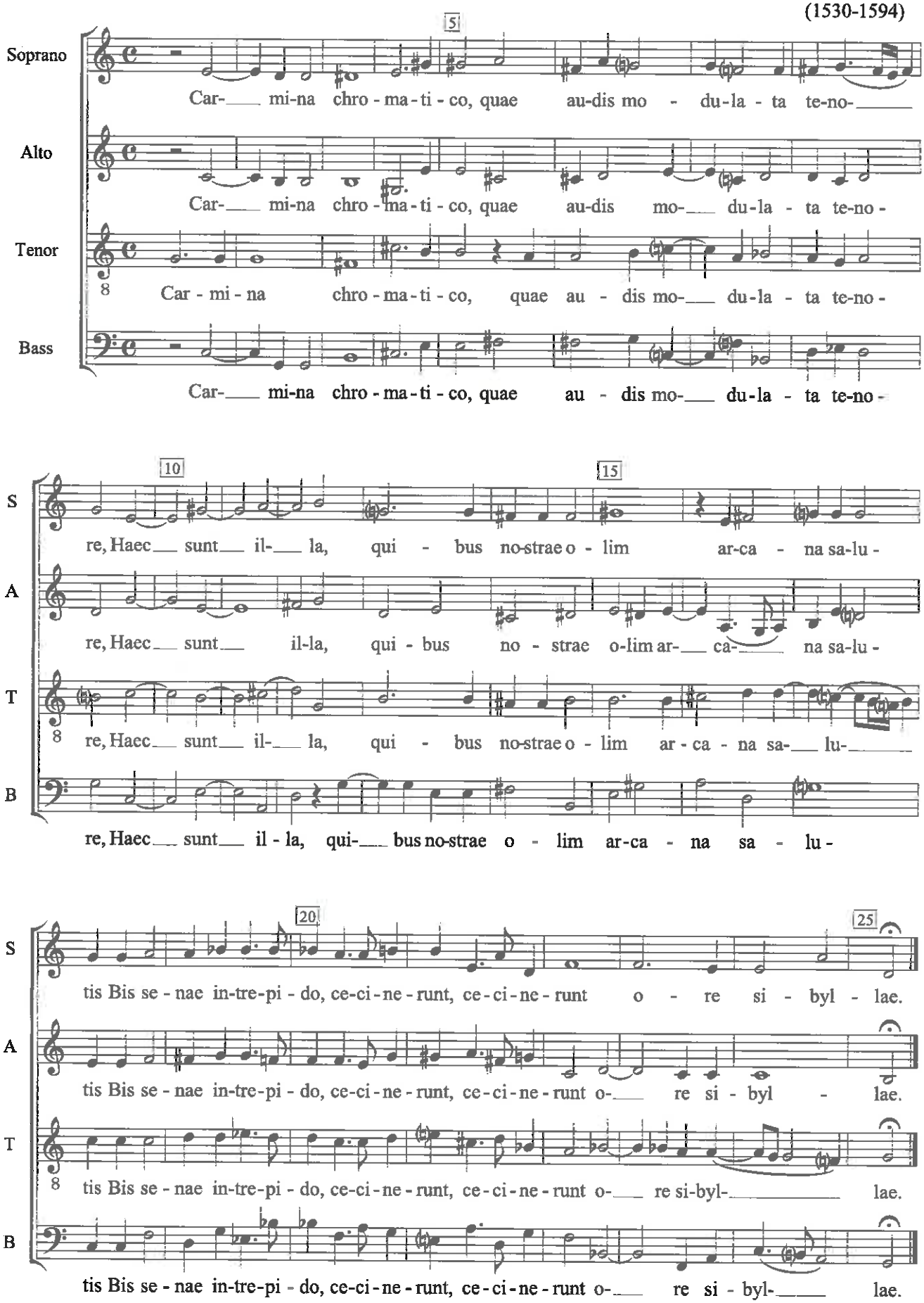

27
mp poco cresc.
and then, As night is with-drawn From these sweet-springing
cresc.
then, As night is with - drawn From these sweet-springing
p poco cresc
and then, As night is with - drawn From these sweet-springing
cresc.
then, As night is with - drawn From these sweet-springing
cresc.


29
mf
p
meads and burst - ing boughs of May,
mf
p
meads and burst - - - ing boughs of May,
mf
p
meads and burst - ing boughs of May,
mf
p
meads and burst - - ing boughs of May,
mf
p


31
p cresc.
while the in - num-er - a - ble choir of
pp
Dream,
p cresc.
while the in -
pp
Dream,
p cresc.
while the in - num-er - a - ble choir
pp
Dream,
pp
Dream,
pp
cresc.
33
mf
f
day
Wel - come the dawn.
mf
f
- num-er-a-ble choir of day
Wel - come the dawn.
mf
f
of day
Wel - come the dawn.
mp cresc.
mf
f
while the in-num-er-a-ble choir of day Wel - come the dawn.
mp cresc.
mf
f
while the in-num-er-a-ble choir of day Wel - come the dawn.

Carmina chromatico

Orlandus Lassus
(1530-1594)



UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Tuesday 26 May 2015, 9-11

Paper 6

ADVANCED TONAL SKILLS

Candidate number.....

*Complete **one** of the following:*

A. Exercise in canon
B. Song accompaniment exercise

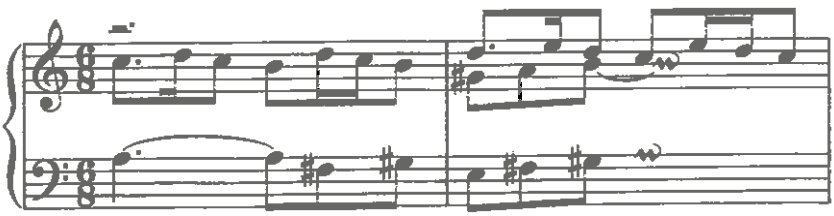
STATIONERY REQUIREMENTS
Tags

SPECIAL REQUIREMENTS
Manuscript paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

A Exercise in canon

Continue this two-part canon over a free bass, writing a short movement of c.32 bars. You may, if you wish, cast the movement in binary form.



B Song accompaniment exercise.

Complete the piano accompaniment to this song, *Apaisement*, by Chausson, varying the texture as appropriate.

Translation:

'The silver moon'

The silver moon
shines in the woods.
From each branch
springs a voice
beneath the arbour.
Oh my beloved...

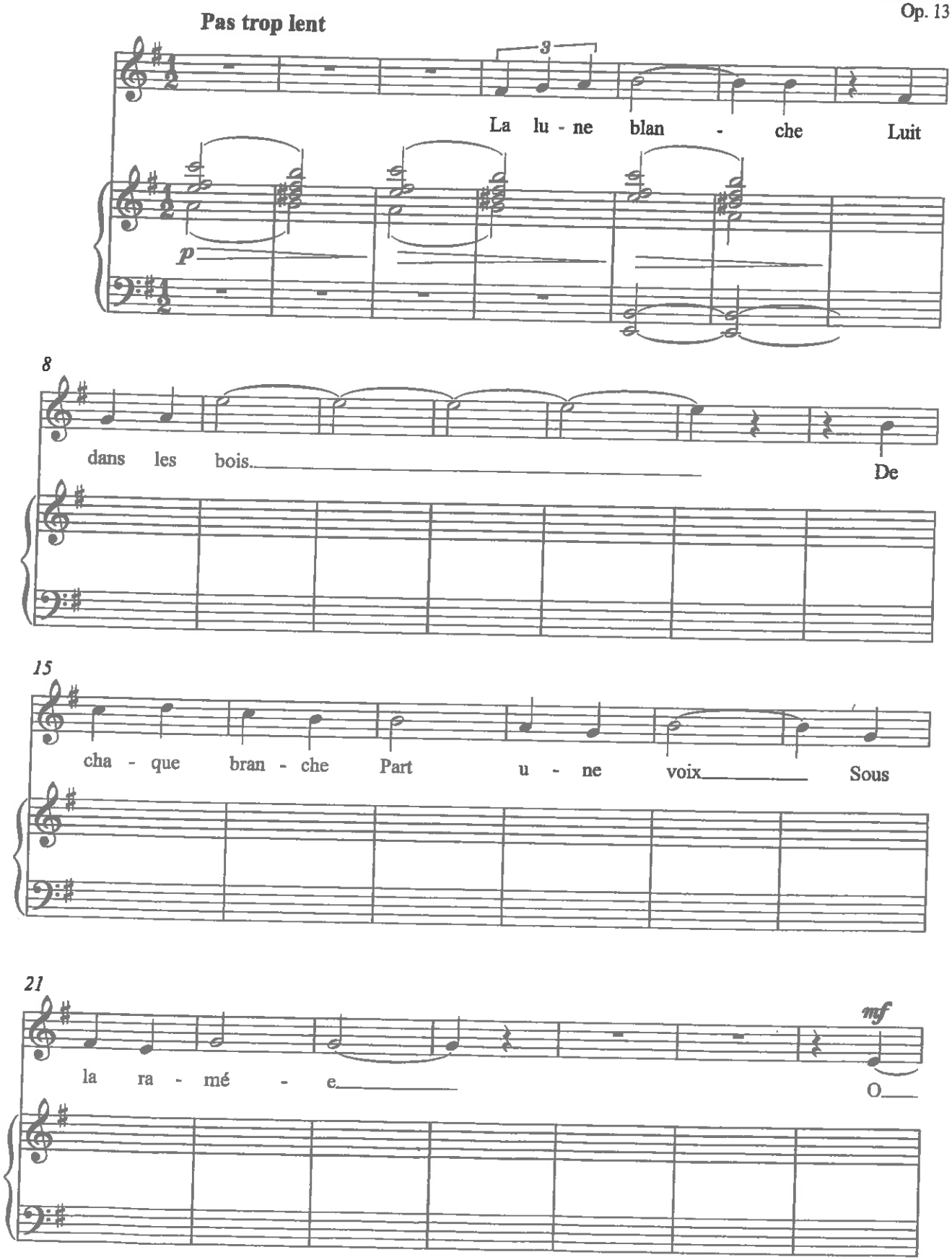
The pond reflects
like a deep mirror
the silhouette
of the black willow
where the wind weeps.
Let us dream! It is the hour...

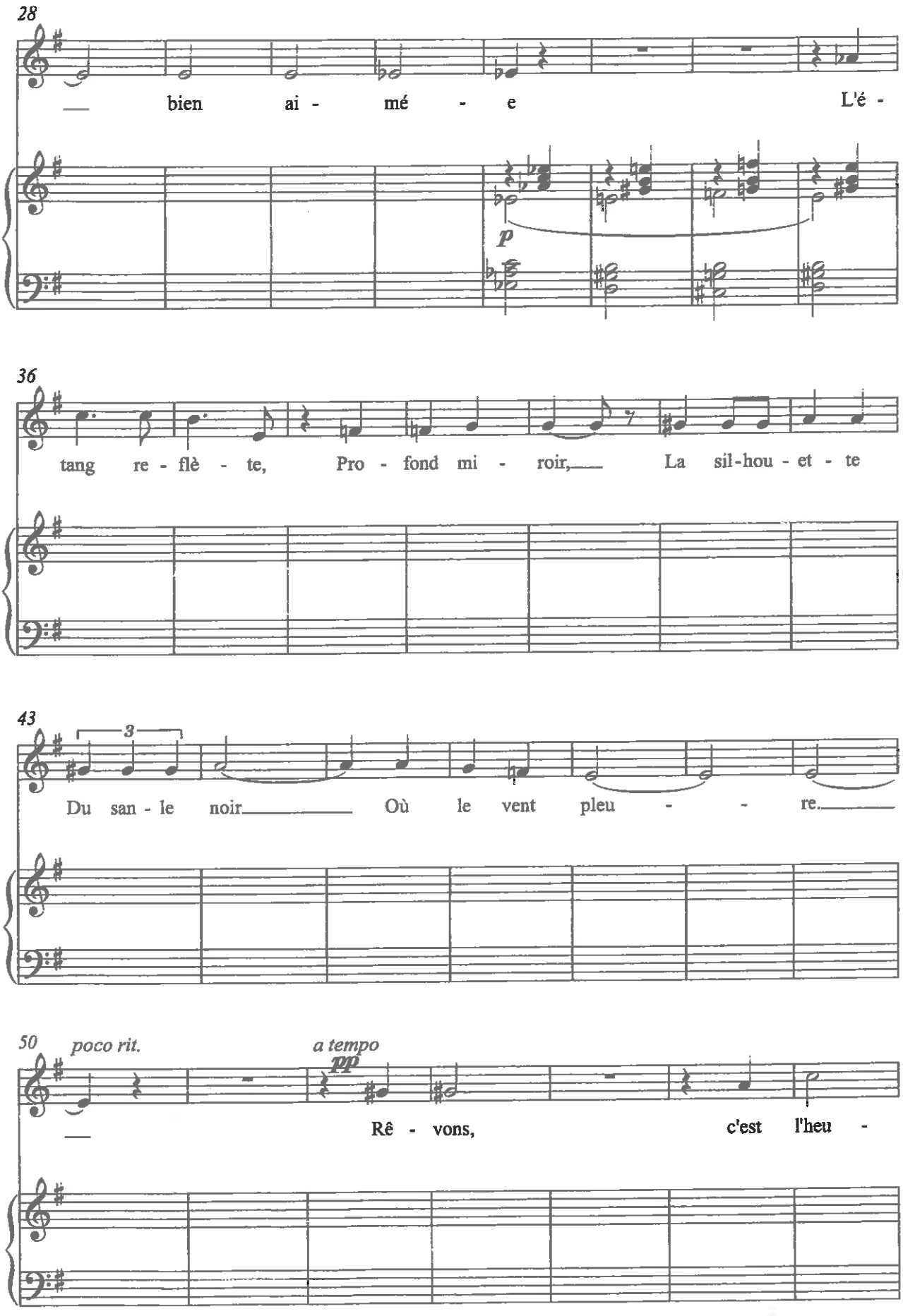
A vast and tender
calm
seems to descend
from a sky
made iridescent by stars.
It is the exquisite hour!

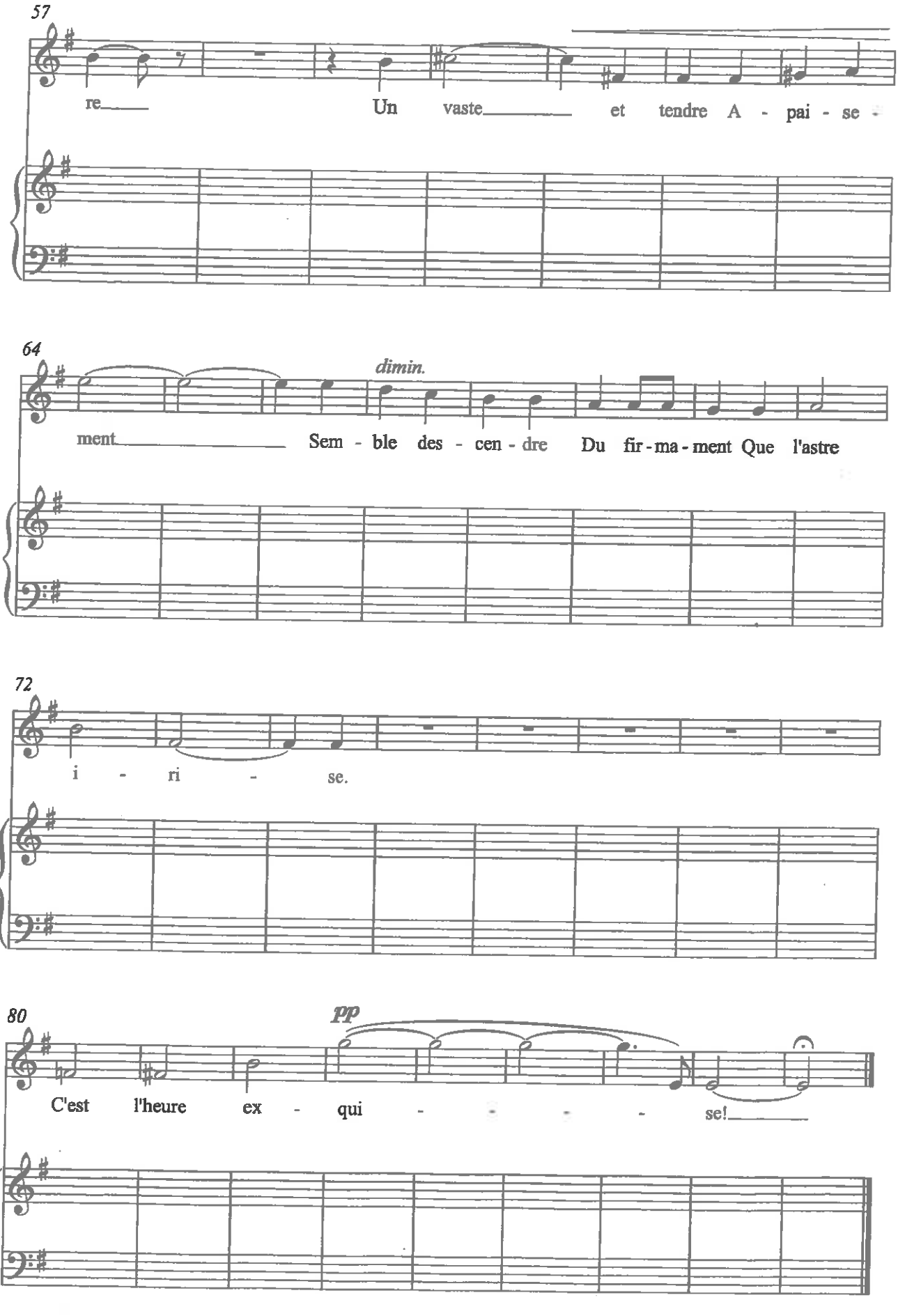
(Verlaine)

Apaisement

Chausson
Op. 13




28
bien ai - mé - e L'é -
p
36
tang re - flè - te, Pro - fond mi - roir, La sil-hou - et - te
43
3
Du san - le noir Où le vent pleu - - re.
50
poco rit.
a tempo
pp
Rê - vons, c'est l'heu -


57
re
Un vaste et tendre A - pai - se -
64
dimin.
ment
Sem - ble des - cen - dre Du fir - ma - ment Que l'astre
72
i - ri - se.
80
pp
C'est l'heure ex - qui - - - - - se!

END OF PAPER

UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Monday 1 June 2015, 9-1

Paper 7

FUGUE

*Answer **one** question.*

*Write your number, **not** your name, on the cover-sheet.*

You may transpose a subject to a different octave.
The pitch but not the duration of the final note in each subject is fixed.
You must name the instrument(s) for which you are writing.
Transposing instruments must be written at sounding pitch.
You must number the first bar of every system.
It is not obligatory to adopt the style of the named composer.

STATIONERY REQUIREMENTS
Cover-sheets
Tags

SPECIAL REQUIREMENTS
Manuscript paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

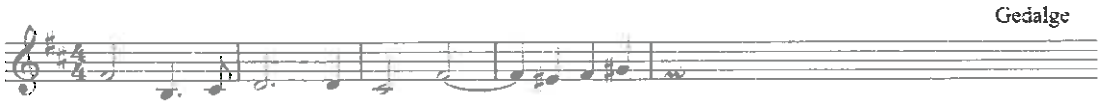
Write a fugue for any **one** of the following ensembles or instruments on **one** of the subjects given below:

(a) String trio
(b) String quartet
(c) Three woodwind instruments
(d) Four woodwind instruments
(e) Three brass instruments
(f) Four brass instruments
(g) Keyboard (including organ)

(i)

(ii)

(iii)



(iv)

(v)

END OF PAPER

UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Friday 5 June 2015

Paper 8

ADVANCED KEYBOARD SKILLS

You have forty minutes in which to study these keyboard tests. You may use the electronic keyboard, but only with headphones. You must **not** use the piano.

Do not write anything on this copy of the tests.

Do not take this copy of the tests out of the perusal room; there is a second copy in the examination room.

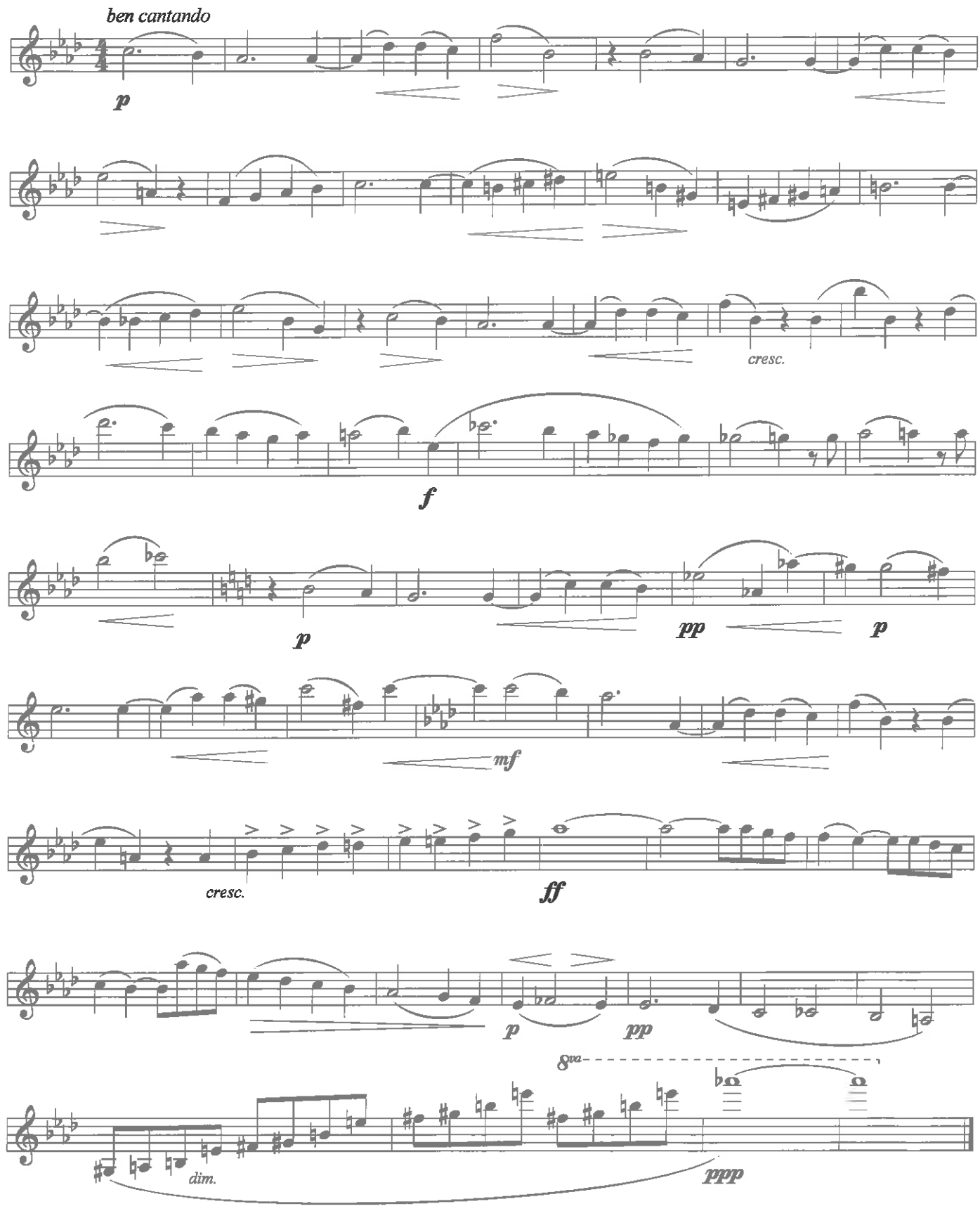
Do not write out the tests or discuss them with anyone else.

As soon as you are summoned, come straight to the examination room.

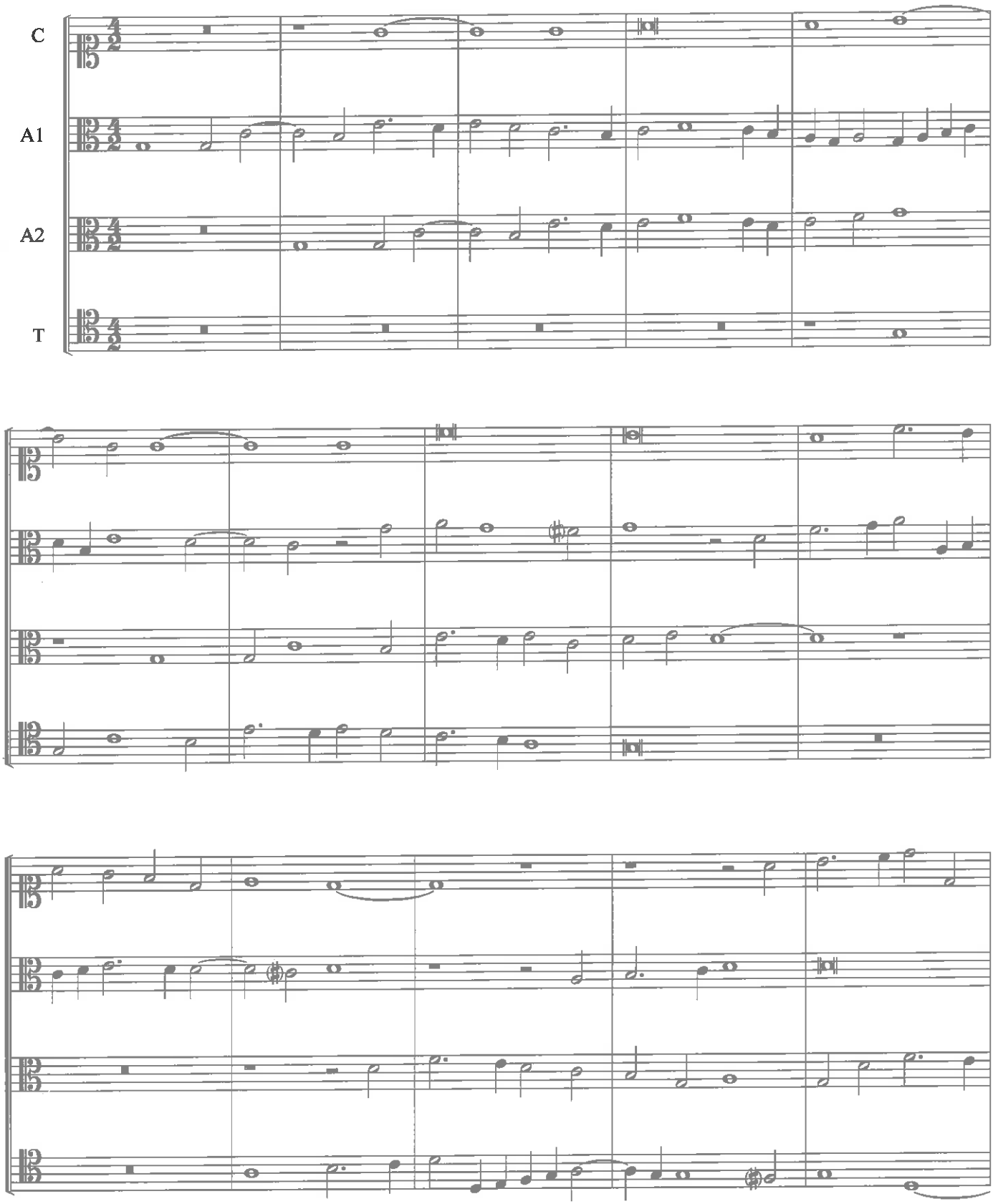
The examiners may at any point ask you to move on to the next test; you should comply with any such request.

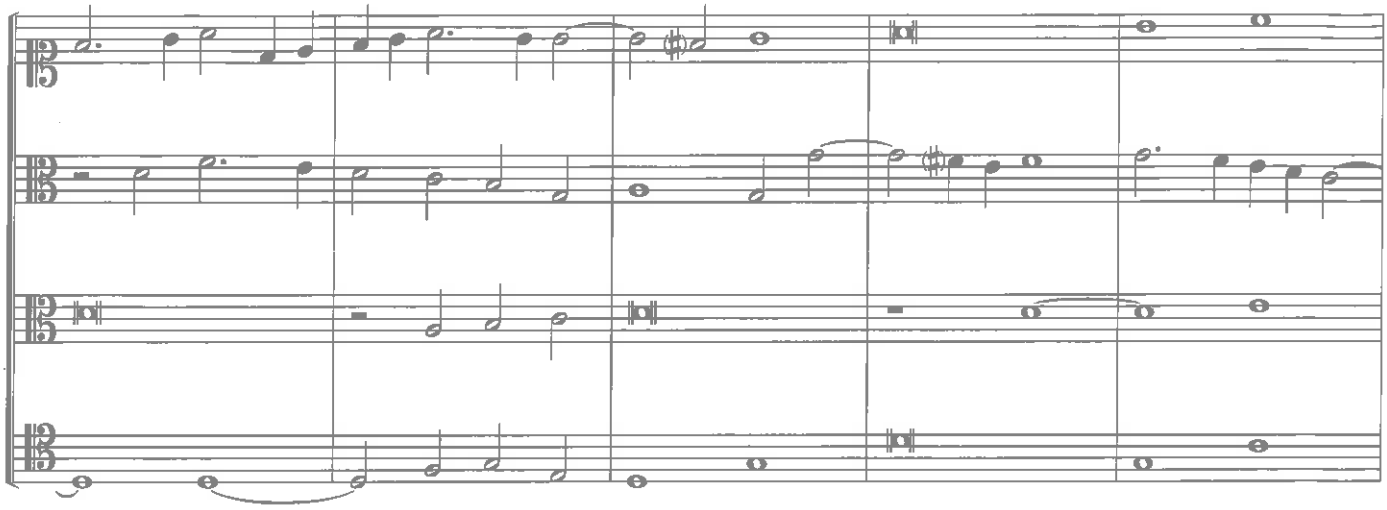
Harmonization

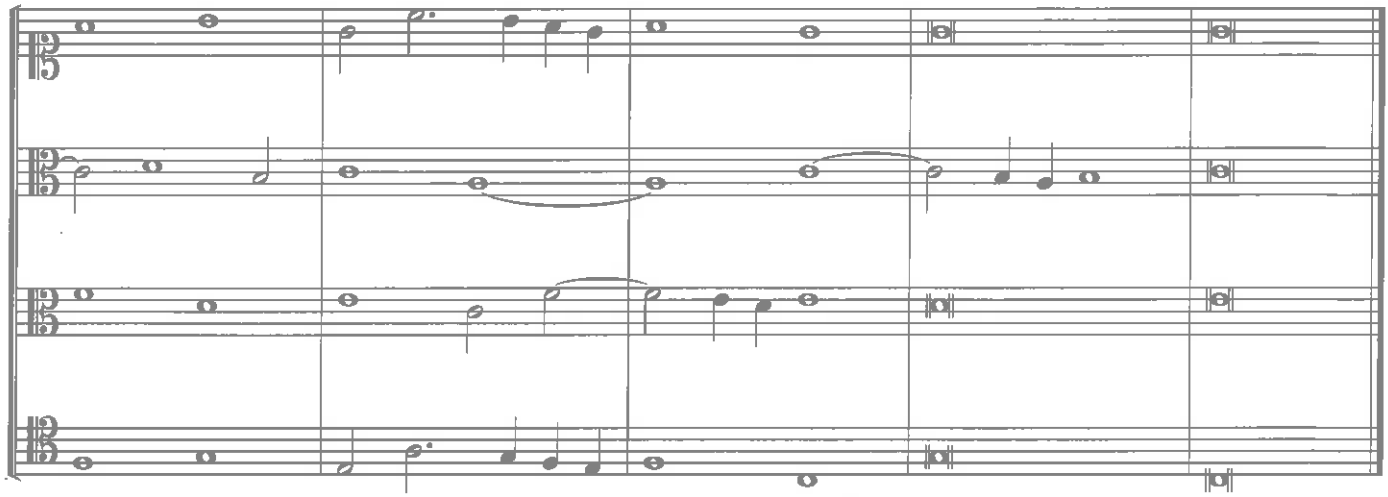
Andante

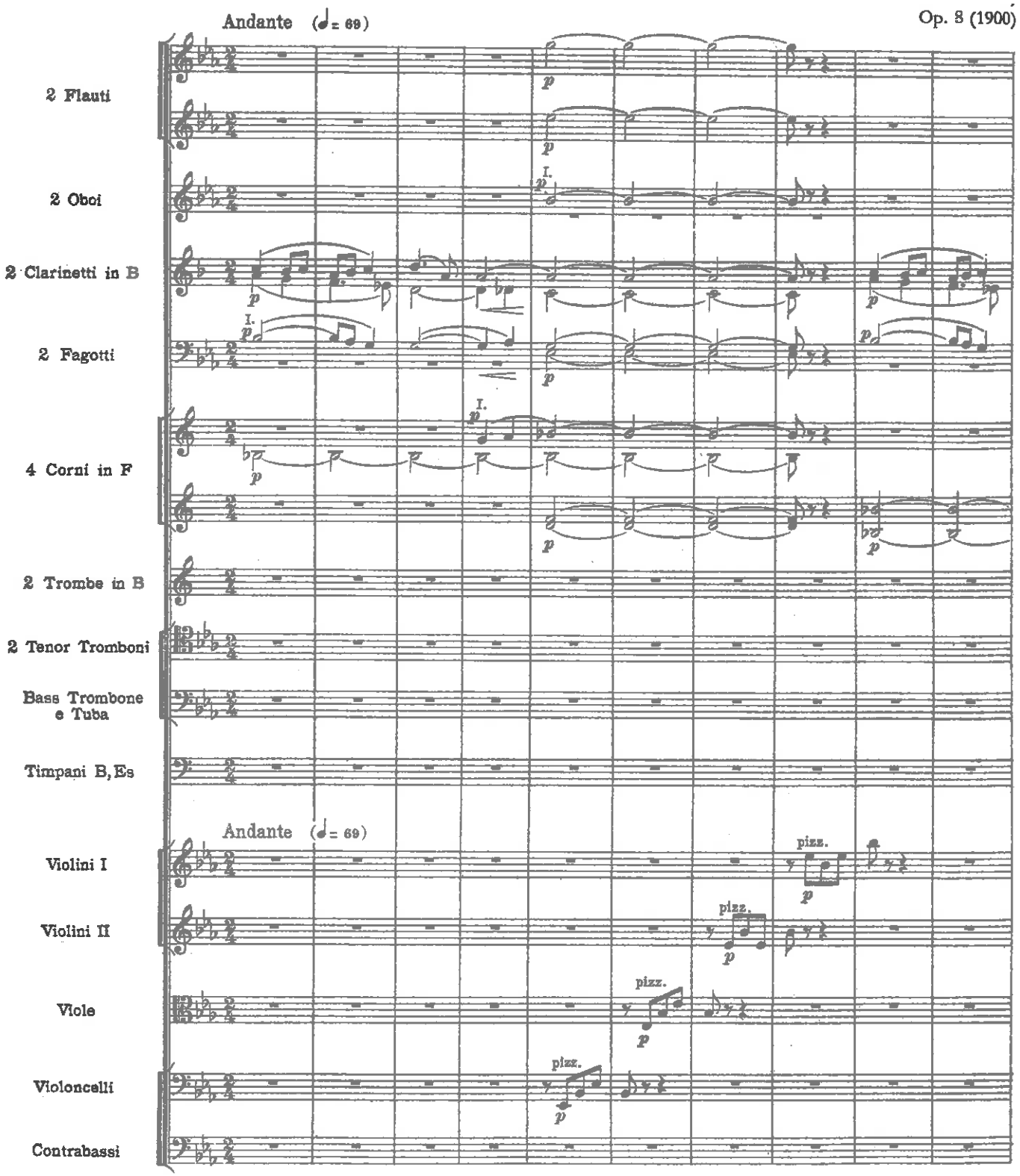


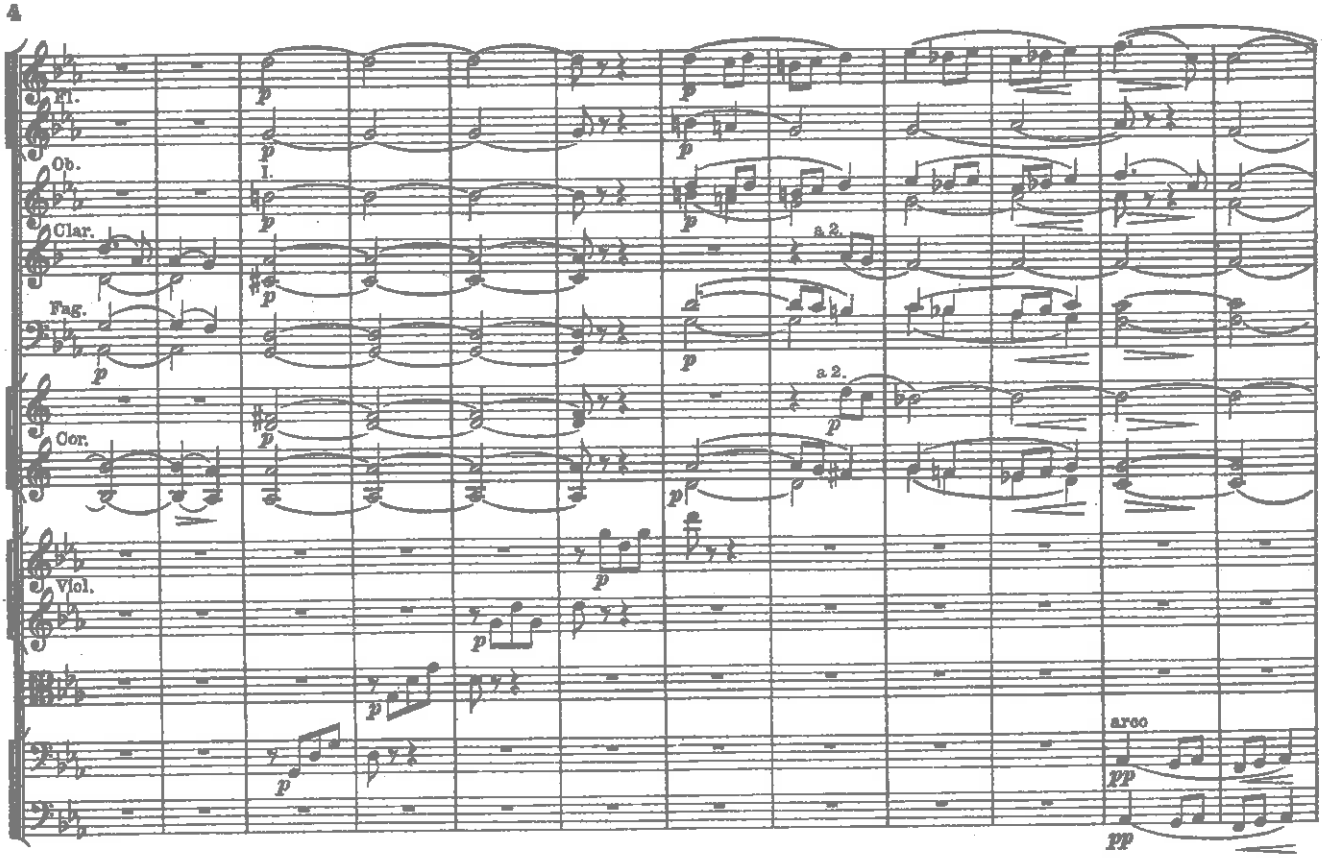
Score-reading in C clefs

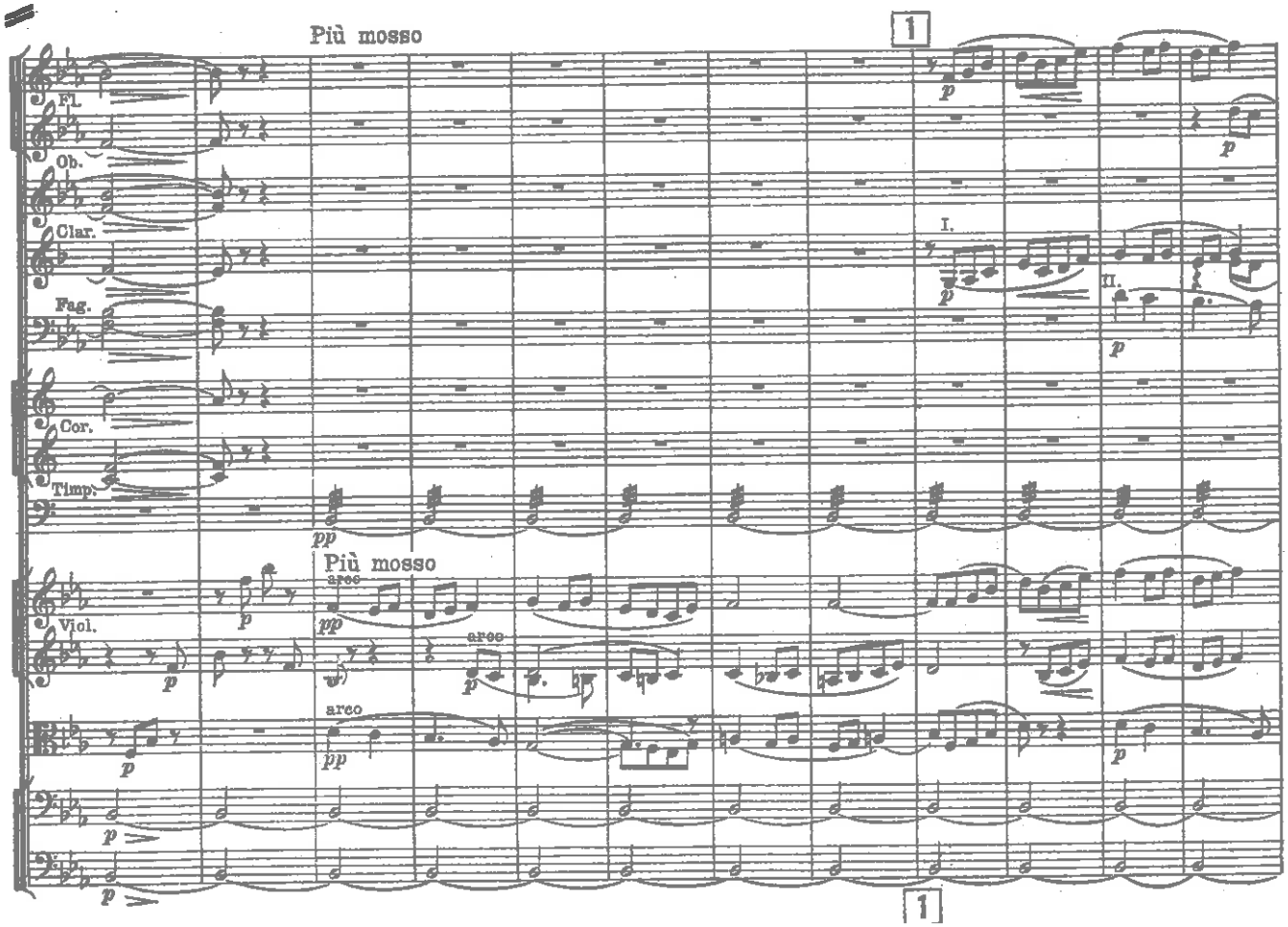


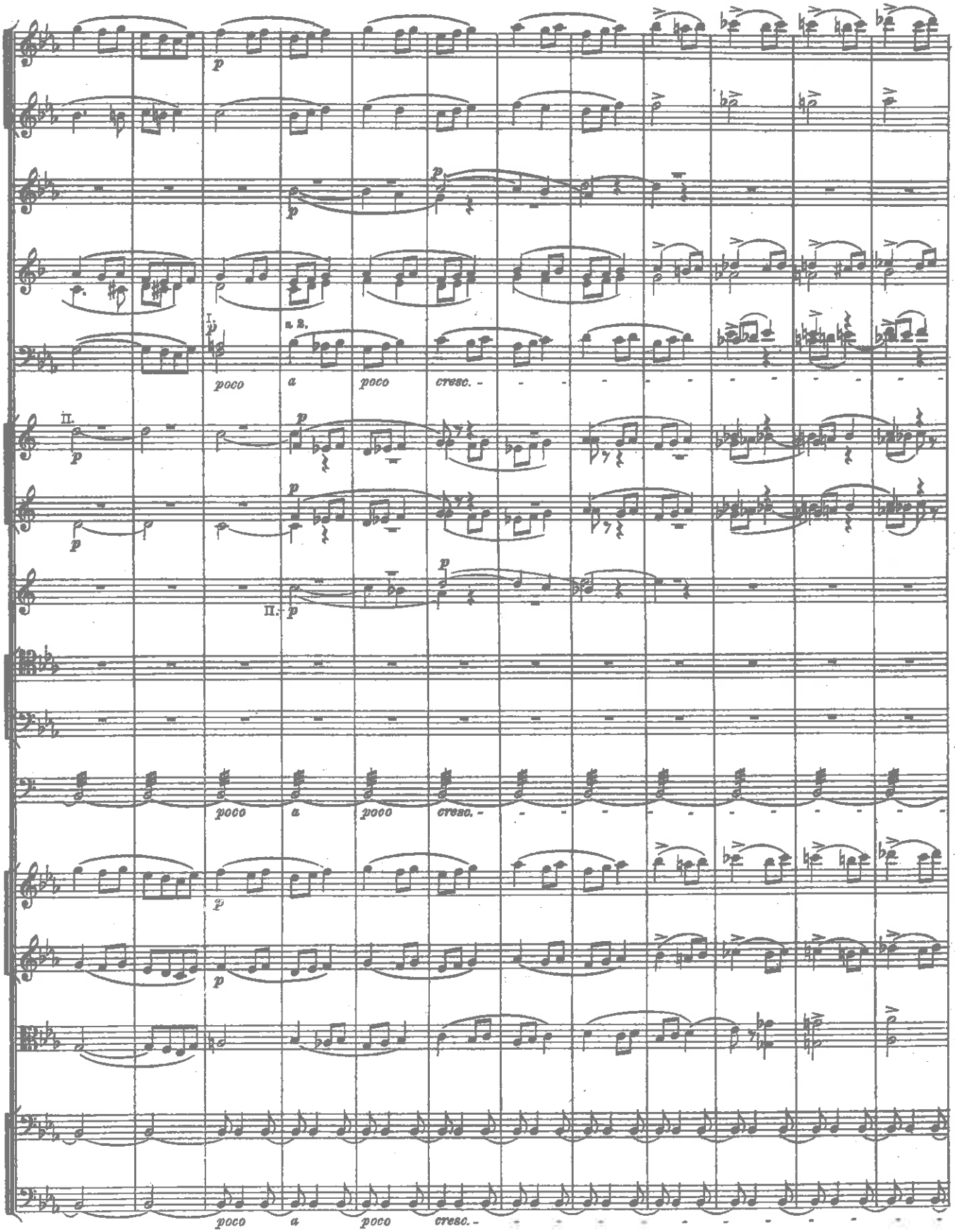


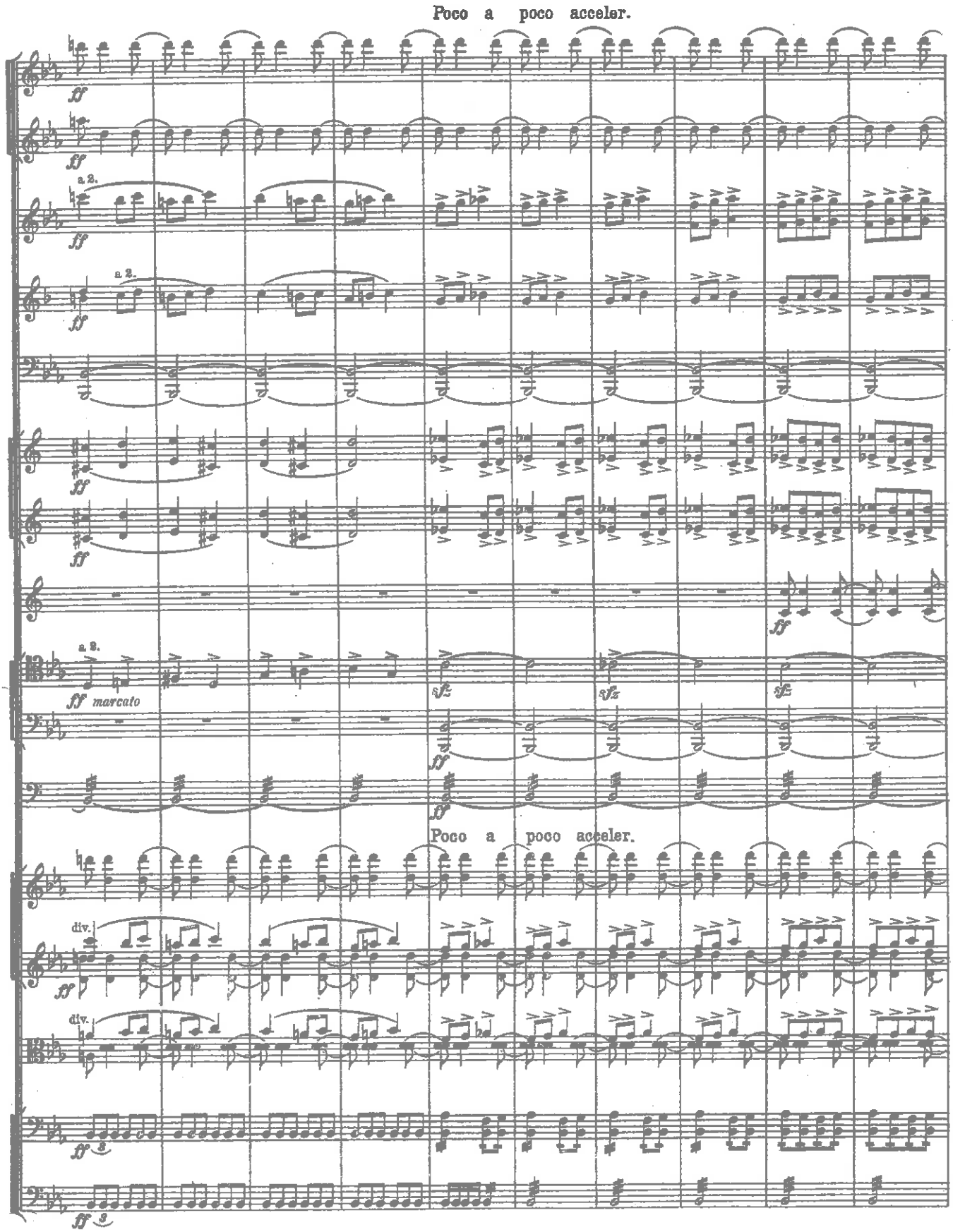


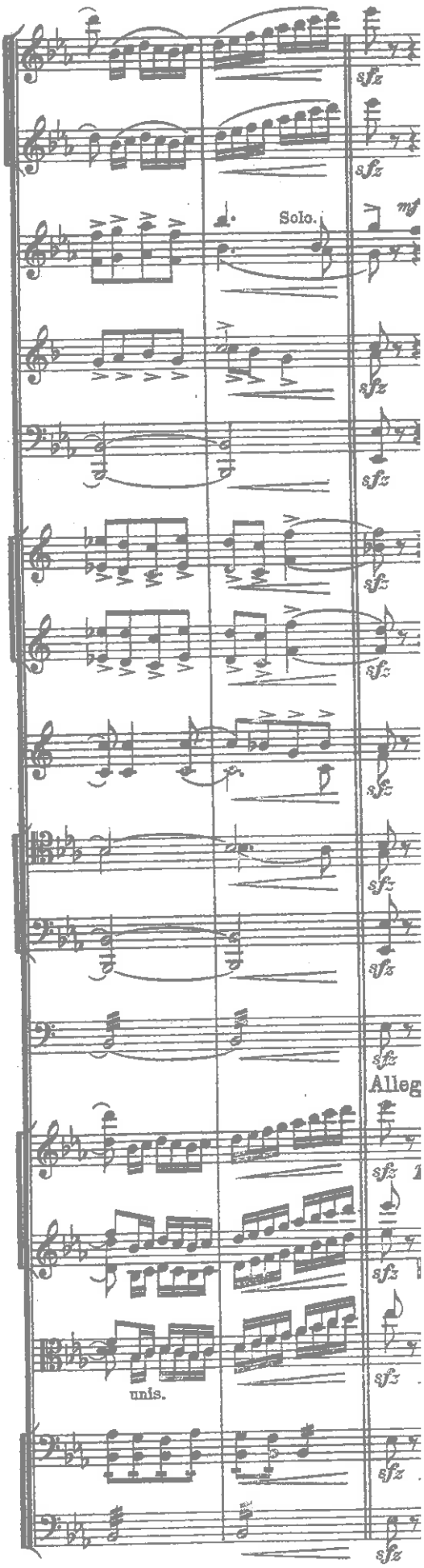

Andante (♩= 69)
Op. 8 (1900)
2 Flauti
2 Oboi
2 Clarinetti in B
2 Fagotti
4 Corni in F
2 Trombe in B
2 Tenor Tromboni
Bass Trombone e Tuba
Timpani B, Es
Andante (♩= 69)
Violini I
Violini II
Viole
Violoncelli
Contrabassi
pizz.


Fl.
Ob.
Clar.
Fag.
Cor.
Viol.
I.
a 2.
a 2.
arco
pp
pp


Più mosso
1
Fl.
Ob.
Clar.
Fag.
Cor.
Timp.
Viol.
I.
II.
pp
Più mosso
arco
arco
arco
pp
1


p
I. p
a 2.
poco a poco cresc.
II. p
II. p
poco a poco cresc.
p
p
poco a poco cresc.


Poco a poco acceler.
a 2.
ff
marcato
sfz
Poco a poco acceler.
div.


Solo.
mf
sfz
Alleg
unis.

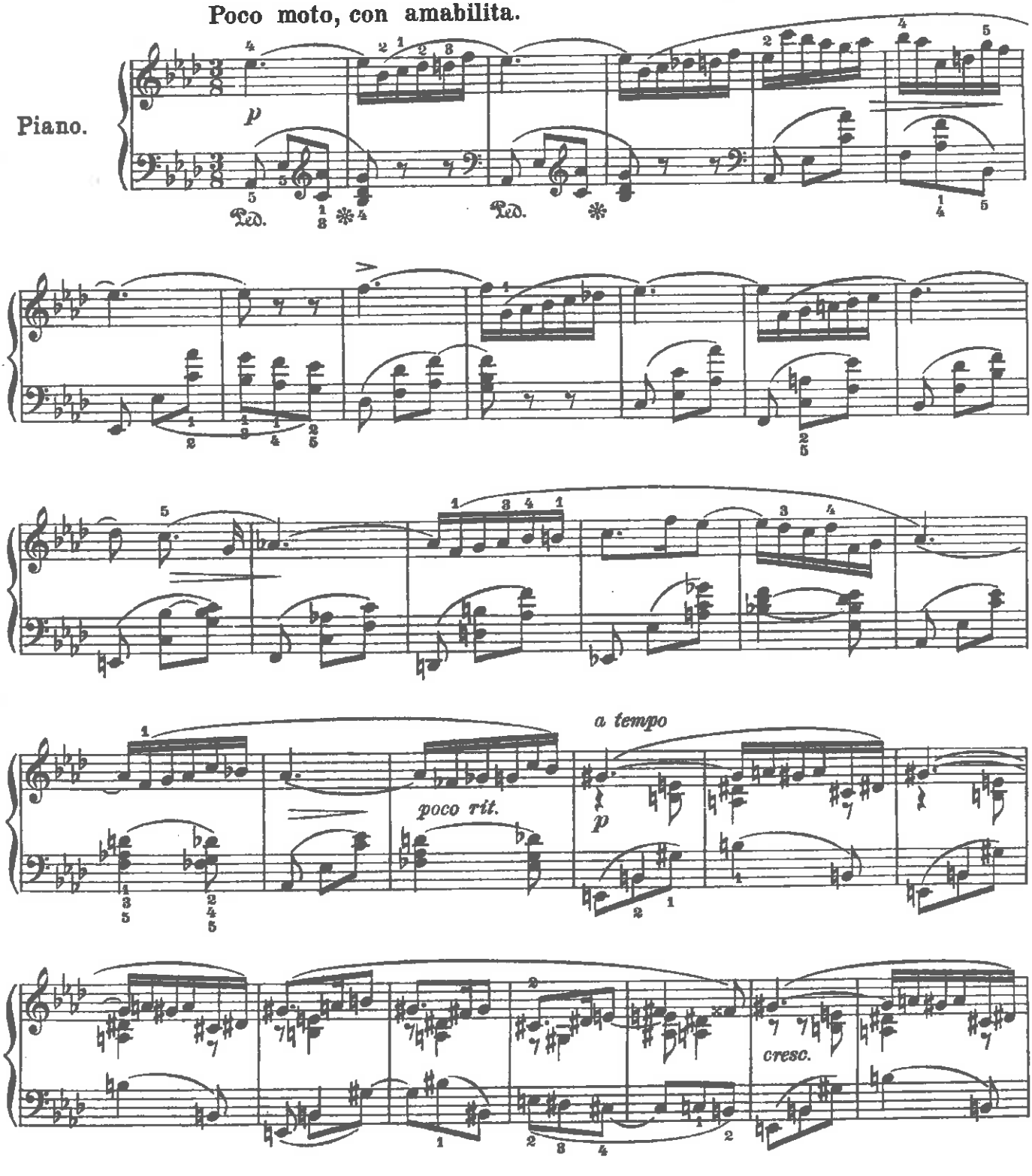
Transpose this piece up one tone

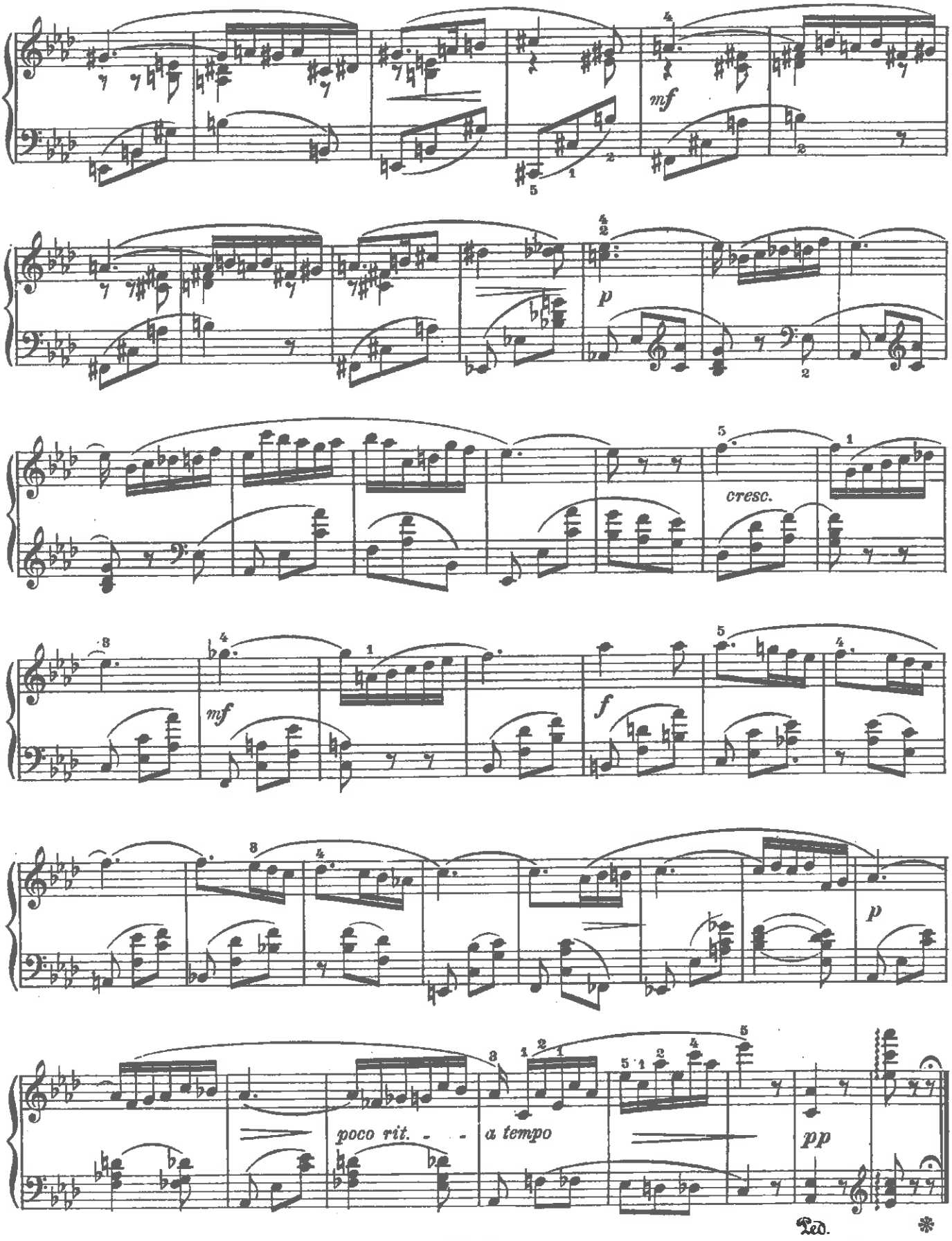
Pensées lyriques.

V.

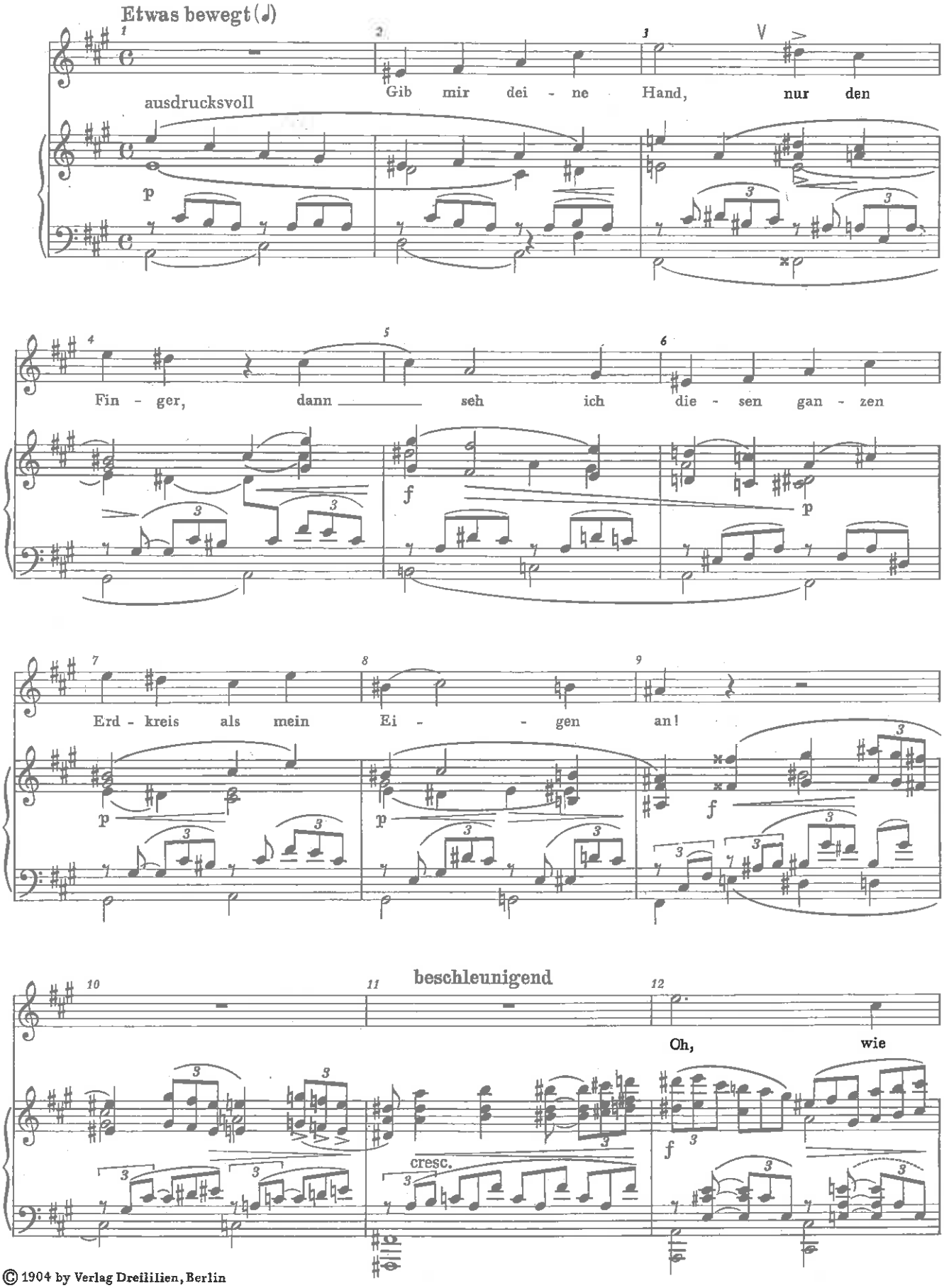
Serge Bortkiewicz, Op. 11. №5.

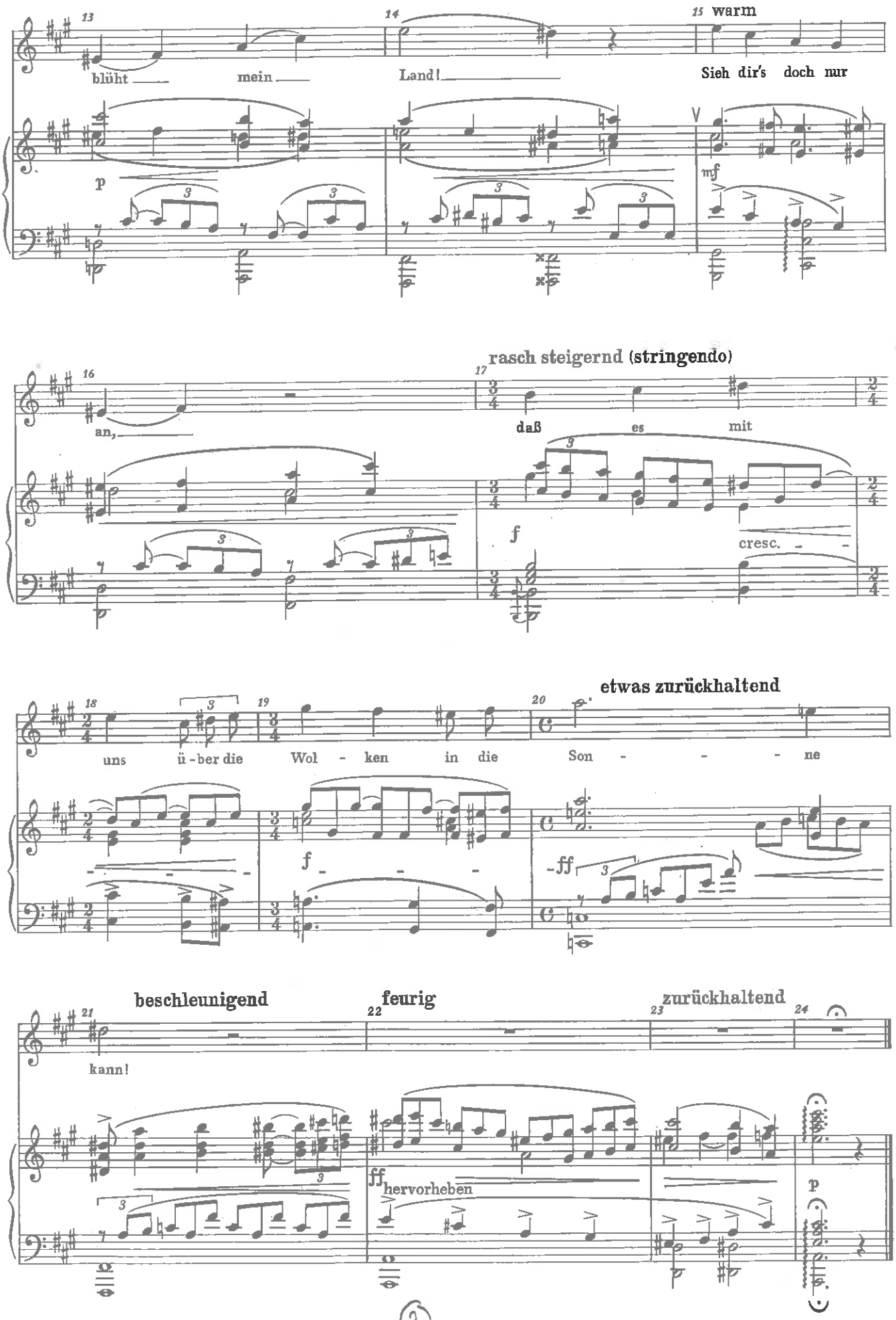
Poco moto, con amabilita.



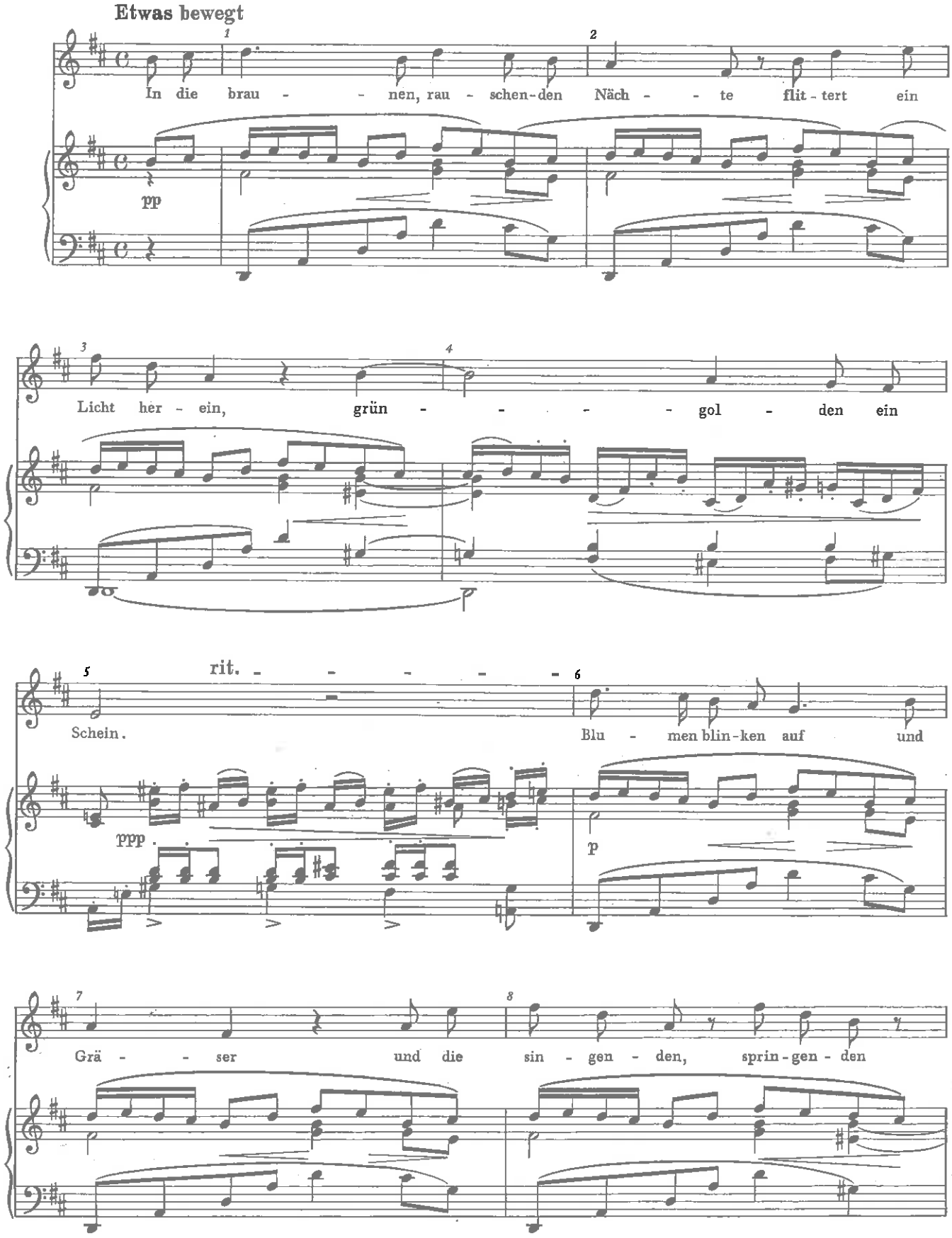

mf
p
cresc.
mf
f
p
poco rit.
a tempo
pp
Ped.
*

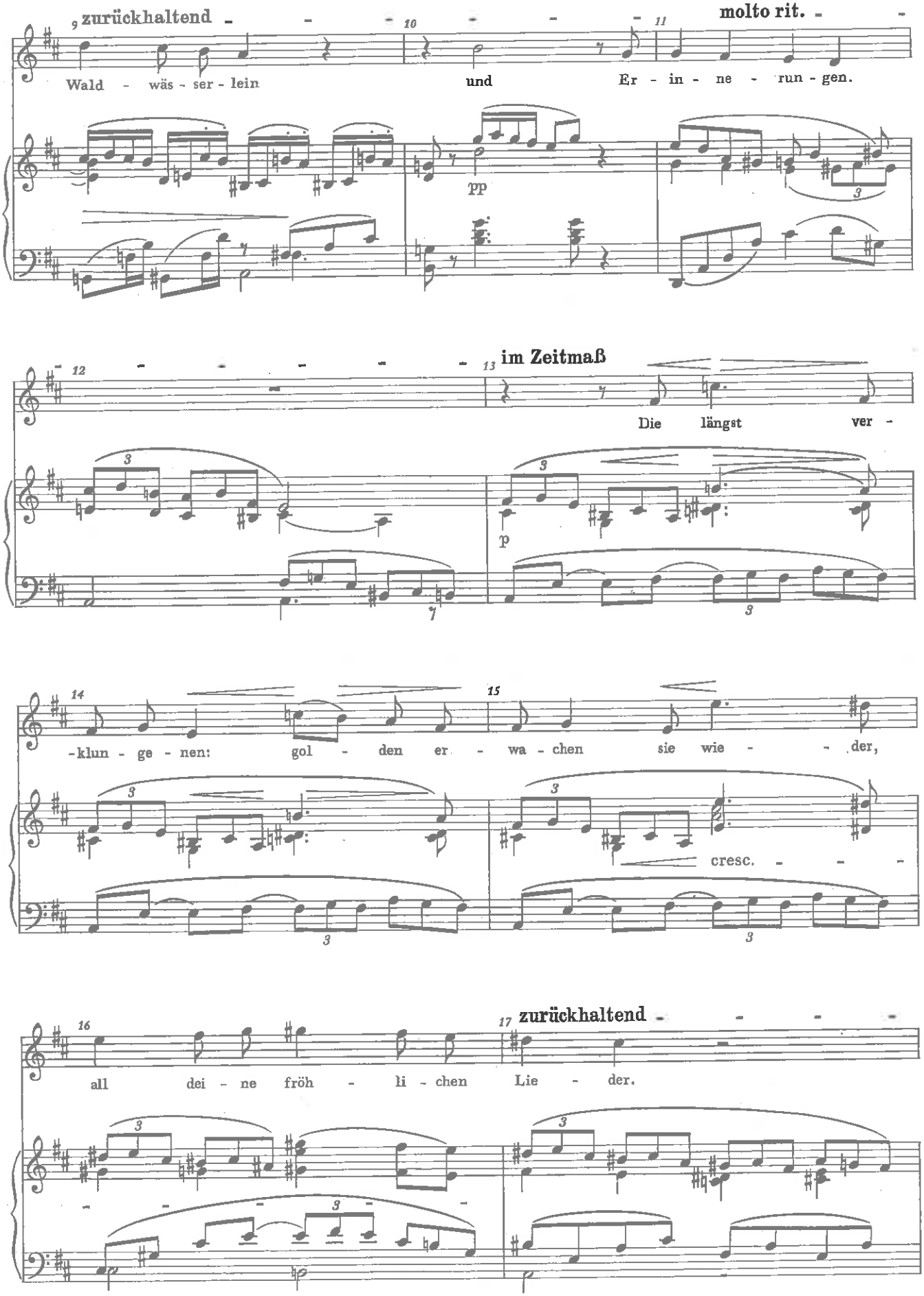
3. Erhebung *Richard Dehmel*

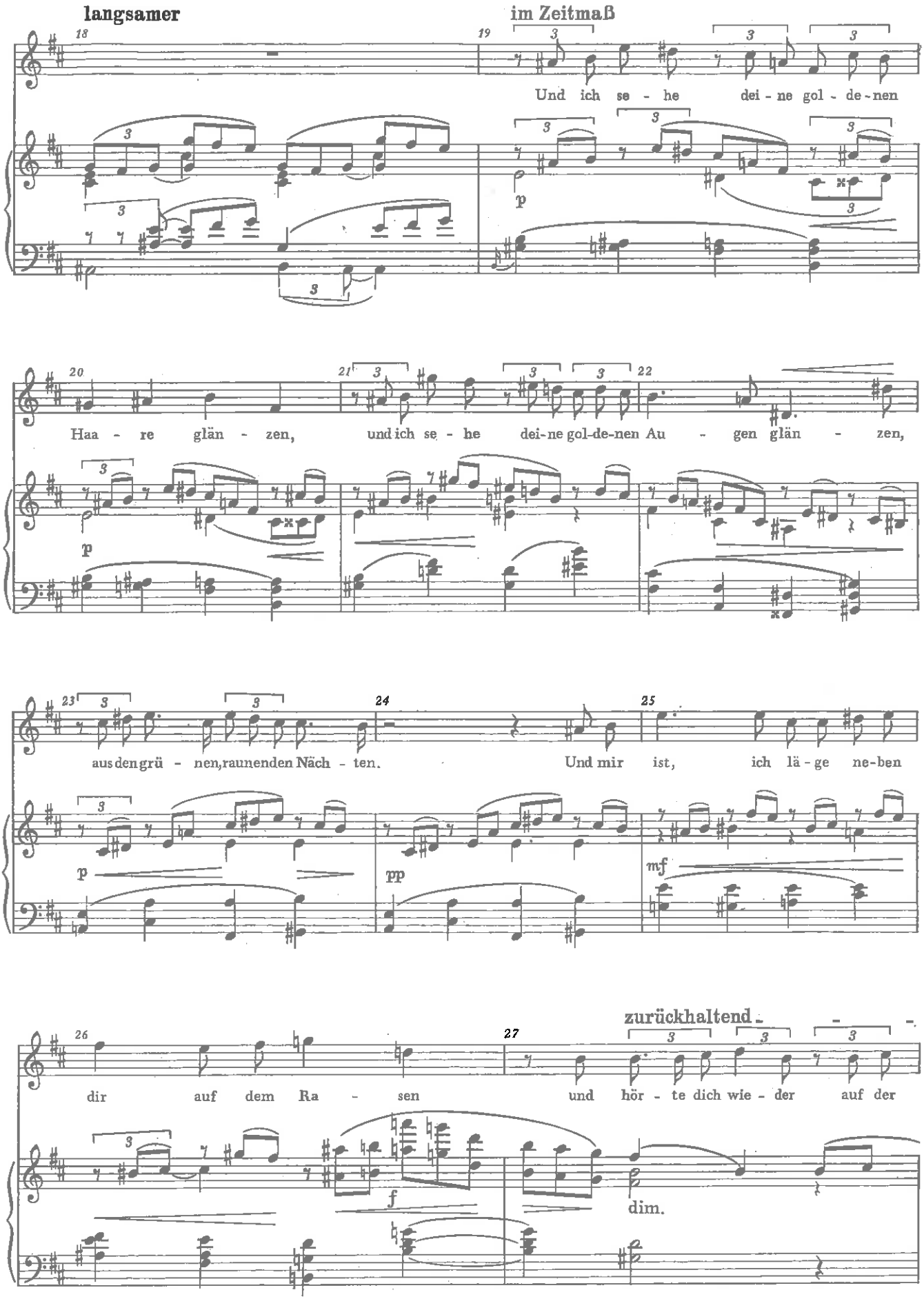


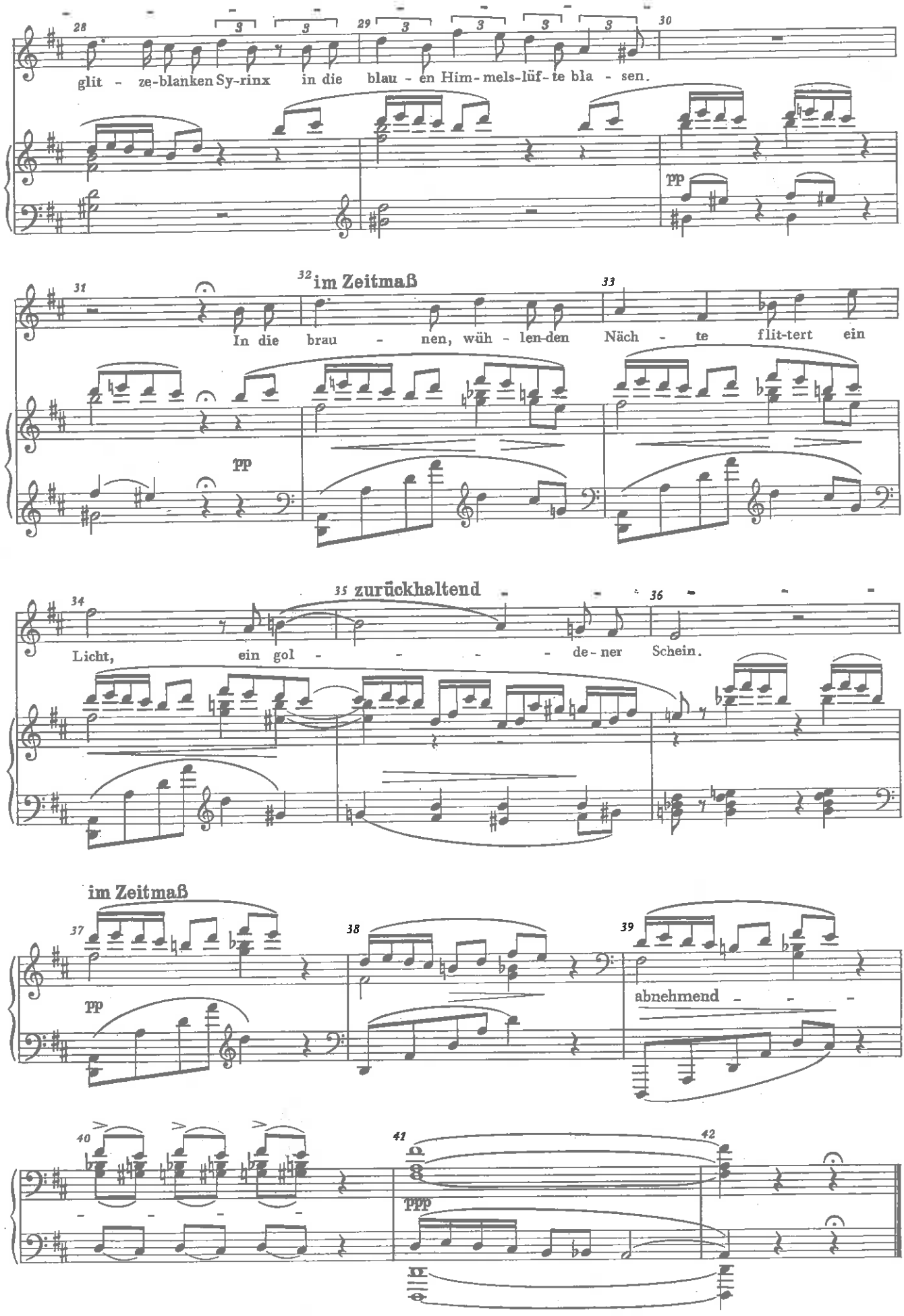

13
blüht
mein
14
Land!
15 warm
Sieh dir's doch nur
p
mf
16
an,
rasch steigernd (stringendo)
17
daß
es
mit
f
cresc.
18
uns
ü-ber die
19
Wol - ken
in die
20
Son - - - - ne
etwas zurückhaltend
f
ff
beschleunigend
21
kann!
22
feurig
23
zurückhaltend
24
ff
hervorheben
p

4. Waldsonne *Johannes Schlaf*



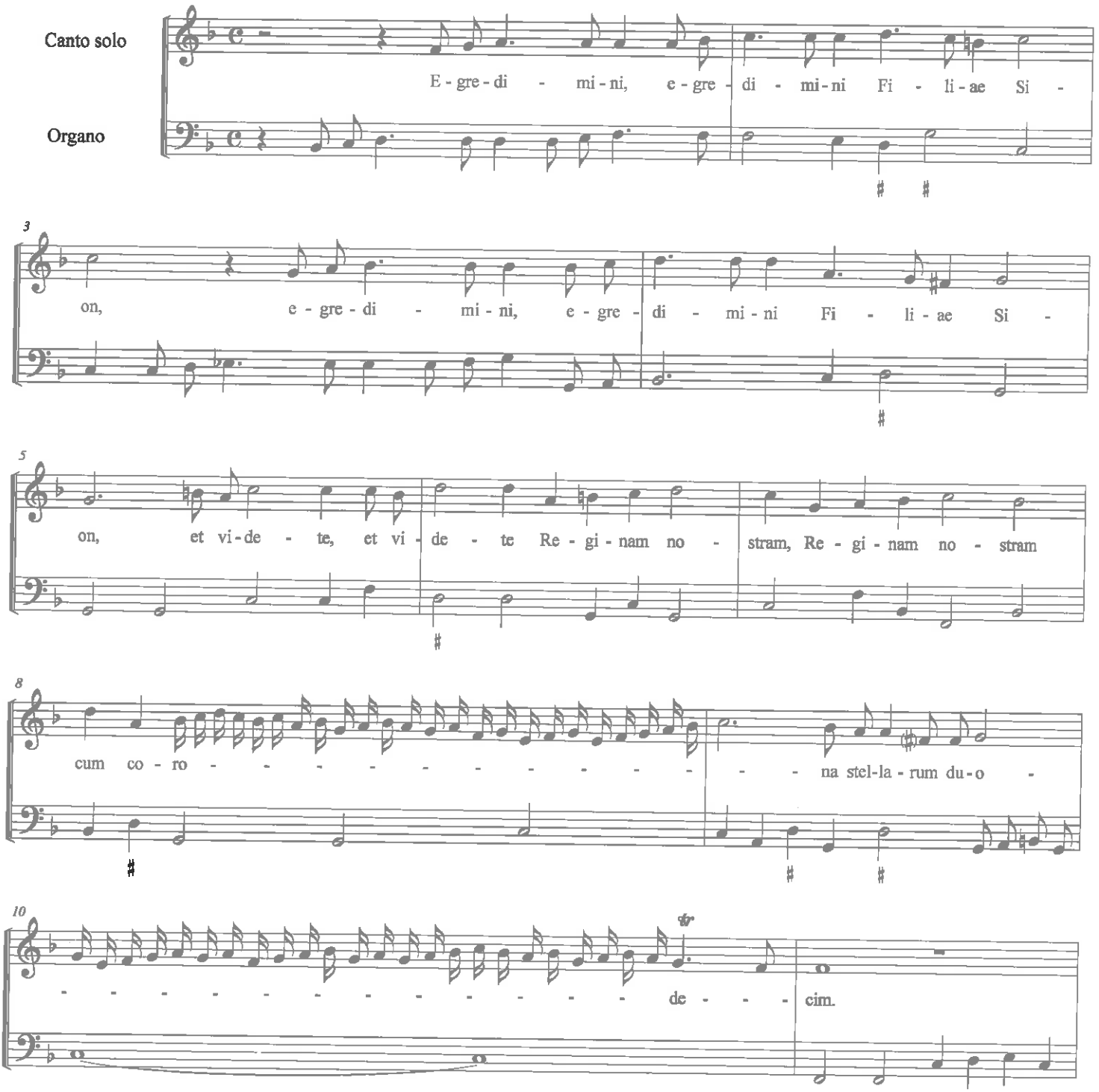

zurückhaltend
molto rit.
Wald - wäs - ser - lein
und
Er - in - ne - run - gen.
pp
im Zeitmaß
Die längst ver -
p
-klun - ge - nen:
gol - den er - wa - chen sie wie - der,
cresc.
zurückhaltend
all dei - ne fröh - li - chen Lie - der.


langsamer
im Zeitmaß
Und ich se - he dei - ne gol - de - nen
Haa - re glän - zen, und ich se - he dei - ne gol - de - nen Au - gen glän - zen,
aus den grü - nen, raunenden Näch - ten. Und mir ist, ich lä - ge ne - ben
zurückhaltend
dir auf dem Ra - sen und hör - te dich wie - der auf der
dim.


28
29
30
glit - ze-blanken Sy-rinx in die blau - en Him-mels-lüf-te bla - sen.
pp
31
32 im Zeitmaß
33
In die brau - nen, wüh - len-den Näch - te flit-tert ein
pp
34
35 zurückhaltend
36
Licht, ein gol - - - - - de-ner Schein.
im Zeitmaß
37
38
39
pp
abnehmend - - -
40
41
42
ppp

Egredimini Filiae Sion

(Venice, 1615)



12

Haec est di-lec - ta no - stra, can - di - da et im - ma - cu - la - ta,

15

et im-ma - cu - la - ta qua - si au - ro - ra, qua - si au - ro - ra con-sur - - -

4 3

18

- - - - - - - - - - gens. Al - le - - -

22

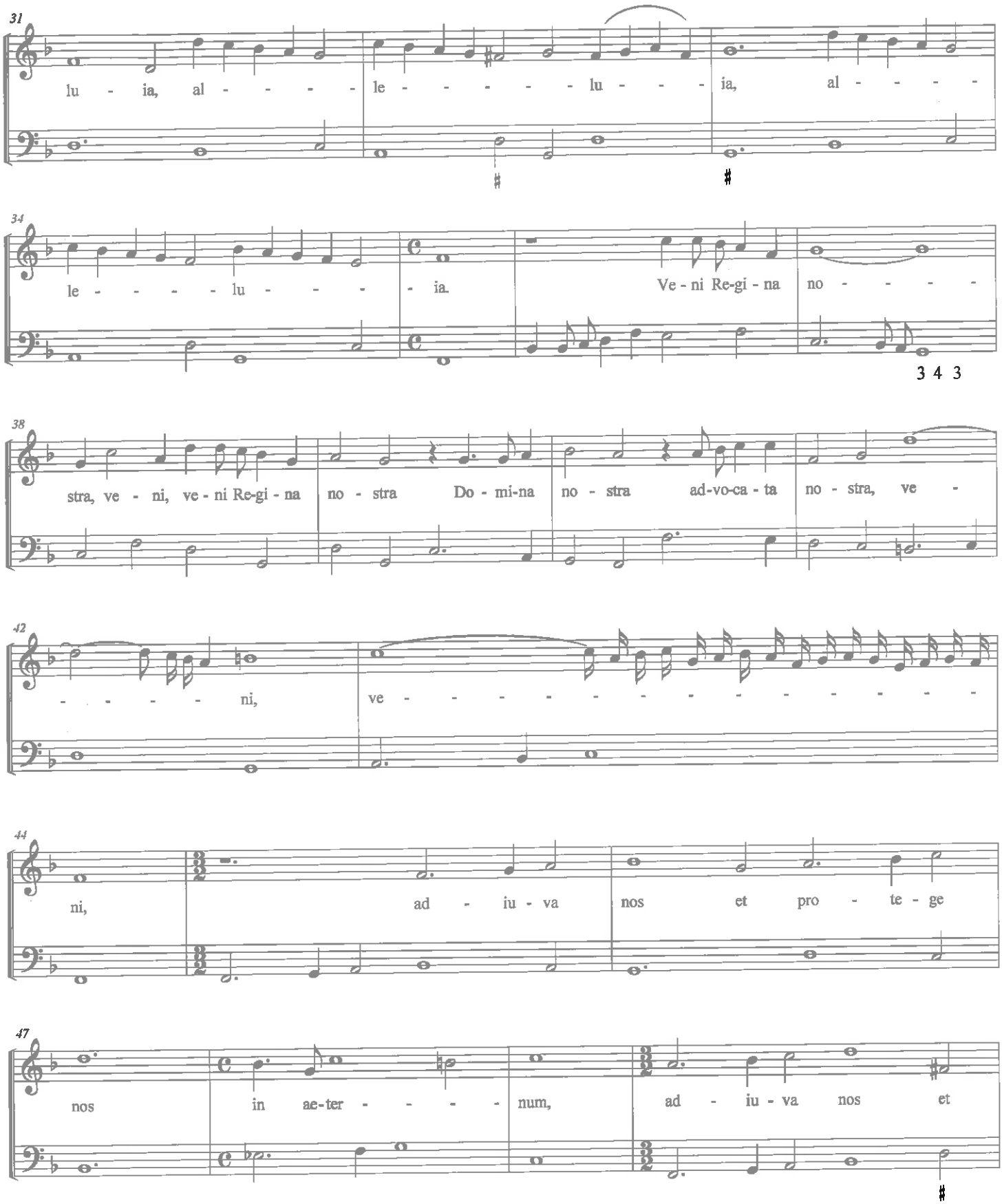
lu - ia, al - le - - - lu - ia, al - - - - le - lu - - - ia,

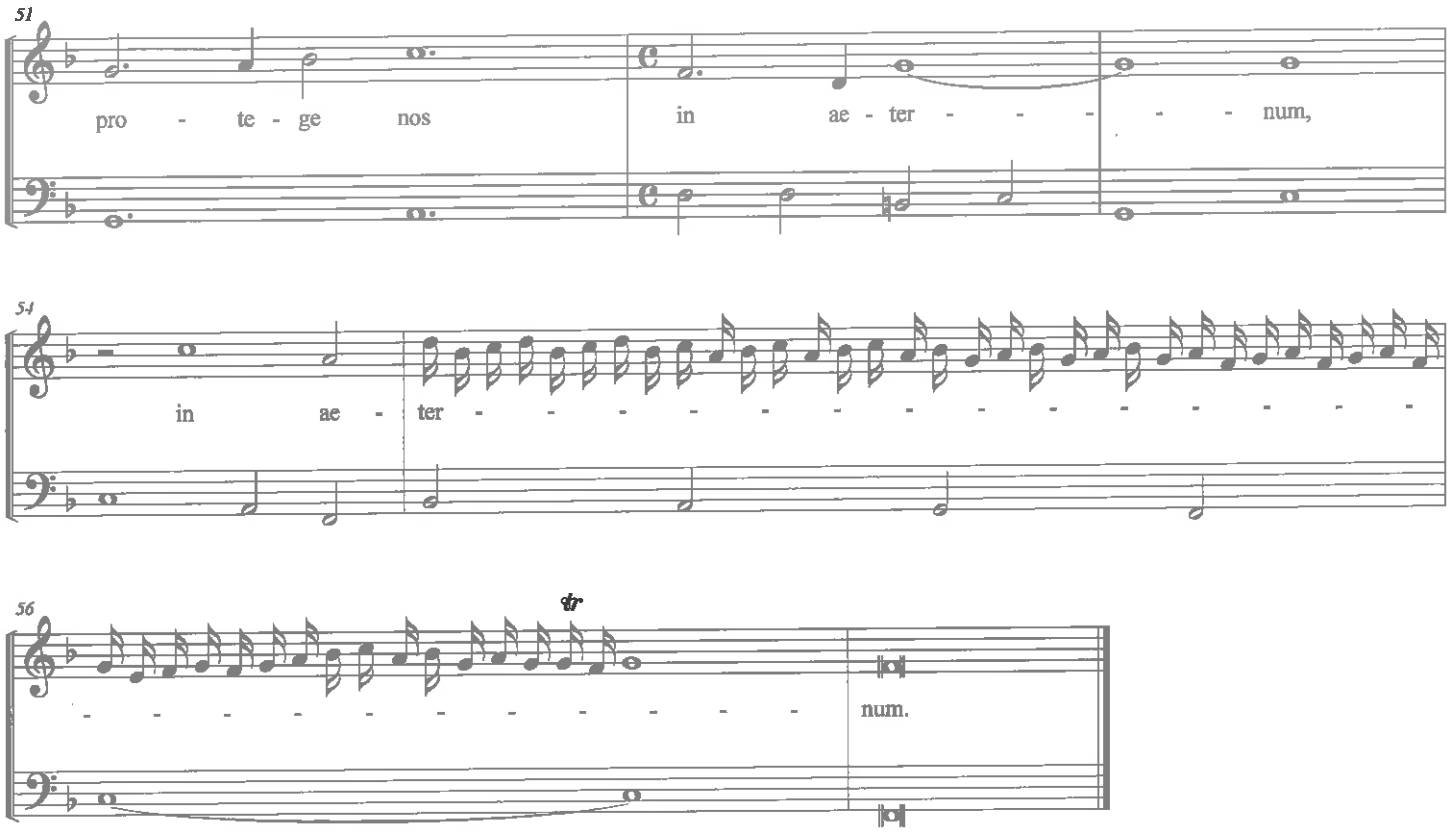
25

al - le - - - lu - ia, al - le - - - lu - ia, al - - - -

28

- - le - - - - - lu - - - - - - - - ia, al - le - - -


31
lu - ia, al - - - - - le - - - - - - lu - - - ia, al - - - -
34
le - - - - - lu - - - - ia. Ve - ni Re-gi - na no - - - -
3 4 3
38
stra, ve - ni, ve - ni Re-gi - na no - stra Do - mi-na no - stra ad-vo-ca - ta no - stra, ve -
42
- - - - - ni, ve - - - - - - - - - - - - - - -
44
ni, ad - iu - va nos et pro - te - ge
47
nos in ae-ter - - - - - num, ad - iu - va nos et



Note: Pitch, note values, stems, time signatures, slurs, ornamentation and figures are all those of the original printed copy of 1615.

UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Wednesday 27 May 2015, 9-12

Paper 9

PARISIAN POLYPHONY

You are reminded that the re-use of material from one examination paper in another is strictly forbidden. This rule applies to all papers, dissertations, submitted essays, etc. Any candidate who infringes this rule is liable to be penalised by the deduction of marks.

*Answer **three** questions. Avoid significant overlap between your answers.*

*Write your number, **not** your name, on the cover-sheet of the Answer Booklet.*

STATIONERY REQUIREMENTS
20-Page Answer Booklet
Tags
Rough Work Pad

SPECIAL REQUIREMENTS
Manuscript paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

Section A

1 Make a transcription of the passage 'Hic est discipulis ille' from F fol. 103r III-VI. Add a brief note on specific aspects of the notation.

2 Make a transcription of the passage '[Audivi]mus' from F fol. 153v I-II, and the first two *ordines* of the next '[Audivi]mus' clausula (fol. 153v II). Add a brief note on specific aspects of the notation.

3 Comment on the melodic and rhythmic patterns of the tenor voices of the three 'Dum loqueretur' *clausulae* beginning on F fol.159r III, IV and VI. Illustrate your answer with transcriptions of both voices corresponding to at least ten longs in each *clausula*.

4 Make a transcription of the motet 'De uirgula / Et confitebor' from W_2 fol. 157r-v (as far as 'fit lesio', fol. 157v II). Use the clausula in F (fol. 154v II-IV) to guide your rhythmic interpretation. Add a brief note on specific aspects of the notation.

Section B

5 **Either** *a)* 'A counterpoint that is architectural rather than improvisatory in nature' (BALTZER). How accurately does this describe polyphony sung at Notre Dame in the late twelfth and early thirteenth centuries?

OR *b)* 'The creation of an organum was something of an ongoing process, and the act of transmission itself would almost seem to have been enough to stimulate recomposition' (ROESNER). Discuss.

6 In what ways do the main thirteenth-century manuscripts of Parisian Polyphony differ? Answer with reference to at least two manuscripts (which may include those which transmit motets but not *organa*).

7 'The equation of manuscript chronology and musical chronology in this repertory should … be made with caution' (BRADLEY). Consider the relationship of the clausula, the Latin motet, and the French motet, especially as transmitted in the manuscripts W_1, F and W_2.

8 Motet: 'mid 13th cent. in Old French; *c*1200 in sense "little word" ' (OED). Reflect on the centrality of play with textual meanings and musical interrelationships in the new genre of the motet (up to the Old Corpus of the Montpellier Codex).

END OF PAPER

MUSIC TRIPOS PART II

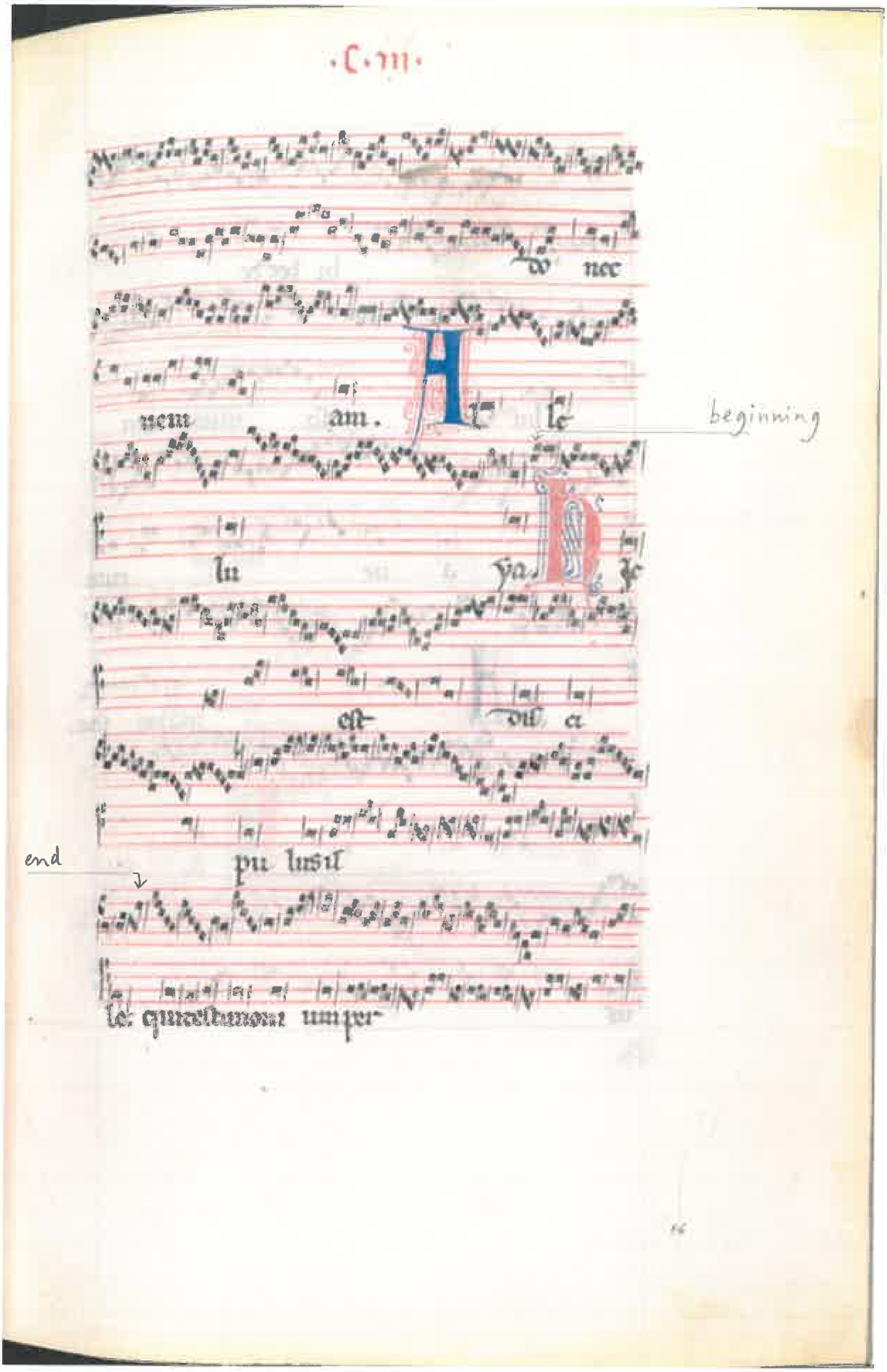
Wednesday 27 May

Paper 9

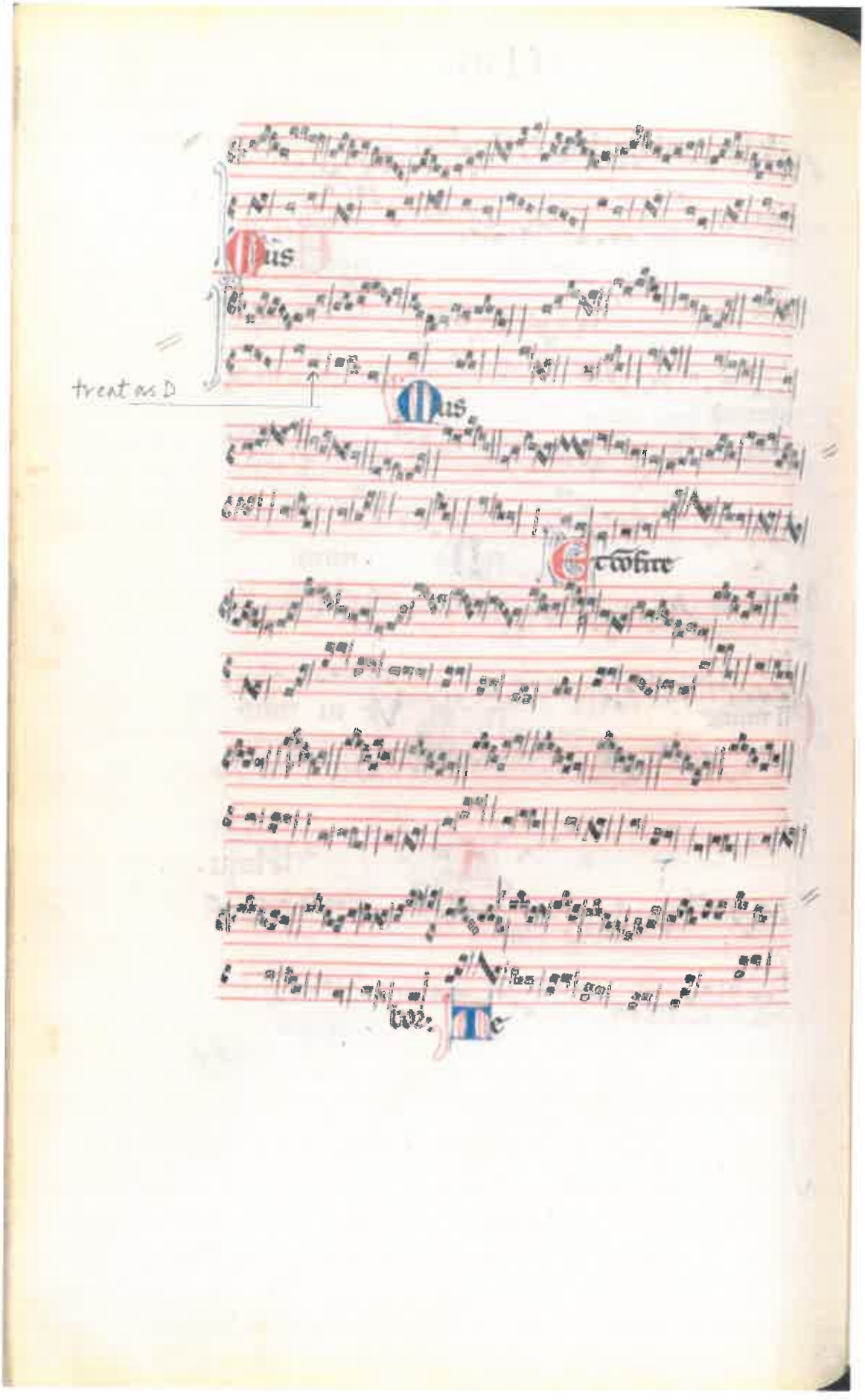
PARISIAN POLYPHONY

Extracts: For Section A, questions 1-4

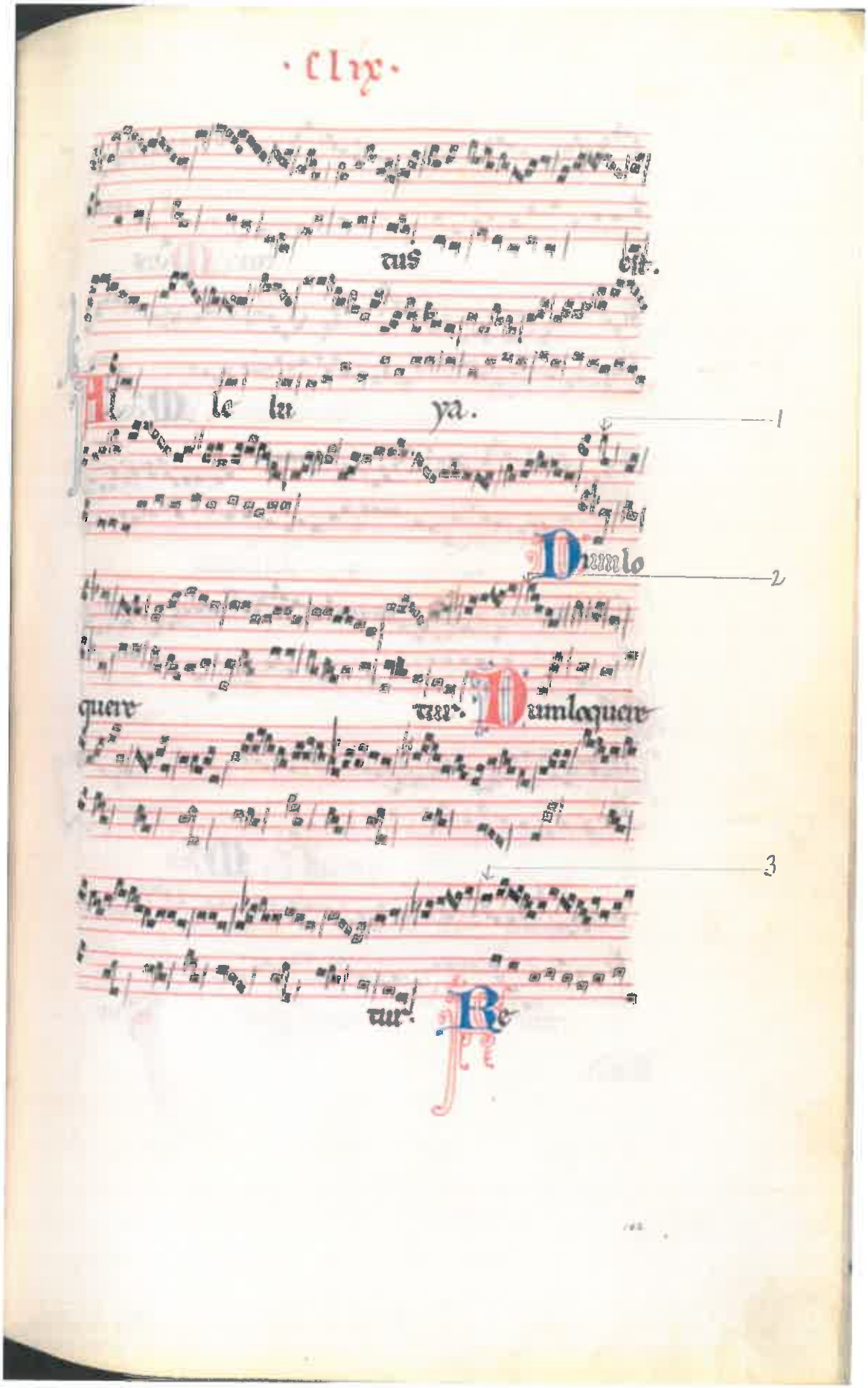
Q.!

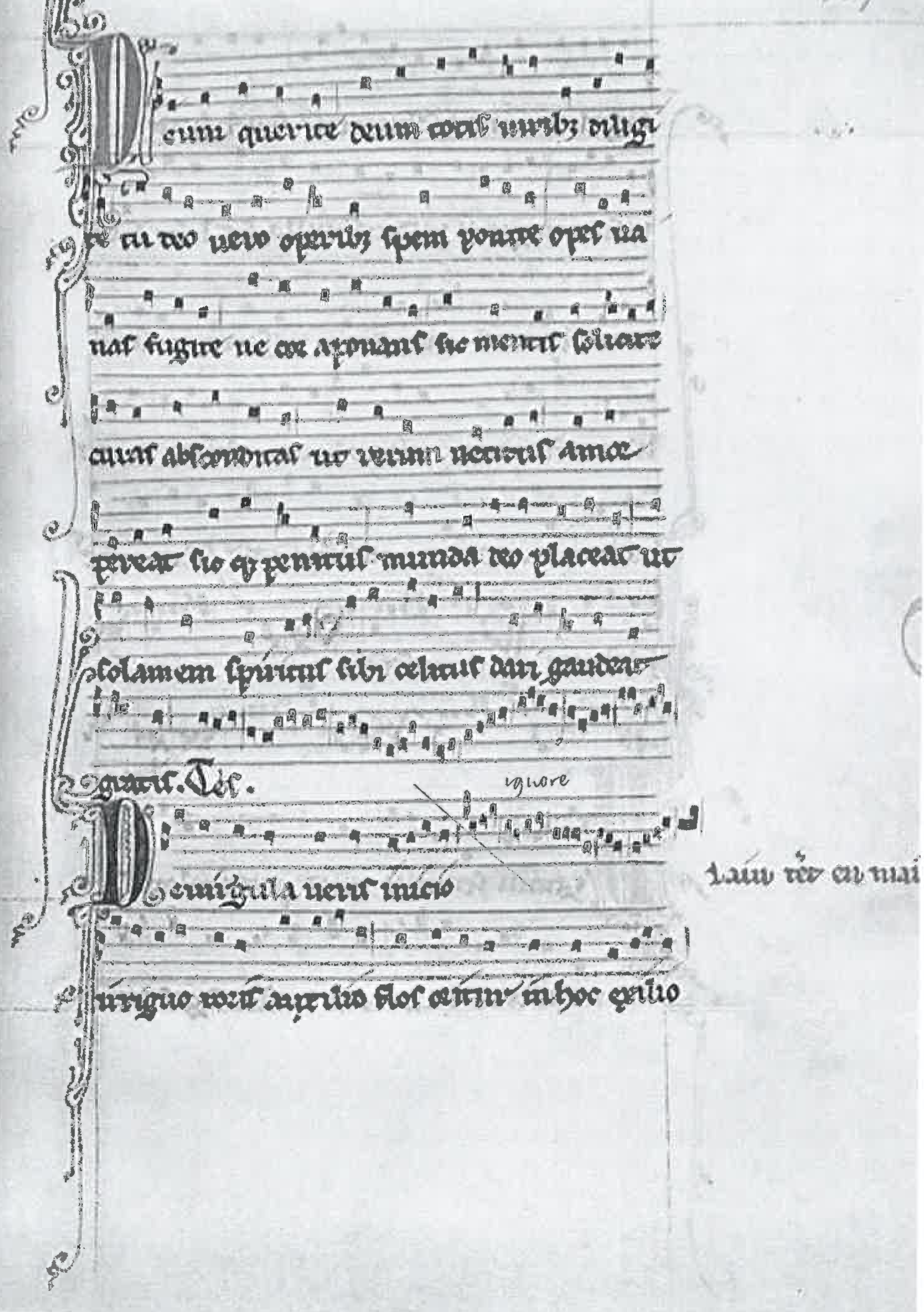

·C·III·
nec
nem am. Al le
beginning
In ya.
est du ea
pu lusit
end
le: quasi tumens umper

Q.2



Q.3




eum querite deum totis viribz diligi
te cu deo vero operibz spem ponite opes va
nas fugite ne cor apponatis sic mentis soliate
curas absconditas ut veniat ... amor
pereat sic cor penitus munda deo placeat ut
solamen spiritus sibi celitus dari gaudeat
gratis. Tes.
ignore
eum singula veris inicio
laus tue cum mai
inriguo roris auxilio flos oritur in hoc exilio

Q.4

angelico nuncio salutacionis fructificat mari

infilio virginei pudoris nulla fit lesio delu

ditur lex nat'e ideo dum nascitur rosa de

lilio o floridum celi rosarium olivum omne

balsaminum adiuva nos sola post filium spes

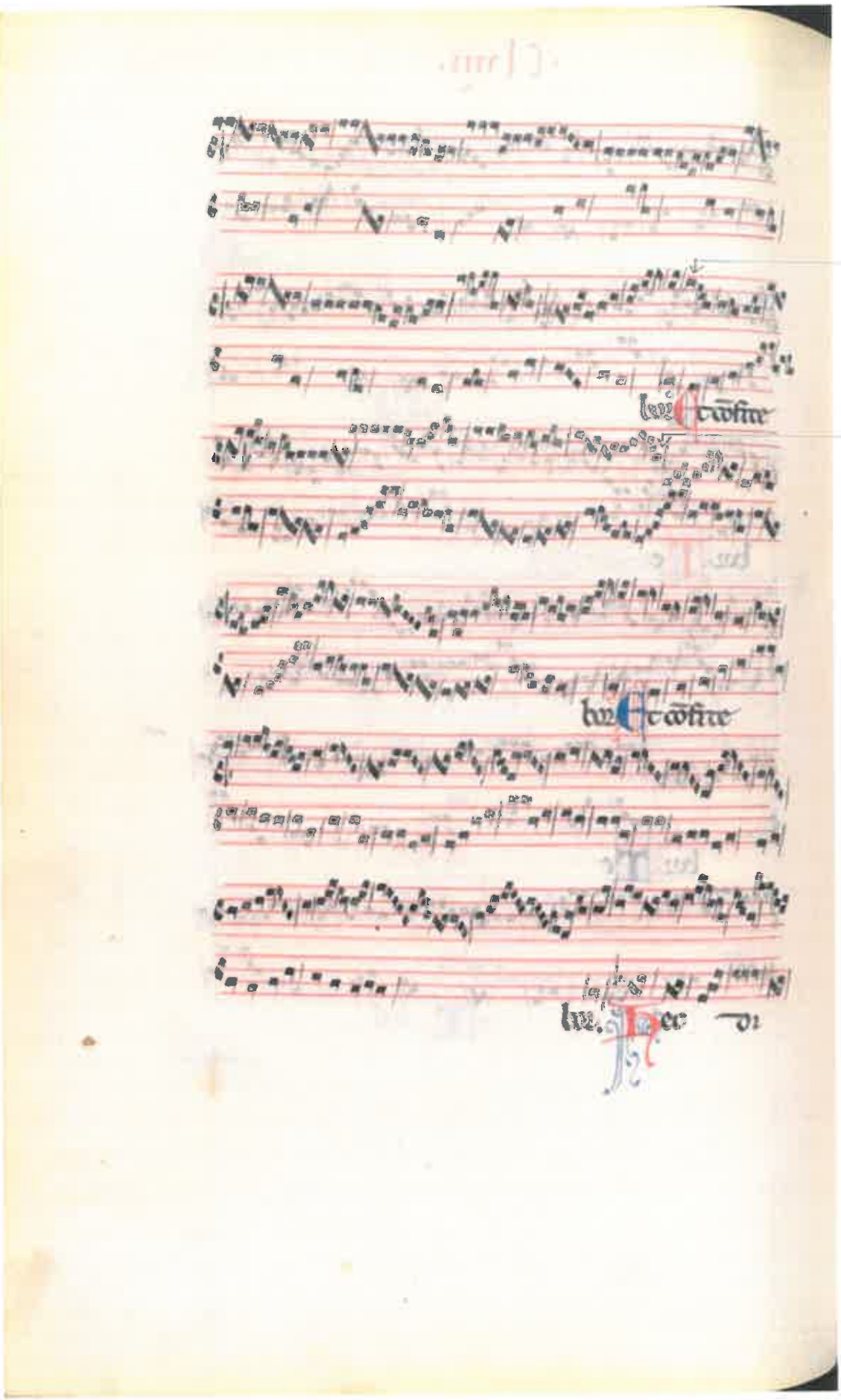
fidelium. Lc confite

Vox

Regnati feminis quod pater colonis se

ret mort dato filio bone messis seges cre

Q.4



UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Tuesday 2 June 2015, 9-12

Paper 10

J S BACH'S KEYBOARD MUSIC

You are reminded that the re-use of material from one examination paper in another is strictly forbidden. This rule applies to all papers, dissertations, submitted essays, etc. Any candidate who infringes this rule is liable to be penalised by the deduction of marks.

*Answer **three** questions. Avoid significant overlap between your answers.*

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STATIONERY REQUIREMENTS
20-Page Answer Booklet
Tags
Rough Work Pad

SPECIAL REQUIREMENTS
Manuscript paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

1. Outline and explain the stylistic chronology of Bach's keyboard music.

2. To what extent is it possible or desirable to assign Bach's keyboard works to any particular type of keyboard instrument?

3. 'Four main principles to which Bach characteristically felt bound can be distinguished: the concertante principle; the obbligato principle; the rhetorical principle; and the symbolical principle' (Martin Geck, *Bach*, 1993). Discuss this observation with reference to specific Bach clavier ***or*** organ works.

4. To what extent can Bach's keyboard works be seen as a synthesis of previous German and other national musical styles?

5. What do Bach's harpsichord versions of his concertos tell us about his concepts of 'arrangement'?

6. How strongly does the German 17th-century keyboard improvisation tradition impact on Bach's organ compositions?

END OF PAPER

UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Monday 25 May 2015, 1.30-4.30

Paper 11

MOZART'S *FIGARO* IN CONTEXT

You are reminded that the re-use of material from one examination paper in another is strictly forbidden. This rule applies to all papers, dissertations, submitted essays, etc. Any candidate who infringes this rule is liable to be penalised by the deduction of marks.

*Answer **three** questions. Avoid significant overlap between your answers.*

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STATIONERY REQUIREMENTS
20-Page Answer Booklet
Tags
Rough Work Pad

SPECIAL REQUIREMENTS
Manuscript paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

1 In 1776 the US Declaration of Independence mentioned 'the pursuit of happiness' as a basic human right; in the final scene of *Le nozze di Figaro*, all characters join in singing, 'Ah, thus we will all be happy.' In what senses could this opera be said to be about the pursuit of happiness?

2 'Analyses of *opera buffa* reveal that many structures … previously attributed to the composer actually stem from the libretto.' (Laurel ZEISS) Explore Da Ponte and Mozart's *Figaro* in light of this statement.

3 In a classicist aesthetics, a masterpiece is a work that best exemplifies its own genre; from a Romantic point of view, a work's value resides rather in its originality – its surpassing the 'norms' of its genre. Within this dichotomy, where would you place Mozart's *Figaro*, and why?

4 **Either** *(a)* Consider the relative merits of staging *Le nozze di Figaro* in eighteenth-century clothes or in 'updated' settings. You may refer to staged or video productions of *Figaro*.

Or *(b)* Discuss Christopher Morris's claim that an opera's libretto and score store 'information that can be retrieved by the practitioner in the context of performance'. You may refer to staged or video productions of *Figaro*.

5 Discuss Nicholas Till's claim that Mozart's *Figaro* takes place in a cosily neo-feudal household, and that 'the conflicts that arise in [the opera] demand no radical alteration of society for their resolution'. Your answer should include reference to musical aspects of the opera.

6 With specific reference to *Le nozze di Figaro,* discuss the relationship between the compositional practices and production systems that were typical of Italian opera in Mozart's time.

END OF PAPER

UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Tuesday 26 May 2015, 1.30-4.30

Paper 12

BORIS GODUNOV AND ITS CONTEXTS

You are reminded that the re-use of material from one examination paper in another is strictly forbidden. This rule applies to all papers, dissertations, submitted essays, etc. Any candidate who infringes this rule is liable to be penalised by the deduction of marks.

*Answer **three** questions. Avoid significant overlap between your answers.*

*Write your number, **not** your name, on the cover-sheet of the Answer Booklet.*

STATIONERY REQUIREMENTS
20-Page Answer Booklet
Tags
Rough Work Pad

SPECIAL REQUIREMENTS
Manuscript paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

1 Examine the influence of Glinka on Musorgsky's "Russian style" in *Boris Godunov*. In what way does Musorgsky intensify or modify Glinka's musical constructions of Russianness?

2 Outline the differences between Musorgsky's and Rimsky-Korsakov's aesthetic principles and attitudes to opera, as revealed by Rimsky-Korsakov's edition of *Boris*.

3 **Either** *a)* Throughout its performance history, *Boris Godunov* has been very unstable as a text. Outline the choices available to the music director/producer of *Boris Godunov* today with regard to the version, orchestration, etc., while referring to important historical precedents.

Or *b)* "I imagine the people as a great personality, animated by a unified idea" (MUSORGSKY). How is the conception of the *narod* as hero realised in Pushkin's play and the 1869 and 1872 versions of Musorgsky's opera?

4 Outline the nationalist and universal aspects of Musorgsky's musical declamation. What difficulties do his operas present to those who wish to produce them in languages other than Russian?

5 Give examples of Musorgsky's dramatic use of folk song (or folk-style song). How does the composer overcome the essentially static structure of folk song and the original role of each folk-song type?

6 Trace the influence of Musorgsky on **one** of the following:

a) Ravel's *L'heure espagnole*

b) Debussy's *Pelléas et Mélisande*

END OF PAPER

UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Thursday 28 May 2015, 1.30-4.30

Paper 13

THE SHADOW OF SIBELIUS

You are reminded that the re-use of material from one examination paper in another is strictly forbidden. This rule applies to all papers, dissertations, submitted essays, etc. Any candidate who infringes this rule is liable to be penalised by the deduction of marks.

*Answer **three** questions, with **at least one** from each section. Avoid significant overlap between your answers.*

*Write your number, **not** your name, on the cover-sheet of the Answer Booklet.*

STATIONERY REQUIREMENTS
20-Page Answer Booklet
Tags
Rough Work Pad

SPECIAL REQUIREMENTS
Manuscript paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

SECTION A

1 'In my opinion the Kalevala is completely modern. I think it is nothing but music: theme with variations.'(Jean Sibelius, letter to Aino, 1890) Discuss Sibelius's involvement with the characters, the stories and the poetic styles of the Kalevala.

2 'When we see those granite rocks, we know why we are able to treat the orchestra as we do.' (Sibelius in conversation with Bengt von Törne) Consider this statement in the context of Sibelius's tone-poems.

3 **Either** *a)* 'I intend to let the musical thoughts and their development determine their own form in my soul.' (Sibelius, diary entry, 8 May 1912) How much insight does this statement provide into Sibelius's mature musical thinking?

Or *b)* '...the abandonment of the principles of sonata form, where Sibelius is concerned, does not mean that the music straggles and sprawls, spreading itself indefinitely in all directions. He has destroyed, but only to re-erect' (J.H. Elliot, 1931). Assess the merits of this statement with reference to Sibelius's symphonies and tone-poems.

4 According to Adorno, Sibelius's music was 'amateurish' revealing 'the asceticism of impotence' characterised by the 'originality of incapacity. It was denied to him to write either a chorale or a proper counterpoint'. Discuss these criticisms, with specific reference to at least **two** pieces as justification for your argument.

SECTION B

5 'The people who you think are radicals might really be conservatives. The people you think are conservative might really be radical.' (Morton Feldman, lecture at Darmstadt, 1984) Consider Sibelius's reception and influence from the 1920s onwards in the light of these statements.

6 **Either** *a)* Discuss the ways in which Sibelius's methods of handling musical time and tempo have been influential on later composers, giving some specific examples.

Or *b)* Consider the impact of Sibelius's concept of content-based forms on the symphonic thinking of later composers, whether or not in works actually titled 'Symphony'.

END OF PAPER

UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Wednesday 3 June 2015, 9-12

Paper 14

ITALIAN MUSIC SINCE 1945

You are reminded that the re-use of material from one examination paper in another is strictly forbidden. This rule applies to all papers, dissertations, submitted essays, etc. Any candidate who infringes this rule is liable to be penalised by the deduction of marks.

*Answer **three** questions. Avoid significant overlap between your answers.*

*Write your number, **not** your name, on the cover-sheet of the Answer Booklet.*

STATIONERY REQUIREMENTS
20-Page Answer Booklet
Tags
Rough Work Pad

SPECIAL REQUIREMENTS
Manuscript paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

1 Analyse the relationships between the political Left and progressive music in post-War Italy.

2 'In music the onward flow of history, of which more sensitive people are continually aware, is transcribed into different times and different dimensions' (BERIO). Consider how this idea informs Berio's music, making reference to **either** (a) his *Sinfonia*, **or** (b) his output more generally.

3 Assess Dallapiccola's role in influencing perceptions of the relationships between serialism and anti-fascism.

4 'The fact that [electronic music] cannot be expected either to take over or to imitate the functions of traditional music is clearly shown by the unequivocal difference of its material from that of traditional music. We prefer to see its potentialities as the potentialities of sound itself' (EIMERT). Discuss, making reference to both electroacoustic and acoustic works.

5 Evaluate Nono's approaches to word-setting through comparison of two works written at different points in his career.

6 'It is natural for a musician to have a predilection for the sound, the timbre, the colour, the particular perfume which is a major triad' (CASTIGLIONI). Assess the importance of tonal elements in Castiglioni's works, making reference to the historical and cultural context in which they were written.

END OF PAPER

UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Friday 29 May 2015, 9-12

Paper 15

LATIN AMERICAN MUSIC AND THE POLITICS OF REPRESENTATION

You are reminded that the re-use of material from one examination paper in another is strictly forbidden. This rule applies to all papers, dissertations, submitted essays, etc. Any candidate who infringes this rule is liable to be penalised by the deduction of marks.

*Answer **three** questions. Avoid significant overlap between your answers.*

*Write your number, **not** your name, on the cover-sheet of the Answer Booklet.*

STATIONERY REQUIREMENTS
20-Page Answer Booklet
Tags
Rough Work Pad

SPECIAL REQUIREMENTS
Manuscript paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

1 'Culture as resource is seen as a way of providing social welfare and quality of life in the context of diminishing public resources and the withdrawal of the state from the guarantees of the good life.' (GEORGE YÚDICE) Explore how this idea informs the interactions of a nation-state and a popular music genre.

2 Parsing Sandroni's definition of 'popular' is a key problem in studying how 'popular music' in Latin America represents region or nation. How does the history of MPB (*Música Popular Brasileira*) demonstrate this?

3 Writing of *rock en español*, JOSH KUN says, 'It's a re-tuning that is equipped to deal with emergent discourses of flexible citizenship and with voicings of patriotism that are not grounded in any one specific, bounded geopolitical territory, but instead are dispersed across unpredictable cartographies and unforeseen social and political realities'. Use two musical examples to explore this flexible citizenship.

4 **Either** *a)* Consider the following meditation on the meanings of tango songs: 'The tango reflects this Argentine ambivalence. Although a major symbol of national identity, the tango's themes emphasize a painful uncertainty as to the precise nature of that identity ... The lyrics proclaim this doubt and reveal the intensity and depth of Argentine feelings of insecurity.' (JULIE TAYLOR) Explore the idea through one tango song.

Or *b)* 'Tango was a versatile, hybrid, new kind of exotic that could adopt the manners of the colonizer while retaining the passion of the colonized.' (MARTA SAVIGLIANO) Explore how tango's mutability between exotic and mannered contributed to its valorization. Be specific in terms of rhythmic and harmonic content.

5 How would the discussion of the interaction between samba rhythms and dancers' bodies by BARBARA BROWNING be pedagogically and politically efficacious for another Afro-Diasporic dance music in Latin America?

6 ALEXANDRA VAZQUEZ highlights Perez Prado's inclusion of a grunt in his mambo recordings. What are the consequences of this type of vocalization on Cuban musical performance?

END OF PAPER

UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Wednesday 27 May 2015, 1.30-3.30

Paper 16

NORTH INDIAN CLASSICAL MUSIC

You are reminded that the re-use of material from one examination paper in another is strictly forbidden. This rule applies to all papers, dissertations, submitted essays, etc. Any candidate who infringes this rule is liable to be penalised by the deduction of marks.

*Answer **two** questions. You may not answer both 3a) and 3b).*
Avoid significant overlap between your answers.

*Write your number, **not** your name, on the cover-sheet of the Answer Booklet.*

STATIONERY REQUIREMENTS
20-Page Answer Booklet
Tags
Rough Work Pad

SPECIAL REQUIREMENTS
Manuscript paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

1 Assess the impact of **at least one** technological development on North Indian classical music.

2 "In patriarchal discourse, the self, the centre, the norm is masculine; the feminine is banished to the realm of the other" (Vidya Rao). Discuss, with reference to North Indian classical music.

3 Answer **one** of the following:

Either a) "We can hardly imagine a composition without a main climax and coda: an Indian singer simply stops when he has sung enough" (A. H. Fox Strangways). Discuss, making reference to performance conventions for North Indian classical music.

Or b) Discuss the concept of *rāg* in North Indian classical music. In your answer, refer to **both** social **and** musical aspects.

4 To what extent can the study of North Indian classical music's listeners help scholars who wish to understand the tradition?

END OF PAPER

UNIVERSITY OF CAMBRIDGE

MUT2
MUSIC TRIPOS Part II

Thursday 28 May 2015, 9-11

Paper 17

PERCEPTION AND PERFORMANCE

You are reminded that the re-use of material from one examination paper in another is strictly forbidden. This rule applies to all papers, dissertations, submitted essays, etc. Any candidate who infringes this rule is liable to be penalised by the deduction of marks.

*Answer **two** questions.*
Use diagrams where appropriate.

*Write your number, **not** your name, on the cover-sheet of the Answer Booklet.*

Attachments: 1 extract (attached as a separate package).

STATIONERY REQUIREMENTS
20-Page Answer Booklet
Tags
Rough Work Pad

SPECIAL REQUIREMENTS
Manuscript paper
Graph paper

You may not start to read the questions printed on the subsequent pages of this question paper until instructed that you may do so by the Invigilator

1 Outline and evaluate the distinctive properties of an experiment or series of experiments on music cognition that has significantly advanced our understanding of music cognition.

2 'Music essentially engages the totality of the nervous system, posing a challenge to understanding but also providing an opportunity to deepen our knowledge of the entire system.' KRAUS, ZATORRE & STRAIT *Hearing Research* 2014. Discuss with respect to contributions of the scientific study of music to our understanding of **one or more** aspects of behaviour.

3 **Either** *a)* Critically evaluate the claim that musicians and non-musicians process music differently.

Or *b)* Critically evaluate the claim that expression of emotion in music and movement share a common, universal, structure.

4 With reference to the experimental literature, discuss the role of memory in becoming a skilled musician.

5 The organizers of the BBC Young Musician of the Year competition wish to know whether judges tend to be biased by the age, sex or instrument of the contestants, and if so, what to do about it. Describe and justify the design and analysis of an experiment or series of experiments to answer these questions. Wherever it will make your points clearer, use tables and bullet points rather than a continuous essay style.

6 Critically evaluate the attached paper [Steinbeis, N. & Koelsch, S. (2009) Understanding the intentions behind man-made products elicits neural activity in areas dedicated to mental state attribution. *Cerebral Cortex, 19*, 619-623] assessing the extent to which the conclusions are warranted, and suggesting further experiments that would be required in order for them to be better supported. You are not expected to be able to comment on technical aspects of the fMRI work.

END OF PAPER

PART II 2015

Paper 17

PERCEPTION AND PERFORMANCE

Extract 1 – Steinbeis, N. & Koelsch, S. (2009) Understanding the intentions behind man-made products elicits neural activity in areas dedicated to mental state attribution. Cerebral Cortex, 19, 619-623

Cerebral Cortex March 2009;19:619–623
doi:10.1093/cercor/bhn110
Advance Access publication July 4, 2008

Understanding the Intentions Behind Man-Made Products Elicits Neural Activity in Areas Dedicated to Mental State Attribution

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Trying to understand others is the most pervasive aspect of successful social interaction. To date there is no evidence on whether human products, which signal the workings of a mind in the absence of an explicit agent, also reliably engage neural structures typically associated with mental state attribution. By means of functional magnetic resonance imaging the present study shows that when subjects believe they are listening to a piece of music that was written by a composer (i.e., human product) as opposed to generated by a computer (i.e., nonhuman product), activations in the cortical network typically reported for mental state attribution (anterior medial frontal cortex [aMFC]), superior temporal sulcus, and temporal poles) were observed. The activation in the aMFC correlated highly with the extent to which subjects had engaged in attributing the expression of intentions to the composed pieces, as indicated in a postimaging questionnaire. We interpret these findings as indicative of automatic mechanisms, which reflect mental state attribution in the face of any stimulus that potentially signals the working of another mind and conclude that even in the absence of a socially salient stimulus, our environment is still populated by the indirect social signals inherent to human artifacts.

Keywords: fMRI, music, social cognition, theory of mind

Introduction

Being in possession of a theory of mind (also known as the ability to mentalize or adopting an intentional stance) refers to the cognitive capacity to explain and predict other people's behavior by attributing a set of independent mental states (i.e., intentions, beliefs, desires; Frith and Frith 2003). The neural correlates underlying the attribution of mental states have been extensively investigated uncovering an underlying network comprising the anterior medial frontal cortex (aMFC), the superior temporal sulcus (STS)/temporo-parietal junction, as well as the temporal poles (TPs) (Frith and Frith 2003). Paradigms typically entailed the explicit attribution of mental states in narratives (Fletcher et al. 1995; Goel et al. 1995; Gallagher et al. 2000; Vogeley et al. 2001; Ferstl and von Cramon 2003), cartoon stories (Gallagher et al. 2000), and animated shapes (Castelli et al. 2000) or subjects were made to believe they were interacting with a human agent as opposed to a computer (McCabe et al. 2001; Gallagher et al. 2002; Ramnani and Miall 2004), in the latter case reliably activating a core structure of the neural network, namely the aMFC. However, there is a high prevalence of instances in everyday life, where we are confronted with the products of human agents (such as works of art), signaling previously held intentions and performed actions in the explicit absence of the agent him/herself. It is thus unclear whether inanimate objects signal social meaning, such as their creator's intentions and whether we thus implicitly attempt to fathom these.

To address this question, we measured brain responses when subjects listened to what they thought were compositions as opposed to computer-generated pieces of music. Using musical pieces, which were equally plausible to have been composed or generated by a computer, participants were effectively presented with the same stimulus. However in one condition (Composer) were made to believe that the piece had been composed and thus implicitly reflected the expression of a rational agent's intentions, and in another condition (Computer) were made to believe that the pieces had been generated by a computer program and thus, whereas following certain rules, did not reflect the expression of a rational agent's intention. To avoid any memory effects, half the stimuli ($N = 30$) were presented in one condition and the other half were presented in the other condition, which was counterbalanced across subjects. Thus the basic acoustic information was kept identical over all subjects and contrasting the Composer condition against the Computer condition therefore only yielded brain activity specifically related to the participants' attitude taken toward the stimulus. We predicted that should human products, of which music is a most pervasive instance, be processed with regards to the mental states and particularly intentions of those responsible for their inception, then we ought to see a significant increase of activity in brain areas typically associated with attributing mental states, namely the aFMC, the STS and the TP.

Participants were instructed to rate the perceived pleasantness of each piece of music to ensure that sufficient attention was paid to the music. Thus, their task did not focus on the experimental manipulation. In addition, a questionnaire was filled out after the functional imaging session requiring participants to indicate their thoughts during and on the experiment.

Materials and Methods

Subjects

In total 16 subjects (8 males) were investigated, of which only 12 were included in the analysis. The remaining 4 subjects were excluded on the basis of indications given on the postimaging questionnaire, in that they considered it implausible that either the composed pieces had been composed or that the computer pieces had been generated by a computer. The remaining subjects included 7 males and 5 females with a mean age of 24.6 years (age range: 21–31). None of them were professional musicians and some of them had either played an instrument before or were still playing at the time of the experiment. None of them were familiar with the style of music presented in the experiment.

Stimuli

The stimuli were taken from pieces written by composers belonging to the 2nd Vienese School, namely A. Schönberg and A. Webern. This was motivated by the fact that the success of the presently employed paradigm relied on the plausibility of the conditions. The music by Schönberg and Webern in particular is explicitly atonal (dodecaphonic), thus having no tonal center, which often gives the music a somewhat random character (particularly for the uninformed listener). This apparent randomness predisposes these pieces to be seen as equally likely to be considered as the unintentional clustering of a series of notes, as well as serious composition, intentionally adhering to an underlying system.

We verified this in a rating study prior to the functional magnetic resonance imaging (fMRI) experiment, presenting subjects with a pool of 140 musical excerpts taken from pieces of the 2 composers and asking subjects ($N = 20$) how plausible they thought it, that the piece was composed or computer-generated. No piece was presented to the same participant twice and presentation was counterbalanced across subjects. From the total pool of stimuli, we eventually took 60, which had been considered to be equally highly plausible to have been either composed or computer-generated. This set of 60 pieces with an average duration of 10.6 s was then used for the fMRI experiment.

Excerpts were taken from Schönberg's *Klavierstück*, op. 33a and b, his *Drei Klavierstücke*, op. 11, as well as from Webern's *Variationen für Klavier*, Op. 27, his *Satzstück für Klavier* and the *Klavierstück, im Tempo eines Menuetts*. The pieces were imported from .midi into Cubase (Steinberg Media Technologies GmbH, Hamburg, Germany) and exported using the Grand option and modified with Cool-Edit (sampling rate = 44.1 kHz; 16-bit resolution). Excerpts were chosen from the pieces if they entailed at least one complete phrase and thus constituted individual and therefore credible musical units. On the basis of our own considerations as well as piloting of the stimuli, excerpts were never shorter than 8 and never longer than 13 s. Thus, subjects would have sufficient time to be able to think about the possible intention behind the music and enough stimuli could be presented in the scanning time.

Experimental Procedure

Participants were instructed outside the scanner and told they were going to be presented with musical pieces that had either been composed or generated by a computer. They were told that our interest lay in whether they would perceive the 2 types of music as more or less pleasant and were therefore asked to indicate on a scale of 1–5, where 1 signaled pleasant and 5 unpleasant with neutral at 3, how pleasant or unpleasant they felt each piece to be. Judgments were to be made after each piece of music. The ratings showed that the 2 types of pieces were not perceived differently in terms of valence (see Fig. 1a).

The presentation of stimuli was blocked so that 5 pieces were played consecutively in each condition. Previous piloting studies suggested that this was the ideal design to establish an "agency" context within which the pieces were listened to. The presentation of each piece of music was jittered by 400–2000 ms. There was an interstimulus interval of 6–8 s and an interval between each block of 20–22 s. Blocks were presented in alternate order of condition and participants were cued before each block and piece what kind of piece (composed or computer generated) they were about to hear.

Postimaging Questionnaire

To be able to relate the functional imaging data back to psychological mechanisms occurring while subjects were listening to the music, we also administered a questionnaire on the subject's thoughts during and on the experiment. Items focused on the frequency and degree to which participants had 1) imagined something while listening to the music (Items 1 and 2: *Did you imagine/visualize anything when listening to the compositions/computer pieces? If so, how often and what?*), 2) had thought about the expression of emotions and intentions (Items 3–6: *Did you feel the compositions/computer pieces were trying to express something, such as an intention/emotion? If so, how often and what?*), 3) had daydreamed during the music (Items 7 and 8: *How often did your thoughts drift off and you started daydreaming (e.g. thinking about friends, relationships, study/work?*), 4) had felt it was plausible that the composed pieces had been composed and that the computer pieces had been computer-generated (Items 9 and 10: *How plausible did it appear to you that the compositions/computer pieces had been composed/generated by a computer?*) and other items on whether subjects, 5) thought the pieces sounded similar or different (Items 11 and 12: *Did the compositions sound similar/different to the computer-generated pieces?*), 6) how pleasant they felt the compositions/computer pieces to have been, and finally 7) how attentively subjects thought they had listened to the music.

On the basis of responses on items 9 and 10 on the perceived plausibility, 4 subjects were excluded from the initial number of 16 scanned subjects in the subsequent statistical analysis. The items on daydreaming and mind-wandering were included, because this has been frequently associated with activity in the aMFC (Mason et al. 2007).

The only difference between the 2 conditions on any of the items was the extent to which participants had thought about intentions being expressed in the music, namely more so for the composed pieces (mean: 3.41) than for the pieces they believed to be computer-generated (mean: 1.91; $P < 0.05$; see Fig. 1b).

Data Acquisition and Analysis

Imaging was performed on a 3T Trio scanner (Siemens, Erlangen, Germany) equipped with a standard bird-cage head coil. A gradient recalled echo-planar imaging (EPI)-sequence was used with time repetition (TR) = 2000 ms and time echo (TE) = 30 ms. A total of 22 axial slices were collected with a slice thickness of 5 mm and an interslice gap of 1 mm. Prior to the functional image acquisition 2 sets of 2-dimensional anatomical images were acquired (T1 Model Driven Fourier Transform [MDEFT] sequence with TR = 1.3 s and TE = 10 ms and an EPI-T1 sequence with the same parameters as the functional run).

Data processing was performed using the software package LIPSIA (Lohmann et al. 2001). Functional data were corrected for motion artifacts and to correct for the temporal offset between slices acquired in one scan, a cubic spline-interpolation was applied. Data were filtered using a temporal highpass filter with a cutoff frequency of 1/128 Hz for baseline correction and a spatial Gaussian filter with 3.768-mm full width at half maximum was applied. Functional slices were aligned with a 3D stereotaxic coordinate reference system (acquired for each subjects individually prior to scanning) by means of a rigid linear registration with 6 degrees of freedom (using 3 rotational and 3 translational parameters acquired during the MDEFT and EPI-T1 sequences). The rotational and translational parameters were subsequently transformed by linear scaling to a standard size and the resulting parameters were used to transform the functional slices by using trilinear interpolation (thus, functional slices were aligned with the stereotaxic coordinate system. For the anatomical data, a T_1-weighted, 3D magnetization-prepared rapid gradient-echo sequence was obtained recording a volume data set with 160 slices and 1-mm slice thickness, which was standardized to the Talairach stereotaxic space (Talairach and Tornoux 1988).

Statistical evaluation was based on a least-squares estimation using the general linear model for serially autocorrelated observations (Worsley and Friston 1995). The design matrix was generated using a synthetic hemodynamic response function. The model equation, including the observed data, the design matrix, and the error term, was convolved with a Gaussian kernel, with a dispersion of 4-s full width at half maximum. Contrast images of the differences between the specified conditions were calculated for each subject. The individual contrast images were then entered into a second-level random effects analysis. Subsequently, *t*-scores were transformed into *Z*-scores. On the basis of Monte Carlo Simulations (1000 iterations) with the present brain volume and an individual voxel height threshold of 3.09 ($P < 0.001$, uncorrected), it was determined that a cluster size of 783 mm^3 (29 contiguous voxels) corresponded to an overall image-wise-false-positive rate of 5%. Thus, all activations exceeding this threshold were considered significant at $P < 0.05$, corrected for multiple comparisons. For regions indicated a priori in the experimental hypotheses, we also applied a more liberal threshold of $P < 0.001$, uncorrected.

To correlate some of the ratings given in the questionnaire with activation strength in predicted brain regions, mean beta-values were extracted from the most activated voxel of our hypothesized brain region (in this case aMFC) and determined the 6 adjacent voxels from the mean contrast across participants.

Results

As shown in Figure 1, there were no differences in the perceived emotional valence between pieces played in the Composer condition and the ones played in the Computer condition. However, scores on the questionnaire indicate that participants thought more strongly about the expression of intentions during the Composer condition compared with the Computer condition ($P < 0.05$). There were no further differences between scores for the pieces presented in either condition for any of the other items on the questionnaire.

The fMRI data show that when contrasting the brain activity of the Composer condition against the Computer condition (see Fig. 2 and Table 1), there is an increase in precisely the neuroanatomical network dedicated to mental state attribution, namely the aMFC (−11, 48, 18; $P < 0.05$ corrected), the left STS (mid-portion: −62, −23, 0; $P < 0.05$ corrected and posterior portion: −65, −51, 18; $P = 0.001$ uncorrected) and the right STS (58, −6, −6; $P = 0.001$ uncorrected) as well as the left TP (−50, 7, −21; $P < 0.05$ corrected) and the right TP (37, 15, −30; $P = 0.001$ uncorrected). Notably, the brain activity in the aMFC was correlated highly with the degree to which participants thought that an intention was expressed in the composed pieces of music ($r = 0.76$; $P < 0.01$). There was no increased brain activity when contrasting the Computer condition against the Composer condition.

Discussion

The present study reports the recruitment of a neural network when people engage in the processing of what they believed to

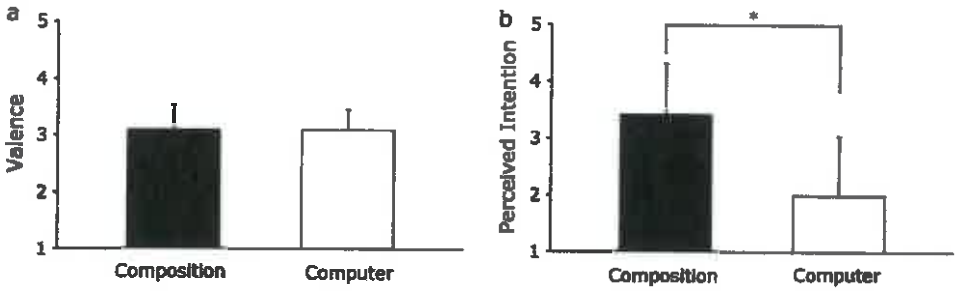

Figure 1. Behavioral ratings. (*a*) Given during the scan on the perceived valence of composed (black) and computer-generated (white) pieces ($P = 0.98$) and (*b*) after the scan on the extent to which participants thought an intention was being expressed, which was higher for composed (black) than computer-generated pieces (white; $P < 0.05$).

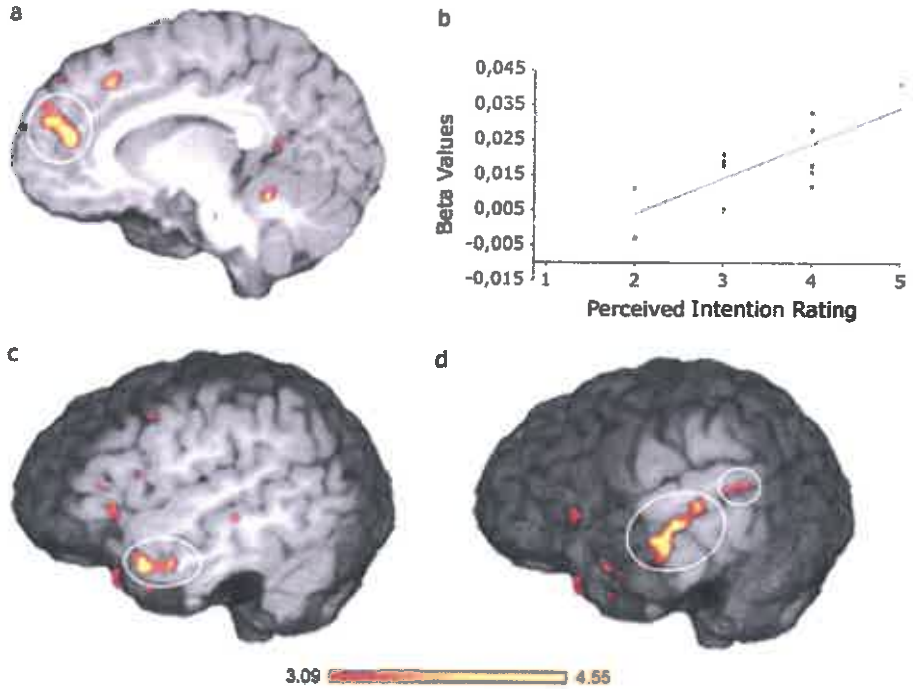

Figure 2. Activations when listening to musical pieces cued as compositions as opposed to computer-generated. (*a*) Increased activation in the aMFC [−11, 48, 18], which (*b*) correlated positively with the extent to which participants thought an intention was being expressed in the compositions ($r = 0.76$; $P < 0.01$). (*c*) Increased activation in the left TP [−50, 7, −21] as well as (*d*) the left STS [−62, −23, 0].

Table 1
Increased activation foci when contrasting compositions against computer-generated pieces

Brain region	Coordinates of peak activation (mm)			Z-score (max)	Extent (mm^3)
	x	y	z		
Predicted					
Left aMFC	−11	48	18	4.18*	2079
Left mid-STS	−62	−23	0	4.24*	1647
Left posterior STS	−65	−51	18	3.84	459
Left TP	−50	7	−21	4.27*	1215
Right mid-STS	58	−6	−6	3.56	108
Right TP	37	15	−36	3.56	270
Not predicted					
Left IFG	−41	16	−9	3.87*	945
Left occipital	−32	−95	3	4.26*	972
Right occipital	28	−80	0	3.83*	1188

Note: All activations significant at $P < 0.001$, uncorrected for multiple comparisons; *indicates corrected for multiple comparisons ($P < 0.05$).

be a man-made stimulus as opposed to an artificial stimulus. To our knowledge this is the first study showing that a network engaged in mental state attribution became active when subjects perceive an explicitly non-social stimulus (not containing any first-order sensory information signaling the presence of a human agent). Previous studies using animated shapes (Castelli et al. 2000) both primed subjects to attend to the "feelings and thoughts" of the interacting shapes and the material which elicited the increased activations in the network underlying mental state attribution was more intentional by nature, as indicated by the given ratings. In contrast, in the present study there was no explicit focus on any expressed intentions nor was the material physically different, in actual fact it was equally plausible for it to be random as indicated by the comparable ratings of participants. Thus, our findings clearly demonstrate for the first time, that the attitude alone taken toward a stimulus as social or not is responsible for the increased activations in the neural network underlying mental state attribution.

The functional significance of the individual subcomponents typically reported for mental state attribution has received increased attention recently (Frith and Frith 2003; Amodio and Frith 2006; Saxe 2006). Given that the aMFC was the key region isolated in experiments where participants were made to believe they were interacting with a real human agent as opposed to a computer, it was argued that this region subserves a key component of mental state attribution, that is, to adopt an intentional stance (McCabe et al. 2001; Gallagher et al. 2002; Ramnani and Miall 2004). The coordinates of peak activity reported in these studies strongly resemble the ones reported in the present study (5, 52, 10; McCabe et al. 2001; −10, 50, 30; Gallagher et al. 2002; −8, 56, 24; Ramnani and Miall 2004). The fact that in the present study activity in this region correlated specifically with the degree to which a supposed intention was being expressed lends strong support to the idea that this region reflects the extent to which people think about an intention being expressed. Moreover, recent studies reporting aMFC activity to be specifically modulated by whether participants felt an intention to be communicated or held privately show, disregarding the lateralization, a remarkable overlap with the present peak activation (6, 60, 20; Kampe et al. 2003; 14, 66, 24; Grezes et al. 2004; 0, 54, 12; Walter et al. 2004). Given the correlation with the intention ratings and the overlap with other studies employing an on-line mentalizing paradigm and the attribution of communicative intentions, the present activation of the aMFC is interpreted as the extent to which participants perceive the piece of music to communicate the (nonspecific) intentions of the composer.

Apart from constituting a key component of the network underlying theory of mind and mental state attribution, the STS has been specifically linked to the processing of intentions too (Allison et al. 2000; Castelli et al. 2000; Gallagher et al. 2000; Singer et al. 2004). Similarly to the study by Singer et al. (2004), there was no explicit instruction to focus on the expressed intention of the stimulus and we therefore interpret this structure to automatically process socially relevant events in one's surroundings, something that may have been triggered merely by the cue of an intentional agent's product (i.e., telling participants that they were about to hear composed music).

Within the cortical network underlying mental state attribution, the TPs have been argued to function as a store for relevant personal and semantic knowledge against which the potential meaning of the incoming perceptual information is evaluated (Frith and Frith 2003; Gallagher and Frith 2003). This is supported by recent evidence, that the anterior temporal lobe subserves processing social information providing abstract conceptual knowledge of social behaviors (Zahn et al. 2007). It is possible that participants attempt to match the music and what it is trying to express with what they may have previously heard elsewhere (something the believed computer-generated pieces would automatically be excluded from). Using personally more meaningful music in future studies may be able to shed more light on this yet tentative interpretation.

Our findings show that potentially everything that is man-made is viewed in terms of the expressed intentions of its creator. Thus, our world would appear to be more socially populated than previously believed, as long as an object can be linked to a human agent. Particularly, the meaning of works of art may be derived from the understanding that every note or brush of paint reflects an intentional act, which signals personal relevance to the artist representing a communication between the creator and the perceiver of the artwork. Whereas recent neuroscientific approaches to the perception and appreciation of art and music (Freedberg and Gallese 2007; Molnar-Szakacs and Overy 2006) have stressed the potential involvement of the mirror neuron system in resonating with the artistic expression, the present data would suggest that trying to understand what the artist is attempting to communicate is so far an overruling mechanism determining the understanding of artistic expression.

Notes

We would like to thank Jöran Lepsien for help with the design and the data analysis. *Conflict of Interest*: None declared.

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