there should be two watermarks in the gathering. The format does not invariably indicate the number of leaves in the gathering.

g) all arbitrary signs, such as type signs, punctuation marks, which are used to sign gatherings, must be copied and listed separately within the formula. Thus: *4, A-Z4 represents a gathering of four leaves signed * followed by twentythree gatherings regularly signed A to Z.

h) the superior suffixed numbers refer only to the sequence with which they are linked, and must be restated after every break, whether it be caused by a letter or type sign abnormally used, or by a different number of leaves in a particular gathering. Thus: *2, A-B4, C4, D-E4, F4, G-I4, J represents a book in which there are the following gatherings—a total of eleven gatherings the first of which is signed with an asterisk and has two leaves, the next two signed A and B each have four leaves, followed by C which has six leaves; this is followed by D and E which each have eight leaves, then F which has two, after which come G, H and I which have four leaves each, and finally J which has two leaves.

i) the letters on the signatures must be followed in the usage of upper and lower case, if these are single letter sequences. Thus in the sequence A-Z4, a-z4 the formula represents a book of fortysix gatherings the first twentythree of which have been regularly signed from A to Z, and the second twentythree of which have been regularly signed from a to z.

j) when the signing alphabet is gothic, it is normal to use roman in the statement of gatherings. Thus, if the signatures in the book are:

ABC

the formula may be written: A, B, C.

k) however, when an alphabet such as Greek, or Hebrew is used to sign a book, this must be used in the formula.

Exercise C

1. Explain the following:

   a) 4°: A-Z4
   b) 8°: A-Z8
   c) 4°: A-Z4
   d) 4°: *4, A-Z4, a
   e) 4°: A-Z4, a-z
   f) 8°: A-I8, J8, K-T8, U8, V8, W8, X-Z8
   g) 4°: A-D4, B4, F-Y4, Z4
   h) 4°: A-D4, E4, F-Z4, a-e, f4
   i) 4°: A-Z4, a-e
   j) 8°: *8, A-D8, E8, F-G8, H-Z8, a-e, d8

2. Construct formulae from the following information:

   a) a quarto book with gatherings signed regularly from A to E, each gathering having four leaves.
   b) a 16mo book with gatherings, each of sixteen leaves, regularly signed from A to I, but with two further gatherings signed J and K respectively, each of eight leaves.
   c) a quarto book with the first gathering signed * and having two leaves, with further gatherings signed regularly from A to Z and then a to z, all having four leaves each.
   d) an octavo book with twentyone gatherings regularly signed from A, each gathering having eight leaves, then two gatherings signed respectively a and b, each of four leaves.
   e) a book in which the chainlines are horizontal and the watermark appears on the inside margin at the centre, and which has fourteen gatherings each of four leaves, regularly signed from A.
   f) a book in which the chainlines are horizontal and the watermark appears on the upper top outside corner of some leaves, and which has twentysix gatherings running from A to Z, each of sixteen leaves.
g) a book in which the watermark appears at the top of the inner margin of some leaves, the chainlines being vertical, and which has a first gathering which is signed + and which is of two leaves, followed by seven gatherings signed regularly from A each of eight leaves, and a final gathering also regularly signed, which is of six leaves.

h) a quarto book of eight gatherings each of eight leaves signed ABCDEFGH

i) a sixteenmo book of twelve gatherings of eight leaves each, signed ABCDEFGHIJKL

j) a quarto book with four leaf gatherings signed a and A to F consecutively, a further one signed G of two leaves, and more regularly signed from H to Z each of eight leaves; with finally four gatherings regularly signed from a, each of four leaves, and one signed c, of two leaves.

Multiple signings

a) the printer setting up a book of more than twenty three gatherings had to employ different signatures from the single letter upper case alphabet. The use of the single letter lower case alphabet has been noted. Often however the printer used multiples of letters. Thus:

A-Z⁸, AA-ZZ⁸ or A-Z⁸, Aa-Zz⁸

both of these formulae representing books of fortysix gatherings, where in the first the printer has used the upper case letter duplicated in the second set of twentythree gatherings, and in the second has used a combination of upper case and lower case, producing however the same result of differentiating the first sequence of twentythree signings from the second twentythree. This is called multiple signing.

b) even if one of the letters involved in lower case as in the second example above, it is regarded as if it were upper case. Thus AA Aa Aaa are considered as AA AA AAA in a formula.

c) as this is so, it is possible to abbreviate all these in the same way. Thus:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>are abbreviated as 2A</td>
</tr>
<tr>
<td>Aa</td>
<td></td>
</tr>
<tr>
<td>AAA</td>
<td>are abbreviated as 3A</td>
</tr>
<tr>
<td>AaA</td>
<td></td>
</tr>
<tr>
<td>Aaa</td>
<td></td>
</tr>
</tbody>
</table>

d) if there is a multiple letter sequence which follows a single letter sequence without a break, a further abbreviation is possible. Thus:

A-Z⁸, Aa-Zz⁸, Aaa-Zzz⁸

which denotes a book of sixynine gatherings without a break, with three consecutive alphabet series, first a single letter, second a double letter, third a triple letter, may be abbreviated to:

A-3Z⁴

e) breaks and irregularities must be accommodated. Thus:

A-Z⁸, Aa-Dd⁴, Ee⁸, Ff-Gg⁴, Hh⁵, Ii⁵, Jj⁵, Kk-Zz⁴, Aaa-Ddd⁴

should be abbreviated to:
A-2D⁴, 2E⁴, 2F-2G⁴, 2H², 2I¹, 2J¹, 2K-3D⁴
it is essential that the multiple should be stated at each point in the
formula, as above.

f) the abbreviation may also be used for arbitrary signs. Thus:

A-Z¹; A-D⁴
may be abbreviated to:

A-Z¹

Duplicate signings

a) sometimes letter sequences are duplicated. Thus:

A-Z¹; A-D⁴
This is called duplicate signing.

b) a statement like the one above is in itself inadequate for the exact
determination of a description. Clarification must be made. To do this
a superior prefixed number is used, which allows of exact identifica-
tion. Thus:

A-Z¹; A-D⁴; A-P⁴
is written as:

A-Z¹; A-D⁴; A-P⁴
so that any particular part of the formula may be separately identified.
Thus:

B³; B³; B³
refer to the recto side of leaf three in gathering B, but in the first,
second, and third sequences respectively, and without confusion.

c) it is necessary to state the superior index before each part of the
formula. Thus in:

A-Z¹; A-B⁴; D-F⁴; A-Z¹
where there is a break in the second sequence, the superior prefix is
repeated at the beginning of the second portion.

d) whenever a new single letter sequence occurs, the next superior
prefix number must be used. Thus in the example given in c above,
the second sequence finishes at F, and alphabetically the sequence is
unfinished unlike the other two; but this is ignored and the next
sequence is assigned a new superior index number.

A-S¹; A-X¹; A-F⁴
is given as:

A-S¹; A-X¹; A-F⁴
A-Z¹; AA-FF¹; A-M⁴; A-Z¹; AA-ZZ¹; AAA-KKK⁸
is given as:

A-Z¹; AA-FF¹; A-M⁴; A-Z¹; A-R⁴, AA-GG¹,
Aa-Nnn¹, Aaa-FFF¹
A-S¹; A-Z¹; AA-Pp¹, Aaa-Mmm¹; A-R⁴, AA-GG¹,
Aa-Nnn¹, Aaa-FFF¹
is given as:

A-S¹; A-Z¹; AA-Pp¹, Aaa-Mmm¹; A-R⁴, AA-GG¹,
Aa-Nnn¹, Aaa-FFF¹
A-S¹; A-Z¹; AA-Pp¹, Aaa-Mmm¹; A-R⁴, AA-GG¹,
Aa-Nnn¹, Aaa-FFF¹

Each of these is a single letter sequence, so that within 2 each part
has superior index 2 attached, and in 3 each part has its superior
index 3 attached.

Note however that each item has its multiple signing stated in the
abbreviated formula.
Exercise D

1. Abbreviate the following:
   a) A—B₁, AA—CC₁, AAA—ZZZ₈, A—Z₄, Aa—Xx₄, Aaa—Ccc₄
   b) A—Z₄, Aa—P₈, Aaa—Bbb₄, A—Q₄, A—X₄
   c) A—Z₄, AA—ZZ₈, AAA—ZZZ₄, AAAA—PPP₈, A—X₄, Aa—Xx₄, A—Z₄, AA—ZZ₄, Aaa—Bbb₄
   d) A—P₈, R—Z₄; A—Z₄; A—Z₄, AA—ZZ₄; A—Z₄
   e) A—P₈, AA—XX₈; A—M₈, Aa—Mm₄; A—Z₄, AA—ZZ₄, Aaa—Ppp₄

2. Construct formulae from the following information:
   a) A book of forty-six gatherings signed A to Z and then A to Z, all gatherings having four leaves, with chain lines horizontal.
   b) A book of forty-six gatherings signed A to Z and AA to ZZ all in eights, with upright chainlines, and watermark at the top of the inner margins.
   c) A book which is quarto signed A to P, A to Q, A to Z, AA to ZZ, and AAA to PPP, in that order.
   d) A book which is folio, each gathering of six leaves, signed regularly A to P, AA to ZZ, A to Z, and AA to PP.
   e) A duodecimo book in sixes signed A to P, R to Z, Aa to Qq, Ss to Vv, A to Z, Aa to Mm, A to Z, in that order.

Inferred signings

a) some gatherings are unsigned. If it is possible, these may be inferred. Thus in a sequence which goes:

   unsigned gathering, B—D₄

   it is possible to infer that the unsigned gathering is A. Also if the unsigned gathering is in the place of a missing letter in an otherwise regular sequence, it may also be inferred. Thus in a sequence which goes:

   A—D₄, unsigned gathering, F—G₄

   it is possible to infer that the unsigned gathering is E.

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The letter which is inferred is put in square brackets in the formula.

Thus:

[A]₄, B—D₄

A—D₄, [E]₄, F—G₄

b) if the first gathering of a sequence is unsigned, and the second is signed with some arbitrary sign, and is followed by a gathering signed B, the unsigned gathering may be inferred as A. Thus:

[A]₄, [A]₄, B—Z₄

but if the first gathering is signed with an arbitrary sign and the second is unsigned, but followed by B, the second must not be inferred as A, but as a second arbitrary sign. Thus:

[A]₄, [2⁸]₄, B—Z₄

Uninferred signings

a) sometimes it is impossible to infer the signature of a gathering. To indicate uninferred gatherings two conventional symbols are used. These are pi (π) and chi (χ).

b) π (π): this is used when an unsigned gathering precedes a first major series. Thus:

π₁, A—Z₄

π₂, A—Z₄

It is not necessarily used always for the very first gathering. It can also be used for the second gathering which comes after a gathering signed by an arbitrary sign, but in that case must precede a complete major sequence:

π₁, π₂, A—Z₄

This may also be written:

π₂, [2⁸]₄, A—Z₄

c) χ (χ): this is used when the gathering is within a sequence and is not capable of being inferred. Thus:

A—D₄, χ₁, E—Z₄

d) both π and χ may be doubled or more to express additional uninferred gatherings. Thus:

π₃—π₄, A—Z₄

A—D₄, χ₄, E—G₄, 2χ₄, H—Z₄

e) π and χ may also be used to indicate disjunct leaves which cannot be associated with a preceding or succeeding gathering. Thus:

π₁, A—D₄, χ₁, B₄, 2χ₄

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**Superior π and χ**

a) π and χ may be used in a superior position to clarify formulae.

b) π: where there is a book in which the signatures go A B C D, rules previously indicated would demand a formula:

\[ \pi A \rightarrow D \]

This relegates the major sequence to a secondary position. This is obviated by the use of superior π thus:

\[ \pi A, A \rightarrow D \]

c) χ: where there are two adjacent gatherings both signed with the same letter, thus:

A B C D E E F G H

the formula must be written:

A → E, E, F → H

the second of the two letters E being given the inferior or intrusive position, unless it is clear that the first one is the intrusive one. If this is so, the following formula would be correct:

A → D, χ E, E → H

In this example the inferiority of the first E is suggested by the different number of leaves from the rest of the sequence.

d) further examples of the use of superior χ:

A B C D e E F G a b c d e f g becomes

A → D, χ E, E → G, a → g

A B C D DD E F G H AA BB CC DD EE FF becomes

A → D, χ 2D, E → H, 2A → 2F

in both these examples the superior χ is used as the single e and the DD which both occur in the middle of the single letter upper case sequence are repeated later on in the formula, and therefore must be distinguished.

**Superior π and χ not used**

a) where there is an obvious printer's error, the correct letter may be inferred, but a note given of the inference at the end of the collation. Thus:

A A C D E F can be inferred as A → F with a note made of the inference of the second A as B

A B C D E E G can be inferred as A → G and written as such, and a note of the inference of the second E as F

b) where the signature is distinguished and unduplicated. Thus:

A B C D e E F G can be written as A → D, e, E → G

A B C D dd E F G AA BB CC DD EE FF GG can be written as A → D, 2d, E → G, 2A → 2G

In this case note that the double lower case dd is retained as 2d to obtain clarity.
Exercise E
1. Explain the following statements:
   a) \([A]^4, B - Z^4\)
   b) \(A - P^4, [Q]^4, R - Z^4\)
   c) \(\pi^4, A - Z^4\)
   d) \(\ast_5, \pi^4, A - Z^4\)
   e) \(A - E^4, \chi^5, F - Z^4\)
   f) \(\pi^4, A - E^4, \chi^5, F - Z^4, a^6\)
   g) \(\pi - 3\pi^4, A - Z^4\)
   h) \(\pi^2, A - D^4, \chi^5, E - F^4, 2\chi^4, G^4\)
   i) \(\pi^2, A - B^4, [C]^4, D - E^4, \chi^5, F - G^4, 2\chi^4, H - K^4, [L]^4, M - Z^4\)
   j) \(\ast_3, [2^*]^4, B - Z^4\)

2. Explain the following statements:
   a) \(\pi A^4, A - D^4, \chi^5, E - F^4\)
   b) \(A - G^4, \chi^5, G^4, H - Z^4\)
   c) \(A - F^4, \chi^5, G^4 - Z^4\)
   d) \(A - O^4\) with a note that the gathering \(F\) has been inferred from one signed \(E\)
   e) \(\pi^3, A - F^5, \omega^6, G - L^8\)
   f) \(\pi A^4, A - F^5, \chi^2 F^8, G - 2G^4\)
   g) \(\pi - 3\pi^4, \pi^4, A - G^4, 2g^2, H - 2L^4\)
   h) \(\ast_5, \pi^4, A - C^4, \chi^5, C^4, D - F^4, \chi^5, G - H^4, 2\chi^4, I - K^4\)
   i) \(A - Z^4, a - Z^4, \chi^5, 2A - 2C^8, \chi^2 C^4, 2D - 2F^8\)
   j) \(\pi^4, A - B^4, b^5, C - D^4\)

Abnormal gatherings

a) Abnormal gatherings are caused by the insertion and/or cancellation of a leaf or leaves within the gatherings. This involves the use of the words *disjunct* and *conjugate* (qqvv in the glossary).

b) Abnormality within a gathering must be noted and stated in the formula. It must be associated with the particular gathering to which it refers. Therefore the gathering must be stated separately within the formula.

c) Inserted leaves: these are disjunct leaves which are inserted at the beginning of, inside, or at the end of a gathering. They are pasted in or bound in the gathering, and must not be confused with leaves remaining after their conjugates have been taken out or cancelled.

At the end:
inserted leaf or leaves unsigned, the statement is:
\[D'(D_4 + 1)\] or \[D'(D_4 + \chi_1)\]
\[D'(D_4 + 2)\] or \[D'(D_4 + \chi_1 + 2)\]

where the use of the comma indicates a disjunct relationship between the inserted leaves. The statements using chi are more precise than those giving only the quantity of leaves inserted.

inserted leaf or leaves signed only with a number, the statement is:
\[D'(D_4 + '1')\] or \[D'(D_4 + '1', '2')\]

inserted leaf or leaves correctly signed, the statement is:
\[D'(D_4 + D_5)\] or \[D'(D_4 + D_5, 6)\]

two inserted leaves, the first correctly signed, the second unsigned, the statement is:
\[D'(D_4 + D_5 + 1)\]
which infers nothing about the second, unsigned, leaf.

or
\[D'(D_4 + 'D_5', D_6)\]
which by the use of single quotes round \(D_5\) infers that the second leaf, although unsigned, is \(D_6\).
2 at the beginning:
the same formula may be used to indicate leaves inserted at the
beginning of a gathering. Thus:

- \( D'(1 + D1) \) or \( D'(x1 + D1) \)
- \( D'(2 + D1) \) or \( D'(x1, 2 + D1) \)

3 inside the gathering:
inserted leaves or leaf unsigned, the statement is:

- \( D'(D2 + t) \) or \( D'(D2 + \chi t) \)
- \( D'(D2 + 3) \) or \( D'(D2 + \chi t, 2, 3) \)

inserted leaf or leaves signed only with a number, the statement is:

- \( D'(D2 + '3') \) or \( D'(D2 + '3', 4') \)

care must be taken here to distinguish between 3 which indicates a
quantity of leaves, and '3' which indicates a leaf signed 3.

inserted leaf or leaves signed and inserted before or after the correct
leaf of the same signature, the statement is:

- \( D'(D2 + 'D3') \) or \( D'(D2 + 'D2') \)
- \( D'(D2 + 'D3', 'D4') \) or \( D'(D2 + 'D2', 'D3') \)

here the single quotes indicate the intrusive leaf or leaves. Where any
inserted leaves or leaf may be marked with some additional
distinguishing sign, there is no need to employ the single quotes. Thus:

\[ D'(D3 + 'D4') \] not \( D'(D3 + 'D4') \)

Note. Where the relationship of disjunct leaves with adjacent gather-
ings is not clear, you should proceed as for uninferred signings e).
d) Inserted folds: these are conjugate leaves which are inserted in the same way as disjunct leaves. The general manner of indicating the insertion is the same as that in which inserted leaves are indicated. The conjugacy is indicated by the use of the full stop. The following are examples of the method of indicating inserted folds:

1 Two inserted conjugate leaves, correctly signed to follow the parent gathering:
   \( A - B \), \( F'(F_4 + F_5.6) \), \( G - H \)

2 An inserted fold distinctively signed, but with the leaves numbered to follow on from the previous gathering:
   \( A - C \), \( D'(D_4 + D_5.6.7.8) \), \( E - H \)
   If \( *D \) were signed \( *D_1 *D_2 *D_3 *D_4 \), the formula would be normal: \( A - D \), \( *D \), \( E - H \)

3 A distinctively signed gathering inserted within a gathering:
   \( Q'(Q_1 + *Q) \) \( P'(P_3 + p) \)

4 An inserted fold signed with the same letter, and with the same numbers as leaves already in the gathering:
   \( G'(G_3 + 'G_3 \cdot 'G_4) \) \( P'(P_1 + 'P_1 \cdot 'P_2) \)

5 An inserted fold signed with the same letter, but of which only the first leaf is numbered:
   \( M'(M_3 + 'M_3 \cdot 1) \)
   Here the real \( M_4 \) exists, so that the unnumbered leaf must not be inferred as \( M_4 \).

Exercise G

1 Explain the following:
   a) \( A - C \), \( *C \), \( \chi \), \( D - F \)
   b) \( A - C \), \( D'(D_4 + D_5.6.7.8) \), \( E - F \)
   c) \( X'(X_1 + *X) \)
   d) \( L'(L_3 + 'L_3 \cdot 1) \)
   e) \( N'(N_2 + 'N_2 \cdot 'N_3) \)
e) Cancellation and substitution: cancellation is the removal of a leaf. The leaf removed is called the cancellandum. Substitution is the insertion of a leaf to replace a leaf taken out. The replacement leaf is called the cancellands.

1. Simple cancellation is denoted by a minus sign. Thus:
   \[ A - B', C'(\pm C_2), D'(-D_4), E - H' \]
   where leaves \( C_2 \) and \( D_4 \) have been cancelled.

2. If a number of leaves are taken out, the formula can express conjunct or disjunct relationship. Thus:
   \[ A - B', C'(\pm C_1, 2), D'(-D_1, 4), E - H' \]
   where the first two leaves of gathering \( C \) are cancelled and have a disjunct relationship to each other, and the conjugate leaves 1 and 4 of gathering \( D \) are missing.

3. If a cancellation is followed by a substitution, the same formula is used, but with the addition of the \(+\) sign. Thus:
   \[ A - B', C'(\pm C_4) \]
   where the last leaf of gathering \( C \) has been taken out, but replaced by another leaf in the same place.

4. If disjunct or conjugate leaves replace one another, the relationship can be expressed in the formula. Thus:
   \[ A - B', C'(\pm C_1, 4 + C_4) \]
   where the conjugate pair \( C_1 \) and \( C_4 \) have been replaced by a disjunct pair \( C_1 \) and \( C_4 \).

5. If a cancelland is different from a cancellandum, the relationship is also expressed, in the same way. Thus:
   \[ A - B', C'(\pm C_2 + \ast C_2), D' - E, F'(-F_4 + \ast 4') \]
   where \( C_2 \) has been replaced by \( \ast C_2 \) and \( F_4 \) has been replaced by a leaf signed only 4.

6. If the substitution is greater or lesser than the cancellation. Thus:
   \[ B'(\pm B_3 + \ast B_3', 1) \]
   \[ B'(\pm B_2 + \chi) \]
   where in all three examples the substitution, although it may be greater, is expressed after the cancellation. \( B_3 \) is replaced by a fold signed \( B_3 \) only on the first leaf, \( B_2 \) is replaced by an unsigned fold, and the disjunct leaves \( B_1 \) and \( B_2 \) are replaced by an unsigned leaf.

7. If deletion and insertion come within a gathering, but at different points, the insertion is given first. Thus:

\[ M'(M_3 + \ast M_4'; -M_1) \quad M'(M_4 + \ast M_5; 6; -M_2, 3) \]

Note that the parts within the parentheses are separated by a semi-colon.

8. If it is possible to ascertain that the cancellands of one gathering is the cancellandum of another, or that a single leaf in the collection is taken from one of the gatherings, this should be stated. Thus:
   \[ \pi([=F_4], A - E', F'(-F_4) \]
   \[ A - B', C'(\pm C_3), D'(-D_4 = \pm C_3) \]
   where the last leaf of \( F \) is the single leaf at the beginning of the collection and \( D_4 \) has become the replacement for \( C_3 \). Suspicion of this can be indicated by adding a question mark to the statement. Thus:
   \[ \pi I [=F_4?] \]
   where the likelihood is that the single leaf at the beginning is \( F_4 \), but not definitely so.
Exercise H

1 Explain the following:
   a) $B'(\bar{-}B3)$
   b) $B'(\pm B3)$
   c) $C'(\bar{-}C3 + '3')$
   d) $F'(+F4')$
   e) $X'(\bar{-}X1,2)$
   f) $F'(\bar{-}F2 + *F2)$
   g) $L'(\bar{-}L2.3 + \chi1)$
   h) $K'(\bar{-}K3 + 'K3',1)$
   i) $G'(G2 + 'G3'; -G1)$
   j) $C'(C8 + 'C8'; -C2)$

2 Explain the following:
   a) $\pi1[=I4], A-D^4, E'(\pm E4), F-G^4, H'(\bar{-}H2 + *H2), I'(\bar{-}I4), K-L^4$
   b) $A-B^4; C'(\bar{-}C3), D-F^4; G^4 (-G1.4 + G1.4), H-K^4, L'(\bar{-}L4 + '4'), M'(\pm M3), N-P^4, Q'(Q3 + 'Q4'; -Q1)$

3 STATEMENT OF:
   a) signers
   b) foliation
   c) pagination

   a) signers: immediately after the statement of gatherings comes the statement of signers. This indicates exactly which leaves are actually signed, The sign $\$ is used in this context to mean either 'all gatherings' or 'in all gatherings'.
   Thus:
   $4^0: A-K^4, [\$3 signed] demonstrates that the first three leaves in each gathering are signed.

   b) foliation: the next part of the line is the statement of foliation. This is simply a total of leaves, which of course must agree with the total as demonstrated in the statement of gatherings. Thus:
   $4^0: A-K^4, [\$3 signed]; 40 leaves shows that the number of leaves in the simple formula $A-K^4$ is 40. A statement which requires more careful checking, is, of course, one which contains abnormal gatherings.

   c) pagination: after the foliation comes the pagination. This is a statement of how the pagination of the book runs. Thus:
   $8^0: \pi^4, A-C^3, D^4, [\$3 signed]; 32 leaves, pp. 1-64 is a very simple statement of pages with no difficulties.

   $8^0: \pi^4, A-C^3, D^4, [\$3 signed]; 32 leaves, pp. [4] 1-60 indicates four unnumbered pages at the beginning which cannot be inferred, since the next page is numbered 1.

   $8^0: \pi^4, A-C^3, D^4, [\$3 signed]; 32 leaves, pp. 1-30 [4] 31-60 indicates four unnumbered pages in the middle, which cannot be inferred as there is no gap in the numbering between the preceding and succeeding pages.
8°: π⁴, A—C⁴, D⁴, [§3 signed]; 32 leaves, pp. [1-2] 3-30 [31-32] 33-58 [59-64] indicates that when page numbers can be inferred, they should be but the inferred pages should be placed in square brackets.

Pages numbered in roman should be left so. Thus:
8°: π⁴, A—C⁴, D⁴, [§3 signed]; 32 leaves, pp. i-xiv, 1-50 means that the first 14 pages are numbered in roman.

Misnumbering should be stated, but also noted at the end of the collation line. Thus:
8°: π⁴, A—C⁴, D⁴, [§3 signed]; 32 leaves, pp. i-31, 30, 33-64 Note: page 32 misnumbered as page 30.

4 STATEMENT OF PLATES, Insets
These should be noted if they do not occur within the collation count. Thus:
Plates I-III (opp. B⁴, C⁴, D⁴) indicates that the insets are tipped or bound in at these particular points in the book.

5 STATEMENT OF PRESS FIGURES
The press figure or press number is an identification mark which appears in some books of the period roughly 1680-1820. It is usually found at the foot of a page of the outer forme and of a page of the inner forme of each gathering, and normally not a page containing a signature. It should be stated thus:
press figure: 3(A², A⁴, B², B⁴)

EXERCISE I

Explain the following:

a) [§ signed]
b) [§4 (—ABC) signed]
c) [§5 (+XYZ) signed]
e) 48 leaves, pp. [1—6] 7—88 [89—96].
f) 48 leaves, pp. [1—6] 7—40 [41—92].
g) Engraved maps (opp. A³, B⁴, C₄)
h) Insets 1—3 (opp. B⁵, C⁵, D₄)
i) Engraved plates (opp. A⁴, B⁵, F²)
INCUNABLES  Bowers chapter nine

The collational formula line for incunables is the same as that for 1501-1800, but with certain additions:

a) unsigned books can be given a numerical line. Thus:
1—18⁴, 19⁴
indicates a book with unsigned gatherings, eighteen of which are regular gatherings each of four leaves, with a last, nineteenth, which is of six leaves.

b) books which have their signatures stamped on can be indicated in the collational line in the following way:
[stamped: a—c⁴, d⁴]

b) blank leaves: these are a problem in incunables, and are dealt with at length in chapter nine of Bowers, but for present purposes the following points are useful to remember:

1 blank leaves which interrupt the text should be treated in the formula as excised, but must still be noted at the end of the formula.

2 blank leaves which occur at proper intervals of text must be assumed to be integral parts of the book.

3 existing acceptable blank leaves must be noted within parentheses at the end of the collational line, giving folio number and signature of each leaf.

d) if the pages are unnumbered say so.

example:
4⁴: a—c⁴, [s2 (—c3) signed]; 12 leaves (ff 1[a1], 12[c4] blank), unnumbered.

e) colophon: the colophon is given immediately after the collation. The exact location of the colophon is also given. Should the colophon be excessively long, it is permitted to omit parts which are not essential. Omissions should be indicated by a note, within square brackets, of the number of lines omitted. Thus:

example:
Colophon: f32(43³); Printed by John Small [ . . six lines] at the sign of the Sunne [in Fleece street] 1493.

1801+  Bowers chapter ten

a) An important difference with books of this period is the use of measurement rather than format at the beginning of the collational line. The use of the terms for format as demonstrated for the period 1501-1800 becomes virtually meaningless once machine made and continuous roll paper is in use. Format is therefore, for this period, a measurement of the size of page, height x width, either in inches or millimetres. If the book is uncut with leaves of differing lengths, an average size should be given. Thus:
10 × 5 ⁷/₈": A—5⁴, [s2 signed]; 144 leaves, 1—288.

b) the collational line for books of the post 1800 period is the same as that for 1501-1800. However, in books of this period it is not unusual to find gatherings signed with numbers. When this is so, the normal practice is followed, except in references to leaves, when to make the reference clear, the leaf reference is made as an inferior index number. Thus:
1—8⁴ indicates a book of eight gatherings, each of which has four leaves,

but

1³ 2¹ 8¹ indicate the third leaf of gathering 1, the first leaf of gathering 2, and the fourth leaf of gathering 8.

c) modern books also often have at the bottom left hand corner of the recto of the first leaf in each gathering, a short title of the book. Thus: PW1 can refer to the first volume of the poetical works of Wordsworth. It is useful to indicate that this short title exists, and it can be indicated in the same way as signatures, using the sign. Thus: short title: PW1; $1¹
indicating that the short title is on the recto of each of the first leaves of every gathering.
contents

1 501-1800  

Bowers chapters six, seven

I REFERENCES

The setting out of the contents requires a knowledge of the way in which references are made.

a) it is possible to refer to a particular column if required. Thus:
   P1 refers to column b on the verso of leaf one of gathering P. This
   may also be stated as P1

b) inserted leaves are referred to in a similar way. Thus:
   P'(P4 + 'P4') indicates the intrusive leaf signed P4. This is the
   full reference, which is used when the collation line is not available
   for consultation. A shorthand version can be used when the collation
   line is available. This P'(P4')

c) inserted folds are referred to in the same way. Thus:
   A'\((A2+A2')\) can also be A'\(A2'\)
   and its individual leaves can be A'\(A1'\)  A'\(A2'\)
   C'\(C2+C2'\) can also be C'\(C2'\)
   and its individual leaves can be C'\(C1'\)  C'\(C2'\)
   D'\(D3+D4.1\) can also be D\(D4.1\)
   and its individual leaves can be D\(D4\)  D\(D4.1\)

d) the cancellandum is referred to by its ordinary signature. Thus:
   A3 refers to leaf which is cancelled. However the cancellans is referred
   to by its parent signature. Thus:
   A(\pm A3)  
   refers to the cancellans, not the cancellandum.

e) arbitrary signs and \chi: with arbitrary signs and \chi the exact position
   in the book is not shown by using the sign alone as a reference. Thus
   the preceding letter is used as a reference in a superior position. Thus:
   A-B, C-F, G-H  
   where references to the leaves in the gathering * and \chi are made thus:
   B*3  P*4

f) when the arbitrary gathering precedes the first regular signing,  
   \pi is used in a superior position. Thus:
   *A4, \pi-B4  
   where references to leaves in gathering * are made in the following
   way:
   \pi-2

g) formes are referred to in the following way:
   A(0)  A(i)
   which refer to the outer and inner formes of gathering A.

EXERCISE J

Explain the following references:

a) \(A3\)

b) \(B(\pm B3)\)

c) \(C'\(C4+C5+1\)\)

d) \(M'(M3+*2)\)

e) \(Z(zz)\)

f) \(LX4\)

g) \(\pi*2\)

h) \(C*3\)

i) \(F(0)\)

j) \(C2*2\)

2 THE CONTENTS

The contents themselves are given as fully as possible without unnecessary detail, and as exactly as possible. It can then be determined what should be on each leaf.

What is on each leaf can be given either as a statement of its contents, or a transliteration. Additional comment should be in square brackets.

example:

Contents: A1: blank; A2 title (verso blank); A3': [ornament]  
Dedicated to my FATHER; A3': [ornament]; A4: contents; B1-K4': text; K4': FINIS [ornament].
This is a simple example, and could be given in a more detailed form:
a) A1 could be divided into A1' and A1'', giving: A1': blank; A1'': blank.
b) A2 similarly could be divided giving: A2': title page; A2'': blank.
c) A4 can be given as A4''.
d) B1—K4' can be expanded if required. For example if the book is a
collection of essays or poems, the page on which each poem or
eay begins would be useful to note, and/or the actual extent of
each poem or essay.
e) should the text end on a page on which there is something separate
to note, the form is to give the two items separately, thus:
B1—K4'': text; K4'': FINIS I [ornament].
f) there is no absolute rule as to the precise amount of detail to be
given. The aim is to achieve clarity and bring out details you
consider important.

3. CATCHWORDS, RUNNING TITLES, TYPE PAGE
These are added to the contents note in the following manner:
a) catchwords: these should be noted. In a small book, all can be
noted; in a large book, the last or the first in each gathering. Thus:
catchwords: A4'': Though; B4'': and T4'': but ... Any
Should the catchword not agree with the first word on the next page
the difference should be noted:
A4'': Though; B4'': and ant ... .
b) running titles: headlines: these should be noted thus:
running titles: A—FHKM r3' ... [note of running title]
indicating that the running title stated can be found on the verso of
leaves r and 3 of gatherings ABCDEFGHM.
c) type page: the type page should be measured from the top of the
ascenders of the headline to the bottom of the descenders of the catch-
word. The basic face used must be given, the number of lines on a
normal page, the use of decoration (decorative chapter headings for
example). Also the vertical measurement of twenty lines of unlead
殷 should be given, preferably in mm. Thus:
type page: height 100mm; roman face with passages in italic;
25 lines of type per page; fleurons at the head of each
chapter; 20 lines of type: 75 mm.

INCUNABLES  Bowers chapter nine
There are certain variations in the detailing of the contents in
incunables. They are:
a) the volume should be foliated throughout, ignoring any possible
foliation within the volume, from the first leaf through to the last.
Thus:
Contents: f1''(A1): blank; f3""(A2''): here begineth the treatise
called Ars Moriendi ...
b) it is insufficient in incunables to put, for example:
f3(B3)—f12'(C4''): text; ...
This must be expanded and the contents analysed with quasifacsimile
transcriptions where necessary. Precise column and line references
should be given if necessary. Analysis of the following is suggested:
1 dedication
2 preface
3 commendations
4 incipit
5 explicit
6 tables
7 verses
8 commentaries
9 beginning of separate parts of text
10 ending of separate parts of text
c) initial letters: these must be noted as follows:
1 rubricated, illuminated manuscript initials are not transcribed, but
a note should be made of their existence:
[illum ms A'] ve
indicating that there is an illuminated ms A which is four type lines
in height, and the rest of the words is ve.
2 an indented space but with no guide letter or director, thus:
['] ve
indicating that there is a space which is four type lines in height, and
the rest of the word is ve.
3 if the guide letter is there but no more, it should be transcribed
thus:
[a'] ve
indicating a lower case a which has been given as guide, the space
given for the initial being four lines of type high and the rest of the word is ve.

4 if the initial is printed, thus:

A\^ ve

with the same meaning as before, except that the upper case A indicates that the initial is actually there.

5 if the initial is carved or engraved, thus:

A\^ [init] ve

again indicating the same as before, but that the initial has been separately engraved and is not a type cast initial.

The more reliable pagination of modern books does allow one to give contents by page number, rather than leaf. Thus:

7 x 4\(\frac{1}{2}\)^\(v\): A—C', [§2 signed]; 24 leaves, pp. 1—48

can have contents given thus:

Contents: p. 1: half title; p. 2: blank; p. 3: title page; p. 4: blank; . . .

The statement of contents can often be more concise in books of this period than in books of the other two periods, as it is often not necessary to elaborate on the statement of text, other than to delineate its extent.
binding

INCUNABLES, 1501-1800
The binding of books of these periods has very little bibliographical importance, since binding was done largely to private order and taste. However it is always useful to have a description of the binding of a particular book. The description of the binding takes the form of a continuous narrative. Thus:

Binding: Full calf, with gilt flower and leaf decorations round the edges of front and back covers; spine titled in gilt at top. T.e.g, fore edge cut, bottom uncut.

This is a simple description. With a knowledge of binding decoration terms, a far more detailed description of decoration can be given, with consequent more use to the bibliographer.

1801+

With the period of modern books comes the period of publisher's casing. The publisher's casing is often a clue to differing editions, impressions, issues. It is very useful to have the binding, or publisher's casing described. Thus:

Binding: Dark blue cloth boards, with paper label at top of spine; paper label printed in black with author and title; cut.

If dust wrappers are available, it is always useful to describe these as part of the binding section.

notes

INCUNABLES, 1501-1800, 1801+
Printed bibliographies generally contain a final section which gives notes on the book described. These can be of any items which are relevant, but not included in the description so far. Here, for example if you know it, you say if the book is a particular issue or state etc; what the provenance of the book is; if it can be found in Pollard & Redgrave, Wing, or any of the other standard catalogues or bibliographies, with, if possible, a reference number; any details of sale; or the existence and location of identical copies. The form of the notes is a continuous narrative. Thus:

Notes: Second edition, first issue; from the library of Sir John Doe; sold Sotheby's 1.1.1911; now in the collection of Townville Public Library; Wing 99999999.
index

Note: This index has been compiled in an attempt to anticipate the keywords which students will look up, rather than to make an index of complete formality.

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