
An Overview of EDMAC: A plain \TeX format for critical editions*

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Abstract

EDMAC is a set of plain \TeX macros providing the ability to format critical editions of texts in the traditional way, i.e., similar to the Oxford Classical Texts, Teubner, Arden Shakespeare and other series. The principal functions that are added are marginal line numbering and multiple series of footnotes and endnotes keyed to line numbers. While EDMAC's inner workings are necessarily esoteric, it seeks to provide relatively simple macros to enable you to control the exact format of the edition, taking into account the need to vary the format for different sorts of texts.

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1 Introduction**1.1 Overview**

The EDMAC macros, together with \TeX , provide several important facilities for formatting critical editions of texts in a traditional manner. Major features include:

- automatic stepped line numbering, by page or by chapter;
- sub-lineation within the main series of line numbers;
- variant readings automatically keyed to line numbers;
- multiple series of footnotes and endnotes;
- block or columnar formatting of footnotes.

EDMAC works together with the plain \TeX format, and with the exception of footnote-related commands, virtually all plain \TeX commands are available for use in the normal way. Other languages and fonts (Sanskrit, Greek, Russian, etc.),¹ can be incorporated.

EDMAC allows the scholar engaged in preparing a critical edition to focus attention wholly on the task of creating the critical text and evaluating the variant readings, text-critical notes and testimonia. \TeX and EDMAC will take care of the formatting and visual correlation of all the disparate types of information.

This documentation assumes the “manual” use of EDMAC. But EDMAC is also successfully being used (with \TeX , of course) as the formatting engine or “back end” for the output

* This file is Revision: 1.1, Date: 18 Oct 1990 16:09:24.

¹ See *TUGboat* 9, no. 2, pp. 131–151.

of an automatic manuscript collation program. COLLATE runs on the Apple Macintosh, can collate simultaneously up to a hundred manuscripts of any length, and will provide facilities for the scholar to tailor the collation interactively. Version 1.0 of COLLATE is scheduled for distribution from March 1991.²

1.2 History

The original version of EDMAC was TEXTED.TEX, written by John Lavagnino in late 1987 and early 1988 for formatting critical editions of English plays.

John passed them on to Dominik Wujastyk who, in September–October 1988, added the footnote paragraphing mechanism, margin swapping and other changes to suit his own purposes,³ making the style more like that traditionally used for classical texts in Latin and Greek (e.g., the Oxford Classical Texts series). He also wrote some extra documentation and sent the files out to several people. This version of the macros is called EDMAC.TEX.

The present version was developed in the summer of 1990, with the intent of adding necessary features, streamlining and documenting the code, and further generalizing it to make it easily adaptable to the needs of editors in different disciplines. John did most of the general reworking and documentation, with the financial assistance of the Division of the Humanities and Social Sciences, California Institute of Technology. Dominik adapted the code to the conventions of Frank Mittelbach's doc option, and added some documentation, multiple-column footnotes, cross-references, and crop marks.

2 How to use EDMAC

2.1 Introduction

All you need to do to invoke EDMAC is to include the line `\input EDMAC` at the top of your document, and to have the file EDMAC.TEX somewhere on your disk that is "visible" to T_EX for input. If you are going to use it frequently, as will certainly be the case if you are doing a real edition, you will find it convenient to compile it into a T_EX format file, loading it after PLAIN.TEX and any other private macros.

EDMAC is a three-pass system. Although your textual apparatus and line numbers will be printed even on the first run, it takes two more passes through T_EX to be sure that everything gets to its right place. Any changes you make to the input file may similarly require three passes to get everything to the right place, if the changes alter the number of lines or notes. EDMAC will tell you that you need to make more runs, when it notices, but it does not expend the labor to check this thoroughly. If you have problems with a line or two misnumbered at the top of a page, try running T_EX once or twice more.

A file may mix *numbered* and *unnumbered* text. Numbered text is printed with marginal line numbers and can include footnotes and endnotes that are referenced to those line numbers: this is how you'll want to print the text that you're editing. Unnumbered text is not printed with line numbers, and you can't use EDMAC's note commands with it: this is appropriate for introductions and other material added by the editor around the edited text.

2.2 General markup

`\beginnumbering` Each section of numbered text must be preceded by `\beginnumbering` and followed

² Contact COLLATE's author, Peter Robinson, at The Computers and Manuscripts Project, Oxford University Computing Service, 13 Banbury Road, Oxford OX2 6NN, England. Janet: `peterr@uk.ac.oxford.vax`.

³ These macros were used to format the Sanskrit text in *Metarules of Pāṇinian Grammar* by Dominik Wujastyk (Groningen, in press).

`\endnumbering` by `\endnumbering`:

```
\beginnumbering
<text>
\endnumbering
```

The `\beginnumbering` macro resets the line number to zero, reads an auxiliary file called `<filename>.nn` (where `nn` is 1 for the first section, 2 for the second section, and so on), and then creates a new version of this auxiliary file to collect information during this run. The first instance of `\beginnumbering` also opens a file called `<filename>.end` to receive the text of the endnotes. `\endnumbering` closes the `<filename>.nn` file.

If the line numbering of a text is to be continuous from start to end, then the whole text will be typed between one pair of `\beginnumbering` and `\endnumbering` commands. But your text will most often contain chapter or other divisions marking sections that should be independently numbered, and these will be appropriate places to begin new numbered sections. EDMAC has to read and store in memory a certain amount of information about the entire section when it encounters a `\beginnumbering` command, so it speeds up the processing and reduces memory use when a text is divided into a larger number of sections (at the expense of multiplying the number of external files that are generated).

`\pstart` Within a numbered section, each paragraph of numbered text must be marked using `\pend` the `\pstart` and `\pend` commands:

```
\pstart
<paragraph of text>
\pend
```

Text that appears within a numbered section but isn't marked with `\pstart` and `\pend` will not be numbered.

The following example shows the proper section and paragraph markup:

```
\beginnumbering
\pstart
This is a sample paragraph, with
lines numbered automatically.
\pend
\pstart
This paragraph too has its
lines automatically numbered.
\pend
\endnumbering
```

1 This is a sample paragraph
2 with lines numbered
3 automatically.
4 This paragraph too
5 has its lines automatically
6 numbered.
7 And here the numbering
8 begins again.

The lines of this paragraph are
not numbered.

And here the numbering begins
again.

`\autopar` You can use `\autopar` to avoid the nuisance of this paragraph markup and still have every paragraph automatically numbered, in this manner:

```

\begingroup
  \beginnumbering
  \autopar
  A paragraph of numbered text.

  Another paragraph of numbered text.

  \endnumbering
\endgroup

```

1 A paragraph of numbered
2 text.
3 Another paragraph of
4 numbered text.

`\autopar` fails, however, on paragraphs that start with a `{` or with any other command that starts a new group before it generates any text. Such paragraphs still need to be started explicitly using `\pstart`.

2.3 The apparatus

`\text` Within numbered paragraphs, all footnotes and endnotes are generated by forms of the `\text` macro:

```
\text{⟨lemma⟩}{⟨commands⟩}/
```

The `⟨lemma⟩` argument is the lemma in the main text: `\text` both prints this as part of the text, and makes it available to the `⟨commands⟩` you specify to generate notes. The `/` at the end terminates the command.

For example:

```

I saw my friend \text{Smith}
{\afootnote{Jones C, D.}}/
on Tuesday.

```

1 I saw my friend
2 Smith on Tuesday.
2 Smith] Jones C, D.

The lemma `Smith` is printed as part of this sentence in the text, and is also made available to the footnote that specifies a variant, `Jones C, D`. The footnote macro is supplied with the line number at which the lemma appears in the main text.

The `⟨lemma⟩` may contain further `\text` commands. This makes it possible to print an explanatory note on a long passage together with notes on variants for individual words within the passage. For example:

```

\text{I saw my friend
  \text{Smith}{\afootnote{Jones
    C, D.}}/ on Tuesday.}
{\bfootnote{The date was
  July 16, 1954.}}/

```

1 I saw my friend
2 Smith on Tuesday.
2 Smith] Jones C, D.
1-2 I saw my friend
Smith on Tuesday.] The
date was July 16, 1954.

However, `\text` cannot handle overlapping but unnested notes—for example, one note covering lines 10–15, and another covering 12–18; a `\text` that starts in the `⟨lemma⟩` argument of another `\text` must end there, too. (The `\lemma` and `\linenum` commands may be used to generate overlapping notes if necessary.)

Commands used in `\text`'s second argument The second argument of the `\text` macro, `⟨commands⟩`, may contain a series of subsidiary commands that generate various kinds of notes. The braces around `⟨commands⟩` are optional, unless this instance of `\text` appears within the argument of another instance of `\text`.

`\afootnote` Five separate series of footnotes are maintained; when all five are used, the a notes
`\bfootnote` appear in a layer just below the main text, followed by the rest in turn, down to the
`\cfootnote` e notes at the bottom. These are the main macros that you will use to construct
`\dfootnote` the critical apparatus of your text. EDMAC provides five layers of notes in the belief
`\efootnote`

that this will be adequate for the most demanding editions. But it is not hard to add further layers of notes to EDMAC should they be required.

```
\aendnote EDMAC also maintains five separate series of endnotes. By default none of them are
\bendnote printed: you must use the \doendnotes macro described below (p. 629) to call for this
\cendnote at the appropriate point in your document.
\dendnote Sometimes you want to change the lemma that gets passed to the notes. You can do
\endnote this by using \lemma within the second argument to \text, before the note commands.
\lemma      \lemma{<alternative lemma>}
```

The most common use of this command is to abbreviate the lemma that's printed in the notes. For example:

```
\text{I saw my friend          1 I saw my friend
\text{Smith}{\afootnote{Jones  2 Smith on Tuesday.
C, D.}}/ on Tuesday.}        2 Smith] Jones C, D.
{\lemma[I \dots\ Tuesday.]}  1-2 I ... Tuesday.]
\bfootnote{The date was      The date was July 16, 1954.
July 16, 1954.}
}/
```

`\linenum` You can use `\linenum` to change the line numbers passed to the notes. The notes are actually given seven numbers: the page, line, and sub-line number for the start of the lemma; the same three numbers for the end of the lemma; and the font family number for the lemma. As argument to `\linenum`, you specify those seven numbers in that order, separated by vertical bars (the `|` character). However, you can retain the value computed by EDMAC for any number by simply omitting it; and you can omit a sequence of vertical bars at the end of the argument. For example, `\linenum{|||23}` changes one number, the ending page number of the current lemma.

This command doesn't change the marginal line numbers in any way; it changes the numbers passed to the footnotes. Its use comes in situations that `\text` has trouble dealing with for whatever reason. If you need notes for overlapping passages that aren't nested, for instance, you can use `\lemma` and `\linenum` to generate such notes despite the limitations of `\text`. If the *(lemma)* argument to `\text` is extremely long, you may run out of memory; here again you can specify a note with an abbreviated lemma using `\lemma` and `\linenum`. The numbers used in `\linenum` need not be entered manually; you can use the "x-" cross-referencing commands below (p. 629) to compute them automatically.

Changing the names of these commands The default commands for generating the apparatus have been given rather bland names, because editors in different fields have widely divergent notions of what sort of notes are required, where they should be printed, and what they should be called. But this doesn't mean you should type `\afootnote` when you'd rather say something you find more meaningful, like `\variant`. We recommend that you create a series of such aliases and use them instead of the names chosen here; all you have to do is put commands of this form at the start of your file:

```
\let\variant=\afootnote
\let\explanatory=\bfootnote
\let\trivial=\aendnote
```

It is also possible to define aliases for `\text`, which can be easier to type. You can make a single character substitute for `\text` by saying this:

```
\catcode'\<=\active
\let<=\text
```

Then you can say `<{Smith}\afootnote{Jones}/`. This of course destroys the ability to use `<` in any new macro definitions, so it requires some care.

Changing the character at the end of the command requires more work:

```
\catcode'\<=\active
\def\xtext#1#2>{\text{#1}{#2}/}
\let<=\xtext
```

This allows you to say `<{Smith}\afootnote{Jones}>`.

These aliases can't be nested: if you want to use a `\text` within the first argument of another `\text`, the outer `\text` can use an alias but not the inner. For example,

```
<{a \text{big}{\afootnote{bin}}/ difference}\bfootnote{no difference}>
```

2.4 Lineation commands

<code>\lineation</code>	EDMAC can number lines either by page or by section; you specify this using the <code>\lineation{<arg>}</code> macro, where <code><arg></code> is either <code>page</code> or <code>section</code> . You may only use this command at places when numbering is not in effect; you can't change the lineation system within a section. You can change it between sections: they don't all have to use the same lineation system. The line-of-section system is used by default.
<code>\linenummargin</code>	The marginal line numbers will be printed in the <code>left</code> , <code>right</code> , <code>inner</code> , or <code>outer</code> margin, depending on which you specify as argument to this command. By default, line numbers appear in the left margin. You can change this whenever you're not in the middle of making a paragraph. E.g.: <code>\linenummargin{inner}</code> .
<code>\firstlinenum</code>	You set these counters to control which lines are printed with marginal numbers. <code>\firstlinenum</code> is the first line in a section to number, and <code>\linenumincrement</code> is the increment between numbered lines. The other parameters do the same for sub-lines. By default all these counters are set equal to 5.
<code>\linenumincrement</code>	
<code>\firstsublinenum</code>	
<code>\sublinenumincrement</code>	
<code>\leftlinenum</code>	These parameters control the appearance of marginal line numbers. You can redefine <code>\leftlinenum</code> and <code>\rightlinenum</code> to change the way marginal line numbers are printed; the default values print the number in font <code>\numlabfont</code> at a distance <code>\linenumsep</code> from the text.
<code>\rightlinenum</code>	
<code>\linenumsep</code>	
<code>\numlabfont</code>	

2.5 Changing the line numbers

<code>\startsub</code>	These macros turn sub-lineation on and off. When sub-lineation is in effect, the line number counter is frozen and the sub-line counter advances instead. If one of these commands appears in the middle of a line, it doesn't take effect until the next line; in other words, a line is counted as a line or sub-line depending on what it started out as, even if that changes in the middle.
<code>\endsub</code>	
<code>\setline</code>	These commands may be used to change the line number (or the sub-line number, if sub-lineation is currently on). They change both the marginal line numbers and the line numbers passed to the notes. <code>\setline</code> takes one argument, the value to which you want the line number set; it must be 0 or greater. <code>\advanceline</code> takes one argument, an amount that should be added to the current line number; it may be positive or negative.
<code>\advanceline</code>	

2.6 Alternate footnote formatting

<code>\notenumfont</code>	These commands select the fonts used in printing all the layers of notes. The <code>\notenumfont</code> and <code>\notetextfont</code> macros take no arguments; they should be equated to the appropriate fonts using <code>\let</code> . <code>\lemmafонт</code> is a macro that takes one argument—the cluster of line numbers passed to the note commands, a cluster that ends with a number indicating what font family was in effect at the start of the lemma; <code>\lemmafонт</code>
<code>\lemmafонт</code>	
<code>\notetextfont</code>	

selects the appropriate font for the note using that family number. See the full documentation for more details. What EDMAC does is to use these macros in a default footnote format macro called `\normalfootfmt`. The footnote formats for each of the layers a to e are `\let` equal to `\normalfootfmt`.

But it is also likely that you might want to have different fonts for just, say, the note numbers in layers a and b of your apparatus. To do this, make two copies of the `\normalfootfmt` macro (see the `arden.sty` example, p. 636 below) or `\twocolfootfmt`, or other appropriate macro ending in `-footfmt`, depending on what footnote format you have selected, and give these macros the names `\afootfmt` and `\bfootfmt`. Then, in these new macros, change the font specifications (and spacing, or whatever) to your liking.

`\footparagraph` All footnotes will normally be formatted as a series of separate paragraphs in one column. But there are three other formats available for notes, and using these macros you can select a different format for a series of notes. `\footparagraph` formats all the footnotes of a series as a single paragraph; `\foottwocol` formats them as separate paragraphs, but in two columns; `\footthreecol`, in three columns. Each of these macros takes one argument: a letter (between a and e) for the series of notes you want changed.

You should set `\hsize` for the text, and the `\baselineskip` of the footnotes (`\afootbaselineskip`, etc.), before you call any of these macros, because their action depends on those values; too much or too little space will be allotted for the notes on the page if these macros use the wrong values.

2.7 Crop marks

Publishers usually like crop marks on the camera-ready copy for works of this kind, so a facility for generating them has been incorporated into EDMAC.

Publishers specify crop marks (or trim lines, etc.) in terms of two dimensions, height and width, and they also usually specify back and head margins.

The “head margin” is the distance between the top of the printed text and the top crop marks; it is normally measured from the top of the running head, plain T_EX’s `\headline`. The “back margins” (or “gutter margins”) are the right margins of even-numbered pages, and the left margins of odd-numbered pages. If you hold a book open in front of you, they are the margins in the middle of the opening.

`\cropsetup` If you want to have crop marks, and to control the back and head margins, you issue the `\cropsetup` macro. It takes four parameters (see Figure 1):

1. the vertical distance between crop marks,
2. the horizontal distance between crop marks,
3. the head margin, and
4. the back margin.

In order to calculate these dimensions properly, EDMAC has to use the `\hsize` of the page, as well as information about the height at which the `\headline` floats above the main text (which is set in plain T_EX’s `\makeheadline` macro). EDMAC performs these calculations when you issue the `\cropsetup` command. Therefore, it is important that you set the `\hsize` and make any changes to `\makeheadline` *before* you issue the `\cropsetup` command. If you do change these values, issue the `\cropsetup` command again.

`\headlinefont` In particular, if the `\headline` is going to be set at a different height from the top of the text, or in a different font, you can change the appropriate values easily by using `\headlinefont` and `\magicvskip`. The former is what you would expect; just `\let` it to be whatever font you like (the font macro should include a definition of an appropriate `\strutbox` for that font). The `\magicvskip` gives you direct access

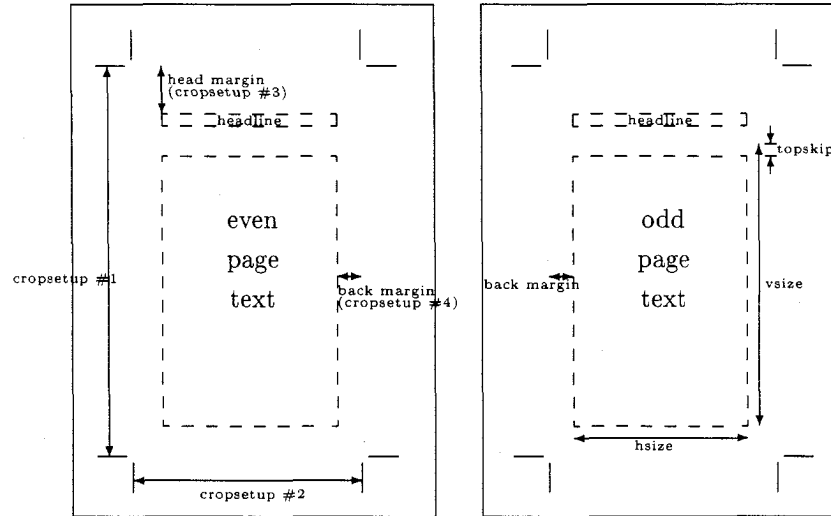


Figure 1: Crop marks, back and head margins.

to what Knuth calls a “magic constant” on p. 255 of *The T_EXbook*. For plain T_EX, `\magicvskip` is `-22.5pt`, but you can change this if you want the `\headline` higher or lower than the default. See the full documentation for more details.

Apart from this stricture that the `\cropsetup` command should follow any changes in `\hsize` and the `\headline`, there is no relation (other than visual) between the crop marks and the `\hsize` and `\vsize`. You can vary any of these dimensions independently, without affecting any other. Your publisher will almost always want the `\hsize` and `\vsize` to be a few picas smaller than the horizontal and vertical distances between crop marks. And if you want to shift the whole of your printed page about on the paper, use `\hoffset` and `\voffset` as described in *The T_EXbook*, 251, or use the facilities of your DVI translator.

`\cropwidth` `\cropwidth` and `\cropgap` define the thickness of the rules used for drawing crop marks and the gap by which crop marks don’t cross; as before, if you change either, do so before using the `\cropsetup` macro.

If, for example, you want your text to have a back margin, for two-sided printing, but you don’t want crop marks, just set `\cropwidth=0pt`.

2.8 Endnotes

`\doendnotes` `\doendnotes` closes the `.end` file, if it’s open, and prints one series of endnotes, as specified by a series-letter argument, e.g., `\doendnotes{a}`. `\endprint` is the macro that’s called to print each note. It uses `\notenumfont`, `\lemmafond`, and `\notetextfont` to select fonts, just as the footnote macros do (see p. 627 above).

`\noendnotes` If you aren’t going to have any endnotes, you can say `\noendnotes` in your file, before the first `\beginnumbering`, to suppress the generation of an unneeded `.end` file.

2.9 Cross referencing

EDMAC provides a simple cross-referencing facility that allows you to mark places in the text with labels, and generate page and line number references to those places elsewhere in the text using those labels.

`\label` First you place a label in the text using the command `\label{foo}`. “foo” can be anything you like, including letters, numbers, punctuation, or a combination—anything but spaces; you might say `\label{toves-3}`, for example.

`\pageref` Elsewhere in the text, either before or after the `\label`, you can refer to its location by saying `\pageref{foo}`, or `\lineref{foo}`, or `\sublineref{foo}`. These commands will produce, respectively, the page, line and sub-line on which the `\label{foo}` command occurred.

A `\label` command may appear in the main text, or in the first argument of `\text`. But `\pageref`, `\lineref` and `\sublineref` commands can be used in the apparatus to refer to `\labels` in the text.

The `\label` command works by writing macros to an `.aux` file (which will only be created if you are actually using some of these commands). Clearly, then, you will need to process your document through `TEX` twice in order for the references to be resolved.

You will be warned if you say `\label{foo}` and `foo` has been used as a label before. The `ref` commands will return references to the last place in the file marked with this label. You will also be warned if a reference is made to an undefined label. (This will also happen the first time you process a document after adding a new `\label` command: the auxiliary file will not have been updated yet.)

`\xpageref` However, there are situations in which you'll want EDMAC to return a number without displaying such a warning: if you want to use the reference in a context where `TEX` is looking for a number, such a warning will lead to a complaint that the number is missing. This is the case for references used within the argument to `\linenum`, for example. For this situation, these variants of the reference commands, with the `x` prefix, are supplied: the only operations they perform are ones that `TEX` can do in its "mouth." They have these limitations: they will not tell you if the label is undefined, and they must be preceded in the file by at least one of the four other cross-reference commands—e.g., a `\label{foo}` command, even if you never refer to that label—since those commands can all do the necessary processing of the `.aux` file, and these cannot.

2.10 Miscellaneous

`\extensionchars` When EDMAC assembles the name of the auxiliary file for a section, it prefixes `\extensionchars` to the section number. By default this is empty, but you can add some characters to help distinguish these files if you like; what you use is likely to be system-dependent. If, for example, you said `\def\extensionchars{!}`, then you would get temporary files called `jobname.!1`, `jobname.!2`, etc.

2.11 Known bugs

The plain `TEX` `\footnote` command will work only within unnumbered text; within numbered text it will wreak havoc.

One seemingly small point that does make a difference to EDMAC is that the definition of each font should include a definition of the appropriate `\strut` and `\strutbox`. Like plain `TEX` itself, EDMAC uses the height of a `\strutbox` in one or two places (the crop marks, the alignment of the top line of footnotes, etc.), and if you change the size of your fonts, but don't change the size of the `\strutbox` too, then there will be discrepancies in the spacing. For an example of how to do this, see the definition of `\eightpoint` on p. 415 of *The TEXbook*.

`\parshape` cannot be used within numbered text, except in a very restricted way (see the full documentation for more details).

Critical editions, like dictionaries, present a great deal of categorized information in a densely compressed form. Success in making the results legible typically depends on the carefully planned use of a large variety of fonts. There are several places where EDMAC suffers from the lack of a general font selection scheme such as Mittelbach and

Schöpf's.⁴ We look forward to a time when it will be possible to rationalize EDMAC's font calls, and bring them into line with such a general scheme.

Any help, suggestions and corrections gratefully received.

3 Examples

In the following examples, the command `\input edmac` has been included for completeness although, as mentioned before, it is usually more convenient to include the EDMAC macros in a \TeX format, to be invoked with a command such as `tex &edmac <filename>`.

3.1 Gascoigne

The first example is taken from an edition of George Gascoigne's *A Hundreth Sundrie Flowres* that is being prepared by G. W. Pigman III. Figure 2 shows the result of setting the text with EDMAC.

The main input file first calls for a file of initial definitions, called `gg.tex`. This file, shown below, demonstrates how EDMAC macros may be customized to give detailed control over the final format.

```
% parameters for edition of Gascoigne's {\it A Hundreth Sundrie Flowres}.
\ifx\ggloaded\relax\endinput\else\let\ggloaded=\relax\fi
\noendnotes
\makeatletter
\def\eightpoint{\def\rm{\fam0\eightrm}%
  \def\it{\fam\itfam\eightit}%
  \setbox\strutbox=\hbox{\vrule height7pt depth2pt width\z0}%
  \rm}
\font\poemnumfont=cmmi12 \font\titlefont=cmr12 \font\ninerm=cmr9
\font\nineit=cmti9 \font\eightrm=cmr8 \let\headfont=\eightrm
\font\eightit=cmti8 \let\headit=\eightit \font\sixrm=cmr6
\font\foliofont=cmmi8 \let\os=\foliofont \let\numlabfont=\foliofont
%
\firstsublinenum=1000
\hoffset=1.25in \voffset=1.25in \hsize=24pc \vsize=488pt
%
\frenchspacing \parskip=0pt \hyphenpenalty=1000
%
\def\makeheadline{\vbox to 0pt{\vskip-16.5pt
  \line{\vbox to 8.5pt{\the\headline}\vss}\nointerlineskip}
\nopagenumbers
%
\newif\ifnolinenums % true if you want no line number in the notes
\def\nolinenums{\global\nolinenumstrue}
\def\lिनenums{\global\nolinenumfalse}
\newif\ifpoemnum % true if you want to print the poem number in
% the notes
\def\nopoemnum{\global\poemnumfalse}
\newif\ifdbpoemnum % ditto for poems with two numbers, e.g., 64 (v)
\def\nodbpoemnum{\global\dbpoemnumfalse}
\newif\ifactnum % ditto for act/scene numbers
\def\noactnum{\global\actnumfalse}
%
\newcount\poemnumber
\def\poem#1{\poemnumber=#1\poemnumtrue\parindent=0pt
  \centerline{\{\poemnumfont#1\}\vskip12pt}
```

⁴ See *TUGboat* 10, no. 2, pp. 222–238; 11, no. 1, pp. 91–97.

2.1

IOCASTA

73

Oedipus entreth.

Or that with wrong the right and doubtlesse heire,
 Shoulde banisht be out of his princely seate.
 Yet thou O queene, sò fyle thy sugred toung,
 And with suche counsell decke thy mothers tale,
 That peace may bothe the brothers heartes inflame, 5
 And rancour yelde, that erst possest the same.

Eteocl. Mother, beholde, youre hestes for to obey,
 In person nowe am I resorted hither:
 In haste therefore, fayne woulde I knowe what cause
 With hastie speede, so moued hath your mynde 10
 To call me nowe so causelesse out of tyme,
 When common wealth moste craues my onely ayde:
 Fayne woulde I knowe, what queynt commoditie
 Persuades you thus to take a truce for tyme,
 And yelde the gates wide open to my foe, 15
 The gates that myght our stately state defende,
 And nowe are made the path of our decay.

„ *Ioca.* Represse deare son, those raging stormes of wrath,
 „That so bedimme the eyes of thine intende,
 „As when the tongue (a reddy Instrument) 20
 „Would fayne pronounce the meaning of the minde,
 „It cannot speake one honest seemely worde.
 „But when disdayne is shrunke, or sette asyde,
 „And mynde of man with leysure can discourse
 „What seemely woordes his tale may best beseeme, 25
 „And that the toung vnfoldes without affectes
 „Then may proceede an answere sage and graue,
 „And euery sentence sawst with sobernesse:
 Wherefore vnbende thyne angrie browes deare chylde,
 And caste thy rolling eyes none other waye, 30
 That here doost not *Medusaes* face beholde,
 But him, euen him, thy blood and brother deare.
 And thou beholde, my *Polinices* eke,
 Thy brothers face, wherein when thou mayst see
 Thine owne image, remember therwithall, 35
 That what offence thou woldst to him were done,

0.1 entreth] *intrat* MS 20–22 As ... worde.] *not in* 73 20 the] *thie* MS
 21 fayne pronounce] *faynest tell* MS 21 the minde] *thy minde* MS 22 It
 ... worde.] *This swelling hart pufte vp with wicked ire / Can scarce pronounce
 one inward louing thought.* MS 31 *Medusaes*] *One of the furies.* 75m

Figure 2: Output from *iocasta.tex*.

```

%
\newcount\dbpoemnumone \newcount\dbpoemnumtwo
\def\dbpoem#1#2{\dbpoemnumtrue\dbpoemnumone=#1\dbpoemnumtwo=#2
  \parindent=0pt\par
  \centerline{\poemnumfont#1} {\titlefont
    (\romannumeral#2)}}\nointerlineskip \vskip12pt}
%
\newcount\actnumber \newcount\scenenummer
\def\act #1 #2 #3{\actnumtrue\actnumber=#1\scenenummer=#2
  \parindent=0pt\vskip24pt plus12pt minus3pt\hrule height0pt\relax
  \pstart\startsub\centerline{\rm#3}\pend\endsub
  \mark{\os#1:#2}}\nobreak \vskip 12pt plus3pt minus3pt}
% : is . in \os
%
\def\rightlinenum{\if@bypage\ifnum\line@num<10\kern.5em\fi\else
\ifnum\line@num<10\kern1em\else\ifnum\line@num<100
  \kern.5em\fi\fi\fi\kern.5em\numlabfont\the\line@num
  \ifnum\subline@num>0:\the\subline@num\fi}
\def\leftlinenum{\numlabfont\the\line@num
  \ifnum\subline@num>0:\the\subline@num\fi \kern.5em}
\linenummargin{outer}
\lineation{page}
\def\ggfootfmt#1#2#3{%
  \eightpoint
  \let\par=\endgraf
  \rightskip=0pt \leftskip=0pt
  \parindent=0pt \parfillskip=0pt plus 1fil
  \printlines#1\ifnolinums\relax\else\enskip\fi {\rm
    #2\def\@tempa{#2}\ifx\@tempa\empty
    \else\enskip\fi#3\penalty-10\hskip 1em plus1em minus.4em\relax}}
% : is . in \os
%
\def\printlines#1|#2|#3|#4|#5|#6|#7{%
  \eightpoint
  %
  % Do nothing if no line numbers are wanted.
  \ifnolinums
  %
  % We are printing line numbers. Go into the old-style-digits font.
  \else
  \begingroup
  \os
  %
  % First, print poem number or act/scene number.
  \ifpoemnum % a poem
  \the\poemnumber:%
  \global\poemnumfalse
  \fi
  \ifdbpoemnum % a poem with two numbers, e.g. 64 (xii)
  \the\dbpoemnumone\space
  {\rm(\romannumeral\the\dbpoemnumtwo).}%
  \global\dbpoemnumfalse
  \fi
  \ifactnum % a play (act/scene)
  \the\actnumber:\the\scenenummer:%
  \global\actnumfalse
  \fi
  % Now do the line numbers. To simplify the logic here we use a lot of
  % counters to tell us which numbers need to get printed (using 1 for

```

```

% yes, 0 for no). The assignments are: 0 for page numbers; 2 for
% starting subline; 4 for ending line; 6 for ending subline; and 8 for
% dash between the starting and ending groups. There's no counter for
% the line number because it's always printed.
% We print page numbers only if:
%   --- we're doing by-page lineation, and
%   --- the ending page number is different from
%       the starting page number.
\count0=0 \count8=0
\if@bypage
  \ifnum#4=#1 \else
    \count0=1
    \count8=1
  \fi
\fi

%
% The ending line number is printed if:
%   --- we're printing the ending page number, or
%   --- it's different from the starting line number.
\count4=\count0
\ifnum#2=#5 \else
  \count4=1
  \count8=1
\fi

%
% The starting subline is printed if it's nonzero.
\count2=0
\ifnum#3=0 \else
  \count2=1
\fi

%
% The ending subline number is printed if it's nonzero and:
%   --- different from the starting subline number, or
%   --- the endline is being printed.
\count6=0
\ifnum#6=0 \else
  \ifnum#6=#3
    \count6=\count4
  \else
    \count6=1
    \count8=1
  \fi
\fi

%
% Now we're ready to print it all, based on our counter values. The
% only subtlety left here is when to print a : between numbers.
% But the only instance in which this is tricky is for ending subline
% number: it could be coming after the starting subline number (in
% which case we want only the dash) or after an ending line number
% (in which case we need to insert a :).
\ifodd\count0 #1:\fi
#2%
\ifodd\count2 :#3\fi
\ifodd\count8 {\rm --}\fi
\ifodd\count0 #4:\fi
\ifodd\count4 #5\fi
\ifodd\count6 \ifodd\count4:\fi #6\fi

%
\endgroup % end of \os font

```

```

\fi\ignorespaces}
%
% Now reset the \afootnote parameters and macros:
\footbaselineskip=9pt
\footparagraph{a}
\let\afootfmt=\ggfootfmt
\dimen\afootins=\vsize
\skip\afootins=3pt plus9pt
\def\ggfootstart#1{\vskip\skip\afootins}
\let\afootstart=\ggfootstart
\def\ttitle{\pstart\startsub\let\par=\endtitle}
\def\endtitle{\pend\endsub}
\def\verseskip{\vskip6pt plus6pt}
\def\speaker#1{\pstart\parindent=1em\let\par=\pend
  {\tenit{#1}}\hbox to 1ex{}\ignorespaces}
\def\sen{\leavevmode\lowerlex\hbox{\tenrm''}}
\def\senspeak#1{\pstart\obeylines\setbox0=\hbox{\tenrm''}\leavevmode
  \lowerlex\copy0\kern-\wd0\hskip1em{\tenit{#1}}\hbox to 1ex{}\ignorespaces}
\def\speak#1{\pstart\obeylines\hskip1em{\tenit{#1}}\hbox to
  1ex{}\ignorespaces}
\def\nospeaker{\parindent=0em\pstart\let\par=\pend}
\def\nospeak{\pstart\obeylines}
\def\stage#1{\pstart\startsub\parindent=0pt\hangindent=3em\hangafter=0
  {\tenit{#1}}\let\par=\endstage}
\let\endstage=\endtitle
\def\motto#1{\pstart\startsub\centerline{{\tenit{#1}}}\pend\endsub}
\def\finis#1{\pstart\startsub\smallskip\centerline{{\tenit{#1}}
  \let\par=\endfinis}
\let\endfinis=\endtitle
\def\initials#1{\pstart\line{\hfil{\it #1}\quad}\let\par=\pend}
\makeatother

```

With these definitions, the actual input file, `iocasta.tex`, is relatively simple:

```

\input edmac
\input gg
\parindent=0pt
\pageno=73
\mark{{\os2:1}}
\headline={\ifnum\pageno>61\ifodd\pageno
  \rlap{\foliofont\botmark}\hfil\headfont
  IOCASTA\hfil\llap{\foliofont\folio}%
\else
  \rlap{\foliofont\folio}\hfil\headfont
  IOCASTA\hfil\llap{\foliofont\botmark}\fi
\else\hfil\fi}

\beginnumbering

\stage{Oedipus \text{entreth}\afootnote{{\it intrat} MS}/.}

\nospeak
Or that with wrong the right and doubtlesse heire,
Shoulde banisht be out of his princely seate.
Yet thou O queene, so fyle thy sugred tounge,
And with suche counsell decke thy mothers tale,
That peace may bothe the brothers heartes inflame,

```

And rancour yelde, that erst possess the same.

\pend

\speak{Eteocl.} Mother, beholde, youre hestes for to obey,

In person nowe am I resorted hither:

In haste therefore, fayne woulde I knowe what cause

With hastie speede, so moued hath your mynde

To call me nowe so causelesse out of tyme,

When common wealth moste craues my onely ayde:

Fayne woulde I knowe, what queynt commoditie

Persuades you thus to take a truce for tyme,

And yelde the gates wide open to my foe,

The gates that myght our stately state defende,

And nowe are made the path of our decay.

\pend

\senspeak{Ioca.} Represse deare son, those raging stormes of wrath,

\sen That so bedimme the eyes of thine intente,

\text{\sen As when \text{the}\afootnote{thie MS}/ tongue (a redy Instrument)

\sen Would \text{fayne pronounce}\afootnote{faynest tell MS}/ the meaning %

of \text{the minde}\afootnote{thy minde MS}/,

\sen \text{It}\lemma{It \dots\ worde.}\afootnote{Thie swelling hart %

puft vp with wicked ire / Can scarce pronounce one inward louing %

thought. MS}/ cannot speake one honest seemely worde.}\lemma{%

As \dots\ worde.}\afootnote{{\it not in\} \os73}/

\sen But when disdayne is shrunke, or sette asyde,

\sen And mynde of man with leysure can discourse

\sen What seemely woordes his tale may best beseeme,

\sen And that the toung vnfoldes without affectes

\sen Then may proceede an answere sage and graue,

\sen And euery sentence sawst with sobernesse:

Wherefore vnbende thyne angrie browes deare chylde,

And caste thy rolling eyes none other waye,

That here doost not \text{{\it Medusaes\}}/%

\afootnote{One of the furies. {\os75}m}/ face beholde,

But him, euen him, thy blood and brother deare.

And thou beholde, my {\it Polinices\} eke,

Thy brothers face, wherin when thou mayst see

Thine owne image, remember therewithall,

That what offence thou woldst to him were done,

\pend

\endnumbering

\bye

3.2 Shakespeare

The following text illustrates another input file of moderate complexity, with two layers of annotation in use. The example is taken from the Arden *Merchant of Venice*. First, the file arden.sty contains a set of font definitions and format specifications:

```
\makeatletter
% Load small fonts: (cf. TeXbook, p.413-415):
\font\eightrm=cmr8 \font\eighti=cmmi8 \skewchar\eighti='177
\font\eightys=cmsy8 \skewchar\eightys='60 \font\eightbf=cmbx8
\font\eighttt=cmtt8 \hyphenchar\eighttt=-1 % inhibit hyphenation
\font\eightsl=cmsl8 \font\eightit=cmti8
\font\sixrm=cmr8 \font\sixi=cmmi8 \skewchar\sixi='177
```

46

THE MERCHANT OF VENICE

[ACT II

[SCENE III.—*Venice.*]*Enter* JESSICA *and* [LAUNCELOT] *the clown.*

- Jes.* I am sorry thou wilt leave my father so,
 Our house is hell, and thou (a merry devil)
 Didst rob it of some taste of tediousness,—
 But fare thee well, there is a ducat for thee,
 And Launcelot, soon at supper shalt thou see 5
 Lorenzo, who is thy new master's guest,
 Give him this letter,—do it secretly,—
 And so farewell: I would not have my father
 See me in talk with thee.
- Laun.* Adieu! tears exhibit my tongue, most beautiful pa- 10
 gan, most sweet Jew!—if a Christian do not play the
 knave and get thee, I am much deceived; but adieu!
 these foolish drops do something drown my manly
 spirit: adieu! [Exit.]
- Jes.* Farewell good Launcelot. 15
 Alack, what heinous sin is it in me
 To be ashamed to be my father's child!

Scene III] *Capell; om. Q, F; Scene IV Pope. Venice] om. Q, F; Shylock's house Theobald; The same. A Room in Shylock's House Capell. Launcelot] Rowe; om. Q, F. 1. I am] Q, F; I'm Pope. 9. in] Q; om. F. 10. Laun.] Q2; Clowne. Q, F. 10. Adieu!] Adieu, Q, F. 11. Jew!] Iewe, Q, F. do] Q, F; did F2. 12. adieu!] adieu, Q, F. 13. something] Q; somewhat F. 14. adieu!] adieu. Q, F. S. D.] Q2, F; om. Q; after l. 15 Capell. 17. child!] child, Q, F; Child? Rowe.*

5. *soon*] early.

10. *exhibit*] Eccles paraphrased "My tears serve to express what my tongue should, if sorrow would permit it," but probably it is Launcelot's blunder for prohibit (Halliwell) or inhibit (Clarendon).

10–11. *pagan*] This may have a scurrilous undertone: cf. *2 H 4*, ii. 168.

11. *do*] Malone upheld the reading of Qq and F by comparing ii. vi. 23: "When you shall please to play the thieves for wives"; Launcelot seems fond of hinting at what is going to happen (cf. ii. v. 22–3). If F2's "did" is accepted, *get* is used for *beget*, as in iii. v. 9.

13–14. *foolish... spirit*] "tears do not become a man" (*AYL.*, iii. iv. 3); cf. also *H 5*, iv. vi. 28–32.

Figure 3: Output of the Arden text.


```

\font\sixsy=cmsy8 \skewchar\sixsy='60 \font\sixbf=cmbx8
\font\sixtt=cmtt8 \hyphenchar\sixtt=-1 % inhibit hyphenation
\font\sixsl=cmsl8 \font\sixit=cmti8
\def\eightpoint{\def\rm{\fam0\eightrm}}%
\textfont0=\eightrm \scriptfont0=\sixrm \scriptscriptfont0=\fiverm
\textfont1=\eighti \scriptfont1=\sixi \scriptscriptfont1=\fivei
\textfont2=\eighty \scriptfont2=\sixsy \scriptscriptfont2=\fivesy
\textfont3=\tenex \scriptfont3=\tenex \scriptscriptfont3=\tenex
\def\it{\fam\itfam\eightit}\textfont\itfam=\eightit
\def\sl{\fam\slfam\eightsl}\textfont\slfam=\eightsl
\def\bf{\fam\bfam\eightbf}\textfont\bfam=\eightbf
\scriptfont\bfam=\sixbf \scriptscriptfont\bfam=\fivebf
\def\tt{\fam\ttfam\eighttt}\textfont\ttfam=\eighttt
\normalbaselineskip=9pt \global\let\sc=\fiverm
\setbox\strutbox=\hbox{\vrule height7pt depth2pt width0pt}%
\normalbaselines\rm}

% Macros for the edition:
\def\stage#1{\rlap{\hbox to \the\linenumsep{\hfil\llap{[{it#1/}]}}}}
\def\speaker#1{\pstart\hangindent2em\hangafter1
\leavevmode{it#1}\enspace\ignorespaces}
\def\{\hfil\break}

% EDMAC customizations:
\noendnotes \vsize 40pc \hsize 23pc \parindent 0pt
\linenumsep=.3in \rightskip\linenumsep
\let\notenumfont=\eightrm \let\notetextfont=\eightit \let\numlabfont=\eighti
\let\afooterule=\relax \let\bfoterule=\relax
\afooterbaselineskip=9pt \bfoterbaselineskip=9pt
\footline={\hfil}
\def\rightlinenum{\numlabfont\llap{\the\line@num}}
\pageno=46
\headline={\eightpoint{\teni\folio}\hfil THE MERCHANT OF VENICE\hfil [ACT II]}
\cropsetup{8in}{5in}{3.5pc}{3pc}
\hoffset=.75in \voffset=.9375in
\frenchspacing

% Footnote formats:
\def\nonumparafootfmt#1#2#3{% footnote format that doesn't have line numbers
\let\par=\endgraf
\rightskip=0pt \leftskip=0pt
\parindent=0pt \parfillskip=0pt plus 1fil
{\eightpoint\lemmafont#1|#2/\rm}\enskip\notetextfont
#3\penalty-10\hskip 1em plus.5em minus.1em\relax}}
\def\newparafootfmt#1#2#3{%
\let\par=\endgraf
\rightskip=0pt \leftskip=0pt
\parindent=0pt \parfillskip=0pt plus 1fil
{\eightpoint\notenumfont\printlines#1|\rm.\enspace
\lemmafont#1|#2/\rm}\enskip\notetextfont
#3\penalty-10\hskip 1em plus.5em minus.1em\relax}}
\def\newtwocolfootfmt#1#2#3{%
\let\par=\endgraf
\hsize .48\hsize
\rightskip=0pt \leftskip=0pt \parindent=5pt
{\eightpoint\notenumfont\strut\printlines#1|\rm.\enspace
\it#2/\rm}\penalty100\hskip .5em plus .5em\rm
#3\strut\endgraf\allowbreak\relax}}

```

```
% Footnote style selections etc. (done last):
\footparagraph{a}
\foottwocol{b}
\let\afootfmt=\newparafootfmt
\let\bfootfmt=\newtwocolfootfmt
\let\collation=\afootnote
\let\note=\bfootnote
\lineation{section}
\linenummargin{right}
\makeatother
```

The Arden text, using the above definitions, is input as follows (the output is shown in Figure 3):

```
\input edmac
\input arden.sty

\let\afootfmt=\nonumparafootfmt % we do not want line numbers initially

\beginnumbering
\pstart
\centerline{[\text{SCENE III}]
  \lemma{Scene III}
  \collation{Capell; om. Q, F; {\rm Scene IV} Pope.}/.---%
  \text{\it Venice}
  \collation{om. Q, F; Shylock's house Theobald; The same.
  A Room in Shylock's House Capell.}/.]}
\pend
\bigskip

\pstart
\centerline{\it Enter\ / {\rm JESSICA} and\ /
  {\rm [\text{LAUNCELOT}]
  \lemma{Launcelot}
  \collation{Rowe; om. Q, F.}/]} the clown.} \pend \bigskip

\let\afootfmt=\newparafootfmt % we do want line numbers from now

\speaker{Jes.} \setline{1}%
\text{I am}
  \collation{Q, F; {\rm I'm} Pope.}/
sorry thou wilt leave my father so,\
Our house is hell, and thou (a merry devil)\
Didst rob it of some taste of tediousness,---\
But fare thee well, there is a ducat for thee,\
And Launcelot, \text{soon}
  \note{early.}/
at supper shalt thou see\
Lorenzo, who is thy new master's guest,\
Give him this letter,---do it secretly,---\
And so farewell: I would not have my father\
See me \text{in}
  \collation{Q; om. F.}/
talk with thee.
\pend

\speaker{Laun.}
```

परिभाषावृत्ति

3

किमेतस्या ज्ञापने प्रयोजनम् । काशे कुशे हरिशे बभ्रुश इति
प्रगृह्यसंज्ञा न भवति इति ।

सैषा परिभाषातिप्रसक्ता । यत्र नेष्यते तत्र प्रतिषिध्यते ।

25

न वर्णग्रहणेषु ॥ १० ॥

कथं ज्ञायते । यदयमिट्‌वहिमहिडित्यत्रैकं टितं करोति । अस्य
किल टित्करणं विशेषणार्थम् । तच्च शक्यमकर्तुम् । एरदिति वक्ष्यामः ।
न च वहिमह्योरपि इकारस्यात्प्राप्नोति अर्थवत् इकारस्य ग्रहणात् ।
यश्च वहिमह्योरिकारो ऽसावनर्थकः । अनर्थकत्वादस्य न भविष्यति । 30
अर्थवद्ग्रहणे नानर्थकस्येति सिद्धे सति यदृकारं करोति विशेषणार्थं
तज्ज्ञापयति वर्णग्रहणमिति न चैषा परिभाषा वर्णग्रहणेषु भवति । न
च सामान्यग्रहणमेतत्स्यात् आर्धधातुकेतश्च विभक्तेश्चेति । अस्य चाकारो
यथा स्यात् । लविषीय पविषीय । न चात्रेष्यते । यद्यपि नेष्यते तथापि
प्राप्नोति । न प्राप्नोति । कथम् । डित् इति इड् विशिष्यते । डित्तो 35
य इडिति । यश्चार्धधातुके ऽसौ डित्तश्चान्येषां च भवति । तेन तस्या न

23 हरिशे om. β || बभ्रुश J (an easy confusion in Śāradā) 24 प्रागृह्य°
P₁ a.c. 25 न यत्रेष्यते α 27 कथं ज्ञायते om. α || यदयं <-4> वहि°
B : यदयं मिट्‌वहि° P₂ : यदयं हट° J (i.e. om. वहि) || °महिट् P₂ a.c.
|| [इति अत्र P₁ β] || टितं : डित्तं codd. (a very easy confusion in Śāradā) :
टितं P₂ a.c. || टित्° : डुडित्° codd. 28 एरद् : एरज् P₁ β (द and ज
are not alike in Śāradā, but द and च are. So if an original द were transliterated as च
and the sandhi then regularized, the MS readings would be accounted for) : परज् J
29 वहिसह्योर B, P₂ a.c. || वहिमह्योरपि J (मेतथेसिस्) || इकार° :
दृकार° J || °आत्प्राप्नोति Abhyankar : °आत्प्राप्नोति J β : °आ [[-1-]] ...
आप्नोति P₁ (substitution of अच् for अत् is not obviously explicable) 30 यच्च
J B || वहिसह्योर B : वहिमह्योर J (saut and metathesis) : वहिमह्योर P₁ a.c.
(?) || [इकारः असाव् β] 31 यदृकारं Abhyankar : यदृकारं J, P₂ a.c. :
दृकारं P₁ : यदृकारं P₂ : यदृकारं B (not obviously explicable) || विशेषणार्थं P₁
32 'तत्' ज्ञापयति B 33 अर्थ° J B 35 इड् विशिष्यते : इडित् विशिष्यते J
: [इट् विशिष्यते P₁] 36 य इडिति : य डिति J || [धातुके असौ β]
|| डित्तो ऽन्येषां α (i.e. om. च)

Figure 4: Sanskrit edition of a grammatical text.

```

\text{}\lemma{\it Laun.}
  \collation{Q2; Clowne. Q, F.}/%
\text{Adieu!}
  \collation{{\rm Adieu}, Q, F.}/
tears \text{exhibit}
  \note{Eccles paraphrased ‘‘My tears serve to express what my
  tongue should, if sorrow would permit it,’’ but probably it is
  Launce\lot’s blunder for prohibit (Halliwell) or inhibit
  (Clarendon).}/
my tongue, most beautiful
\text{pagan}
  \note{This may have a scurrilous undertone: cf. {\it 2 H 4,}
  \sc II. \rm ii. 168.}/,
most sweet \text{Jew!}
  \collation{{\rm Iewe}, Q, F. \quad {\rm do}} Q, F; {\rm did} F2.)/---if
a Christian \text{do}
  \note{Malone upheld the reading of Qq and F by comparing \sc
  II. \rm vi. 23: ‘‘When you shall please to play the thieves for
  wives’’; Launcelot seems fond of hinting at what is going to
  happen (cf. \sc II. \rm v. 22--3). If F2’s ‘‘did’’ is accepted,
  {\it get\} is used for beget, as in \sc III. \rm v. 9.}/
not play
the knave and get thee, I am much deceived; but
\text{adieu!}
  \collation{{\rm adieu}, Q, F.}/
these \text{foolish drops do \text{something}}
  \collation{Q; {\rm somewhat} F.}/
drown my
manly spirit}
  \lemma{foolish{\rm\dots}spirit}
  \note{‘‘tears do not become a man’’ (\it AYL., \sc III. \rm
  iv. 3); cf. also \it H 5, \sc IV. \rm vi. 28--32.}/:
\text{adieu!}
  \collation{{\rm adieu}. Q, F. \quad {\rm S. D.]] Q2, F; om. Q; after
  1. 15 Capell.}/
\hfill \stage{Exit.}
\pend

\speaker{Jes.}
Farewell good Launcelot.\.
Alack, what heinous sin is it in me\
To be ashamed to be my father’s \text{child!}
  \collation{{\rm child}, Q, F; {\rm Child?} Rowe.}/
\pend
\endnumbering
\bye

```

3.3 Sanskrit text edition

Finally, Figure 4 shows an example from an edition of a Sanskrit text on Pāṇinian grammar that uses Frans Velthuis’s excellent Devanāgarī font. I have not shown the input file for this because I almost never looked at it myself. The edition records a large number of variants, and there are frequent font and script changes. Preparing this purely manually would have been very error-prone. In fact, the text was prepared using a word processor which had the ability to fold footnotes out of sight. I designed custom Indic fonts for my computer screen, so that I could see all the diacritical marks on accented characters as I typed. (A set of T_EX macros declared these characters

active, and defined them to give the correct output.) Font changes were invoked using the standard facilities of the word processor, so the perennial “missing closing brace” hardly ever arose. A short post-processor program changed the word processor file into correctly tagged EDMAC input, and another post-processor (provided by Velthuis) did some special processing on the Devanāgarī strings. This combination of tools proved very workable and no major problems were encountered.

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