# Critical editions and arabic typesetting: the ledarab and afoot packages*

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**Abstract**

The ledmac package, which is based on the PLAIN TEX set of EDMAC macros, has been used for some time for typesetting critical editions, and the ArabTeX system enables the typesetting of arabic texts.

The afoot package is an extension to the arabtex package to enable footnotes in arabic texts and the ledarab package provides an interface between arabtex and ledmac (also ledpar) for arabic text in critical editions.

Please, for all bug's report, open a ticket on https://github.com/maieul/ledmac/issues/

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# 1 Introduction

The EDMAC macros [LW90] for typesetting critical editions of texts have been available for use with TeX for some years, and the arabtex package [Lag99] provides for arabic typesetting. These two works are interfaced by the aedpatch package provided as part of the ArabTeX distribution.

Following the introduction of EDMAC there had been a small but constant demand for a version that could be used with LaTeX. The ledmac package [Wil04a] was introduced in 2003 in an attempt to satisfy that request. This was extended in 2004 by the ledpar package [Wil04b] to allow the typesetting of parallel critical texts. The ledarab package provides an interface between the arabtex and the ledmac (and ledpar) packages. The package has to try and coerce TEX into paths it was not designed for. Use of the package, therefore, may produce some surprising results.

I initially used version 3.10 (2001/09/16) of the arabtex package but when I moved to version 3.11 (2003/08/22) I found that the code for footnotes (in afoot.sty) no longer worked. The afoot package provided here is based on the obsolete 3.10 version, until a working version[1] of afoot.sty is provided in the ArabTeX distribution.

# 2 The afoot package

The arabtex package automatically calls the afoot package. If you want to use my version of afoot just make sure that it is found by LaTeX before the ArabTeX's version, for example by having a copy in your working directory.

\footnote The \footnote{⟨*text*⟩} produces a numbered footnote. Unlike the usual LaTeX \footnote macro there is no optional argument for specifying the number.

\LRfootnotes Inside an arabtext environment the \LRfootnotes declaration causes follow-

[1] I made queries about this on the comp.text.tex newsgoup on 2005/01/06 but got no responses.

ing footnotes to be in normal left to right (LtoR) roman text, left adjusted and with the number at the left.

\RLfootnotes
\arabfootnotes

Inside an `arabtext` environment the `\RLfootnotes` or `\arabfootnotes` declaration causes any following footnotes to be in right to left (RtoL) arabic script, right adjusted and with the number at the right. In normal text the footnotes are normal.

To get an arabic footnote in normal text try:
`...roman\footnote{\RL{arabic}}...`
The footnote will be left adjusted but the note's text will be arabic.

# 3 The ledarab package

The ledarab package[2] is partially based on Klaus Lagally's `aedpatch.sty` and lets the ledmac package's critical apparatus be applied to arabic texts. The packages must be used in the following order:

```
\usepackage{ledmac}
\usepackage{ledpar} % if you need parallel texts.
\usepackage{arabtex}
\usepackage{ledarab}
```

The package is very limited — only the basic numbering and critical footnotes are supported. Even then, all critical notes are left adjusted with the lemma and note in left to right order, although the lemma and/or note may be in RtoL arabic script. Items like familiar footnotes, endnotes, tabulars and so on are left to you the user.

In normal numbered text you can use the `\RL` macro within the critical aparatus for short pieces of arabic.

```
\beginnumbering
\pstart
Normal \edtext{latin}{\Cfootnote{roman}} text.
Normal \edtext{\RL{latin}}{\Cfootnote{\RL{roman}}} text.
...
```

In the first line above the lemma and footnote will both be in latin script while in the second line they will both be in arabic script; in each case, though, the lemma is at the left and the note follows on the right.

```
\beginnumbering
\pstart
\begin{arabtext}
Arabic \edtext{script}{\Afootnote{roman}} text.
Arabic \edtext{script}{\Afootnote{\LR{roman}}} text.
```

[2] I offered an earlier version to Prof. Lagally towards the end of 2003 for possible addition to his arabtex package but got no response to my messages.

```
Arabic \edtext{script}{\Afootnote{\RL{arabic}}} text.
Arabic \edtext{\LR{error}}{\Afootnote{roman}} text.
\end{arabtext}
\pend
...
```

In the first and second lines above the lemma is in arabic script and the note in latin script, while in the third line both the lemma and the note are in arabic script. Using `\LR` as part of the lemma, as in the last line causes errors.

```
\beginnumbering
\begin{arabtext}
\pstart
Arabic \edtext{script}{\Afootnote{messy}} text.
Arabic \edtext{script}{\Afootnote{\LR{messy}}} text.
Arabic \edtext{script}{\Afootnote{\RL{arabic}}} text.
\pend
\end{arabtext}
...
```

In the first two lines above the lemma is in arabic and the note is in what looks like (to me at least) arabic, but it is all messed up. In the last line both the lemma and the note are in arabic.

`\arablnumrep` `\restorelnumrep` Line numbers are normally typeset in latin script arabic numerals and LtoR. Following the `\arablnumrep` declaration they will be typeset in arabic script numerals and RtoL. The `\restorelnumrep` ensures the regular line numbers. Use the declarations like:

```
\arablnumrep
\begin{arabtex} ... \end{arabtex}
\restorelnumrep
```

`\latinarabic` `\arabiclatin` Arabic script naturally has a greater height or leading (larger `\baselineskip`) than latin text. Parallel normal texts and parallel arabic texts align naturally, as do parallel columns of latin/arabic or arabic/latin texts. However, left to their own devices pages of parallel arabic and normal text will not align.

If you are setting normal text on the left pages and arabic script on the right using the `\latinarabic` declaration should align them. Similarly when you have arabic script on the left and latin script on the right use the `\arabiclatin` declaration.

`\ledarabstrut` `\savestruts` `\restorestruts` The `\ledarabstrut` strut is the height of a line of arabic script and is used to increase the height of latin text lines to match arabic script lines. The definition is:

```
\newcommand*{\ledarabstrut}{\rule[-1ex]{0pt}{4ex}}
```

If it does not quit match the arabic script in your case then change the `4ex` appropriately.

The macro `\savestruts` saves the current definitions of the struts used in the left and right texts (`\latinarabic` and `\arabiclatin` change these). The macro `\restorestruts` set the definitions of the left and right struts to match those stored by the last `\savestruts`. The package calls `\savestruts` itself to store the default struts.

For example, with regular text on the left and arabic on the right then the general scheme is:

```
\savestruts
\begin{pages}
\begin{Leftside}
  \beginnumbering
  \pstart
    normal text
    ...
\end{Leftside}
\begin{Rightside}
  \begin{arabtext}
  \beginnumbering
  \pstart
    arabic text
    ...
\end{Rightside}
\latinarabic
\Pages
\restorestruts
\end{pages}
```

In the above, if it had been:

```
\begin{arabtext}
  \Pages
\end{arabtext}
```

Then a redefinition of `\ledarabstrut` as:

```
\renewcommand*{\ledarabstrut}{\rule[-1ex]{0pt}{3.75ex}}
```

might provide better alignment of the latin text with the arabic.

Life gets complicated regarding lemmas and notes when there are parallel latin and arabic texts. Consider that there are the following left (latin) and right (arabic) texts

```
\begin{Leftside}
 ...
1) \edtext{latin}{\Afootnote{roman}}...
2) \edtext{\RL{latin}}{\Afootnote{\RL{roman}}}...
3) \edtext{\LR{latin}}{\Afootnote{\LR{roman}}}...
...
\end{Leftside}
\begin{Rightside}
\begin{arabtext}
```

```
...
A) \edtext{script}{\Bfootnote{arabic}}...
B) \edtext{script}{\Bfootnote{\RL{arabic}}}...
C) \edtext{script}{\Bfootnote{\LR{arabic}}}...
...
\end{Rightside}
```

and they are to be output as matching pages. If they are output simply as:
`\Pages`
then the lemmas and notes for the marked lines are:
1) latin lemma, latin note
2) arabic lemma, arabic note
3) latin lemma, latin note
A) arabic lemma, latin note
B) arabic lemma, arabic note
C) arabic lemma, latin note

On the otherhand, if they are output via:
`\begin{arabtext} \Pages \end{arabtext}`
then the lemmas and notes for the marked lines are:
1) latin lemma, messed arabic note
2) arabic lemma, arabic note
3) latin lemma, messed arabic note
A) arabic lemma, messed arabic note
B) arabic lemma, arabic note
C) arabic lemma, messed arabic note

# 4 The afoot implementation

The afoot package is effectively an extraction from the alatex package of ArabTeX, v3.10, 2000/05/08.

Announce the name and version of the package, which is targetted for LaTeX2e.

```
⟨*afoot⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{afoot}[2005/03/24 v0.1 PW's version of ArabTeX's afoot.sty]

```

The package redefines the internals of the LaTeX `\footnote` macro along the lines of the `\vfootnote` macro in Plain TeX. It also does some things a bit differently if the fnpara package has been used.

`\@makefntext` I don't know why this is here as it is also defined as part of the `\@footnotetext` macro below.

```
\ifx \footglue \undefined % normal case
\else                   % fnpara.sty is present
  \long\def\@makefntext#1{{$^{\@thefnmark}$}#1\nobreak }
\fi

```

\@footnotetext

```
%%% Make the LaTeX \cs{footnote} catcode-safe, like in Plain TeX.

\def \@footnotetext {%        new, do not yet read footnote text
  \insert \footins \bgroup
  \ifx \footglue \undefined %  prepare normal footnote
    \interlinepenalty \interfootnotelinepenalty \floatingpenalty \@MM
    \splittopskip \footnotesep \splitmaxdepth \dp \strutbox
  \else
    \global\long\def \@makefntext ##1{{$^{\@thefnmark }$}##1\nobreak }%
    \setbox0=\hbox \bgroup % fnpara.sty is present
    \floatingpenalty=20000 \footnotesize
  \fi
  \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
  \a@fntext }

```

\@mpfootnotetext The version for minpages.

```
\def \@mpfootnotetext {%
  \global \setbox \@mpfootins \vbox \bgroup
    \edef \@currentlabel {\csname p@mpfootnote\endcsname \@thefnmark }%
  \unvbox \@mpfootins \reset@font \a@fntext }

```

\a@fntext A common portion of the code for the footnote text in both normal and minipage environments.

```
\def \a@fntext {% common part for footnote text
  \footnotesize \hsize \columnwidth \@parboxrestore \clubpenalty 5000
  \@makefntext {\rule {\z@ }{\footnotesep }}\futurelet \next \fo@t }

```

The next set of macros are from the \vfootnote macro (*The TeXbook*, Appendix B)

\fo@t Copy from *TeXbook*.

```
%%%%%%%%%%%%%%%%%%%%%%% \footnote, parts from Plain %%%%%%%%%%%%%%%%

\def\fo@t{%
  \ifcat
    \bgroup \noexpand\next
    \let\next\f@@t
  \else
    \let\next\f@t
  \fi
  \next }

```

\f@@t Copy from *TeXbook*.

```
\def\f@@t{\bgroup\aftergroup\@foot\let\next}
```

\f@t Copy from *TeXbook*.

```
\def\f@t#1{#1\@foot}
```

\@foot This has a bit more to it than the *TeXbook* macro.

```
\def\@foot{\unskip \strut \lineskiplimit -20pt \endgraf \egroup }

```

\a@footnote These macros are for normal footnotes from within an arabic environment.
\@foot
\@footnotemark

```
%%%%%%%%% footnote inside an Arabic environment, Roman document style

\def\a@footnote{%
  \def\@foot{% ArabTeX-LaTeX version
    \ifx \footglue \undefined % normal case
      \unskip \strut
    \else                     % fnpara.sty is present
      \penalty-10 \hskip\footglue \egroup % box 0
      \dp0=0pt \ht0=\fudgefactor\wd0 \box0
     \fi
     \egroup \arab@codes \set@arabfont \test@token }%
  \def\@footnotemark{\af@fnmarkb@x \a@spacetrue}%
  \rmfamily \parindent \a@parindent \unarab@codes \footnote }

```

\af@fnmarkb@x This saves some tokens as the code is used in several places.

```
\def\af@fnmarkb@x{%
  \a@spacefalse \putword@box \@makefnmark}

```

\a@footnotemark These are also for normal footnotes from within an arabic environment.
\@footnotemark

```
\def\a@footnotemark{%
  \def\@footnotemark{\af@fnmarkb@x \a@spacefalse \arab@codes \test@token}%
  \unarab@codes \footnotemark }

```

\a@@footnote These macros are for arabic footnotes from within an arabic environment.
\@footnotemark
\a@fntext

```
%%%%%%%%% footnote inside an Arabic environment, Arabic document style

\def\a@@footnote{% ArabTeX-LaTeX version
  \def\@footnotemark{\af@fnmarkb@x \a@spacetrue}%
  \def\a@fntext{\a@@fntext }%
  \footnote }

```

\a@@fntext This is also for arabic footnotes, being the common portion of the code for footnote text in both normal and `minipage` texts.

```
\def\a@@fntext#1{% some common code for footnote text
  \def\end{%
    \a@par \egroup \test@token }%
  \hsize \columnwidth \@parboxrestore
```

```
  \initlineb@x \@footnotemark \test@token #1 \end }
```

`\a@@footnotemark` `\@footnotemark` As are these.

```
\def\a@@footnotemark{%
  \def\@footnotemark{\af@fnmarkb@x \a@spacetrue \test@token}%
  \footnotemark }
```

`\LRfootnotes` Inside an `arabtext` environment the `\LRfootnotes` declaration results in normal footnotes, left adjusted.

```
\def \LRfootnotes {% left to right, Arabic document
  \let \a@c@footnote \a@footnote
  \let \a@c@footnotemark \a@footnotemark }
\all@wcmd \LRfootnotes
```

`\RLfootnotes` Inside an `arabtext` environment the `\RLfootnotes` declaration results in arabic footnotes, right adjusted. In normal text the footnotes are normal.

```
\def \RLfootnotes {% right to left, Arabic document
  \let \a@c@footnote \a@@footnote
  \let \a@c@footnotemark \a@@footnotemark }
\all@wcmd \RLfootnotes
```

`\arabfootnotes` `\arabfootnotes` is an alias for `\RLfootnotes`.

```
\let \arabfootnotes \RLfootnotes
\all@wcmd \arabfootnotes
```

Make `\LRfootnotes` the default.

```
\LRfootnotes
```

The end of the package

```
⟨/afoot⟩
```

# 5 The ledarab implementation

The ledarab package is based on the original aedpatch from the `ArabTeX` distribution.

Announce the name and version of the package, which is for LaTeX2e.

```
⟨*ledarab⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{ledarab}[2005/03/24 v0.1 Cooperation between arabtex and ledmac]
```

\tr@ce@n
\tr@ce@ff

I think, but don't know, that by appropriate (re)definitions of these you can get arabtex to produce some tracing of what is going on, perhaps by setting \tracingmacros to 1 instead of 0.

```
\providecommand*{\tr@ce@n}{\tracingmacros 0}
\providecommand*{\tr@ce@ff}{\edef \tr@ce@n
{\nxp\tracingmacros \the\tracingmacros }\tracingmacros 0}
\let \tr@ce@n \relax

```

\if@l@dparpack
\@l@dparpacktrue
\@l@dparpackfalse

We need a flag for knowing if ledpar is being used.

```
\newif\if@l@dparpack
  \@l@dparpackfalse
\@ifpackageloaded{ledpar}{\@l@dparpacktrue}{\@l@dparpackfalse}

```

## 5.1 Adjusting the baselines

\do@linehook

Arabic lines are taller than roman lines, so add some height to numbered lines.

```
\renewcommand*{\do@linehook}{%
  \advance\baselineskip 1ex}

```

arabledparfixi

If the ledpar package is loaded we have to change several of its macros. We can't do this simply within an \if@l@dparpack because of the internal \ifs. Hence, we define a macro whose expansion is the necessary changes.

```
%%%%%%%%%%%%%%%%%%%% ledpar fix %%%%%%%%%%%%%%%%%%%%%%%%%%
\newcommand{\arabledparfixi}{%

```

\do@lineLhook
\do@lineRhook

Increase the height of numbered lines.

```
\renewcommand*{\do@lineLhook}{%
  \advance\baselineskip 1ex}
\renewcommand*{\do@lineRhook}{%
  \advance\baselineskip 1ex}

```

\a@l@dparparamsL
\a@l@dparparamsR

Variations on \a@parparams from ArabTeX's aoutput.sty. These are required to take account of the differing widths, by setting \a@hsize appropriately.

```
\newcommand*{\a@l@dparparamsL}{%
  \ifnum \parshape = \z@
     \a@hsize \Lcolwidth
     \a@leftmargin \z@
  \else
    \a@hsize \Lcolwidth \a@leftmargin \@totalleftmargin
  \fi
  \a@leftmargin \z@
  \a@prevgraf \z@ \spreadfalse }
\newcommand*{\a@l@dparparamsR}{%
  \ifnum \parshape = \z@
     \a@hsize \Rcolwidth
```

```
135     \a@leftmargin \z@
136   \else
137     \a@hsize \Rcolwidth \a@leftmargin \@totalleftmargin
138   \fi
139   \a@leftmargin \z@
140   \a@prevgraf \z@ \spreadfalse }
```

\Leftsidehook
\Rightsidehook

```
141 \renewcommand*{\Leftsidehook}{%
142   \let\a@parparams\a@l@dparparamsL}
143 \renewcommand*{\Rightsidehook}{%
144   \let\a@parparams\a@l@dparparamsR}
```

\ledarabstrut
\ledstrutL
\ledstrutR
\savestruts
\restorestruts
\latinarabic
\arabiclatin

In order to get parallel arabic and normal texts to line up a strut has to be added to each latin line to hide their different heights; this is `\ledarabstrut`. The commands `\savestruts` and `\restorestruts` save and restore the original left/right strut definitions. The declaration `\latinarabic` is for left and right texts being latin and arabic, and for left arabic and right latin use `\arabiclatin`.

```
145 \newcommand*{\ledarabstrut}{%
146   \rule[-1ex]{0pt}{4ex}}
147 \newcommand*{\savestruts}{%
148   \let\oldl@dstr@tL\ledstrutL
149   \let\oldl@dstr@tR\ledstrutR}
150 \newcommand*{\restorestruts}{%
151   \let\ledstrutL\oldl@dstr@tL
152   \let\ledstrutR\oldl@dstr@tR}
153 \newcommand*{\latinarabic}{%
154   \def\ledstrutL{\ledarabstrut}%
155   \def\ledstrutR{}}
156 \newcommand*{\arabiclatin}{%
157   \def\ledstrutL{}%
158   \def\ledstrutR{\ledarabstrut}}
159
```

At last, the end of `\arabledparfixi`.

```
160 }% end of \newcommand{\arabledparfixi}{...
161
```

Perform the fix for ledpar if necessary.

```
162 \if@l@dparpack
163   \arabledparfixi
164   \savestruts
165 \fi
166 %%%%%%%%%%%%%%%%%%%% end major ledpar fix %%%%%%%%%%%%%%%%%%%%%%%%%
167
```

## 5.2 Lemmas

\a@c@edtext

This is the internal version of `\edtext`. The parameters have their original catcodes.

```
\newcommand*{\a@c@edtext}{%
  \tr@ce@n \leavea@vmode \unarab@codes
\begingroup
  \tr@ce@ff \rmfamily \tr@ce@n \a@@edtext}
```

`\a@@edtext` An auxiliary routine to kill leading blanks and remove spurious braces from `\edtext`'s second argument.

```
\newcommand*{\a@@edtext}[1]{%
%%%  \def\next@command{\a@@@edtext {\RL{#1}}}% causes errors
  \def\next@command{\a@@@edtext {#1}}%
  \futurelet \next@token \test@space }
```

`\a@edget@text` Get flags and lemma.

```
\def\a@edget@text #1\@@{%
  \a@edappend{\flag@start}\a@@Linsert{#1}}
```

`\a@edend@lemma` Another utility routine.

```
\newcommand*{\a@edend@lemma}{%
  \ifx\end@lemmas\empty \else
    \gl@p\end@lemmas\to\x@lemma
    \x@lemma
    \global\let\x@lemma=\relax
  \fi}
```

`\a@edput@text` Unpack `\Linsertb@x`.

```
\newcommand*{\a@edput@text}{%
  \a@Lunpack \putwordb@x {\ins@skip }}
```

`\a@edappend` `\a@edappend{`⟨*arg*⟩`}` adds its argument to the `\lineb@x`.

```
\newcommand*{\a@edappend}[1]{%
  \setbox \lineb@x \hbox {\unhbox \lineb@x #1}}
```

`\a@@@edtext` The meat of it all

```
\newcommand{\a@@@edtext}[2]{
  \no@expands
  \def\next@command{\test@special}%
%%%  \xdef \@tag{#1}\set@line % the original produces roman in notes
%%%  \def\@@@tag{\RL{#1}} \xdef\@tag{\@@@tag}\set@line % produces errors
  \xdef \@tag{{\RL{#1}}}\set@line% produces arabic in notes GOOD ONE!!
  \global\insert@count=0
  \aftergroup \a@edget@text
  \ignorespaces #2\relax
\endgroup
```

```
%%%  #1\a@edend@lemma \@@ %% gives roman in arabic text
  \showlemma{#1}\a@edend@lemma \@@% GOOD ONE
  \a@edput@text \a@edappend {\flag@end }%
  \arab@codes
  \a@spacetrue
\tr@ce@ff \test@token}

```

`\showlemma` Modify `\showlemma{`⟨*lemma*⟩`}` so that its argument is set RtoL in arabic text, otherwise as normal. The setting of the ⟨*lemma*⟩ in the notes is controlled independently.

```
\renewcommand{\showlemma}[1]{%
  \ifin@arab\RL{#1}\else #1\fi} % arabic in text, but roman in notes

```

## 5.3 Line numbering

`\beginnumbering` `\endnumbering` Enable `\beginnumbering` and `\endnumbering` to be used directly in arabic text, though I don't know if this is useful.

```
\all@wcmd{\beginnumbering}
\all@wcmd{\endnumbering}

```

`\beginnumberingR` `\endnumberingR` Similarly, if ledpar is used, for numbering in parallel Right texts.

```
\if@l@dparpack
  \all@wcmd{\beginnumberingR}
  \all@wcmd{\endnumberingR}
\fi

```

`\a@par` `\a@@par`

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\let\a@par=\a@@par % save for \a@@everypar in \a@c@autopar

```

`\pstart` `\pend` Arabic(?) forms for `\pstart` and `\pend`.

```
\def\a@c@pstart{\pstart \test@token}
\def\a@c@pend{\a@par \pend \a@par \test@token}

```

`\a@c@autopar` Arabic(?) form of `\autopar` (but the original `\autopar` has some limitations and can cause unexpected problems).

```
\def\a@c@autopar{% use inside Arabic environment
\ifnumbering \else \errmessage
{\string\autopar\space must be used within a numbered section}%
\beginnumbering
\fi
```

```
\a@@everypar= {\setbox0 = \box \lineb@x \let \next \test@token
\a@par \pstart % starts a group
\def \a@@par {\a@par \pend \a@par }%
\def \end {\a@par \pend \test@token \end }%
\a@@everypar= {}\arab@indent }%
\a@spacefalse \test@token}

```

\@arabic
\arablinenumr@p

Provide \@arabic (for setting numbers to be typeset as arabic numerals in the latin script) as an arabic macro. \arablinenumr@p{⟨*num*⟩} typesets {⟨*num*⟩} as arabic numerals in the arabic script (and RtoL).

```
\all@w@ne{\@arabic}
\newcommand*{\arablinenumr@p}[1]{\RL{\@arabic{#1}}}

```

\linenumrep
\sublinenumrep
\arablnumrep
\restorelnumrep

Ensure that \linenumrep and \sublinenumrep typeset (sub)line numbers as normal LtoR arabic in latin script. The declaration \arablnumrep causes line numbers to be typeset RtoL in arabic script and \restorelnumrep puts them back to LtoR in latin script.

```
\def\linenumrep#1{\LR{\@arabic{#1}}}
\let\oldlinenumrep\linenumrep
\def\sublinenumrep#1{\LR{\@arabic{#1}}}
\let\oldsublinenumrep\sublinenumrep
\newcommand*{\arablnumrep}{\global\let\linenumrep\arablinenumr@p
                           \global\let\sublinenumrep\arablinenumr@p}
\newcommand*{\restorelnumrep}{\global\let\linenumrep\oldlinenumrep
                              \global\let\sublinenumrep\oldsublinenumrep}
\all@wcmd{\arablnumrep}
\all@wcmd{\restorelnumrep}

```

\linenumrepR
\sublinenumrepR
\arablnumrepR
\restorelnumrepR

If ledpar is used, similarly for Right texts.

```
\if@l@dparpack
  \def\linenumrepR#1{\LR{\@arabic{#1}}}
  \let\oldlinenumrepR\linenumrepR
  \def\sublinenumrepR#1{\LR{\@arabic{#1}}}
  \let\oldsublinenumrepR\sublinenumrepR
  \newcommand*{\arablnumrepR}{\global\let\linenumrepR\arablinenumr@p
                              \global\let\sublinenumrepR\arablinenumr@p}
  \newcommand*{\restorelnumrepR}{\global\let\linenumrepR\oldlinenumrepR
                                 \global\let\sublinenumrepR\oldsublinenumrepR}
  \all@wcmd{\arablnumrepR}
  \all@wcmd{\restorelnumrepR}
\fi

```

## 5.4 More critical commands in arabic text

\edlabel
\edpageref
\xpageref
\lineref
\xlineref
\sublineref
\xsublineref

Allow more ledmac commands in Arabic text. These take no parameters.

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\all@w@ne{\edlabel}
\all@w@ne{\edpageref}
\all@w@ne{\xpageref}
\all@w@ne{\lineref}
\all@w@ne{\xlineref}
\all@w@ne{\sublineref}
\all@w@ne{\xsublineref}
```

`\edindex` `\typeout` And more, taking one parameter.

```
\all@w@ne{\edindex}
\all@w@ne{\typeout}
```

`\edmakelabel` `\xxref` And more, taking two parameters.

```
\all@wtw@{\edmakelabel}
\all@wtw@{\xxref}

```

`\Columns` `\Pages` Also enable `\Columns` and `\Pages` as arabic text commands.

```
\if@l@dparpack
  \all@wcmd{\Columns}
  \all@wcmd{\Pages}
\fi

```

# 6 The End

This is the end of the package code, but first use `ledarabpatch.sty` if it exists.

```
\InputIfFileExists{ledarabpatch.sty}

```

⟨/ledarab⟩

# A Examples

This section presents some sample documents.

The figures are from processed versions of the files. Having latexed a file I used `dvips` to get Encapsulated PostScript, then the `epstopdf` script to get a PDF version as well. For example:

```
> latex egarab
> latex egarab
> latex egarab
> dvips -E -o egarab.eps egarab  % produces egarab.eps
> epstopdf egarab.eps            % produces egarab.pdf
```

For those who aren't fascinated by LaTeX code I show the typeset results first, then the code that produced them. I know nothing about arabic so these are not part of any publishable work and are unlikely to have any connection with the arabic language.

Can we have non-arabic text in `\edtext`

In roman text you can have critical notes. 1

In ارَبِئ تِخت you can have critical notes. 2

In latin you can have critical notes. 3

In ارَبِئ تِخت you can have critical notes. 4

Here the order is `\beginnumbering \pstart \begin{arabtext} ...`

1 لِدمَٔ اس وُندِرفُل اند سُ ارَبِئ تِخت اس ارَبتِخ

2 اند ارَبِئ تِخت يُ▮ ئَن دُ ئرِتِحَٔل نُتِس هِرِ.

Here the order is `\beginnumbering \begin{arabtext} \pstart...`

١ لِدمَٔ اس وُندِرفُل اند سُ ارَبِئ تِخت اس ارَبتِخ

٢ اند ارَبِئ تِخت يُ▮ ئَن دُ ئرِتِحَٔل نُتِس هِرِ.

---

1 roman] not arabic

2 ارَبِئ تِخت] not roman

3 latin] ارَبِئ تِخت ـ فُ▬تنُتِ

4 ارَبِئ تِخت] ارَبِئ تِخت ـ فُ▬تنُتِ

---

1 ارَبِئ تِخت] Arabic text — footnote

2 ارَبِئ تِخت] ارَبِئ تِخت ـ فُ▬تنُتِ

---

١ ارَبِئ تِخت] خ.ن.خ.ن.ن، ---خخ ءحخا

٢ ارَبِئ تِخت] ارَبِئ تِخت ـ فُ▬تنُتِ

1

Figure 1: Output from `egarab.tex`

Here is an example pair of texts. The arabic version is on the right.

| | | | |
|---|---|---|---|
| 1 | gUyand kasAn behe st bA .hUr hOs | گُویَند کَسَان بِهِ ست بَا حُور هُوس | |
| 2 | ast | است | 2r |
| 3 | man mIgUyam keh 'Ab-i angUr hOs | مَن مِیگُویَم کِه آبِ انگُور هُوس | |
| 4 | ast | است | 4r |
| 5 | In naqd begIr wa-dast az 'An ne- | اِین نَقد بِگِیر وَدَست از آن نِسِیه | |
| 6 | siyeh bedAr | بِدَار | 6r |
| 7 | k-'AwAz-i dohol sanIdan az dUr | کآوَازِ دُهُل سَنِیدَن از دُور هُوس | |
| 8 | hOs ast. | است. | 8r |

The same texts but more oriented towards arabic.

| | | | |
|---|---|---|---|
| 9 | gUyand kasAn behe st bA .hUr hOs | گُویَند کَسَان بِهِ ست بَا حُور هُوس | ٩ر |
| 10 | ast | است | ١٠ر |
| 11 | man mIgUyam keh 'Ab-i angUr hOs | مَن مِیگُویَم کِه آبِ انگُور هُوس | ١١ر |
| 12 | ast | است | ١٢ر |
| 13 | In naqd begIr wa-dast az 'An ne- | اِین نَقد بِگِیر وَدَست از آن نِسِیه | ١٣ر |
| 14 | siyeh bedAr | بِدَار | ١٤ر |
| 15 | k-'AwAz-i dohol sanIdan az dUr | کآوَازِ دُهُل سَنِیدَن از دُور هُوس | ١٥ر |
| 16 | hOs ast. | است. | ١٦ر |

1 st] Western side
11 keh] واستِرن سِدِ

1r ست] Eastern side ١١ر کِه] یاستِرن سِدِ



Figure 2: Output from `egarabpar.tex`

## A.1 General example

The result of the following code is shown in Figure 1. The arabic script is nonsensical to anyone who can read Arabic as it is just the English text represented using the arabic script.

The example illustrates a variety of critical notes, including one that is all messed up just to show that some things do not work.

---

```
⟨*egarab⟩
%%% egarab.tex
\documentclass[12pt]{article}
\addtolength{\textheight}{-10\baselineskip}
\usepackage{ledmac}
\setcounter{firstlinenum}{1} \setcounter{linenumincrement}{1}
\linenummargin{right}

\usepackage{arabtex}
\usepackage{ledarab}

\begin{document}

Can we have non-arabic text in \verb?\edtext?

\beginnumbering
\pstart
\noindent
In \edtext{roman}{\Afootnote{not arabic}} text you
can have critical notes. \\
In \edtext{\RL{Arabic text}}{\Afootnote{not roman}} you
can have critical notes. \\
In \edtext{latin}{\Afootnote{\RL{Arabic text --- footnote}}} you
can have critical notes. \\
In \edtext{\RL{Arabic text}}{\Afootnote{\RL{Arabic text --- footnote}}} you
can have critical notes.
\pend
\endnumbering

Here the order is \verb?\beginnumbering \pstart \begin{arabtext} ...?

\beginnumbering
\pstart
\begin{arabtext}
ledmac is wonderful and so
%%% arabic lemma, latin note
\edtext{Arabic text}{\Bfootnote{Arabic text --- footnote}} is arabtex\\
%%% arabic lemma, arabic note
and \edtext{Arabic text}{\Bfootnote{\RL{Arabic text --- footnote}}} you
can do critical notes here.
\end{arabtext}
\pend
```

```
\endnumbering

Here the order is \verb?\beginnumbering \begin{arabtext} \pstart...?

\arablnumrep
\beginnumbering
\begin{arabtext}
\pstart
ledmac is wonderful and so
%%% arabic lemma, screwed up arabic note
\edtext{Arabic text}{\Cfootnote{Arabic text --- footnote}} is arabtex\\
%%% arabic lemma, arabic note
and \edtext{Arabic text}{\Cfootnote{\RL{Arabic text --- footnote}}} you
can do critical notes here.
\pend
\end{arabtext}
\endnumbering
\restorelnumrep

\end{document}
⟨/egarab⟩
```

## A.2 Parallel example

The result of the following code for parallel typesetting is shown in Figure 2. The left and right inputs are the same. In this case the arabic script should make sense to an Arabic reader while the English text is the input that would produceds the arabic if it were inside the `arabtex` environment. The text for the example is from `omar.tex` in the `ArabTeX` distribution; I do not know what it means.

The two examples are virtually the same except that in the second the numbering is in arabic script instead of latin script. Note that the usual variety of footnotes can be used for arabic texts as well as western texts.

---

```
⟨*egarabpar⟩
%%% egarabpar.tex  ledmac & parallel arabic text
\documentclass[12pt]{article}
\addtolength{\textheight}{-4\baselineskip}
\usepackage{ledmac}
\usepackage{ledpar}
\setcounter{firstlinenum}{1} \setcounter{linenumincrement}{1}
\usepackage{arabtex}
\usepackage{ledarab}
%%
% simple right text arabic script numbering version of \printlines
\makeatletter
\def\printlinesAR#1|#2|#3|#4|#5|#6|#7|{\begingroup
  \setprintlines{#1}{#2}{#3}{#4}{#5}{#6}%
  \ifl@d@pnum #1\fullstop\fi
  \ifledplinenum \RL{#2}\Rlineflag\else \symplinenum\fi
```

```
  \endgroup}
\makeatother

%%% We will use the Bfootnote series for the arabic right texts,
%%% in paragraph style
\footparagraph{B}

%%% right text numbering
\let\oldBfootfmt\Bfootfmt
\renewcommand{\Bfootfmt}[3]{%
  \let\printlines\printlinesR
  \oldBfootfmt{#1}{#2}{#3}}

\begin{document}

Here is an example pair of texts. The arabic version is on the right.

\vspace{\baselineskip}

\begin{pairs}

\begin{Leftside}
\beginnumbering
\pstart
\noindent
gUyand kasAn behe \edtext{st}{\Afootnote{Western side}} bA .hUr  hOs ast \\
man mIgUyam keh 'Ab-i angUr hOs ast \\
In naqd begIr wa-dast az 'An nesiyeh bedAr \\
k-'AwAz-i dohol sanIdan az dUr hOs ast.
\pend
\end{Leftside}

\renewcommand{\Rlineflag}{r} % writes r in latin
\begin{Rightside}
\firstlinenum{2} \linenumincrement{2}
\begin{arabtext}
\beginnumbering
\pstart
\noindent
gUyand kasAn behe \edtext{st}{\Bfootnote{Eastern side}} bA .hUr  hOs ast \\
man mIgUyam keh 'Ab-i angUr hOs ast \\
In naqd begIr wa-dast az 'An nesiyeh bedAr \\
k-'AwAz-i dohol sanIdan az dUr hOs ast.
\pend
\end{arabtext}
\end{Rightside}

\Columns

\end{pairs}
```

```
418
419 \vspace{\baselineskip}
420
421 The same texts but more oriented towards arabic.
422
423 \vspace{\baselineskip}
424
425 \begin{pairs}
426
427 \begin{Leftside}
428 \pstart
429 \noindent
430 gUyand kasAn behe st bA .hUr  hOs ast \\
431 man mIgUyam \edtext{keh}{\Afootnote{\RL{Western side}}} 'Ab-i angUr hOs ast \\
432 In naqd begIr wa-dast az 'An nesiyeh bedAr \\
433 k-'AwAz-i dohol sanIdan az dUr hOs ast.
434 \pend
435 \endnumbering
436 \end{Leftside}
437
438 %%% right full arabic note numbering
439 \renewcommand{\Bfootfmt}[3]{%
440   \let\printlines\printlinesAR
441   \oldBfootfmt{#1}{#2}{#3}}
442 \renewcommand{\Rlineflag}{\RL{r}} % writes r in arabic
443
444 \begin{Rightside}
445 \firstlinenum{1} \linenumincrement{1}
446 \arablnumrepR % changes the number to arabic
447 \begin{arabtext}
448 \pstart
449 \noindent
450 gUyand kasAn behe st bA .hUr  hOs ast \\
451 man mIgUyam \edtext{keh}{\Bfootnote{\RL{Eastern side}}} 'Ab-i angUr hOs ast \\
452 In naqd begIr wa-dast az 'An nesiyeh bedAr \\
453 k-'AwAz-i dohol sanIdan az dUr hOs ast.
454 \pend
455 \endnumbering
456 \end{arabtext}
457 \end{Rightside}
458
459 \begin{arabtext}
460 \Columns
461 \end{arabtext}
462
463 \end{pairs}
464
465 \end{document}
466 ⟨/egarabpar⟩
```

# References

[Lag99] Klaus Lagally. *ArabTeX: A system for typesetting arabic: Draft User Manual*, July 1999. (Available from CTAN in `macros/latex/contrib/arabtex`)

[LW90] John Lavagnino and Dominik Wujastyk. 'An overview of `EDMAC`: a PLAIN TeX format for critical editions'. *TUGboat*, **11**, 4, pp. 623–643, November 1990. (Code available from CTAN in `macros/plain/contrib/edmac`)

[Wil04a] Peter Wilson. *ledmac: A presumptuous attempt to port EDMAC, TABMAC and EDSTANZA to LaTeX*. May 2004. (Available from CTAN in `macros/latex/contrib/ledmac`)

[Wil04b] Peter Wilson. *Parallel typesetting for critical editions: the ledpar package*. December 2004. (Available from CTAN in `macros/latex/contrib/ledmac`)

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# Change History

v0.1

General: First public release . . . . . 1

Maïeul Rouquette new maintainer . . . . . 1