The hletter class and style for producing flexible letters and page headings

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Abstract

A package, *hletter*, is presented which permits the user to specify easily, with the aid of self-defined key-words, letters (with a logo and/or private) and headings. The *heading* may include a footer and the letter provides commands to include a scanned signature, two signees and works with the *merge* package. It illustrates using zero width boxes and converting lengths into counts.

1   Introduction

Your first thoughts are probably "Not another LaTeX letter package" but, maybe, this package does offer something extra and useful. The idea came from my secretary who wrote the minutes of various committee meetings, prepared regulations in three languages, wrote letters on behalf of the committees, etc. The objective was, at first, to have one package which would produce headers in the various languages for the departments, committees, etc., and the letter was an easy extension. Of course, since she is a LaTeX fan, she should also have the possibility of writing private letters (for me as well). The main ideas for the package are:

- Permit the user to specify key-words which, together with the default or specified language, invoke various styles of the heading.

- With letters one may define an option to produce a private letter, i.e., one with no logo but a from-address.

- The header is always centred, at the top of A4 paper.

- Ensure the to-address is centred in a C5/C6[1] window envelope.

- Use a style file to produce headings as for letters with a horizontal rule underneath.

- The text for the heading together with the footer is produced by key-words dependent on a user defined option.

- A command `\closingtwo` may be used to produce letters with two signees.

- The *merge* package by Graeme McKinstry [3] works.

- A scanned signature may be used — which is especially useful with *merge* letters.

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[1] I would have supported the North American stationery sizes but I have no access to such envelopes, etc.

2   The general design

The files used are shown in figure 1 where the shaded files should be provided by the user. The package loads the packages *graphicx* and *ifthen*.
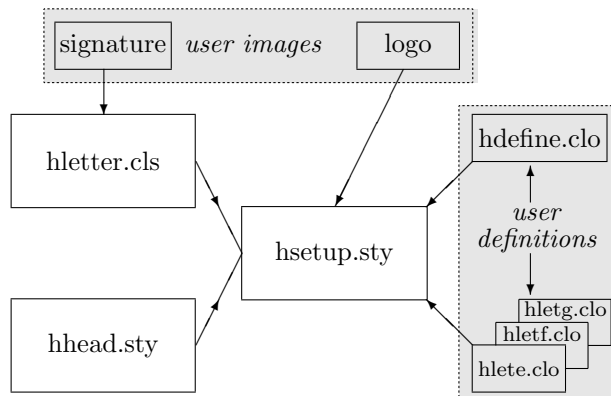

Figure 1: Files used in producing letters and headings

The function of the files are:

hletter.cls The class definition file, based upon the standard LaTeX letter class [2]. It redefines various commands and defines new ones (see later).

hhead.sty The package to produce the headings at the top of a page. Include `\usepackage{hhead}` in the preamble and the command `\heading` is defined to produce the heading(s).

hsetup.sty The file which does most of the work and defines the command to produce the headings and which reads in the files `hdefine.clo` and `hlet⟨lng⟩.clo` where *lng* is specified in the class or style options (default is English).

hdefine.clo The user file which defines key-words for the various headings.

hlet⟨lng⟩.clo The user file which defines the fields for the heading where *lng* is the letter e, f or g for the languages English (actually British), French and German.

logo The image file to produce the logo.

signature A scanned signature which may be used in the letter(s).

3   Fields used in the header

Figure 2 shows the commands which define the text where the command is shown. Also there is a command `\centrepos{n}` where *n* is a length specifying the offset of the centre text from the middle of the paper. The default is 10 mm and it may be negative.

If a header alone is being produced then it will have a horizontal rule below of a default width of 180 mm. With the command `\barlength` one may
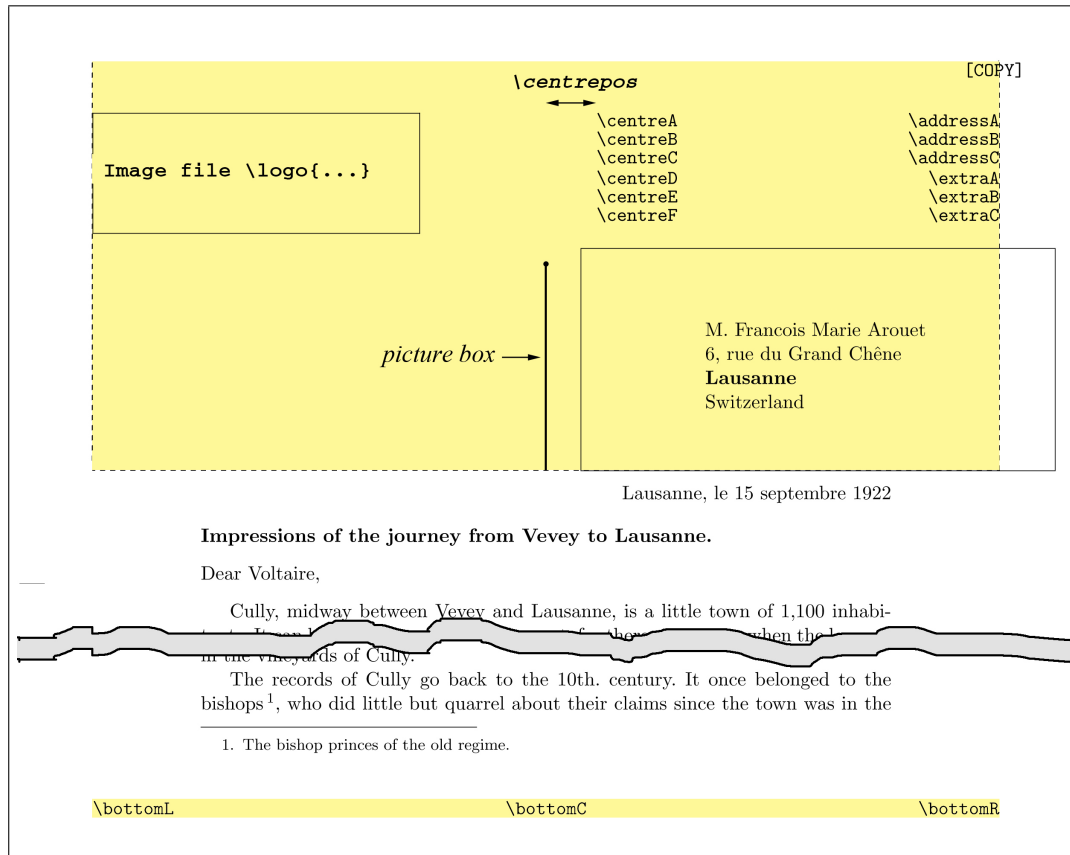
Figure 2: How most of the fields are defined

change this length, even making it 0 mm. If the logo is very high then the header height will be increased accordingly.

4 The layout of the header

Obviously the header for a letter is different from a simple header but both are produced using the *picture* environment and in both cases the origin of the picture has to be the same.

The header must be in the centre of the paper and the offset from the beginning of the text is calculated when the heading is produced. Thus any dimension changes the user may make are taken into account.

4.1 Horizontal positioning

The solution is to space horizontally and then make a LaTeX *picture* of zero width as shown in figure 3.

4.2 Vertical positioning

For letters the header stretches to the bottom of the *to-address* box (for a C5/6 envelope) and is 91 mm from the top of the paper. For the simple header (using the package *hhead*) the bottom of the header
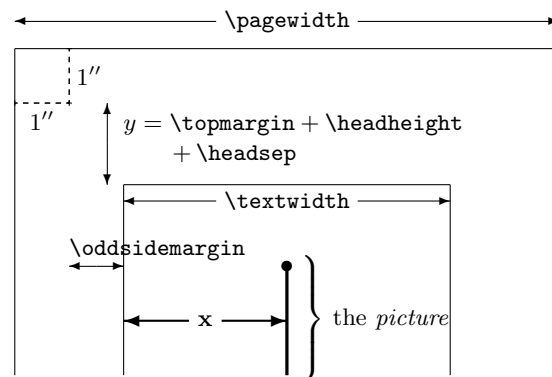

Figure 3: We see that $\mathtt{x} = .5\backslash\mathtt{pagewidth} - 1''$ $- \backslash\mathtt{oddsidemargin}$

is 41 mm from the top of the paper but this may be increased if the logo is large.

4.2.1 The letter

As seen in figure 3 we need to calculate $h = 91\mathrm{mm} - 1'' - y$ and if this value is negative then a warning "top margin seems to be too large" is issued. This

can only happen if the text area is lower than the *to-address* box.

The variable h is a length variable and is stored as scaled points but for the picture we need a counter which depends on `\unitlength`. Thank goodness, TEX is very accommodating and we set a *counter* to the length h and then divide by `\unitlength`. The value is truncated but I think a header to within 1 mm is sufficiently accurate and one could modify the package to use a *unitlength* of 0.1 mm if one wishes more accuracy.

The command `\begin{picture}(0,h)(0,-41)` is used to produce the picture containing the header.

4.2.2 A simple header

Here the value calculated is $h = 46\text{mm} - 1'' - y$ and again we divide by *unitlength*. If the height of the logo is large then the value of the offset of the rule under the header is increased and the picture must be higher and the lower left of the picture is set to a negative value.

If the document is in *twocolumn* format then the command `\twocolumn` is used to ensure that the header spans the two columns.

5 The user files

`hdefine.clo` Defines the names to select the various type of headings, together with a sequentially increasing integer. An example is:

```
\logo{GCCS}
\newoption{private}{1}
\newoption{signit}{2}
\newoption{bruni}{3}
\newoption{test}{4}
```

As shown, the logo may also be specified in this file to provide a default which may be changed in the *hlet* files. The file `hsetup.sty` simply defines a new option which, if used, sets a global counter:

```
\newcommand*{\newoption}[2]{%
  \DeclareOption{#1}%
  {\global\hltype=#2}%
  \typeout{*** Option #2 has name #1}}
```

and types out the option and value in the log file. Originally the package generated the number automatically but early users wanted to specify the numbers themselves and cut and paste the define file as comments in the next files.

`hlet⟨lng⟩.clo` For each of the languages English, French and German which are supported (one could add more) the user must provide a file which defines the fields for the options used in `hdefine.clo`. The structure is shown in figure 4.

```
% Letter options for English
\ifcase\hltype
% case = 0 (no user option)
  definitions for default case
\or % case = 1 (private)
  \address{...
    defining an address gives a private letter
    ...}
\or % case = 2 (signit)
  definitions for signit option
\or % case = 3 (bruni)
  definitions for bruni option
\else
  % all other cases (should not be used)
  \addressA{?} \addressB{?} \addressC{?}
  \extraA{Telephone: ?}
  \extraB{Telefax: ?} \extraC{eMail: ?}
\fi
```

Figure 4: Structure of definitions file for English in `hlete.clo`

the logo The command `\logo[ht]{⟨file⟩}` sets the logo file. If the optional height is not specified, 24 mm is used. This command may be used in the definition file and/or in the *hlet* file(s).

signature file A scanned signature may be inserted; particularly useful for merge letters. Define the file with the command `\sign[ht]{⟨file⟩}`. If *ht* is not specified, it will be 15 mm high.

6 Creating a letter

Assuming that the define file and the *hlet* files have been created, one makes a letter in the usual LATEX way but with a few additional commands. The class *hletter* is used with options for the point size, language (default English) and maybe one of the user options defined in `hdefine.clo` to select the required letter type.

6.1 Short summary of the letter commands

`\signature` The single argument is the name under the closing signature. Separate multiple lines with `\\`.

`\address` The *from-address* and, when used, makes a private letter without a logo. Separate multiple lines with `\\`.

`\reference` If used the argument is set centred under the opening for English and above, left justified, otherwise.

letter environment Starts the letter and the argument is the *to-address*.

`\date` The date to be printed under the header.

`\opening` This command has an optional argument which, when used, is placed in typewriter font

at the top right of the letter, e.g.,

```
\opening[{[DRAFT]}]{Dear Voltaire,}.
```

\closing The argument is the closing text above the signature. Terminate multiple lines with \\.

\closingtwo Supplies the closing text which is centred above two signatures. The \signature command should contain two names, each line separated with an '&' as in a tabular (which it is), e.g.:

```
\signature{Dr.~A. Boss & Mr.~B. Bitt
           \\ CEO & CIO}
\closingtwo{Yours Faithfully,}
```

\encl A list of enclosures; multiple lines separated with \\.

\cc A list of persons who are to receive copies of the letter; multiple lines separated with \\.

7 Creating simple headings

In the document prologue one loads the package *hhead* with any optional argument such as language and a user option. A header is produced with the command **\heading**, which has an optional argument which if used will be printed at the top right of the page. If *heading* is used more than once in a document then a *cleardoublepage* is issued and the page count is reset.

8 Merge or form letters

The package *merge* from Graeme McKinstry works well with this letter package. It reads a file of {*to-address, opening*} pairs which are used to create a letter which is addressed to many recipients. When TEX reads from an external file it honours grouped lines; i.e., to enter the address over many lines in the merge file (new lines terminating with \\) enclose the address in {...}. The package uses a tabular to set the to-address so these brackets, if present, must be removed. Fortunately *The TEXbook* [1] (as usual) provides the answer and the *to-address* is produced with these, at first look, rather strange commands:

```
\def\dotoaddress#1{%
  \setbox0\hbox{\expandafter\cmda#1}%
  \ifnum\myc=1\settoaddress{#1}\else
  \expandafter\settoaddress#1\relax\fi}
\def\settoaddress#1{\global\setbox\addrbox
  \hbox{\begin{tabular}{@{}l@{}}#1\end{tabular}}}
\newcount\myc
\def\cmda#1{\global\myc=0 \cmdb#1\end}
\def\cmdb#1{\ifx#1\end \let\next=\relax
  \else \global\advance\myc by1 \let\next=\cmdb
  \fi \next}
```

Thus the creation of the address file is very easy and readable.

To make it a little easier, a small modification to `merge.sty` has been made so that *after* the first address pair one can insert a % as the first character of a line. The modified version is called `mergeh.sty`.

9 Examples

In these examples, the extent of the contents of the picture are shown together with its origin to illustrate what is happening. The file `hdefine.clo` was as shown in section 5.

Ex. 1 The LATEX file contained:

```
\documentclass[11pt,english]{hletter}
\begin{document}
\signature{Sir Frederick Treves\\
    Sergeant-Surgeon to His Majesty the King}
\reference{Impressions of the journey from
    Vevey to Lausanne}
\date{Lausanne, le 15 septembre 1922}
\begin{letter}{M. Francois Marie Arouet \\
            6, rue du Grand Ch\^{e}ne \\
            \textbf{Lausanne} \\
            Switzerland}
\opening[{[COPY]}]{Dear Voltaire,}
 ...
\closing{I remain, Sir,\\yours Truly,}
\vfill
\cc{All Smiths in London
    \\ Mademoiselle S. Curchod}
\encl{Tourist guide to Switzerland.
    \\ Plan of Cully.}
\end{letter}
\end{document}
```

and the default (value=0) in the file `hlete.clo` specified:

```
\addressA{Largitzenstrasse 15}
\addressB{CH--4056 Basle}
\addressC{Switzerland}
\extraA{Telephone: +41 (61) 345 78 90}
\extraB{Telefax: +41 (61) 345 78 92}
\extraC{eMail: info@gccs.com}
\bottomL{Bank: VCT Unterwil, CH--4220
        Unterwil/BL}
\bottomR{Account: 322--956123.02R}
```

The truncated output is shown in figure 5. The example would be improved if the logo was somewhat larger, e.g., `\logo[36mm]{GCCS}`.

Ex. 2 Here the commands used were:

```
\documentclass[11pt,german,bruni]{hletter}
\begin{document}
\signature{Dr.~C. Featherstonehaugh &
    Dr.~A. Beauchamp \\ CEO & CIO}
\reference{Impressions of Lausanne}
\date{Lausanne, le 15 septembre 2008}
\begin{letter}{Sir F. Treves, Bart.,\\
            \textbf{Vevey.}\\
```
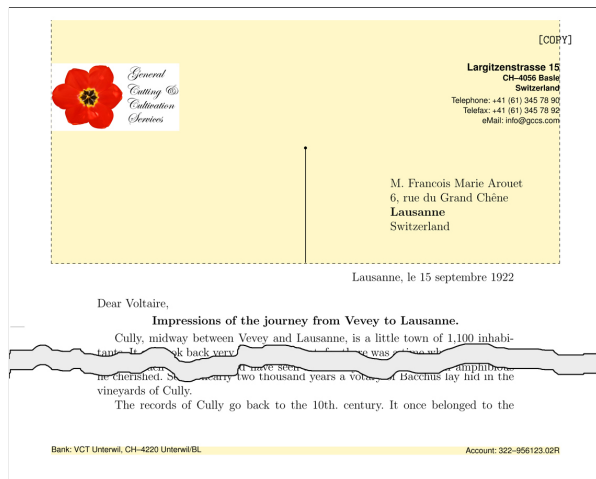
Figure 5: The letter using the defaults (Ex. 1).

```
                Switzerland}
\opening[\textsc{[draft]}]{Sir,}
 ...
\closingtwo{Yours Faithfully,}
\vspace{2cm}
\cc{All Smiths ... S. Curchod}
\encl{Tourist guide ... Cully.}
\vfill
\end{letter}
\end{document}
```

The file `hletg.clo` for the option *bruni*:

```
% case = 3 (bruni)
\addressA{Der Glockenturm}
\addressB{Hauptstrasse 54}
\addressC{Upper Throgmortondale}
\extraA{Telefon: +44 187 3546}
\extraB{Telefax: +44 187 3547}
\extraC{email: bruni@songs.flat.ac.uk}
\centreA{Songs written \& sung}
\centreB{Loudness no problem}
\centreC{Flats \& sharps used}
\centreD{\rule[.5ex]{16mm}{1pt}} % a rule
\centreE{Notes sometimes used}
\centreF{Spears may be hurled}
\centrepos{-10mm}
   % fancy footer:
\bottomL{$\ast\ast\ast\ast\ast$}
\bottomC{Lullabies ... our speciality}
\bottomR{$\ast\ast\ast\ast\ast$}
\sign[10mm]{signat}
\logo[50mm]{Bruennhilde}
\DeclareFixedFont{\newfa}{OT1}
  {phv}{m}{n}{12pt}
\DeclareFixedFont{\newfc}{OT1}
  {phv}{m}{sl}{10pt}\or
```

This contained a larger logo, two signees, a rather special footer and it also changed the default fonts `\newfa` and `\newfc`. The font `\newfa`
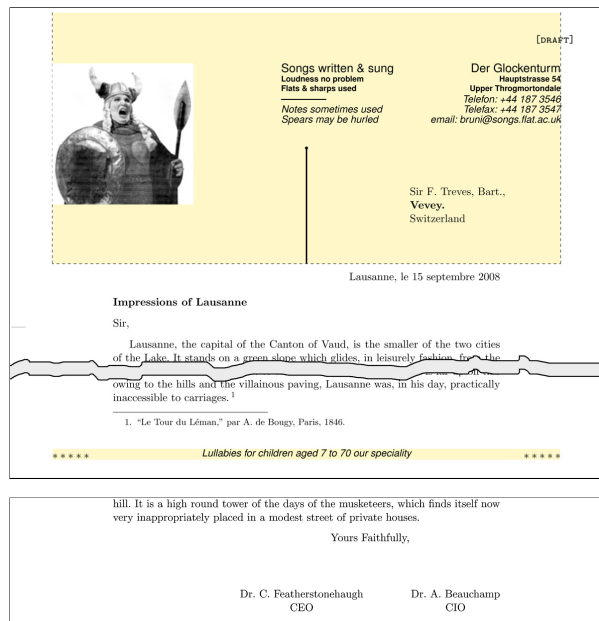
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Figure 6: First part of the Bruennhilde letter and the double closing (Ex. 2).

is used for `\addressA` and `\centreA`; `\newfb` is used for address and centre B and C; all the other fields use `\newfc`.

The output is shown in figure 6. The `\sign` command is ignored for two signees.

Ex. 3 This example is a simple heading for a two column document. The *bruni* option is used again and the document used the commands:

```
\documentclass[11pt,a4paper,twocolumn]
  {article}
\usepackage[german,bruni]{hhead}
\begin{document}
\setlength{\columnseprule}{.4pt}
\barlength{\textwidth}
\heading[\textsc{confidential}]
```

Note that the commands to specify the header may be placed in the definition file, the *hlet* file or in the document itself. The result is shown in figure 7.

Ex. 4 An example of using the slightly modified *merge* package contains the commands:

```
\documentclass[11pt,english,signit]{hletter}
\usepackage{mergeh}
\signature{A. Nother\\Head of Batology Dept.}
\date{Lausanne, le 15 septembre 2008}
\begin{document}
 \reference{Impressions of the journey from
    Vevey to Lausanne}
 \begin{merge}{testmerge.dat}
 between Vevey and Lausanne
```

Figure 7: A heading for Bruennhilde (Ex. 3).

```
  ..
 unfortunately the suggestion is unfounded.
 \closing{Yours Sincerely,}

 \vfill
 \cc{All Smiths ... S. Curchod}
 \encl{Tourist guide ... Cully.}
 \end{merge}
\end{document}
```

and part of the address file `testmerge.dat` is shown below.

```
{Professor Alfred B. Colquhoun\\
   Tittlebat Research Centre\\
   \textbf{Isle of Skye}\\
   Scotland}
Dear Prof.~Colquhoun,
% old Coony
{Mr.~A. Miller\\
   23a, Council Flats\\
   Park Lane\\
   \textbf{London WC1}}
Dear Archibald,
% first Miller
Dr.~V. M\"{u}ller\\ Langstrasse 15
  \\ \textbf{3012 Bern}
Dear Vee,
%
%{Mr.~A. Nother\\
%   123 High street\\
%   \textbf{Nether Poppleton}\\
%   Nr. York\\ England}
```

```
%Hello Alf,
%% Skip alf today
{Viscountess Elizabeth
     Featherstonehaught-Cholmondeley\\
   Cathedral Close\\
   \textbf{Winchester}}
My Dearest Elizabeth,
%
{Sir Archibald Bloggs\\
   Jones Old Yard\\
   Gasworks Lane\\
   \textbf{Throgmortendale}}
Howdy Sir Archie,
% NOTE:
% Comments are allowed between addresses
% but NOT before the first address
% and NO BLANK LINES!
```

The address of the viscountess gives a class warning, '`** Address too wide for window **`'.

Ex. 5 A private letter used the commands:

```
\documentclass[10pt,private,french]{hletter}
\begin{document}
\signature{} % do not used closing name
\reference{Impressions of Lausanne}
\date{Lausanne, le 15 septembre 2008}
\begin{letter}{Sir F. Treves, Bart.,\\
              \textbf{Vevey.}\\
              Switzerland}
```

and here `hletf.clo` contained:

```
% case = 1 (private)
```

The `hletter` class and style for producing flexible letters and page headings
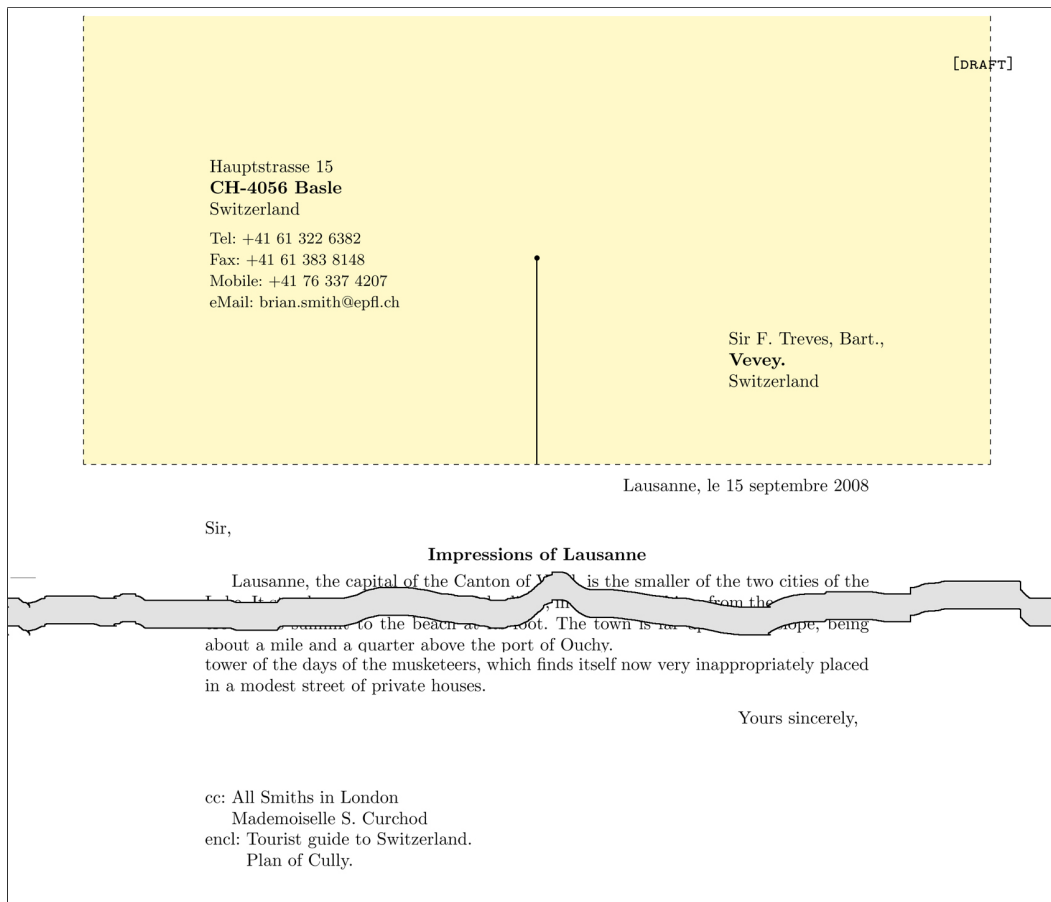
Figure 8: A private letter (Ex. 5).

```
\address{Rue principal 15\\
    \textbf{CH-4056 B\^ale}\\
    La Suisse\\[1ex]
    \small Tel: +41 61 322 6382\\
    \small Fax: +41 61 383 8148\\
    \small Mobile: +41 76 337 4207\\
    \small eMail: brian.smith@epfl.ch}
\or
```

and the result is shown in figure 8.

10   Possible future changes

The first version was called *gletter* (for the company GCCS), *h* was the next letter so maybe a future version will be called *iletter*.

One change which has been suggested is to make the dimensions of the headers easier to specify rather than changing values in the package. Also, the positioning of the text and logo should be more flexible. I also wish to sort out the present confusion in the package between the *babel* options *english* and *british*. At the moment specifying *english* invokes *british* which is really not correct. The reason for the mix is that *english* was originally used and then it was requested that I also include *british* — but I was rather lazy!

The support of North American stationery was planned but depends on when and if I acquire samples of the writing materials.

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References

[1] Donald E. Knuth, *The TEXbook*, 15th ed., Addison-Wesley, 1989, ISBN-10: 0201134489.

[2] Leslie Lamport, *LATEX: User's guide & reference manual*, 2nd ed., Addison-Wesley, 1994, ISBN-10: 0-201-52983-1.

[3] Graeme McKinstry, *Form letters*, TUGboat **8** (1987), no. 1, 60–61, (macros revised 6 September 1988).

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