Philology

The teubner LaTeX package: Typesetting classical Greek philology

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Abstract

The teubner package provides support for typesetting classical Greek philological texts with LaTeX, including textual and rhythmic verse. The special signs and glyphs made available by this package may also be useful for typesetting philological texts with other alphabets.

1 Introduction

In this paper a relatively large package is described that allows the setting into type of philological texts, particularly those written about Greek literature or poetry. Such texts require a large number of special symbols, including the possibility of setting diacritical marks on every letter.

The first section explains my connection to the Greek alphabets and my involvement with this particular project. I then explain why and how I decided to design a new Greek font, inspired by the typefaces used by the printing company Teubner. The name of the package was chosen to honour this small printing company that is so praised by philologists.

We then delve into the package functionality by showing and briefly describing the plethora of diacritical marks and special accents that philologists need.

These accents are not the only signs philologists require; they also need special marks for indicating their interpolations or elisions from the cited text specimens, for marking special pronunciations or special alphabetic glyphs that are not present in the standard alphabets.

Next, the environments for setting poetry are examined; not only those for setting specific verses with numbered lines, but also the *metrae*, verse in which the syllables are substituted by their value for the rhythmic and melodic declamation of poetry.

I conclude with some personal remarks about the fact that the current package is a starting point, not a finished work; feedback from philologists and others will inspire further evolution of teubner.

2 Background

My connection to Greek fonts and Greek typesetting dates back several years, when a friend of mine, a professor of classical Greek in a nearby classical high school, was complaining that she could not typeset her class tests in Greek, as she could do in Latin. I stated that with LaTeX she should not have any difficulty, but when I started searching on CTAN, I could not find anything really suitable for her. At that time I found only the excellent Greek fonts designed by Silvio Levy [1] in 1987 but for a variety of reasons I did not find them satisfactory for the New Font Selection Scheme that had been introduced in LaTeX in 1994.

Thus, starting from Levy's fonts, I designed many other different families, series, and shapes, and added new glyphs. This eventually resulted in my CB Greek fonts that now have been available on CTAN for some years. Many Greek users and scholars began to use them, giving me valuable feedback regarding corrections some shapes, and, even more important, making them more useful for the community of people who typeset in Greek — both in Greece and in other countries.

Then, one day I received an e-mail from a young man, Paolo Ciacchi, from Trieste, Italy, who was about to start work on his master's thesis in classical Greek philology, and needed some extensions to the available fonts and to the macros provided by the babel option for typesetting Greek with multi-accent spelling (i.e., with the polutoniko babel language attribute when the greek language option is selected).

Over time, his requests became quite extensive:

- a different typeface for purposes of emphasizing quoted phrases or sentences;
- a multitude of commands for setting the specific and quite specialized philological marks in the critical text;
- these marks, where applicable, had to be usable with both the Latin and the Greek alphabets;
- special signs for typesetting the *metrae*, the sequences of long and short marks that give the rhythm of Greek and Latin verses;
- environments for typesetting poems with verse numbering — even double numbering;
- new symbols for representing ancient monetary and/or measure entities.

Ciacchi would also have liked to have the facilities offered by the package edmac, by John Lavagnino and Dominik Wujastyk [2]. Unfortunately, edmac is based on the Plain TeX format and I was not able to transfer them to the new LaTeX 2_ε package I was writing for Ciacchi. Aside from my inexpertness at tinkering with the output macros of the LaTeX format, I don't think it is a good idea to fiddle with these internal macros, unless one likes

Ἐν ἀρχῇ ἤν ὁ Λόγος, καὶ ὁ Λόγος ἤν πρὸς τὸν Θεόν, καὶ Θεός ἤν ὁ Λόγος. οὗτος ἤν ἐν ἀρχῇ πρὸς Θεόν. πάντα δι' αὐτοῦ ἐγένετο, καὶ χωρὶς αὐτοῦ ἐγένετο οὐδὲ ἓν ὃ γέγονεν. ἐν αὐτῷ ζωὴ ἤν, καὶ ἡ ζωὴ ἤν τὸ φῶς τῶν ἀντρώπων. καὶ τὸ φῶς ἐν τῇ σκοτίᾳ φαίνει, καὶ ἡ σκοτία αὐτὸ οὐ κατέλαβεν.

Figure 1: Sample text set with the Olga-like Greek typeface

Ἐν ἀρχῇ ἤν ὁ Λόγος, καὶ ὁ Λόγος ἤν πρὸς τὸν Θεόν, καὶ Θεός ἤν ὁ Λόγος. οὗτος ἤν ἐν ἀρχῇ πρὸς Θεόν. πάντα δι' αὐτοῦ ἐγένετο, καὶ χωρὶς αὐτοῦ ἐγένετο οὐδὲ ἓν ὃ γέγονεν. ἐν αὐτῷ ζωὴ ἤν, καὶ ἡ ζωὴ ἤν τὸ φῶς τῶν ἀντρώπων. καὶ τὸ φῶς ἐν τῇ σκοτίᾳ φαίνει, καὶ ἡ σκοτία αὐτὸ οὐ κατέλαβεν.

Figure 2: The same sample text, set with the Lipsiakos Greek typeface

to get into trouble and, if he's lucky, end up with something that is working with the current version of LATEX — but may very well be incompatible with the next version. In my opinion, this sort of operation can be carried out only by the LATEX team.

I must add that recently the package `poemscol` by John Burt [3] was made available to the TEX community. This package is dedicated to printing anthologies of selected poems with adequate comments and retrieval information of the sources. I find it is a versatile instrument in the hands of a scholar, suitable for publishing well designed poetry books. This package has some of the philological functionality that is missing from `teubner`, but it deals only with poetry with numbered verses and with end-notes; in other words, `poemscol` can set end-notes whose numbers correspond to the verse numbers. This could be implemented also in `teubner` but I have preferred to avoid end-notes, since I consider it unwieldy to look up the notes in a different place from the current page.

`poemscol` provides the structures required to produce a critical edition of the kind specified by the Modern Language Association's Committee on Scholarly Editions, whereas these are not contained in `teubner`; the latter is primarily dedicated to new symbols and to low-level commands for formatting philological text, in particular when the Greek alphabets are used.

3   The new typeface for emphasis

The standard "italic" Greek typeface used with `babel` when the CB fonts are used is an imitation of the rather modern Olga typeface introduced by the Greek Font Society and fully described in the invaluable book *Greek Letters — From Tablets to Pixels* [4]. A sample text composed with such a font appears in figure 1.

However, classical philologists are rather conservative when it comes to typesetting, by and large, and like to see their works typeset in the traditional fonts that have always been used by the best publishing houses for this purpose. In this regard, I discovered that the most authoritative publishing

house is the B.G. Teubner Verlagsgesellschaft of Lipsia. The Greek typeface used by this publishing house is very elegant and is highly praised by readers; see, for example, [5]. In [4], the Teubner font is thoroughly described, including explanations as to why it is so widely used in scholarly works. This font became so widespread that it received in Greece the definitive name "Lipsiakos".

Paolo Ciacchi eventually persuaded me to adopt the Lipsiakos as the default typeface for emphasis with `teubner`. As it happened, I had already started remaking the Lipsiakos typeface with METAFONT. By the end of this long process, I had also received the assistance of Dimitrios Filippou who gave me invaluable suggestions for second order corrections of each glyph. Eventually, the typeface design ended up in a "final" version available on CTAN in both METAFONT and PostScript Type 1 format. The sample text of figure 1 reset with the Lipsiakos typeface is shown in figure 2.

The `teubner` package automatically substitutes the default "italic" Olga-like Greek typeface with the more traditional Lipsiakos one, and defines new commands and environments that extend the `babel` options available for typesetting Greek. Specifically, it provides the commands `\textDidot` for typesetting its argument in the "regular" upright Didot Greek typeface, and `\textLipsias` for typesetting its argument with the Lipsiakos typeface, and it redefines `\textlatin` for inserting a phrase in Latin characters within a text typeset in Greek.

All of these commands (and the declarations `\Lipsiakostext` and `\NoLipsiakostext`), as well as selecting a particular font, change the current font encoding and the default language so that when their action is finished the previous default encoding and language are re-established. In this way it is straightforward for scholars to write an article mainly in, say, German, while inserting short (or long!) text samples in Greek within the work.

4   Accents and other diacritical marks

Philologists need to stack several accents and/or diacritical marks over or under alphabetic signs. The

Table 1: Accent macros

Example	Syntax	Example	Syntax
ὰ	\'{⟨letter⟩}	αω	\ut{⟨letters⟩}
ά	\'{⟨letter⟩}	ά	\Ab{⟨letter⟩}
ᾶ	\~{⟨letter⟩}¹	ὰ	\Gb{⟨letter⟩}
ϊ	\"{⟨letter⟩}	ᾰ	\Arb{⟨letter⟩}
ᾰ	\u{⟨letter⟩}	ᾰ	\Grb{⟨letter⟩}
ᾰι	\U{⟨diphthong⟩}	ᾰ	\Asb{⟨letter⟩}
ᾱ	\={⟨letter⟩}	ᾰ	\Gsb{⟨letter⟩}
ἀ	\r{⟨letter⟩}	ά	\Am{⟨letter⟩}
ἀ	\s{⟨letter⟩}	ὰ	\Gm{⟨letter⟩}
΄	\Ad{⟨letter⟩}	ᾶ	\Cm{⟨letter⟩}
`	\Gd{⟨letter⟩}	ᾰ	\Arm{⟨letter⟩}
῀	\Cd{⟨letter⟩}	ᾰ	\Grm{⟨letter⟩}
ᾰ	\Ar{⟨letter⟩}	ᾰ	\Crm{⟨letter⟩}
ὰ	\Gr{⟨letter⟩}	ᾰ	\Asm{⟨letter⟩}
ᾰ	\Cr{⟨letter⟩}	ᾰ	\Gsm{⟨letter⟩}
ᾰ	\As{⟨letter⟩}	ᾰ	\Csm{⟨letter⟩}
ᾰ	\Gs{⟨letter⟩}	ᾰ	\Sm{⟨letter⟩}
ᾰ	\Cs{⟨letter⟩}	ᾰ	\Rm{⟨letter⟩}
ι	\c{⟨letter⟩}	ᾳ	\iS{⟨letter⟩}
u	\semiv{⟨letter⟩}²	π	\d{⟨letter⟩}
a	\ring{⟨letter⟩}²	ῐ	\bd{⟨letter⟩}

¹ The circumflex accent may be obtained with \~ only if the attribute polytoniko is specified for the Greek language with babel v.3.7.
² Most commands may be used also with Latin letters.

most obvious instance is when they have to typeset poems (or even prose) inserting rhythmic accents and melodic accents simultaneously; for example, a grave accent over a macron. In other situations, it is better (and recommended) to address the specific accented glyphs without resorting to the ligature mechanism embedded into the CB Greek fonts. We will discuss this later.

Thus, teubner defines stacking accent macros that take into account the font slant in skewing the accent stack. Also, end user macros are available so as to allow the typesetter to put multiple accents over any glyph. Philologists must also be able to put accents over consonants, so even simple accents have their own macros that accept any symbol as the alphabetic symbol to mark. It is therefore not particularly difficult to typeset ᾰ́ (\Ab{a}) or ᾶ (\Gm{w}) or even ὰ (\'{s}).

The sample text displayed in figure 2 has a glitch: compare the words αὐτοῦ and αὐτῷ.¹ They display an evident difference in the initial diphthong; for the first word, the marked upsilon has been ob-

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¹ This is the situation referred to earlier where it is best to access accents directly. The glitch in the composition of the sample text was intentionally not corrected in order to show this difference.

Table 2: Accented vowel macros

\aa	ά	\ag	ὰ	\ac	ᾶ
\asa	ᾰ́	\asg	ᾰ̀	\asc	ᾰ̃
\ara	ᾱ́	\arg	ᾱ̀	\arc	ᾱ̃
\arai	ᾱ́	\argi	ᾱ̀	\arci	ᾱ̃
\ai	ᾳ	\ar	ᾰ	\as	ἀ
\asi	ᾳ	\aai	ᾴ		
\ari	ᾳ	\agi	ᾲ	\aci	ᾷ
\asai	ᾰ	\asgi	ᾰ	\asci	ᾰ
\ha	ή	\hg	ὴ	\hc	ῆ
\hsa	ῄ	\hsg	ῂ	\hsc	ῇ
\hra	ή	\hrg	ὴ	\hrc	ῆ
\hrai	ή	\hrgi	ὴ	\hrci	ῆ
\hi	η	\hr	ή	\hs	ἠ
\hsi	ῃ	\hai	ή		
\hri	ῃ	\hgi	ῂ	\hci	ῇ
\hsai	ῄ	\hsgi	ῂ	\hsci	ῇ
\wa	ώ	\wg	ὼ	\wc	ῶ
\wsa	ῴ	\wsg	ῲ	\wsc	ῷ
\wra	ώ	\wrg	ὼ	\wrc	ῶ
\wrai	ῴ	\wrgi	ῲ	\wrci	ῷ
\wi	ῳ	\wr	ώ	\ws	ὠ
\wsi	ῳ	\wai	ῴ		
\wri	ῳ	\wgi	ῲ	\wci	ῷ
\wsai	ῴ	\wsgi	ῲ	\wsci	ῷ
\ia	ί	\ig	ὶ	\ic	ῖ
\isa	ῗ	\isg	ῒ	\isc	ῗ
\ira	ί	\irg	ὶ	\irc	ῖ
\ir	ί	\is	ἰ	\id	ϊ
\ida	ί	\idg	ὶ	\idc	ῖ
\ua	ύ	\ug	ὺ	\uc	ῦ
\usa	ῧ	\usg	ῢ	\usc	ῧ
\ura	ύ	\urg	ὺ	\urc	ῦ
\ur	ύ	\us	ὐ	\ud	ϋ
\uda	ύ	\udg	ὺ	\udc	ῦ
\ea	έ	\eg	ὲ	\er	ἐ
\esa	ἒ	\esg	ἒ	\era	ἔ
\es	ἐ	\erg	ἒ		
\oa	ό	\og	ὸ	\oR¹	ὀ
\osa	ὄ	\osg	ὂ	\ora	ὄ
\os	ὀ	\org	ὂ		

¹ For homogeneity with the other command definitions the command \oR should be spelled \or, but then it would produce incompatibilities due to the TEX primitive of the same name.

tained with the accent macro \s{u} (the mnemonic 's' stands for 'smooth breath'), while for the second word the ligature mechanism was invoked by writing simply >u. With other typefaces you hardly notice the difference, but with the Lipsiakos face the shape of the upsilon makes it very evident that the kerning between the initial alpha and the marked upsilon in the second case is not effective.

This is a drawback of the ligature mechanism, which is otherwise so useful for keying in text: TeX metric files only support kerning and ligature information for two characters at a time. Therefore, some information is lost when you key in a>u, because it involves three characters, directly processed by TeX. On the other hand, no information is lost when you key in a\s{u} because, thanks to the powerful LaTeX 2$_\varepsilon$ commands, \s{u} is mapped directly to the glyph that represents *ΰ*, without resorting to the ligature ’v⟹ΰ. Of course these refinements can be thought of as second order refinements so as to obtain the very best typesetting. For speeding up the keying process in this particular case, there is also available the command \us, but of course then you must type a\us␣t~w| in order to obtain *αὐτῷ*.

Accent commands and accented vowel macros are collected in tables 1 and 2. The mnemonics are quite transparent; in any case, the package documentation accompanying teubner gives more details. I would like to stress that these accent and accented vowel macros are for fine-tuning the final typesetting; the typesetter should not trouble to use them before reaching the final step, and then only if some irregularities are found in the letter kerning of specific words.

5 Philological signs

It would take us too far afield to describe here each and every command related to the special philological signs. In general, let us recall that philologists insert such signs when they want to stress the point that some letters in the transcription of an ancient manuscript, papyrus, tablet, or the like, has been replaced or interpolated by the scholar, or perhaps that the original spelling is thought to be wrong and the correction is specially marked. All these instances received technical names and the commands to produce them correspond to their full names or are abbreviations; most are Latin names, but sometimes it's difficult to distinguish a real Greek or Latin name from a Latinized version of a Greek name. In any case, philologists know very well their meaning and can distinguish very easily which command to use for producing which sign.

Table 3 contains most, though not all, of the specific commands defined in teubner. Some of them have been already described, others are used for inserting the philological signs, and still others are used for defining special signs used in philology.

In table 4, we have the commands and the ligatures that provide access to all the special symbols that are included among the 256 glyphs of every CB Greek font. Some of these symbols are accessible

Table 4: Greek and general symbols

,,	’	((	«	))	»
\GEodq	„	\GEcdq	"	:	:
\GEoq	‚	\GEcq	‘	?	;
\ENodq	"	\ENcdq	”	;	.
\stigma	ϛ	\varstigma	ϛ	\Stigma	Ⲥ
\coppa	ϙ	\koppa	ϟ	\Coppa	Ϙ
\sampi	ϡ	\Sampi	Ϡ	\permill	‰
\digamma	ϝ	\Digamma	F	\euro	€
\f	ϝ	\F	F	\shwa	ə

through babel commands, so there is no need to resort to the teubner extension package. Nevertheless, it is useful to have them collected in a single table, so as to know the differences between variants. Some of these glyphs are used by the babel commands \greeknumeral and \Greeknumeral: the teubner package redefines both commands in order to represent the value '6' with the digamma sign (which is traditional with philologists), and it defines new variant commands that use the stigma sign for the value '6' (which is more common in ecclesiastical writings). The result can be seen in the following examples:

if you type \greeknumeral{1996} you get ͵αϡϙϛ′
if you type \Greeknumeral{1996} you get ͵ΑϠϘϜ′
if you type \greeknumeral*{1996} you get ͵αϡϙϛ′
if you type \Greeknumeral*{1996} you get ͵ΑϠϘϹ′

6 Environments for poetry

teubner defines two kinds of environments for typesetting poetry: the first deals with actual verse and has three variants; the second deals with *metrae*, which are the metric patterns describing rhythms of verses and/or stanzas.

6.1 Environments for verse

The first verse environment, with the Latin name of versi, typesets verses in block mode, with a separator between each verse. Over the separator is a sequence number. The left margin of the block may be set with a descriptor, generally the overall reference to the group of verses. The result is as follows:

Mer. fr. 4 *ἔνθ' ὁ μὲν ε[ἰσπλη]* ^{68}ᵢ *θὺν Μερόπων κίεν. ἠ*
[δὲ δια] ^{69}ᵢ *πρὸ αἰχεμῆι σθῆτος [ἔλασσεν.]*
^{70}ᵢ *ὃ δ'ἐξέχυτ'· οὐ γὰρ [ὁμοῖαι][ἀ]* ^{71}ᵢ *θάναται*
θνηταῖσι βολ[αὶ κατὰ] ^{72}ᵢ *γαῖαν ἄσιν. πρη[[μ]]ν[ῆ-*
ς δ...] ^{73}ᵢ *τησε. μέλας δὲ περιε.[...]* ^{74}ᵢ *ϱω*

Table 3: Extended commands in teubner

Example	Syntax	Example	Syntax
Βαχύλιδες	`\textLipsias{⟨text⟩}`	{αβγ}	`\lesp{⟨text⟩}`
Βαχύλιδες	`\textDidot{⟨text⟩}`	•	`\LitNil`
text	`\textlatin{⟨text⟩}`	ĝ	`\cap{⟨letter⟩}`
(*Βαχύλιδες*)	`\frapar{⟨text⟩}`	⎯	`\Coronis`
(	`\lpar`	∟	`\lmqi`
)	`\rpar`	⌋	`\rmqi`
(?)	`\qmark`	⌊αβγ⌋	`\mqi{⟨text⟩}`
…	`\Dots[⟨number⟩]`	⌈	`\lmqs`
. . .	`\DOTS[⟨number⟩]`	⌉	`\rmqs`
– – –	`\Dashes[⟨number⟩]`	⌈αβγ⌉	`\mqs{⟨text⟩}`
– – –	`\DASHES[⟨number⟩]`	$\overbrace{αβγ}$	`\zeugma{⟨text⟩}`
foo	`\ap{⟨text⟩}`	$\underbrace{αβγ}$	`\siniz{⟨text⟩}`
ϙ	`\sinafia`	___	`\paragr`
⋮	`\:`	═══	`\dparagr`
⋮	`\;`	⊗̄	`\FinisCarmen`
⋮	`\?`	†	`\crux`
::	`\antilabe`	`αβγ′	`\apici{⟨text⟩}`
|	`|`	′	`\apex`
||	`\dBar`	∼	`\responsio`
|||	`\tBar`	∫	`\Int`
[	`\lbrk`	*a	`\star`
]	`\rbrk`	**a	`\dstar`
[αβγ]	`\ladd{⟨text⟩}`	***a	`\tstar`
⟦αβγ⟧	`\lladd{⟨text⟩}`	|| ||	`\,`
⟨αβγ⟩	`\Ladd{⟨text⟩}`	|| ||	`\!`
⟪αβγ⟫	`\LLadd{⟨text⟩}`	0123456789	`\OSN{⟨digits⟩}`
$\overbrace{αβγ}$	`\nexus{⟨text⟩}`	α̂β̂γ̂	`\nesso{⟨text⟩}`
A͡B	`\Utie{⟨2 letters⟩}`	ahβ	`\h`
aĵβ	`\yod`	aəβ	`\shwa`
aqβ	`\q`	*AFB*	`\F`
aϝβ	`\f`	i̦	`\semiv{⟨letter⟩}`
hᵛ	`\skewstack{⟨base⟩}{⟨apex⟩}`	ē̦	`\md{⟨letter⟩}`
ĕ	`\Ud{⟨letter⟩}`	ē̦	`\mO{⟨letter⟩}`
ĕ̦	`\UO{⟨letter⟩}`	e̦	`\Open{⟨letter⟩}`
e̦	`\nasal{⟨letter⟩}`	đ	`\cut{⟨b|d|g⟩}`
⊢	`\dracma`	✕	`\denarius`
⚡	`\stater`	∟	`\etos`
c	`\hemiobelion`	⊃	`\tetartemorion`
s̸	`\splus`	š	`\stimes`
k̦	`\kclick`		

The second environment, `Versi`, sets verses in display and separates stanzas with a blank line, just as the standard `verse` LaTeX environment. The primary change is that `Versi` labels the verses with a numeric sequence which is printed every fifth element. The result is like this:

45   *τα· πρόσθε χειρῶν βίαν*
   δε[ί]ξομεν· τὰ δ' ἐπιόντα δα[ίμο]ν σρινεῖ.—
   τόσ' εἶπεν ἀρέταιχμος ἥρως·

τ]άφον δὲ ναυβάται
φ]ωτός ὑπεράφανον

50   *θ]άρσος· Ἀλίου τε γαμβρῶι χόλωσεν ἦτορ*

The third environment, `VERSI`, is similar to `Versi` with the addition that verses can be numbered according to two sequences: the outer one displays every fifth element, as before, while the inner one may be turned on and off, but when it is on displays every element. This composition looks like this:

40   *κέλομαι πολύστονον*
   18 *ἐρύκεν ὔβ' ριν· οὐ γὰρ ἂν θέλοι-*
      μ' ἄμβροτον ἐραννὸν Ἀο[ῦς
   20 *ἰδεῖν φάος, ἐπεί τιν' ἠϊθέ[ων*
   21 *σὺ δαμάσειας ἀέκον-*
45   *τα· πρόσθε χειρῶν βίαν*
   23 *δε[ί]ξομεν· τὰ δ' ἐπιόντα δα[ίμω]ν κρινεῖ."*
    1 *τόσ' εἶπεν ἀρέταιχμος ἥρως·*
    2 *τ]άφον δὲ ναύβαται*
    3 *φ]ωτὸς ὑπεράφανον*
50 4 *θ]άρσος·....*

See the teubner package documentation for details on the input syntax.

6.2 Environment and commands for *metrae*

Typesetting *metrae* requires both an alphabet — a special font with the necessary symbols — and a series of commands and environments. Table 5 shows most of the symbols that can be used within the metric commands and environments.

Most commands define a single 'note', but a few define frequently used rhythmic sequences and the rhythms of common verses. Most important of all, teubner provides a defining command \newmetrics, similar to \newcommand, for defining new metric sequences. (More details are given in the documentation of the teubner package, as usual.) The important point is thus not to memorize the multitude of metric commands (although their names are either full names or abbreviations that are commonly used in philological texts), but rather to remember that with the help of \newmetrics, one can encapsulate frequently used sequences in a particular verse, so as to save a substantial amount of input keying.

Metrae can generally be typeset within the standard LaTeX verse environment, but sometimes it is necessary to use special constructs. In particular, a new environment bracedmetrics has been defined in order to typeset *metrae* well aligned and grouped together. With the help of this environment, it is not difficult to align various rhythms and to group with vertical braces some rhythmic variants that may appear in particular stanzas. For example, the following *metrae* can be obtained with a bit of work and attention:

Table 5: Metric symbols

Command	Metric symbol
\longa	—
\bbrevis	‿
\ubarbrevis	⊻
\ubarsbrevis	⊻‿
\corona	⌢
\catal	∧
\anceps	×
\ancepsdbrevis	⚮
\brevis	◡
\barbrevis	▽
\ubarbbrevis	‿
\coronainv	◡
\ElemInd	⌒
\ipercatal	+
\ubrevislonga	▽
\banceps	⚮
\hiatus	ʜ
\iam	▽ ◡
\enopl	◡ ◡◡ ◡◡
\aeolchorsor	◠◡◡◠
\2tr	◡ × ◡ ×
\chor	◡◡
\4MACRO	— — — —
\hexam	◡◡ ◡◡ ◡◡ ◡◡ ◡◡
\pentam	ϖ ϖ ‖ ◡◡ ◡◡
\aeolicbii	∘∘
\aeolicbiii	∘∘∘
\aeolicbiv	∘∘∘∘

7 Conclusion

The teubner package is a complex project whose ultimate usefulness may be evaluated only by the philologists. In my own opinion, some highly useful features are still missing; in particular, integration with the edmac Plain TeX package. As I explained in the introduction, I believe that the particular functionality for setting footnotes in continuous lines with the references tied to the line number of the critical text must be implemented by the LaTeX team only; otherwise, sooner or later incompatibilities would certainly show up.

I hope that the special arrangements for switching language and alphabet provided by teubner, together with its wealth of special symbols, will be appreciated by scholars who can now typeset their works in their mother tongue or another "language of the trade", while inserting specimens of philological material written in another language with another alphabet.

As for the future of the teubner package, as long as I am able I intend to implement whatever additional features I can, and certainly try to correct any errors found by the users. At this writing, I have had feedback from half a dozen philologists and the actual version 2 of this package is the result of their constructive criticism.

8   Acknowledgements

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