A guide for the FURCH software
version 2.011

1. Table

Introduction

FURCH is a software to display and analyze texts. If you want informations on a word, you will simply point and click with your mouse on this word. The software is able to search into dictionaries. If the word is found, FURCH will display the information. FURCH is a graphical application, it is using windows, and more generally windgets, which are that kind of "window gadgets" one is now used to see on graphical applications and user's interfaces. FURCH is based on GTK2. For now, a Linux-Debian/Ubuntu version exists. However, the software has been ported to Windows OSs and it has been tested on Win 98 SE, Win 2000 and Win XP. The Windows 98 version is based on GTK+1.3 as included into "Dev-Cpp". This "unstable" version of GTK is intermediate between GTK 1.2 and the more recent GTK 2. The Linux, Win 2000 and Win XP versions are using GTK2.
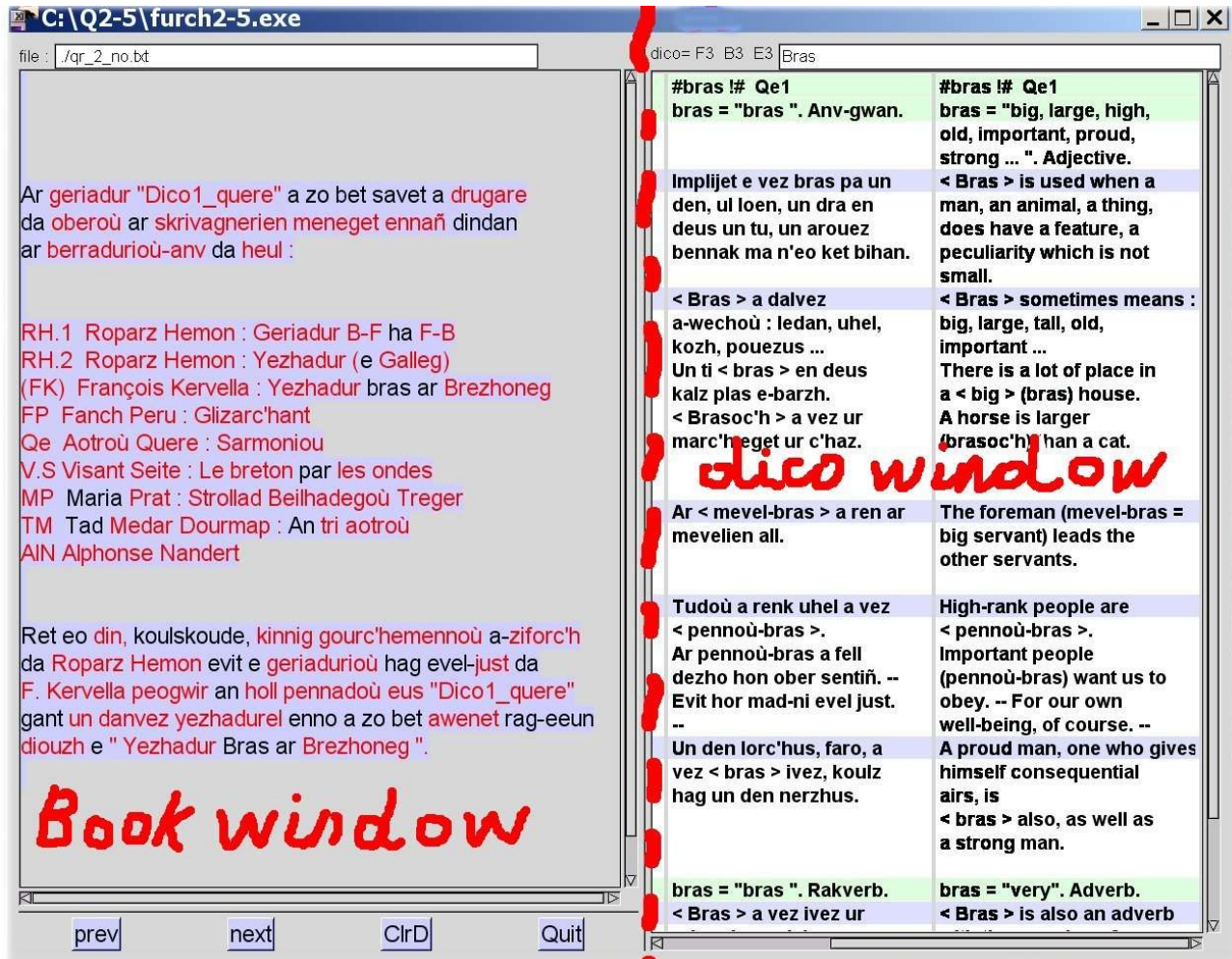
Presentation of the FURCH software

Figure 1. *(Kervella-en1.jpg) Book and dictionary windows, Furch 2.000 version*

FURCH will present itself as a large window and most probably, you will allow it to occupy the larger part of your screen display. This large window is divided into two parts. The left part will be called the "book window" and the right part will be the "dictionary window". Let us speak first of the "book part". This part shows a single page of a book. Generally a book page is about 40 lines of text and anyway, it is limited (for the present time) to 100 lines an 1000 words. Each plain text file opened by FURCH is considered by the software to be a book. The software analyses the files for special tags dividing them into pages. If it does not find tags, it is still able to display the file into pages without modifying the original file. This makes possible the reading of text files created by MS-Word, OpenOffice or other word processors.

You can "turn" forward or backward the pages of your book by clicking on the "prev" (previous) or "next" buttons at the bottom of the book window. There, you

will also find the "ClrD" (Clear Dictionary) button which is for a complete clearing of the dictionary window (details will be given later). Close to the "ClrD" button you have the "Quit" button which you can use to leave gracefully the application while registering your settings (size and position of the windows, last page read). You can also quit the application by deleting the general container window with a click on the little cross at the right or left of the upper margin. In doing that, you will not register your present settings and next time you will be back to your default settings as defined into the furch.conf file. At the top of the book part there is also a command line which, in the 2.011 version (see figure 4), shows the name of the book file and the page number and may be used to change them. You can do that in 3 different ways :

1°) Just writing a number in the command line. For example the number 1 will send you to the first page of your first book in your list as defined in your « furch.conf » file. The number 2 will send you to the first page of your second book, etc...

2°) You can write just a file name without any path indication. This file will be looked for first in your book list and if not found there, the software will search its own directory for the file.

3°) You can also write the full absolute path of the file.

Remark : Version 2.011 of the software writes also in the command line the page number and the total number of pages (look at figure 4). For example 10/25 means page 10 over a total of 25 pages. Changing the 10 into 24 will send you directly to page 24. This is a very convenient feature, with it you don't have to press 14 times the « next » button.

Presentation of the Book window.
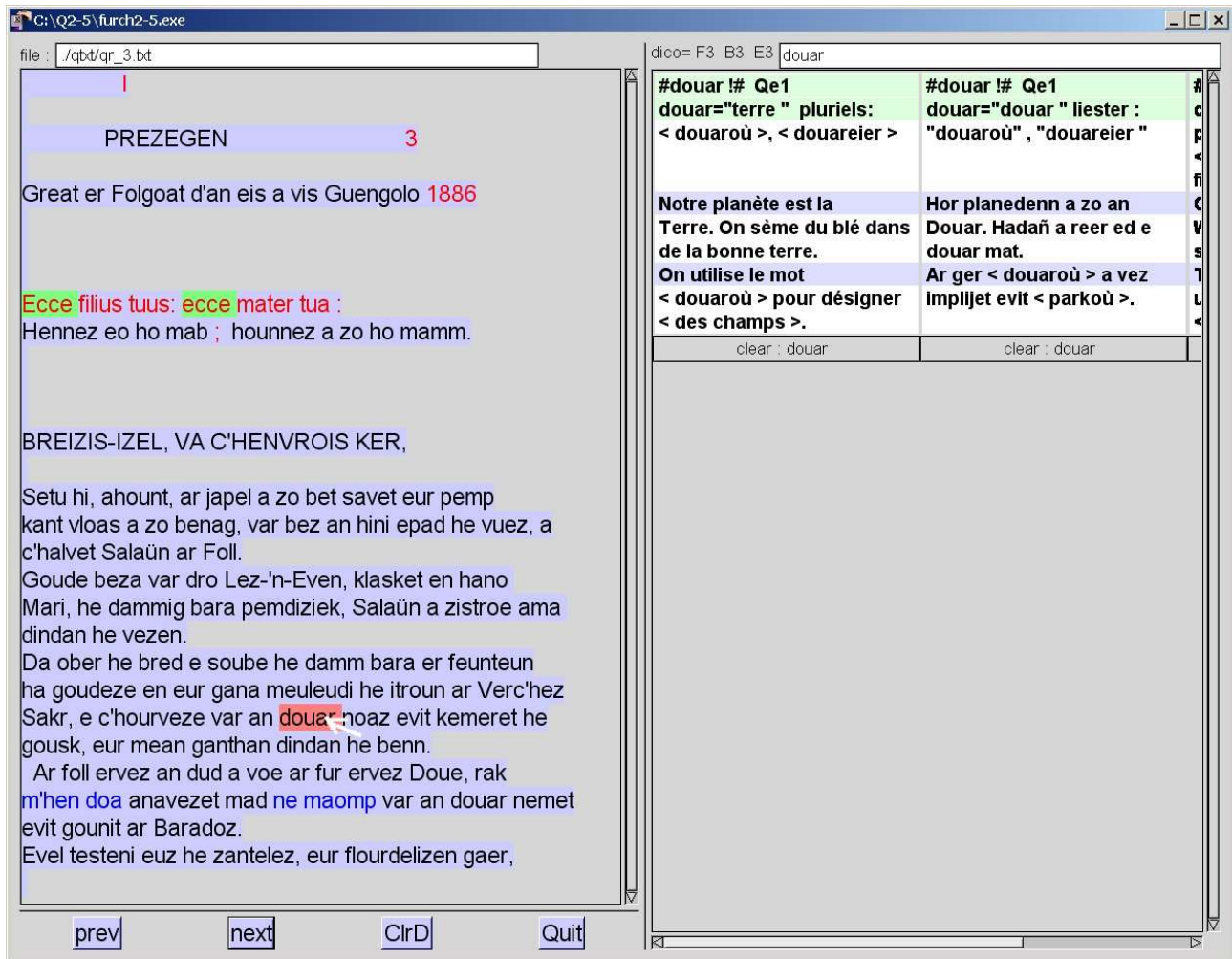
Figure 2 *(douar_fr1.jpg). When a word is clicked on the book window, its meaning and translations are displayed on the Dictionary window. (Furch 2.000 version)*

Now, let us speak of the page which is displayed. It is a page written in Breton and some characters may be accentuated such as into the name Salaün on figure 2. While displaying the page, the software makes an analysis and decomposes the text into words. When reading this text, if you don't understand the meaning of a word, or still if you want to challenge the software, you will point your mouse index on the word. The background of this word will immediately turn orange to show that it is selected. This is the case on figure 2 for the word "douar" (earth). Now a simple left click of the mouse will launch the search engine and all the relevant information will be displayed on the main window right part, that is to say on the "dictionary part". You will have more details on the "dictionary" window later. For the present time, let us go back to the words of the book part. Each word is technically a button, the action of which, when clicked, is to display a text stored on a dictionary file. This text starts from the address of an entry point and continues down to the the next entry point address.

As you can see on figure 2, words are displayed in different colors : black, blue, green, red. Black is for ordinary simple words like nouns, adjectives, prepositions,

articles... when they are into the data base. Blue is for multi-words expressions. Any good dictionary makes reference to multi-word expressions as well as to simple words. FURCH is doing its very best to recognize these expressions. This is a difficult task, however, because words in expressions may vary. Nouns have singular and plural forms, verbs may be conjugated. At the present time. FURCH is not able to recognize variable expressions, this may come later. When pointing at one of the words of an expression, the whole expression is highlighted with the orange background color. This feature makes the blue color of the letters to be perhaps superfluous but it is only a default color and you can change it for black, the color of ordinary words, if you prefer.

Some other words have a green background, they are words written in the « furch.conf » file, that you have chosen to permanently highlight for your own purposes. Each time these words are recognized in a page, they will be displayed with a green background. This may be interesting for verbs as they appear under different forms when they are conjugated. This is also true for ordinary nouns as they are subject in Breton to mutations. You may also want to count how many times a word is used in a book or to check a grammatical construct or have any other reason of your own. You may, of course, adjust this background color to your vision and screen characteristics. This can be done into the « gtkb.rc » file.

You will also notice that some of the words are displayed in red, they have not been recognized by the software or most probably they are not into the data base. You will have to introduce these words into your own dictionary ! This is the case for a lot of words on figure 1 and for the latin words on figure 2. Even when not recognized, a word can still be highlighted with the green background. This is the case for "ecce" (this one) in figure 2.

All the colors I have mentioned are default colors, you can adjust them to your taste or hardware in modifying one of the two configuration files :"furch.conf" or "furch.rc"

Both the book and the dictionary windows have horizontal and vertical rulers that will automatically appear when the content of the window is too large for the place which is allowed. On figure 2 the horizontal ruler for the book window was not necessary. One was needed for the dictionary window, however.

Presentation of the dictionary window

When you click on a recognized word, one which is not in red, the software will display the information it has in its data-base. This information is displayed in the right part of the main window which is called the "dictionary window". On top of the "dictionary window" there is a "command line". This "command line" may be used to interrogate directly the dictionaries. You can type a word, an expression or even a full sentence into the "command line" and FURCH will search its data base for you.

This is a way to by-pass the regular process :

Page book text file **->** Mouse pointer **->** Click **->** Display on "dictionary window"

You will have more details on the command line later.

Under the command line is the main dictionary window. As for the book part, rulers will automatically appear if needed, that is to say if there is too much to display on the limited surface of the dictionary window.
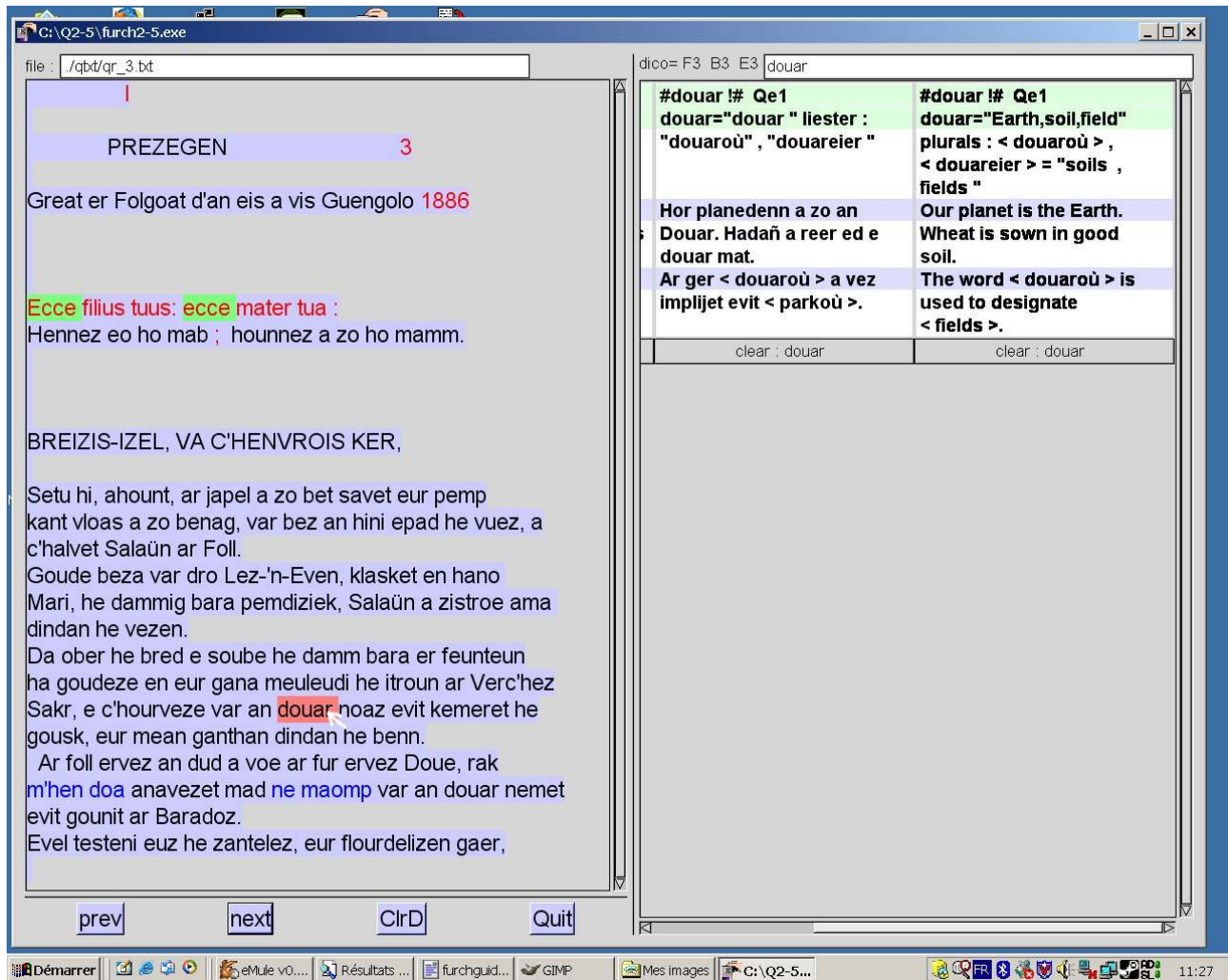
Figure 3 (douar_en1.jpg) *This figure is a screen capture on a Windows 2000 OS.(Furch 2.000 version)*

On figure 3 the word "douar" is highlighted because the mouse pointer is on it (the pointer has not been captured by the picture software "the Gimp", it has been added manually). This figure shows the English translation of the Breton dictionary. The French translation may be seen on figure 2. You can note the position of the "index" on the horizontal ruler.

Display of information for a regular norm dictionary.

Currently there are two kind of dictionaries, one kind with the regular norm and the other one with a simplified norm. The simplified norm has been introduced to make use of lists of words that people may have already written for their personal purposes.

Let us see the display of the information contained into a regular norm dictionary. On figures 2 and 3, you are reading page 3 of Father Quéré's book and you want to get informations on the word "douar" (earth). For that purpose, you click on this word with the mouse or still you write this word into the command line and in this latter case you press the "return" key. These actions will induce a research into FURCH's data base. The word "douar" is into one of the dictionaries, you already know this fact because this word is written in black. For our particular example the word is into the "dico1_quere" dictionary. This dictionary is written in Breton with translations into French and English. I suppose now that you are interested by the three languages and that you have made the necessary settings into the "furch.conf" file (more on that in the user guide). You will understand now why project FURCH makes reference to "synoptic dictionaries". Three vertical columns will appear into the dictionary window, one for the French language, one for Breton and the last one for English. Horizontal lines with a blue or green background color divide the written text into small paragraphs (somewhat like verses in fact). This allows you to immediately find the corresponding translation if you have difficulties with the Breton text.

Each of the columns is in fact a "Clist". This is GTK1.2.x technical stuff and declared obsolete but still working in GTK2. I will not tell you much about it. It is enough to know that this explains the capabilities and the shortcomings of the dictionary window as we have it into this 2.011 version of FURCH. One important property of a "Clist", for us, is that each line may be individually mouse-clicked, unfortunately not each word on a line but at least each line. So, according to the contents of the line, you can make appropriate actions. We will make an extensive use of this property to navigate into the data base. This will be explained later.

For the moment, let us go back to the dictionary window where I have chosen to display three columns. With the current settings which are in the "furch.conf" file, there is not enough place to see all the three columns. However, by making use of the horizontal ruler at the bottom of the dictionary window, you can see at least two columns and so you can display the Breton and English parts or the Breton and French parts together. It is possible to change the order of your language selection or even to have a single column with the language of your choice by adjusting parameters in the "furch.conf" file. On figure 2 the French and Breton columns are visible together with the beginning of the English column. On figure 3, the Breton and English columns are visible together with the end of the French column. You can also note on figures 2 and 3 that at the end of the dictionary columns there is a gray

line with the word "Clear :" followed by the word or expression that is displayed. This is for the management of your dictionary window. Having a mouse click on that line will clear the explanations but only for the indicated word or expression. You may have more than one word explained in your dictionary window however. In that case, for your convenience, a general clear button : "ClrD" (Clear Dictionary window) at the back of the book window allows you to clear everything with a unique click.

Secondary entries.

The writing of the dictionaries is a very slow process. In order to spare development time, some words are given only as secondary entries. For example in the article defining the word « beleg » (priest), we will also give « person » (parish priest) and « kure » (curate). To make the reading easier, a secondary entry will be highlighted by a yellow background at least twice, first at the beginning of the article and then each time it is encountered inside the article (see figure 4).
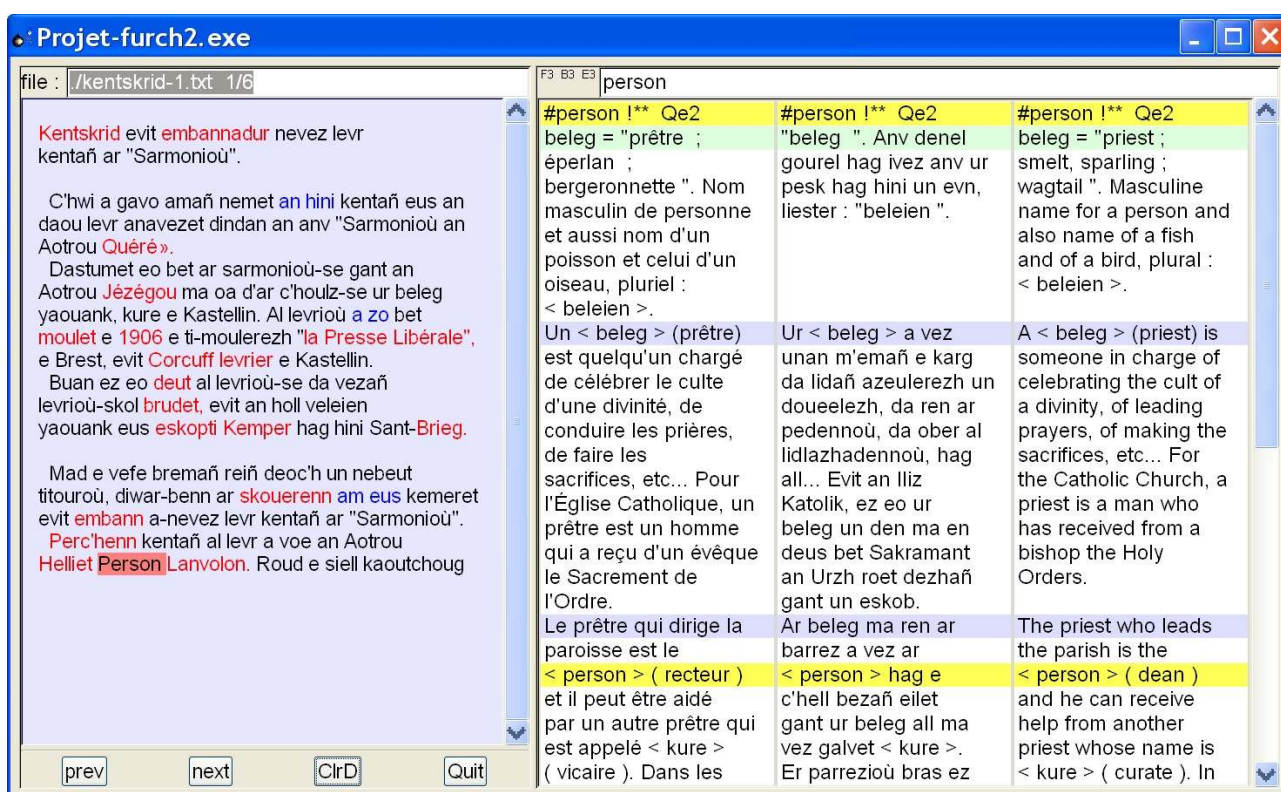
Figure 4 (person.jpg) Some words ar secondary entries in an article defining another word. Here « person » and also « kure » are secondary entries in the « beleg » article. (Furch 2.011 version)

Clearing explanations for a single word or expression.
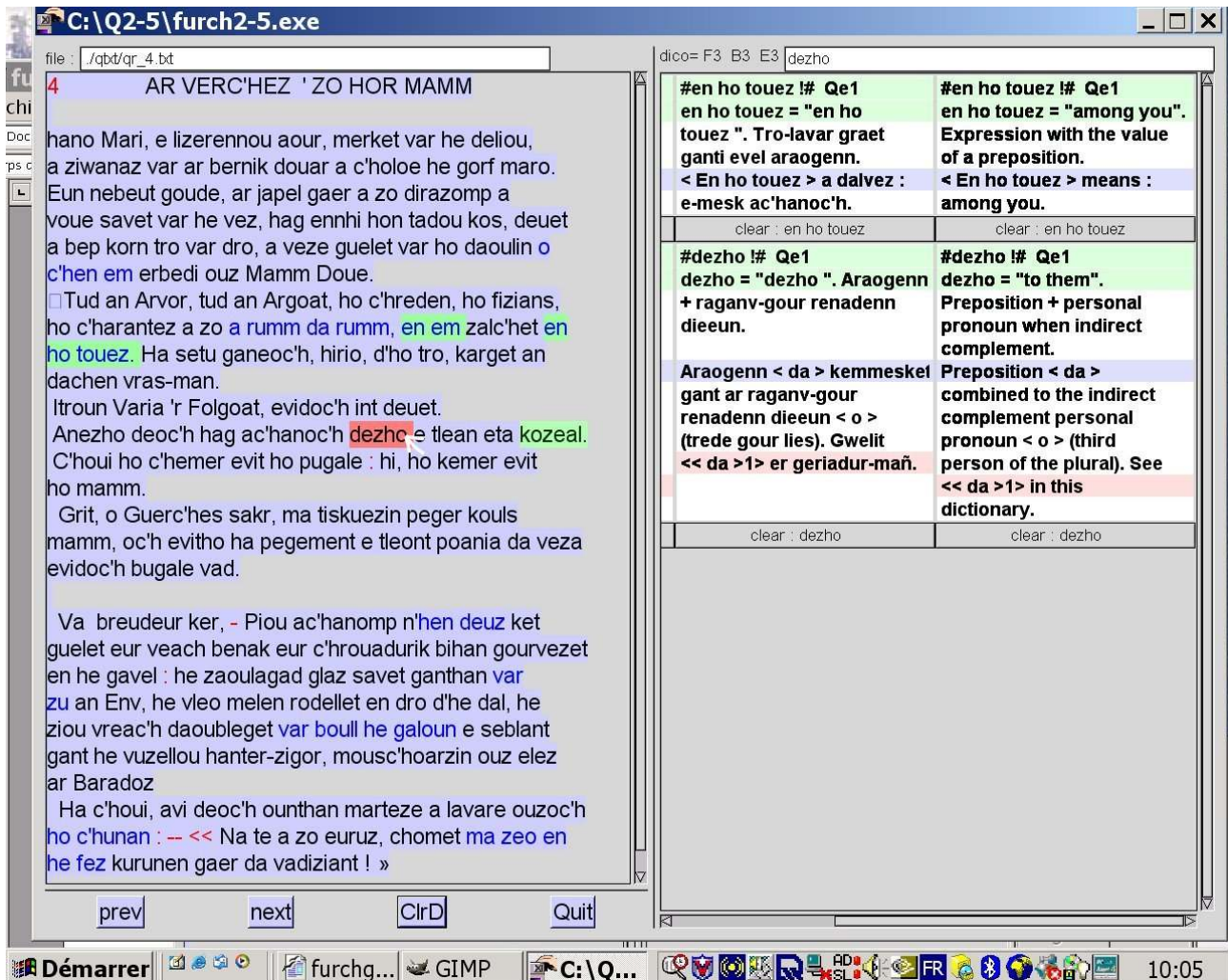
Figure 5. (dezho_en.jpg) *This figure shows the second page of the "sarmoniou" where the number "4" has not been recognized (it is in red). The expressions "en em" and "en ho touez" are permanently highlighted as well as the verb "kozeal". They will be highlighted in all the pages were you can found them. You can ask FURCH to highlight words or expressions in the "furch.conf" file.*

 A recognized expression such as "en ho touez", when you click on it, is explained in the dictionary part as a single entity. The word "dezho" is highlighted because the mouse pointer is on it. In fact, it has just been clicked and the explanations have been added into the dictionary part after the explanations for "en ho touez". That expression was first clicked of course ! The last clicked word is displayed into the command line at the top of the dictionary window. This is not useful in the case of a single word but convenient for multi-word expressions because, by editing the command line and suppressing the other words, you can get explanations for a single word which is part of the expression.

You will also remark the lines "clear : en ho touez" and "clear : dezho" which can be clicked on to suppress the explanation for the word or expression in the dictionary part. Only the explanations for the chosen word or expression will be suppressed, however.

Navigation into the dictionary data base.

The lines with " << da >1>" in the dictionary window are with a pink color (figure 5). These lines are clickable, they are links towards the word "da" into the first dictionary on your priority list (you can change that priority list and thus the number 1 may change).

Let us have a click on the "clear : en ho touez" line to make some room on the dictionary window and then another click on the pink "<< da >1>" line. What we obtain is shown in figure 6 :
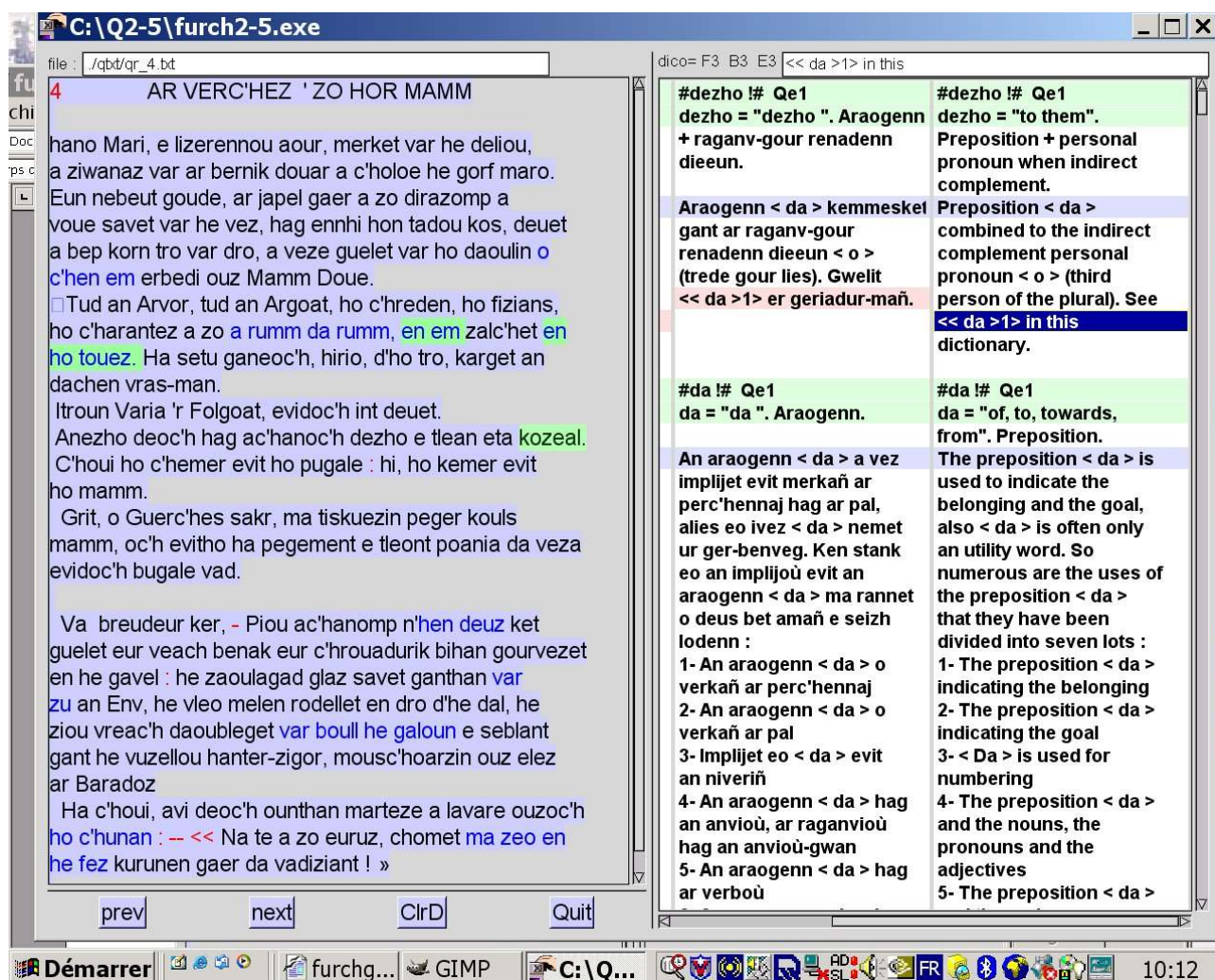
Figure 6. (dezho_da_en.jpg) *When having a click on a pink dictionary line...(Furch version 2.000)*

The line « << da >1> in this », in the English column has just been clicked. This line has turn blue and it has been copied into the command line (this may be of some use in the future ...). Of course it is also possible to click the pink lines in the Breton or French columns. The explanations for the word "da" are now added to the explanations for "dezho" in a single package which may be cleared by the "clear : dezho" line. This command line is not visible on figure 6 because the explanations for "da" are very long. The lift ruler at the right of the dictionary window will allow you to read all of them and use the "clear : dezho" line..

How deep to read a regular norm dictionary ?

As there is sometimes much grammatical explanations in some dictionaries, you may choose in the "furch.conf" file not to read everything. Here, as indicated at the top of the dictionary window by the line "dico= F3 B3 E3", I have chosen to display everything. However, if you are reading for your pleasure, you may not want to have all that grammar. That is why, levels have been defined into the dictionary regular norm. You can choose to read only down to some given depth level.

Level -1 will suppress any output for a given column. For example : F-1 B3 E-1 will suppress outputs in the French and English columns and will display the explanations in their full extent in the Breton column.

Level 0 is what you expect to find into a simple dictionary. In a Breton column you will have the Breton word that may be written in different orthographic systems. For example in "dico_quere" the word is given as written by Father Quéré and the writing in KLTG is added. Then, you will have some simple grammatical information (noun, adjective, verb ...) and the plural for a noun or the past participle for a verb. In the English or French columns you will have the translation of the word or expression instead of the writing in KLTG. Level 0 is enough if you are only interested by a translation.

Level 1. There are now paper dictionaries fully written into Breton. Dico_quere is my personal contribution to the electronic counterpart of these dictionaries. So Breton words are explained into Breton and this is Level 1. Of course the translation of the word explanations is not particularly useful for most of the readers as they already know the meaning of the French or English translations. However, reading explanations in Breton is also an excellent exercise and if you have difficulties to understand the Breton text, the translations in French and English will help. As the explanations are divided into very small paragraphs beginning by a line with a light blue background, it is easy to locate a given sentence.

Level 2 gives generally grammatical explanations. Any dictionary presupposes that the reader knows the grammar of the language he is reading. This is often not true for a reader of a Breton dictionary. As paper weight and expense are not relevant for an electronic data base, I have thought it would be convenient for the reader to have the necessary grammatical explanations, together with the word or expression meaning. This is sometimes at the price of some repetitions but again, the price of paper is not

a problem here.

Level 3 gives complementary explanations not absolutely necessary for the understanding of the word or expression. In fact, because place is not a problem I have dared to add some personal touch here. At level 3 you may find chattering, whim, bad misanthropic jokes, my appreciation over beach topless fashion, unduly severe judgments over respectable professions, personal youth remembrance etc. Fortunately level 3 does not exist very often and any way any responsible person will avoid level 3. Lower levels are serious, I swear.

Your choice of reading level is as usual set into the "furch.conf" file. You may tune independently the reading level for the Breton, French and English columns. The software will do its very best to present at the same level the same text in the three languages. This has been poorly tested however, so let me know the errors and be patient !

Display of information for a simplified norm dictionary.

The writing of a regular norm dictionary is a long process, even if you limit yourself to "Level 0", that is to say if you give only the breton word and its translation in at least one language, French or English at present time. In fact, it seems that many people studying Breton have done, for their own purposes, lists of words with translations. These lists have been made into an electronically readable form. They must have the possibility to use their lists (you can call them dictionaries) into the FURCH software with as few modifications as possible.

The "regular norm" is rather complex and is not necessary if you only need a translation of the words. This is why the "simplified norm" has been devised. How to transform an existing lexicon into a "simplified norm" dictionary readable by the FURCH software ? Basically, one will put a # sign at the beginning of a line. This will introduce the word or expression and after that will come a punctuation sign (a point, a comma, a next line character) which will be written to separate the word or expression from the explanations, translations, etc... Et voilà, that is all, the lexicon is now usable in FURCH. This, of course, has to be done for each entry in the lexicon. We will lose the synoptic display we had with the "regular norm", but this is the price to pay for simplicity. You will have more details on the "simplified norm" in the detailed user guide. For now a look at figure 7 will show you how the display of a simplified norm dictionary looks like. As there is no information on the language used for the explanations, there is no synoptic display. So all the output takes place on the first column of the dictionary window. On figure 7 this is the French column because the first column was chosen to display French. Nothing is written on the other columns. There is no level of display for such "simplified norm" dictionaries either. Everything on the dictionary file is written on the first column, down to the next sign # located at the beginning of a line, or if no one exists, down to the end of the file. On figure 7, the French and English translations are separated by a line of stars for a better clarity. This is not necessary, but this shows you that, even for a "simplified norm" dictionary, the output may be agreeable to read.
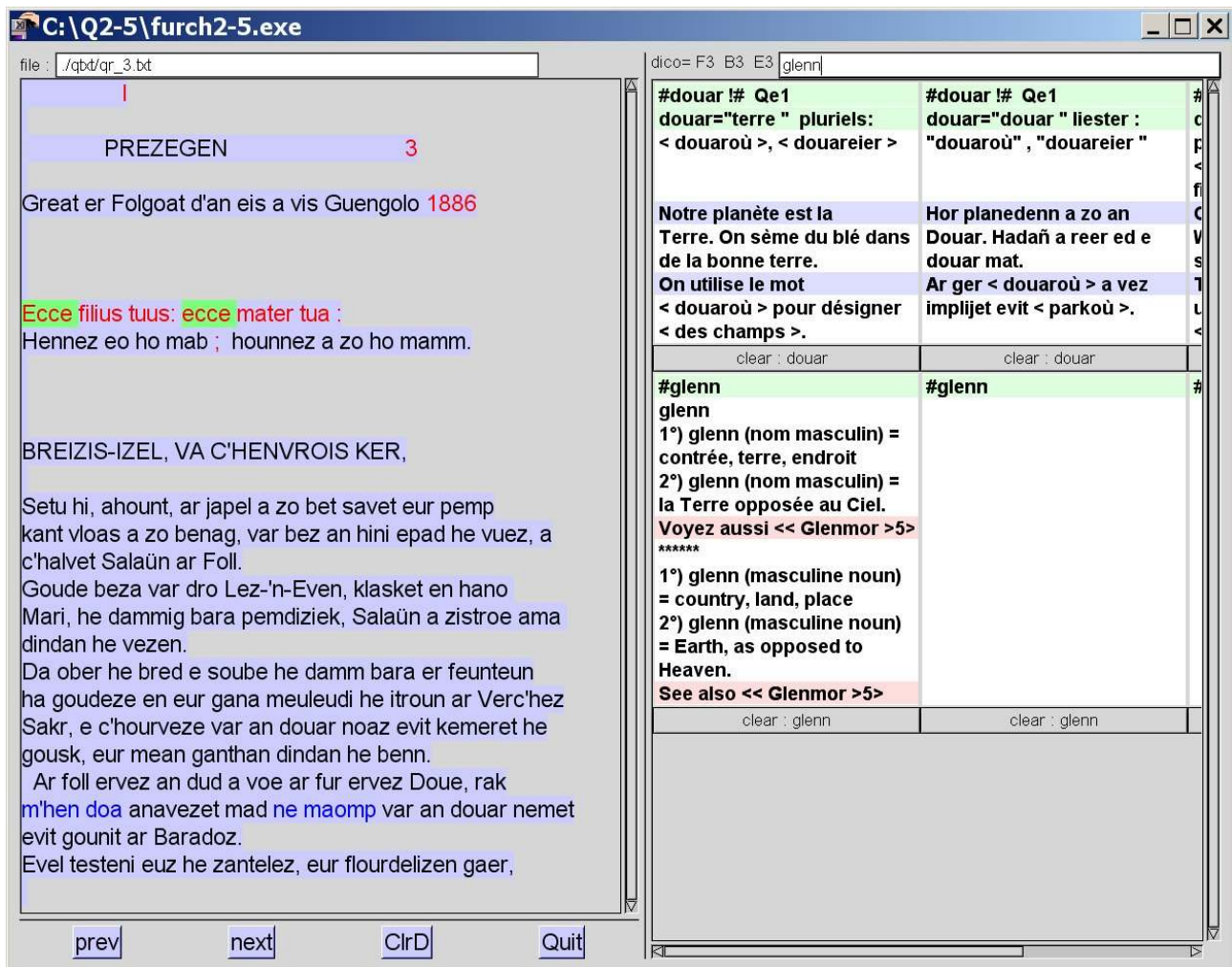
Figure 7. (glenn.jpg) *This figure shows the output (for the word "glenn") obtained from a simplified norm dictionary as opposed to the output of a regular norm dictionary (for the word "douar"). There is no synoptic information on a simplified norm dictionary and everything is displayed on the first column of the dictionary window.*

Because the simplified norm has been tailored to make use of existing lists of words with the minimum amount of work, that kind of dictionary doesn't have much possibilities. However, as you can see on figure 7, navigation through the data base by line clicking is possible. If the "See also << Glenmor >5>" or the "Voyez aussi << Glenmor >5>" lines are clicked, what you obtain is shown on figure 8.

Remark : The "5" in "<< Glenmor >5>" is computed by the software. On the dictionary we have only : "<< Glenmor >>" which makes reference to "Glenmor" in the same dictionary. You will have more information on dictionary norms in the user guide.
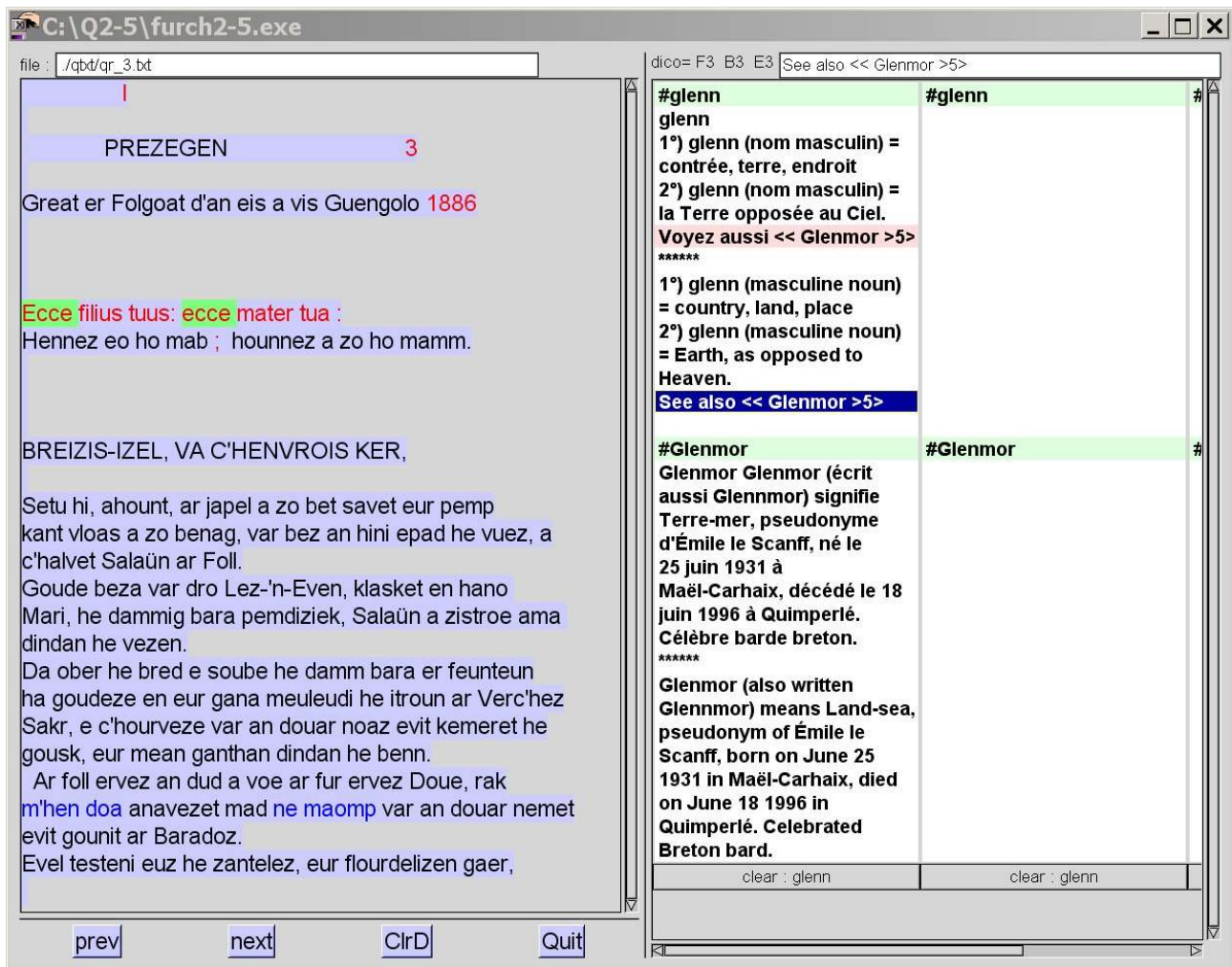
Figure 8. (Glenmor.jpg) *Starting from the situation shown in figure 7, the "clear : douar" line was first clicked to make room and then the pink "See also << Glenmor >5>" line was clicked. This line has turned blue and the information on "Glenmor" has been displayed.*

When a word is into different dictionaries.

As the FURCH program has been designed to handle more than one single dictionary, these dictionaries may be written by different authors which may not be aware of the work already done by other people. So, the same word may be found into different dictionaries. This fact may also occur in purpose, for example an author may want to give additional informations, or correct something into his predecessors work. With FURCH this is not a problem, everybody can add what he wants, everything is accessible and may be displayed on the dictionary window. The order of priority, that is to say which dictionary will be displayed first, is the choice of the user. The user has a priority list in his "furch.conf" file and he even can choose the "more information first" priority. For the last case, the priority is variable as a given dictionary is not always the most complete for each word. You will have more information on this subject when the configuration files will be studied in the user guide. For now, let us take one example, the word "ac'hanomp" (from us) is defined in the two dictionaries "dico1_quere" and "dico2_quere". This was a mistake, but this mistake is providential because we will see what happens when we click on the word "ac'hanomp". This is shown on figure 9.

However, before we have a look at this figure, I must say a few words on the " dictionary aliases ". A dictionary alias is a short sequence of characters which the author of the dictionary chooses as nickname or second name for the dictionary he is writing. For example I have chosen Qe1 for "dico1_quere" and of course Qe2 for "dico2_quere". These aliases are used when you are writing a dictionary to indicate that additional information may be found into another dictionary. These aliases are also useful for the end user as they are given on the first line of the explanations to indicate the origin of the displayed information.

We may now look at figure 9 :
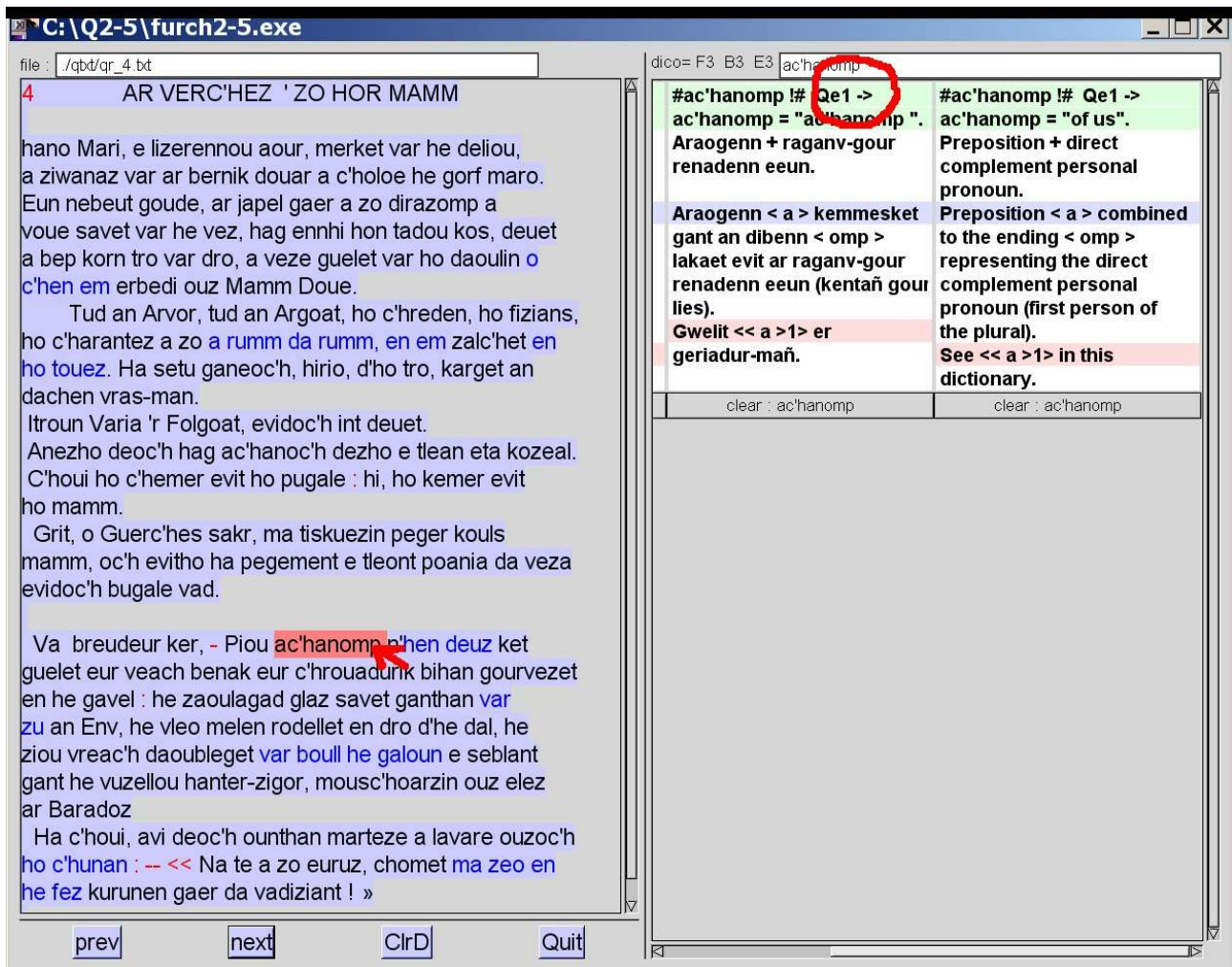
Figure 9. (multi-dico1-en.jpg) *This figure shows page 4 of Father's Quere sermons where the word "ac'hanomp" has just been clicked. This word happens to have definitions in more than one single dictionary.*

The software has searched his data base, found the word and displayed explanations as usual. However, there is a very small difference. You may compare, for example, with figure 6 which displays the same page for the words "dezho" and "da" which are in only one dictionary. What is new on figure 9 is that the first line into the dictionary part (the first of the two lines with a light green background) displays the dictionary alias (Qe1) followed by the sign : " -> ". The sign " -> " tells us that more information is available on other dictionaries for the word "ac'hanomp" . The dictionary "dico1_quere" whose alias is "Qe1" is the first dictionary on my personal priority list. What has been displayed is the information into the " dico1_quere " dictionary. However all additional information may be reached. Let us have a click on this first green line. What we obtain is shown on figure 10 :
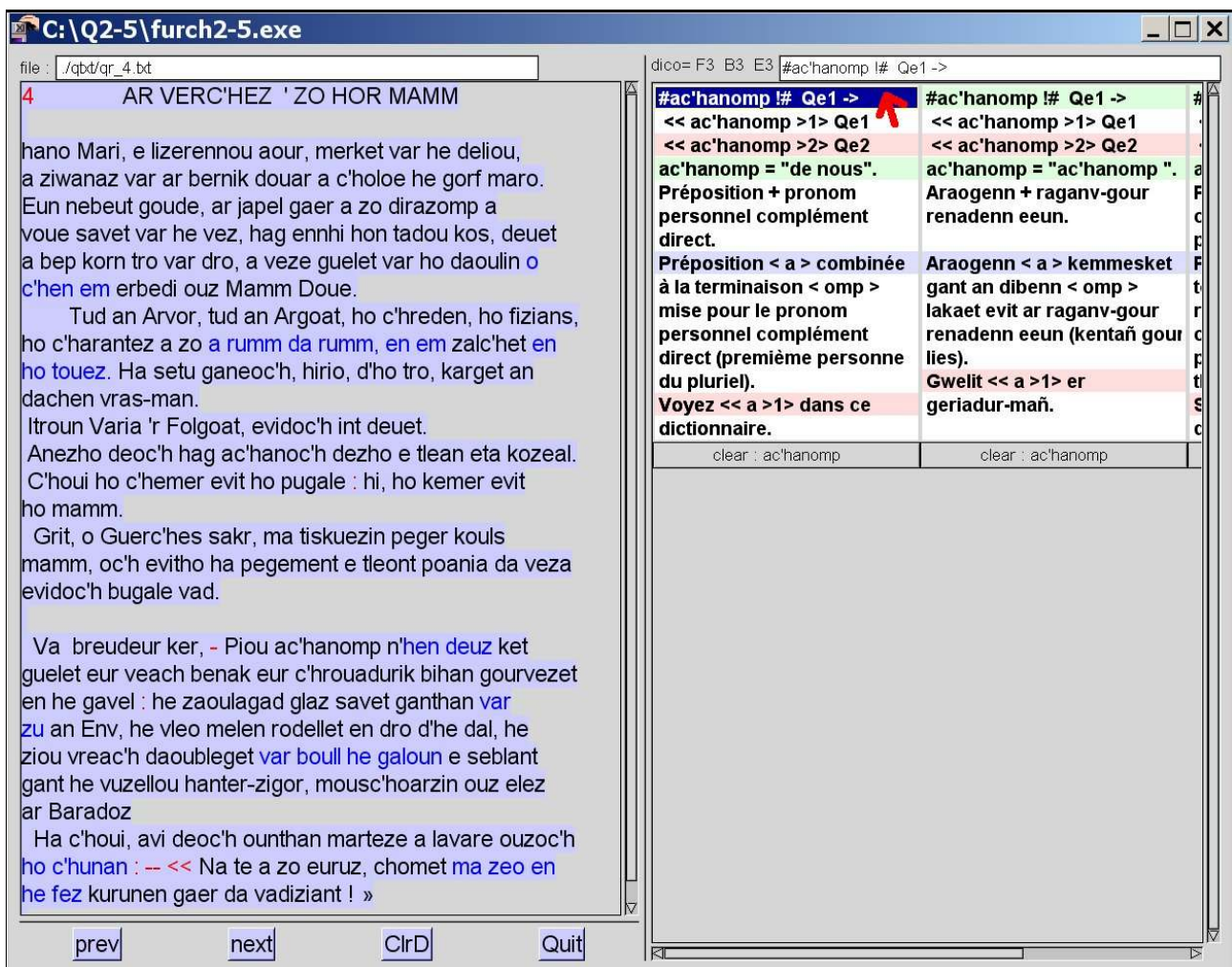
Figure 10. (multi-dico2-fr.jpg) *When a word is on more than one dictionary, clicking on the first line allows you to chose what dictionary to display.*

The first line was clicked (here on the French part of the dictionary window but the result is the same for the Breton or the English parts). The clicked line has turned blue and two lines have been inserted between the green lines. One of these line has a white background and the other a pink background. Let us analyze the pink one : " << ac'hanomp >2> Qe2 " . The part << ac'hanomp >2> is an indication for the software to look for the word " ac'hanomp " into the second dictionary of your personal priority list. As you may have forgotten what dictionary it may be, the dictionary alias, here " Qe2, " standing for " dico2_quere ", follows. You may now guess what the white background line " << ac'hanomp >1> Qe1 " means. It makes reference to the word " ac'hanomp " into the dictionary " dico1_quere " which is the first one on the priority list. Because the information on " dico1_quere " has already been displayed on the dictionary window, the line has a white background to distinguish it from the second line. In fact both lines are clickable. Let us have a click on the second line with a pink background. What we obtain is shown on figure 11 :
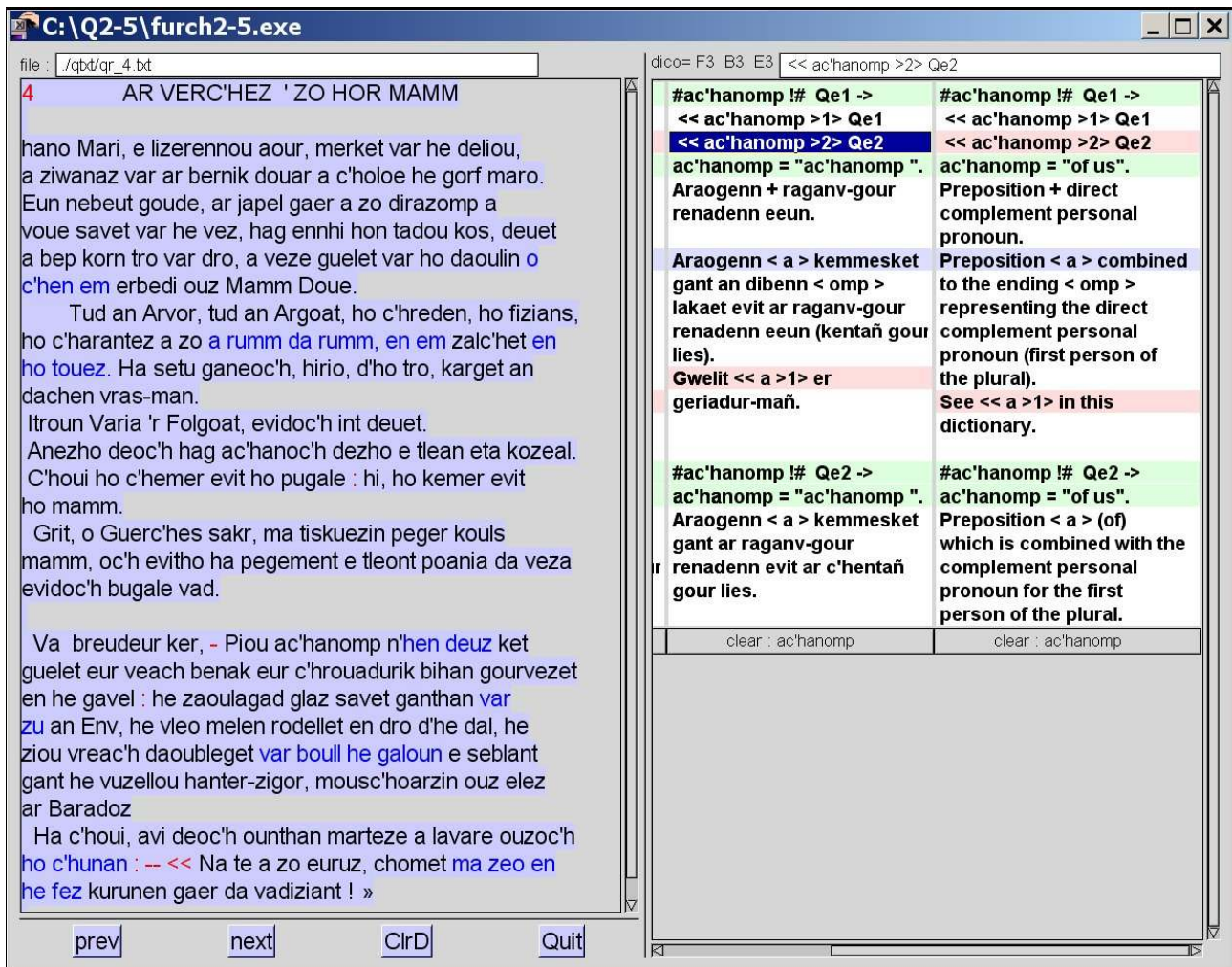
Figure 11. (multi-dico3-en.jpg) *When a word is defined in more than one single dictionary, it is easy to reach information given in the other dictionaries.*

The pink background line was clicked (here on the breton part of the dictionary window but the result would have been the same for the French or the English parts). The clicked line has turned blue and the information which is into the " dico2_quere " dictionary has been added. Of course, if the word " ac'hanomp " would have been found into other dictionaries, more clickable lines would have been inserted. All the dictionaries into the database may be reached and their information displayed. No dictionary is useless, if the explanations into one first dictionary doesn't seem to correspond well with what you expect, you may have a look at the other dictionaries.

The dictionary command line.

The command line can be used to obtain explanations and translations for a word which may not be written into the book window. This function is the one we are expecting from any electronic dictionary. Of course, you will obtain just that with the FURCH software if the word is into the data base. However, you can also write more than a single word in the command line. In that case, the software will try to recognize not only each word but also groups of words which are forming known expressions. As you may have too many things to display, each recognized word or expression will be written on a clickable line and it is up to you to select the ones you want. Let us take one example : You write the 4 words "e par ar marv" on the command line. What you will obtain is shown on figure 12 :
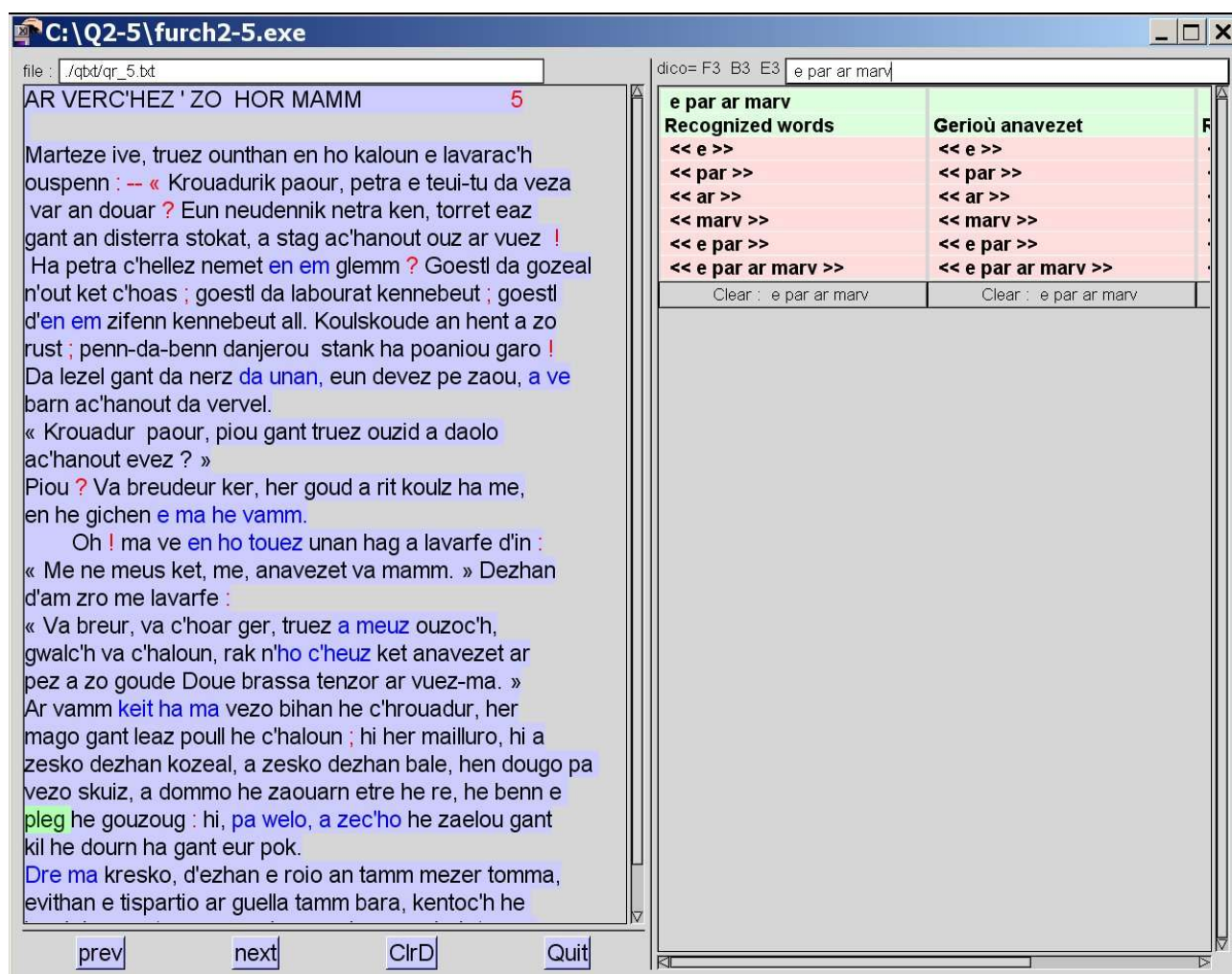
Figure 12. (e-par-marv-en.jpeg) *The expression "e par ar marv" (to the point of death) has been written into the command line. The software has recognized each word but also two expressions : "e par" (upon the watch) and "e par ar marv". (to the point of death).*

You have to click on one of the pink lines to have the explanations on a peculiar word or expression. Let us have a click on "e par", for example. What we obtain is shown on figure 13 :
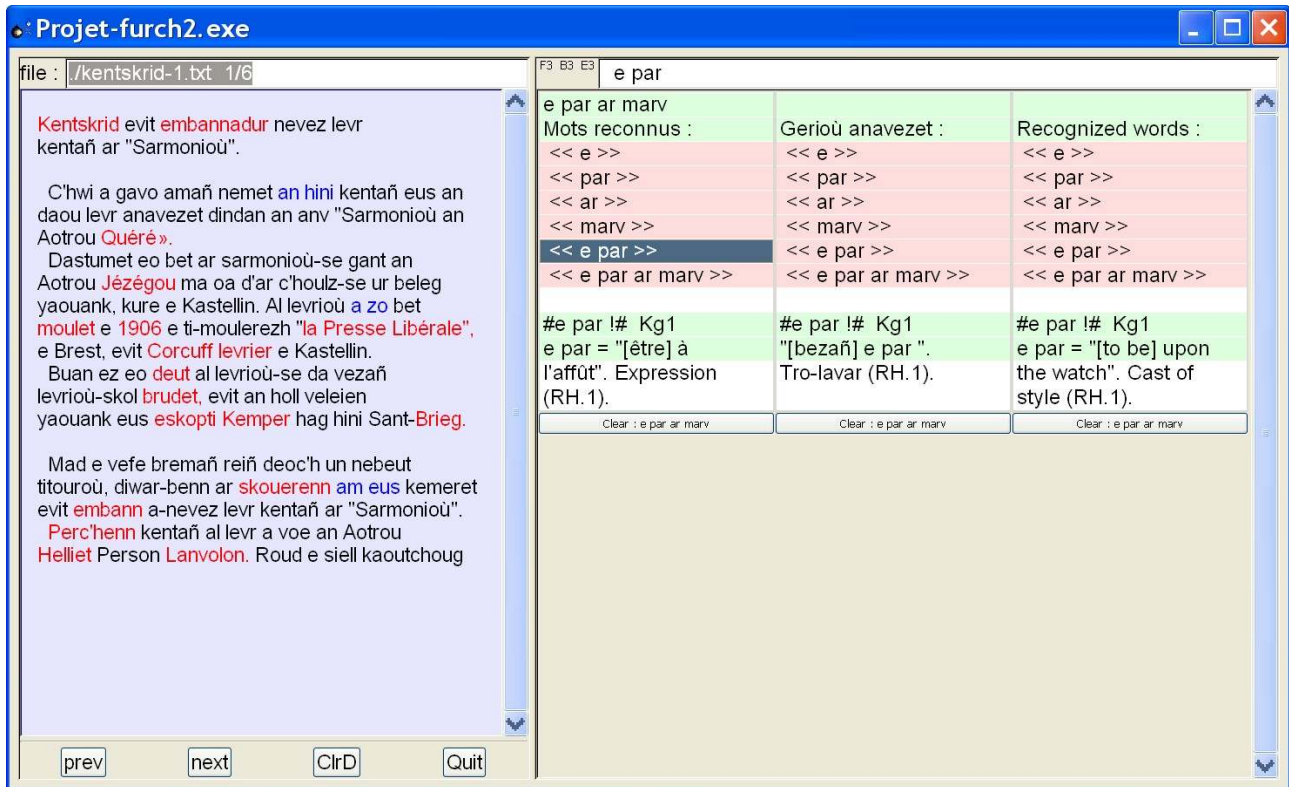
Figure 13. (e-par-en.jpg) *You can select one particular word or expression found by the software in its analysis of what you write in the command line. In this particular case : « e par ar marv » was written.*

The line " << e par >> " has just been clicked, it has turned blue and has been written into the command line in replacement of " e par ar marv ", what we had into figure 12. The information which is into the " roll1_kltg " dictionary has been displayed. The dictionary alias is " Kg1" and this alias is indicated on the first green line " # e par !# Kg1 " after the bunch of clickable pink lines. Of course if the expression would have been on more than a single dictionary, this would have been indicated by a sign " -> " and the green line would have become :

" # e par !# Kg1 -> "

Conclusion of the FURCH software presentation.

This rapid presentation has shown what you can obtain with the FURCH software in its present state. You have seen that you can display texts, these texts are analyzed and you may click on the words. When these words are not displayed in red , they have been recognized and by clicking on them, you obtain the information which is into one or several dictionaries. The software is also doing its very best to recognize multi-word expressions. Most of the texts shown into the figures were taken from the first pages of Father's Quéré sermons, a celebrated preacher of the nineteenth century from the westernmost part of north Brittany. The first book of these sermons is available and, of course, you can substitute these texts by your own ones. You can also use into FURCH your own lexicons with very few changes. The software is free, it is released under the terms of the GNU license, you can modify it for your own purposes but your modifications must be published and released under the same terms. You can use this software for texts which are not written into Breton but you will have to modify the search engine as conjugations, mutations, grammar, etc, will be different. If I have some time available, I will perhaps do something for English (it is rather simple) and for French (it is more difficult). The longer part is the writing of dictionaries, however.

For the Breton language, the dictionaries which I have written are copyrighted, you cannot modify them or distribute them for a fee but you can obtain them freely, make as much copies as you want and distribute these copies as long as you do not charge for this distribution. I strongly encourage you to write and publish your own dictionaries under the same or more liberal conditions. If you give me permission, I will distribute your dictionaries together with my own ones. They will remain under your name and responsibility however and only you will be allowed to modify and improve them. You can also choose to distribute these dictionaries on your own web page or even try to sold them ...

The writing of a good dictionary is a very long an difficult process, it may be a century long work. It took more than eighty years for a Welsh team to make one ! Fortunately, there are many good Breton dictionaries on paper and they were written by talented people. For a good electronic dictionary, Breton cannot afford a century long delay. This is why FURCH software is able to manage many dictionaries, some very simplified, other more detailed. Words don't need to be put into alphabetic order, a given word may be found into different dictionaries, each author may thus improve and complete the work done by his predecessors. We will thus have a cooperative data base instead of a single dictionary, but this has the same value for our purpose because we are able to search all the data base and navigate into it. Each dictionary making the data base may have more or less quality but each will be useful. As far as I am concerned, I am not a talented lexicographer, so I am very

eager to receive your corrections and suggestions. If they are accepted, your name will, of course, be quoted into the articles you helped to improve. This is a cooperative database isn't it ?

You will find into the second part of the documentation "FURCH software detailed user guide" more informations on the two configuration files of the FURCH software and more details on the simplified and regular dictionary norms. You will find also some advice to help you for the software installation.

Alphonse Nandert, November 2007

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