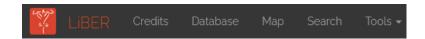
A SHORT INTRODUCTION TO Liber

The navigation bar

LiBER has a navigation bar that provides links to the various sections and functions of the website.



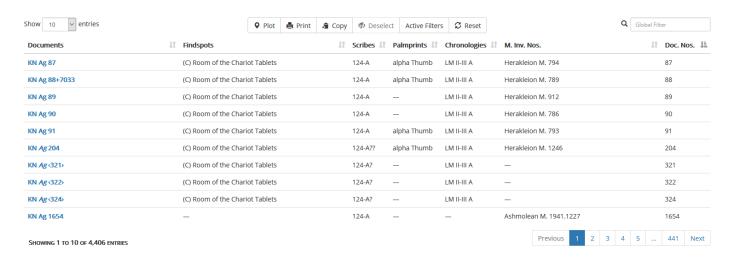
"LiBER" points to the site's Home Page. "Credits" provides information about museums, institutions, collaborations, and bibliographic sources. "Database", "Map" and "Search" give access to the three main sections of the site, whose functions are to filter the documents in the database, display their findspots on interactive maps and perform text searches, respectively. "Tools", along with this brief introduction, provides additional resources, such as syllabogram and logogram tables. It also gives access to contextual functions for the individual sections of the site.

During navigation, depending on the sections used, other menus may appear on the navigation bar alongside those mentioned.

In what follows, a brief description is given of the three main sections of the site, along with some practical tips.

The Database section

The *Database* section contains a data table and a series of filters. The data table divides into seven columns: Documents, Findspots, Scribes, Palmprints, Chronologies, M. Inv. Nos., and Doc. Nos.



The first column shows the database documents classified by prefixes and component numbers. The following five columns indicate findspot, scribal attribution, dactyloscopic identification, chronology, and place of preservation of each document. The last column indicates the first component of each text and can be used to sort documents by order number.

By default, the table content is sorted by documents but can be rearranged by any other column. Therefore, it is possible to sort documents in direct or reverse order by findspots, scribes, palmprints, chronologies, museum inventory numbers, or document order numbers.

The selector in the top left corner allows you to scroll the table in blocks of 10, 25, 50 or 100 documents. The last option, "all", lets you browse through the entire dataset. Clicking on one of the bottom right buttons, you can move forward and backwards or jump to another block. The number of documents currently shown is displayed below the data table.

If you click on a blue link (first column), a new tab opens with the transcription, photograph and notes relating to that document (see below *Text presentation*).

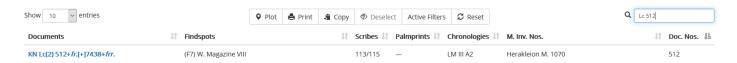
By clicking on a table row, you can select a specific document. Multiple selections are also possible using CTRL / CMD (non-contiguous documents) or SHIFT (contiguous documents). The selected documents are highlighted on a blue background and can be deselected one by one (with CTRL / CMD) or cumulatively pressing the "Deselect" button. The number of currently selected rows is displayed below the data table next to the number of documents currently shown.

SHOWING 1 TO 10 OF 4,406 ENTRIES 4 ROWS SELECTED

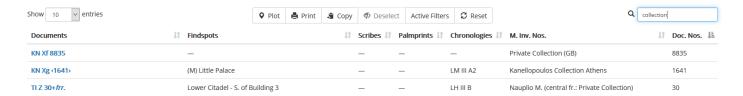
Selected documents can be displayed on the map, printed on screen or copied to memory (e.g., to be pasted into an *Excel* spreadsheet) using the "Plot", "Print", and "Copy" buttons, respectively.

The contents of the database can be filtered through the "Global filter" in the top right-hand corner. This generic filter is case-insensitive and returns any document whose data matches the search string.

For example, "Lc 512" selects the document "KN Lc(2) 512 + fr. [+] 7438 + frr.",



while the word "collection" filters the following three documents:



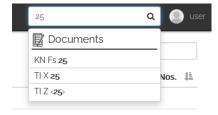
The number of filtered documents is visible below the data table next to the number of documents currently shown.

SHOWING 1 TO 3 OF 3 ENTRIES (FILTERED FROM 4,406 TOTAL ENTRIES)

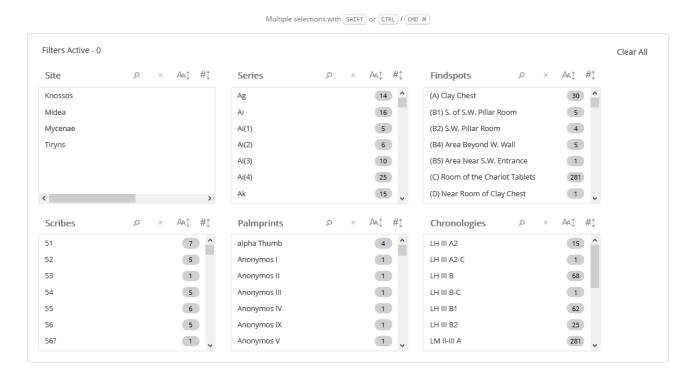
A special filter ("Search docs by number") is always available on the navigation bar to search for documents by component number (the quickest way to find a text without specifying its site or series).



For example, to select the KN Dg 1235 + 5400 tablet, it is sufficient to type either "1235" or "5400". If two or more documents from different archives share the same order number, they are grouped in a menu for selection.



The box immediately below the data table has six panels, each of which allows for specific filtering: by sites (e.g., Knossos), series (or sets) (e.g. Ai or Ai(2)), findspots (e.g. (B2) S.W. Pillar Room), scribes (e.g. 53), palmprints (e.g. Anonymos I), and chronologies (e.g. LH III B).



Each panel entry is followed by the total of its occurrences.

All panels allow for multiple selections. As in the data table, to select or deselect multiple items, it is sufficient to click on them while pressing CTRL / CMD (non-contiguous items) or SHIFT (contiguous items).

The number of active filters is displayed simultaneously in a red box above the data table and the top left corner above the panels. The number of filtered documents is displayed below the data table.

To access the entire database again, you can click on the "Clear all" button in the top right corner above the panels.

To restore the initial state of the panels and clear all active filters (including the "Global filter"), you must click the "Reset" button above the data table.

All these panels can be filtered based on the values selected in the other panels. So, if you select the word Mycenae from the "Sites" panel, the remaining panels will only show series, findspots, scribes, etc., related to Mycenae. If you then select Ge from the "Series" panel, the remaining panels will only show findspots, scribes, etc., corresponding to the Mycenae Ge tablets.

After each selection, the relative frequencies of any individual item are displayed next to the totals, while the table's content is updated accordingly.

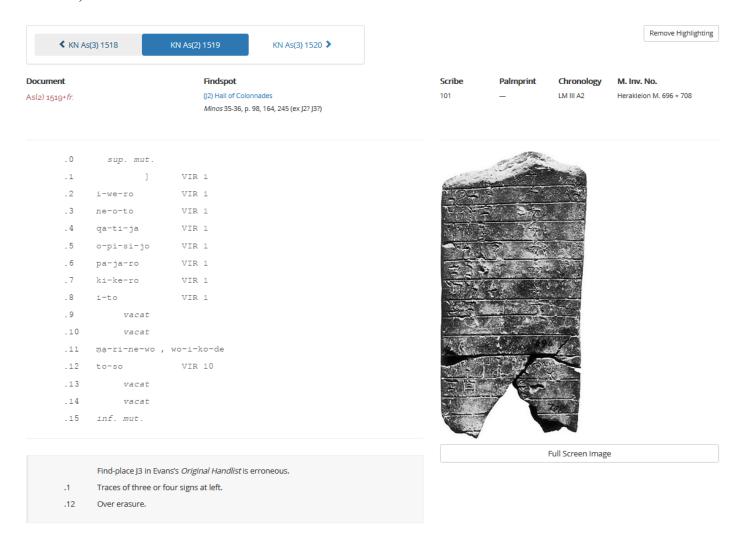
Above each panel, there is a search box followed by four buttons:



This search box is case sensitive and is used to filter a specific item. The first button activates the input box, the second one clears its content, while the last two buttons rearrange the content either alphabetically or by frequency.

Text presentation

Each document is provided with its transcription, photograph, and critical apparatus, together with the relevant information about its findspot, scribe, palmprint, chronology, and museum inventory number (when available).



The blue link below the "Findspot" label can be clicked to display the document findspot on the map. Bibliographic notes on the findspot (if any) are reproduced below the link.

Each document is shown according to its original printed layout, respecting as far as possible both the typographic conventions and the spatial distribution of text elements in its reference edition. At the same time, each text is rearranged into a hyperlink matrix so that, if you click on a text element (word, logogram, metrogram, numeral, etc.), the *Search* section opens with that element already pasted into the input box (see *Search* section). Documents mentioned in the notes as possible components, simili-joins or comparanda of the current document are also shown as hyperlinks (see e.g., Bo 808).

If you move the mouse pointer over the photograph, a frame appears with a magnified portion of the image, which can be zoomed in and out using the mouse wheel. If you click on the "Full screen image" button, a full-size photograph appears (press Esc key or click × to exit).

The blue links in the top left box refer to the documents preceding and following the current one (highlighted in blue). These links can be used to browse the entire database, or a group of documents previously selected from the *Database* section (in which case the current document is highlighted in red).

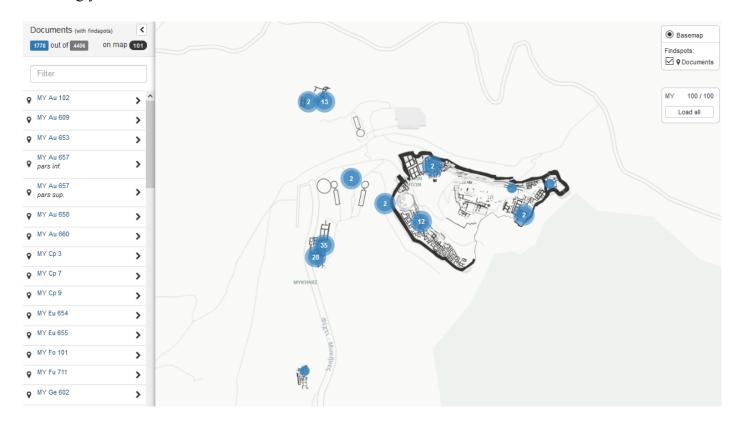
The "Remove Highlighting" button at the top right removes the highlighting from the sequences found by the search engine (see *Search* section).

The Map section

The *Map* section is intended to display the findspots of the documents. Documents are grouped in clusters marked by blue circles with white numbers. When the map is zoomed in, clusters split into smaller groups or individual documents, the latter being represented by smaller blue circles. The zoom function can be activated using either the mouse wheel or the "+" and "-" buttons in the bottom right corner on the map.

The documents represented on the map are those with probable or certain information about findspots. In the left sidebar three totals are displayed. The first refers to all documents with known findspots (blue label), the second to all documents in the database (grey label), the third to the documents currently represented on the map (black label).

Below these totals, the sidebar shows a list of the documents displayed on the map, along with additional information about their findspots (e.g., bibliographical references). The map and list are related to each other. Thus by increasing the zoom level, the number of documents on the map and in the list decreases accordingly.

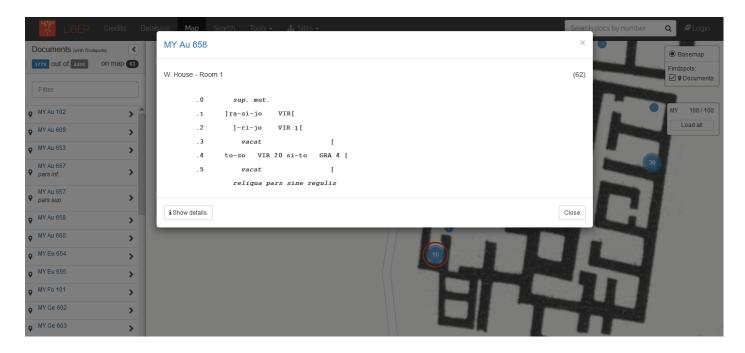


If you move the mouse pointer across the list, the corresponding findspots are highlighted with a red circle.

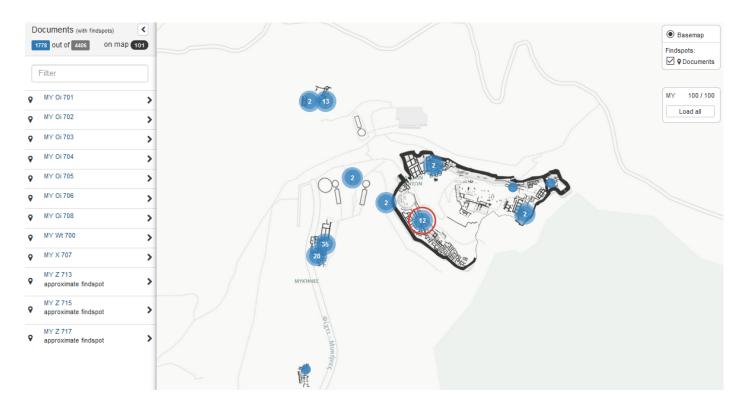
At higher, more detailed zoom levels, if you move the mouse pointer over a cluster or an individual document, the corresponding findspot's name is displayed in the top left corner on the map.

If you click on a document in the list, the corresponding findspot is highlighted with a red circle and the text appears in a pop-up window. The pop-up shows the text of the selected document plus some basic

information. To view all the information, you must click on the "Show details" button in the pop-up's bottom left corner. By clicking on this button the map disappears and the tablet is displayed in full.



If you click on a cluster, this is highlighted with a red circle and only the corresponding documents are listed.



If you click on a blue circle corresponding to an individual document, its text directly appears in a pop-up window.

The list can be filtered at any time to find a specific text or group of texts (e.g., if you enter "Z" in the "Filter" search box, the list is reduced to vase inscriptions).

If necessary, the sidebar can be hidden by pressing the button.

When you are in the *Map* section, the navigation bar changes. The new "Sites" menu appears, while the "Tools" menu is enriched with new functionalities. "Sites" provides the ability to navigate across sites, flying directly to Knossos, Mycenae, etc., or zooming in to a specific findspot. The new functionalities in "Tools" allow you to activate or deactivate the sidebar and maximise the map.

The arrow button in the map's bottom right corner returns you to your current location on the ground. This geo-localization function is intended for use on archaeological sites with mobile devices.

If you select or filter some documents from *Database* or *Search* and then click on the "Plot" button, a new tab opens with the documents' distribution map. In both cases, a box on the map's right-hand side indicates for each site the number of documents with findspots against the total number of documents filtered or selected.



The "Load all" button in the same box allows you to reset the map view with all the documents with known findspots in the database.

The Search section

The *Search* section is used to query the database.

Sites	Series	Sub-series	Set	Sets		Scribes		Findspots			Periods		Sub-periods	Phases
T	Please start typing	7	0			Any match	○ Start	s with	[Notations]		~	[Filte	r by sign classes]	~
Basic Associations		Contiguities Co-occurrences		□ Notes		Exact match Sign match	○ Ends (* input allowed				Submit	Reset form

Several types of search are available:

- 1) Basic search: finds all the occurrences of a given item.
- 2) Associations: finds all items directly or indirectly associated with a given item.
- 3) Contiguities: finds two or more items in the same line of a text in a predefined order.
- 4) Co-occurrences: finds two or more co-occurring items regardless of their relative position in the text.

To start a query, type a string in the input box, choose the appropriate search conditions from the checkboxes, radio buttons and select menus ("Sites", "Series", etc.) above the input box and press Enter or click the "Submit" button.

The select menus can be hidden or called up by pressing the button.

The two dropdown menus on the right have special functions. The first menu ("Notations") allows you to find all forms with dotted, erased, or restored signs. The second one ("Filter by sign classes") allows you to create full lists of specific sign classes such as special syllabograms, logograms, metrograms, arithmograms and stiktograms.

When typing a search string in the input box, bear in mind that the signs that are conventionally transcribed in *italics* or superscript must always be preceded either by \$ (e.g., \$0, \$ME+\$RI, OLE+\$PA, *\$171, etc.) or ^ (e.g., TELA^1, OVIS^f) , while each dotted character must always be followed by ° (e.g., \$P°A°).

Special characters ${}_{2} {}_{3} \times {}^{\circ} \bullet_{L} \cup {}_{4} \times {}^{\circ} \oplus {}_{4} \cup {}_{5} \times {}^{\circ} \oplus {}_{5} \cup {}_{5$

To clear the input box, you must click on the so button.

If you want to restore the default search conditions, you must click on the "Reset" button.

Basic search

"Basic" search and "Any match" are selected by default.

With "Basic" search, all conditions can be selected.

Conditions assigned to radio buttons are mutually exclusive:

- "Any match" finds any sequence matching the searched item regardless of its position (substring search).
- "Exact match" finds any sequence starting and ending like the searched item, regardless of whether it is preceded or followed by square brackets (useful to find all the occurrences of a given abbreviation or adjunct: e.g., \$PA or \$di).

- "Sign match" finds a specific sign regardless of its specific position (e.g., ra finds ra, ra-, -ra-, -ra, but not ra₂; useful to find all the occurrences of a given abbreviation and its ligatures: e.g., \$PA and TELA+\$PA).
- "Starts with" finds any sequence beginning with the searched item.
- "Ends with" finds any sequence ending with the searched item.
- "Regex" enables the use of regular expressions.

Conditions assigned to checkboxes can be combined:

- The "Aa" checkbox enables the "Case sensitive" function.
- The "Notes" checkbox performs a full-text search in the notes.

If needed, you can also specify additional parameters by using the select menus above the input box:

- "Sites" (KN, MY, etc.)
- "Series" (first letters of series prefixes: A-, B-, etc.)
- "Sub-series" (second letters of series prefixes)
- "Sets"
- "Scribes"
- "Findspots"
- "Periods"
- "Sub-periods"
- "Phases"

These menus are linked to each other. So, if you select "MY" from the "Sites" menu or "J3" from the "Findspots" menu, the remaining menus will only show data relating either to Mycenae or the Knossos J3 findspot.

In all these menus, multiple choices are allowed (CTRL key keeps the menus open).

When one or more elements are selected from these menus, the button and the menu borders turn red and remain so until the "Reset" button is pressed.

Selections made via the select menus are permanent until the "Reset" button is pressed. So, they can be used to refine search parameters further.

These menus can also be combined with the "Notation" and "Filter by sign classes" dropdown menus. Thus, it is possible to search for dotted, erased, or restored signs, or for a certain class of signs, by limiting the search to a specific site, findspot, scribe, etc. If you want to search for a specific dotted sign, you can type the sign in the input box (e.g., n°a°). In all these cases, the "Any match" condition is automatically selected.

Note: all queries concerning Linear B textual data with Basic search are performed both in texts and notes.

Some examples:

- pa + "Any match" finds any sequence corresponding to or containing pa, pa, or PA (dotted or not).
- \$pa + "Any match" finds any sequence corresponding to or containing pa or PA (dotted or not).
- \$PA + "Any match" + "Case sensitive" finds any sequence corresponding to or containing *PA* (dotted or not).
- $p^{\circ}a^{\circ}$ + "Any match" + "[Notations] Dotted signs" finds any sequence corresponding to or containing pa, pa, or PA.
- \$P°A° + "Any match" + "Case sensitive" + "[Notations] Dotted signs" finds any sequence corresponding to or containing PA.

- pa + "Any match" + "[Sites] KN" finds any sequence corresponding to or containing pa, pa or PA (dotted or not) at Knossos.
- pa-ro + "Exact match" finds all occurrences of pa-ro (including |pa-ro, pa-ro[, and |pa-ro[).
- a-pi + "Starts with" + "[Series] V" + "[Sub-series] c" finds any sequence beginning with *a-pi* in the Knossos Vc series.
- we-jo + "Ends with" + "[Sites] KN" finds any sequence ending in -we-jo at Knossos.
- -(.?)i-j(.?)\$ + "Regex" finds any sequence ending in -...i-j... like -i-ja, -i-je, -i-jo, -di-ja, -di-je, -di-jo, etc. (dotted or not).
- "⊕" + "Search in notes" returns all simili-joins.

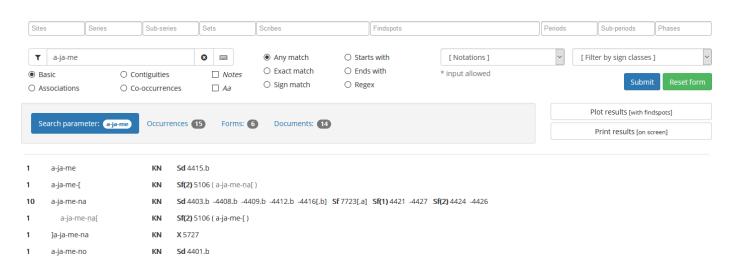
With the help of regular expressions, you can perform complex queries.

E.g., the following expression finds all the logograms in the database:

• $*\[0-9]{3}\]^{(]?)[A-Z]{3} + "Regex" + "Case sensitive"$

For more details about regular expressions see: https://www.regular-expressions.info/

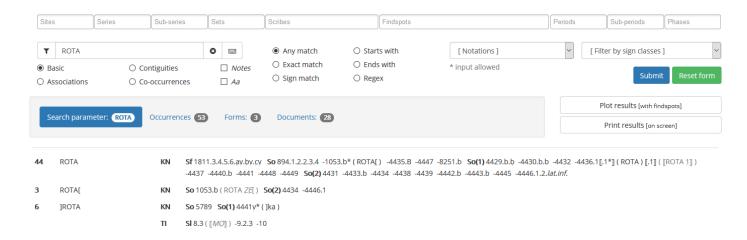
After the query has been submitted, a grey box appears showing the total number of occurrences, forms and documents found.



Results are presented in tabular form. The first column gives the totals of occurrences per form, the second contains the forms that match the query, the third shows the sites where the forms are attested, the fourth shows the documents containing the individual forms.

If you click on a document, its text is displayed in a new tab and the element found is highlighted. This function can be deactivated by clicking on the "Remove Highlighting" button.

The forms found are indexed according to the rules generally used for Linear B indexes (cf. *Index généraux*, Rome 1973). Alternative readings in the notes are added in grey after the corresponding references. These readings are also repeated in the index as separate entries, indented in grey and followed by the corresponding primary readings in black.



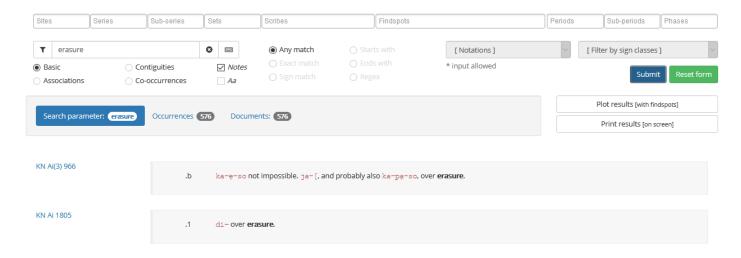
The documents found are grouped by sites and series (or sets).

If a reference is dotted, it means that the corresponding reading is uncertain. If it is in square brackets, the reading is partially or totally restored. If it is in angle brackets, the original text is missing. If it is in double square brackets, the text is erased but still readable. If it is followed by *, the reading is mentioned in the notes and the corresponding primary reading is reproduced after the reference. Finally, if one reading has one or more alternative readings, these are shown in grey after the corresponding references.

References to the *verso* have a "v" appended to the tablet or line number (e.g., KN Sc 217v or KN Bk 799.4v); those to the so-called *fragmenta separata* (cf. e.g., KN As(3) 1520) are marked by a letter ("B", "C" or "D") in superscript (e.g., As(3) 1520.2^B).

The results of the queries can be displayed on the map or printed on screen using either the "Plot" or "Print" buttons.

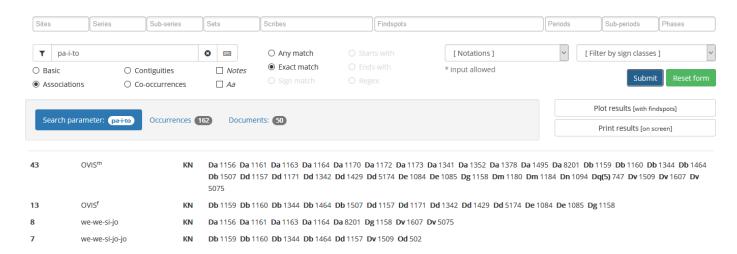
The results of the queries carried out in the notes are displayed on two columns. The first column shows the links to the texts found, ordered by series and number. The second reproduces the notes containing the searched item. Clicking on a link causes the corresponding document to be displayed in a new tab.



Associations

"Association search" finds all items that are attested in the same texts together with a given item (e.g., all words, logograms and numerals directly or indirectly associated with *pa-i-to*).

"Exact match" is selected by default. With "Any match" you can perform a less strict search. "Case sensitive" is also available if you need to distinguish between upper and lower case. The other conditions are not available, whereas the select menus are.



Search results are ordered by frequencies.

By clicking on a tablet, the corresponding text is displayed in a new tab.

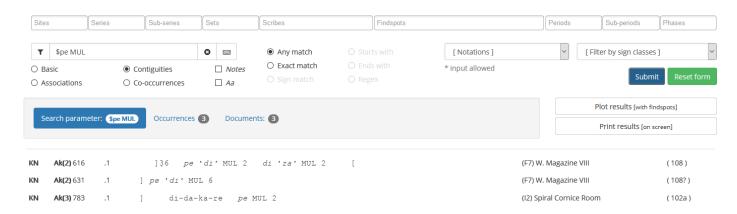
The result sets can also be displayed on the map or printed on screen using either the "Plot" or "Print" buttons.

Contiguities

"Contiguity search" finds two or more items in the same line of a text in a predefined order (the order in which you type them in the input box).

"Exact match" is selected by default. With "Any match" you can find the cases where an additional item is interposed between two searched items (e.g., with "\$pe MUL" and "Any Match" you also get *pe 'di'* MUL).

"Case sensitive" is also available if you need to distinguish between upper and lower case. The other conditions are not available, whereas the select menus are.



Search results are ordered by tablets and show the text lines where contiguities are found, followed by information on scribes and findspots. Clicking on a tablet shows its full text.

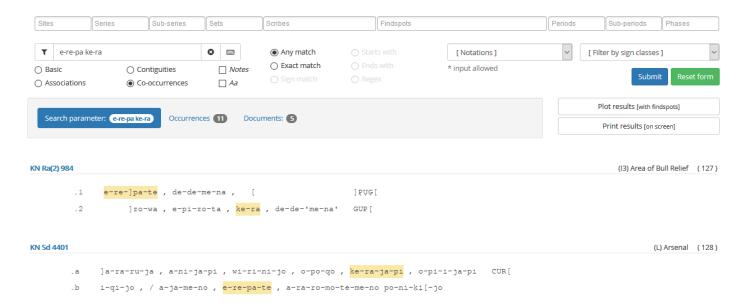
Note: this search function can also be used to search for a single item in order to get a synoptic view of all its micro-contexts.

The result set can be displayed on the map or printed on screen using either the "Plot" or "Print" buttons.

Co-occurrences

"Co-occurrence search" finds two or more items attested in the same text regardless of their relative position.

In this case, "Any match" is selected by default. With "Exact match", you can perform a stricter search. "Case sensitive" is also available if you need to distinguish between upper and lower case. The other conditions are not available, whereas the select menus are.



Search results are ordered by tablets, displayed in full, with additional information on scribes and findspots, and with the searched items highlighted.

Note: this search function can also be used to search for a single item in order to get an overview of all its contexts.

Again, the result sets can be displayed on the map or printed on screen using either the "Plot" or "Print" buttons.



