

## The AGNT Project Report—Q2 2019

As a licensee or friend of AGNT or ANLEX, we would like to update you once a quarter about our continuing work to enhance and perfect these databases and about our plans for the future.



**The Project.** *The AGNT Project Report—Q3 2008* introduced the team, outlined ongoing tasks, and discussed potential tasks.



## The Thesaurus Linguae Graecae® Project: Part 1

John J. Hughes

In the mid 1980s when I was working on my book *Bits, Bytes, and Biblical Studies: A Resource Guide for the Use of Computers in Biblical and Classical Studies* (Grand Rapids: Zondervan, 1987), I became familiar with the Thesaurus Linguae Graecae® project ([link](#)), the world's largest corpus of machine-readable (computerized) Greek texts. Over the past thirty years, the TLG has grown exponentially in size, and has added auxiliary resources and search features.

Students of the New Testament have access to custom Bible study programs such as Accordance, Logos, Olive Tree, and WORDsearch, to name the major players. Some of these, e.g., Accordance, offer access to almost every imaginable original-language text (Hebrew, Greek, and Coptic) that NT students and scholars are interested in, so why would they need the TLG? In two words: Greek lexicography.

No other resource in the world can touch the TLG when it comes to finding *all* occurrences of a Greek word or phrase (inflected or lemmatized) in *any* Greek literature in the period between Homer (8 c. B.C.) and the fall of Byzantium in A.D. 1453<sup>1</sup> or any authorial, chronological, or corporeal subset thereof. In short, if you wish to do serious, world-class diachronic or synchronic word studies, you need access to the full TLG corpus. For example, did you know that “in the heavenlies” (ἐν τοῖς ἐπουρανίοις) occurs five times in Ephesians—1:3, 20; 2:6; 3:10; 6:12—and nowhere else in the NT or in pre first-century Greek literature? You might know that by reading it somewhere, but if you wish to verify that fact, you need the TLG. The non-occurrence of ἐν τοῖς ἐπουρανίοις prior to Pauline usage and the fact that this phrase only occurs in Ephesians raises (at least) three major questions: (a) what was Paul trying to accomplish by prefixing ἐπί to οὐρανοί, (b) why did he use the plural form for “heaven,” and (c) why does ἐν τοῖς ἐπουρανίοις only occur in Ephesians in the NT?

Two examples of using the TLG for lexicographical purposes are Wayne Grudem's “The Meaning of κεφαλή (“Head”): An Evaluation of New Evidence, Real and Alleged,” *JETS* 44:1

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<sup>1</sup> In an e-mail to me dated 06.11.2019, Maria Pantelia, TLG Director, noted: “We are working on A.D. 16–19 and the corpus now contains at least 180 works from that period.” I would like to thank Dr. Pantelia for kindly reading this review and making many helpful comments.

(March 2001): 25–65 ([link](#)) and Leland Edward Wilshire’s “The TLG Computer and Further Reference to ΑΘΕΝΤΕΩ in 1 Timothy 2.12,” *NTS* 34:1 (January 1988): 120–34 ([link](#)).

In this issue of the *AGNT Project Report*, I will cover the history of the TLG project, searching the TLG canon, and searching the TLG corpus. In the Q3 2019 issue, I will cover browsing TLG texts, using the various online lexica, creating N-grams, generating statics, and using the TLG’s terrific vocabulary tools.

**Note:** The information and much of the wording in the following review is taken from the TLG site ([link](#)) and the TLG instructional videos ([link](#)).

### History of the TLG Project

In 1971, Marianne McDonald, then a graduate student in classics at the University of California, Irvine, where she later ended up teaching and being a TLG board member, proposed the creation of a computerized databank of all Greek texts from antiquity to the present era. She backed her visionary idea with an anonymous gift of \$1 million to help fund what is now the Thesaurus Linguae Graecae® project. The TLG was officially established on October 30, 1972, at an international gathering of over a dozen prominent classicists at the University of California, Irvine.

Over the years, additional funding for the TLG has come from Marianne McDonald, the National Endowment for the Humanities of the United States of America, the Andrew W. Mellon Foundation, the David and Lucille Packard Foundation, the Andrew W. Mellon Foundation, the University of California, and numerous other individuals, foundations, and institutions. Currently, the TLG is funded by subscription fees, endowment income, and UC, Irvine ([link](#) and [link](#)).

The TLG’s first director, Theodore F. Brunner, a professor of classics at UC, Irvine, oversaw the project from its inception in 1972 until 1997. Under his directorship, the TLG released three CD-ROMs (1985, 1988, 1992) and worked with David W. Packard to make the TLG corpus available on the Ibycus Scholarly Personal Computer (see below). Dr. Brunner’s successor, Maria C. Pantelia (1996–present), also a professor of classics at UC, Irvine, has overseen the tripling of the TLG corpus, its migration from the Ibycus-based system to an online system, the creation of CD-ROM E (the only disk produced entirely in house), the addition of lexica to the project, and the development of a world-class online search engine.

All Greek texts for the TLG have been double-keyed in Korea, the Philippines, and for the last twenty-five years in China. Double-keying is the gold-standard of accuracy for converting printed text to machine-readable text, and this is especially true for languages like Polytonic Greek that use a variety of diacritics.

TLG texts are encoded using Beta code, a system developed by David W. Packard, a classicist and son of David Packard, co-founder with William Hewlett of Hewlett-Packard. For display and printing purposes, Beta code can be converted to Unicode; and, in fact, the TLG worked with the Unicode Technical Committee (UTC) to define the Unicode Standard for Polytonic Greek. “The TLG Beta Code Quick Reference Guide” is available [here](#), and “The TLG Beta Code Manual” is available [here](#). Beta code has become the standard among Greek scholars for encoding Polytonic Greek. It is what we use to encode Greek text in the various versions of the AGNT databases.

Beginning in 1976, the TLG’s Greek texts were available on tape. In 1985, David W. Packard and William Johnson formed a company to develop the Ibycus Scholarly Personal Computer (PSC), which I reviewed in the *Bits & Bytes Review* 1.1 (October 1986): 1–8 ([link](#)). This special-purpose computer was the first in the world to allow scholars to browse, display,

edit, and search classical texts in an integrated (software-and-hardware) desktop package. The PSC allowed the TLG to release its first CD-ROM (TLG A) in 1985. (Famously, this was the first CD-ROM in the world not to contain music!) In 1988 the TLG released its second CD-ROM (TLG C). The last TLG CD-ROM (TLG E) was released in 1999. Since then, the TLG has been available through online access only.

The full TLG Digital Library is available to individuals and institutions. Individual subscriptions are \$140 for a 1-year subscription and \$400 for a 3-year subscription. Institutional subscriptions vary in cost, depending on the size of the institution and the number of users. More information about subscriptions can be found [here](#).<sup>2</sup>

The TLG also offers a free subset—the Abridged TLG—of the full corpus that contains about 1,000 works from 70 authors and uses the same search engine as the full online TLG version. Unfortunately, although the Abridged TLG includes authors whose works are traditionally used in college-level Greek instruction—the most important classical authors (e.g., Homer, Hesiod, Plato, Aristotle, the Greek tragedians and orators) and a large number of patristic texts—it does not contain the Greek New Testament.

Currently, the TLG Digital Library contains virtually all surviving Greek texts from Homer (8 c. B.C.) to the fall of Byzantium in A.D. 1453, as well as a large number of texts up to the twentieth century. The TLG contains “more than 110 million words from over 10,000 works associated with 4,000 authors and is constantly updated and improved with new features and texts. The full corpus is available to more than 2,000 subscribing institutions and thousands of individuals in 73 countries worldwide” ([link](#)).

A more detailed history of the TLG project may be found [here](#). Also see: “The Thesaurus Linguae Graecae®: Specialized Historical Content for a Niche Audience” ([link](#)).

### Overview of TLG’s Main Features

The TLG’s main features, followed by links to the related TLG [help](#) pages, are

- Search the canon. [Link](#) and [link](#). Video tutorial [link](#).
- Search the TLG corpus. [Link](#) and [link](#). Video tutorial [link](#).
- Browse TLG texts. [Link](#) and [link](#). Video tutorial links: [link](#) and [link](#).
- Consult online lexica. [Link](#).
- Create N-gram comparisons (intertextual phrase matching). [Link](#).
- Create word-usage statistics. [Link](#).
- Use the vocabulary tools. [Link](#).

The remainder of this review will cover searching the TLG canon and searching the TLG corpus.

### Search the TLG Canon

The TLG allows users to search the entire canon—over 10,000 works—and to do so by author, editor, work title, publication title, series, publication year, and by all fields. The purpose of this feature is to allow you to find and select the work or works you wish to study.

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<sup>2</sup> I would like to thank the TLG for granting me a complimentary full-corpus subscription for the purpose of this review.

As you begin to type a name in the entry field, entries that match what you have typeset so far are displayed.

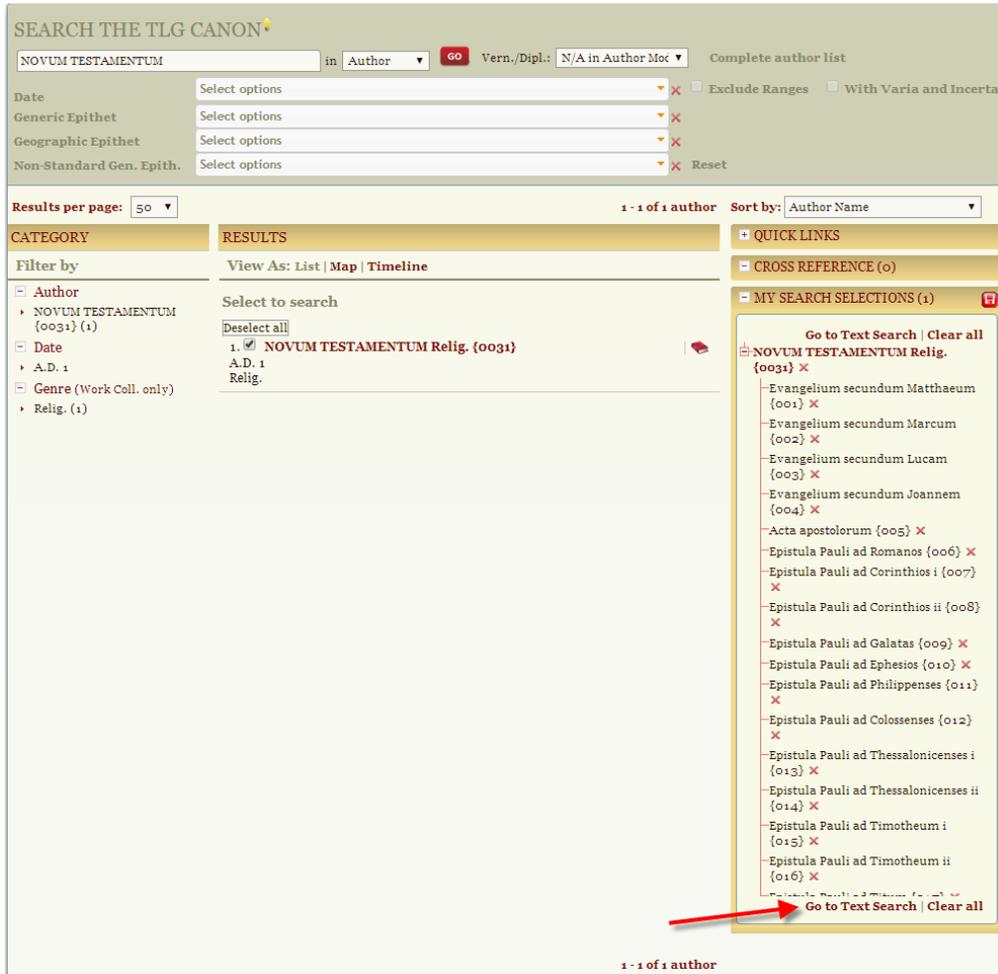
Selecting an entry name displays its record.

Under “Category” on the left, selecting the Author, Date, or Genre categories displays what their names indicate. The “Quick Links” on the right link the selected work, in this case “Novum Testamentum” to various resources. All works in the TLG are designated by Latin names and a four-digit number; Novum Testamentum is 0031. The list is divided into free resources (the top half) and resources that require a subscription (the bottom half). In the case of “Novum Testamentum,” I did not find the Quick Links helpful. More information about the TLG canon can be found [here](#).

And here we run into two limitations of the TLG for close textual study of the GNT. The TLG’s Novum Testamentum is the UBS2 (2nd ed., 1968), not the UBS5 (5th ed., 2014), and the critical apparatus is not included (which is common for most digitized GNTs). In all fairness to

the TLG, the GNT is undoubtedly the most studied and heavily researched Greek text in history, and new critical editions come out periodically. (Interested readers can access the UBS GNT5 without charge [here](#).) Generally speaking, the TLG only provides a single edition of each text.

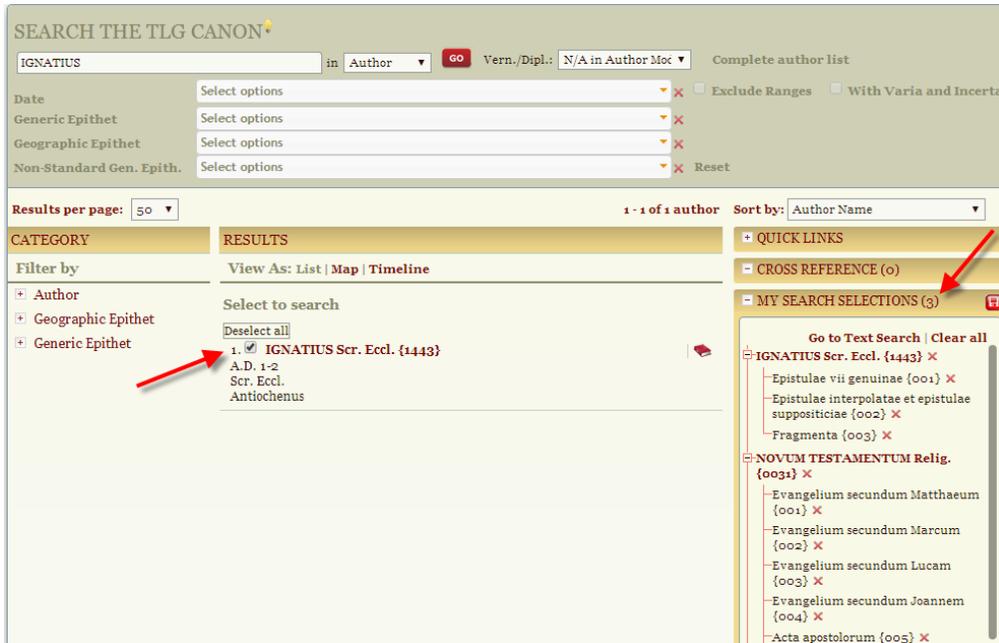
In the middle pane, selecting the name of the work by clicking on it displays its contents in a new, scrollable, right-hand pane named “My Search Selections.”



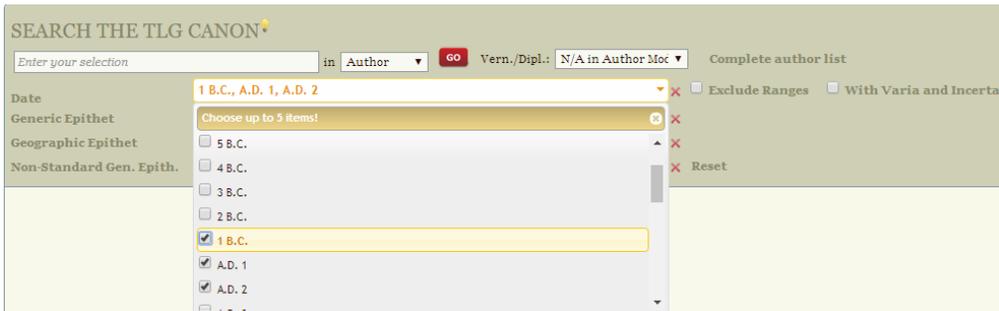
Selecting “Go to Text Search” at the bottom of this search-selection pane (see graphic above) takes you to the Search the TLG Corpus screen where you can initiate a search of the corpus you selected, e.g., Novum Testamentum.

To search the works of two or more authors, select the first corpus or author, e.g., “Novum Testamentum,” and click the “Select all” checkbox. Then select a second corpus or author, e.g., “Justinus Martyr,” and click the “Select all” checkbox. Then select a third author or corpus, e.g., “Ignatius,” and click the “Select all” checkbox. Now you will be searching all the writings in the GNT, Justin Martyr, and Ignatius.

Thus you can define a set of authors and search all their works, without having to select the individual works; and you can you name, save, retrieve, and edit the set, as will be discussed below under “Saving Searches.” Similarly, you can define a set of texts to search (e.g., GNT, LXX, Fathers), and you can name, save, retrieve, and edit the set.

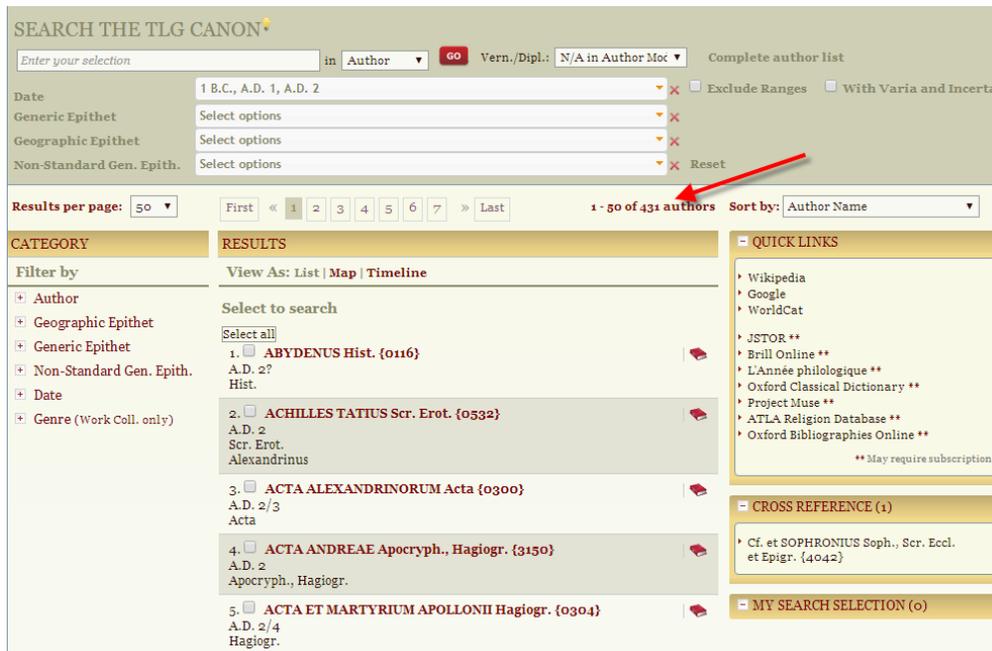


You can also define a chronological search range and search all the authors and their works in that range, without having to select the authors or works individually. To do this, use the Date field to select up to five different centuries.



Chronologically demarcated searches are useful for limited diachronic and expanded synchronic searches, for example for studying how a given word in the GNT is used in the 300 years from the beginning of the first century B.C. through the end of the second century A.D.

Selecting 1 B.C., 1 A.D., and 2 A.D.—the first century B.C. and the first two centuries A.D.—selects all the works of 431 authors.



For more information about using the TLG Canon, click [here](#), and watch the instructional video [here](#).

### Search the TLG Corpus

The TLG’s sophisticated search engine allows users to perform various types of refined searches, including the following:

- Word, lemma, and textual searches for one word or several words in proximity.
- Wildcard and Boolean (proximity) searches.
- Word index phrasal searches.
- Case-sensitive and diacritics-sensitive searches.
- Exact-word search and substring matches.

Selecting Help from the main menu bar displays the main help [page](#), which contains links to specialized help pages, including these search-related pages:

- [Text Search](#).
- [Proximity Search](#).
- [How to save a search](#). Users can save up to ten search results. Saved searches can be restored, edited, annotated, and deleted.

### Overview

The TLG supports two basic search types: simple and proximity. A simple search looks for one item, which can be a single word or a single phrase. A proximity search looks for one or more words in proximity to one another. (Proximity searches also are known as Boolean searches. *And*, *Or*, and *Not* operators are supported.) Both types of searches allow users to specify the entire TLG Canon or to restrict the search’s scope to a particular author/work or authors/works in the Canon.

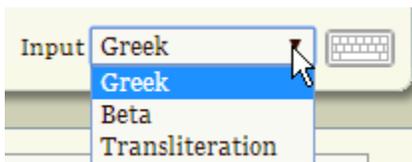
There are three types of **simple searches**: word index, lemma, and textual. A **word index search** looks for a specific string (word or phrase) in a pre-indexed list of all the words in the TLG corpus. This is the fastest way to search the TLG. A **lemma search** looks for all the forms (inflections) of a selected lemma. (This search presupposes that the lemma exists in one of the lexica indexed by the TLG.) A **textual search** looks for all words or phrases that contain the search string (word or phrase) in the TLG corpus. (This is the slowest type of TLG search.) Selecting “Exact Match” restricts results to exact inflected matches (“exact match” works with word index and textual search). Other checkable options include “diacritics-sensitive,” “case-sensitive,” “adscript as subscript,” and “wildcard.”



A **proximity search** allows users to enter up to three words or lemmata. The same options available for a simple search are available for proximity searches. The result of a proximity search may be displayed as a list or by author (word index), as a list, by author or by grammar (lemma), and as a list in word index. Phrase searches are not supported in proximity searches.



Search strings for all searches may be entered as Greek, Beta, or Transliteration by selecting from the Input Field at the bottom right of the search dialog box.



To enter a search in Greek, select Greek from the drop-down list, and then select the keyboard icon to display the on-screen keyboard.



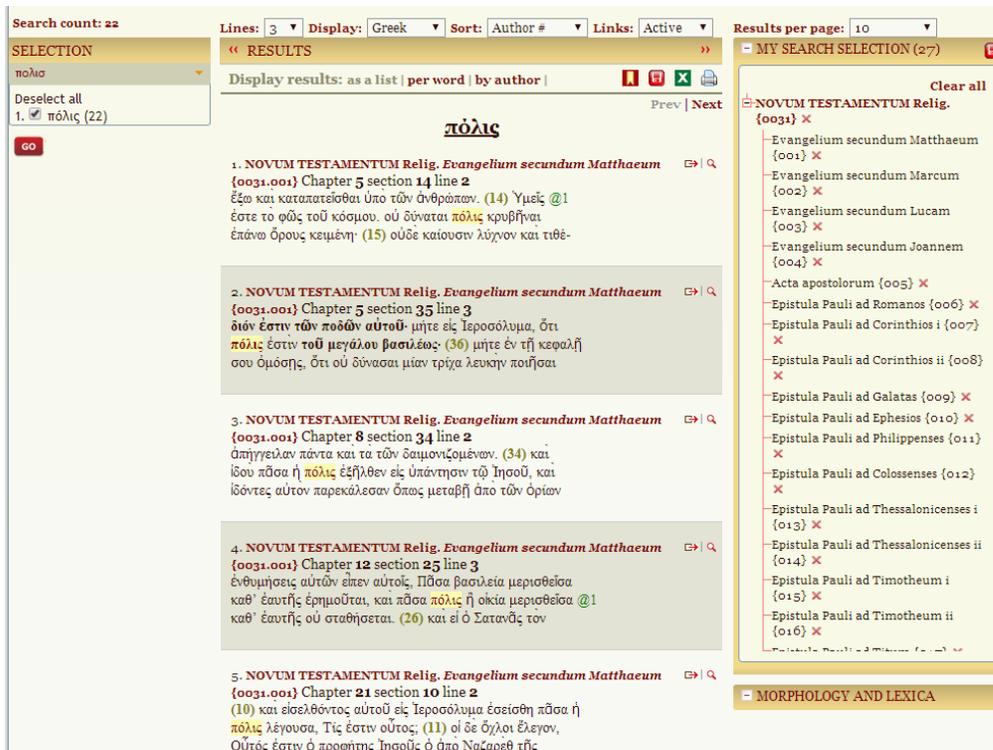
### Simple Word Index Search

A word index search looks for a specific string (word or phrase) in a pre-indexed list of all the words in the TLG corpus. We will search for πολίς (no diacritics) in the Greek New Testament. This type of search looks for a specific string (word or phrase) within a preindexed list of all words in the TLG corpus; it's fast. To use the on-screen keyboard, click on the letters. Although the keyboard shows a final sigma, selecting it did not result in a final sigma in the search string. You can enter proper Greek from your keyboard if you have enabled Greek Polytonic ([link](#)).

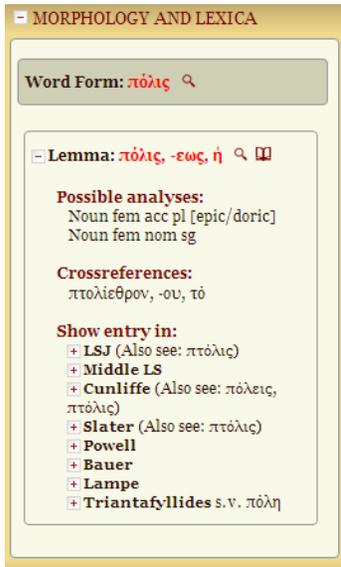


The results of that search are displayed in the graphic below. TLG displays Greek text in Unicode; it can be copied and pasted into Word, for example, without problems.

Note that the number of hits in the graphic below is listed (22). Using the Lines drop-down menu, you can change the number of lines of context from 3 to 5, 7, or 10. Using the Display drop-down menu, you can display search results in Greek, Beta, and Raw Beta. Using the Author drop-down menu, you can sort the search results by date (earlier, latest) and case (upper, lower). The TLG views Matthew as the earliest and Revelation as the latest NT books.

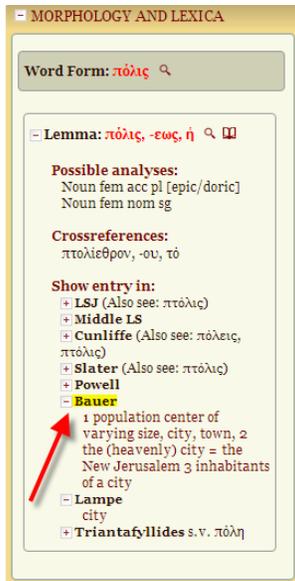


Clicking on a word in the search results displays a Morphology and Lexica pane that lists the selected word's form, lemma, possible morphological analysis, cross references, and a list of available, online lexicons that list the lemma. Selecting πόλις, for example, displays this:

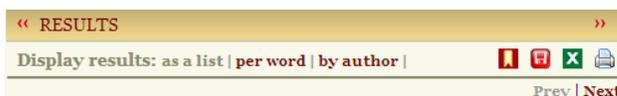


Notice the differentiation in the morphological analysis between epic/doric (noun fem acc pl) and non-epic/doric (noun fem nom sg) parsing.

Selecting any of the available lexicons positions it to the selected word. LSJ, Middle LS, Cunliffe, Slater, Powell, and Triantafyllides open in new windows. Bauer and Lampe display available lexical information in the Morphology and Lexica pane. (For more information about TLG lexica, click [here](#). I will cover the TLG’s lexica in more detail in the Q3 2019 issue of the *AGNT Project Report*.)



The Results menu allows you to display results as a list, per word, and by author, as well as to display information about citing a TLG search (ribbon icon), save search results (red shopping cart icon), export search results to CSV (green Excel icon), and print search results (printer icon).



Selecting the save search results icon displays the next screen below. The My Saved Searches pane allows users to save searches by annotating the name of the search construction. Saved searches can be restored, edited, and deleted. The Preferences pane allows users to specify default settings for general items (e.g., input and display), canon (e.g., results per page), browse, and N-Grams.

The screenshot shows a user account page for 'John Hughes'. The 'My Saved Searches' pane is divided into 'Canon Searches' (empty) and 'Text Searches' (three entries for 'polis'). A red arrow points to the 'Annotation' field of the first 'polis' entry. The 'Preferences' pane on the right has sections for 'General', 'Canon', 'Text Search', 'Browse', and 'N-Grams', each with various dropdown menus and a 'Save' button at the bottom.

Selecting the export search results to CSV icon, saves the results to a file on your computer. Curiously, the text of the search is not saved.<sup>3</sup> In the graphic below, “0031” is the TLG Canon number for “Novum Testamentum”; “001” is the number for Matthew, “002” for Mark, and so on.

	A	B	C	D
1	NOVUM TESTAMENTUM Relig.	Evangelium secundum Matthaeum	0031.001	Chapter 5 section 14 line 2
2	NOVUM TESTAMENTUM Relig.	Evangelium secundum Matthaeum	0031.001	Chapter 5 section 35 line 3
3	NOVUM TESTAMENTUM Relig.	Evangelium secundum Matthaeum	0031.001	Chapter 8 section 34 line 2
4	NOVUM TESTAMENTUM Relig.	Evangelium secundum Matthaeum	0031.001	Chapter 12 section 25 line 3
5	NOVUM TESTAMENTUM Relig.	Evangelium secundum Matthaeum	0031.001	Chapter 21 section 10 line 2
6	NOVUM TESTAMENTUM Relig.	Evangelium secundum Marcum	0031.002	Chapter 1 section 33 line 2
7	NOVUM TESTAMENTUM Relig.	Evangelium secundum Lucam	0031.003	Chapter 4 section 29 line 3
8	NOVUM TESTAMENTUM Relig.	Acta apostolorum	0031.005	Chapter 13 section 44 line 1
9	NOVUM TESTAMENTUM Relig.	Acta apostolorum	0031.005	Chapter 16 section 12 line 3
10	NOVUM TESTAMENTUM Relig.	Acta apostolorum	0031.005	Chapter 19 section 29 line 2

### Simple Lemma Search

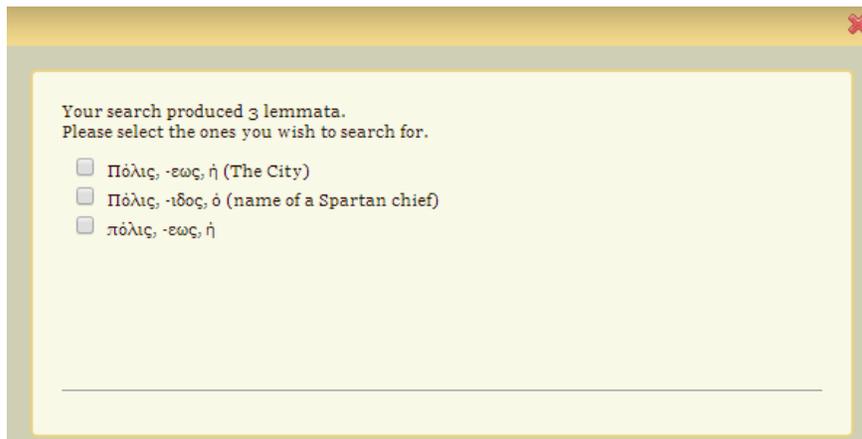
A lemma search looks for all the forms (inflections) of a selected lemma. (This search presupposes that the lemma exists in one of the lexica indexed by the TLG.) To initiate a lemma search, select Lemma as the type of simple search, and start typing. The TLG supports autocomplete so that, for example, as πολις is entered in the search field, a list of available

<sup>3</sup> Dr. Pantelia informed me that the TLG Project hopes to expand this feature in the future.

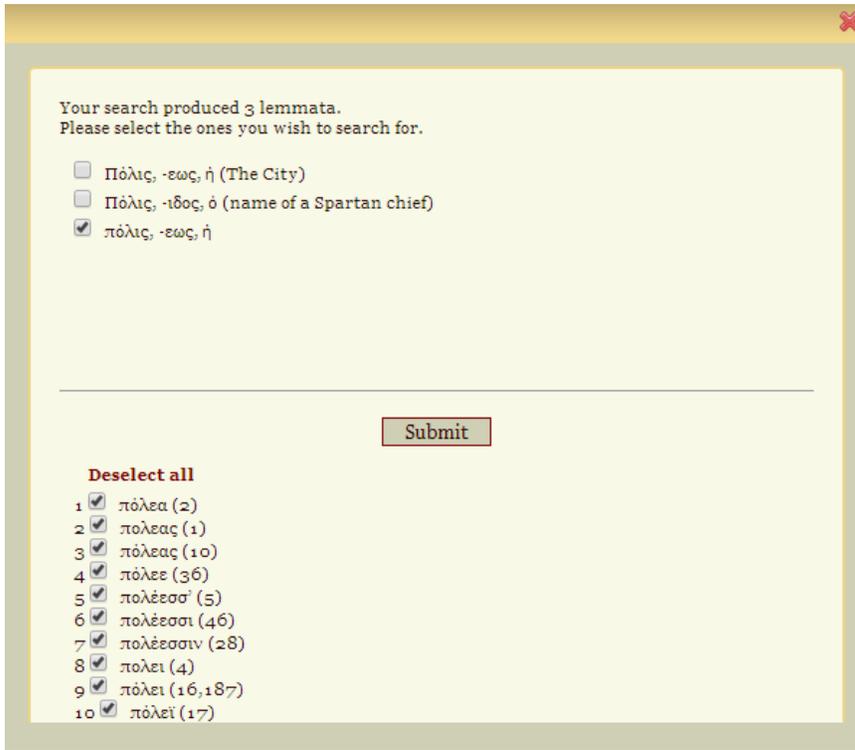
forms is displayed. Note that the list includes every form of every word that begins with the search string.



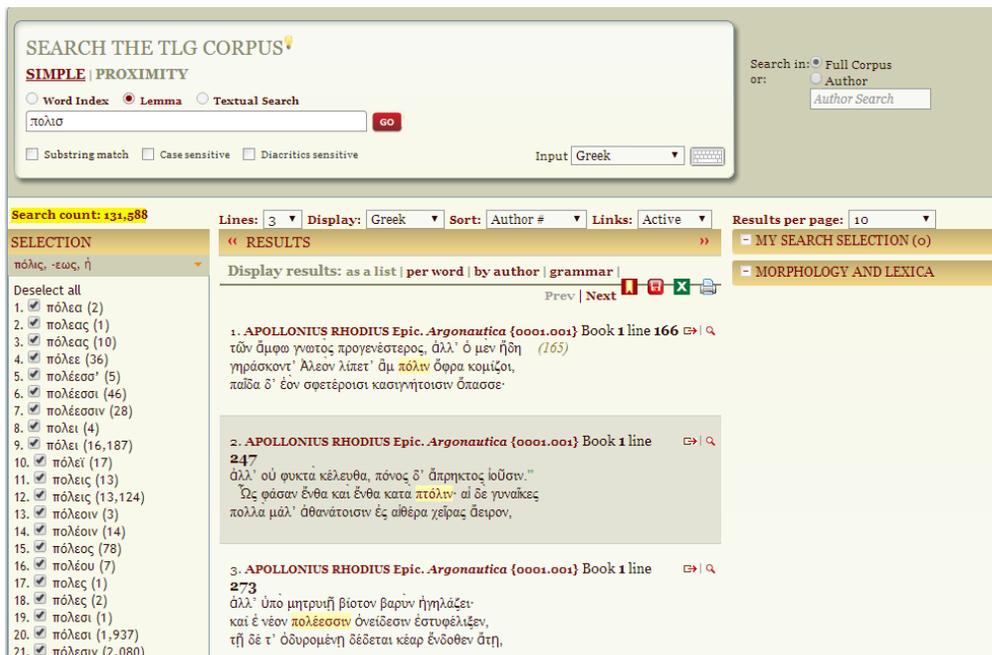
You can select from that list, or click Go to display the lemmata underlying the autocomplete list. Notice that the first and third lemmata differ only in terms of case.



Selecting the third lemmata displays a list of 78 forms, followed by the number of times each form occurs in the TLG corpus.



Submitting that list results in 131,588 hits.



The search results are displayed as a list, which can be sorted by word, author, and grammatical construction. Suppose, for example, that you only wish to display the feminine, singular, nominative forms of πόλις. Selecting Display results | grammar allows you to specify that by using check boxes.

SEARCH THE TLG CORPUS  
SIMPLE | PROXIMITY  
Word Index | Lemma | Textual Search  
πόλις GO  
Substring match Case sensitive Diacritics sensitive Input: Greek

Search in: Full Corpus or: Author Author Search

Search count: 131,588  
Lines: 3 | Display: Greek | Sort: Author # | Links: Active | Results per page: 10  
MY SEARCH SELECTION (0)  
MORPHOLOGY AND LEXICA

SELECTION  
πόλις, -εως, ἥ  
Gender  
[x] Fem.  
Number  
[x] Singular  
[ ] Dual  
[ ] Plural  
Case  
[x] Nominative  
[ ] Genitive  
[ ] Dative  
[ ] Accusative  
[ ] Vocative  
GO

« RESULTS »  
Display results: as a list | per word | by author | grammar |  
Prev | Next

**Πόλις**

1. PINDARUS Lyr. *Fragmenta* (0033.005) Poem Dith fragment 70c line 9  
[ ] κρόταφον [ ]  
[ ] εὐαν ἔλαθε φίλαν δὴ πόλιεα  
[ ] ὦν τε σκόπελον γείτονα πρότασιν [ (10)

2. Georgius CHOEROBOSCUS Gramm. *Prolegomena et scholia in Theodosii Alexandrini canones isagogicos de flexione nominum* (4093.001) Page 229 line 2  
(229) <καὶ ὡ πόλις> καὶ ὡ πρῶξις Ἀττικὰ εἰσιν· εἰς ἃ δὲ οὐκ ἠδύνατο εἶναι οἷα το σὺμφωνον προηγεῖσθαι τοῦ ε, ὅλον ὄθεα μάντεια πόλιεα πράξεα· ἤτις αἰτιατικὴ καὶ ἐπιλέλοιπε κατὰ γρήσιν, λέγω δὴ ἡ εἰς ἃ, τὸν ὄσιν

The results of that search look like this.

SEARCH THE TLG CORPUS  
SIMPLE | PROXIMITY  
Word Index | Lemma | Textual Search  
πόλις GO  
Substring match Case sensitive Diacritics sensitive Input: Greek

Search in: Full Corpus or: Author Author Search

Search count: 25,535  
Lines: 3 | Display: Greek | Sort: Author # | Links: Active | Results per page: 10  
MY SEARCH SELECTION (0)  
MORPHOLOGY AND LEXICA

SELECTION  
πόλις, -εως, ἥ  
Gender  
[x] Fem.  
Number  
[x] Singular  
[ ] Dual  
[ ] Plural  
Case  
[x] Nominative  
[ ] Genitive  
[ ] Dative  
[ ] Accusative  
[ ] Vocative  
GO

MATCHES ?  
• ΠΟΛΙΣ (1)  
• ΠΟΛΙΣ (4)  
• Πόλιη (77)  
• Πόλις (405)  
• Πτόλις (2)  
• πόλιη (22)  
• πόλις (25160)  
• πολις (1)  
• πτόλις (52)

« RESULTS »  
Display results: as a list | per word | by author | grammar |  
Prev | Next

**Πτόλις**

1. GEORGIUS Gramm. *Carmina anacreontea* (3187.002) Poem 1 line 81  
μάθε καὶ πόβου το κέντρον. (80)  
Πτόλις ἐστὶν Ἀφροδίτης  
μεγάλα σοφῶν Ἀθῆναι,

**Πόλιη**

2. LAMENTATIONES DE CAPTIVATIONE CONSTANTINOPOLIS Chronogr. et Hist. *Anonymi Threni* (9037.002) Lamentation 1 line 34  
ὅταν ἐκαλογοροίκισε τὰ μαυρὰ τῆς μαντιᾶ:  
«Πόλιη, το πάσχεις πάσχω το, καὶ το πονεῖς πονῶ το, καὶ ἡ πόλλιη σου συμφορὰ, καὶ με πικρὴ ἐράνη, (35)

3. LAMENTATIONES DE CAPTIVATIONE CONSTANTINOPOLIS Chronogr. et Hist. *Anonymi Threni* (9037.002) Lamentation 1 line 50  
Ἀλλοσιμόνον, πῶς τὸ 'παθες, Πόλιη, καὶ ἐσικαβάθης.  
Πόλιη, το πάσχεις πάσχω το καὶ το πονεῖς πονῶ το (50)  
Πόλιη μου, ἐτριγύρισα γῆς τὸν τροχὸν καὶ τόπον

4. LAMENTATIONES DE CAPTIVATIONE CONSTANTINOPOLIS Chronogr. et Hist. *Anonymi Threni* (9037.002) Lamentation 1 line 51  
Πόλιη, το πάσχεις πάσχω το καὶ το πονεῖς πονῶ το (50)  
Πόλιη μου, ἐτριγύρισα γῆς τὸν τροχὸν καὶ τόπον  
δὲν ἠύρα εὐμορφότερον νὰ σε παρομοιάσω,

But what if we wanted to do a lemma search of the GNT only, not the entire TLG corpus? We would select “Author” here,

then enter “Novum Testamentum,” then select from the two lemmata,

and then click Submit to display the 162 forms of πόλις in the GNT.

To display a subset of matching forms, deselect all the forms in the Selection pane, select the form you are interested in, and click Go.

The screenshot shows the 'SEARCH THE TLG CORPUS' interface. At the top, there are search options: 'SIMPLE' (selected) and 'PROXIMITY'. Under 'SIMPLE', there are radio buttons for 'Word Index', 'Lemma' (selected), and 'Textual Search'. A search input field contains 'πόλις' and a 'GO' button. Below this are checkboxes for 'Substring match', 'Case sensitive', and 'Diacritics sensitive'. An 'Input' dropdown is set to 'Greek'. On the right, there are search scope options: 'Full Corpus' and 'Author' (selected).

The search results section shows a 'Search count: 6' and various filters: 'Lines: 3', 'Display: Greek', 'Sort: Author #', 'Links: Active', and 'Results per page: 10'. A 'SELECTION' sidebar on the left lists search results with checkboxes: 'πόλις, -εως, ή', 'πόλει (21)', 'πόλεις (12)', 'πόλεσιν (2)', 'πόλεων (6)', 'πόλεως (36)', 'πόλιν (63)', and 'πόλις (22)'. A red arrow points to the 'πόλεων (6)' option. The main results area displays two entries under the heading 'πόλεων':

1. NOVUM TESTAMENTUM Relig. *Evangelium secundum Matthaicum* {0031.001} Chapter 14 section 13 line 3  
εἰς ἔρημον τόπον κατ' ἴδιαν· καὶ ἀκούσαντες οἱ ὄγλοι  
ἠκολούθησαν αὐτῷ περὶ ἀπο τῶν πόλεων. (14) καὶ ἐξελθόν  
εἶδεν πολὺν ὄγλον, καὶ ἐσπλαγγίσθη ἐπ' αὐτοὺς καὶ
2. NOVUM TESTAMENTUM Relig. *Evangelium secundum Marcum* {0031.002} Chapter 6 section 33 line 2  
κατ' ἴδιαν. (33) καὶ εἶδον αὐτοὺς ὑπάγοντας καὶ ἐπέγνωσαν  
πολλοὶ, καὶ περὶ ἀπο πασῶν τῶν πόλεων συνέδραμον.  
ἐκεῖ καὶ προήλθον αὐτούς. (34) καὶ ἐξελθόν εἶδεν πολὺν @1

On the right, there is a 'MY SEARCH SELECTION (27)' sidebar with a 'Clear all' button and a list of search results including 'NOVUM TESTAMENTUM (0031)', 'Evangelium secundum Matthaicum (001)', 'Evangelium secundum Marcum (002)', 'Evangelium secundum Lucam (003)', 'Evangelium secundum Joannem (004)', 'Acta apostolorum (005)', 'Epistula Pauli ad Romanos (006)', 'Epistula Pauli ad Corinthios i (007)', 'Epistula Pauli ad Corinthios ii (008)', and 'Epistula Pauli ad Galatas (009)'.

### Simple Textual Search

A textual search looks for all words or phrases that contain the search string (word or phrase) in the TLG corpus. Selecting “Exact Match” restricts results to exact inflected matches (“exact match” works with word index and textual search). Other checkable options include “diacritics-sensitive,” “case-sensitive,” “adscript as subscript,” and “wildcard.”

To initiate a textual search, select Textual as the type of simple search. To restrict this to the GNT, select Author and then enter “Novum Testamentum.” Select Exact Match to make this search match every form in the GNT that *includes* the search string, which will be πόλεις. Click Go. This results in fifteen matches (though this number is not displayed). Notice that the form κωμοπόλεις is displayed, as well as πόλεις. This is because κωμοπόλεις includes the search string πόλεις.

The screenshot shows the 'SEARCH THE TLG CORPUS' interface. The search type is set to 'Textual Search' with the term 'πόλεις' entered. The search is restricted to 'Full Corpus' and 'Author'. The results are displayed as a list. The first four results are shown, with the fourth result in Acts 17:24 highlighted by a red arrow pointing to the word 'πόλεις' in the text: 'λέγουσιν αὐτῷ ὅτι Πάντες ζητοῦσιν σε. (38) καὶ λέγει αὐτοῖς, Ἄγωμεν ἀλλαγῶ εἰς τὰς ἐγγόμενας κομποπόλεις, ἵνα καὶ ἐκεῖ κηρύξω· εἰς τοῦτο γὰρ ἐξῆλθον. (39) καὶ ἦλθεν'.

To restrict the search to πόλεις and no other forms, place a space before and after πόλεις in the search field. This search yields twelve matches. The spaces act like quotation marks in an Internet search.

### Proximity Search

A proximity search allows users to enter up to three words or lemmata. The same options available for a simple search are available for proximity searches. The results of a proximity search may be displayed as a list or by author (Word Index), as a list, by author or by grammar (Lemma), and as a list in Word Index ([link](#)). Phrase searches are not supported in proximity searches.

To initiate a proximity search, select Proximity as the search type. To restrict this to the GNT, select Author and then enter “Novum Testamentum.” For some reason, on my computer I am not able to use the TLG’s on-screen Greek keyboard to enter terms in the Proximity search fields (though I was able to do so for all the Simple searches), so I cut and pasted πολεις into the first search field and πᾶσα into the second.<sup>4</sup> I left the third field blank. I accepted the default “and” Boolean operator to link the two terms, as well as the default “within 5 words” proximity setting and the “near” word-order setting (which specifies that word order is not significant for the search). The search returned four matches, three in Matthew and one in Acts. These are numbered in the center of the next graphic. In my opinion, it would be helpful also to display the number of hits as a raw number, e.g., “Search count: 4.”

<sup>4</sup> The system is smart enough, however, to understand entries in Roman font. Users do not have to enter Greek character, and diacritics hardly ever make a difference, so entering “polis” will work.

The screenshot displays the 'SEARCH THE TLG CORPUS' interface. The search is performed using the 'Word Index' method with the term 'πόλις'. The results are sorted by 'Author #' and displayed as a list. The search parameters include 'Within 5 Words' and 'near first word'. The results are categorized into 'SELECTION' and 'MY SEARCH SELECTION (27)'. The 'SELECTION' section shows two works: 'πόλις' (22 occurrences) and 'πῶσα' (46 occurrences). The 'MY SEARCH SELECTION' section lists 27 items, including 'NOVUM TESTAMENTUM Relig.' and 'Acta apostolorum'. The results are displayed in Greek, and the interface includes options for 'Case sensitive', 'Exact Match', 'Diacritics sensitive', and 'Wildcard ?'.

## Wildcard Searches

Wildcard searches are supported in word index and textual searches. They allow users to substitute one or more characters for another character or characters and to locate the specified string in any part of a word. For example, entering *πολις* in a wildcard search locates every occurrence of this string in any part of a word—all the compounds of *πολις*.

The TLG supports an impressive variety of wildcard searches, which can be displayed in a pop-up information box by clicking the question mark to the right of the Wildcard check box, as shown in the next graphic.



The following wildcard combinations are possible:

- Search for  $\alpha\nu\alpha$  as part of a word:  $\alpha\nu\alpha$
- Search for  $\alpha\nu\alpha$  as a prefix (word index)/at the start of a line (full text):  $^{\alpha\nu\alpha}$
- Search for  $\alpha\nu\alpha$  as a suffix (word index)/at the end of a line (full text):  $\alpha\nu\alpha\$$
- Search for the word  $\alpha\nu\alpha$  (word index only):  $^{\alpha\nu\alpha\$}$
- Search for  $\alpha\nu\alpha\delta\upsilon$  or  $\alpha\nu\epsilon\delta\upsilon$ :  $\alpha\nu[\alpha\epsilon]\delta\upsilon$
- Search for  $\alpha\nu\alpha\delta\upsilon$  or  $\alpha\nu\epsilon\delta\upsilon$ :  $\alpha\nu\alpha\delta\upsilon|\alpha\nu\epsilon\delta\upsilon$
- Search for  $\alpha\nu\alpha\delta\upsilon$  or  $\alpha\nu\epsilon\delta\upsilon$ :  $(\alpha\nu\alpha|\alpha\nu\epsilon)\delta\upsilon$
- Search for  $\acute{\alpha}\nu\alpha\delta\upsilon$  or  $\acute{\alpha}\nu\epsilon\delta\upsilon$ :  $(\alpha\lambda\ \nu\alpha|\alpha\lambda\ \nu\epsilon)\delta\upsilon$
- Search for  $\alpha\nu\alpha\delta$  followed by anything but  $\upsilon$ :  $\alpha\nu\alpha\delta[^{\upsilon}]$
- Search for a word consisting of  $\alpha\nu\alpha\delta$ , then any two letters, then  $\upsilon$ :  $^{\alpha\nu\alpha\delta..}\upsilon$
- Search for  $\epsilon\delta\upsilon$  or  $\alpha\nu\epsilon\delta\upsilon$ :  $(\alpha\nu)?\epsilon\delta\upsilon$
- Search for a numeric digit:  $[0-9]$
- Search for an Arabic numeral (a sequence of one or more digits):  $[0-9]^+$
- Search for a quotation mark Beta escape (" followed by zero or more digits):  $"[0-9]^*$
- Note: In both Word index and Textual search, special beta character such as  $*()/\|+$  should be escaped by prefixing them with backslash ( $\backslash$ ).

### Saving Searches

The TLG allows you to save up to ten searches to review at a later time. The “save” option is available on the Canon and Text Search pages. On the Canon page, your search selections are displayed in the right-hand sidebar. By clicking on the Save icon, your selections will be saved in your account.

SEARCH THE TLG CANON

novum in Author GO Vern./Dipl.: N/A in Author Moc Complete author list

Date Select options X Exclude Ranges With Varia and Incerta  
 Generic Epithet Select options X  
 Geographic Epithet Select options X  
 Non-Standard Gen. Epith. Select options X Reset

Results per page: 50 1 - 2 of 2 authors Sort by: Author Name

CATEGORY RESULTS QUICK LINKS

Filter by View As: List | Map | Timeline CROSS REFERENCE (0)

Author Select to search MY SEARCH SELECTIONS (1)

Date Select all  
 Genre (Work Coll. only) 1.  CATENAE (Novum Testamentum) Caten. {4102} p. A.D. 5 Caten. 2.  NOVUM TESTAMENTUM Relig. {0031} A.D. 1 Relig.

Go to Text Search | Clear all  
 NOVUM TESTAMENTUM Relig. {0031} X  
 Evangelium secundum Matthaeum {001} X  
 Evangelium secundum Marcum {002} X  
 Evangelium secundum Iohannem {003} X

My Saved Searches

### My saved searches

#### Canon Searches

Name	Annotation	Restore/Modify	Date
1) NOVUM TESTAMENTUM {0031}	<input type="text" value="My saved NT search"/>	Restore   Edit   Delete	06/07/19
2) NOVUM TESTAMENTUM {0031}	<input type="text"/>	Restore   Edit   Delete	06/07/19

Apply Changes

#### Text Searches

Name	Annotation	Restore/Modify	Date
1) polis	<input type="text"/>	Restore   Edit   Delete	05/27/19
2) polis	<input type="text"/>	Restore   Edit   Delete	05/27/19
3) polis	<input type="text"/>	Restore   Edit   Delete	05/27/19

Apply Changes

Similarly, your search results can be saved by clicking on the Save icon in the Text Search page.

SEARCH THE TLG CORPUS

SIMPLE | PROXIMITY

Word Index | Lemma | Textual Search

πόλις

Case sensitive | Exact Match | Diacritics sensitive | Wildcard ?

Input: Greek

Search in: Full Corpus or: Author

Search count: 22

Lines: 3 | Display: Greek | Sort: Author # | Links: Active | Results per page: 10

SELECTION

πόλις

Deselect all

1. πόλις (22)

« RESULTS »

Display results: as a list | per word | by author |

πόλις

1. NOVUM TESTAMENTUM Relig. *Evangelium secundum Matthaem* {0031.001} Chapter 5 section 14 line 2  
 ἔξω και καταπατεῖσθαι ὑπο τῶν ἀνθρώπων. (14) Ὑμεῖς @1  
 ἔστε τὸ φῶς τοῦ κόσμου. οὐ δύναται πόλις κρυβῆναι  
 ἐπάνω ὄρους κειμένη· (15) οὐδε καιουσαν λύχνον και τιθέ-

2. NOVUM TESTAMENTUM Relig. *Evangelium secundum Matthaem* {0031.001} Chapter 5 section 35 line 3  
 διὸν ἔστιν τῶν ποδῶν αὐτοῦ· μήτε εἰς Ἱερουσόλυμα, ὅτι  
 πόλις ἔστιν τοῦ μεγάλου βασιλέως· (36) μήτε ἐν τῇ κεφαλῇ  
 σου ὁμοίης, ὅτι οὐ δύναται μίαν τρίχα λευκῆν ποιῆσαι

MY SEARCH SELECTION (27)

Clear all

- NOVUM TESTAMENTUM (0031) X
- Evangelium secundum Matthaem {001} X
- Evangelium secundum Marcum {002} X
- Evangelium secundum Lucam {003} X
- Evangelium secundum Joannem {004} X
- Acta apostolorum {005} X
- Epistula Pauli ad Romanos {006} X
- Epistula Pauli ad Corinthios i {007} X
- Epistula Pauli ad Corinthios ii {008} X
- Epistula Pauli ad Galatas {009} X

Once a search has been saved, you can restore it from your “My account” page.

### Text Searches

Name	Annotation	Restore/Modify	Date
1) πόλιεις	My saved search	Restore   Edit   Delete	06/09/19
2) πόλις		Restore   Edit   Delete	06/08/19
3) πολις		Restore   Edit   Delete	06/08/19
4) πόλις		Restore   Edit   Delete	06/08/19
5) πόλις		Restore   Edit   Delete	06/07/19
6) polis		Restore   Edit   Delete	05/27/19
7) polis		Restore   Edit   Delete	05/27/19
8) polis		Restore   Edit   Delete	05/27/19

Apply Changes

Saved searches can be restored, edited and annotated. If you no longer need a search, you can delete it.

In the Q3 2019 issue of the *AGNT Project Report*, I will cover browsing TLG texts, using the various online lexica, creating N-grams, generating statics, and using the TLG’s terrific vocabulary tools.



As always, we remain open to developing AGNT and ANLEX in ways that are most useful to the needs of students and readers of God’s Word.

## The AGNT Project Report—Q2 2019

Thank you for your continued support of *The AGNT Project*, for faithfully marketing the AGNT and ANLEX databases, and for making these state-of-the-art tools for studying the Greek New Testament available to students, scholars, pastors, translators, and laymen worldwide.

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