

**מקראות גדולות הכתר**  
***Mikraot Gedolot haKeter--Biblia Rabbinica***  
**Behind the scenes with the project team**

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Jewish tradition considers the Bible a Divine work---the Torah having been dictated to Moses by God, and the books of the Prophets (נביאים) and the Writings (כתובים) composed under Divine inspiration. This being the case, preserving an accurate Hebrew text of the Bible has always been considered of utmost importance. But the nature of the Hebrew language makes this a difficult task. Most words are based on three letter roots with prefixes and suffixes added and vowels being placed under, beside and/or over the letters. And change in one vowel can result in a different meaning, appropriate in context, for the same group of letters. Properly placed cantillation notations also are important and an accurate text has to properly record other signs too: secondary accents (הגעיות), dots over letters, letters written smaller or larger than the main text, or isolated letters such as the inverted letters nun (נ) before and after ויהי בנסוע הארון (Num 10:35-36), and the notation of words whose reading is slightly different than the letters in the text would indicate such as for Deut. 21:7. There are even cases where an entirely different word should be read instead of the word appearing in the text.

To insure the accuracy of this complicated text there developed a group of notes referred to as the *Masorah* (מסורה) —something passed on, or in short, tradition, a term familiar to us from the opening Mishna of *Pirke Avot*—משה קבל תורה הסיני ומסרה ליהושע. This *Masorah*, probably written down before the 8<sup>th</sup> century, was a development of the previous century and is really two compositions. The first, the *Masorah Parva* (קטנה), consists of brief notations which generally are recorded beside the line to which they relate and give cryptic information concerning the proper form of the text and/or impart additional pertinent information. But these brief notes themselves became the subject of what is referred to as the *Masorah Magna* (גדולה), a more complete explanatory text appearing in the upper or lower margins of the page, and, if too long, continued at the end of that particular Biblical book. For example, for the word *Vehaaretz* (והארץ) in Gen. 1:2 the following notation appears in the *Masorah Parva*: ה ר"פ. The *Masorah Magna* expands explaining ה refers to eight occurrences of the word *Vehaaretz* ר"פ (ראש פסוק) at the beginning of a Biblical verse. Then the first words of the eight verses are quoted.

Though the purpose of the *Masorah* was to protect the integrity of the Biblical text, it, itself developed different versions. The first attempt to produce a definitive text of the *Masorah*, and based upon it an accurate Biblical text, was the second edition of the *Mikraot Gedolot* (מקראות גדולות) printed by Daniel Bomberg in Venice, 1524-25 (רפ"ד). Responsible for this work was Bomberg's proofreader, Ya'akov ben Hayim, who had collected numerous manuscripts of the *Masorah*, compared them and produced what he

considered an authoritative *Masorah* text. He then used that to produce an accurate text of the Bible.

The *Masorah* did not appear in the first edition of the *Mikraot Gedolot* published by Bomberg in 1517-1518 (ונציה, רע"ה) . As a matter of fact, the format of that edition was different than that of the *Mikraot Gedolot* as we know it today. Today's editions generally consist of the Biblical text, an Aramaic Targum and a number of commentaries. The first edition had the Biblical text, a Targum text for most books and at least one commentary for each Biblical book (with five exceptions). A complete edition of the Bible with a commentary on every book had never been published before. Ben Hayim's edition, though adding the **Masorah** and increasing the number of commentaries, was limited in its accuracy by the manuscripts he had at hand, only a small number of those in existence, and before long hundreds of errors had been noted by learned readers.

All of this is the subject matter dealt with by Bar Ilan's *Mikraot Gedolot haKeter* project team headed by Professor Menahem Cohen. It's goal is the publication of an accurate text of all the elements of the *Mikraot Gedolot*. The idea for the project came from comments made during Professor Cohen's student days about the state of the *Mikraot Gedolot* text by his mentor Professor Moshe Goshen-Gottstein. Professor Goshen-Gottstein held positions at both the Hebrew and Bar Ilan Universities as Professor of Semitic Languages and Biblical Philology and was honored in 1988 for his accomplishments in this field by the awarding of the Israel Prize, Israel's equivalent of the Pulitzer Prize in the United States. Professor

Cohen's thesis, written under the direction of Professor Goshen-Gottstein, was entitled *Orthographic Systems in Ancient Masorah Codices and their Import for the History of the Traditional Hebrew Bible Text*, a subject from which the *Keter* project was be a natural derivative. This project is sponsored jointly by three research units at Bar Ilan:

1) Institute for the Study of Medieval Biblical Commentaries;

2) Study of Biblical Manuscripts Project;

3) Institute of Computerized Knowledge in Judaic Studies,

and presently consists of Professor Cohen and ten researchers. Each of these is a specialist in one of the areas dealt with by project and included are Bar Ilan faculty members and graduate students. For most team members this is a part time endeavor combined with teaching or research.

The edition is called *Mikraot Gedolot haKeter* (מקראות גדולות הכתר) because the Biblical text used is that of what is universally agreed upon to be the most accurate Biblical text in existence, the *Aleppo Codex*, in Hebrew כתר ארם צובה. This 10<sup>th</sup> century manuscript, whose letters were written by Shlomo ben Bouya'a, was voweled and had the accompanying *Masorah* written by Aaron Ben Asher, of famous Ben Asher family of Masorites—those involved in preserving the exact text of the Bible. It was upon this text that the Rambam based his laws about the Torah scroll (הלכות ספר תורה), and which he used as the text from which to write his own Torah scroll. Written in Eretz Yisrael, it eventually became the property of the Jewish community of Aram Zova--Aleppo, or Haleb, in Syria. When the United Nations voted

in 1947 to partition Palestine into Jewish and Arab states, riots broke out throughout the Arab world to protest this decision and in Aleppo led to the burning of the synagogue in which the *Keter* was stored causing extensive damage to the manuscript. For ten years afterward it was hidden and eventually was brought to Israel where it is now at the Ben Zvi Institute in Jerusalem. How much of the manuscript was actually consumed in the fire isn't known, but today about 1/3 of it is missing, including almost the entire Torah. It is known that some missing pages of the *Keter* "disappeared" between its removal from the synagogue in Haleb and the time it reached Jerusalem and in the 1980's one of these missing pages containing part of the text of the book of Chronicles, chapters 35-36, was donated to the Ben Zvi Institute to be rejoined with the manuscript. It apparently had been in the possession of a former Haleb resident and then passed on to others who decided its proper place was with the manuscript itself.

Previous editions of the Biblical text based upon the *Keter* have been published. In the 1970's Professor Goshen-Gottstein himself edited one and more recently an edition appeared edited by Professor Mordechai Breuer. The recently published *Keter Yerushalayim* edition of the Bible is also based upon the *Keter*. But Professor Cohen did not use any of these for the new edition's text. He insisted on a detailed reexamination of the manuscript of the *Keter*. For comparison purposes about 100 other Biblical manuscripts were checked and of these the team found that only fifteen had texts that were close to that indicated by the **Masorah**, the closest being the Leningrad manuscript written in the 11<sup>th</sup> century.

The most obvious problem for the project team was reconstructing the missing parts of the *Keter*. Some of this work could be based on manuscripts of work done by Professor Umberto (Moshe David) Cassuto of the Hebrew University in 1943. The Haleb community had a tradition that as long as it preserved the *Keter* the community would not be endangered. They even feared letting outsiders see it. It took prolonged negotiations before Professor Cassuto was allowed to consult the *Keter* and make notes about parts of the text but he didn't succeed in publishing these before his death. These notes provided important information that helped with establishing the Torah text.

The basic letter configurations of the Torah could be determined by using other reliable manuscripts. This consultation of other manuscripts was greatly facilitated by the existence of the Institute for Microfilmed Hebrew Manuscripts, today a part of the Jewish National and University Library in Jerusalem. The Institute was established in the 1950's at the suggestion of David Ben Gurion. Israel's first Prime Minister felt that in the Jewish homeland there should be copies of all the manuscripts of Hebrew compositions and the Institute's teams have roamed the world filming every Hebrew manuscript they could find. With all of this material available on microfilm in Israel the *Keter* project team was not required to travel far and wide to access manuscripts as had been necessary in order to complete many other projects,

Establishing the proper vowels to be appended to the letters was in some cases problematic, as was establishing the correct accents, dots, cantillation notations and other

special notations. To cope with this challenge parallel configurations in other parts of the *Keter* were checked to determine the accepted *Keter* practice. For example, different sets of vowels can be added to the letters אכילה yielding the same meaning. A search of extant *Keter* text for all uses of this configuration was conducted to determine how the letters were voweled in the *Keter*.

The *Keter*'s text, and those of the control manuscripts, had been digitized as part of the project and a search engine was developed to answer not only the problem outlined above, but also a variety of problems that Professor Cohen had encountered during his studies over the years. He thoroughly discussed specifications for the search engine with the programmer engaged to write the program and carefully checked each stage of the program's development. Making the job easier was the fact that the programmer was his son, Shmuel. In an interview Professor Cohen said that the development of the search engine became a family undertaking and even outside the formal office setting discussions were conducted about problems and challenges, for example at the Shabbat table. The operation of the search engine will be described later in this paper.

The same comparative approach used to determine the exact Biblical text was used for establishing the texts of the targumim and commentaries. For each a control text was chosen. Then a group of relatively accurate manuscripts was chosen after visual inspection and finally the text determined by comparing these with the control text.

This task was less problematic. First of all, the complete texts existed. Second, they don't have the same status as the Biblical text. They were humanly composed, not Divinely dictated or written under Divine inspiration. Hundreds of manuscripts were compared in the process of establishing definitive texts. The most accurate manuscripts of the Targumim were those from Yemen where Aramaic remained a living language for much longer than in other areas, thus resulting in more exact copies of the text. Even today there are Yemenite synagogues where the Torah reading on Shabbat is accompanied by the reading of the parallel Targum section.

A limitation of the original edition of the *Mikraot Gedolot* was the amount of material that could be printed on the page. For this reason commentaries no less important than those selected for the original edition were not included. Also, because of space limitations, some commentator's works appear accompanying some Biblical books but not others. For this edition of the *Mikraot Gedolot* a two-page layout was adopted and this allows the addition of some of the major medieval commentaries not in the original edition. Among them are those of Yosef Kara, Yosef Bekhor Shor and Yosef Kaspi. Also in original edition of the *Mikraot Gedolot* the commentaries of the Radak (Rabbi David Kimchi) on Psalms and of Ibn Ezra on Isaiah aren't found though they do appear on other books, but they do appear in the *Keter* edition. The amount of work involved in preparing the text of each commentary varied according to the material available. For example, dozens of manuscripts of Rashi's commentary were available for comparison while only one manuscript each exists of the







punctuation in the commentaries, a fact that can be critical, such as when not knowing if a certain word is part of the previous or following phrase---which in some cases changes the commentary's meaning entirely. And the opening words of each comment are highlighted to alleviate the need to search for the end of one comment and the beginning of the next.

An addition of major importance to this edition is a commentary on the *Masorah* called *Ein haMasorah* (עין המסורה) written by Professor Cohen. The *Masorah* is hard to understand unless one has devoted much time to mastering its style. This commentary fills in cryptic notations and adds relevant information such as citing a *Masorah* comment on a certain text that may appear for a parallel text elsewhere in the Bible but not for this one. For example, using the text in Genesis cited above which says that the word *Vehaaretz* appears at the beginning of eight verses, it might be that the *Masorah* only makes this comment on seven of the eight verses but *Ein haMasorah* adds it on the eighth verse.

An additional illustration of the contribution of *Ein haMasorah* can be shown using the same example from Genesis. In the *Masorah Parva* the letters ה"פ appear-- a shorthand notation. The *Masorah Magna* gives the meaning of the letters and quotes the beginning of the eight verses. *Ein Masorah* in this case adds the location of the verses. This commentary appears beneath the *Masorah Magna* on each page. Included also in each volume is a listing of abbreviations used in the texts, Biblical, Targumim and commentaries, and their full forms.

The first volume of the new edition appeared in 1992 after 10 years of preparatory work. Included were the books of Joshua and Judges. Publication was begun with these books and not with Genesis, the first book of the Bible, for a number of reasons. First, the *Keter* text existed. Second, the number of commentaries involved isn't as large as for other books. Third, before tackling more complicated books the team wanted to accrue experience. And, finally, the Torah is considered Divinely dictated and the team didn't want to chance opposition from very conservative elements in the Jewish community at the outset of the project. They, so to speak, wanted to establish their credentials before publishing Torah volumes. To date nine volumes containing ten Biblical books have appeared and the team's goal is to complete the entire work within the next five years. A comprehensive introduction to the project and the literature involved appears in the first volume published and Professor Cohen has planned essays on the French and Spanish schools of commentators for inclusion in future volumes.

Complete preparation of the texts for printing is done by the project team. First, after the correct text has been established, it is transferred to a form with codes indicating how exactly the type for the printed version is to be set. Then the contents of these forms are keyed into the computer. The next stage is to run the computerized data through a program that arranges the text according to the instructions encoded with it. Finally the text is transferred to another program which divides it into pages for printing. After all this machine generated work a real human being checks that the page divisions are in logical places.

Accompanying the printed edition is a computerized database on CD-ROM. The first edition included all the Biblical text and the specially developed search engine. In the second edition, now in beta site testing, the **Masorah**, some of the Targumim and all the commentaries are included. It is planned that a third edition will include the reasoning behind decisions concerning which form of the text to accept in disputed cases.

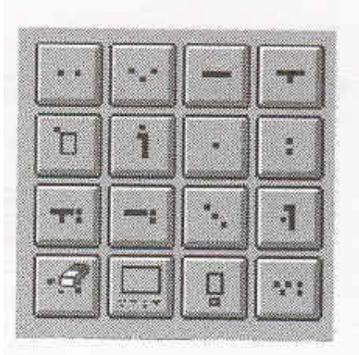
The main screen of the search engine is composed of three tiers. On the first the letters sought are entered. The middle tier allows vowels to be placed under the letters and the lower tier accommodates the cantillation notations that might appear on the word.

### SEARCH SCREEN



Special pads, based on the idea of the number pad on the computer keyboard, are provided on the screen to facilitate filling in the vowels and the cantillation notes.

## VOWEL PAD



## CANCELLATION NOTE PAD

3) coi

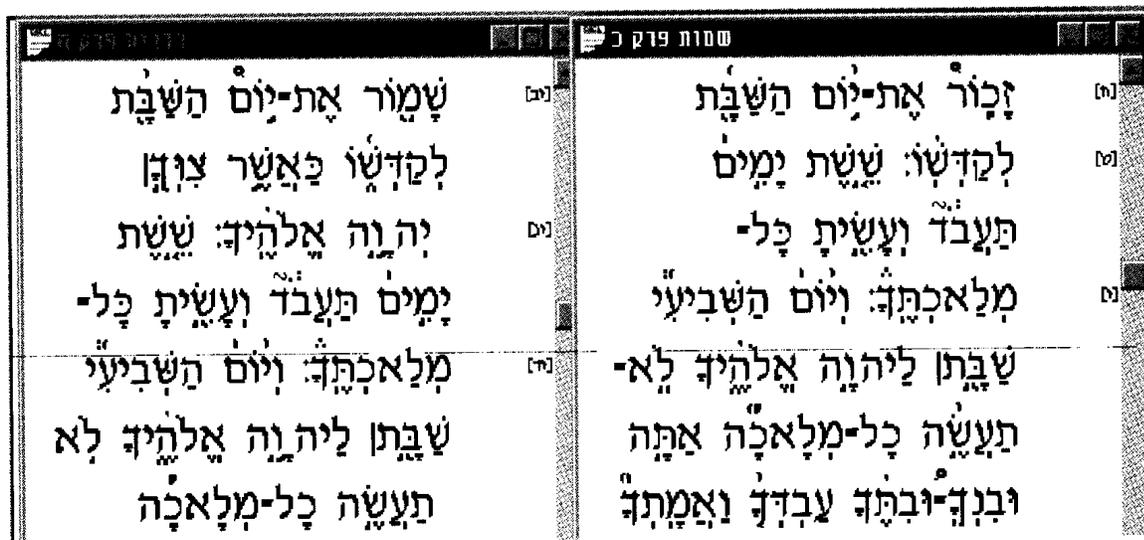


The results of a search will appear as follows:



Each appearance of the term requested is clearly marked and in the upper left corner of the screen the number of times the term appears in the text is noted. By scrolling down all occurrences of the search term can be viewed.

Another feature of the search engine is the ability to display items side by side on a split screen. This can show two Biblical texts, a Biblical text and commentary or two commentaries. Below is a split screen showing the versions of the fourth commandment from books of Exodus and Deuteronomy



There are additional features, including many of those that have made Bar Ilan's Responsa Project such an important resource.

The CD comes with a detailed instruction book structured in lesson form to allow the user to make the utmost use of the program. At this stage only a Hebrew version is available.

As yet the CD-ROM database hasn't been released for general use, but to many of those who have used the computerized version of the *Keter* it seems that this project is destined to contribute as much to the field of Biblical studies as Bar Ilan's widely heralded Responsa Project has to halachic and historical studies.