

DOV JARDEN  
BORN 17 JANUARY 1911 (17 TEVET, TAF RESH AIN ALEPH)  
DECEASED 29 SEPTEMBER 1986 (25 ELUL, TAF SHIN MEM VAV)  
by Moshe Jarden<sup>1 2</sup>



<http://www.dov.jarden.co.il/>

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<sup>1</sup>Draft of July 9, 2018

<sup>2</sup>The author is indebted to Gregory Cherlin for translating the original biography from Hebrew and for his help to bring the biography to its present form.

### **Milestones**

- 1911 Birth, Motele, Russian Empire (now Motal, Belarus)
- 1928–1933 Tachkemoni Teachers' College, Warsaw
- 1935 Immigration to Israel; enrolls in Hebrew University, Jerusalem: major Mathematics, minors in Bible studies and in Hebrew
- 1939 Marriage to Haya Urnstein, whom he called Rachel
- 1943 Master's degree from Hebrew University
- 1943–1945 Teacher, Bnei Brak
- 1945–1955 Completion of Ben Yehuda's dictionary under the direction of Professor Tur-Sinai
- 1946–1959 Editor and publisher, *Riveon LeMatematika* (13 volumes)
- 1947–1952 Assisting Abraham Even-Shoshan on *Milon Hadash*, a new Hebrew Dictionary
- 1953 Publication of two Hebrew Dictionaries, the *Popular Dictionary* and the *Pocket Dictionary*, with Even-Shoshan
- 1956 Doctoral degree in Hebrew linguistics from Hebrew University, under the direction of Professor Tur-Sinai; thesis published in 1957
- 1960–1962 Curator of manuscripts collection, Hebrew Union College, Cincinnati
- 1965 Publication of the *Dictionary of Hebrew Acronyms* with Shmuel Ashkenazi
- 1966 Publication of the *Complete Hebrew-Spanish Dictionary* with Arye Comay
- 1966 Critical edition of Samuel HaNagid's *Son of Psalms* under the Hebrew Union College Press imprint
- 1969–1973 Critical edition of the liturgical poetry of Solomon ibn Gabirol in two volumes
- 1975–1976 Critical edition of the secular poetry of Solomon ibn Gabirol in two volumes
- 1979–1986 Critical edition of liturgical poetry of Yehuda Halevi in four volumes

- 1982 Critical edition of Samuel HaNagid's *Son of Proverbs*
- 1986 Critical edition of the liturgical poetry of Yehuda Halevi
- 9/1986 Awarded Leib Yaffe Prize for research
- 9/1986 Death
- 1992 Posthumous critical edition of Samuel HaNagid's  
*Son of Ecclesiastes*

**Abstract:** Dov Jarden was both a mathematician and a Hebrew linguist. Combining these roles, he founded, edited, prepared for publication, printed, and distributed the Hebrew language research journal *Riveon LeMatematika* for 13 years, beginning in 1946. As a mathematician, he was the author of a substantial number of research articles, mainly on recurrent series and solid geometry. As a linguist, he was a member of the editorial team which completed the comprehensive Hebrew dictionary initiated by Ben Yehuda as well as Even-Shoshan's *New Dictionary*. Furthermore, he edited and published the *Popular Dictionary*, a pocket dictionary, a thesaurus of Hebrew acronyms, and a Spanish-Hebrew dictionary, jointly with various collaborators. But his primary work in Hebrew linguistics lay in editing and collating texts of medieval poetry for broad publication with a sound scholarly basis, particularly the poems of Samuel HaNagid, Solomon ibn Gabirol, and Yehuda Halevi. He received a doctorate from Hebrew University for his work *The Language of the Notebooks of Immanuel of Rome*, under the direction of Professor Tur-Sinai. On his death in a traffic accident in 1986, he was survived by his wife Rachel and their five children, Moshe, Leah, Yaakov, Tamah, and Amotz.

**Childhood:** My father, Dov Jarden, was born in a shtetl called Motele (now Motal) roughly 20 miles west of Pinsk, at the time part of the Russian Empire and now in Belarus. This shtetl produced some notable figures, among them Chaim Weizmann and Saul Lieberman. The former played a major role in bringing about the Balfour Declaration. The latter is best known on account of his extensive work relating to the *Tosefta*.

Concerning Dov Jarden's father, Chaim Chalavne Yuzhuk, it is known that he kept a shop that catered to the needs of the residents of Motele, both the Jews and the Byelorussian farmers. The latter grew potatoes in

their fields, among other crops. They would not have been able to grow their potatoes properly without fertilizer. This was supplied by Chaim with the assistance of a cow lodged in his shed. It remains unclear how a single cow managed to adequately enrich all of the fields about the village. But perhaps Chaim also bought cow manure from other sources to sell to the farmers.

Dov's mother Leah Bayer, daughter of Moshe-Eliezer Cohen and Gittel Bayer, was a woman of valor<sup>3</sup>. Besides her regular duties as a mother and housewife, she also played a part in the management of the shop. From time to time she would travel to the major city nearby, Pinsk, and sometimes even as far as Warsaw, to purchase goods for the shop there. It is said that in her youth Leah wanted to travel by the land route to the Land of Israel, that is via Armenia and Turkey. But she was caught on the way and was obliged to return back the way she came. Leah died of cancer in 1934.

It is important to note that Chaim was a pious man (as were of course all his family) and that one of the main precepts that he followed was "to meditate upon it by day and by night" (Joshua 1:8). And indeed, a copy of the Talmud generally lay on his shop counter, which he studied whenever there was no customer in the shop. Chaim tried to pass this principle on also to his children, and in some instances, in particular with his daughter Tamah and his son Dov, he met with success.

When there were customers on hand, Chaim spoke to each in his own language. If they were Jewish then this was of course Yiddish, while with the farmers who spoke the Byelorussian language, he naturally spoke in Russian, for he was not at ease speaking their "rough" dialect. Nonetheless, in this somewhat bilingual conversation they understood one another.

As is well known, for centuries past the Jews of Eastern Europe spoke Yiddish in their homes, while the men corresponded for the most part in Hebrew. There was a novelty in the Yuzhuk home: they also spoke Hebrew along with Yiddish.

My father spoke both of these languages fluently, but had a special love for Hebrew. He combined this love with a love of the Hebrew Bible. Together with his sister Tamah, who was one year older, he went through the full length and breadth of the bible, and at the age of 11 had learned it by heart.

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<sup>3</sup>Proverbs 31

I recall how proud my father was that Tamah and he had recited the whole of the book of Job from memory in the space of an hour.

**Schools:** When my father was 12 years old, Chaim decided that his son was ripe for more advanced religious studies (*limudei kodesh*) and sent him to study in the Novredok yeshiva. However, although Dov excelled in his studies, he desired to pursue secular studies, that is general education, along with his religious studies. He told his father this each time he returned home at the end of a school term. Five times, Chaim changed the yeshiva where his son was studying, but in the end, when Dov reached the age of 17, he acceded to his request and sent Dov to study at the Tachkemoni<sup>4</sup> Hebrew Teachers' College in Warsaw, which combined general studies with religious subjects.

He remained in that institution for five years. Among other things he learned Polish fluently and was proud that he knew by heart the famous epic “Pan Tadeusz” by the Polish national poet Adam Mickiewicz. In addition as was customary at the time he studied Latin in the midrash, and was also tutored in German. Later I benefitted from my father’s proficiency in these two languages when in the course of my graduate work I needed an article on mathematics in Italian, and after my doctoral work, another article in German.

**Aliya La’Aretz:** My father completed his studies in the Tachkemoni college in summer 1934. On completion of his studies he was awarded a certificate of rabbinical ordination (*smicha lerabbanut*), which qualified him for an internship with a primary rabbi (*Rav Muvhak*). However it turns out that at this time he was headed in a different direction, to mathematics. He aimed to immigrate to the Land of Israel and to study mathematics at the Hebrew University. However in order to enter into the territory of the Land of Israel it was necessary to have an entrance permit. Such permits were given out sparingly by the British Mandate government in the Land of Israel according to the recommendations of various Jewish organizations, such as the Hebrew University. Unfortunately the Hebrew University required a payment of 17 lira for processing the permit. This was a substantial sum of money in those

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<sup>4</sup>i.e., educational—a customary name

days and my father did not have such funds at his disposal. He turned for assistance to his father who by then had already made aliya. His father took it on himself to address a fervent letter about the matter to Professor Chaim Weizmann (who it will be recalled also came from Motele). We do not have Weizmann's answer to this request, but the outcome was that my father made aliya in the year 1935 and enrolled at Hebrew University in Jerusalem.

**The Hebrew University:** The subjects of study which my father chose were mathematics (major subject) and Bible studies and the Hebrew language (minor subjects). The choice of the latter two subjects resulted from his long-standing loves for both. We do not know what led him to choose mathematics, but over time this subject became his greatest love, winning out even over his two earlier loves.

The capstone of my father's university studies in mathematics was his thesis on the topic of "Properties of Fibonacci Series and their applications" which he wrote under the supervision of Dr. Theodore Motzkin. In this work Dov provided a compendium of algebraic, analytical, and arithmetical properties of Fibonacci series. As he writes in the introduction, "The goal of the text is to reveal the marvelous interactions among geometry, arithmetic, and algebra which arise in the theory of Fibonacci series, by gathering together and appropriately connecting the isolated treatments and scattered works due to a considerable number of researchers." At the end of the treatise there is found, in particular, a table of Fibonacci numbers through the 128th, with their prime factorizations. This table was continued afterward with the aid of the engineer Alexander Katz through the 320th Fibonacci number and ultimately published in the book *Recurring Sequences* which collected all his mathematical articles in this area [Jar58].

An important tool used in the aforementioned factorizations was an algorithm developed by my father to divide large numbers (up to 80 digits) by other large numbers (up to 35 digits). The algorithm proceeded using a pencil and a sheet of graph paper and only required the operation of addition. In particular the algorithm was applied to the division of the Fibonacci number  $F_{mn}$  by the number  $F_m$ , in which case it is well known that the quotient is an integer. Furthermore the algorithm contained inter alia a simple test which made it possible in that particular case to check the correctness of the result

[[Jar73], pp. 157–163]<sup>5</sup>.

The two other subjects my father studied at the university, the Bible and the Hebrew language, are perhaps well illustrated by his speech for the prosecution in a mock trial that was held in a seminar run by his teacher, Naftali Herz Tur-Sinai. The question was whether it is permissible in Hebrew to use the word for “not” before a verb in the benoni form<sup>6</sup>. For example, is it possible to say both “I do not want” (3 words in Hebrew: “I, not, wanting”) in place of the standard form “I have no desire”? One of the points my father made was that in the original Hebrew source texts the use of “not” with the benoni form in the sense used today (and also in my father’s time) is either completely absent or occurs therein to such a limited extent, that it had no ability to influence general usage. The briefs of the litigants in this mock trial were published [YST39].

**Marriage:** While still a student, in 1939, Dov married Chaya Orenstein, who in the course of time became my mother. Her father, Moshe Orenstein, came from a venerable Jerusalem family of Chabad (Lubavitch) hasidim whose roots go back to Rabbi Uri Orenstein (1806–1878), who immigrated with his family from the Byelorussian city of Slonim in 1830. Moshe Orenstein passed away when my mother was just 11 years old. Responsibility for her care fell to her elder brother Rabbi Isaac Orenstein, who at the time had been appointed Rabbi of the the Western Wall. Although it was clear that my father was not religious (at least, not to the extent that suited the Orenstein family) and destitute to boot, Isaac convinced my mother that my father was the true scholar<sup>7</sup> that she had always wanted as a spouse. At the same time, my mother recognized Dov’s talents and virtues, and she agreed to marry him. And furthermore, throughout my father’s university studies, my

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<sup>5</sup>Ribenboim, *The Little Book of Bigger Primes*, Chap. XI: “In a paper of 1988 dedicated to Dov Jarden, [the authors] Brillhart, Montgomery & Silverman gave the known factors of Fibonacci numbers  $U_n$  (for  $n$  odd,  $n \leq 999$ ) and of Lucas numbers  $V_n$  (for  $n \leq 500$ ). The factorizations were complete to  $n \leq 387$  and  $n \leq 397$ , respectively. In April 2003, Montgomery reported that the factorizations of  $U_n$  and  $V_n$  had been finished for all  $n \leq 1000$ . This pushes much further the work which had been done by many other numerologists, among whom Jarden (see the third edition of his book, 1958).”

<sup>6</sup>Similar to the present tense in English

<sup>7</sup>“Talmid Chacham,” a talmudic term

mother supported him by working as a seamstress.

My father completed his master's degree from Hebrew University in 1943. In that same year he also changed his family name from *Yuzhuk* to *Jarden*, after the river Jordan. In his scholarly publications he wrote his name as *Dov Jarden* because the letter J is pronounced in Polish (as in German) like the Hebrew letter *yod*. He decided to call his wife (my mother) *Rachel*, perhaps because in her youth she had been called *Chaya Rashe* in Yiddish.

**Ben Yehuda Dictionary:** On completion of his university studies, the problem of earning his livelihood returned in earnest. A partial solution to this problem was found in Bnei Brak, where my father found a teaching position in a school. There I was born as well, as my parents' eldest son. For two full years<sup>8</sup> my father taught in that school, until in 1945 he was invited back to Jerusalem by his former teacher, Professor Tur-Sinai, to become a member of the team which was working on the completion of the *Dictionary of the Ancient and Modern Hebrew Language* (probably during 1944–1953) begun by the driving force behind the revival of Hebrew as a spoken language, Eliezer ben Yehuda. This team, which worked from 1935 to 1959, published volumes 10 through 16, compiled in part from material which had been prepared by Ben Yehuda (who died in 1922), and in part by following in Ben Yehuda's footsteps. Tur-Sinai acknowledged the role played by my father in the work of this team at the end of the introduction to the last volume of the Dictionary as follows: "And I am also grateful to my assistants, who have stood by me all these years, to Mr. Meir Meidan and Dr. Dov Jarden, with further assistance for the work on these last two volumes, in a changing of the guard, from Mr. David Peles, Yaakov Mansour, and Yisrael Ben David." (See [introduction to the 16th volume of \*Milon Ben Yehuda\*](#).)

**Even-Shoshan Dictionary:** While working on the completion of Ben Yehuda's dictionary, in the years from 1947 through 1952, my father assisted Avraham Even-Shoshan in connection with the preparation of his *New Dictionary*. In the preface to the first volume of the dictionary, Even-Shoshan includes my father in the group of consultants and experts who participated in the preparation of the dictionary, as an expert in matters of grammar

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<sup>8</sup>Genesis 41



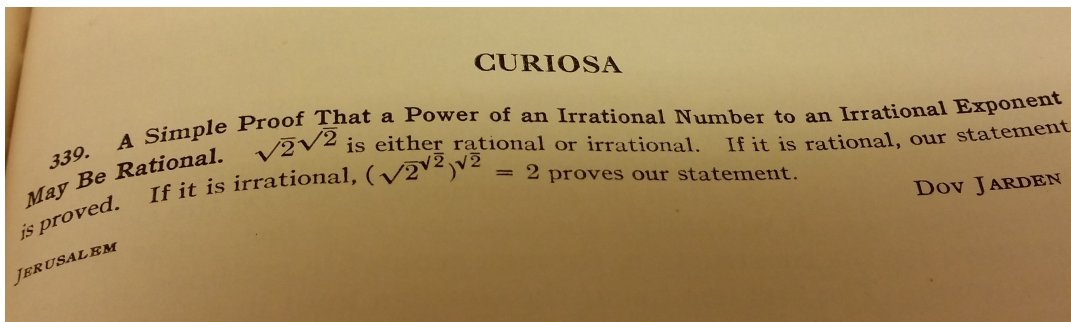
and linguistics, and for assistance with editing and proof-reading, and also refers to his work on the editorial board for the dictionary of E. Ben Yehuda. He also thanks him in the following words: “I am indebted to . . . and to Mr. D. Jarden who regularly shared the labor of reading over the material, and general proof-reading, as well as for his help in the formulation of various definitions for mathematical terms, on the basis of his expertise in that sphere.” (See [introduction to 1st edition of \*Milon Hadash\*, 1948–1952](#))

At the time the *New Dictionary* was being compiled, our family lived in the Knesset neighborhood in the center of Jerusalem. I recall that when I was nine years old, I would accompany my father from our home to Yosef Ben Matityahu Street, where Even-Shoshan resided. We would join Even-Shoshan in his study, which overflowed with books. Even-Shoshan and my father would work on the dictionary, while I occupied myself by reading the *Book of Legends* of Bialik and Ravnitzky [[BR1910](#)], which I found among the books on hand.

My father’s ties to Even-Shoshan continued even after the publication of the *New Dictionary*; at this time, Even-Shoshan and my father were both living in the same building in the Kiryat Moshe neighborhood of Jerusalem, at 12 Gat Street. My father also helped Even-Shoshan with the preparation of subsequent editions. In addition to his assistance with mathematical terminology, my father also supplied quotations from medieval Hebrew poetry composed in Spain, his specialty. Even-Shoshan does not mention these contributions in later editions, yet the mathematical terminology is acknowledged, still.

**Mathematics:** The continuation of my father’s mathematical work is seen in a series of articles in elementary number theory, primarily recurrent sequences, and also solid geometry. A striking article on “minimalist mathematics” was published in [[Jar53](#)] (see also [[JoT73](#)]).

Here is a scan of the original:



But the most important mathematical work by my father was his work on the production of the journal *Riveon LeMatematika* (Mathematical Quarterly), from 1946 through 1959. In this journal, whose name was generally shortened to *Riveon*, two of my father's great loves were brought together: mathematics and the Hebrew language. In those days the Hebrew language still ruled the roost at Hebrew University in Jerusalem. Accordingly my father managed to get research papers for *Riveon* from leading mathematical researchers of the day. Among them we fondly recall Abraham Frankel, Michael Fekete, Binyamin Amira, Jacob Levitsky, S. A. Amitsur, Shmuel Agmon and Michael Rabin (cf. [?, Kat04]). The articles were generally written in Hebrew, but they were always accompanied by an abstract in English. One exception to the general rule was Paul Erdős, who submitted his articles to *Riveon* in English. Besides submissions by leading Jewish researchers, Dov also encouraged young researchers to write introductory articles for publication in *Riveon*. The original research articles went through the customary peer review process, and the journal's research articles were covered by *Mathematical Reviews* (searchable on MathSciNet under the journal listing *Riveon Lematematika*), for a total of 178 reviews.

As a child I observed the production process for printing issues of the *Riveon*. After an article had been submitted and passed the usual peer review, my father first typed up the article on a Hebrew typewriter. At the time mathematicians were not generally proficient at touch typing with ten fingers and my father typed up the articles with one finger, one letter after another, onto stencils. The typewriter keys cut out their forms in the stencil, leaving holes through which black printing fluid would later pass to leave images of the characters typed at the outset. Since a mathematics article

typed in Hebrew would require many symbols from the Latin alphabet, it was also necessary to use a second typewriter with keys for that alphabet. At this point it was necessary to align the stencil accurately so as to type the Latin symbols into the spaces left for them in the first pass of typing in Hebrew. Then, in a third pass a Greek typewriter was used so as to add any Greek symbols required (notably, the summation symbol) to the same stencil. Lastly, my father would lay the stencil on a piece of window glass and etch in any geometrical diagrams needed with a stylus, as well as any special symbols still lacking. Once this preparatory work was completed, he brought all the stencils to the Gestetner company where they made 200 duplicates from each stencil. We took those duplicates to the bookbinder, set out all the stacks of 200 sheets apiece one after the other on long tables, and then assembled the pages one by one into 200 stacks of pages arranged in increasing order. The bookbinder then bound each of the stacks and thus produced one volume of the *Riveon*. Now it was time to distribute them. Again, sales were handled for the most part by my father. Some would come to purchase the latest volume in person at our house, others would wait for it to arrive by mail, and on occasion, when the Israel Mathematical Union (presumably established 1953) held a conference somewhere, my father brought along the volumes to be sold there. As I recall, one time the union held a conference during Succoth, 1953, at the Mathematics Institute of the Hebrew University in Jerusalem, which was housed from 1950 through 1957 in the north annex of the King David Hotel. My father sat me down next to a table with the volumes of the *Riveon* and went in to hear the lecture. I stayed in the hallway outside the lecture hall, and sold the volumes to members of the Mathematical Union who wandered by. One of these was Paul Erdős, who saw me sitting by the table and called me “epsilon,” his customary term for a child.

Of course this entire process demanded considerable time and effort, and also involved non-negligible financial expenditures. My father would not have been able to manage it without the full support of a generous benefactor, namely Professor Jekuthiel Ginsburg (1889–1957), a professor of mathematics at Yeshiva University who became Director of its newly founded Institute of Mathematics in 1952. Professor Ginsburg founded and edited the quarterly

journal *Scripta Mathematica*, devoted primarily to the history, philosophy, and expository treatment of mathematics, in 1932 [Boy58].

**Lexicography:** My father's contributions to the Hebrew language lay in two areas, lexicography and the study of medieval Hebrew poetry.

In the field of lexicography, as noted earlier, he worked with a team under the direction of Professor Tur-Sinai on the completion of Ben Yehuda's dictionary, volumes 10–16 [Bri00, p. 184]. This work was completed in 1959.

He collaborated with Avraham Even-Shoshan on the preparation of two comprehensive dictionaries in a one-volume format published in 1953/1954: a *Popular Dictionary* [ESJ53] and a *Pocket Dictionary* [ESJ54]. The popular dictionary contained approximately 13,000 main entry words in a 3-column format, with their definitions in Hebrew, illustrations of their use in some cases, and derived forms such as adjectival or construct forms of nouns. The *Popular Dictionary* and the *Pocket Dictionary* turned out to be very popular, the latter especially in elementary schools, and have been subsequently reprinted many times.

Both dictionaries were based on Even-Shoshan's *Milon Hadash* (*New Dictionary*) which had appeared in five volumes from 1947 through 1952, and was reprinted in a four volume edition in 1953, and then many times later. This dictionary aimed to cover all Hebrew words in use up to that time.

My father collaborated with Shmuel Ashkenazi on the compilation of a dictionary of Hebrew acronyms [Ash65]. He also compiled a Hebrew-Spanish dictionary with Arye Comay [JaC66]. More information about these texts is found in [Bri00].

**Doctoral thesis:** Alongside his work on these dictionaries, my father wrote a doctoral thesis on *The Language of Notebooks of Immanuel of Rome*<sup>9</sup> under the direction of Professor Tur-Sinai. He received the degree of doctor of philosophy of Hebrew University on April 6, 1956 (25th of Nisan, 5716). There is a certain accidental but appropriate symbolism in the fact that on the doctoral certificate, after the signature of the president of Hebrew University, one finds the signature of Abraham Halevi Fraenkel, then rector of

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<sup>9</sup>Immanuel of Rome was a scholar and poet whose wide-ranging interests included Biblical and Talmudic studies as well as mathematics.

the university, but previously one of my father's instructors in mathematics.

**Medieval poetry:** The completion of his doctorate marked the point of departure for his second major undertaking (the first being the establishment and management of the *Riveon*), namely the preparation and publication of critical editions of medieval poetry; specifically, poems by medieval Hebrew poets who lived in al-Andalus, that is, in the territory of Spain under Moslem rule, and primarily the poems of the three most renowned poets of the 11th and early 12th centuries: Samuel HaNagid, Solomon ibn Gabirol, and Yehuda Halevi.

A number of problems had to be faced by any editor preparing a critical edition on the basis of the existing texts. In medieval times the publication process began when a poet wrote a fair copy of a new poem out by hand on paper or parchment (and in Christian Europe, exclusively on parchment), and then handed it over to a son, a friend, or a professional copyist to make one or more copies of the original. Then these copies were transmitted to others, who for their part would make additional copies that they would pass on, and so forth. With the passage of time many of the copies made were lost or deteriorated, including in particular the original fair copy, but some survived and eventually could be found scattered in libraries all around the world, sometimes damaged or with variant readings. My father acquired photographs of such copies. In addition he also acquired copies of books of poetry by the aforementioned poets which had been printed after the invention of the printing press in the 15th century, based on the hand-written texts then available.

However, both the handwritten copies and the printed works contained many textual errors, scribal or typographical, which may be classified as errors of omission, addition, transposition, or alteration, resulting either from the difficulty of reading the text to be copied due to difficulties with handwriting or physical deterioration of the media, or carelessness, and even on occasion, misguided attempts to correct a supposed inaccuracy. These errors accumulated in the course of textual transmission. A second difficulty facing the editor, acting in his own right as the final copyist, was the problem of deciphering a variety of scripts in the hand-written copies at his disposal. And the editor had to interpret Hebrew neologisms coined by a poet while

composing his poem. From a practical perspective these difficulties were interrelated: to the extent that the editor mastered one, the others became easier to deal with.

On the other hand, the medieval Hebrew poets knew the bible by heart and had also mastered the Mishnah, the Talmud, and later Jewish literature up through their own times. They were also acquainted with the poems written by the earlier poets, and wove Biblical verses and verses from later Hebrew literature into their poetry. A researcher trying to read a poem found in a medieval manuscript who is himself well versed in the classical Hebrew literary sources will often be able to spot a string of words similar to one appearing for example in the Bible and work out from this what the poet had written, and in such cases this is a precious aid to familiarizing oneself gradually with the characteristics of the particular script used.

As we have mentioned above, my father knew the Bible by heart and was well versed in the Talmud at an early age, and later became well acquainted with medieval Hebrew poetry. He began as a doctoral student under the supervision of Professor Tur-Sinai by preparing a critical edition of the so-called “Notebooks” of Immanuel of Rome, a medieval Italian poet (1261–1328) whose poems were influenced by the great Spanish poets of the previous generations. My father had 10 manuscripts of poems or portions of poems at his disposal, and five printed editions. By a comparative analysis of the various manuscripts and printed editions, making use of his knowledge of the biblical sources and talmudic literature, he established a version of the “Notebooks” that was as close as one could come to the original. He gave a fully vowelized version of this material. He supplied a brief commentary and to conclude gave specific references in the original sources for expressions which Immanuel of Rome had adopted. The *Notebooks of Immanuel of Rome* were published by the Bialik Institute publishing house in an expanded form in 1957.

On the completion of this first project my father turned to the preparation of a critical edition of the work of the great Spanish poets Samuel HaNagid, Solomon ibn Gabirol, and Yehuda Halevi. He first took up the book *Son of Psalms* by Samuel HaNagid. Hayyim Schirmann, a professor of medieval poetry at Hebrew University, was impressed by my father’s work

on Immanuel of Rome's "Notebooks," and asked the Israeli Academy of Sciences to fund my father's project on the "Son of Psalms." But in the course of this work differences of opinion emerged between my father and Professor Schirmann. The latter felt that the book should be "scientific." In his view, it was necessary that the book provide a detailed list of all variant forms among the manuscripts and the previous printed editions. My father felt that the book should be suitable for lovers of medieval Jewish poetry and not only for the community of scholars interested primarily in the variants which appeared in the manuscripts in the course of the process of copying and re-copying. Since the two men could come to no accord on this point, the package fell apart and the Academy of Sciences withdrew its commitment to publish the book. Beyond that, from then onward my father was in bad odor with Professor Schirmann, and, close on his heels, his colleagues as well, the other specialists in Spanish poetry at Hebrew University. Among other things, a few years later Professor Schirmann barred my father from access to the manuscript collection in a library in the vicinity of Jerusalem.

**Hebrew Union College:** But my father pursued his work on a critical edition of the "Son of Psalms" according to his own lights while continuing to manage his journal *Riveon* and pursue his own mathematical research. In spite of the reservations of the academic community with respect to my father's methodology, the publication of the "Notebooks" of Immanuel of Rome made waves, and Hebrew Union College, a Reform Jewish institution in Cincinnati, invited him to serve as curator of their manuscript collection. By this time, my father had three more children, besides myself and my sister Leah, namely Yaakov, Tamah, and Amotz. The entire family, except for myself, as I was then in military service, moved to Cincinnati in 1960. In Cincinnati my father took care of the college's manuscripts, and in particular expanded the collection by the purchase of additional manuscripts. In his spare time he continued his work on an edition of the "Son of Psalms." For the first time in his life, my father received a decent salary adequate to the needs of his family. However, after a while he realized that this style of life carried with it the substantial risk that he and all of his family would grow dependent on the creature comforts afforded by life in Cincinnati, and feel compelled to settle there permanently. Accordingly he submitted his

resignation to the administration and brought his family back to Israel after a year and a half.

Nonetheless Hebrew Union College respected his decision, and even decided to publish his edition of the “Son of Psalms” under their imprint. This appeared in 1966 [Jar66].

**End of the *Riveon*:** On his return to Israel in 1962, my father learned that the Weizmann Institute was planning to publish a mathematics journal called the Bulletin of the Research Council of Israel, which was subsequently renamed the Israel Journal of Mathematics. The bulk of the articles published in that journal were in English, and there were no articles in Hebrew. This was the kiss of death for the *Riveon*, as its erstwhile contributors flocked to the new journal. The *Riveon* had published a total of 13 volumes, the last of which appeared in 1959, with a full index to all articles published in the series. These are available as downloadable pdf files at the site previously mentioned: <http://www.tau.ac.il/~jarden/Riveon>

**The Big Three:** After that, my father’s mathematical activities decreased, though they did not come to a halt. On the other hand he put even more energy into his work on medieval Jewish poetry, particularly the poems of the “Big Three,” Samuel HaNagid, Solomon ibn Gabirol, and Yehuda Halevi. He found no support in the academic community in Israel. However, it is a pleasure to recall that support for the publication of my father’s editions of medieval poetry came from another quarter, namely from the American businessman, philanthropist, and scholar William Salzman (1883–1970), a co-founder of a number of Jewish organizations in New York, among them the teachers’ college Herzliah, which he served as trustee and eventually as president, a founder of the home of the Academy of the Hebrew Language in Jerusalem, an honorary member of that Academy from 1956, as well as a chair of Israel Matz Foundation in New York, which supported writers in Hebrew in the United States and in Israel, and in its early days had supported ben Yehuda.

**List of publications:** The complete list of publications of poetry edited by my father runs as follows.

[Jar66] The Divan of Samuel HaNagid I: Ben Tehilim [Son of Psalms]



- [[Jar82](#)] The Divan of Samuel HaNagid II: Ben Mishlei [Son of Proverbs]  
[[Jar92](#)] The Divan of Samuel HaNagid III: Ben Kohelet [Son of Ecclesiastes]  
[[Jar71](#)] The Liturgical Poetry of Rabbi Solomon ibn Gabirol  
[[Jar84](#)] The Secular Poetry of Rabbi Solomon ibn Gabirol  
[[Jar85](#)] The Liturgical Poetry of Rabbi Yehuda Halevi, in 4 volumes

In addition, my father prepared critical editions of the poems of some Spanish poets of the second rank, and also, as previously mentioned, the so-called *Notebooks* of Immanuel of Rome.

**Award:** On Thursday the 21st of Elul, 5746 (25 September 1986), for the first time in his life, my father received academic recognition for his work on the restoration of medieval poetry, winning the 1986 Leib Yaffe prize for his critical editions of the poems of the great Spanish poets (cf. [[Jar86](#)]). (See [Dov Jarden talking during the award ceremony.](#))

**Traffic accident:** Four days later, on the 25th of Elul, 5746 (29 September 1986), on his way to pay a visit to Professor Dov Sadan in Beit HaKerem, Jerusalem, as my father was crossing Herzl Boulevard in Jerusalem, a reckless motor-cyclist ran into him in the crosswalk. My father died of his injuries in Hadassah Hospital one and a half hours afterward. May his soul rest in peace.

FULL TEXTS OF WORKS BY DOV JARDEN IN PDF FORMAT

<http://www.dov.jarden.co.il/>

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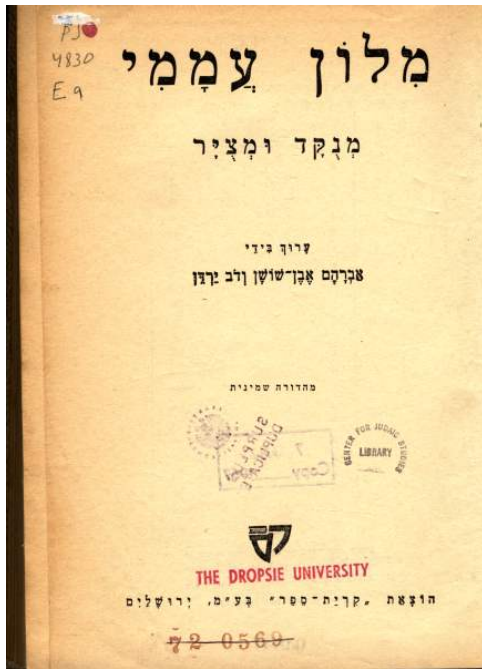
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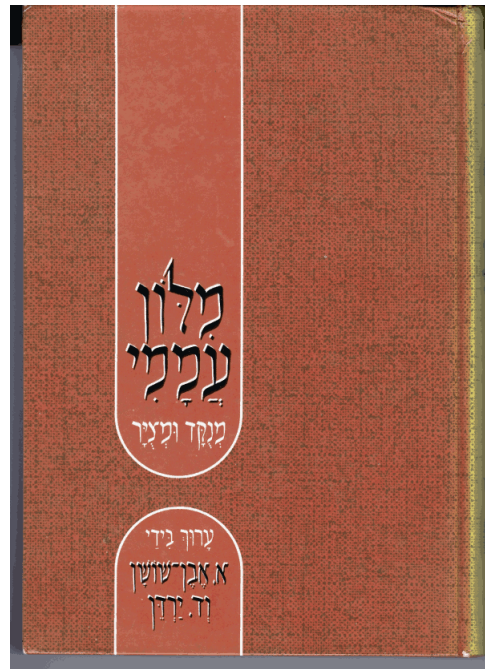
## Appendix



Figure 1: Students of “Tachkemoni” Beit Midrash, directed by Professor Meir Balaban, with their teacher (seated in the center) and with Dov (with glasses) sitting to the left of the teacher, Warsaw, Poland



Title page, 1966 edition



Cover, 1990 edition

(Left: [www.library.upenn.edu/exhibits/cajs/jastrow/11.html](http://www.library.upenn.edu/exhibits/cajs/jastrow/11.html))



רבעון למתמטיקה  
ללמוד ולחקר

בעריכת

דב ירדן

כרך 1

תש"ו—תש"ז

ירושלם

RIVEON LEMATEMATIKA

A Quarterly Journal

Intended to Promote Mathematical Research  
Among Students of Mathematics

Dov Jarden

Editor

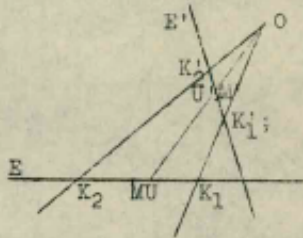
Volume 1

1946—1947

Jerusalem

*Riveon LeMatematika*, Volume 1, Title Page

דומה לחברו  $OK_1K_2$  בסקוף כמראה, הוא מגיע אחר הסיבוב לפעם כזה שבו  $K_2K_1'$  מקביל ל  $K_1K_2$ . ואולם עכשו מוכרחים אמצעי הזלעות  $M$  ו  $M'$  להמציא פהותי עבר של חוצה-הזווית (הואיל וחוצה-הזווית מחלק את הקטעים  $K_1K_2$  ו  $K_2K_1'$  ביחס שווה); ובכך מוכרחים היו להמציא לפני הסיבוב פעורים סוגים של חוצה-הזווית; כמצב ראשון זה אין הם יכולים אפוא להתקבל זה מזה על ידי השלח.

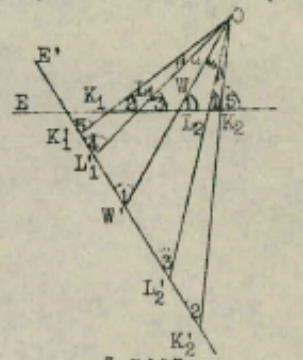


ציור 2.

אפשרית כל עקר.

5. בזה כבר השלמנו הוכחתנו, כי אין למצוא למעגל את מרכזו הנעלם בסרגל בלבד, פרט להוכחה מספם-העזר על התחוכים הצמודים בהרוט מעגלי טופס, שעלינו עוד להביאה. נבאיה לנו את ההוכחה כפריטוד עיד הפעם כציור 2: צורה המרכבת מן המעגל  $K_1K_2$  זיסרים מסוימים כמיסוד E מובלת מ O על הפיסוד  $E'$ , ובהשלח זו עובר ישר ליסוד והמעגל  $K_1K_2$  למעגל  $K_1'K_2'$ . בו בזמן אין מרכבו M של  $K_1K_2$  נוטל על המרכבו M' של  $K_1'K_2'$ . בנית-יסורים סהימה מובילה ב E למסרה, אינה עומה זאת ב  $E'$ . לפיכך אין הבניה המבוקשת

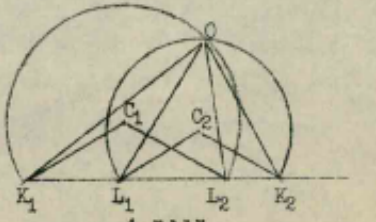
6. קטה פזו היא גאומטרית ההעתקה ב ש ב י מעגלים בתונים. אבו מעגלים תמיד מרכז-ההשלח O סבי חרוטים מסופעים, ועלינו לערוך את הזכרים כך, שפיסוד-ההשלח  $E'$  יתחוך את  $E$  ב י ה מ בחתוך הצמוד. נבחינו בין סבי קרים. ראשית יתיי ס ב י ה א מ ע צ ל י מ ב E נ מ צ א י מ ו ה ב ת ו ק ז מ. את פיסוד-המרכבו סבים בפאובך ל E דרך סבי המרכזים M ו N של סבי המעגלים, סקסריהם כציור 3 הם  $K_1K_2$  ו  $L_1L_2$ . אילו עלה בידנו לטים את מרכז-ההשלח כך, שאוצי-הזווית היוצאים מ O בסטולטים  $OK_1K_2$  ו  $OL_1L_2$  יתלכזו, יכולנו לומר: התחוכים הצפורים מקבילים זה לזה ולפיכך אפשר לקבלם כאותו הפיסוד  $E'$ . לטע זה נחזק שאוצה-הזווית  $O'W'$  יפגוש את הפיסוד  $E'$  באותה זווית כמו E, אך בכרוז פנוגד. אז סורת כעליל הזווית כציור 3 הטמומנות בו כספון סתאים (הואיל ולפי ההנחה  $\angle L_2OW = \angle L_1OW$ )



ציור 3.

ו  $\angle K_1OW = \angle K_2OW$ , כך סבאט יוצרים E ו  $E'$  תחוכים צפורים ביניהם. את המעגלים  $K_1K_2$  ו  $L_1L_2$  הנמצאים זה לפני שזה נשיל על המעגלים  $K_1'K_2'$  ו  $L_1'L_2'$ . הנמצאים כמו כן זה לפני שזה.

כזפיון גמור לקודם סביאים לידי סתירה כל הצעת בניה לפגיאת מרכז המעגל כסרגל. בניה ב E המרכבת פיסורים מעתקת לבניה דומה לה ב  $E'$ . אך הואיל ואף אחד מן המרכזים M ו N אינו עובר טוב למרכז המעגל, אין הבניה ב  $E'$  יכולה להביא למסרה ב E. אך הואיל ו E ו  $E'$  סוי-זכויות בהכרח לגמרי ביחס לבניה המדוכרת, לא תתכן בניה כזאת בכלל. לא נסאך לנו מעתה אלא לטים את הנקודה O כך, סתתקים דריסתנו על התלכרות חוצי-הזווית בסבי המטולטים  $OK_1K_2$  ו  $OL_1L_2$ . אם יומס לב כי  $\angle K_1OL_2 = \angle K_2OL_1$  (מה ססטיקים על ידי חברו מן הסוינוכה



ציור 4.

$$\angle K_1OW = \angle K_2OW$$

$$\angle L_2OW = \angle L_1OW )$$

נוכל לנהוג כאופן הבא: נבחר  $\angle K_1OL_2 = \angle K_2OL_1 = \delta$  וכרסום פעל ל  $K_1L_2$  ופעל ל  $K_2L_1$  כסיתרים את המעגלים, הסכילים את  $\delta$  כזווית -



על נקודה שסכום מרחקיה מנקודות נתונות הוא מינימלי

חיים חנני

תהיינה נתונות במישור 3 נקודות  $A_i$ , ( $i=1,2,3$ ). ידוע כי הנקודה אשר סכום מרחקיה מאלו הנקודות  $A_i$  הוא מינימלי, היא נקודה  $M$  אשר עבורה  $\chi(A_i M A_j) = 120^\circ$ , ( $i, j=1,2,3; i \neq j$ ), אם נקודה כזאת קיימת.

נרחיב את המשפט הזה לכספר נקודות סופי כלשהו במרחב אוקלידי בעל מספר ממדים כלשהו.

משפט 1. תהיינה נתונות על פני כדור-היחידה  $S_k$  בעל מרכז  $O$ ,  $n$  נקודות ספסיות  $A_i$ , ( $i=1,2,\dots,n$ ). נסמן  $a_{ij} = \cos(A_i O A_j)$ . אזי תנאי הכרחי ומספיק לכך שבשביל נקודה  $A_0$  כלשהי על  $S_k$  יהיה  $\sum_{i=1}^n a_{0i} = 0$  הוא  $\sum_{i,j=1}^n a_{ij} = 0$ .

הוכחה. קל להוכיח כי התנאי הוא הכרחי, כי בתור נקודה  $A_0$  נוכל לבחור כל אחת מהנקודות  $A_i$ , ( $i=1,2,\dots,n$ ) ואז נקבל  $\sum_{j=1}^n a_{ij} = 0$ . וכך גם  $\sum_{i=1}^n a_{ij} = 0$ . נכרי להוכיח כי התנאי הוא גם מספיק. נסמן ב  $\alpha_i$  את הוקטור  $OA_i$ , וב  $\alpha$  את  $\sum_{i=1}^n \alpha_i$ . נשתמש בנספון של סכמלה סקלרית של וקטורים. מתנאי המשפט נקבל

$$(\alpha, \alpha) = \left( \sum_{i=1}^n \alpha_i, \sum_{i=1}^n \alpha_i \right) = \sum_{i,j=1}^n (\alpha_i, \alpha_j) = \sum_{i,j=1}^n a_{ij} = 0$$

וכן גם  $\alpha = 0$ , ומכאן

$$\alpha = (\alpha_0, \alpha) = \left( \alpha_0, \sum_{i=1}^n \alpha_i \right) = \sum_{i=1}^n (\alpha_0, \alpha_i) = \sum_{i=1}^n a_{0i} = 0.$$

משפט 2. תהיינה נתונות במרחב אוקלידי  $R_k$ ,  $n$  נקודות  $A_i$ , ( $i=1,2,\dots,n$ ). אם קיימת נקודה  $M$  כזאת ש  $\sum_{i,j=1}^n \cos(A_i M A_j) = 0$  אזי סכום המרחקים מנקודה  $M$  לנקודות  $A_i$  הוא מינימלי. להפך, אם קיימת נקודה  $M$  הסונה מכל הנקודות  $A_i$ , ( $i=1,2,\dots,n$ ) כזאת שסכום המרחקים  $\sum_{i=1}^n \overline{MA_i}$  הוא מינימלי, אז  $\sum_{i,j=1}^n \cos(A_i M A_j) = 0$ .

הוכחה. תהי  $Q$  נקודה כלשהי השונה מ-  $M$ . נסמן

$$(i=1,2,\dots,n), q_i = \cos(Q M A_i), p_i = \overline{QA_i}, m_i = \overline{MA_i}, x = \overline{MQ}$$

סכום הקטעים המהכרים את  $Q$  עם  $n$  הנקודות  $A_i$  יהיה

$$f(x) = \sum_{i=1}^n p_i = \sum_{i=1}^n (m_i^2 + x^2 - 2m_i x q_i)^{1/2}$$

על-ידי גזירה לפי  $x$  נקבל

$$f'(x) = \sum_{i=1}^n ((x - m_i q_i) (m_i^2 + x^2 - 2m_i x q_i)^{-1/2})$$

$$f''(x) = \sum_{i=1}^n (m_i^2 (1 - q_i^2) (m_i^2 + x^2 - 2m_i x q_i)^{-3/2})$$

ככרי להוכיח את החלק הראשון של המשפט, נשים לב שנתאם לתנאי המשפט ולפי משפט 1,  $\sum_{i=1}^n q_i = 0$  ובכך  $f'(x) = 0$  בשביל  $x=0$ , אבל  $f''(x) > 0$  בשביל כל ערכי  $x$  ולכן הפונקציה  $f(x)$  מקבלת את המינימום היחיד שלה בשביל  $x=0$ , זאת אומרת, כשהנקודה  $Q$  מתלכדת עם  $M$ .

(1) ההוכחה בעזרתה הנוכחית נוסחה על-ידי ש. שריבר.

**THE LANGUAGE OF THE MACHBAROT  
OF IMMANUEL HAROMI**

**A Thesis**

**Submitted to the Senate of the Hebrew University  
in fulfillment of the requirements for the degree of  
Doctor of Philosophy**

**by**

**DOV JARDEN**

**Jerusalem, February 1954**

*The language of the Machberot of Immanuel Haromi*

# דיואן שמואל הנגיד

יצא לאור בפעם ראשונה בשלמותו על פי כתב יד יחיד  
בעולם (כ"י ששון סי' תקפ"ט) עם הקדמה ומפתח שירים

נערך ונסדר ע"י

הצעיר דוד בן לא"א סלימאן בן דוד ששון זצ"ל

**כ**ל השירים בשלמותם של אחד משוררי ספרד הכי גדולים.  
בהקדמתו המקיפה המוציא לאור מתקן שגיאות רבות ומגרש  
ספקות שונים. מספר השירים עולה ל 1743, ויותר מ 1500  
מהם לא נודעו לפני זה. הם רבי הערך מפני השפה, דברי  
ימי המשורה, ומאורעות זמנו, ומורים עד כמה גדלה השפעתו  
על אבן גבירול ויהודה הלוי. מלמדי שפתנו וספרותנו ולומדיהן  
ימצאו בספר הזה אוצר יקר עד מאד.

אוקספורד, ברפוס האוניברסיטה

*Divan Shmuel Hanagid*