

ABOUT THE WORK OF MUHAMMAD IBN MUSA AL-KHOREZMI "AL-KITAB AL-MUHTASAR HISAB AL-JABR WAL-MUKOBALA "

("AL - JABR WAL-MUKOBALA" SMALL BOOK ABOUT THE BROCHURE)

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ANNOTATION:

In article is brought great encyclopedist scientist end VII ages and begin VIII ages crisp about mathematician Al- Horazmiy. This article about his (its) work on mathematician and about book.

Keywords: testament, complex, dogmatist, irrigation, categorization, transcription.

INTRODUCTION:

In this article from the treatises on mathematics of the great encyclopedist Al-Khwarizmi, who lived and worked in the late seventh and eighth centuries.

An Arabic copy of the Khorezmian "Algebra" is kept in the Bodlean Library of Oxford University. This manuscript was copied in 1342. An Arabic copy of it, along with an English translation, was published in 1831 by F.Rosen. It was established that Khorezmi had 2 more Arabic copies of this work. In addition to the Arabic copies of the treatise, there are 2 Latin translations, the first Latin translation made in 1145 by Robert of Chester in Segovia, Spain. According to manuscripts of this translation kept in the Columbia (New York) University, Vienna, and Dresden State Libraries, the Latin text was translated into English in 1915 by L.Ch.Published by Karpinsky.The second Latin translation was also made in the 12th century by Gerardo of Cremona and published in 1838 by G.Libri. The German translation of the Arabic version was published by Yu.Rushka, the French translation by A.Marr and the Persian

translation by H.Hedivjam. The geometric part of the work was published by S. Gandts. G. Wileitner hit the chapter on inheritance distribution in the brochure perfectly. Various issues related to the treatise, including its sources and influence on European mathematics, are covered in the works of L. Rode, L. Karpinsky, M. Simon, O. Neugebauer, G. Zuter, G. Satron, P. Yushkevich, G. Enestrem, Basman and others. The Russian translation was published by Yu.H. Kopelevich and B.A. Rosenfeld. Recently, the interest in Khorezmian art is growing.

Khorezmian "Algebra" has been analyzed and criticized by many scholars.

Yu.Rushka translates some chapters of the pamphlet and analyzes it from a critical point of view, focusing on the history of Arabic numerals, as well as mathematical expressions in Khorezm and the issues of inheritance. Various issues related to this work, in particular, its impact on European mathematics, L.Rode, M.Simon, O.Neigebauer, H.Zuger, J.Sarton, A.P.Yushkevich, G.Enestrem, H.Bosmans, G. Hit by P.Matvievskaya. "I have proposed a short book on Al-Jabr and Wal-Mukabala, which covers the simple and complex problems of arithmetic, because in the distribution of inheritance, in the making of wills, in the distribution of goods and justice, in trade and any transactions, as well as in land surveying, the channels it is necessary for people in conduction, geometry, and various other similar works. ' In these words of the scientist, the booklet reflects the complex issues facing him.

At the same time, the Khorezmian caliphate said that it was planning to address the economic needs of the caliphate, issues arising from the dogma of Islam and Sharia, as well as issues related to architecture and irrigation. In general, Khorezmian algebra is the science of solving numerical quadratic and linear equations.

The role of Khorezmian algebra in the history of science was so great that the direction he started was continued by the mathematicians of the next period and waited for a higher level. Omar Khayyam continued the direction in algebra as an independent science and improved the method of geometric algebra by studying it more deeply. He introduced the method of solving cubic equations using conic sections into oriental algebra and brought a complete classification of equations from Khorezm, bringing the calculation of cubic equations to 25. The famous mathematician and astronomer Jamshid Kashi further perfected this method in his 1427 work, *Maftox al-Hisab*. At the same time, Shark's algebra and mathematics in general, initiated by Khorzmi, rose to a higher level in Kashi's work.

In short, Khorezmi is the founder of algebra. The term "algebra" is derived from the Latin spelling of the word "al-jabr" in his work *Al-jabr val-mukobala*. Due to this work, the name "Al-Khwarizmi" first took the form "Algorithm" in Latin transcription in the early 12th century, from which it became "Algorithm" and, finally, the basic term of modern computational mathematics "algorithm".

In the West, it has served as the source of many new discoveries in mathematics. That is why the name of al-Khwarizmi was immortalized in Europe. A.A.Markov, who invented normal algorithms, is an active follower of Khorezmian scientific ideas in modern times.

Khorezmi is the author of the first zij-mathematical and astronomical tables created in the Middle East. He authored a work on

geography entitled *The Picture of the Earth*. This work consists of several cards drawn by Khorezmi and comments on it. American orientalist D.Sarton describes Khorezmi as "one of the greatest mathematicians of all time."

Khorezmi's unique gray geographical work "*Kitab surat al-ard*" ("Picture of the Earth") was found in 1878 in Cairo. Khorezmi based this work on Ptolemy's "*Use of Geography*". The play gives 537 important places, geographical details of 209 mountains, the shape of the basin of rivers, seas and oceans, the important coordinates of the islands located in them.

Khorezmi did a lot of work in the field of astronomy. Based on his observations at the Baghdad Observatory and a comprehensive critical analysis of the astronomical tables of the Indians, he compiled a new "*Astronomical Table*."

In the 12th century, this work was translated from Arabic into Latin by Adelard Batsky and used for several centuries.

In 827, under the leadership of Khorezmi, one degree of the Earth's meridian was measured to determine the size of the Earth. To do this, in Mesopotamia, the linear distance between 350 and 360 degrees north latitude was determined directly by the measuring system in the direction of the meridian, and the angular measurement was performed by observing the meridian heights of the stars. The length of the meridian is $56 \frac{2}{3}$ of an Arabian mile, or 112 km on average. This result was obvious, and the method of measurement itself was of great scientific importance. One of the first works on trigonometry written in Baghdad belongs to Khorezmi, which shows the laws of change of sines and tangents. Its trigonometric table differs from the tables of that time.

There is information that Khorezmi also wrote such works as "*A treatise on Usturlob*", "*A treatise on sundials*", "*A treatise on history*", "*A treatise on music*", but they have not reached us.

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