Gerard of Cremona Biography

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Biography

Gerard of Cremona is sometimes referred to as Gerhard, Gherardo, or Gherard of Cremnona, and these variant spellings should be noted. Born in Cremona in Italy, Gerard eventually died in 1187 in Toledo, Spain. He was a translator who realized that much of the knowledge of the Arab world was still largely unknown in the West. To rectify this Gerard set himself the task of translating Arabic scientific texts into Latin, which was then the language of the educated in Europe. Gerard travelled to Toledo to learn Arabic. His first translation was of Ptolemy's *Almagest*. By the end of his life Gerard had translated over 90 works from Arabic into Latin. These works covered such topics as mathematics, astronomy, and medicine. In his translations Gerard produced Latin words to cover mathematical concepts which were rendered in Arabic. From this we have the names that we now use for many mathematical terms, particularly those of **geometry**. One example of this is the derivation of the word **sine**. **Aryabhata the Elder** called it ardhaiya (half chord), which he abbreviated to iya (chord). When this was translated into Arabic the word was taken as jiba, which was written as jb. This was eventually replaced by jaib (cove or bay) and Gerard took the nearest Latin equivalent of sinus (a bent curve), and from this we get sine.

The translations of Gerard were of such high quality that they were sought out by many mathematicians for centuries to come. It is to Gerard that we owe the preservation of many original texts, or later commentaries on them (some of the Arabic texts translated were commentaries on original Greek texts that were long lost even by the twelfth century). One of the most famous works that Gerard translated was *Elements* by **Euclid of Alexandria**. There are no known examples of this work from the time of Euclid, all copies are translations of Arabic copies made by the Byzantines in the eighth century, the first known such work is by **Adelard of Bath**, with Gerard's version appearing some 30 years later. Gerard was also responsible for translating the **algebra** of Al Khwarizmi.