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Guillaume Gosselin, an algebraist in Renaissance France

Guillaume Gosselin de Caen's treatise, known as *De Arte Magna* (Paris, 1577), is a short and quite simple work written by someone who is a typical algebraist in Renaissance France. Gosselin learned mathematics and heard about new methods in algebra from mathematicians who worked just before him; after making these new methods his own, he wanted them to be taught and wrote them down. He is especially good at solving problems with several unknown quantities and several linear equations.

It is important to notice that Gosselin's book is very dependant both on Italian Tartaglia's *Arithmetic* (Venise, 1556), which Gosselin translated into French by the same time he wrote *De Arte Magna*, and on Diophante's *Arithmetics*, which came to be known exactly two years before, thanks to Xylander's translation into Latin (Bâle, 1575). Both Gosselin and Tartaglia refer to Pacioli's work (*Summa*, Venise, 1494) and Pacioli himself says he learned much from Fibonacci, especially through *Liber Quadratorum* (Pise, 1225).

According to the fact that Al-Khwarizmi founded Algebra during the 9th century, it is not surprising that, when being translated into Arabic in the late 9th century by Lebanese Ibn Luqa whose native language was Greek, Diophante's *Arithmetics* seemed to be considered as a treatise about Algebra since algebraic vocabulary and way of thinking were most widely shared. Only few people understood that it was actually an arithmetic treatise: Al-Khazin (900–971) did, and therefore he is one of those who laid the foundations for the integer Diophantine analysis. We know that Jean de Palerme submitted Al-Khazin's problem about congruent numbers to Fibonacci, who then wrote *Liber Quadratorum*.

These are the main ways that lead from Diophante, as both a Greek and an Arabic source, to Renaissance Europe readers. We will show from his text how eager to learn and respectful of what he learnt Gosselin was, and how enthusiastic about the new algebraic methods he was too. He wished he could retranslate and explain the complete Diophante's *Arithmetics*, but he didn't. We ignore what kind of work he would have done, either an exact arithmetic treatise as Bachet (Paris, 1621) and Fermat (1601–1665) did, or an up-to-date algebraic one according to what all algebraists did, such as Bombelli (*Algebra*, Bologne, 1572), Stevin (*Arithmetic*, Leyde, 1585), Viete (*l'Art Analytique*, Tours, 1591–1593) or Girard (*L'invention nouvelle en Algèbre*, Amsterdam, 1629).