Johannes De Sacrobosco Encyclopedia Article

Johannes De Sacrobosco

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Johannes De Sacrobosco

1195-1256

English Mathematician and Astronomer

Johannes de Sacrobosco, also known as John of Holywood or John of Halifax, wrote a number of influential works in mathematics and astronomy. Like his contemporary Leonardo Pisano Fibonacci (c. 1170-c. 1250), he helped to popularize Hindu-Arabic numerals, and his *Algorismus* (c. 1230) became a widely used textbook in European universities.

Sacrobosco was born in the town of Holywood, Yorkshire, England, and received his education at Oxford. He became canon of the Order of St. Augustine at the Holywood monastery, then in 1220 continued his studies in Paris. A year later, he was appointed a teacher, and subsequently a professor of mathematics, at that city's university.

During the 1220s and 1230s, Sacrobosco produced a number of important texts. Divided into 11 chapters, the *Algorismus* addresses a range of subjects, including not only arithmetic functions but square and cube roots. Most notable, however, was Sacrobosco's use of Hindu-Arabic numerals, just then beginning to gain acceptance in the wake of Fibonacci's *Liber abaci* (1202).

Sacrabosco's *Tractatus de sphaera* (1220) had a similarly popularizing effect for the work of the Greek astronomer Ptolemy (c. 100-170). Among the topics discussed in the book are Ptolemy's ideas on planets and eclipses, as well as the position of the Earth in a universe that Sacrobosco believed to be spherical. In 1472, the *Tractatus* would be the first printed work of astronomy, and despite its many errors, it continued to be widely used until the 1600s.

In 1232, Sacrobosco wrote *De anni ratione*, which concerned the measurement of time. In addition to discussing the day, week, month, year, lunar phases, and ecclesiastical calendar, Sacrobosco used the book to make an early case for calendar reform. The Julian calendar, he noted, was 10 days in error, and he advocated a method of correction by omitting a single day every 288 years. In 1582, the Western system of dates would indeed be corrected with the adoption of the Gregorian calendar, though the system used was different from that promoted by Sacrobosco.

Other works by Sacrobosco included *Tractatus de quadrante,* in which he discussed the uses of the quadrant in astronomy. He died in Paris in 1256.