

Caramuel y Lobkowitz, Juan | Encyclopedia.com

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(*b.* Madrid, Spain, 23 May 1606; *d.* Milan, Italy, 7 September 1682),

mathematics.

The son of Lorenzo Caramuel y Lobkowitz, a Bohemian engineer in Spain, and Catalina de Frisia, Caramuel became a member of the Cistercian Order and studied at Alcalá and Salamanca, the principal Spanish universities of the time. He received the doctorate in theology at Louvain. He held various important posts within the Cistercián Order and spent most of his life in Flanders, Bohemia, and Italy. Caramuel was in the service of Emperor Ferdinand III and then of Pope Alexander VII, who appointed him bishop of Campagna (near Amalfi). He died while serving in that post.

Caramuel's some seventy works treat many subjects. One of the more important is *Mathesis biceps: Vetus et nova* (Campagna, 1670), which, although it contains no sensational discovery, presents some original contributions to the field of mathematics. In it he expounded the general principle of the numbering systems of base n (illustrated by the values 2, 3, ..., 10, 12, and 60), pointing out that some of these might be of greater use than the decimal. He also proposed a new method of approximation (although he did not say so) for trisecting an angle. Caramuel developed a system of logarithms of which the base is 10^9 , the logarithm of 10^{10} is 0, and the logarithm of 1 is 10. Thus, his logarithms are the complements of the Briggsian logarithms to the base 10 and therefore do not have to use negative characteristics in trigonometric calculations. In these particulars Caramuel's logarithms prefigure cologarithms, but he was not understood by his contemporaries; some, such as P. Zaragoza, raised strenuous objections.

A man of encyclopedic knowledge, Caramuel tried to apply a mechanical formulation to astronomy, relegating astrology to the domain of superstition and criticizing some of the statements of [Tycho Brahe](#). In addition, he made meteorological observations, investigated the globe's physical properties, and theorized about the possibility of aerial navigation.

BIBLIOGRAPHY

Writings on Caramuel are enumerated in Ramón Ceñal, S. J., "Juan Caramuel. Su epistolario con Atanasio Kircher S. I.," in *Revista de filosofía*, **12**, no. 44 (1953), 101–147; David Fernández Diéguez, "Juan Caramuel," in *Revista matemática hispano-americana*, **1** (1919), 121–127, 178–189, 203–212; and Patricio Peñalver y Bachiller, *Bosquejo de la matemática española en los siglos de la decadencia* (Seville, 1930), pp. 29–33.

Juan Vernet