

**MATTEO RICCI** (October 6, 1552 – May 11, 1610)

by HEINZ KLAUS STRICK, Germany

Ever since MARCO POLO travelled overland to China, stayed there from 1275 to 1292, and wrote a travelogue about the mysterious "Cathay" on his return, the unknown countries in the East exerted a strong fascination on the people of Europe.



In the 15th and 16th centuries, daring seafarers tried to explore the world.

In 1513, Portuguese ships reached the southern port of Macao for the first time, and, in the middle of the century, they established a trading post there on the payment of a rent. Until 1695 it was the only sea access for foreigners to the Chinese Empire.

The merchants were followed by missionaries, mainly from the Jesuit order, who were commissioned by their church to convert the Chinese population to the Catholic faith.

The Italian MATTEO RICCI was the first and most famous of them. In collaboration with XU GUANGQI (1562-1633), he translated books on "Western" mathematics into Chinese.



Ricci's successors included JOHANN ADAM SCHALL VON BELL (1592-1666) and FERDINAND VERBIEST (1623-1688). Due to their abilities as mathematicians and as astronomers, the three Jesuits were highly respected in China.



The Italian MATTEO RICCI had first started studying law in Rome, then joined the Jesuit order and studied mathematics and astronomy under CHRISTOPHER CLAVIUS (1538-1612), the Bamberg-born head of the papal commission charged with reorganising the calendar.

The Vatican stamp (next page) shows CLAVIUS, who was called the "EUCLID of the 16th century" by his contemporaries, presenting the draft of the new calendar to Pope GREGOR XIII (The Gregorian calendar reform was in 1582).



MATTEO RICCI entered China via Macao in 1582, learned the Chinese language and studied Chinese culture intensively. He drew up a map of the world (which included the American continent), through which he showed the Chinese – who had lived in isolation for centuries – their peripheral position and actual size of the country. In 1589 he began to teach Chinese students the mathematical ideas of EUCLID – as he had learned them from CLAVIUS.

His extensive knowledge and his ability to engage with the foreign culture and to recognise traditional Chinese values and customs earned him a high reputation among the educated. In 1601, he was even allowed to enter the city of Beijing, which was forbidden to foreigners and there he lived like a *mandarin* (minister) at the imperial court. (Some of the stamps show him in the typical dress of a mandarin).



His knowledge of the language was eventually so advanced that he wrote several books on mathematical and theological subjects in Chinese. In 1607, in collaboration with XU GUANGQI, a member of the Chinese court, he began to translate the works of EUCLID into Chinese. In doing so, he explained the content of the Latin translation made by CLAVIUS to his learned pupil, who attempted to render it appropriately in Chinese, as far as he understood it.



In the notes to readers, XU GUANGQI wrote: "Four things in this book are not necessary: doubting the results, conjecturing new results, checking or modifying. Furthermore, there are four things that are impossible in this book: to omit, refute, shorten or change the order of any part."

In contrast to the strict approach of Greek mathematics, traditional Chinese mathematics had dealt primarily with practical questions, i.e. the application of mathematics.

For the basic concepts of EUCLID geometry such as point, curve, parallel, acute or obtuse angle, there were no words in the Chinese language. XU GUANGQI had to "invent" them and since then, they have become an integral part of Chinese mathematics, just like those of geometric plane figures.



XU GUANGQI was so convinced of the superiority of European mathematics that he himself did not regret that important writings of classical Chinese mathematics from the 3<sup>rd</sup> to the 7<sup>th</sup> century had been lost.



Ricci hoped to demonstrate the superiority of Christianity by communicating the scientific achievements of the West and thereby convert the Chinese population. He placed great hope in introducing the Gregorian calendar as the most convincing sign of strength in China. This approach, which focused on scientific rather than religious doctrine, as well as his promotion of the traditional ancestor and Confucian cult of the Chinese, met with fierce criticism in the Church. Ricci died at the height of his career; he was buried with the highest honours in a tomb donated by the emperor in Peking.

When XU GUANGQI, in collaboration with the Jesuit JOHANN ADAM SCHALL VON BELL from Cologne, succeeded in 1629 in surpassing all competitors in accuracy in the predictions for a solar eclipse, he was commissioned by the emperor to reform the calendar.



SCHALL also wrote mathematical books in Chinese, built novel astronomical instruments and taught the heliocentric view of the world (which the church in Europe still suppressed). After the Manchu victory over the Ming dynasty, SCHALL became president of the astronomical office in 1644, and was even given permission to build the first Catholic church in Beijing in 1650.

As mandarin, he exerted great influence on the policies of the reigning emperor. When the Emperor died unexpectedly in 1662, SCHALL was tried as the alleged culprit. Many at court had been waiting for an opportunity to stop the influence of "undesirable foreigners".

FERDINAND VERBIEST, as the defender, could not prevent SCHALL from being sentenced to death – only an earthquake saved him from having the sentence carried out. The judges interpreted the natural disaster as God's proof of his innocence. In the meantime, however, SCHALL had also come under criticism within the church and was even accused of supporting superstition. Paralysed after a stroke, he died in the Jesuit mission in Peking in 1666.



VERBIEST's influence on the new Manchu emperor was also great; he commissioned him to implement the calendar reform already proposed by Ricci. He was allowed to accompany him on his journeys through the great empire and was involved in the border negotiations conducted in Latin with a Russian delegation.

After VERBIEST's death, missionaries from other orders petitioned the Pope to put an end to the practice of special Chinese rites that had been tolerated since Ricci's time.

First published 2006 by Spektrum der Wissenschaft Verlagsgesellschaft Heidelberg

<https://www.spektrum.de/wissen/matteo-ricci-1552-1610/862796>

Translated 2021 by John O'Connor, University of St Andrews

Here are some stamps about MARCO POLO's travels:

