

ENIGMATIC „WHEEL” FROM MONASTERY STUDENICA

Fifty years ago, during the excavation of the medieval dining room of the Orthodox monastery Studenica (43° 29' N, 20° 32' E) in Serbia, four marble fragments of a sundial were found. Connected, the fragments make $\frac{3}{4}$ of a marble wheel. The radius of the wheel is 24 cm, and the wheel is 6 cm thick. The diameter of the opening is 12 cm. The gnomon is missing. Four cm from the edge of the opening a concentric groove was engraved. One cm from that groove begin hour lines, marking $\frac{1}{4}$ hour intervals. Each full hour is marked by both Roman and Arabic numerals, with the height of 13 mm. Lines from 5.30 a.m. until 5.30 p.m. are preserved on the fragments.

Was it a part of a sundial or a part of a mechanical clock? If it was sundial, why it was made as a wheel? How did it look in its original shape?

Enigmatic wheel from monastery Studenica was not a medieval sundial. It was not a vertical sundial nor a horizontal sundial constructed by the gnomonic rules based on today's hourly system. It is not very probable that it was equatorial sundial based on the same system. It is possible that it was a dial of a mechanical clock, or an approximately made azimuth sundial which could be rotated around the vertical axis (for counting the hours from the midnight and from the sunset).