



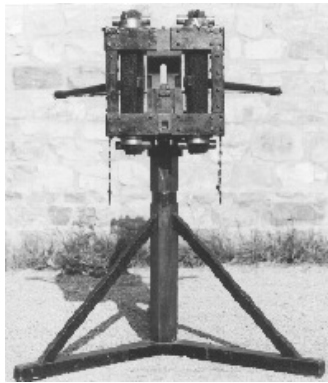
## CATAPULTS IN GREEK AND ROMAN ANTIQUITY

### GASTRAPHETES - the first ancient mechanical weapon



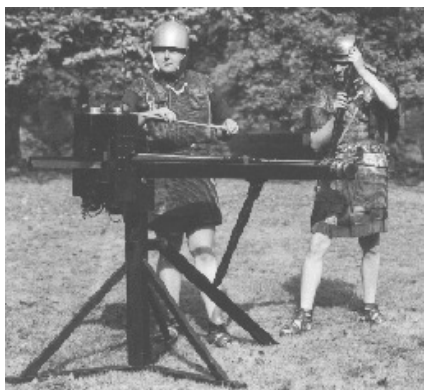
The gastraphetes (‘belly-bow’) was invented about 400 BC. The weapon was cocked by resting the stomach in a concavity at the rear of the stock and pressing down with all strength. In this way considerably more energy can be summoned up than by using only one arm of the archer as in the hand-bow. There are no archaeological finds known so far, but there is a detailed description preserved in Heron, *Belopoiica* together with an accompanying text figure. The reconstruction by E. Schramm displayed here is mistakenly equipped with a steel bow. As Marsden 1969, 8-9 has shown, the ancient gastraphetes was powered by a composite bow.

### EUTHYTONON - two-armed torsion catapult, light arrow-shooter



The euthytonon was invented in mid-fourth century BC. The weapon is powered by two torsion spings consisting of rope bundles. On each end of a torsion spring there is a bronze washer (*modiolus*) holding an iron lever (*episkygi*). The two torsion springs and the four modioli are clearly visible in the reconstruction displayed here, also the two arms of the weapon coming out at the sides. This light torsion catapult was the most common type of artillery during the Hellenistic period. With only slight modifications the weapon was employed still in the Early Roman Imperial period, up to ca. AD 100, when the Romans redesigned their artillery.

Reconstruction by E. Schramm after the Ampurias find (reconstruction displayed in: Saalburgmuseum, Bad Homburg, Germany). For construction plan and description of Ampurias catapult see: Schramm 1918, 40-46 pl.11.



Arrow-shooting catapult being cocked by a windlass.

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