

# Military Technology

## Rockets

The first rockets were used as fire work and weapons by the Chinese and Mongols in the 11th and 12th century CE. Known by other cultures as Chinese-Arrows, they were made out of wood or bamboo. As weapons of war they were mostly used as a deterrent (to inspire fear) because they were ineffective to take out soldiers and hopelessly inaccurate.

With the refinement of black powder through al-khemia and advanced metallurgy rockets became effective weapons for the first time. The book by al-Rammah contained 107 recipes for black powder. Of which 22 were specifically meant for rockets. Rockets like we know them today, with a metal body, sharp point and wings/stabilizer fins were invented in India/Hindustan. They were used by Hyder Ali and his son Tipu Sultan from the Sultanate of Mysore. Better known as the states of Kerala and Tamil Nadu. Tipu Sultan and his father were fighting the oppression and exploitation of the British Empire. Tipu Sultan had thousands of rocket soldiers and used them to inflict humiliating defeats against the British. Tipu Sultan fought to the death for his country and his people. The British were so impressed by the Mysore Rockets that they incorporated them in their fleet against their American colonies. There are even references to the Mysore Rockets in the American anthem. The Mysore Rockets had a range of up to 2 kilometres and were equipped with a sword tip. The rockets exploded on impact or when its fuel ran out.

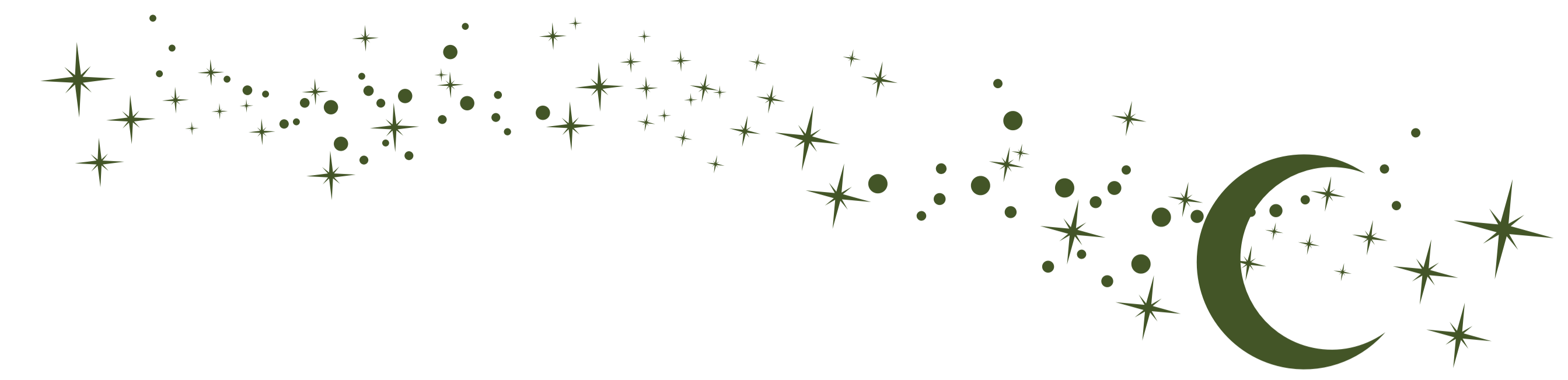
## Guns, Hand-cannons and Cannons

The first guns were made in the 12th and 13th century. These were not very accurate and took a while to reload. They still gave a good first attack option for officers and select soldiers in the Middle East and Asia. There were even handheld cannons carried by soldiers. These hand-cannons would shoot hail and shrapnel to clear out large groups of enemy soldiers. The use of black powder in guns gave rise to the name gunpowder in the Middle East and Asia. Through the combination of superior metallurgy and advanced chemistry (al-khemia) the first heavy cannons were made by Muslim engineers. The biggest cannons till the 1st world war (20th century CE) belonged to the Ottoman in the 15th Century CE. No fort or castle could stand against the cannons of Mehmed II. His cannons would weigh up to 17 tons and were 5.2 meters long. They were cast out of iron. Just like Muslims copied technology from others, others copied technology from Muslims. In the 14th and 15th century CE, black powder, rockets, guns and cannon technology spread to Europe, India and back to China.



**Military Marching Band.  
Ottoman Empire,  
12th century CE.**

**Ottoman super cannon  
with arabic inscriptions,  
15th century CE.**



**Mysore Rockets  
from Tipu Sultan.  
18th century, India**

