



Gun law: above, the Chinese carving that gave Needham his evidence and, below, how the weapon was fired

## Bang goes a gunnery date

NEW evidence proving that guns were developed more than 150 years before previously believed has been found in China.

The discovery goes some way to clearing up a conundrum of military history — how guns came to be used in Europe apparently so soon after their development by the Chinese.

The Chinese were the first to discover gunpowder when alchemists stumbled upon it while searching for the elixir of life. Experts originally believed that the gun was invented in 1280, just 47 years before the earliest evidence of a gun in Europe. This was contained in a manuscript dated 1327.

Now the world's leading authority on Chinese scientific history, Dr Joseph Needham, director of the East Asian history of science library at Cambridge University, has found evidence which indicates that guns were being used as early as 1128.

Needham made his discovery while investigating a Buddhist cave in Szechuan province in southwest China last year. He noticed that a stone carving representing a mythical army surrounding a statue of Buddha included a soldier carrying what Needham knew was a depiction of an early form of gun, known in Europe as a bombard.

But Needham, who has just published the 16th of a

planned 25-volume series on science in China, also knew the carving had been done in 1128 — more than 150 years before he, and other experts, believed the gun had been invented.

The gun, called an ox-jar by the Chinese, is identical in shape to the first ones to arrive in Europe two centuries later.

According to Needham the weapon depicted would have had a bored barrel holding a single round projectile. A coarse twine fuse impregnated with low-nitrate gunpowder would have been inserted in a tiny touch-hole near the back of the gun to fire it.

Contrary to the mythical depiction in the cave, no human could have held the weapon. It would probably have been mounted on a rack. A heavy, bulbous rear section of thick cast iron was needed so that the weapon could withstand the blast of the gunpowder in the detonation chamber.

Needham was the first to establish that the gun came from China to Europe. But what puzzled the experts was the astonishing speed at which it arrived.

Such a rapid transport in sophisticated inventions was unheard of at that time. However, the new discovery means that the idea had at least 199 years to cross from China to Europe.

Robert Temple

### THE BOMBARD: Dated 1128, China

Henry Nolan

