



#### WHAT A WELL-DRESSED ROMAN HORSE WORE TO BATTLE

*This modern horse, cautiously held by an Arab lest he revolt at his unaccustomed burden, is dressed in bronze armor that archaeologists have unearthed at Dura on the Euphrates. The armor was worn by a horse of Roman heavy cavalry, when Rome defended Dura against attacking Sassanians, 256 A.D.*

#### ENGINEERING

## Powerful Diesel Locomotives May Revolutionize Railroads

**G**IANT diesel-electric locomotives drawing swiftly and more economically standard passenger and freight trains of America's railroads were foreseen when Charles F. Kettering, leading research brain of General Motors, finished talking about diesel engines to the National Academy of Sciences at their Cleveland meeting.

Nearly ready to emerge from the Winton Cleveland shops are 3,600 horsepower diesels, which have four times the power of a similar engine in the now famous Union Pacific streamlined train. They will operate with an efficiency of 36 per cent., which makes the steam locomotive of today very uneconomical by comparison.

"Ket's" new diesels are travelling power plants that equal in efficiency the steam turbines used in large stationary electric generating stations.

With large diesel-electric locomotives capable of replacing steam engines and running without any changes in trackage upon existing railroad lines, the question arises as to whether this will

make unnecessary the further electrification of American railroads and even economically obsolete the existing electrifications.

The principal trick in making such large diesels lies in the method of injecting the oil fuel into the cylinder where the heat of compressing the mixed vaporized fuel and air explodes the mixture without the aid of a spark, necessary in the gasoline engine. Kettering uses injection pressures fivefold those used in other diesels, 25,000 instead of 5,000 pounds per square inch. The injector is built close into the cylinder so that friction losses are few, and small charges of oil can be handled. No matter what the viscosity of the oil used, enough pressure can be applied to break it up into fine vapor through ten-thousandth-inch holes.

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It is estimated that there were about 50 million buffalo in North America at the beginning of the seventeenth century.

#### ARCHAEOLOGY

## Find Temple of Mithras, Rival of Christian Faith

**I**N the ruins of Dura on the Euphrates, archaeologists from Yale and the French Academy have unearthed a temple to the great Persian god Mithras, favorite deity of the Roman legions, and one time rival of the Christian God in popular esteem.

"The importance of the discovery of the sanctuary of Mithras cannot be exaggerated," declared Dr. M. I. Rostovtzeff of Yale, one of the scientific directors of the expedition, announcing the latest revelations from the Mesopotamian city.

"Mithras was the greatest rival of Christ in the third century, A. D. In his pointed manner, the great E. Renan once said that were Christianity prevented from spreading by some accident, the religion of the modern world would be that of Mithras."

The temple, excellently preserved, is still decorated with bas-reliefs showing Mithras killing the bull, and engaged in other exploits of his career. The room where the soldiers of the Roman garrison at Dura once gathered to worship still contains two of the benches customary in Mithras' temples. On these benches the soldiers lay to partake of the sacred meals and to witness the sacred ceremonies performed by the magi.

In the Jewish synagogue, where previous digging revealed Bible paintings of the third century A.D., new scenes of the Old Testament have come to light. To this art gallery of Bible characters are now added Moses in the bulrushes, Queen Esther watching the triumph of Mordecai, Samuel anointing David, the Exodus of the Israelites, the story of Elijah, and other frescoes showing how people of 245 A.D. thought of these characters and incidents.

Dura's career lasted only five centuries, from about 280 B. C. to about 256 A.D. But in that time the city bore the imprint of five civilizations. Two more houses of worship have been found in this city of many religions. These are a Roman temple to Zeus and a temple of the Phoenician god Adonis and his consort Astarte.

Mines and counter-mines, evidence of the warfare when the Sassanians came to capture Dura from Rome, have been discovered. Bodies of the dead Roman defenders still with their armor and