

Nature Note

Giant Cactus

That prickly skyscraper of the desert flora, the saguaro cactus, is vanishing from the Arizona range.

The tall cylindrical plant, with branches that point to the sky, is slowly being destroyed by ground squirrels, wood rats, rabbits and other rodents seeking the water stored inside its tough green stem. U.S. Park Service researchers are suggesting that maybe coyotes could carefully be reintroduced around the special areas in order to eat the rodents and thus save the cactus, state flower of Arizona.

The saguaro, *Carnegiea gigantea*, is the tallest cactus of the nation, but it takes a long time to grow. In the first 10 years of life, it grows only one inch. A 30-year-old plant may be no more than three or four feet tall. At 75 years of age, it may measure 15 to 20 feet, and at death, 200 years old, it may stretch 40 to 50 feet high and weigh about 10 tons, four-fifths of which is water.

The saguaro is a marvel of architectural engineering. The stem is a cylindrical frame work of long vertical ribs which support the internal pulp tissue. During the long dry spells of the desert, the plant shrinks as the water is used up, the ribs folding in like an accordion. It has a root system that stretches out only a few inches beneath the sandy soil, with a radius equal to the height of the plant. During a rainstorm, these roots can absorb a ton or more of rain-water and transport it toward the saguaro's stem.

In past years, the desert Indians used many parts of the saguaro, mashing the pulp for liquid juices, eating the pear-shaped greenish-purple fruit, fermenting seeds to make a kind of butter, and burning its dried remains as fuel.

• Science News Letter, 87:399 June 19, 1965

ARCHAEOLOGY

Bronze Buckle in England Gives Clue to Mystery

► THE DISCOVERY of a three-inch bronze buckle in a Saxon grave near Deal, Kent, is offering clues to the identity of a huge mysterious statue whose origin is unknown.

The buckle, found when 140 Saxon graves were recently excavated, has as its main feature a quaint little figure with a horned helmet and two long spears in its hands.

This figure is similar to a 240-foot ancient statue called the Long Man, carved on Wondover Hill near Eastbourne, Sussex, Dr. C. F. C. Hawkes of Oxford University believes.

Dr. Hawkes believes that the figure on the buckle depicts the Germanic war god Woden, worshipped in Scandinavia as Odin.

The Long Man, said Dr. Hawkes, is the buckle man disarmed, shorn of the pagan's god's equipment, helmet, belt and spearheads. The pagan god may have been shorn by St. Wilfrid, the apostle of Sussex, whose mission lasted from 681 to 686 A.D.

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ARCHAEOLOGY

Bronze Vessels Found In Ancient Tomb of China

► A TOMB dating back some 2,700 years has been unearthed in Hsiuning County, Anhwei Province, East China.

The tomb, covering an area of 60 square meters, was discovered by peasants in Yichi people's commune, working on a desolate hill near the town of Tunchi. In this tomb were found 159 bronze, pottery and jade vessels.

Among the bronze and pottery vessels are kuei (deep circular vessels), yu (jars), fang ting (rectangular cauldrons), vessels in the shape of animals, ho (kettles), red pottery pots, glazed pottery bowls and yu (basins with everted rims).

Archaeologists believe that it was a tomb of a slaveowner of the late Western Chou Dynasty, 1200 to 800 B.C.

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GENERAL SCIENCE

Science Used to Analyze What Art Has Discovered

► THE DELICATE METHODS of making red glazed pottery in China, fine royal gold jewelry in Ur, an Etruscan gold and copper bowl with granular designs and clearly etched Damascus and Japanese swords were all discovered and used by craftsmen and artisans centuries ago, long before they were explained by modern scientists.

Only in the last few decades has science reached the position where it can lead in developing new types of material, such as aluminum and titanium, states Dr. Cyril Stanley Smith, Massachusetts Institute of Technology, Cambridge.

Almost every type of metal alloy used at the end of the 19th century had been discovered and used more than 4,000 years earlier, he reported in *Science* 148:908, 1965.

The many methods of handling materials such as clay, paint and metals were discovered and used by ancient man out of sheer curiosity and delight in trying many things.

The Etruscan goldsmith in 600 B.C. knew how to raise granules in intricate designs on gold bowls, even though he did not understand the scientific processes.

The Korean craftsman in the 11th century A.D. could create a graceful water jar of inlaid and glazed ceramic ware, even though he did not know that the wonderfully soft reflection of light was due to innumerable tiny internal bubbles skillfully nucleated by control of composition and temperature, and preserved by exploitation of the high viscosity of feldspathic glaze.

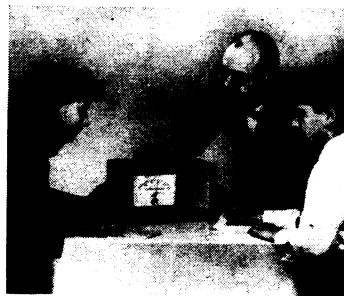
The role of science has been to explain these intricate methods and to provide better control, rather than to open up new areas, believes Dr. Smith, who regrets the tendency of today's scientific specialists to feel no interest in the richness of their materials such as the ancient artisans felt.

Today's modern worker, specializing in molecular and electronic energies, is trained to look intellectually at the unitary parts of the material's behavior, rather than being concerned with a whole concept.

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