

THE SCIENCE NEWS-LETTER

A Weekly Summary of Current Science

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ISSUED BY
SCIENCE SERVICE

B and 21st Streets
WASHINGTON, D. C.

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SUBSCRIPTION: \$5 A YEAR, POSTPAID

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Vol. IV. No. 163

Saturday, May 24, 1924

TAMED INVENTIONS

By Dr. Edwin E. Slosson.

Coming inventions cast their shadows before. Some of the most useful of the gifts of science were first revealed to mankind in a malevolent rather than a benevolent aspect. But even the most destructive agencies may in the course of time be brought into the constructive service of the human race. As the wolf was tamed into the faithful dog and the wild elephant converted into a beast of burden so man may tame the engines of war and extract medicaments from the most baneful drugs.

Steel, man's most useful metal, made its appearance in the form of swords and spearheads for the killing of man. Now we employ it for the skeleton of skyscrapers and steamships.

Petroleum was first employed as "Greek fire" for setting ships on fire. Now it is employed as fuel for the propulsion of ships.

The horse was employed upon the field of battle long before he was put to work upon the harvest field. He was first hitched to a war chariot and only later was he set to the humble and useful task of pulling a plow. Judging by the Egyptian and Assyrian inscriptions the Chariot was the first wheeled vehicle, but this developed in the course of centuries into the cart, the carriage, and the car.

The most efficient of the ancient road builders, more efficient indeed than most modern peoples, were the Romans, and their famous system of highways, connecting the frontiers of the empire with the forum of the capital, was designed for armies, not agriculturists.

It has often happened in history that what was designed to kill is retained to cure. Many of our modern medicines were employed by savages for poisoning their arrow points. Strychnine and aconite had this ill omened origin. Another arrow poison, obtained by the savages from cassava juice, is hydrocyanic acid, which in the hands of the modern metallurgist extracts nine-tenths of the gold supply of the world.

Arsenic, which during the Renaissance was the fashionable means of poisoning people, is now used for the more laudable purpose of poisoning plant, pest and the parasites of man.

Distilled alcohol, introduced by the alchemists under the misleading name of the "elixir of life", has done untold harm to the race. Yet when our gasoline supply runs short, alcohol may prove to be our main reliance for autos and airplanes. Once the world stops drinking it we will have alcohol to burn.

We owe our wireless to the late war, and the art of aviation, which played an important part in that conflict, has not yet found a place of importance in civil life.

Government itself is a war baby, born from the need of unified control in time of danger. The earliest rulers were the chiefs who defended their folk against attack or led them on predatory raids against their neighbors for the procurement of booty, especially women and children.

Government, once started as a war measure in emergencies, proved useful for the maintenance of order and the promotion of the general welfare, and hence came to be regarded as indispensable to civilization. But war remains the principal function of government even in the most peaceable of nations. Our own federal government in 1920 spent 93 per cent of its revenues on wars, past, present, and future, while devoting one per cent to scientific research and developmental work.

Never before has the world seen such feverish activity in scientific investigation and invention as during the Great War, never such liberal governmental support; never such enterprise and self-sacrifice on the part of the citizens. And so it has often been in the past. Mars has always been able to enlist the energies of man with more success than Minerva or the Muses. Shaw, who sometimes assumes the role of the devil's disciple, has in his "Man and Superman" put into the mouth of Mephistopheles a caustic comment on war as a stimulus to man's inventive powers.

"I have examined Man's wonderful inventions. And I tell you that in the arts of life man invents nothing; but in the arts of death he outdoes Nature herself, and produces by chemistry and machinery all the slaughter of plague, pestilence and famine. The peasant I tempt today eats and drinks what was eaten and drunk by the peasants of ten thousand years ago; and the house he lives in has not altered as much in a thousand centuries as the fashion of a lady's bonnet in a score of weeks. But when he goes out to slay, he carries a marvel of mechanism that lets loose at the touch of his finger all the hidden molecular energies, and leaves the javelin, the arrow, the blowpipe of his fathers far behind. In the arts of peace Man is a bungler. I have seen his cotton factories and the like, with machinery that a greedy dog could have invented if it had wanted money instead of food. I know his clumsy typewriters and bungling locomotives and tedious bicycles; they are toys compared to the Maxim gun, the submarine torpedo boat. There is nothing in Man's industrial machinery but his greed and sloth; his heart is in his weapons."

But, as we have seen, the bright ideas that have been struck out of man's brain in the clash of conflict may persist to enlighten the race. "God hath made man upright but they have sought out many inventions" for the purpose of doing injury to their fellow-men, but often these have, like Balaam's curse, turned out to be blessings. Though we may regret that science should so often

show her sinister side, yet we must agree that civilization does sometimes go forward by riding on a powder-cart.

WOMAN ARCHAEOLOGIST DOES OWN DIGGING

There are few real pick-axe archaeologists among women, but Mrs. Earl Morris has dug for prehistoric remains with her own small hands and has ridden alone into dark, unexplored canons, seeking signs of remote occupation. With her husband, who is an archaeological explorer for the American Museum of Natural History, she recently returned from New Mexico to New York, bringing trophies which students of America's ancient history will admire when they are placed upon exhibition.

"They were really my find, weren't they, Earl," Mrs. Morris demands, pointing to two fine turquoise pendants which are one of the expedition's proudest and most significant discoveries. Mrs. Morris's specialty, however, are Basket Maker sandals, and to the study of these she is now giving most of her time.

The Museum's excavations at the Aztec Ruin, New Mexico, are being conducted chiefly with a view to obtaining light upon the three periods called, respectively, the Basket Makers, the Post Basket Makers's, and the Pre-Pueblo. Although the Basket Makers, who flourished 4000 or more years ago and antedated the Cliff Dwellers by several thousand years, had not learned to fashion pottery, yet they displayed fine craftsmanship in the manufacture of baskets and sandals woven of yucca fibre and ornamented with intricate and beautiful designs whose colors have survived the centuries. All of the specimens in Mrs. Morris's collection are obviously intended to adorn small feet.

It was one hot day last November, when all were digging in dust-masks, that her spade opened the site which was to yield those turquoise pendants. The expedition was feeling rather discouraged. They had found no valuable skulls. And archaeologists are not happy unless they find skulls. Finger-bones don't "get them much forrarder".

"I'm going to try once more," declared Mrs. Morris, and taking her shovel she went down the slope to a spot which the other scientific diggers had abandoned. Soon the earth crumbled. Thrusting in her hand she touched bones. "And you cannot imagine the thrill of discovering that there were not one but three skulls!" She had come upon a prehistoric cemetery, but a great fire at some period had destroyed baskets and textiles, leaving only bones. The Canon del Muerto, where this exciting event took place, is a hundred miles from a railroad, in the north-eastern corner of New Mexico.

Under the devastated cemetery lay two skeletons, upon their breasts the turquoise ornaments. These are the earliest examples of turquoise mosaic that have been found in our Southwest, and are easily 3,000 years old. They were the burial adornments of an old woman and a young man of the Basket Maker people, and are made of bits of turquoise and abalone set in wood.

"You can see from remains which that dry climate has almost mummified that the Basket Maker ladies wore bobbed hair," Mrs. Morris points out.