Mound-Builder Weavers

The art of weaving was known to the Indians who built their mounds in Indiana centuries ago, as it was to their compeers of the Hopewell area in Ohio and to the greatly different Indian civilizations of the Southwest. On opening a leather pouch containing a number of copper bracelets excavated from the mound he is exploring at Winchester, Ind., F. M. Setzler found three layers of woven cloth. The Indians knew how to make more than one kind of fabric; for part of the material was finely, part coarsely woven.

Very little woven work by mound-builders has come down to us, because in the damp earth of the mounds it had no chance to be preserved from decay. The pieces which have been recovered have without exception been preserved by contact with copper objects, which formed verdegris, checking the action of fungi and bacteria of decay.

Science News-Letter, October 12, 1929

Boulder Monument

An "old settler" of 400,000 years ago will be utilized by the city of Lawrence, Kans., as a monument to old settlers, and was dedicated October 11, when the city celebrated its 75th anniversary.

The "old settler" thus used is a quartzite boulder, weighing some 23 tons, that was brought by the glaciers to the Kansas river from South Dakota, or perhaps from northeastern Nebraska.

Use of the boulder served to call attention to the fact that the Kansas river marks approximately the extreme limit of the second ice cap, which centered in northern Canada, and extended over much of the north central part of what is now the United States.

Dr. R. C. Moore, head of the department of geology at the University of Kansas, explained that whereas geologists once thought that the "erratics" or boulders of material not found in a given region, had been brought from the north frozen in the bottom of icebergs, it is now believed that they were rolled along, or carried in the bottom of the glacial ice streams.

Science News-Letter, October 12, 1929

The Field Museum has received several great "coral trees" weighing three or four tons each, brought from the Bahamas by a recent expedition.

Rockets for Space Voyages

Voyages through space, from the earth to the moon, or to other planets, are forecast by the recent successful demonstration in Frankfort of a rocket-propelled airplane. In May, 1928, Fritz von Opel, German automobile manufacturer, demonstrated his rocket automobile. Now, after further experiments, he has built an airplane, propelled by the same means, and shown that it is capable of flight.

Interesting as the method is, there is little likelihood that it will ever become a serious competitor of combustion engines in terrestrial vehicles, or airplanes for use in the lower portions of the atmosphere. The rocket depends for its propulsion on the kick given by the explosions. It uses its fuel, whether gasoline, hydrogen and oxygen, or explosives, very rapidly, but only a small amount of the fuel's total energy is available to furnish the necessary "kick". In other words, the rocket has a low efficiency. Where the same fuel can be used to apply energy to the ground, as in the automobile, or to the air, as with the airplane, it is better to use the wheel or propeller to obtain traction.

In getting through the space between the planets, containing less air than in the vacuum of an incandescent lamp, however, the situation is very different. There no air, ground or water is available against which to push and the rocket is the only known means of propulsion. The kick of an explosion is just as powerful in a vacuum as in the air, for the push is against the gases formed by the explosion. In fact, in a vacuum, the rocket would tend to travel somewhat faster, because of the lack of atmospheric resistance.

The theoretical investigations upon the practical uses of the rocket were begun by Prof. R. H. Goddard, American physicist at Clark University, Worcester, Mass. Later mathematical studies were made on the same problem by Prof. Max Vallier of Munich, and Albert Mueller. The results of the latter were made available to the Opel company's engineers.

Some years ago Prof. Goddard startled the scientific world by publishing data showing the possibility of a rocket flight to the moon. These researches have been continued by him since then under the auspices of the Smithsonian Institution. His rocket, he figured, could travel at a speed of 6.6 miles a second, nearly 400 miles an hour. This speed would be sufficient to allow it to escape from the earth's gravitational attraction, and to take it to the moon in eleven hours. His idea was that the rocket would not carry a passenger, but would bear a charge of flash powder, to explode upon impact at the moon's surface. This great flash could then be observed on earth.

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Liquid Propels Rockets

Development of a liquid propellant for rockets that will make possible airplanes much faster than those of the present day is announced by Prof. R. H. Goddard, of Clark University. Prof. Goddard was asked to comment on the recent experiments in Germany with a rocket propelled airplane. His statement follows:

The recent rocket plane in Germany raises the question as to just what bearing this result may have on aviation. According to German aeronautical journals, these rocket auto and airplane experiments are being carried out along the lines of the experimental work that I performed at Clark University in 1916 and which was published by the Smithsonian Institution in 1919.

These published results described expansion nozzles of eight degree taper, electrical ignition by wires through these nozzles and the system of using bundles of similar rockets, all of which are now in use abroad.

A plane equipped with powder rockets, however, has an extremely limited cruising radius unless it is used as a rocket glider. If, on the contrary, liquid propellants are used, capable of supplying a large amount of energy compared with an equal weight of powder and the amount of propellant carried is large compared with the weight of the rocket plane itself, some very surprising distances can be covered in a much shorter time than with an ordinary plane. The development work on liquid propellant rockets planned abroad is unnecessary as my work under the Smithsonian Institution has already produced liquid propellant rockets that operate.

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