

ARCHAEOLOGY

# Rosetta Stone of Prehistoric Mississippi Valley Found

## Small Bowl and Other Louisiana Discoveries May Link Shadowy Mound Builders With Indians of Recent Times

**D**IGGING into an Indian mound at Marksville, La., archaeologists have found a "Rosetta Stone" of American prehistory, and evidence which may at last link the mysterious and shadowy Indian Mound Builders with Indian tribes of recent times. The discoveries are the result of a cooperative venture between the Smithsonian Institution, the city of Marksville, and the Emergency Relief Administration of Louisiana.

Frank M. Setzler, archaeologist of the Smithsonian Institution, has just returned from Marksville, where he directed the mound excavations at the city's invitation. Crews of 50 to 75 men drawn from the city's unemployed assisted in the project of exploring three Indian mounds and reconstructing them to their original ancient appearance. The mounds and a curved line of earthworks are features of a city park development.

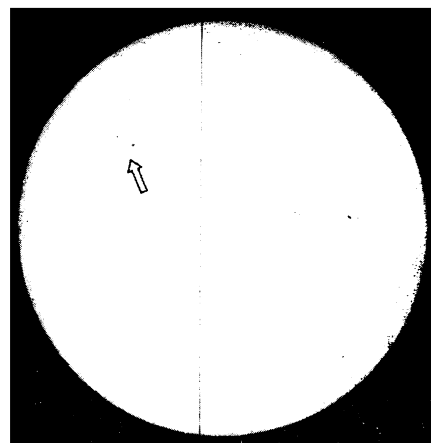
The object which Mr. Setzler likens to a Rosetta Stone is a small bowl of unusual shape and intricate decoration. The Rosetta Stone of the Nile bore the same inscription in known and unknown writing, and thus Egyptologists learned to read the hieroglyphics of Egypt. The Mississippi Valley's "Rosetta Stone" bears two kinds of art designs—known and unknown. One is the art style of the well-known Hopewell Mound Builder culture that flourished in the Mississippi Valley around Ohio. The other is an art style new to archaeologists. It had been seen on a few objects found in the South before, but it was like an unknown language, in that no one knew definitely what sort of people made such art or where they belonged in the prehistory of the South. Finding the known and unknown art combined on one bowl is pronounced convincing evidence that there was a southern variation of the Hopewell culture which existed contemporaneously with it and was closely allied.

The bowl almost looks as though the potter had made two generous halves of vases, each decorated in a distinctive

manner, and then had joined them in a twin form.

One mound explored by Mr. Setzler at Marksville was a burial mound, which originally contained some 30 graves. Parts of some skeletons, almost completely disintegrated, were found, and most of these were remains of young children.

The manner of burial was quite distinct from the tombs in Ohio's Hopewell mounds, Mr. Setzler found. A platform of clay was built by the Indians. After several years a pit was dug in the center for the graves. Then a vault of vertically placed logs was built around the pit and roofed with small oak limbs and layers of bark and wild cane. After that, the vault was covered by the mound to a height of 20 feet. Only the imprints of the logs and bark and other construction features remain to show the unusual construction of this ancient tomb. A few Mound Builders were buried in this central vault. Oth-



SUNSPOTS

*This group of spots, indicated by the arrow, is the most important observed at the U. S. Naval Observatory in several months and may belong to the new cycle. This photograph was taken Oct. 29; the black line is a north-south marker.*

ers were buried in shallow pits dug in the raised platform around the vault. In all cases the bodies had been placed upon and covered with bark.

The important vase with dual-decorations was found in this mound. Other contents included broken platform pipes, additional pieces of pottery with the southern and northern style of art design, and a single fragment of copper, perhaps a bracelet, which shows that these southern Indians like the Hopewell people had the cultural advantage of using copper. (Turn Page)

ASTRONOMY

# Observations Show New Sunspot Cycle Begun

**T**HE NEW cycle of sunspots has now begun.

Dr. Seth B. Nicholson of Mt. Wilson Observatory, Calif., has observed two spots opposite in magnetic polarity to the old procession of gigantic disturbances on the sun that have held sway for the past ten and a quarter years. This was announced by the Carnegie Institution of Washington, of which the Mt. Wilson Observatory is a part.

One spot was seen on the last three days of October, while another very small one was observed Oct. 10. It is now the time of sunspot minimum. The sun was nearly inactive in July and August, slightly active in September and

nearly inactive in October. The new family of spots now beginning will continue to troop across the sun's face for nearly eleven years.

J. D. Phenix, astronomer on the staff of the U. S. Naval Observatory, Washington, who photographs the sun about noon every day when the weather is clear enough, observed a group of spots near the solar meridian on Oct. 26, which were not seen Oct. 25. Following a parallel about eight degrees north of the sun's equator, they moved slowly toward the edge of the sun, at the same time dwindling in size, and appeared last in the daily photograph taken Nov. 1.

*Science News Letter, November 11, 1933*

That the newly discovered Marksville culture may belong to the oldest of all the mound building cultures in the Mississippi Valley is the conjecture of Mr. Setzler. The objects seem older in type than those in the northern part of the valley. How old they may be he prefers not even to guess. Perhaps fifteen centuries old, he hesitatingly says, just to give a vague idea. From this southern center the Mound Builder culture may have spread.

Hope of setting in order the cultural events in the Mississippi Valley looks promising, Mr. Setzler believes, with Marksville yielding a very old Mound Builder culture that seems to merge into the famous Hopewell culture that moved north. And to carry the story on toward modern times, at another Louisiana site, James Ford, Mississippi archaeologist, has found the sequence of Hopewell culture, followed by what is known as Coles Creek type of culture, and in Mississippi by prehistoric Tunica Indian culture and then finally by Tunica Indians of historic times.

Efforts to link the Mound Building tribes definitely with known historic Indian tribes have heretofore yielded little satisfactory information. But now the line of heredity seems to be traceable, and by more scientific excavations in the southeast the tribes that evolved from these ancient Mound Builders will be known.

*Science News Letter, November 11, 1933*

#### METEOROLOGY

### Chilly, Droughty Winter Indicated for California

CALIFORNIA is in for another winter with temperatures below normal and little rain. Thus Dr. George F. McEwen, Scripps Institution oceanographer, has interpreted the trend of weather-making factors off the West Coast, following his custom of the past several years, in which he has scored a high percentage of hits. He was right regarding both low temperature and scanty rainfall for the winter of 1932-33.

The coming winter is not expected to be as chilly as last year's, he says, though it will still be below normal in temperature averages. On the other hand, the precipitation trend indicates a drought even more severe than last season's. Values of seasonal precipitation, as he has calculated them, range from 60 to 85 per cent. of the average.

*Science News Letter, November 11, 1933*

#### ENGINEERING

## Streamlining Saves Power Of 1933 Automobiles

### But Most Rakish Current Model Still Has Twice as Much Air Resistance as Completely Streamlined Motor Car

THE AUTOMOBILE of 1933 consumes 30 per cent. less power in overcoming air resistance than its predecessor of 1928, wind tunnel measurements on models by R. H. Heald of the U. S. Bureau of Standards show. This improved performance comes as a result of the modern trend toward streamline form. The tests showed, however, that the air resistance of the 1933 car is still more than twice that of a completely streamlined car of the same frontal area.

The aerodynamic characteristics of six small scale replicas, ranging from one-quarter to one-fifteenth natural size, were studied in the wind tunnel at air speeds from thirteen to seventy miles per hour. These six models were a 1922 sedan, a 1922 touring car, a light sedan of 1928, and of 1933, and two models of the autos of tomorrow. The 1933 model was a composite model and not an exact duplicate of any actual make. It was equipped with disk wheels, exposed bumpers, fenders, headlights and spare tire. One model of the auto of the future differed from it in having the windshield inclined at a 45 degree angle, the top rounded front and rear, and a general smoothing of lines. The other model of the future presents a radical departure in design; the whole upper structure is rounded, blunt in front and tapered to the rear so that it resembles a section from a thick airplane wing. The wheels of this car are enclosed in the body.

#### Air Drag Devours Power

Mr. Heald measured the resistance offered by these models to air currents of known velocity and from this data he obtains the so-called drag coefficients which express the aerodynamic efficiency of the model. These coefficients ranged from 0.0017 for the 1922 sedan, 0.0018 for the 1928 sedan, 0.0014 for the 1933 sedan to 0.0005 for the ultramodern car of the future.

The significance of these figures can be more readily appreciated when these

drag coefficients are converted into horse-power consumption for an actual automobile. At a speed of 60 miles per hour air resistance devours 27 horse-power for the 1922 sedan, 33 horse-power for the touring car of the same period, 26 horse-power for the 1928 sedan, 18 horse-power for the 1933 sedan, and 8 and 6 horse-power for the two streamlined models. The slight improvement of the 1928 model over those for 1922 is due, not to any improvement in aerodynamic design, but to a reduction in frontal area, and to a lesser extent this is true also of the 1933 car as compared to the 1928 model.

At 48 miles per hour the power consumption due to air resistance is only half of that at 60 miles per hour while at 76 miles per hour it is doubled.

#### Great Saving at High Speeds

A very striking feature of Mr. Heald's results is the prediction that the 1933 automobile, shorn of its projecting bumpers, headlights, and spare tire, fitted with a sloping windshield and a rounded top, would consume 10 horse-power less at 60 miles per hour, and about 20 horse-power less at 70 miles per hour. The saving in gasoline would be of considerable importance for those who cruise at these speeds.

The completely streamlined, aerofoil type as represented in the most advanced of Mr. Heald's models, offers a further slight improvement in performance but this would only be of practical significance at considerably higher speeds. However, Mr. Heald points out that an automobile body of this shape would act like an airplane wing and at high speeds would produce a lifting force. The effect of this lifting force on performance has not yet been investigated.

*Science News Letter, November 11, 1933*

Carrying a refrigerator out into the field to the corn was the means adopted by scientists who wanted to study resistance of corn to cold in the field.