

# THE SCIENCE NEWS-LETTER

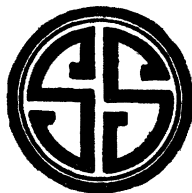
*A Weekly Summary of Current Science*

EDITED BY WATSON DAVIS

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EDWIN E. SLOSSON, Director  
WATSON DAVIS, Managing Editor



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## ANCIENT EARTHQUAKES REVEAL ANCESTORS OF MAYA RACE

The forerunners of the wonderful Maya civilization in Central America have been discovered. Earthquakes which long ago shook Guatemala may enable archeologists to shove American pre-history back many thousands of years, and thus a new era ripe for archeological research will be revealed.

Such are the probable results of a three months reconnaissance survey of unknown Guatemala just completed by Dr. Manuel Gamio, leading Mexican archeologist, working under the auspices of the Archaeological Society of Washington. Dr. Gamio is now on his way to Washington, where he will study the material he has collected and will prepare a scientific report of his exploration trip.

The survey was for the purpose of determining whether Guatemala is a promising field for pre-Maya explorations. The first reports confirm the conjecture that the Guatemala highlands would yield evidence of ancient human occupancy, dating back to long before the time of Christ.

What happened in the central region of American before the rise of the Maya, the Toltecs, and the Aztecs is literally "pre-history". From time to time clay and stone fragments of great antiquity have been found in Central America, but archeologists have vaguely termed them as "Archaic" which means only that they belong to an age and a people that distinctly preceded the Maya.

In a report to the Washington Society, Dr. Gamio states that he has made several trial excavations, digging through seven strata of deposited soil, each layer being about 20 inches thick. In these deposits he found numerous fragments of pottery and clay sculptures. Many of these are of the Archaic type. There are a few Maya finds. Also, some of the pottery shows signs of a gradual transition to the ceramic style of the Maya, indicating that the two types may have blended or that one developed into the other.

Geography, and earthquakes in particular, are helping in this tracing of early Mayan history. Exploring this unsettled region, Dr. Gamio has found evidence that "the Maya, able constructors of lofty and complicated edifices, did not, if one may judge from appearances, build anything in the high zones affected by earthquakes. They confined themselves to the lower and above all to the coastal regions, where shocks were not experienced."

Buildings of the Maya remain standing in Guatemala today. Dr. Gamio suggests that probably these careful builders profited by the earthquake experiences of the

earlier and more primitive people, because the makers of the Archaic pottery had established their settlements with careless disregard of earthquake zones.

It is not yet determined, however, whether these early inhabitants built such simple homes that they did not fear the rocking of houses and the falling of walls, or whether there were fewer earthquakes in that part of the world then.

The part played by earthquakes in the wanderings of these prehistoric American tribes is being closely studied by Dr. Gamio, who says that earthquakes have had a marked influence on the development of human life.

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#### CRYSTALLINE INSULIN REQUIRES LONG STUDY

Insulin has been reduced to a purity so great that it comes down out of solution in the form of minute crystals, that shine like bits of uncut diamond when viewed through the microscope. Yet this result has not satisfied Dr. John J. Abel and his corps of co-workers at the school of medicine of the Johns Hopkins University. They expect to spend the coming two or three years, at least, investigating the properties of these crystals.

The insulin used in medicine is effective clinically, Dr. Abel told a representative of Science Service, but it has been recognized from the first that chemically it is far from being a pure product. Most chemical compounds indicate the attainment of a state of real purity by forming regular crystals, and nobody had been able to get crystals of insulin. The trouble was, Dr. Abel explained, that the insulin was all mixed up with a lot of other unknown substances that would precipitate at very nearly the same electro-chemical state of the solution.

Beginning with the ordinary insulin used in medicine, Dr. Abel and his associates passed it through an elaborate series of precipitations with various chemicals and repeated solutions in weak acetic acid. The crystals that come down at the last stage are very small. After settling out at the bottom of the flask they were picked up with a fine-pointed, rubber-tipped medicine dropper. The process of manufacture is so slow and difficult that months of work have resulted in the preparation of only a few hundred milligrams of the precious stuff.

This pure crystalline insulin is extremely potent, Dr. Abel states. One milligram of it, or a bit as large as a rather small grain of sand, has as much power to reduce blood sugar as is possessed by 100 clinical units of the solution used in medical practice. One fiftieth of a milligram will throw a  $4\frac{1}{2}$  pound rabbit into convulsions, which are quickly cured, however, by injecting a little sugar solution into the rabbit's veins.

Whenever a chemist succeeds in refining a natural compound to a purity that will result in crystal formation, the next step is usually expected to be the analysis of the crystals, with a view to the possible manufacture of the compound by artificial means, so that a perfectly uniform product may be obtained at a lower price. But Dr. Abel states that a year or more of work must intervene before the analysis can be completed. The synthesis of the compound will undoubtedly be a matter of