er that it will start approaching the sun again, to disappear from the evening skies in a few months.

Mars, much fainter than Venus, is still nearer the sun, but may be glimpsed in the late evening twilight. On the twentieth, Venus makes a close approach to the moon, then a slender crescent, three days past new. At 8:19 p. m., eastern standard time, Venus will be just two minutes of arc, about a fifteenth of the moon's diameter, to the south, so that it should make a most interesting sight. On the twenty-second at 2:48 p. m., eastern standard time, the moon passes almost as close to Saturn, the planet then being seven minutes north of the moon. This will happen in the afternoon, for people in the eastern part of the country, when the planet is not visible, but after dark the two will still be close together.

The moon is full on the second, at last quarter on the tenth, new on the seventeenth and at first quarter on the twenty-fourth. This will mean moonlit evenings from the first to the fourth and from about the twenty-second to the end of the month.

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FORESTRY

Warfare Ends Against White Pine Disease

PROTECTION of thousands of acres of white pine from the ravages of blister rust is one of the accomplishments of the Civilian Conservation Corps in the past few months.

Blister rust control was the major job of 35 conservation camps in northern Idaho, where vast acreages of western white pine are threatened. Seven thousand young Conservation Corps workers were distributed through the heart of the best white pine country in and adjoining the Coeur d'Alene, St. Joe, and Clearwater National Forests, working on government, state and private lands.

Control work was also done in the Lake States and in the Northeast, on national, state and private forest lands, and to some extent in portions of the national forests in Pennsylvania, Virginia, West Virginia, and Tennessee.

In the northern Idaho operations each strip covered was marked by a string line and the crews working in that section this season used 40 tons of cotton twine, laying out some 56,000 miles of line.

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ARCHAEOLOGY

Mayan History Revised By Mexican Archaeologist

Expedition to Inaccessible, Majestic Ruins of Palenque Convinces Authority There Was Only One Empire

By SR. LUIS ROSADO VEGA,

Director of the Archaeological and Historical Museum of Yucatan and Director of the Expedition of Palenque.

A RESEARCH expedition has just been completed to the remote ruins of the Maya city of Palenque, in the heart of the jungle in the State of Chiapas, Mexico. The ruins represent the most interesting and beautiful group of the very ancient Maya-Quiche civilization, perhaps the most notable on the American continent.

The expedition was organized and directed by myself, accompanied by Miguel Angel Fernandez, archaeologist of the Department of Monuments in Mexico City; Alberto Escalona, civil engineer and author of notable works on Mexican native civilizations; and the painter, Carlos Camara, who is especially interested in Mayan art.

The expedition's main object was to establish the route followed by Mayan Indians in their pioneer and colonizing migrations, and to rectify certain mistaken theories.

Palenque's ruins, whose beauty has been compared to that of the Parthenon of Greece, rise majestically at the foot of the southern Sierra Madre, a range of mountains crossing from Guatemala into the Yucatan peninsula where they disappear. The ruins offer an imposing sight in the midst of that wild scenery.

Over Forty Temples

More than forty temples are in the group of ruins, and there is the famous so-called "Cross of Palenque," subject of an extensive bibliography by archaeologists of all the world. Many opinions about Palenque and the cross are based on references or data not altogether correct, as difficult traveling in the jungle makes it uncomfortable to reach Palenque and few have visited it. Among these few are professors of Tulane University and the Carnegie Institution of Washington.

Much has been said about the "Cross of Palenque," a beautiful structure simulating a perfect cross, wonderfully carved. Some have asserted it to be a Christian cross. But after this expedition, I refuse to accept this possibility, considering it entirely superficial. It is more likely a representation of the four cardinal points, which would be logical considering that the Mayas were devoted to astronomy and were highly developed in that line.

From studies by the expedition, certain opinions heretofore considered as facts by modern archaeology are rectified. We found reason to deny the existence of a division splitting the great Maya civilization into an Old Empire and a New Empire, which supposes the archaeological groups to be, first the Old Empire in Central America, including Palenque, and later the New Empire in the Yucatan peninsula.

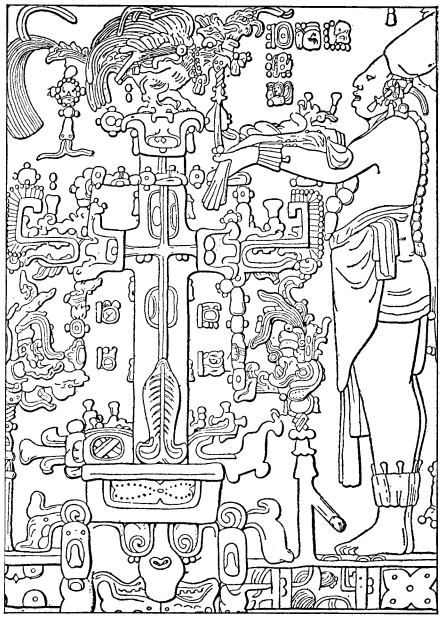
Not Older Than Yucatan

That Palenque by no means represents a period older than monuments found in Yucatan is sufficiently demonstrated by many points: the general characteristics pertaining to Mayan monuments such as pyramidal construction on terraces or truncated pyramids, the hieroglyphs entirely alike in all the groups, the shape of the ceilings, the seats placed according to astronomical calculations, and last, the perfect construction of the monuments in Palenque which is the cause of the beauty of fresco, sculpture, and carving.

What seems probable is that the Mayan tribes lived in the same period of art and civilization, not those of the north following those of the south. This does not deny that cities were built or lost at different times, but the artistic and structural rhythm is always the same.

There was only one civilization with slight differences manifested according to environment.

From Mexico City, we followed the logical route that would have been taken by the Mayan tribes from Central America to Yucatan. From a starting point called Nine Hills, the group of



CROSS OF PALENQUE

A line drawing representing a portion of the tablet of the Cross.

people who were the origin of the Mayan civilization are supposed to have left the Mexican regions and spread through Central America. They founded first the large city of Copan in Honduras and then Quirigua in Guatemala and Palenque in Chiapas and then spread to populate the banks of the great Usumacinta River until they reached Tabasco, and thence they proceeded to Campeche where they founded great communities whose ruins can be seen. Then they went on to Yucatan, leaving along their course monuments whose ruins still cause the admiration of the traveler.

This route is in perfect accord with my thesis, in the sense that there was no Old and New Empire but only different places where branches of the primitive group settled, and it is well to have in mind that not the group as a whole migrated, but colonies, so to speak, each went their own way.

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Quiet since the first few days of the month, the Caribbean celebrated the departure of October by breeding another pair of twin tropical storms, one of which passed on up the Atlantic seaboard, bringing an abnormally warm addition to Indian Summer. This pair of storms, neither of which is as severe as some of the season's earlier hurricanes, constitute numbers 19 and 20 of the 1933 family of tropical disturbances.

CHEMISTRY

New Rayon Fiber to Retain Strength Even When Wet

NEW USES for cellulose that will greatly extend its present wide industrial applications were predicted by Dr. Gustavus J. Esselen, Boston chemical enginer, in an address before the Franklin Institute.

This fundamental stuff of all plants and trees, contained in cotton, wood, cornstalks, etc., and already used in making paper, rayon, guncotton, lacquers, non-shatterable glass, transparent wrappings and a host of everyday things, will find applications that have not yet been visualized by anyone, Dr. Esselen said. He declared that a special type of rayon fiber that rivals silk in appearance and strength even when wet will soon be developed commercially. So far other characteristics of this experimental cellulose fiber have prevented its wide introduction into the textile industry.

Technical literature and patents are recording at an increasing rate new chemical derivatives of cellulose, many of which Dr. Esselen expects will appear in industry within the next five or six years. Already cellulose esters are available that have very unusual resistance to both acids and alkaline solutions, and reports are being heard with increasing frequency that new mixed esters with greatly improved properties are being developed.

There is an increasing popularity of synthetic fibers made from cellulose acetate instead of from the regenerated cellulose of which most of the "artificial silk" of commerce has been made. The cellulose acetate process for making rayon was the last of four methods to achieve commercial importance and at first its high cost deterred its wide use. Recent price reductions, Dr. Esselen explained, have allowed it to come into wider markets.

"When rayon, or artificial silk as it was then known, first began to attract attention in this country, a committee of silk manufacturers was appointed to study this new competitor and report on its possibilities," Dr. Esselen said. "After careful deliberation it finally concluded that the possibilities were distinctly limited and that it would probably be short lived.

"Yet in 1931 there was actually 60 per cent. more rayon than natural silk used in the United States and this year the proportion in favor of rayon is probably even higher. Rayon, however, should not be looked upon as a substitute for silk, but rather as unique fibers with distinct and valuable properties of their own. These fibers may be used alone in fabrics; in conjunction with cotton to furnish an attractive decorative effect; or with wool to produce pleasing new fabrics of lowered cost.

"In 1910 the production of rayon in the whole world was only about ten million pounds and none was being made in the United States. In 1931 the production here amounted to about 144,000,000 pounds.

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