The history of the Mayas, founders of a great pre-Columbian civilization in Central America, is slowly emerging from the tropical jungles which have buried it for more than 300 years. It is of direct interest to foresters because of the important effect of ecological principles on Mayan agriculture. The earliest date deciphered in the Mayan region was June 16, 68 A.D., found on a stone stela in the ruined city of Uaxactun, shown above.

Fourteen centuries before Columbus' voyage of discovery, forest clearing for agriculture presented its problems to an American race. The history of the Mayas, founders of a great pre-Columbian civilization in Central America and southern Mexico, is slowly emerging from the tropical jungles which have buried it for more than three hundred years. This history is of direct interest to foresters and others because of the important effect of ecological principles on Mayan agriculture, and ultimately, it is probable, on the very existence of Maya centers of culture.

The earliest date deciphered in the Mayan region was June 16, 68 A.D.,
the date having been found on a stone stela in the ruined city of Uaxactun. From this date to the time of the Spanish conquest in the 16th century, more than forty Mayan cities were founded, the largest and perhaps most important of which was Tical, estimated to have had a population of a quarter of a million or more.

Examination of records left by them in sculpture, architecture and hieroglyphic writing and contemporary writings of Spaniards and Mayas educated by Spaniards, indicates that these people had developed a truly great ability for scientific and artistic attainment. Their calendar, considered by some students of archaeology to be the greatest scientific achievement of any race on the same cultural level, was more accurate than the Julian calendar used by Imperial Rome. It was so accurate that in the course of 3,800 years there would be an error of only about two days. That a primitive, isolated people could develop the skill in mathematics, astronomy, and logic necessary for the working out of such an accurate system of chronology, is almost unbelievable. Incidentally, three dates have been found recording periods of more than a million years—the one at Tical is for five million years. Apparently the Maya conception of the age of the earth was more logical than any other up to the 19th century.

The Maya sculpture and architecture, as exemplified by the ruins of Yaxchilan, Copan, Uxmal, Chichen Itza, and many other cities, was of a high technical and esthetic order. This fact is more remarkable when one realizes that their stone carving was done without the aid of metal tools.

Practically the entire Mayan culture—art, science, and religion—was built up around agriculture and its vital importance to the race. In fact, it is possible that the Mayan civilization never would have existed had it not been for the discovery and domestication of the maize plant, or American corn. Without this staple crop, there would probably have been
A close view of the Temple of the Warriors at Chichen Itza as it now stands after evacuation and repair by the Carnegie Institution of Washington.

no leisure class to work out the problems of science and mathematics, nor would there have been available the surplus manpower of the lower classes to do the manual labor of erecting the temples and other buildings.

Their agriculture was of a simple sort. It depended on the natural fertility of the soil built up by the original forest cover. In December or January the head of the Maya family selected an area of forest which he considered suitable for his next corn crop. He then joined with several of his neighbors for the clearing operation. Before actual work started, it was considered necessary that the group spend a night in vigil and fasting, in prayers and sacrifices to the gods of earth and forest in order that the work might receive divine approval. Then the group went to the milpa, or field, of each of the members in turn, and started clearing. That the clearing was a task of no mean proportions is indicated by the fact that stone axes were the only tools these people had. The larger trees were killed by girdling; the slashings were left to dry under the
The ruins of Chichen Itza, believed to have been founded not later than 530 A.D. by colonists from the Old Empire region of the Maya to the south and southwest. In this region, the author points out, Maya culture was built around agriculture, which depended on the natural fertility of the soil supplied by the original forest cover. When this fertility was destroyed by the practice of burning the forests, he maintains the Mayas started on their period of decadence.

Hot spring sun of the tropics. Early in April, after offerings to the wind gods, and prayers that they "play with the flames" and assure a good burn, the slash was fired. Just as the rainy season started, the farmer planted the seed by making a hole in the ground with a sharp stick, placing a few maize grains in it, covering the hole and heaping a little dirt over it with his foot. From then on until the harvest time the farmer was free for other pursuits, probably for conscripted labor on buildings or other public works.

After the crop was harvested, the area was likely to be unfit for another planting the next season because of the thorny scrub that grew up after the fire. It was then necessary that the land lie idle for from
two to six years until there was a sufficient accumulation of brush for another fire, when the process was repeated. At every repetition of this cycle the land became poorer and the crop smaller, until the area was covered with coarse grass and unfit for other crops. It was necessary then to find more virgin forest to destroy before further crops could be grown.

The following modern Mayan prayer, from The History of the Maya, to his ancient gods is expressive of his hereditary sentiments and fears regarding the destruction of the forest: "O God, my mother, my father, Huitz-Hok, Lord Hills and Valleys, Che, Lord Forest, be patient for I am about to dirty you—to destroy your beauty. I am going to work you that I may obtain my dily bread. I pray you suffer no animal to attack me, nor snake to bite me. Permit not the scorpion nor wasp to sting me. Bid the trees that they fall not upon me, and suffer not the ax or knife to cut me, for with all my heart I am about to work you."

There was one phase of Mayan history for which archaeologist have found no adequate explanation. That was the wholesale abandonment of the cities of the southern portion of the Maya area, and the emigration of whole populations to Yucatan. This emigration occurred during the 6th century A.D. Various explanatory theories have been advanced; for example, epidemic disease, climatic changes, war, earthquake, religion, or soil exhaustion. Wholesale soil depletion resulted from repeated cycles of cropping and burning in excess of the capacity of the forest to reproduce and replenish soil fertility. Once a whole great population, the only alternatives were starvation or emigration. The same process is going on among the Mayas of Yucatan today on a small scale, and would probably result in widespread soil exhaustion if the population were anywhere near as
large as it was a thousand years ago.

The "New Empire" of the Mayas in Yucatan had already started on a period of decadence at the time of the Spanish conquest. Among the Maya of today the glory of their ancestors is but a vague memory.

Is it not possible that the story of the Maya's rise and fall may carry a lesson for modern advocates of periodic forest burning?