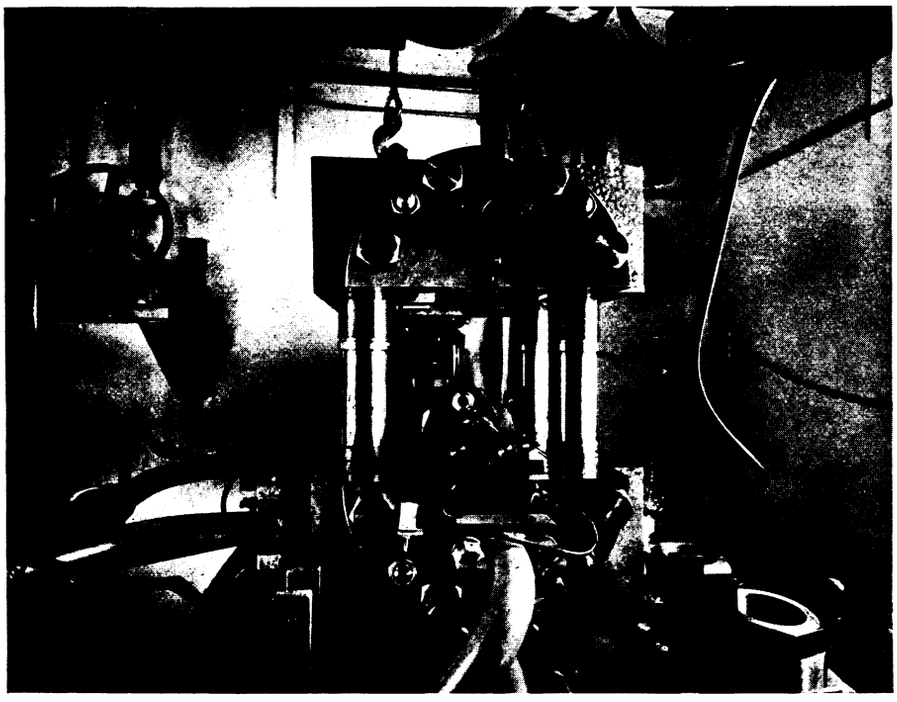

ULTRACENTRIFUGE

This apparatus, which whirls solutions with forces equal to 250,000 times the force of gravity, is now in use industrially by the du Pont company. For the photograph, the upper part of the housing has been removed to show the rotor, cell chamber and end of bearing.

ARCHAEOLOGY

Spotlight Focusing on Mayas; Great Discoveries Expected

THE SPOTLIGHT of discovery is focusing on the land of the Mayas. It looks as though news of ancient America's greatest civilization would break there soon.

An expedition is already digging in the very region where the most learned students of America's past have pointed, as the likely birthplace of the magnificent Mayan civilization. And that is in the highlands of Guatemala, south of Mexico.

Expeditions heretofore have unearthed ruined cities of the Mayas in jungles of Yucatan and Guatemala. They have revealed these ancient Indians as master builders, astronomers, mathematicians, and inventors of a writing system. Belated respect is paid the Mayan calendar. It was more accurate than the calendar of Spain, when the Spaniards arrived in America and set about civilizing the benighted savages.

But what has baffled science is to explain when and where so extraordinary a civilization got its start.

So, the expedition of the Carnegie Institution of Washington, which has launched on a campaign to explore mounds in the highland region, in the suburbs of Guatemala City, is being closely watched.

It was in the hill country, by the generally accepted theory, that the Mayas or their forefathers learned to plant corn. And when they became stable farmers, then their star rose and they began to build massive temples to the gods and to practice the arts and sciences.

At the site chosen for digging, discoveries have already been reported by Dr. A. V. Kidder, expedition leader. A stucco pyramid, three times rebuilt, and tombs containing pottery of great interest, are the initial finds. How old will the site turn out to be?

Potsherds found at the same site some years ago were hesitantly pronounced "early." Since then, archaeologists have accumulated more knowledge for establishing the antiquity of Mayan remains, as far back as the history has been pushed. The oldest known Mayan city, Uaxactun, goes back to several centuries before Christ.

Before the present expedition began its work, Dr. Kidder summed up the strategic importance of the highland impressively in these words:

"The significance of the Guatemala highlands can hardly be overestimated, for in the mountain valleys should be found the remains of the early groups whose culture, according to the hypothesis held by most authorities, either through movement of people or by diffusion, fathered that of the Maya."

Science News Letter, April 11, 1936

PHYSICS

Powerful Ultracentrifuge Is Built Commercially

NEW RESEARCH equipment which whirls solutions with such velocities that the centrifugal forces developed are equivalent to 250,000 times the force of gravity has just been installed at the du Pont Experimental Station, Wilmington, Delaware.

The apparatus, known as an ultracentrifuge, works on the same principle as the old-fashioned cream separator. High speeds of revolution, however, make the device capable of creating forces so powerful that molecules and sub-microscopic particles can be separated out of their solutions.

The high-speed rotor of the ultracentrifuge is revolved by a turbine driven by a blast of oil. At the normal operating speed of 60,000 revolutions a minute the tip of the rotor is moving with a velocity of 1,200 miles an hour; this is one and one-half times the muzzle velocity of a 22-caliber rifle bullet.

The device is a commercial adaptation of the apparatus first developed by the Swedish scientist, Prof. Thé Svedberg who won the Nobel Prize in Chemistry in 1926.

Prof. Svedberg has been able, in his laboratory models of the ultracentrifuge, to obtain rotor speeds of 160,000 revolutions a minute and create forces equivalent to 1,100,000 times that of gravity. (*SNL*, Aug. 4, 1934.)

In America at the University of Virginia, Prof. J. W. Beams and his co-