containing thigh and hip bones. These discoveries suggested that the unknown Teotihuacanos perhaps practiced cannibalism. Apart from these, diggers unearthed obsidian razor blades, arrowheads, statues, paved streets and scores of proofs that Teotihuacan was undoubtedly the largest city in pre-conquest America.

But there is yet to be indisputable proof of the identity of the early civilization which mysteriously abandoned the city. Later it was inhabited by the Toltecs and the Aztecs, although the original empire must have been far larger than that established by the Aztecs some 500 years later.

Some archaeologists claim the early Teotihuacan civilization flourished from around 160 to 330 A.D., although others hold that city was already thriving in an unknown pre-Christian year.

Certain experts claim that Teotihuacan was dedicated to Quetzalcóatl, the plumed serpent, which would make the culture Nahuatl. But full examination of current finds, including a curious mongoloid funeral mask and almost a half million archaeological pieces, will take years. Even then the mystery may remain: Why did a people who built such an astounding city abandon it, and disappear?

There are indications that the ancient civilization traded with tribes in Guerrero, Oaxaca and Veracruz, with the Mayas of Yucatan and even with Honduras and southwestern areas of the United States. Murals, discovered in a 1901-1908 exploration, might have been a valuable clue in pinpointing the civilization, but these were lost because no adequate protective measures were taken.

Some investigators speculate that the abandonment of Teotihuacan was caused by climate changes resulting from the felling of trees, or to a devastating religious war. Even the date of the disappearance is uncertain, with estimates ranging from 800 to 1116 A.D. It may be that impoverished soil may have caused abandonment, and a drifting south of the people to fuse with the Mayan race. Plague, too, might have been responsible for the mass exodus.

The mysterious race had a highly advanced culture, including exceptional facility in pyramid construction by unknown means. The pyramids reveal the ancient dwellers of Teotihuacan had knowledge of astronomy and that they may have been sun worshippers; they also had a proficiency in metallurgy.

"We have not given up the attempt to solve the riddle of the Teotihuacan pyramids," archaeologist Acosta says, "despite the invasion of buses and tourist cars driving up and down among still unfinished diggings."

Emil Zubryn

CANADA

Diagnosing Brain Disorders

An alignment device that permits more accurate techniques of diagnosing certain brain disorders through the use of ultrasound has been designed by the National Research Council of Canada.

According to designer Arthur Hudson, an engineer with the Radio and Electrical Engineering Division of NRC, it should make more simple and reliable the operation of A-scan echo-encephalography.

A-scan echo-encephalography is a term borrowed from radar to describe the method of presenting information gained via ultrasound on a cathode ray tube screen.

In general, this involves sending a microsecond pulse of ultrasound into the head and recording its echoes.

Low intensity ultrasonic energy will propagate through living human tissue; when it encounters a new kind of tissue, some of the energy is reflected. This reflection accurately locates hidden surfaces.

Echo-encephalography got its start in 1954 when Lars Leksell, a Swedish neurosurgeon, reported the use of pulsed ultrasound to reveal lateral shifts in certain structures which normally lie in the medial plane of the brain. Today, hundreds of hospitals throughout the world use Leksell's method to spot pathological conditions within the skull, notably hematoma following injury, certain brain tumors and hydrocephalus.

The drawback to A-scan echo-encephalography is that practitioners must be highly skilled—usually neurosurgeons.

An operator looks for evidence of a significant shift of the cerebral midline structures. Such a shift would be indicative of a local swelling of the brain which could be caused by a tumor.

It is generally agreed that the midline echo has the highest amplitude and is the most persistent of the echoes seen. What makes its amplitude and persistence unreliable as a sure means of identification is the fact that it can be confused with other high amplitude echoes sometimes seen on the screen.

According to Dr. D. Naldrett White, head of the Medical Ultrasonics Research Group at Queen's University, with whom Hudson has been in collaboration, the problem with A-scan echo-encephalography "can best be described as a surfeit of riches." An abundance of echoes can be obtained by any operator who places a transducer on a human skull—wherever he places it and at whatever angle he chooses. The question is: Which echo comes from which surface?

To help overcome this defect, Mr. Hudson has developed a transducer mount which has two principal functions: to place the two transducers in contact with the patient's head in essentially corresponding positions, and to maintain symmetry of location while the operator searches for an acceptable echo display.

The design allows the operator four degrees of freedom in his search for midline echoes. He may move or rock the transducers in both the coronal and horizontal planes without having to disturb the symmetry of their placement.

In conjunction with the alignment device, Hudson—in collaboration with B. J. Trollope—designed and built a four-trace simultaneous presentation echo-encephalograph, believed to be the first of its kind in use.

Hudson feels that A-scan's comparative simplicity and low cost will make it greatly useful as a preliminary screening device.

He points out that radiologists no longer take their own X-rays nor neurologists their own electroencephalograms. "This development should help to place A-scan echo-encephalography on the same basis," he believes.

Tom Weissman

AUSTRALIA

Divert Rivers Against Drought

As a severe drought extends its grip over the southeastern half of Australia, desperate state governments are planning to divert rivers in emergency attempts to bring in water. Wheat crops are down by half in at least three states, and conditions worsen every month.

In Victoria, the drought is the worst in history. Water from the Goulburn and Murray rivers is to be channeled into the Wimmera-Mallee irrigation system, which consists of more than 6,600 miles of channels serving some 11,000 square miles of land. At present the reservoirs in the system hold only one-tenth of their capacity of 618,000 acre-feet.

Water from the Goulburn will be supplied through existing channels, according to state officials, while from the Murray it will move through two channels now being built. The new system should allow up to 60,000 acre-feet of water to be piped to the northern part of the Wimmera-Mallee system during 1968.

Similar drought conditions exist in South Australia and New South Wales. Only one dam in New South Wales still holds a satisfactory supply of water, and that dam is operating at only 67 percent of its effective capacity.

W. A. Scholes