

From the Institution's laboratories of embryology in Baltimore comes a stage in the development of the monkey that has never been seen before. It is the living organism at the point where it is simply a hollow ball of cells filled with fluid, resulting from the original fertilized egg. At the stage shown, it is just ready to become attached to the maternal tissues, to begin its slow development leading to birth.

Folsom Man, whom archaeologists recognize as the earliest known American, but whom they have perforce left vaguely "in the air" as to date, is at last restored to a time in American prehistory. Edgar B. Howard who has made studies at Clovis, New Mexico, exhibited evidence that Folsom Man was present in America about 10,000 B.C. This is the age assigned on geological evidence to a lake bed at Clovis where some of Folsom Man's distinctive grooved stone spear-points were lost.

Mr. Howard also reports that America's oldest hunters, these Folsom Men,

used unique stone weapons. Their grooved darts, thin and leaf-shaped, are not matched by any Stone Age weapons found elsewhere in the world.

Electrical tides in the earth—great surges of electric current intimately tied up with the Northern Lights and magnetic disturbances—were demonstrated in a working exhibit by the Institution's Department of Terrestrial Magnetism. The earth currents affect compass needles and telegraph communication; the latter, in fact, was the means of discovering the currents in 1844.

Experimental studies in the Geophysical Laboratory on the actions of solutions under pressures as high as 180,000 pounds to the square inch, are disclosing new facts on such different things as the air man breathes, the human blood, beverages of all kinds, oil, gasoline, glass and the lavas flowing from volcanoes. All these are solutions having common broad problems.

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sion was supported by the discovery of the original Peking skull and by the subsequent finding of other remains. Now this fuller report of a larger number of individuals bears out the main concepts of our picture of Peking Man."

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SEISMOLOGY

Earthquakes in Pacific And South America

TWO EARTHQUAKES only ten hours apart shook widely separated spots on the bottom of the Pacific Ocean on Dec. 14 and 15. One was about 70 miles off the coast of Guatemala, the other in the neighborhood of the Solomon Islands. Locations of the epicenters were made by seismologists of the U. S. Coast and Geodetic Survey and of the Jesuit Seismological Association, St. Louis, on the basis of information transmitted through Science Service from a number of observatories in the United States and the Philippine Islands.

The Guatemalan quake began at 5:05.4 p. m., Eastern Standard Time, on Dec. 14; its epicenter was in approximately 14 degrees north latitude, 93 degrees west longitude. The Solomon Island quake started at 2:07.8 a. m., Eastern Standard Time, and was located in about 12 degrees south latitude, 161 degrees east longitude. It was rated as a strong shock.

Observatories reporting to Science Service were those of Pennsylvania State College, the University of Wisconsin, the University of Virginia, the Philippine Observatory at Manila, Georgetown University, St. Louis University, Canisius College at Buffalo, and the stations of the U. S. Coast and Geodetic Survey at Tucson, Ariz., and Honolulu.

"Back of the Andes"

Destruction may have come by earthquake, to villages on the "back of the Andes" near the Peru-Brazil boundary, on Friday, the thirteenth. But if the quake did bring ruin with it, the world will probably not have direct word for days or weeks, because of poor means of communication with that isolated part of the world.

The earthquake sent its own message, via tiny tremors through the solid earth, to half-a-dozen seismological observatories in this country. Their data, relayed by Science Service to the Jesuit Seismological Association in St. Louis and to the U. S. Coast and Geodetic

ANTHROPOLOGY

Peking Man Possibly Cannibal, Bone Examination Indicates

CANNIBALISM may have been a part of the regular life of Peking Man, recently discovered but already famous pre-Neandertal race of ancient China.

Indications to this effect have been uncovered by studies of Dr. Franz Weidenreich, who was professor of anthropology at the University of Frankfurt, Germany, in pre-Nazi days. Later he was at Chicago University, and is now conducting his researches at Peking Union Medical College, Peiping, China, as successor to the late Dr. Davidson Black, who first gave to the world detailed information about these oldest known human inhabitants of China.

The most recent issue of the *Bulletin of the Geological Society of China* contains a report by Dr. Weidenreich, stating that an exhaustive examination of a mass of bones and teeth found in Peking Man's first known home, the Chou Kou Tien caves, sorts them out as having belonged to 24 individuals. The count includes two children aged about five years, six about seven to ten years old, and four individuals between eleven and eighteen years.

The crushed condition of the skulls,

and the absence of all body bones, of both children and adults, suggests that not only might Peking Man have been a cannibal, but that he had an active preference for children. Since there is as yet no evidence of the existence of any other human race in China at the time of Peking Man, the inference is natural that he preyed upon his own kind.

Interviewed by Science Service, the noted English anthropologist Elliot Smith stated:

"It is quite possible that Peking Man was a direct forerunner of the Neandertal race, as Dr. Weidenreich suggests. There is nothing anywhere comparable with this numerous collection of individuals of such an early race. Piltdown Man of England and Trinil Man of Java are represented only by remains of single individuals. It is always a great problem to determine how far characteristics of any one individual can be taken as representing those of an entire race.

"This report should help to restore confidence in the work of anthropologists. From one tooth, Dr. Davidson Black postulated a new race. His conclu-

Survey, Washington, D. C., have been interpreted and a preliminary "fix" given to the epicenter, or point of greatest disturbance.

This is calculated as having been in latitude 6 degrees south, longitude 74 degrees west. It was a "deep-focus" quake, with the rock-slip that caused it occurring 350 kilometers (about 200 miles) beneath the earth's surface. Time of origin was 8:31.3 p. m., Eastern Standard Time, on Friday, Dec. 13.

This earthquake was recorded on instruments at the University of Califor-

nia, Berkeley; the University of Wisconsin, Madison; Canisius College, Buffalo; Georgetown University, Washington, D. C.; St. Louis University, and the observatory of the U. S. Coast and Geodetic Survey at Tucson, Arizona.

Several years ago, a severe earthquake "back of the Andes," that caused considerable damage and loss of life, reported itself through the seismographs a full three weeks before messengers on foot managed to struggle through the tumbled mountain ways and bring the news to the nearest telegraph station.

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PLANT PHYSIOLOGY

Movies Show Plants Dancing, Getting Dazed on Monoxide

Reverse of Slow Motion Speeds Movements of Plants To Make Visible Their Rhythmic "Dance of Life"

PLANTS moving with rhythmic grace as though in an esthetic dance, plants getting "blind drunk" on a whiff of poisonous carbon monoxide, featured a botanical movie show put on at a meeting of the New York Academy of Sciences, by Dr. William Crocker, of the Boyce Thompson Institute for Plant Research, Yonkers, N. Y.

In the "Dance of Life" pictures, the plants, being rooted, perforce emulated some of the modernist human dancers, who "move everything but the feet." They swayed and undulated from side to side, slowly raised their leaves in unison, like arms, and slowly lowered them again. Tips of twining plants circled like the heads of snakes. Roots "wormed" through the earth.

It was all done by the opposite of the process used in making slow-motion movies. In taking slow-motion pictures, the camera is run at greatly increased speed while taking, and the finished films projected at ordinary speed, thereby greatly slowing down the apparent rate of motion. In the films shown by Dr. Crocker, the "time-lapse" process was used. In this, the camera is set up in front of the plant and the motor-operated shutter is set for exposures at intervals of several minutes, hours or even days. In this way the plant's motions, imperceptible to the eye, are "condensed," and become evident when the film is projected at normal speed. The hundred days of a corn plant's life can

be packed into five minutes of projection.

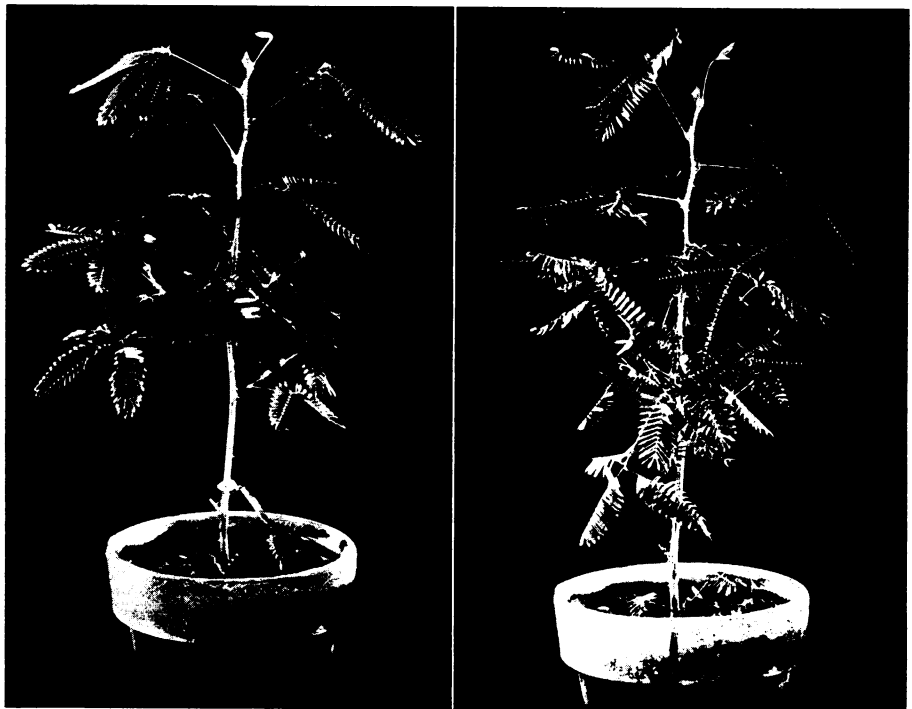
The graceful, sinuous "dance" of a growing plant is due to the fact that not all its cells expand at the same rate. Consequently, one side of the stem, or

leaf, or other organ is always growing a little faster than the other, and pushes the tip in the opposite direction. Then the other side grows faster for a while, and the plant sways the other way.

Plants were shown getting intoxicated on two different gases, ethylene and carbon monoxide. The first gas, which has been much used for producing ripe color on fruits, stimulating seeds and cuttings to grow etc., affects plants in very low concentrations. When used as a mixture of one part in a half-million of air, its first effect was stimulating. The growing tissues on the upper sides of tomato and sunflower leaf-stems grew faster, causing the leaves to turn downward. The youngest leaves were most sensitive, but soon the mature leaves "noticed" it also. Restored to clean air, the plants recovered and the leaves returned to position, though the older ones could not quite get back to normal.

Mimosas, or sensitive plants which can fold down their leaves when touched or otherwise stimulated, were so affected by carbon monoxide that they would not react, even to heat. They were like intoxicated persons who can be burned without noticing it. Yet their recovery by the morning after was complete, with no noticeable hangover.

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DIZZY FROM GAS

Just a mild dose of carbon monoxide (the poison that you get from automobile exhausts) turned the neat and dignified Mimosa, or sensitive plant (left) into the dizzy specimen on the right. But the plant was all right again next morning.