

## Pharaoh's Hard Heart

*Paleopathology*

The Egyptian ruler Merneptah, believed to be the pharaoh who pursued the Children of Israel in their flight from bondage, never took part in that strenuous scene, because he was a fat old man with hardening of the arteries and other infirmities. Some facts about the pharaoh's condition have been generally known, but the data has not been assembled and its full significance recognized, declares Dr. Roy L. Moodie, specialist in the diseases shown in ancient bones.

Dr. Moodie, who has been making intensive studies of Egyptian mummies and the present state of knowledge about the diseases of Egypt, points out that Merneptah was an old man when he mounted the throne in the thirteenth century B. C. His mummy, although shrunken to skin and bone, shows great folds of skin about the face, neck, and hips, thus proving conclusively that the pharaoh was an excessively corpulent individual. A fringe of white hair encircled his almost bald head. The cartilages of his voice box had become bony, and his teeth were in bad condition.

When this senile ruler sent his chariots and officers out in the name of "Pharaoh" to bring back the escaping Israelites, he himself must have remained in his palace physically disabled to the point where any exertion was painful and continued activity impossible.

The theory that pharaoh did not ride to destruction in the Red Sea was advanced when the mummy of Merneptah first came to light in recent times. Far from being drowned, he had been buried in the valley of the royal tombs, but he had been allowed little peace in death, as in life, for robbers seeking jewels had long since broken into his tomb and chopped great holes in the royal burial wrappings. Gaping wounds were cut in the body itself. When the body was unwrapped, Prof. G. Elliot Smith, who was present, examined the hacked mummy and pointed out that the heart of this famous character was quite literally "hardened."

Sentiment against examination of the royal mummies of Egypt is now very strong. But if X-ray examination by scientists is ever allowed, further light on the Pharaoh of the Exodus may be expected, Prof. Moodie believes.

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A copper carpenter's saw used in ancient Kish about 3200 B. C. was found recently.

## New England Earthquake

*Seismology*

Earthquake observatories as far away as Victoria, B. C., and West Bromwich, England, obtained records of the earthquake that shook New England and eastern Canada on the afternoon of Monday, November 18. With the aid of seismograph records collected by Science Service from these and other stations, experts of the U. S. Coast and Geodetic Survey have determined that the center of the quake was at 47.5 degrees north latitude and 58 degrees west longitude. This is a point in the Atlantic Ocean just south of Newfoundland and about 720 miles northeast of Boston. The shake occurred there at 3:22 p. m., Eastern Standard Time.

Despite the severity of the shock, it is the first one that has ever been recorded off the Newfoundland coast, said Commander N. H. Heck, chief of the earthquake section of the Survey.

"It is not wholly surprising that

### New Theory of Space

*Physics*

A new idea of what fills or makes space was presented to the National Academy of Sciences by Dr. F. S. C. Northrop, associate professor of philosophy at Yale.

It is "an entity which is atomic and physical in character, and so large in size and fixed in form as to surround and congest all the microscopic atomic entities of the traditional atomic theory."

Two contradictions exist in current physical theory which can only be met by amendment to present theory, Prof. Northrop declared. A new factor to replace the discarded absolute space is needed, he argued, because atomicity is an inescapable fact and to have atomicity there must be something to refer them to other than the particles themselves.

Modern physics considers that the structure of space is conditioned by matter and that this structure is uniform over large distances. Prof. Northrop found that matter as currently conceived is incapable of producing such uniformity. According to the relativity theory of Einstein, space is the relation between objects, he stated, and the particles of the traditional atomic theory on account of their motion and change can not be the objects determining space. He has therefore postulated a sort of super-atom filling and creating space.

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one should occur in this region," he added. "The rock structure there is a continuation of a formation that has been the seat of many earthquake movements farther to the west, in Nova Scotia and the St. Lawrence valley. On February 28, 1925, a severe quake occurred in the St. Lawrence region and was felt over the northeastern United States."

The recent quake was reported by seismograph stations at Georgetown University, Washington; Fordham University, New York; St. Louis University, St. Louis; University of Michigan, Ann Arbor; University of California, Berkeley, Calif.; the Coast and Geodetic Survey, Tucson, Ariz.; the Dominion Observatory, Ottawa, Canada; the Meteorological Observatory, Victoria, B. C., and the private observatory of J. J. Shaw at West Bromwich, England.

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### Used Hoofs as Trowels

*Paleontology*

Curious animals that once roamed the plains of Patagonia in South America and used their hoofs as digging implements were described before the National Academy of Sciences by Prof. W. B. Scott of Princeton University.

They belonged to a group known as the Entelonychia. Hitherto they have been known only from fossil skulls, but on a recent expedition E. S. Riggs of the Field Museum discovered some fairly complete skeletons, and it was from these that Prof. Scott learned of the strange modification of hoofs into digging claws. They were probably not burrowing animals, because they were much too large, but more likely used their hoof-trowels in digging up roots and tubers for food.

Another strange animal group represented in the same collections and studied by Prof. Scott were the Astropotheria. These had a certain superficial resemblance to the elephants. The skull indicates the presence of a long proboscis, the limbs are remarkably elongate and slender in proportion, the foot is five-toed and resembles that of the elephant in appearance, though not in the details of its structure.

Both these groups of animals lived in Tertiary times, estimated at ten or twenty million years ago.

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