

BIOLOGY

Living Organisms Found in Waters of the Dead Sea

LIVING organisms have been found in Dead Sea water, which has always been supposed to be utterly devoid of life of any kind because of its exceedingly high concentration of salt, potash, and other mineral matter. The discovery was made by Dr. B. Wilkansky of the Hebrew University of Jerusalem.

Dr. Wilkansky collected samples of water in the Dead Sea, at various depths to 22 feet. After suitable laboratory preparation, three microscopic forms of life were found: one consisting of yeast-like cells, one of short, rod-like cells, and the third in the shape of long, fine threads.

A brief account of the discovery has been sent to the British science journal, *Nature* (Sept. 12). Investigations are being continued.

Science News Letter, October 3, 1936

ANTHROPOLOGY

Man's Great-Uncle's Bones Found In An African Cave

FRAGMENTS of bone from a South African cave, described by Dr. R. Broom of the Transvaal Museum, may prove to be some of the most significant fossils thus far turned up by science in its long search for facts bearing on the natural origin of man. For sketches of these bits of bone, sent by their discoverer to Dr. William K. Gregory of the American Museum of Natural History, "suggest the right characters for the adult of Australopithecus or a nearly allied form."

Australopithecus, or "the Ape of the South," was first found in 1925 at Taung in Bechuanaland, by Prof. Raymond A. Dart of the Witwatersrand University, Johannesburg. The two fossils then discovered, a brain-cast and part of the bones of the face, were definitely those of an ape, but of an ape with more man-like characters than any previously known subhuman species, living or fossil. Australopithecus was apparently a real missing link.

Prof. Dart's specimens were those of a young animal, just cutting its first permanent molar teeth. It was therefore of less value scientifically than an adult animal might have been, because young apes and human children are always more alike than the adult forms become. Scientists therefore went on hopefully hunting for fossils that would tell the story of what Australopithecus

looked like after he had grown up.

By an especial stroke of good fortune, the newly discovered material described by Dr. Broom also includes a brain-cast, so that a direct comparison with the juvenile brain-cast of the earlier find can be made, and comparisons with the brains of human beings and the brains of apes will also be possible. With this very important cast were also parts of the skull base and a fragment of the upper jaw, both important in giving some idea of the shape of the animal's head and of the appearance of at least the lower part of its face.

The age of the formation in which the fossils were found may be pliocene, that is, the time just before the beginning of the world's latest great Ice Age, more than a million years ago. Since man's ancestry had already been well separated from the ape stock by the late pliocene at least (and indeed man may have definitely appeared by then) it is not considered probable that Australopithecus was a direct ancestor. He must be looked upon as a collateral relative—a great-uncle rather than a grandfather. But he appears to have been a more nearly related great-uncle than any other great ape yet found perching near the main trunk of the human family tree.

Science News Letter, October 3, 1936

ARCHAEOLOGY

To Explore Prison of Richard the Lion-Hearted

THE castle where King Richard the Lion-Hearted was imprisoned when he returned from crusading in the Holy Land, now only an imposing ruin, is to be excavated and restored as a part of an extensive project for the investigation of some of the historic castle ruins in the Rhenish Palatinate, undertaken by the German state of Bavaria.

This castle, still known by its ancient name of Trifels, came into possession of the German emperor, Heinrich IV, in the year 1081. During the reign of Heinrich VI it was rebuilt and extended; it was in this renovated castle that the famous English king was imprisoned, along with many Sicilian nobles.

From 1126 until about 1300, Trifels was the treasure house of the Imperial insignia. Here reposed the Emperor's crown, scepter, orb, imperial sword, ceremonial sword, and all the other bejeweled badges of office and power. Restoration plans include the rebuilding of the castle chapel, in which replicas of the ancient imperial insignia will be kept in state.

Science News Letter, October 3, 1936

IN SCIENCE

ZOOLOGY

Cape Buffalo Specimens Gathered for Philadelphia

SPECIMENS of the Cape buffalo, reputed to be even more dangerous to hunt than tiger or gorilla, have been secured for the Philadelphia Academy of Natural Sciences by R. R. M. Carpenter of Wilmington, Del., who has just returned from South Africa. To enable museum artists to construct a really accurate background for the mounted group, Mr. Carpenter and his party also collected specimens of the vegetation, stones, and even cans of earth, and made many careful sketches and copious notes and measurements.

Mr. Carpenter was not particularly looking for thrills when he went on his scientific buffalo hunt, but he got them just the same. On one occasion a herd of 80 charged first him and then Mrs. Carpenter, who was making motion pictures atop a hunting car at a little distance. Fortunately, both times the animals stopped before their charge went home. At another time, a herd stampeded past the inadequately sheltered hunter-scientist, so close that he could have touched some of the animals with his outstretched hand.

Science News Letter, October 3, 1936

BIOGRAPHY

Dr. T. H. Morgan Honored by University

DR. THOMAS HUNT MORGAN, one of America's most noted living biologists, Noble Prizeman in 1933, was honored by his Alma Mater, the University of Kentucky, in an all-day program on the occasion of his seventieth birthday. The events included a general convocation at the university in the morning, the placing of a bronze plaque at his birthplace in the afternoon, and an evening banquet of the Society of Sigma Xi, national honor organization for scientists.

The principal speakers were Dean Fernandus Payne of the Indiana University graduate school and President Frank L. McVey of the University of Kentucky. Dean Payne is a former pupil of Dr. Morgan.

Science News Letter, October 3, 1936

E FIELDS

ENGINEERING

Steel and Concrete Hold 8,000,000-Pound Load

See Front Cover

GIANT 24-foot long columns of steel and concrete have been tested at the National Bureau of Standards with equipment capable of exerting a maximum load of 10,000,000 pounds. As much as 8,314,000-pounds load was exerted on the concrete-encased steel columns while only 5,853,000 was applied to similar steel columns alone.

The increase in the average of the final maximum load, due to the concrete, was 42 per cent, report scientists Dr. A. H. Stang, H. L. Whittemore and D. E. Parsons of the Bureau. On the front cover is shown one column already encased in concrete and workmen building the mold for encasing a second column.

Science News Letter, October 3, 1936

BIOCHEMISTRY

Blood-Clotting Material Gotten From Blood Plasma

ABROWN-GRAY, shapeless mass of solid material obtained from blood by two Harvard University scientists, Drs. Arthur J. Patek, Jr., and F. H. L. Taylor, may hold the key to the solution of the problem of hemophilia. This is the hereditary bleeders' disease which threatens the life of the Count of Covadonga, one-time heir to the throne of war-torn republican Spain.

This brown-gray stuff when suspended in a solution of ordinary salt in a test tube, effectively hastens the clotting time of hemophilic blood, the scientists report (*Science*, Sept. 18). The ever-present danger to a person suffering from hemophilia is the fact that his blood clots so slowly he may bleed to death from a small cut. The report does not indicate whether this material would prove effective when injected into the veins of a hemophilia sufferer.

The material was obtained from plasma, the fluid part of blood. Both the solid material and plasma from normal blood are effective in hastening clotting of hemophilic blood. They evidently contain some as yet unknown substance which clots blood and which is

lacking or ineffective in the blood of hemophilia sufferers.

Efforts to identify this substance are now under way. Apparently, the Harvard scientists point out, it is associated with an already known blood constituent, prothrombin, or is a modification of prothrombin. Their studies indicate that it is not found in the blood platelets, minute bodies which have been considered important in connection with the blood clotting mechanism.

Science News Letter, October 3, 1936

PSYCHOLOGY

Brain Injury Makes Rats Less Variable in Choices

INJURY to the brain may actually be a help to an individual in performing some tasks, it was indicated by experiments reported to the Hanover, N. H., American Psychological Association meeting.

The individuals tested were only rats, and the task was to find a way through a maze, but the rats with injured brains were more successful because they naturally selected a monotonous unvarying pathway at the end of which lay their food. Normal animals prefer variations even when not always successful.

Among human beings a similar situation is seen when unintelligent persons are more efficient at monotonous routine tasks.

Although "lack of brains" may be an asset in a situation like this, it ordinarily would be a great hindrance to learning, said Dr. I. Krechovsky of the University of Chicago who reported the experiments.

Not only does such an injury decrease the variability of the animals—their ability to change their ways and adopt new courses of action—it also detracts from their ability to work out some general method of attack on a problem in the first place.

The extent to which division of labor takes place among different brain areas is indicated by the way in which monkeys recover from brain injuries in different locations. When the parts of the brain controlling movement are injured in the infant, the monkey can recover and learn to move about freely, Dr. C. J. Jacobsen of Yale University told the same meeting.

This recovery cannot take place in the adult monkey. Very different is the effect of injury to the frontal association areas believed to control thinking. Even the infant monkey fails to "come back" after such an injury.

Science News Letter, October 3, 1936

OCEANOGRAPHY

Record Deep Dive Claimed By Commercial Diver

DIVING experts of the U. S. Navy Department, while yet officially uninformed of the 510-foot descent of the well-known commercial diver, Roy Hansen, were keenly interested in the claimed record-breaking feat.

Hansen's descent, made in the deep, flooded quarry at Penargyl near Bangor, Pa., to rescue a boy from death, was possible through the use of an armored diving suit invented by Thomas P. Connolly of New York City. A check of Navy records showed no information on the detailed design of the Connolly diving suit used by Hansen.

Record descent with an armored suit in which actual work was done, said Navy officials, is the 410 feet attained by the Italian salvage company seeking the treasure aboard the sunken S.S. Egypt off the French coast.

However, they pointed out, inventors of armored type diving suits have claimed descents of 525 feet and more.

Navy record for the ordinary type of rubber suit is 306 feet made in Honolulu on the salvage of the submarine F-4 two decades ago. The British Admiralty has also claimed 345-foot dives in rubber suits.

King of all deep sea dives is, of course, the 3,028 foot descent of Dr. William Beebe on August 15, 1935, in the Barton bathysphere.

Dives useful for observational purposes and descents in which the diver performs actual labor are quite different things, point out the Navy's diving experts.

Even in the work on the S.S. Egypt with the armored suit, observation and instruction to the surface vessel was the main contribution of the equipment. The supposed flexible arms and legs on the Italian equipment were replaced, during operations, by a straight-walled container with the observing head structure superimposed. From within, the diver directed the placing of TNT charges about the *Egypt* and the direction of hooks and cables. The device served, in the main, as a pair of underwater eyes for the surface salvaging vessel.

Here is the way undersea descents look in tabulation:

Diving helmet	60 feet
Rubber diving suit	306 feet
Modern submarine (estimated)	360 feet
Armored suit (S.S. Egypt)	410 feet
Roy Hansen armored suit (claimed) ..	510 feet
German armored suit (claimed)	525 feet
Barton bathysphere	3,028 feet

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