

with practically no parts missing, show it to have been much smaller than modern 'gators and crocs—only 32 inches long. Its snout was rather shorter in proportion than a modern alligator's, much shorter than a modern crocodile's. It stood up on its legs in a little more lizard-like fashion, and it did not wear nearly so elaborate a suit of armor as any of its modern descendants.

And it had never heard of the Elephant's Child. There weren't any elephants then.

Science News Letter, April 28, 1934

EVOLUTION

Man's Use of His Hands Depends on His Legs

MAN OWES his tool-adapted arms and hands partly to his legs. His tree-dwelling ancestors probably had arms proportionately much longer, as tree-dwelling animals today mostly have. But when he dropped out of his arboreal home and began to walk about on the ground, his legs lengthened a good deal and his arms shortened somewhat, until they were of the present advantageous length for using tools and handling things.

This idea was put forth by Dr. Charles B. Davenport of the Carnegie Institution of Washington's Department of Genetics, located at Cold Spring Harbor, N. Y., in an address before the meeting of the National Academy of Sciences.

It is also a great advantage to man that his first ground-dwelling ancestors chose to walk instead of hopping like a kangaroo, even though the latter method of locomotion gets one about much faster. For leaping animals of that type have very much reduced arms, which would be of very much less use as tool-handlers.

Shadowed in Embryo

The ancestral history of man's limbs has its reminiscent shadow in the way they grow, before birth and during infancy. At first, the arms grow a little more rapidly than the legs, but some time before birth the legs overtake and pass the arms. At birth, the upper arm and forearm of a baby are about equal in length, but in later life the upper arm becomes the longer. Similarly, the thigh is at first no longer than the lower leg, but later on considerably surpasses it.

Science News Letter, April 28, 1934

EVOLUTION

Evolution Now "Experimental Fact"; Species Made to Order

"**O**RGANIC evolution is no longer an hypothesis. It is an experimental fact; new species have been built while we look on, and in some cases we know how they have been built."

With this challenging dictum, Prof. Edwin G. Conklin of Princeton University concluded the Penrose Memorial Lecture before the meeting of the American Philosophical Society, oldest of American science organizations, founded in 1727 by Benjamin Franklin.

Prof. Conklin's subject was "A Generation's Progress in the Study of Evolution." More progress has been made in the solution of evolution's riddles during the past quarter century than in all previous centuries, he declared.

The most fruitful field for the study of evolution, the speaker stated, has been found in the very heart of the cells. He said:

"Imagine the amazement and incredulity of the naturalists of a former generation who thought of evolution as the transformations of developed organisms under the influence of changing environment, if they could learn that today the great problems of evolution center in the structures and functions of the germ cells! And yet this is strictly and literally true. The germ cells are the only living bonds not only between generations but also between species, and they contain the physical basis not only of heredity but also of evolution.

"In the microscopic chromosomes

which are found in the nuclei of all cells, and in the ultra-microscopic inheritance units, or genes, which lie in the chromosomes are found the causes of heredity, mutation, and evolution."

By the manipulation of mutations, or sudden large changes, it has been possible to create actual new species, Dr. Conklin indicated.

"The most important advances of the past twenty years concern the causes of mutations, or inherited variations, which are the building materials of evolution," he said. "Among these causes are changes in the numbers and composition of the chromosomes of the germ cells and changes in the inheritance units or genes which lie in those chromosomes.

"In many plants it has been found that new mutations are caused by an increase or decrease of their chromosomes and in a few instances absolutely new species have been formed which breed true but are sterile with their parent stocks."

Science News Letter, April 28, 1934

PHYSIOLOGY

Acetyl-Choline May Prevent Benzene Deaths

THE MANY cases of sudden death due to benzene poisoning that occur each year in various industries where benzene is commonly used as a solvent

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may be prevented by an injection of the drug, acetyl-choline. This announcement was made before the New Haven Medical Society by Dr. Louis H. Nahum, of the Yale Medical School, who told of his work in this field with Dr. H. E. Hoff, also of Yale.

Benzol vapor, Dr. Nahum explained, produces an abnormal sensitivity of the heart to adrenalin, a common constituent of the blood, bringing about an irregularity in the heart beat which causes death. Adrenalin, incidentally, is sometimes injected into a heart that has stopped beating, in an effort to restore life. Excitement and physical activity predispose to the occurrence of sudden death by benzol vapor, the Yale scientists found. Excitement, moreover, is a condition in which the adrenal glands pour into the blood large amounts of adrenalin. Animals deprived of adrenalin did not die of ventricular-fibrillation, the fatal irregularity of heart action which appears to be the cause of death in benzene poisoning.

"We found, further, that an injection of acetyl-choline counteracted the action of the adrenalin and protected the animals against this fatal irregularity," Dr. Nahum said.

This finding, while important in itself, opens up a new field of investigation of the causes for death by heart failure. Adrenalin under abnormal conditions, one of them being exposure to benzol vapors, produces ventricular-fibrillation.

Whether other conditions, heretofore overlooked by physicians, predispose the heart to the lethal action of the adrenalin remains to be investigated.

Science News Letter, April 28, 1934

ASTRONOMY—PHYSICS

Corona May Be Seen Without Eclipses By Means of Television

ASTRONOMERS will not need to chase eclipses around the world for a fleeting few minutes in which to observe the sun's corona if a new method of observing the corona suggested to the National Academy of Sciences by A. M. Skellett of the Bell Telephone Laboratories proves practical.

Television apparatus promises to solve the problem of viewing the corona at any time that the sky is clear. Mr. Skellett's scheme is to scan the image of the sky around the sun's disk with an "electric eye" photoelectric cell in much the same way that a television image is obtained. The glare around the sun is caused by scattering of light and it prevents the seeing of the corona because it is many times brighter. This glare will produce, Mr. Skellett finds, a kind of photoelectric current in the television apparatus different from that of the light of the corona. It will be possible to sort out with electrical filters the high frequency components of the photoelectric current caused by the corona and then feed them into a television receiver which will reproduce the main features of the corona.

The method proposed has not yet been used upon the sun but Mr. Skellett has tested with success the essential features using television apparatus and bright lights in his laboratory.

The corona was photographed through the unclipped sun's glare by use of special photographic methods developed in Europe two years ago, but Mr. Skellett's method promises better results.

Mr. Skellett hinted that other uses for the television method of discriminating between conflicting lights of different sort are planned.

Science News Letter, April 28, 1934

MEDICINE

Football Bladder Keeps Man Breathing

A FOOTBALL bladder strapped to his chest has kept an almost completely paralyzed patient, S. Crosby Halahan, breathing continuously for the past six months, it appears from a report by Dr. Phyllis Tookey Kerridge of the London School of Hygiene to *The Lancet*. Dr. Kerridge has just designed a new apparatus to replace the football bladder.

Mr. Halahan is a man now 63 years old. He is suffering from a progressive wasting of the muscles which started in 1927. Although almost completely paralyzed he is still mentally alert and contented. By 1931 he began to have difficulty in breathing as a result of the gradual paralysis of his muscles.

From June, 1932, until September, 1933, he was kept alive by manual artificial respiration maintained continuously by relays of relatives and nurses. Then his friend, Sir William Bragg, Fellow of the Royal Society, designed a hand-operated machine for inflating a football bladder bandaged to Mr. Halahan's chest. In October, 1933, he designed hydraulic bellows for inflating the football bladder, which have worked successfully ever since, except once when the water froze.

An old injury to the right side of Mr. Halahan's chest has made it extremely sensitive to pressure, so Dr. Kerridge designed a rubber bag which surrounds the left side of his chest only and is now successfully taking the place of the football bladder apparatus.

Science News Letter, April 28, 1934

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