

ORNITHOLOGY

**Raven Flies Upside Down
"Showing Off" Before Mate**

A BOY aviator going into loops, barrel rolls, Immelman turns and other sky-acrobatics just because he knows his best girl is watching him from the landing field is only following a fashion set by the birds who taught men to fly in the first place.

Sky-pranking by birds engaged in courtship is not at all an uncommon thing. They will even fly upside down. In the British scientific journal, *Nature*, Sydney Evershed tells of a raven he saw doing just that stunt, evidently to impress or please his mate.

He writes: "The two birds were flying close alongside each other, as is the habit of ravens. As they were passing by, the one nearer to me suddenly, and without any warning action, rolled over sideways and after falling in a confused fashion ended on his back, some five or six feet below his mate. In this position, and without losing horizontal speed, he continued flying; or to describe more precisely what I saw, he remained on his back, flapped his wings, and traveled along in what appeared to be level flight. . ."

"After flying upside down for a considerable distance, the raven rolled over again and got himself right side up. . ."

Science News Letter, February 7, 1931

MEDICINE

**Man Expected to Die
Saved by Hormone**

CORTIN, the new hormone extract prepared in a Buffalo laboratory, has kept a man suffering from once-hopeless Addison's disease alive for over six months.

"When first treated this patient was not expected to live," stated Prof. Frank A. Hartman and Dr. Katherine A. Brownell who developed the hormone extract and called it cortin. "Positive proof that the extract keeps him alive has been shown by four relapses which have occurred due to the reduction of extract. A few hours after increasing the extract, following a relapse, improvement is evident and in two or three days recovery is complete."

The extract contains the vital hormone of the cortex of the adrenal glands. When this part of the glands is injured or destroyed, death follows.

Addison's disease, which is caused by destruction of this vital adrenal cortex, has hitherto always been fatal.

Early efforts to study cortical extracts were blocked because it was impossible to get an extract free from epinephrin, the hormone of the medulla of the gland. In 1927 Prof. Hartman and associates were successful in preparing a cortical extract almost entirely free from epinephrin. Last year they developed a method of preparing a concentrated extract.

Other scientists, however, had been working on the same problem at other laboratories. In March, before the Buffalo scientists had perfected their last method, Dr. W. W. Swingle of Princeton University and Dr. J. J. Pfiffner of the laboratory of the Long Island Biological Association announced a successful method of preparing a similar extract. This extract has been used at the Mayo Clinic by Drs. Leonard G. Rowntree and C. H. Greene, who recently reported that they were successfully treating cases of Addison's disease with it.

Science News Letter, February 7, 1931

PSYCHOLOGY

**Death Sentences Averted
By Psychology Tests**

HOW a psychological examination saved two young prisoners from the death penalty in Georgia has been reported by a University of Georgia professor to the American Association for the Advancement of Science.

The professor, A. S. Edwards, declared that so far as he knows the case is without precedent. A psychologist has no standing, as such, in the courts of Georgia. But this particular report has been accepted by the Prison Commission, and the Governor ordered the death sentence commuted to life imprisonment.

The prisoners, brothers eighteen and sixteen years old, were convicted of murdering a negro and his wife and were to die in October. Professor Edwards, looking at the case as a psychologist, reported that the two were only nine years old in mentality. Various relatives with whom they associated were insane. In their home they were surrounded by conditions of violence, immoral relationships, bootlegging, and other influences, which led the psychologist to declare that they "did not have fair chances to develop into law-abiding citizens."

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IN SCIENCE

ANTHROPOLOGY

**Caveman Magician's Art
Described by Breuil**

RESULTS of his study of three rock engravings in the Trois-Frères Cavern in central France have been announced by Abbé Breuil, noted authority on the art of prehistoric man.

There are 100 engravings on the walls in this set of caverns. The caves open one into another, leading into deepest darkness far underground. Some of the pictures were scratched and carved by the old artists and then lined in black to bring them into higher relief.

The three pictures especially examined are in a row. First comes a reindeer with front limbs ending in human hands. Next in line is a creature with a bison's head, a goat's loins, and human legs. This being looks, as if in fright, at the third which is also half man, half beast. This creature has a bison's head and fur set on a man's shoulders, and the body has a long mule-like tail. With such art, the sorcerers of ancient times wrought magic, particularly to aid hunters in the chase, it is supposed.

Science News Letter, February 7, 1931

ZOOLOGY

**Desert Mice Less Thirsty
Than Other Wild Mice**

THE WILD mice of deserts have learned to get along on less water than their relatives of moister regions. That, at least, is the indication of a discovery made by Dr. F. B. Sumner of the Scripps Institution of Oceanography and reported in the 1930 Yearbook of the Carnegie Institution of Washington, which has just been issued.

He found that the water requirement, per unit of body weight, of desert-dwelling varieties of deer-mice is less than that of other varieties within the same genus that have a wider distribution, living in humid as well as arid habitats. The differences, which have been traced for several varieties, are hereditary.

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E FIELDS

ARCHAEOLOGY

Egyptian Tomb Discovery Important to Science

THE TOMB of an ancient Queen of Egypt, which has now been discovered in the Ra Ouer tomb enclosure close by the Egyptian Sphinx, is a find of more than ordinary importance, Prof. James H. Breasted, noted Egyptologist, of the Oriental Institute, considers.

The discovery, reported to include the sarcophagus of the queen and royal household furnishings such as gold toilet articles, alabaster statuettes, a bed and other furniture, brings a group of valuable new materials to light, Prof. Breasted said. Besides the value of the discoveries themselves, the Ra Ouer tomb excavations are "of more than ordinary importance, marking the beginning of native Egyptian participation in archaeological research," he added.

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ENGINEERING

Engineers Question Manhattan Airship Mast

THE possibility of using the tallest of New York's buildings now under construction as an airship mooring mast is questioned in an editorial in the current issue of the *Engineering News-Record*, a leading civil engineering weekly magazine.

"Current sketches depicting the city of the future reveal the remarkable virility of the contemporary imagination," states the editorial. "In these drawings no limit is placed on the height or bulk of the buildings, and the airplanes and airships cruise in and out among the spires, landing in the streets or tying up to a convenient pinnacle. Subconsciously we want to believe in these pictures, and every opportunity to nurture our desire is seized upon.

"As a result, when the owners of a great building, like the Empire State Building in New York, top out their magnificent structure with a steel cage 200 feet tall and call it a mooring mast for airships, the idea falls on fertile soil.

"Apparently it is true that the base and main shaft of the mast are designed not alone for the expected wind load but for an extra horizontal load of 100,000 lb., which serves the purpose of lending credence to the airship-mooring claim. But it is also true that the top 25 ft. of the mast, where all of the mechanism for airship mooring would have to be installed, is a simple dome framework of radial roof trusses, incapable of anchoring a large dirigible. Unless present methods of airship handling are changed radically, there is little prospect that the elevators of the Empire State Building will be crowded with returning air voyagers."

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GEOLOGY

Ice-Age History Shows Four Cycles of Glaciers

THE glacial age, which we often speak of as though it were the oncoming of a single huge sheet of ice that sat on the American landscape for half a million years and then went away, was really a much more complicated affair. Dean George F. Kay of the University of Iowa divides the whole Ice Age, or Pleistocene period, into four chapters which he calls epochs, subdivided into shorter time units which he calls ages.

The whole epic of the Ice Age, Dean Kay said, can be read best on the broad prairies of Iowa, where he has worked for many years. Iowa and the adjoining states have furnished the names for the ages of drift or glaciation, from Nebraskan, the oldest, through Kansan, Illinoian, Iowan to Wisconsin, the most recent. Dean Kay's new names for his epochs are taken from the localities where each can be best studied. He calls them Grandian, Ottumwan, Centralian and Eldoran.

The time during which each succeeding sheet of ice covered the upper Mississippi valley seems to have been brief as compared to the long ice-free periods in between. Dean Kay estimated the total duration of glacial time in Iowa at a minimum of 30,000 years, and the total of all the interglacial ages at 675,000 years; a grand total for the whole Pleistocene, therefore, of about 700,000 years. The time that has elapsed since the last of the ice melted from the Iowa landscape he estimated at about 25,000 years.

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ENGINEERING

Little Waterwheel Does Big Power Job

See Front Cover

FORTUNATE are those countries which have small rivers falling rapidly, rather than huge slow moving streams. Electricity can be generated for these nations easily and cheaply.

To make electricity for Korea from the 2,000-foot fall of a mountain stream will be the life work of the Voith impulse water wheel shown on the front cover. Though its greatest diameter is just a little more than eleven feet and it weighs only eleven and a half tons; when turning at 360 revolutions per minute this simple wheel of steel develops 50,000 horsepower.

To produce 57,000 horsepower in this country at Spier Falls on the Hudson river a huge, slow turning water turbine, which weighs nearly ten times as much as the simple little Voith wheel, is required. It turns at 81.8 revolutions per minute under a head of 81 feet.

In only a few countries are there streams that fall far enough and rapidly enough for driving impulse turbines. Norway, Sweden and Switzerland have harnessed their falling waters to produce power in this manner and are noted for the quantity of electricity they use. Japan, too, is progressing in this respect.

At Lac Fully in Switzerland there is a hydro-electric power plant which operates under a head of 5,412 feet, more than a mile.

Science News Letter, February 7, 1931

GENERAL SCIENCE

Women Scientists Asked To Use Maiden Names

A PLEA that women biologists, when they marry, always continue to use their maiden names upon scientific publications has been made by Dr. T. D. A. Cockerell of the University of Colorado.

The increasing importance of the scientific work of women and the confusion that results from scientific references to the work of the same woman under two names, were advanced by Dr. Cockerell as reasons for his suggestions.

It would be possible for the woman scientist, if she wished, to add the married name: "By Mary Smith (Mrs. William Jones)."

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