

PSYCHOLOGY

Chimpanzee Excels Baby In Several Mental Tests

Ape Learned Faster and Remembered Longer Than Human Infant With Whom She Lived

AN APE brought up with a child in a human family is superior to her human "brother" in performance on a number of mental tests and experiments, the psychologist who performed the experiment, Dr. W. N. Kellogg, declared before the meeting of the American Psychological Association in Ithaca.

Motion pictures were shown by Dr. Kellogg, professor at Indiana University, of an infant chimpanzee and human baby learning to untie knots and performing other tests of their mental development. The two had been brought up together for nine months. The ape learned more rapidly, remembered longer, and for the first five months responded to more words than the boy, Dr. Kellogg said. The superiority of the ape was probably due in large measure to her strictly human environment, he believes.

Other experiments, however, reported to the same meeting by Dr. Louis W. Gellermann, of Yale University, indicate that infants and apes do differ in reasoning ability even at that early age. One of the tests he gave in identical fashion to two babies and two chimpanzees was to distinguish between a triangle and a square in order to secure food. Human babies have greater ability to discover the relationship between the correct food box and the shape of the marker placed above it, Dr. Gellermann found.

The chatter of the babies as they puzzled over the boxes showed that they learn not alone by trial and error, but by thinking out the problem in words. This superior ability to "verbalize" distinguishes the mentality of humans from that of apes, Dr. Gellermann indicated.

Birth Injury Causes Deficiency

Birth injuries must be blamed for the unfortunate plight of about one-tenth of the cases confined to institutions because of mental deficiency, it was revealed by a survey conducted by Dr. Edgar A. Doll, of the Training School at Vineland, N. J., in collaboration with Dr. Winthrop M. Phelps, and

reported by Dr. Doll to the American Psychological Association.

A total of 435 institutionalized cases of mental deficiency were studied, and with 44 of these the mental trouble was caused by an injury at the time of birth. Motion pictures were shown by Dr. Doll which indicated that a peculiar stiffness of the body and spasms or wriggling, particularly of the hands and feet, are characteristic of these birth-injured mental defectives.

No Fear For Cat Scent

If rats have an instinctive fear of their natural enemies, the cats, this fear is not aroused by the scent of the cat, results of an experiment conducted by Dr. Margaret Wooster Curti, of Smith College, indicate. Dr. Curti reported her work to the Association.

White rats which had been isolated from cats from birth were observed when they were allowed to see a cat without being able to smell her and also when they were allowed to smell the odor of a cat without sight of her.

The rats, although the cat was a total stranger to their experience, did show marked and definite response. But in no case did they show any clear-cut evidence of fear in response to the cat odor alone.

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TYPOGRAPHY

Oldest Printing Blocks Brought to America

THE OLDEST printing blocks in existence, brought from their homeland in China, have been added to the rare exhibits of an American museum. Acquisition of the historic relics by the Field Museum of Natural History, is announced by Dr. Berthold Laufer, curator of anthropology, who obtained them while on an expedition in China.

The blocks are engraved with floral designs. They were made at some time earlier than the year 1108 A. D., Dr. Laufer reports. They were found in the ancient city of Chu-lu in Chi-li province

in eastern China. This city, submerged by flood centuries ago, has been excavated by archaeologists.

"The Chinese are the inventors of block-printing, and, in fact, of all the essentials for printing—paper, writing brush, ink, and ink-pallet or ink-stone," said Dr. Laufer. "The Chinese invented and perfected these entirely from their own resources, unaided by any other nation. Paper was invented and manufactured in China as early as A. D. 105. Under the Sung dynasty, which held sway from 960 to 1279, the printing of books from wooden blocks was a flourishing art."

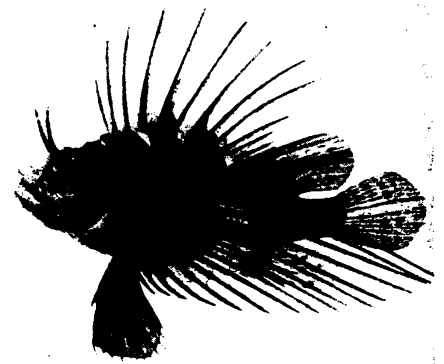
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PHYSICS

Discovery of New Energy Form Predicted

THE DISCOVERY of a new type of energy within the atomic nucleus was predicted at York, England, by Dr. C. D. Ellis, physicist of Cambridge's famous Cavendish Laboratory, who spoke before the British Association for the Advancement of Science. Dr. Ellis is an associate of Lord Rutherford. He presented evidence that the energy distribution of electrons emitted by radioactive atoms like radium upsets the principle of the conservation of energy. The principle has been considered fundamental to physics.

In attempting to find a way out of this dilemma, Dr. Ellis suggested that



ARMED WITH POISONED BLADES

Renaissance bravos fought with a sword in one hand and a dagger in the other, but the lion fish, a dangerous South Pacific species, has a whole armory of blades—and they are all poisoned. Moreover, they break off like the famed glass daggers of Venice when they have pierced the flesh of the victim, leaving the point in the wound to lacerate it further and insure more complete distribution of the poison. The specimen here pictured is at the Field Museum of Natural History.

possibly there would come the discovery of a new type of energy in the bodies that emit beta rays or electrons.

Dr. W. O. Richardson, famous British physicist, maintained that the meaning of energy is indefinite within the nucleus or heart of the atom.

Hope that neutrons, the recently discovered atomic particles, can be used to reveal the structure of the atomic hearts was expressed by le duc Maurice de Broglie, French physicist, who described a peculiar absorption of neutrons by lead. M. de Broglie visualizes the neutrons as waves and he believes that they interfere with the hearts of lead atoms and are thus absorbed differently than would otherwise be the case. Further experiments, he hopes, will elucidate just what is within the nuclei or hearts of atoms.

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ASTRONOMY-GEOLOGY

Pacific Not Big Enough To Furnish Moon

THE MOON didn't come out of the Pacific Ocean basin.

So says D. Artur Neuberg, of Meissen, Germany, in flat contradiction to a widely held theory, that pictures the earth as "calving" the moon out of the Pacific Ocean basin in some remote geological period.

Choosing one of three proposed methods for calculating the total volume of the Pacific Ocean basin, Herr Neuberg arrives at an estimate of approximately 700 million cubic kilometers (167 million cubic miles). But the moon, with a diameter of 3,480 kilometers, has a volume of approximately 22 billion cubic kilometers (5 billion, 240 million cubic miles). The Pacific Ocean basin is therefore about 31 times too small to supply all the material needed.

Even if the Pacific, Atlantic and Indian oceans, together with all smaller seas, were scooped out to make the moon, they would not yield nearly enough material. According to Herr Neuberg's calculations, their collective volume is roughly one and one-third billions of cubic kilometers (319,200,000 cubic miles), or only one-sixteenth that of the moon.

Herr Neuberg sticks to the theory held by another school of geologists, that the earth and the moon were shot off together from the sun as a single egg-shaped mass, which subsequently separated into a larger body, the earth, and a smaller, the moon.

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ARCHAEOLOGY

Golden Goats' Heads Found In Ruins of Old Persian Palace

FIVE mountain goats' heads wrought in gold are among the long-buried art treasures of a Persian palace at Damghan, now restored to the light of day by American archaeologists.

First cabled reports of the discovery to the University of Pennsylvania Museum at Philadelphia, indicate that the Persian treasures may rival those of the royal tombs of Ur. Ruins at Damghan are being excavated by a joint expedition from the University Museum and the American Institute for Persian Art and Archaeology, led by Dr. Erich Schmidt.

The sumptuous array of jewelry and ornaments includes necklaces and diadems of gold, vessels delicately carved in alabaster, copper weapons and accoutrements, and cones made of gold

and silver. All of these adorned the persons or the palaces of Persian royalty 3,500 years ago.

Dr. Schmidt's cable does not tell where the treasure lay, but the Museum staff assumes that it was in a room of a small palace discovered by the excavators.

This palace appeared to have been buried by a natural catastrophe, probably by a fire, commented Horace H. F. Jayne, director of the Museum. The art objects in the ruins would confirm this hypothesis, for precious metals, seldom escape pillaging enemies.

The Persian treasure opens up new vistas of history, Mr. Jayne declared. The golden goats' heads, in particular, are important because they suggest affinities with the Sumerians.

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ASTRONOMY-PHYSICS

Shrinking Atom Alternative For Expanding Universe Theory

THE theory that the universe is expanding at a tremendous rate might also be called the theory of the "shrinking atom," Sir Arthur Eddington, British astronomer, reminded members of the International Astronomical Union at their meeting in Cambridge, Mass.

"All change is relative," he declared after summarizing the evidence that the universe is doubling its diameter once in 1300 million years, about the length of geologic time as measured in rocks here on earth.

"The universe is expanding relatively to our common standards; our common standards are shrinking relatively to the size of the universe.

"We walk the stage of life performers of a drama for the benefit of the cosmic spectator. As the scenes proceed, he notices that the actors are growing smaller and the action quicker. When the last act opens the curtain rises on midget actors rushing through their parts at frantic speed."

Sir Arthur credited Americans with

the observational work that laid the foundation for the expanding universe theory, mentioning Slipher, Hubble and Humason by name. Prof. W. de Sitter of Holland gave the first theoretical hint of an expanding universe in 1917 and just as predicted, the remote spiral nebulae appear to be running away from us and the velocity of recession increases in proportion to the distance.

But, said Sir Arthur, "they are not avoiding us—everyone is having the same experience."

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ENGINEERING

Corrosion Fought to Save Money for Industry

A NATION-WIDE battle against the loss of millions of dollars each year by the corrosion of non-ferrous metals and alloys is being waged by the American Society for Testing Materials.