

PALEONTOLOGY

New-Found Fossil Jaw Of Extinct Ape-Man Child

COMPARISON between two fossil genera of remarkable man-like apes, *Australopithecus* and *Paranthropus*, found in South Africa in recent years has become possible for the first time through the discovery of a new bit of bone at Sterkfontein, S. A., by Prof. R. Broom of the Transvaal Museum, Pretoria. (*Nature*, May 17.)

The new fossil consists of part of the lower jaw, with teeth, of a *Paranthropus* baby, about four years old. This enables scientists to make comparisons with a fragmentary jaw of an *Australopithecus* child just a little older, already in the museum.

The teeth in the new-found jaw are astonishingly human, although the creature is known to have been an ape. The molars have the five cusps or points characteristic of human teeth, plus a tiny extra cusp also often found on human molars.

The teeth in both jaws are of course milk teeth. Dr. Broom remarks on the much closer resemblance they bear to human teeth of the same stage of development than to similar teeth in the young of great apes. The latter, he points out, have become more specialized than man's—have evolved farther away from the original parent stock.

Science News Letter, June 21, 1941

AERONAUTICS

Double Airplane Propeller Used on British Planes

BY USING two airplane propellers on the same shaft, which turn in opposite directions, British fighting aircraft have eliminated many of the difficulties involved in using engines up to 2,000 horsepower, which are now coming into use, to give speeds up to 400 miles per hour and more.

Successful use of the new type, known as the "contraprop," is reported in *Nature* (May 17). It is stated that the device has been particularly useful in the Fleet Air Arm, especially with planes operating from the deck of an aircraft carrier.

As airplane engines have increased in power, it has been necessary to transform this power into pull through the air. At first accomplished by making the propellers bigger, or by increasing the number of blades, a limit for such advances has about been reached, the *Nature* writer points out. However, using

two propellers, one placed behind the other, the difficulties are removed, and the design of the undercarriage is simplified, since the swing of the blades is smaller, and there need be less clearance to the ground.

Another advantage is elimination of "airscrew torque." When the propeller turns one way, the airplane tends to turn the other way. With a single-engined plane, there may be a tendency to swing to one side when taking off, but with the contraprop, one propeller's motion cancels that of the other. This is particularly important, it is said, for craft taking off from the confined space of an aircraft carrier, and also it increases the rapidity of certain maneuvers in the air.

The pitch of the blades in each propeller is adjustable, and there is a special control to permit either to be kept in operation if the other is damaged. For fighting purposes, a cannon can be fired through the hub. The weight of the entire contraprop, states the article, need be no greater "than a single propeller capable of absorbing equivalent power."

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ASTRONOMY

Third New Comet of Year Discovered in Java

FOR the third time this year, a new comet has just appeared in the sky, Dr. Harlow Shapley, director of the Harvard College Observatory, announced.

It was discovered, he said, by H. van Gent, of the Bosscha Observatory at Lembang, Java, on May 27, according to a cable message received from Dr. W. H. van den Bos, director of the observatory. When found, it was of the eleventh magnitude, too faint to be seen except with a fairly large telescope.

It was then in the constellation of the Southern Crown, which can now be seen from the United States very low in the south about 1:00 a.m., to the left of the hook-shaped figure of Scorpius. Slowly moving in a northwesterly direction, it may come into better view for northern countries, but whether it will brighten or get fainter cannot be told until more observations are made.

Earlier this year astronomers found two other new comets, as well as Encke's periodic comet. All three departed without being visible to the naked eye in the United States, though one of the new visitors was conspicuous in southern countries.

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IN SCIENCE

RESOURCES

Aluminum for Defense Hits Bird Banding

AMERICA'S aluminum defense needs have created a problem for bird-banding scientists and amateurs, who use thousands of tiny aluminum bands each year.

Manufacturers have material on hand to supply most sizes now to fit wild birds for scientific work, says Dr. Frederick C. Lincoln of the U. S. Fish and Wildlife Service. Beyond that, it remains to be seen whether aluminum can be made available for this purpose.

It takes about 800 pounds of aluminum a year for the little numbered bands which scientists attach to legs of birds in order to trace their migrations and wanderings. Dr. Lincoln weighed samples to figure it.

"We consider bird banding work one of the most important investigations of bird life, because of the specific information gained," he explains.

A larger quantity is used for bands of aluminum tubing attached to racing pigeons. Poultry breeders are also wondering about supplies of aluminum leg bands used in quantity to keep records of good breeding stock.

No substitute for aluminum for bird bands has yet been found, says Dr. Lincoln. In some experiments, copper corroded more rapidly. Monel metal was too stiff for fingers to handle and too costly. Plastics have never been adapted, chiefly for want of a method of stamping serial numbers and other data on the bands while heated.

Science News Letter, June 21, 1941

PHOTOGRAPHY

Daylight Flash Bulbs For Use with Color Film

FLASH BULBS are now available for color photography with the daylight type of color film. The inside of the bulbs are coated with a special clear, daylight-blue lacquer, which acts as a self-contained filter to convert the color temperature of the light from 4,000 degrees Kelvin to 6,000, the equivalent of sunlight. (*Wabash*.)

Science News Letter, June 21, 1941

CE FIELDS

PHYSICS

Auto with Steel Body Safe Place in Lightning

See Front Cover

YOU need not fear lightning if you are out riding in an automobile with a modern steel body and top. Proof of this was given at the Westinghouse high voltage laboratory in Trafford, Pa., when Dr. Gilbert D. McCann sat in such a car while being bombarded with 3,000,000 volts of artificial lightning.

"Although the laboratory lightning stroke hit the car just six inches above my head," said Dr. McCann, "I was safe from injury because modern steel car bodies are effective shields against lightning."

Even the rubber tires produce no difficulty, for the lightning jumps over them from the metal wheel to the ground. In an actual storm, with the road and tires wet, the conduction of the current from the car in this way would be aided.

Dr. McCann said also that the gasoline tank presents no serious hazard. The protected position of the tank is one that lightning can hardly reach. It seeks its nearest target, usually the top of the car.

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NUTRITION

Use of School Cafeterias For Defense Workers Urged

THE AMERICAN ARMY is the best fed in the world, but the huge army of workers in American defense industries, airplane production plants and the like, are badly fed and many of them are having trouble finding places to get anything to eat, delegates to the National Nutrition Conference for Defense, called to Washington by President Roosevelt, declared.

The plight of 20,000 workers in an aircraft factory who have no place to eat lunch except standing on the pavement or sitting in their cars outside the factory, and no place to get the food except from hot dog stands, was described by a nationally known nutritionist who refused to allow his name to be used be-

cause of possible interference with efforts being made to correct the situation. Their lunches consist of hot dogs or hamburgers and soft drinks. These are all right in themselves, he said, but such a lunch does not supply the vitamins and minerals needed for strength, endurance and the will to work. These young men newly arrived in the community live in bachelor quarters, one of them cooking for his rent. Their dinners consist chiefly of fried meat, white bread, and some butter. They rarely eat vegetables because of the time and trouble needed to clean and prepare them. Occasionally they will open a can of beans for variety.

Immediate steps to remedy the situation all over the country were urged by the delegates who declared that the present emergency will not permit, because of the time factor, the use of educational methods alone to improve the diet of defense workers.

School cafeterias, with their equipment, trained dietitians and corps of workers, might be used to serve breakfasts and dinners to workers in nearby defense factories, Prof. Mary Brian, of Teachers College, Columbia University, suggested as a practical measure that could be instituted rapidly. Large numbers of workers could thus be fed at a time when the school cafeterias are idle anyway.

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NUTRITION

Rats' Incisor Teeth Give Picture of Vitamin Action

RATS' incisors, or "eye teeth," can be used in dramatic demonstration of the effects of vitamin D in the prevention of rickets, Dr. J. T. Irving of the University of Cape Town points (*Nature*, May 17.)

The chisel-like incisors of rodents do not have a determinate growth like most other teeth, but keep on growing indefinitely, like hair or fingernails. Constant gnawing keeps them worn down to working length.

Lengthwise sections through incisors of rats that were first kept on a rickets-inducing diet, then given plenty of vitamin D, show clearly in change of structure just when the vitamin began to have effect on the growing region in the jaw, where the limy substance of the tooth was formed, Dr. Irving reports.

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AGRICULTURE

Florida Gardens Pinch Hit For France, Italy, Japan

PINCH-HITTING for France, Italy, the Balkans, Japan and a few other countries, Florida is trying its hand at growing some of the foreign specialty imports that war conditions have cut off.

Crops which the Florida State Experiment Station advises as "worthy of trial plantings," though not yet established certainly enough for extensive production, include these:

French endive, formerly imported from France and Belgium. The Everglades area is trying this vegetable, believed likely to have good success.

Tomato paste, formerly imported in quantity from Italy, and made from special, small varieties of tomatoes. "Paste" types of tomatoes are being investigated by several Florida growers.

Sage for seasoning, formerly brought in quantity from Greece. Various sections of Florida are trying this.

Paprika from various Balkan countries. Planted in trials at the Experiment Station farm, paprika gave excellent results. Florida had not yet produced this plant commercially, but Louisiana, South Carolina, and California have.

Spinach seed from Holland and Denmark. One seed grower in Florida's Jefferson County is already raising 100 acres of spinach seed.

Mustard and turnip seed from Japan. These can be grown in Florida, the Station believes.

Teasel burrs from France. Considered especially good for combing wool in American mills, the French type of teasel is to be planted on the Experiment Station Farm for trials.

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INVENTION

'Riveted' Men's Socks Will Wear Longer

MEN'S SOCKS will wear three times as long when a new process comes into use in the near future. By immersing the fabrics in a bath of certain colloidal substances suspended in water, the microscopic particles practically "rivet" the fabrics in the twisted threads so that they resist wear. Yet there is no change in their feel or appearance. Also, the untreated pairs showed a shrinkage of 25 per cent, while the treated shrank only 4 per cent. The process may also be used for underwear, blankets, etc. (*U. S. Rubber Co.*)

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