

ANTHROPOLOGY

Fossil Skeleton May Tell Man's Place in Evolution

➤ AMERICAN anthropologists await with great interest scientific study of the almost complete skeleton of a 10,000,000-year-old man-like animal reported found in the coal mines at Bacinello, Italy.

Although fragments of approximately 50 individual skeletons of this creature have been available previously for scientific analysis, teeth and jaws predominated. Other parts of the frame such as legs, arms and pelvis, are needed to disclose whether the ancient creature walked erect and was truly man-like, was ape-like, or, perhaps was a relative of the Old World monkeys.

Having an almost complete skeleton of a single individual will greatly aid scientists in placing the very early animal on his rightful limb of the evolutionary family tree.

Already, anthropologists have concluded that the animal, known to scientists as *Oreopithecus*, was man-like more than ape-like. But at least one anthropologist, Dr. William L. Straus Jr. of Johns Hopkins University, has concluded that "there is no way of knowing whether it represents a form directly on the line leading to man, for the hominid line of evolution, like other vertebrate lines, quite likely produced more than one branch."

In other words, his study of the *Oreopithecus* bones indicates that the animal may have been "one of Nature's mistakes."

Study of the newly reported skeleton may show the answer to this problem.

Dr. Straus is now in Europe to study the *Oreopithecus* remains.

If *Oreopithecus* does prove to be an ancestor of modern man, he will be the oldest ancestral form on the main line of human evolution.

The earliest pebble tool users among true men are dated at 700,000 years ago. The ancient ape-men of South Africa probably lived about 500,000 to 700,000 years ago. Peking Man of China lived 300,000 years ago. Neanderthal, an extinct "uncle" of modern man, lived 150,000 years ago and later. If modern man is considered to include the *Fontchevade* skulls, he was living at least 100,000 years ago and even longer ago if the *Swanscombe* skull is also included.

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ROCKETS AND MISSILES

Reserve Forces Urged to Aid Students in Hawaii

➤ HAWAII has been advocated as a proving ground for an experimental amateur rocketry program to insure adequate leadership for student rocketeers and also provide retirement points for military reservists and National Guardsmen.

Sen. Edward J. Thye (R-Minn.) urged Defense Secretary Neil McElroy to issue a directive that would allow reservists and Guardsmen to lead and instruct Hawaii's amateur rocketry groups as part of their

military duties. Under the proposal, which Sen. Thye has twice before urged, the Guardsmen and reservists would receive commission and retirement points for their science youth activities.

The request, made on the Senate floor, was the first time Sen. Thye specifically urged that the reserve forces of Hawaii be a pilot group and that "we continue to watch Hawaii as an example that will materially affect our national survival."

He pointed out that a single directive issued by the Secretary of Defense would meet two pressing needs by supplying trained leadership to youngsters who need it, and by giving reservists and Guardsmen useful duties by which to earn credit.

The use of reservists in the nation's science youth effort was first proposed publicly by Kendall K. Hoyt, executive director, Association of Missile and Rocket Industries.

The plan was presented to Sen. Thye by Mr. Hoyt and Lt. Col. Charles M. Parkin Jr., Army Corps of Engineers, Fort Belvoir, Va.

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DENTISTRY

Many Old Toothbrushes Still Being Used

➤ CHANCES are two to one that the toothbrush you are now using has outlived its usefulness, a recent survey has shown.

Careful examination of 2,032 brushes that poured into the office of Dr. Robert G. Kesel, head of the department of applied materia medica and therapeutics at the University of Illinois College of Dentistry, revealed the following statistics:

Usable brushes numbered 700; 1,219 were unusable; 90 were doubtful. Some were not toothbrushes—they were denture or vegetable cleaning brushes.

The brushes were sent in response to a campaign sponsored by the Du Pont Company in cooperation with the American Dental Association. Brushes were classified according to bristle and sanitary condition, according to an article in the *Du Pont Magazine* (June-July).

The largest proportion of unusable brushes was found among the age group between 45 and 50; next most likely to be unusable is the brush of the child between one and five years of age; next, those of persons between 25 and 30. Boys and girls between the ages of 10 and 15 scored highest for usable brushes.

Method and frequency of brushing play important roles in determining the length of a toothbrush's life, ADA officials deduced from the answers on questionnaires.

American women outperform men, 42% to 38%, according to the survey, in keeping a satisfactory toothbrush. While both sexes fall far short of the ideal, they have progressed in a decade, the percentage of worn toothbrushes having dropped from 80 to 67.

"Many persons continue to brush their teeth as a ritual or for the aesthetic benefits. And many use toothbrushes well beyond the time when the bristles are worn out," the ADA added.

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IN SCIEN

ENTOMOLOGY

Study Effects of Jet Travel on Insect Pests

➤ JET AIRPLANES may turn out to be very effective insecticides as they deal the deathblow to hitchhiking "bugs."

Whenever aircraft from a foreign country land, the planes are inspected inside and out to ensure that no harmful insects gain entrance. Now, with the jet age here, new quarantine problems arise concerning the effects of high altitude, temperature extremes and high speeds on insect mortality.

Experiments conducted by U. S. Department of Agriculture entomologists W. N. Sullivan and E. B. Knipling indicate that the low temperatures of unheated parts of planes flown at high altitudes make it difficult for hitchhiking insects to survive. In actual field test using armyworm eggs, the scientists found the eggs, usually the most difficult stage to destroy, could not survive a ride on a jet's wings.

Laboratory tests also show insects cannot stand as high temperature as man. Northern house and malaria mosquitoes died at 113 degrees Fahrenheit; a temperature of 140 degrees Fahrenheit was needed to kill grasshoppers and Colorado potato beetles, however.

More experiments are being made with additional species of insects, the scientists report. The studies provide information on how air transportation may spread insect pests and what safeguards must be provided through quarantine procedures.

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TECHNOLOGY

New Radar Trap Picks Out Speeders in Traffic

➤ A RADAR speed check device that can discriminate between different automobiles even in heavy traffic has been developed by a British firm.

The portable electronic traffic analyzer, called "PETA" by the developers, Marconi's Wireless Telegraph Co., Ltd., London, will take individual readings on cars as close together as eight feet, and will "lock on" and follow an individual speeder for further readings if the traffic officer desires.

PETA is described in *British Communications & Electronics* (Aug.).

Costing less than 500 pounds (\$1,400) in Britain, it is expected to be made available in the United States through the firm's New York office.

The device, which is the first radar speed trap to be manufactured in Britain, was designed to eliminate the major objection to radar speed checks, that of not being able to distinguish between individual automobiles in heavy traffic.

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CE FIELDS

MEDICINE

New Blood Clot Dissolving Agent May Be Superior

► A NEW BLOOD clot dissolving agent that appears to be superior to any known drug now used is under study.

The agent, an enzyme called fibrinolysin, a derivative of human blood, has been administered to 52 patients suffering from various types of thromboembolic disease, in which a vessel is blocked by a clot that has broken loose from its site of formation. Fibrinolysin attacks and dissolves fibrin.

Unlike other agents now used, fibrinolysin does not exhibit many severe side reactions, Dr. Kenneth M. Moser of the District of Columbia General Hospital told SCIENCE SERVICE.

Those side effects that did occur included fever in 49.2% of the patients and two cases of delayed allergic skin reactions, he pointed out. The most recent investigations indicate that the use of barbiturates offers the best successful control of the fever.

Some beneficial effect from fibrinolysin was noted in four of eight patients with pulmonary embolism, in which the clot moves into the lung area.

Eighteen patients with deep venous thrombophlebitis of the legs showed consistently encouraging results, Dr. Moser reports in the *Journal of the American Medical Association* (Aug. 2). The patients' legs showed a loss of heat, tenderness and size within 24 hours after treatment and there was no recurrence of clotting.

Further research and investigation, directed by Dr. Moser since the recent report was compiled, indicate that this new drug, called Actase by the manufacturers, Ortho Pharmaceutical Corporation, offers more advantages than the presently used drugs. However, Dr. Moser said, in spite of the many plus signs for the new drug, there are still some areas needing study: toxicity, correct dosage, and estimation of the drug's value in various thromboembolic states.

The drug is not yet available to practicing physicians, he added.

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NUTRITION

New Oleomargarine Has Low Cholesterol Level Oil

► A NEW OLEOMARGARINE spread in which 80% of the fat content consists of nonhydrogenated corn oil has been developed. Corn oil can help control blood cholesterol levels.

Emdee margarine, as it is called, may prove to be a safe fat substitute for heart disease sufferers who usually are restricted in their animal fat, and hence, butter, intake.

The controversy over the relationship be-

tween atherosclerosis or hardening of the arteries, fat intake and blood cholesterol, the fatty deposits that clog the arteries and result in heart attacks, has continued for years with no definite association yet linking the fat intake to the direct cause of cholesterol formation.

Some individuals' cholesterol level will rise with increased animal fat and hydrogenated vegetable fat intake, Pitman-Moore Company, Indianapolis, Ind., developers of this new process, report.

The nonhydrogenated corn oil is processed to preserve the original content of unsaturated fatty acids. Each 100 grams is said to provide 34 grams of linoleic acid and 18 grams of other unsaturated fatty acids.

It is fortified with vitamins A and D and the caloric content equals that of other margarines.

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PHARMACOLOGY

Parakeets Can Receive Antibiotics in Bird Seed

► PARAKEETS can now receive full protection against pneumonia, parrot fever and other infectious diseases by eating a new bird seed that contains an antibiotic.

Besides suppressing disease promptly, the new medicated bird seed notably stimulates food intake and growth and helps maintain body weight, a group of scientists attending the International Congress for Microbiology meeting in Stockholm, Sweden, learned.

Not only will the pets be healthier, Dr. James H. Steele, chief, veterinary public health, Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga., said, but the seed will indirectly help man's health because psittacosis is a serious disease potentially transmissible from all birds to man.

It is anticipated that the chemotherapeutic treatment methods being investigated by the Hartz Mountain Products Corporation, manufacturers of the new seed, called Keetlife, will lead to the control of the disease in other domestic birds as well. This would be especially important among poultry which have become an important source of human infection.

Parrot fever, or psittacosis, is a pneumonia-like disease. Parakeets are susceptible to it and also to respiratory infections, particularly during the stress of adjustment to new surroundings.

The new feed incorporates a standardized amount of the antibiotic chlortetracycline with hulled millet, one of the standard seeds in the parakeet diet.

The preparation is readily taken by the birds, Dr. Karl F. Meyer, director emeritus of the Hooper Foundation of the University of California, said. A 15-day course of treatment comprising a daily intake of 2.5 milligrams of drug suppressed the infective virus completely in 99% of the laboratory birds, he reported.

Assisting Dr. Meyer in these investigations were Drs. B. Eddie, J. H. Richardson, N. L. Shipkowitz and R. J. Muir.

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PHYSIOLOGY

Insects Survive Extreme Low Temperatures

► EXTRACELLULAR freezing may be the key to a living organism's surviving extremely low temperatures.

In experiments with whole insect larvae, two Japanese scientists report they were able to keep the insects alive at extremely low temperatures without using any antifreeze agent, provided there had been sufficient extracellular freezing.

In this kind of freezing, water inside the cells does not freeze; except for some shrinking and loss of moisture or dehydration, the cells seem unaffected and the organism can withstand severe low temperatures.

This is believed to be the first successful test of extracellular freezing, aside from work with isolated cells, bits of tissue, and the tiny vinegar eel (about two millimeters long).

Eizo Asahina and Kiyoshi Aoki, working at the Institute of Low Temperature Science at Hokkaido University, stored larvae of a slug caterpillar at temperatures ranging from 0 degrees centigrade to 30 degrees below zero centigrade. Following this preliminary freezing, the insects were immersed in liquid oxygen for one day, then held in air at 30 degrees below zero centigrade for four hours. They were next transferred to room temperature.

Revival occurred only in the group that had been held initially at 30 degrees below zero centigrade for one day before going into the liquid gas. Similar results were obtained, the scientists report, with experiments on butterfly larvae. Both larvae were in the "overwintering" stage.

The only change in the cells of insects that survived the low temperatures was that small fat granules sometimes fused into large masses.

Further details of the research appear in *Nature* (Aug. 2).

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GENERAL SCIENCE

Russian Journals Now Available to Scientists

► SOME 60,000 pages of important Soviet scientific and technical journals are now available in English translations, the National Science Foundation has reported.

Journals ranging from crystallography to factory laboratory, the theory of probability, medicine, metals, atomic energy, and "problems of oncology" are represented in 53 English editions of Russian publications. There are also four extensive series of translated abstracts of scientific papers and four series of partial translations of important journals.

In addition to the NSF, the National Institutes of Health, the Office of Naval Research, the Atomic Energy Commission, and several commercial translating firms support the work of making recent Russian reports available to U. S. scientists.

Translations are sold on a subscription basis.

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