PALEONTOLOGY

Earliest Cat Found Among Badlands Fossils

POSSIBLY the original ancestor of all the later saber-tooth tigers, certainly the earliest cat so far found, is the distinction claimed by one of the fossil skulls brought back to Princeton University from the Big Badlands of South Dakota by Prof. Glenn L. Jepsen, leader of the Scott Fund Expedition.

The fossil was included among hundreds of others dug up in the Big Badlands during the past summer. It was recognized then as a saber-tooth tiger, but its unique position in the feline family tree was not then determined. Now it has been found to be a new genus, ancestral to two separate lines of saber-tooth tigers for which no connecting link has hitherto been known.

Its position in a lower geological stratum than any in which feline fossils have ever before been found definitely marks it as the earliest known cat. The formation in which it was found is of early oligocene age, of an antiquity estimated at some eight or nine million years.

In the opinion of the late Prof. W. D. Matthew of the University of California, all modern members of the cat family descended from the saber-tooth tiger tribe. Certain it is that the saber-tooth beasts are geologically older, so far as all present evidence goes. If this theory of feline evolution is true, then Princeton University is now the resting-place of the most ancient ancestor of all cats.

Science News Letter, November 5, 1932

METEOROLOGY

Subnormal Rainfall Indicated for California

CALIFORNIA will have a slightly drier-than-average winter this year, according to climatic-trend data compiled by Drs. George F. McEwen and A. F. Gorton of the Scripps Institution of Oceanography.

"In general, the available evidence points to considerably less precipitation than last season, but not far from the average," Dr. McEwen said. "Fewer general storms and less snowfall in the higher altitudes may be expected. The runoff of important northern watersheds is estimated to be from 70 per cent. to 90 per cent. of the normal.

"The trend of both precipitation and runoff in the northern area is still downward, contrary to indication for Southern California, but the reversal of the temperature trend last winter may have marked the end of the dry period in the north, and may mean a rapid rise during the next decade."

Drs. McEwen and Gorton base their calculations on observed relationship between the temperature of the ocean water, the annual precipitation over a considerable period of years, and sunspot numbers. The composite index thus obtained has scored a 75 to 80 per cent. success; the reliability is apparently greater when a deficiency in rainfall is indicated.

With deficient rainfall there comes also a general decrease in temperature. Since last November the trend of temperature throughout California has been downward. Although milder weather is expected than was experienced last winter, the prospect is for a continuation of subnormal temperatures during the next few years, the two oceanographers stated.

Science News Letter, November 5, 1932

BACTERIOLOGY

Better Sauerkraut From Washed Cabbages

WASH your cabbages before you shred them if you want the best sauerkraut.

This is the moral to be derived from experiments at the University of Wisconsin by a scientific team headed by C. H. Keipper. Tests of the finished product, in hundreds of barrels, by connoisseurs of kraut indicated the product of the washed cabbage-head a winner every time.

Shredded cabbage, salted down, becomes sauerkraut through natural fermentation, caused by microorganisms present on the cabbages as they are brought in from the field. These are principally lactic acid bacilli, the germs that cause milk to sour. But in the field dirt that clings to the heads as they are brought in there are millions of other germs, which are not so good for the kraut. They give it off flavors and odors, and may spoil it entirely. If the dirt, and these unfriendly germs with it, is washed off, there still are plenty of the right kind of bacteria in the inner leaves to start the proper fermentation.

The natural bacteria can be relied on, the tests indicated. Pure cultures of lactic acid bacteria gave a little better results.

Science News Letter, November 5, 1932

IN SCIENC

ASTRONOMY

Nine Groups Organize To Watch November Meteors

NINE GROUPS of observing parties, including astronomers at five observatories, will join in watching for shooting stars on three nights in the middle of November.

Scattered at points from Philadelphia to Virginia, these scientists have been organized by Dr. Charles P. Olivier, director of the Flower Observatory of the University of Pennsylvania, and president of the American Meteor Society. The Naval Observatory and the Georgetown University Observatory at Washington; the Hood College Observatory, at Frederick, Md.; the observatory of the Maryland Academy of Sciences at Baltimore, as well as the Flower Observatory, are in the "hook-up."

In this way, it is hoped to get an accurate record of the numbers of meteors that appear in the Leonid shower of shooting stars. Every year some of these meteors appear, but astronomers think it likely that this year may see a display that has not been equalled since 1866. The night of Nov. 15 and early morning of Nov. 16, it is supposed, will bring the greatest numbers, but observers will be on watch during the preceding and following nights.

Science News Letter, November 5, 1932

CHEMISTRY

Work in Rubber Technology Wins Chemistry Award

GEORGE OENSLAGER, Akron rubber chemist, is the recipient of the 1933 Perkin medal, awarded annually for the most valuable work in applied chemistry. He initiated and successfully carried into production the carbon black tread and the nitrogenous organic accelerator which are rated as two of the five major achievements that have taken place in rubber technology in the last thirty years. The date of the medal presentation by the American Section of the Society of Chemical Industry has not yet been set.

Science News Letter, November 5, 1932

E FIELDS

PHYSIOLOGY

Nobel Prize Shared By British Physiologists

THE 1932 Nobel Prize in medicine and physiology was given Sir Charles Scott Sherrington of Oxford University and Prof. Edgar Douglas Adrian of Cambridge University for research on nerves. Sir Charles was a pioneer investigator into the reflex action of nerves when Prof. Adrian was still in the nursery. Sir Charles did a large amount of experimental work on all phases of nerve activity. He brought together knowledge of how the nerves all work together.

Prof. Adrian, who at the comparatively young age of 43 years, shares the Nobel Prize with Sir Charles, has made investigations on the nerves with the aid of very modern physical instruments. He has applied the modern amplifying methods of radio to the measurement of the current in single nerve fibers, and was the first to measure the current of such a single nerve fiber.

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ASTRONOMY

Partial Eclipses May Give Total Eclipse Data

ASTRONOMERS will not have so much incentive to wait years for a total eclipse of the sun or travel thousands of miles to observe it if they utilize the suggestion made by Dr. Herbert Dingle, University of London astrophysicist, who talked at the California Institute of Technology.

Dr. Dingle told how observations of value can be made during partial eclipses of the sun, which occur much more frequently than total eclipses. Heretofore astronomers have considered partial eclipses of little scientific value.

Dr. Dingle's idea is to take advantage of the two corners of the partially eclipsed sun where the moon's disc intersects that of the sun. There the conditions are just like those of totality. By training a spectroscope on such a corner and following it during the earlier part of an eclipse, it would be possible to get a long exposure of the so-called flash spectrum. This flash spectrum comes from the atmosphere of the sun. It consists of bright lines on a dark background instead of dark lines on a bright background as in the ordinary solar spectrum. The old method was to catch it as it flashed on for a few seconds just before totality. Dr. Dingle with his new method will be able to get strong exposure, twenty minutes if necessary, and this will permit a high accuracy in the measurement of the lines.

Dr. W. S. Adams, director of Mt. Wilson Observatory, commented that with the development of methods like those of Dr. Dingle it will soon be possible to get along without total eclipses except for a few special observations.

Science News Letter, November 5, 1932

ARCHAEOLOGY

Fate of Huge Indian Collection Uncertain

HOPE that science may take some record of the huge collection of Indian relics belonging to the late Edward W. Payne, before the thousands of articles are disposed of and perhaps scattered, is expressed by Dr. Warren K. Moorehead, archaeologist, of Phillips Academy at Andover, Mass.

The Payne collection is so large that no other single collector and few museums in the United States outrank it in sheer quantities of Indian objects, Dr. Moorehead said. Mr. Payne, a banker of Springfield, Illinois, pursued his hobby of digging up and purchasing Indian objects for fifty years, amassing an ever-growing array of Indian pipes, bowls, blankets, headdresses, and other articles, until they overflowed his residence, and he had to arrange storage space in rooms elsewhere. The number of boxes of such objects is estimated at 4,000.

Since Mr. Payne's death, last March, the fate of the collection has hung in the balance.

Dr. Moorehead, who knew Mr. Payne for thirty-five years, and who has examined portions of the exhibits at various times, states that many of the objects have scientific importance. The banker's tremendous interest in Indian antiquities was aroused before the great museums of the country had begun their efforts to preserve the story of Indian America. Many of the sites which are represented in the collection have long since been obliterated.

Science News Letter, November 5, 1932

BACTERIOLOGY

Vaccines May be Inefficient Because Germs Are Weaker

THE STRAIN of typhoid fever germs from which most anti-typhoid vaccines are now made may no longer be efficient in giving protection against the disease. Studies showing this were reported by Dr. Francis B. Grinnell of Harvard University to the American Public Health Association meeting in Washington.

The vaccines like those which were used so successfully to protect American soldiers during the World War, are made from what is known as the Rawlins strain of typhoid germs. The original germs of this strain, the ancestors of the ones that make the typhoid vaccine, were isolated from a soldier who died in the South African war.

Bacteriologists have found recently that germs are not very stable. They may change their form and characteristics as they grow older, and with these changes there is sometimes a change in virulence. The Rawlins strain of typhoid germs has shown some of these changes, and investigations with mice showed that the Rawlins strain was much inferior as a protective agent to some of the other strains with which they are compared.

Science News Letter, November 5, 1932

ENTOMOLOGY

Insect "Missing Link" Found in South America

THE RANKS of evolutionary "missing links" have lost another member. This time it is a fly, a curious insect from the high lying lake region of southwestern Argentina, that fills a gap between the bot-flies that bother cattle and a group of tiny flies that parasitize other insects. The common house-fly is only a distant relative.

The find was made by Raymond C. Shannon, a Smithsonian entomologist, but its significance was not realized until the specimen reached the U. S. National Museum. Here it was examined by Charles H. T. Townsend and Dr. J. M. Aldrich, Smithsonian curator of insects.

The new fly is like a bot-fly, except that it has bristles on its body, while the bot-fly is smooth. It represents, possibly, a "surviving ancestor."

Science News Letter, November 5, 1932