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SCIENCE NEWS BULLETIN

No. 27. Edited by Watson Davis October 3, 1921

LARGEST SNAKE IN CAPTIVITY AT NATIONAL ZOO

(By Science Service)

Washington, October .- The world's largest captive snake is now an inhabitant of the National Zoological Park in Washington.

It is a large regal or reticulated python that once roamed in the Malay forests. From the tip of its head to its tail is about 25 feet long. This species of python grows to be largest in size of any snake now in existence, and while a specimen that measured a little less than 30 feet long was once killed, it is believed that the snake now in Washington is the largest on exhibition.

A special cage of extra thick glass was built to house the new python, which came from New York in a heavy wooden box perforated with small holes to allow circulation of air. The large python did not dine on its journey as it only goes to dinner once in three or four weeks. But these infrequent meals usually consist of a large pig or even a small deer or antelope, which is crushed to death in the coils of the snake and then swallowed whole and digested while the snake passes away the time lying partly submerged in cool water until its next meal time arrives.

If this great regal python were a star attraction in a circus, he would probably be bally-hooed as a "boa constrictor that eats them alive." According to Dr. N. Hollister, superintendent of the National Zoological Park, who was chairman of the new python's reception committee, most of the snakes that are shown in the "greatest shows on earth" and advertised as boa constrictors are pythons, which are usually larger snakes. The circus variety of python is usually the rock or black species that grow 12 to 15 feet long and are found in South America. These do not compare in size with the larger regal species that are found in the Malay regions, parts of Asia and the Philippines. The Washington Zoo has three specimens of the smaller pythons.

The new snake has been secured as part payment for a baby hippopotamus that the National Zoological Park raised last year. Most of the additions to the zoo are secured by exchange in this way. The new python arrived in New York from the Orient through the regular commercial channels of caged animal trading.

The world's largest snake cost $2 per pound. Its exchange value was $500 and it is estimated to weigh close to 250 pounds.

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NEWS OF THE STARS

The Partial Lunar Eclipse of October 16.

BY Isabel M. Lewis,
of the U.S. Naval Observatory.

(Science Service)

When the moon rises in the eastern United States on the evening of October 16 just as the sun is setting, there will be a piece of it missing to an earthly observer.

This partial eclipse of the moon will be very nearly total since ninety-four per cent. of the moon's diameter will be covered by the shadow of the earth.

The beginning of the eclipse will be visible in western Asia, Europe, Africa, the Indian Ocean, the Atlantic Ocean and the eastern part of South America. The ending will be visible in western Asia, Europe, Africa, the western part of the Indian Ocean, the Atlantic Ocean, South America and all of North America except the extreme western part.

The eclipse will begin at 4:14 p.m. Eastern Standard Time and greatest obscuration will take place at 5:54 p.m. It will end at 7:34 p.m. Since the sun sets at 5:29 p.m. Eastern Standard Time in the latitude of Washington, and the moon rises at sunset on that day, the moon will rise partially eclipsed in the eastern part of the United States. The greatest phase of the eclipse will be visible in all places keeping Eastern Standard Time but the moon will be coming out of the shadow by the time it rises over the central states. Along the Pacific coast the eclipse will be completed before moon-rise.

BONE OF LARGEST ANIMAL
DISCOVERED IN NEW MEXICO (By Science Service)

Washington, October -- The largest shoulder blade of any animal on record, ancient or modern, has been discovered in San Juan basin in northern New Mexico by John B. Reeside, jr. of the U. S. Geological Survey. This scapula bone is part of an immense extinct dinosaur estimated to be over 100 feet long and markedly larger than any previously known to have existed.

Charles E. Gilmore of the National Museum here has assembled the collection of pieces of this fossil scapula and has found that the total length of the bone is over five feet, nearly as tall as a man. This is five times the length of the shoulder blade of a cow of today.

The large fossil was found in the part of the earth that was deposited and formed in the Upper Cretaceous era, and this indicates to the geologist that the dinosaurs lived at a later geologic time than they had previously supposed. This fact has created more stir in geological circles than the size of the fossil.

Dinosaurs were large reptiles with long necks, little heads and brains, and long tails. Their bodies look somewhat like that of an oversized elephant with hind legs longer than fore legs. They dominated the earth in the days when the limestone beds were laid but for some reason disappeared from the earth to give place to smaller and livelier animals.

BRITISH PLAN TO GET
ELECTRICITY FROM SMALL STREAMS
(By Science Service)

To utilize the small streams of gradual slope that theoretically produce many millions of horse power, Professor F. G. Baily of Edinburgh, at the recent meeting of the British Association, proposed a scheme that will turn this present waste energy into electricity.

The small rapid streams and waterfalls of the high uplands, and the rivers of the long, gently-sloping valleys, such as occur in Scotland, would be harnessed by numerous small hydro-electric stations, so that the rainfall would pass through a succession of turbines in its passage from the gathering ground to the sea. It would thus yield a fair proportion of its total energy. For this purpose the stations must be small, generally from 50 h.p. to 300 h.p., in order to avoid the costly engineering work of large dams and long pipe lines. They must operate automatically to reduce the cost of superintendence, and they must be simple and robust.

Each turbine would drive a dynamo of the kind known as an induction generator, which is a three-phase squirrel-cage motor driven at a speed slightly above that at which it runs as a motor. According to the plan, without any control or ad-

justment, this machine would supply electric current to the mains in proportion to the water power available, and thus, up to the limits of the output of the turbine, it would convert all the power of the stream, whether small or large. The starting up would be so simple that it might be controlled from a distant central point and, once started, no further care would be needed.

The general arrangement would consist of a set of electric mains running out from a large town with a steam-driven central power station, following the course of the river and branching at its tributaries until the distance and the smallness of the streams renders further extension uneconomical. At all suitable points these small stations would be erected, merely a hut with a turbine and dynamo, feeding their quotum of power into the system. The steeper parts would have short pipes to the turbines, but in the valleys a succession of small dams would be built and the turbine house would be a part of the dam. These dams would also serve to store water in times of drought by the shutting down of the turbines from the main station during the hours of light load. As fluctuations of head would make no difference to the dynamo beyond changing the amount of power it would be able to deliver, considerable use could be made of these dams without any supervision.

Superintendence might be reduced to periodic visits around the area, to see that all is well and to clear the strainers of the intake water. Wear and tear of turbine and dynamo are extremely small, as neither has any rubbing surfaces except the bearings of the main shaft.

EARTH'S ATMOSPHERE WEIGHS
11,300,000,000 MILLION POUNDS (By Science Service)

Washington, October .- Calculating the mass of the atmosphere in which we live has been accomplished by Dr. W. J. Humphreys of the Weather Bureau at Washington. The total weight, nearly 11,300,000,000,000,000,000 pounds or between 5 and 6 quadrillion tons is perhaps less surprising than the weights of some of its individual constituents.

Of nitrogen and oxygen, which we have been taught to consider the whole thing, there are only 8,541,832,500,000,000,000 and 2,557,995,000,000,000,000 pounds respectively. Argon, one of the "rare" gases, comes next in abundance with 137,632,500,000,000,000 pounds. Of water vapor there are 29,250,000,000,000,000 pounds, or enough to cover the entire earth one inch deep with water. Carbon dioxide, which is exhausted by our lungs and our automobiles, accounts for 4,777,500,000,000,000 pounds. The hydrogen, neon, and krypton in our air weigh respectively 285,000,000,000,000 pounds, 105,000,000,000,000 pounds, and 14,250,000,000,000 pounds. Helium, the non-inflammable substitute for hydrogen as balloon-gas runs a close second to krypton with 13,500,000,000,000 pounds. Of xenon, the rarest of the naturally occurring rare gases, we have but 2,550,000,000,000 pounds.

CABBAGE BED TO RESIST
DANGEROUS DISEASE (By Science Service)

Madison, Wisconsin, October .- Listen cabbage eaters! While a cabbage disease, known to growers as "cabbage yellows", threatened to place your leafy luxury in the same class as the Dodo bird, a scientist's knowledge of heredity has resulted in the development of a strain of cabbage that resists the dreaded infection. Millions of dollars have been saved to growers, and thousands of plates of salad have been rescued for the consumer, by careful studies of "Yellows" carried on during a period of several years. Under the direction of L. R. Jones, plant pathologist at the University of Wisconsin, who is responsible for the new strain, investigations are being continued to aid further in stamping out the disease which threatened to destroy the cabbage growing industry in Wisconsin and other states.

Working on the basis of the fact that in every disease-infected area of plants some individuals are more resistant to a disease than others, Dr. Jones selected seed in badly infected fields of cabbage, from occasional heads that seemed to have escaped much of the disease. By planting the seed obtained in this way, and by continuing these seed selections in the same way during a period of several years, a strain of one variety of cabbage was developed which escaped the ravages of yellows, while adjoining fields were swept clean by the spread of the disease. Seed was distributed among farmers in the commercial cabbage growing districts of Racine, Kenosha, and other counties with the suggestion that plantings should not be made on soils which had previously grown diseased cabbage. By planting

the seed from the new strain and by avoiding "cabbage sick" soil, thousands of dollars were saved to growers and to consumers.

Similar selections are now being made with varieties of kraut cabbage to develop a resistant strain.

THE HIGHEST MOUNTAIN IN HAWAII WAS ONCE COVERED WITH ICE.

By Howard D. Case.
(Science Service Correspondence from Honolulu)

Evidences of prehistoric glacial activity on Mauna Kea, the highest island mountain in the world which towers 13,875 feet above sea level on the island of Hawaii, Hawaiian group, have been discovered by a party of scientists and laymen who recently climbed the mountain and spent two days looking for traces of glaciation among the valleys on its slopes. These traces were found in abundant measure.

Dr. Herbert E. Gregory of Yale University, Director of the Bishop Museum at Honolulu, and A. O. Burkland of the United States Geological Survey, were the scientists with the party.

Doctor Gregory says that the party found the whole top of Mauna Kea to have been glaciated -- that is, covered with ice -- during the glacial period of the world's history, roughly about 100,000 years ago. He says the evidence lies not only in the boulders and other signs, but that the best proof is in the topography of the valleys around the summit. Ridges and valleys cut by moving ice have certain well-defined characteristics distinct from those formed by the action of streams.

"We went up one valley, over the summit, and spent the night," the scientist explains. "After that we went down into another valley. Both were well glaciated. We intend to follow up the study of the mountain from time to time until we have examined all of the valleys. To make a complete picture and a map showing the extent and size of the glaciers, we will have to await the completion of a topographic survey which Mr. Burkland will make on top of the mountain. When his survey is finished, we will thenbe able to construct a map which will restore the old glaciers and will show them to have been formed of ice a couple of hundred feet thick and from two to three miles long."

Doctor Gregory says that the knowledge obtained through the study of glacial activity on Mauna Kea will be an important factor in studying the history and distribution of plant and animal life in Pacific countries.

For many years, he points out, scientists have been curious as to whether the Hawaiian Islands and other groups in the Pacific took part in the glacial period. If they did, the climate of the entire Pacific area must have been much colder than at present -- so cold, in fact, that no coral could grow in the sea at the time.

"If there is any place in the Pacific where glacial traces exist," Doctor Gregory continues, "Mauna Kea must be it, as the mountain is 13,875 feet high, exceeding any other peak in the Pacific. Away back years ago this question was agitated. In 1909 Professor Reginald Daly of Harvard came out to the islands to make a study of coral reefs. He climbed Mauna Kea and saw what he thought were traces of glaciation. When he went away he asked me to look into this detail in an effort to determine what the field was and how far it extended. Prof. William A. Bryan, formerly with the University of Hawaii, also noted evidence of glaciation when he made a study of Mauna Kea several years ago. We went up a few days ago and found that the entire top of the mountain has been glaciated from the 13,000-foot elevation down to about 11,200 feet."

AIR MAIL "JINNIE" ANSWERS
"HOW LONG IS THE LIFE OF AN AIRPLANE?"

(By Science Service)

Washington, October -- How long does an air plane last?

It depends; but this most common of all questions asked by groundlings is answered amazingly by an air mail plane which has been constantly in the hardest kind of service for three and a half years, or since the Air Mail Service was begun.

It has flown over 42,000 miles and has delivered tons of mail, hundreds of thousands of letters.

Air Mail Plane No. 12 has just been shown at the Minnesota State Fair, and it has been proposed to house it as a historic relic at the Smithsonian.

It is the type the flyers call "the Ford of the air", being a Curtiss "Jinnie" or JN4H, with a 150 horsepower Hispano Suiza motor. It has a carrying capacity of 200 pounds, or 8000 letters, carries 40 gallons of gasoline, and has a cruising radius of three and a half hours at 75 miles an hour.

"Old Jinnie" made the initial air mail trip between Washington and New York on May 15, 1918.

Contrasted with this ship the newer type carries 1000 pounds and has a cruising radius of five and a half hours at a maximum speed of nearly two miles a minute. They are DeHaviland bombers, rebuilt for mail carrying.

Is the air plane beginning to interest the common man, as the automobile began to interest him only two or three decades ago?

Rapidly increasing sales of air planes to individuals and companies indicate it is, and with reason, says Frederic Whitney, Director of the Aero Club of Southern California.

"Properly cared for and handled in the air an air plane doesn't cost any more for upkeep than an automobile," he declared at a meeting of the Trade Board of the Club.

He drives both and ought to know.

Surplus war air planes of the type of the "Jinnie" are on the market for as little as $750.

X-RAY MAKES DIPHTHERIA
CARRIERS HARMLESS

(By Science Service)

Washington, October -- The X-ray is now being used to make diphtheria carriers safe citizens.

These unfortunate persons who have diphtheria, recover from it and are well and happy and yet carry and spread the germs to other people are now being treated and cured by X-rays.

The diphtheria germs remain in certain tissues of the tonsils, nose and ear passages of the victim. Dr. P. M. Hickey of Detroit, Michigan, at the meeting of the American Roentgen Ray Society, reported that treating these tissues with light doses of X-ray rendered them uninhabitable to the diphtheria germs. Eleven out of 15 tonsil cases were cured in this way, while 4 out of 5 nasal and 2 out of 4 ear cases were also cured. The X-ray treatment is comparatively mild and does not compare in severity with that used in treatment of cancer.

Diseased tonsils and goitre are also being treated with the Roentgen ray with successful results according to Dr. W. D. Witherbee of New York City who told of his work at the convention. The treatment consists of light filtered doses of X-rays every two weeks. This allows the normal cells to recover from the effect of the X-ray, but the diseased cells are more sensitive and do not recover.

(Editors. These six groups of short paragraphs can either be used as a daily feature, or they will come in handy as fillers.)

DO YOU KNOW THAT-

Ordinary London air contains black particles which vary in diameter from 1/100,000 to 1/20,000 inch. Exhaled air yields similar particles.

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The police of Colorado Springs, Colo., have utilized an aeroplane to carry bloodhounds promptly to the scene of a crime.

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Water, generally regarded as practically incompressible, decreases 20 per cent in volume when subjected to a pressure of 180,000 pounds to the square inch.

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The "pontias" is a local night wind blowing out of a narrow valley near the town of Nyons, France. According to a prevailing legend the wind was brought thither from the sea by a bygone saint in order to increase the fertility of the region.

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DO YOU KNOW THAT-

During the dust storms of the spring of 1894 in the south of Russia the soil was removed to an average depth of 6 inches and nearly 200 square miles under cereal crops was ruined.

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Grain and small-sized coal are being loaded on steamers and transferred from bin to bin by compressed air.

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In Ireland, Scotland and the Faroe Islands dried seaweed is used as winter feed for cattle and horses. In Sweden it is fed to swine.

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A North Carolina law just passed provides a regular inspection of hotels and compels keeping a score card of their sanitary record.

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DO YOU KNOW THAT-

It is estimated that there are two birds per acre in the eastern half of the United States.

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The southernmost permanently inhabited spot on the globe is Laurie Island, South Orkneys, southeast of South America, and its sole inhabitants are a little party of meteorologists who maintain weather observations there for the Argentine government. The staff is relieved once a year.

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A battle between the British and the Turks in Mesopotamia, in April, 1917, had to be suspended on account of the confusing effects of desert mirage.

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The Ashokan reservoir, from which water is brought to New York by a great aqueduct, lies among the Catskill Mountains 85 miles from the city. The reservoir has a water surface of nearly 13 square miles and a capacity of 132,000,000,000 gallons.

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DO YOU KNOW THAT-

Before the days of tournaments large horses were almost unknown in England. The need of a powerful mount to carry a knight in armor led breeders to develop the type of steed that eventually gave rise to the modern British breeds of draft horses.

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A coal-mine fire at Dysart, Scotland, burned for two centuries.

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The "barocyclonometer" is an instrument for determining the location and movements of a tropical cyclone from observations at a single place, as on shipboard.

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Ivory obtained from the teeth of the hippopotamus was in much demand a century ago for making artificial teeth.

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DO YOU KNOW THAT-

Astronomical picture postcards are published in Germany.

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Photographs taken with the great Hooker telescope of the Mount Wilson Observatory, the largest in the world, have added hundreds of new craters and craterlets to the map of the moon.

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The Fisk Street Generating Station, in Chicago, with a rated capacity of 230,000 kilowatt-hours, is probably the largest central power station in the world.

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As a cheap method of storing the intermittant power that nature produces in the tides, the sun's radiation, the wind, and the waves of the sea, a Rumanian engineer suggests that this energy be converted into compressed air and stored in subterranean chambers that are formed by penetrating below air-tight layers of clay by artesian wells.

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DO YOU KNOW THAT-

The gigantic seaweeds of high southern latitudes exercise a remarkable effect in stilling the waves; so much so that at Kingston, South Australia, an open bay has been made a safe anchorage by virtue of this effect.

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More than 100,000 photographs of the planet Mars have been made at the Lowell Observatory, Flagstaff, Arizona.

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"Reconstructed milk" has recently come into widespread use in many parts of the country. The milk is made from skim milk powder, butter fat and water, mixed in proper proportions in a specially designed machine.

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The famous Wind and Current Charts, published by Lieut. Maury, of the U. S. Navy, in the middle of the last century, were immensely valuable to mariners in pointing out the quickest and safest routes for sailing vessels. British shipping alone is said to have benefited from them to the extent of $10,000,000 a year.

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