

● RADIO

December 9, 4:15 p. m., E.S.T.
BIG GAME IN THE NATIONAL PARKS
 —Dr. H. C. Bryant of the National
 Park Service.

December 16, 4:15 p. m., E.S.T.
WIVES BY THE DOZEN—IN AFRICA—
 Rev. Edward Ward of the Catholic Uni-
 versity of America.

In the Science Service series of radio dis-
 cussions led by Watson Davis, Director,
 over the Columbia Broadcasting System.

regions, in a rather gradual spread, and some local wild cat tribes became blended in the cat race. Etruscans acquired these cats centuries before the Christian era; China about the beginning of the Christian era; England not until about 900 A. D.

And now India's most ancient civilization turns up with a cat, and a new mystery for archaeologists to explain by further digging.

Science News Letter, December 4, 1937

ENGINEERING

Use of Construction Steel Likely To Increase

FOUR and a half billion tons of steel, a billion tons more than at present, will be required to meet America's construction program in 1947, a decade from now.

Some of that steel will go into railroads, bridges, skyscrapers, homes—uses to which it has been put many times in the past. But more of it will go into elevated automobile highways than ever before.

This was the picture of the steel industry and steel construction which emerged from discussions by engineers attending the fifteenth annual convention of the American Institute of Steel Construction.

Use of steel for construction purposes has increased by one-fourth every ten years, F. E. Schmitt, editor of the *Engineering News-Record*, declared. The present three and a half billion tons a year should become four and a half billion tons a year in another decade, he asserted. Henry M. Stevens, J. Walter Thompson Company vice-president, predicted that other cities would follow New York in building elevated express highways to solve a mounting traffic problem.

Science News Letter, December 4, 1937

Meat of the pistachio nut contains an oil similar to sperm oil.

MEDICINE

Anti-Tuberculosis Vaccine Gives Encouraging Results

AN ANTI-TUBERCULOSIS vaccine to protect young children from the dread disease has been developed at the Saranac Laboratory, Saranac Lake, N. Y. Encouraging results with animal trials of the vaccine were reported by Dr. H. M. Kinghorn and Morris Dworski at the meeting of the American Clinical and Climatological Association, at Baltimore.

The vaccine, result of 11 years of work at the Saranac Laboratory, is still in the experimental stage. Dr. Kinghorn and Mr. Dworski stressed the point that reliance should not be placed solely on vaccines to prevent tuberculosis but that all

present precautionary measures should be faithfully and carefully carried out.

The Saranac vaccine is obtained from the caseous or cheesy tuberculosis mass in the center of a cow's lung or cow's gland, and is thoroughly sterilized before using. It has been tested against the vaccine of Robert Koch, and found to be greatly superior to Koch's vaccine. It has also been tested against the vaccine called BCG of the late Dr. A. Calmette of the Pasteur Institute of France, and has been found to be of equal value to this.

Calmette's BCG is an attenuated or weakened bovine or cow tubercle bacil-

Effective January 1, 1938

REDUCTION IN PRICE

CHANGE IN ISSUE

for the

JOURNAL OF MORPHOLOGY

Beginning January 1, 1938, the *Journal of Morphology*, heretofore a quarterly, will be issued bimonthly, on the first of January, March, May, July, September, November.

A volume will contain 600 pages, as formerly, and will be issued in three numbers. Two volumes will be published annually.

The price is reduced from \$12.00 per volume to \$10.00 per volume, Domestic; \$10.50 per volume, Foreign.

Members of

The American Association of Anatomists.

The American Society of Zoologists

The American Association of Physical Anthropologists

subscribing to the *Journal of Morphology* at the special subscription rates offered them through membership in these societies, will now receive this journal at the further reduced rate of \$7.00 per volume.

This change has been made to meet the demands of the ever increasing number of accepted manuscripts, and to assure prompt publication.

Volume 62, No. 1 will be issued January 1, 1938.

Address subscriptions to

THE WISTAR INSTITUTE OF ANATOMY AND BIOLOGY
 Woodland Avenue and Thirty-sixth Street
 Philadelphia, Pa.

lus. Vaccine of the Saranac Laboratory contains a virulent bovine tubercle bacillus, but is killed.

Dr. Kinghorn hopes that this caseous vaccine, when perfected, will be of decided value in preventing the development of tuberculosis in young children who have no tuberculosis.

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of outer space, are adventurers. They have climbed rugged mountain peaks, carried their instruments high into the stratosphere in balloons, sailed the seven seas and sank their equipment deep in lakes.

Now, it is disclosed at the meetings of the American Physical Society that they have donned miners' crash-helmets and carried their delicate measuring apparatus into deep mines.

V. C. Wilson of the University of Chicago reported to the physicists' meeting his experiments carried out in a mine in Michigan to a depth of 1600 feet.

The mine chosen had its shaft slanting at 34 degrees to the vertical so that by placing the instruments at different places along the shaft any thickness of rock could be studied for its absorption of the rays.

At the maximum depth of 1600 feet it was found that the piercing radiation still came through the great rock mass. Its value, however, was only one twenty-thousandth of the intensity at the surface.

Science News Letter, December 4, 1937

Short-wave radio sets have proved so useful in emergency communication in U. S. National Forests that 2,300 sets are in use.



Insect Specialists

SOME flowers insist upon the attention of specialists for accomplishing their pollination.

Not many, to be sure: the vast majority of flowers have open, easily accessible nectar and pollen stores, so that the ubiquitous honeybee and other insects of about the same size and lack of specialization can visit them and perform this vital service toward the production of fruit and seed. Apple and alfalfa, orange and white clover, buckwheat and tulip-tree, a wide variety of others, find the "old family bee" quite adequate.

But there are some flower forms that have become so highly specialized that only a correspondingly specialized insect can be of any use to them.

Particularly is this true of flowers with very deep, narrow throats, like tobacco, petunias, and certain species of lilies, like the beautiful white Madonna lily. The insects that can most successfully pollinate these are certain species of hawk-moths—those big-bodied, whirring-winged moths that some persons mis-

take for hummingbirds. Hawk moths have tongues so long that usually they never touch the flowers with their feet—just hover with their heads partway into the tube, and thrust that incredible proboscis down after the nectar. And, incidentally, daub their heads and bodies with pollen, to be carried to the next flower they visit.

Hawk-moths are so important to one of our major commercial crops, tobacco, that if their numbers were seriously reduced—say by the eradication of the weeds their big, fat caterpillars feed on, it would be necessary to begin the cultivation of special patches of food plants for them.

Bumblebees are another important group of long-tongued insects essential to the welfare of an important crop, this time red clover. Breeders have been trying to get a short-flowered red clover that honey-bees can pollinate, but bumblebees still remain a heavy standby to the red clover seed crop.

Charles Darwin is credited with a classic ecological chain, proving that old maids are necessary to the clover crop. Something like this: Old maids keep cats. Cats kill field mice. Bumblebees find good nesting-places in the empty mouse burrows. The more bumblebees the better the clover crop. Q. E. D.

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removed, during earlier museum collecting expeditions:

"The specimens that have been removed from this quarry represent eleven genera of dinosaurs, mostly gigantic sauropods, also crocodiles, turtles, and a lizard; and we have reason to believe that other genera are represented in this accumulation.

"The bones are unusually well preserved and but little crushed. It is a veritable Noah's Ark of animal remains characteristic of the Jurassic Period.

"Here are skeletons of the largest of the sauropods mingled with the skeletons of powerful but smaller flesh-eating dinosaurs, the heavily armored forms like *Stegosaurus*, as well as the smaller bird-like dinosaurs. Intermingled with these are an occasional turtle-shell, crocodile remains, fresh-water shells, cycads, fossil leaves, and wood fragments."

All on a tilted table 190 feet long and 30 feet wide—a dainty dish to set before an interested public!

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Science News Letter, December 4, 1937

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