

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.

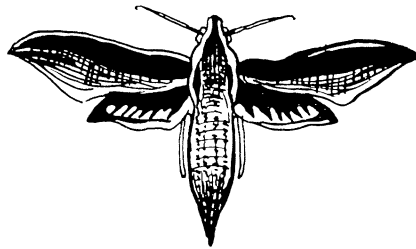
V. C. Wilson of the University of Chicago reported to the physicists' meeting his experiments carried out in a mine in Michigan to a depth of 1600 feet.

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.

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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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