



Not Necessarily a Nuisance

PORCUPINES are not necessarily the unalloyed nuisances in the forests which many foresters consider them, Prof. James D. Curtis, of the University of Maine, suggests. Their bark-chewings are not always harmful, and in many instances may even be beneficial, he points out (*Jour. Forestry*, July).

During the growing season porcupines feed largely on green herbage at ground level, so that except in winter they do neither good nor evil so far as trees are concerned. But in the snowy months they do much of their feeding in the tree-tops, where they chew the bark from smaller branches. Considering how heavy-bodied and apparently clumsy they are, porcupines are astonishingly good climbers. Prof. Curtis states that he has found evidences of their gnawings as much as 70 feet above the ground.

Porcupine feeding injury to trees takes three principal forms. They chew patches of bark off branches and trunks, exposing the wood to the attack of rot-causing fungi. They gnaw smaller branches completely off. Finally, they sometimes gir-

dle the upper part of the trunk completely, in which case of course the whole tree above that point dies.

Prof. Curtis questions whether cutting off branches is necessarily injurious. It may be a form of harmless or even beneficial pruning. Also, it sometimes has the incidental value of dropping leafy boughs of hemlock for deer to browse on, in seasons when such provender is hard to find at ground level.

Furthermore, Prof. Curtis contends, even when trees are seriously injured or even killed as a result of porcupine feeding, the value of the injured tree should be considered. Many of the trees thus eliminated would have to go anyway, in the ordinary process of thinning

to make better stands of timber. Many others are of species held in low esteem from the viewpoint of commercial forestry. And a considerable part of Porky's feeding is done on shrubs which have no economic significance, or (like stag-horn sumac) are "weeds" that hinder the establishment of valuable trees.

Before turning in a final verdict, either against or for porcupines, Prof. Curtis urges, foresters should conduct thorough and unprejudiced researches on what the porcupines in their particular regions actually do to the trees. To shoot all porcupines at sight, just because one sees de-barked branches on some trees, seems a bit unscientific, to say the least.

Science News Letter, October 4, 1941

MEDICINE

Bronchial Cancer Patients Saved by Early Diagnosis

Far Too Many Now Allowed to Die Without Effective Treatment Although Diagnosis Is Possible Early

FAR too many patients with bronchial cancer are now denied the benefit of effective treatment and allowed to die "because no steps are taken even to arrive at a diagnosis until the condition is hopeless."

This charge of laxity or ignorance on the part of both the laity and the medical profession was made by Prof. Evarts Graham, of Washington University, St. Louis, at the University of Chicago Fiftieth Anniversary Celebration. Prof. Graham was among the 35 scientists and scholars to receive honorary degrees at the close of the celebration on Sept. 29.

Bronchial cancer constitutes about 10% of all cancers, Prof. Graham declared. Among patients coming to Barnes Hospital in St. Louis, 88% were in such an advanced stage of the disease that

they could not safely be operated on.

"Yet in 75 or 80% of cases a bronchoscopic examination and biopsy will establish the diagnosis even in early cases," he declared.

The only treatment known to be effective for this condition is complete surgical removal of the cancer, which usually means complete removal of the lung. One patient is now living and well in his ninth year after operation and many more are still living free from recurrence for shorter periods. At present about 35% of the patients die from the effects of the operation, but this figure can be greatly reduced, Prof. Graham

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said, if patients are subjected to operation before serious complications have occurred.

Science News Letter, October 4, 1941

Defense Against TB

THE MOST reliable and desirable of the body's defenses against tuberculosis is calcification, or turning the infected region into bone, Dr. Robert G. Bloch, associate professor of medicine at the University of Chicago, said.

Although it has been believed that calcification is merely a secondary process following complete healing of the disease, the development of bony matter from the infected area actually should be investigated as one of the most promising methods of cure, he said.

Studies by X-ray of more than forty thousand persons to determine the number infected with the tubercle bacillus have indicated that among the healing processes for the disease, calcification of the tuberculous spots is the most reliable and desirable, Dr. Bloch asserted.

"Such a metamorphosis into stonelike remnants of the original disease not only makes it impossible for the tubercle bacillus to live and grow, but also indicates the acquisition of a good immunity by the afflicted individual," he said. "Even though the petrification may not be complete, an abundant deposition of calcium salts surrounded by adequate scar tissue offers a fair protection against the reactivation and further spread of the disease.

"The necrotic (diseased and dying) process, the forerunner of calcification in the adult, is the all-important epidemiologic problem in tuberculosis. Small as it may be, as a potential excavation which will discharge its infectious content, it remains the ever-dangerous redistributor of the infection to the same individual and to others.

"The possible fostering of the process of calcification, therefore, seems a worthy goal of investigation."

Science News Letter, October 4, 1941

Two-thirds of Columbia University's freshmen this autumn are planning careers in engineering, science, and medicine.

An American engineer constructing an electric plant in the Belgian Congo had to improvise substitutes for missing dowel pins—the steel pins turned up later as *nose ornaments* of African tribesmen.

Made to order for school instruction

A FEW MONTHS AGO a limited membership group of friends of science was organized.

It was sponsored by Science Service, the non-profit institution for the dissemination of scientific knowledge. Because its members each month were to receive a unit of unusual objects of science, the group was named "THINGS of science."

More than 1,500 membership applications were received the first several weeks! The roster now approaches 5,000 members.

Teachers especially like to get the science units. For them a special feature is added: Each unit of THINGS contains one or more museum-style legend cards describing the component parts of the month's exhibit. Thus the material can be kept on display in laboratory cases when the teacher's personal or classroom use of the material has been served.

Here are some of the THINGS units members have received—one on Synthetic Rubber, another on Fingerprinting, another on Bimetal (see illustration), another on hundred-million-year-old Fossils, and so on. For example:

in the FABRICS unit:

It contains a piece of cloth made from salt, coal, lime, and air. And a piece of textile woven from fibers of spun *glass*. Also a small piece of synthetic fur made from swamp cat-tails. Also a small piece of synthetic wool made from *milk* produced in Italy and Germany for use in clothing. Lastly, the unit contains a piece of paper that looks and feels like cloth!

in the BIMETALLIC unit:

There are two pieces of metal in this exhibit, one a disc and one a strip. They look like one metal but are actually composed of layers of two! (See *illustration*.) Instructions for three surprising experiments come with them. In the home bimetal is now in use in from ten to fifty pieces of equipment! In your car bimetal is used for as many as thirteen functions.

in the METEORITE unit:

It contains two actual meteorite specimens, with full certification by authorities that they are actual fragments from the heavens such as can usually be viewed only in museums. Included is some of the sand pulverized by the tremendous *impact* of one of the largest meteorites ever to hit the earth.

in the MILLION YEAR FOSSIL unit:

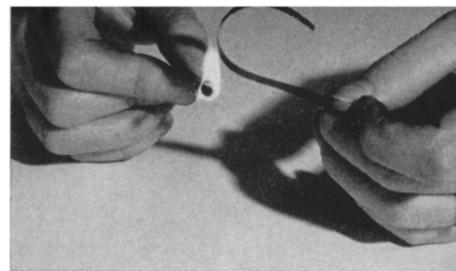
This exhibit is in three parts. First, a section of fifty-million-year-old Dinosaur Bone from the Mesozoic Period. Second, there is a piece of Cretaceous Wood more than 100 million years old. Third, there is a Brachiopod Shell more than 300 million years old, in which life has not existed since the upper Devonian Period!

in the FINGERPRINT unit:

Here is an inkless fingerprint outfit with material good for many impressions. Included are two purse fingerprint cards that may some time be useful to the owner in cashing a check. There are also two official fingerprint record documents. Instruction is given on the way to classify the *arches, loops, whorls and composites* in your own or any fingerprint.

in the SYNTHETIC RUBBER unit:

You pick up a piece of rayon web treated with the magic plasticized poly-vinyl chloride which



Experiment: Flame makes bimetal bend one way. Ice makes it bend the other!

makes it waterproof. Next, a piece of synthetic rubber made from oil, soap, natural gas and air—we may all be using this type of rubber before long! Then, for purposes of comparison and made in the same form as the synthetic piece, there is a section of natural rubber. There are instructions for experiments with each of these products.

IN ADDITION, every exhibit unit contains a brief, clear explanation of its contents, phrased so simply that it is no trouble at all to use the information when talking to the class. Definite experiments are suggested.

THINGS of science units are especially desirable for teachers. They add to your own store of information some tangible things which can be *looked at, tried out, felt, and kept* as a *permanent exhibit*. The legend cards help in the latter.

Dr. B. E. Holaday, State Normal School, Fredonia, New York, writes, "Congratulations upon the development of the technique for disseminating actual THINGS to interested people. My units will be given a prominent display space in the corridor."

The Science Counselor, quarterly journal of the Duquesne University Press, calls THINGS of science, "An exciting new help for science teachers," and adds, "You cannot afford to miss it."

Sister Casimir Czurlis, of Owensboro, Ky., adds, "I just wanted to tell you that THINGS is a dream realized, a dream I am sure many other science teachers have dreamed. It is the most useful subscription that has ever come to my notice and I gladly renew my trial membership."

Would you like to own *three* of the above interesting units of unusual material—just as received by the members? We will choose three from those now available and send them to you for \$1. Please mail remittance with order.

If the units delight you as much as we think they will, you are cordially invited then to join the group. But you are **NOT obligated to join** when you send in the coupon below.

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