

From Page 329

However, it has been found that certain copper compounds, and more especially certain forms of sulphur, will cause changes in the plant's sap, making it poisonous to the leafhoppers for many days. Most of the compounds are not directly poisonous to the insects themselves. Moreover, they are not soluble in water, and it seems improbable therefore that any great amount of them gets into the plant juices. How they cause the plant to become poisonous to the insects has not as yet been found out, but the fact remains that they do have this effect.

Pyrethrum, a plant that is always poisonous to insects, if it is used aright, may become a profitable crop in the United States, making part or all of the present imports from Japan and Jugoslavia unnecessary, R. E. Culbertson, research fellow of the Crop Protection Institute, told the meeting.

Pyrethrum belongs to the chrysanthemum family, and looks like a tall white daisy. The active principle extracted from its dried flower heads, called pyrethrin, is what puts the lethal "kick" in many widely used household insect-killers. Over thirteen million pounds of dried pyrethrum is now imported annually.

Mr. Culbertson has had test plantings made in thirty states, under a wide variety of climatic and soil conditions. Results indicate that the plants will grow well in all parts of this country, and that the paying pyrethrin content is just as high in the domestic product as in the imported. Weather affects the quality of the crop: there is a higher concentration of pyrethrin in hot, dry seasons than in wet, cool ones.

Riding in Corn

When you buy a shiny new automobile for the family, a pair of patent-leather sandals for your wife, or a brightly-lacquered toy for one of the kids, you may be consuming corn and cotton in disguise. Charles L. Gabriel, New York industrial chemist, explained how.

Corn and other grains were used in large-scale production of only one chemical, ethyl alcohol, pre-war days. Now they are fermented into many other useful things.

Prominent among these uses is butanol or butyl alcohol, used as a solvent for cotton in the preparation of bright modern lacquers and leather finishes. Another is methanol or wood alcohol, which can be converted into formalde-

hyde, widely used as a disinfectant, in the manufacture of dyestuffs, and in the production of synthetic resins of the Bakelite type.

Power alcohol, for blending with motor fuel, was stoutly advocated by Francis P. Garvan, President of the Chemical Foundation, New York. He held that the addition of alcohol to gasoline is justified from both engineering and economic viewpoints, and that it is absolutely necessary as a matter of national defense.

Mr. Garvan directly accused the Standard Oil Company of New Jersey of devious methods in opposition to the power alcohol program. Furthermore,

he added, the same company is "plotting and planning with the German I.G." to monopolize world production of liquid fuel from coal by the Haber process, when supplies of crude oil run low.

He warned industrialists among his hearers that if private business does not take up the manufacture of power alcohol the Government will. Although deprecating Government competition in business, he added, "Do not blame the Government for going into business. When it does so, it is always due to either the sloth or the greed of private interests."

Science News Letter, May 23, 1936

ZOOLOGY

Chain Replaces Steel Jaws In Humane Animal Trap

Invented by Leading Animal Researcher, Dogs and Even Hunters Can be Caught Accidentally Without Danger

By DR. FRANK THONE

TRAPPING animals for fur, for domestication, or to remove them as nuisances, promises to become a much changed and far more humane business than it has been during the long reign of the steel trap, through the introduction of an entirely new type of trap, the invention of Vernon Bailey, veteran zoologist of the U. S. Biological Survey. Mr. Bailey's trap substitutes for the old-time steel jaws a firm-holding but painless chain loop, somewhat reminiscent of the string snares we used as boys, to catch ground-squirrels and gophers. Only it is much stronger, wholly automatic in action, and can be built big enough to capture a grizzly bear.

Mr. Bailey has spent a long lifetime among animals, as their student and their friend. He has hated to see them tortured by steel traps—and often escaping from them, at the cost of being crippled for the rest of their lives. Yet he recognizes the legitimacy of the fur trapping industry, which has for a long time depended largely on steel traps. To produce a better trap, that would never lose its catch and yet never torture or maim the animal, has been his ambition for many years.

The "Verbail" trap—as his friends have named his invention—is built very much like a bow. There is a strong but flexible spring-wire arch, with a piece of light chain attached to each end. The

free end of each chain terminates in a ring, which slides freely around the opposite chain, thus forming an easily closing loop.

When the trap is set, a four-legged "spider" of light metal holds the loop open, wide enough to admit the foot of the animal to be caught. When the animal steps into the loop, the jointed legs of the "spider" let go and the spring flies apart, throwing the loop upward and at the same time pulling it shut—and the animal is caught.

The first reaction of a trapped animal always is to jump and pull. In an anchored steel trap, this always ends in a violent jerk, increasing the shock and pain of the jaws' first hard snap, and not unlikely breaking the animal's leg—if the steel trap has not already broken it.

In the "Verbail" trap, the effect is quite different. The chain cannot break the animal's leg, and its jump and tug are stopped by the "yielding resistance" of the spring that holds the chain. As a rule the animal, not being in any pain, soon accepts the situation philosophically and lies down to wait for what may happen next.

Animals with their legs broken in steel traps of the present pattern not infrequently pull and twist, despite the agony their efforts cause, until the foot is pulled off, and they escape. Once in a while a desperate wolf in a trap will even gnaw the broken leg free. But in

Mr. Bailey's chain trap such self-amputation is impossible. It is thus not only more humane than the steel trap, but considerably surer to hold its catch.

Another advantage which Mr. Bailey points out for his non-mutilating trap is the avoidance of neighborhood feuds due to the unintended capturing of dogs, cats, sheep and calves. A steel trap, even if it does not break a leg, is certain to cause at least severe bruising and laceration, which will not only cripple the animal but irritate the owner. But a chain trap causes no more inconvenience than making stray Towser stay away from home a little longer than he intended.

Mr. Bailey tells of a nice old shepherd dog that blundered into a chain trap he had set for a fox. When released, Shep followed his captor with waving tail and every apparent intention to "adopt" him, and it was only with difficulty that Mr. Bailey persuaded him to go home.

Bear traps of the present steel-jawed type, frequently armed with inward-pointing spikes, have terrible effects on unwary hunters or hikers who accidentally step into them. They always cause serious injury and intense suffering, and since it is impossible to open them without a special tool, men have been known to die of pain, starvation and thirst when caught in bear traps. A chain bear trap, on the other hand, causes no injury to even the most delicate ankle, and any human being can open it and escape in a few seconds.

Catches Himself

So little harm is there in the chain traps that Mr. Bailey's favorite method of demonstrating their action is to stick his hand into the loop and let it spring shut on his wrist or finger. He declines, however, to make a parallel demonstration with a steel trap.

A final advantage pointed out for the chain trap is its lightness, which will enable a trapper operating a long line of traps to carry a larger number—with, of course, correspondingly larger chances of making a profitable catch.

Mr. Bailey has also invented several other non-killing, non-maiming traps, including one which closes up around a beaver, holding him helpless but unharmed until his captor comes to take him away for "re-planting" in some old beaver stream, trapped out many years ago. Mr. Bailey has captured many beaver in this way. He says they are among the easiest of animals to make friends with and can be "gentled" in a few minutes.



PAINLESS TRAP

The inventor himself, Vernon Bailey, veteran zoologist, does not mind being caught in his new and humane animal trap, made with a flexible chain loop. The light chain clings around his wrist, snugly yet harmlessly. You wouldn't do that with a steel trap.

Mr. Bailey does not limit himself to beaver, however. He will undertake to put any animal he traps into a bag and take it home alive, if it is of a size he can lift. He has done this with many wildcats, coyotes, foxes, and other animals captured in his chain traps—though he admits that with bobcats it was "rather like going through a barbed-wire entanglement." Although Mr. Bailey is now an elderly man, and not a contender in the heavyweight division, he is quick and wiry from a long outdoor life. Moreover, he "just knows his bobcats."

Another animal guest which Mr.

Bailey has transferred from trap to bag, and taken home safely on his back, was in a sense more formidable than any bobcat—though it was of a species armed less for hand-to-hand combat than for chemical warfare methods. Yet by using plenty of diplomacy—and time—Mr. Bailey got Puss-in-Stripes into his bag, took him home, and kept him there for two days before turning him loose again. And all without the least interruption in amicable relations.

You can do anything with animals if you only use tact and a little animal sense, says Mr. Bailey.

Science News Letter, May 23, 1936

ZOOLOGY

Bats, Captive, Like Diet Of Cheese and Minced Bees

BATS, which would hardly be fancied as pets by most people, have been kept as more or less docile captives for months on end by Prof. William H. Gates of Louisiana State University. At the meeting of the American Society of Mammalogists in Philadelphia, Prof. Gates told of his experience in capturing and keeping bats of several species, and of his observations on their feeding and breeding habits.

Captive bats, he found, would feed willingly on a large number of things

that they cannot imaginably get in their native state. American cheese, cottage cheese, yeast, bees killed and cut into small pieces, minced insects of other kinds, bread, crackers, hard-boiled eggs, any kind of vegetable, any kind of unsalted meat, milk of all kinds—sweet, sour, evaporated, buttermilk, malted milk—all these the bats fed and thrived on.

They preferred cottage cheese above other artificial foods, Prof. Gates said, and would even (Turn to page 334)