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ENTOMOLOGY

Science Seeks Relief for the Stung

"The gobble—uns 'll git you ef you don't watch out!" Perils that lurk in the paths of the unwary

By MARJORIE MACDILL

The annual insect warfare is in full swing.

The buzzing brigades are getting in their usual dirty work while perspiring campers slap lumps on the back of their collective necks, and other parts of their anatomies, and say futile cuss words.

Swollen itchy casualties limp back to the comparative peace of traffic jams and subway crowds after harassed excursions into the wilds, saying "Never again," meaning till next time.

Sunburn, poison ivy and bugs are the rocks that wreck vacations, and the greatest of these is—bugs. A hat will keep off the sun, poison ivy is rooted and can't move, but our six-footed friends we have always with us.

Insect Venoms Classified

Scientists have been so busy laying plans of Hunnish warfare on the corn borer and the cotton boll weevil that make the poor farmer pay and pay and pay, not to mention the malarial mosquito and tse-tse fly and such pleasant mannered insects as carry actual death in their bite, that they have paid scant attention to those that merely bore, saw, puncture, carve and otherwise mutilate their victims. This oversight is gradually being remedied, however, for some humane individuals among the men of medicine and entomology have worked out a few remedial measures that enable any witless wight to patch up his wounds and return from a week-end in the country with a reasonably whole skin.

The venoms which confer on a very small insect the power to make creatures hundreds of times larger than himself so exceedingly uncomfortable may have one or several effects. Dr. A. C. Roxburgh, a skin specialist of London, one of those

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benevolent fellows just mentioned who have made a study of insect bites, says that the poison may affect the nerves or the blood, may produce merely local inflammation or profound and sometimes fatal shock.

Most of the commoner insect annoyances affect the blood. Of these the mosquito is a familiar example. This is the time of year when his hum is heard throughout the land and the cries of his victims arise from afar. Scientifically speaking we should perhaps say "her," for the females do most of the biting.

How the Mosquito Does It

It used to be thought that the well-known result from a puncture of Mother Mosquito's proboscis was merely the effect of an injection of mosquito saliva into the alien fluid, human blood. The irritating agent has been found, however, not to be the saliva but an enzyme in a kind of yeast always present in the insect's alimentary canal. If one had the fortitude to wait patiently for the mosquito to finish its meal, scientists tell us, most of the yeast cells would be sucked back again out of the wound. The occasional deaths from mosquito bites are thought to arise from the insect's having temporarily harbored virulent streptococci as well as the normal yeast cells. Horse-fly bites are often infected in this way, and there is a record of a case where anthrax was inoculated by the bite of one of these insects.

Mosquitoes can be kept off more or less by smoke from fires or tobacco. The odoriferous oil of citronella smeared frequently over the exposed parts of one's person likewise helps. Once they have done their worst to you, rubbing the punctures with a wet cake of soap or weak ammonia will alleviate the itching. If the bite shows any signs of infection it is wise to forestall serious consequences by dabbing on any reliable germicidal solution. If bad infection does show up, a doctor, of course, should be consulted immediately.

How to Remove Stings

When one is getting stung by a bee is not a propitious time to make accurate observations, but it is nevertheless a great help if there is a clue to the identity of the offender. Chemically the poison of a bee is just the opposite of that of a wasp and should be treated with different remedies. The bee sting is acid and should therefore have some weak alkaline preparation like the wet soap or weak ammonia recommended for mosquito bites. The wasp's sting, on the other hand, is alkaline and should be treated with applications of vinegar.

The technique of removing the sting of a bee or wasp from a wound is very important. The sting with the poison sacs that are attached to it is usually left behind by the insect as a memento of his attentions. If one follows the natural instinct and pulls the sting out with the fingers or with forceps, the poison sacs are squeezed and more poison is forced into the wound. The preferred way, the experts tell us, is to lift the sting out carefully with the blade of a knife so that the sacs are left intact.

Thousands of bees have been dissected and their poison analyzed by scientists to find out its exact composition. Formic acid is the main constituent, accompanied by minute amounts of complex organic compounds. The pure poison placed on uninjured skin, one investigator found would produce absolutely no injurious effect. The slightest break in the surface of the skin or a needle puncture through a drop of the poison caused the typical reaction of a sting. Some people are much

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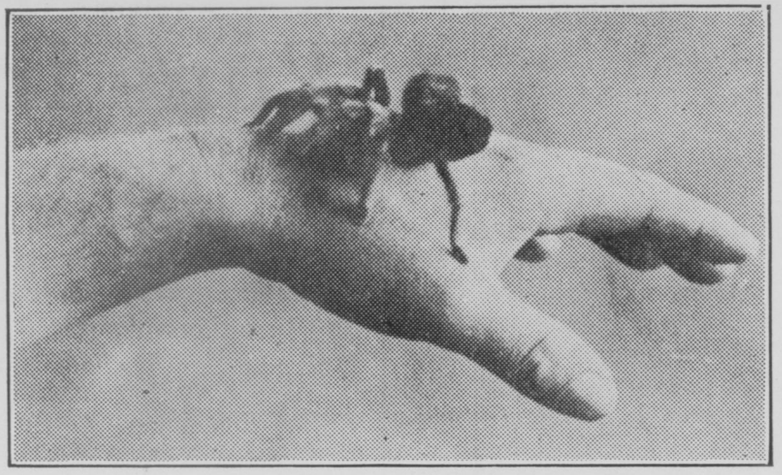

Not so dangerous as it looks. Though the capable jaws of this native tarantula of the southwest will draw blood, the bite is comparatively harmless. This specimen has been living as a pampered pet in the Division of Insects in the National Museum for over three years

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more susceptible to the poison of bees and wasps than others, and it is among this group that cases of collapse and death from stings occur.

Beware of Caterpillars

No one needs to be warned about bee stings, but many caterpillars of the wooly bear category have an irritating effect on the skin, somewhat like nettles. The greyish caterpillar of the widely distributed tussock moth, with tufts of brown whiskers at either end and rows of red spots along its back, is a common offender, while the saddleback caterpillar, well-known to the South, is really seriously poisonous.

The caterpillar of the brown-tail moth that has spread havoc among the shade trees of New England has spines that are very irritating and has caused much annoyance to people in infested sections by getting on laundry hung out to dry. Shirts full of caterpillar hairs have given the eradication campaign as much impetus as desire to save the shade trees, it is said.

A two per cent. solution of sodium bicarbonate followed up with a ten per cent. ichthyol ointment will help relieve the irritation the fuzzy crawlers leave in their wake.

Family History of the Chigger

One of the greatest little killjoys in all out-of-doors is the chigger. Dr. H. E. Ewing, of the U. S. National Museum, has laid bare several chapters in the life of this pestiferous little beast whose habits, all but its bite, remained for a long time a mystery to science.

What eventually proved to be the adult form of the chigger was known to entomologists as Trombicula, a harvest mite that lives in the soil. Finding this mite frequently associated with the tiny red larval form familiar to the picnicker in the woods, Dr. Ewing suspected its identity. He collected a number of Trombiculae and bred them in captivity. The resulting young were the characteristic red chigger about one-fiftieth the size of the adult mite, which is orange red in color and about as large as the head of a pin.

From the chigger stage of life the insect passes first into the nymph stage for a few weeks and then to the adult stage. The adult lives about ten months and is almost amphibious, requiring a great deal of moisture. The indications are that there is but one generation a year, and if the adults can be exterminated by depriving them of moisture, the chigger may be checked. Another possibility of control is getting rid of the rabbits that are the principal animals that harbor these pesky little nuisances. Snakes are also known to carry chiggers and ought to excite the envy of unfortunate campers for when they periodically shed their skins they shed the chiggers with them.

According to Dr. Ewing's observations on the chiggers that he kept under observation on his own arm, they do not bore into the skin as is popularly believed, and stay "holed up" under one's epidermis until they decay. They take up a good position for sucking at the base of a hair and attach their mouth parts there. They are not capable of actually piercing the human skin in the entomologist's estimation.

The American species has been exonerated from the charge of being a disease carrier. A Japanese variety, however, is responsible for the spread of flood fever, a disease somewhat similar to the Rocky Mountain spotted fever of our own West.

Flowers of sulphur dusted in the stockings and underwear is the best way of keeping chiggers off while applications of benzene will make them loosen up from their entrenched position at the base of the hair follicles, after they have made their presence known.

A salt bath or a bath with strong soap immediately after coming in

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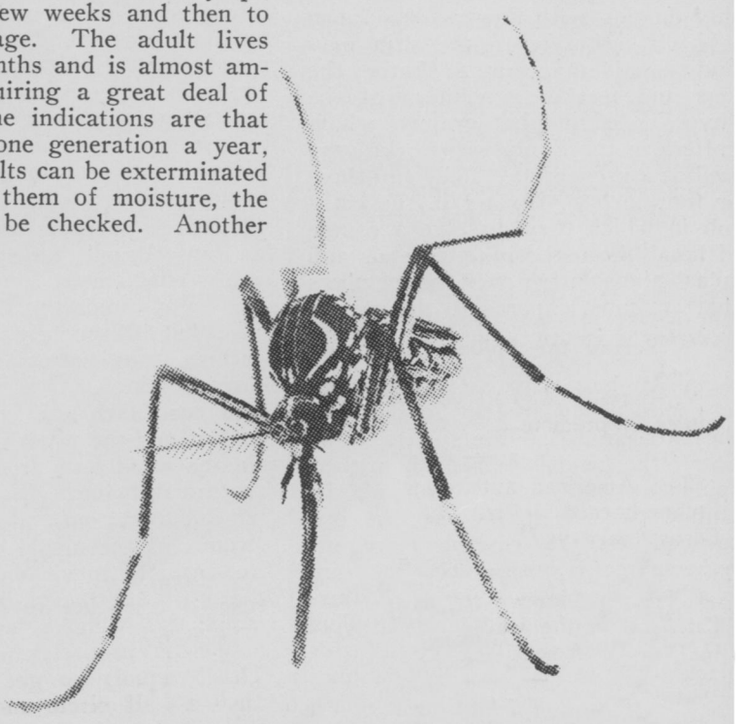
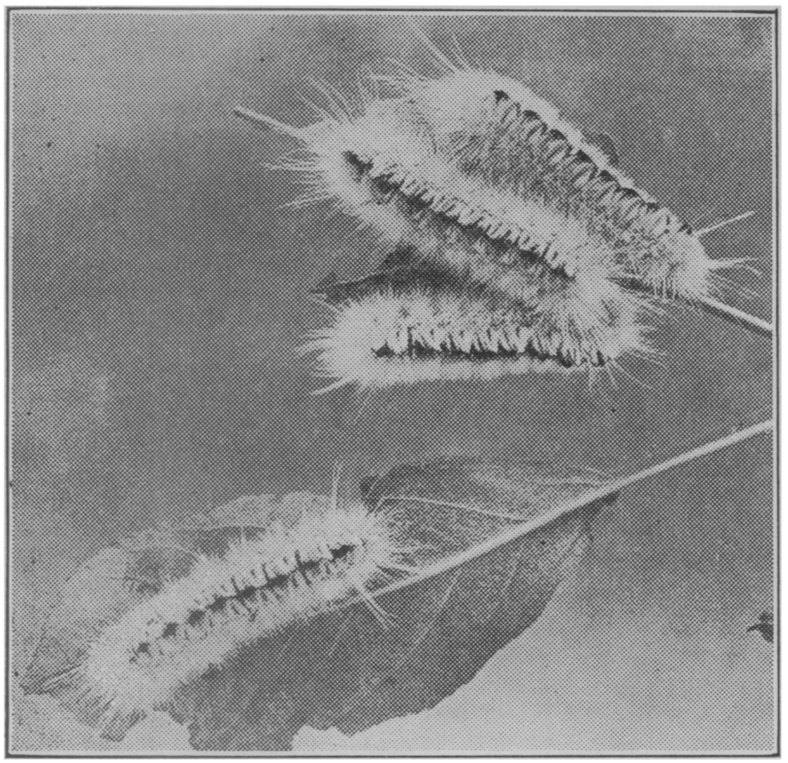


A close up of an old friend. Note the formidable proportions of the beak the mosquito uses to puncture your epidermis.—(U. S. Bureau of Entomology)



Don't let fuzzy fellows like these come too near. Many caterpillars of this family cause great discomfort with their poison hairs.—(Courtesy of the U. S. Dept. of Agriculture)

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from out-of-doors will help wash them off while drug stores sell anti-chigger preparations that purport to check the intense burning that follows a severe encounter with the minute pests. People who find that dusting with flowers of sulphur is itself irritating to the skin may find it advantageous to bathe the legs and feet in a solution of the "hypo" used in photography, which golfers in the South say works very well as a preventive. They run three or four inches of water in the bathtub in which they dissolve a couple of handfuls of the hypo crystals and splash the solution over the members that are most exposed to the enemy.

Serum for Spider Bites

Spiders have a bad reputation, but in general they are not so black as they are painted. One species, however, the widely-famed hourglass spider of the southern half of the United States, causes such serious consequences that cases have recently been treated with a specific serum in a hospital in Los Angeles. Agonizing pain and sometimes death follow an encounter with the fangs of this black widow, as it is sometimes called in reference to the female's pleasant conjugal habit of devouring her mate.

Dr. Emil Bogen, formerly of Los Angeles, who has made an extended study of this problem, states that experiments showing that one attack conferred immunity, suggested the possibility of using serum made from the blood of patients recovering from the black widow's bite. Convalescent serum was accordingly tried out and found to be effective in reducing the acute pain. A limited supply is kept on hand in the hospital where the work was done and its use promises features of considerable interest along the lines of immunization.

Research workers at Sao Paula Institute, Brazil, have developed a highly effective anti-serum for two species of spiders with poisonous bites, but fortunately for us these species do not come within the boundaries of the United States. Aside from the black widow the rest of our native spiders and such tarantulas as are found in the South are comparatively harmless.

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Seedlings of California's giant redwood trees are to be planted in Virginia.

After a conquest in Macedonia, a Roman leader returned with 250 wagon loads of Greek paintings and statues.