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Electric Light Bug

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Belostoma.

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THE POISONOUS STING OF THE ''ELECTRIC LIGHT BUG'' OR BELOSTOMA, AS IT IS CALLED BY ENTOMOLOGISTS.

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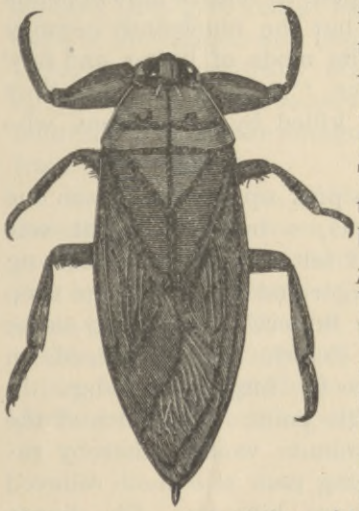
Since the medical profession has been paying so much attention to the study of ''bugs'' for the last ten years or more by means of the microscope, I thought that it were not out of place to give some of my personal observations and the results of my study of one belonging to the larger family of ''bugs''—without the aid of the microscope—which, I hope, would prove entertaining as well as instructive. Of course this communication is out of the common rut and conventional style of medical journal articles and is entirely devoid of the dominant, popularized surgical jargon of the day. There is quite a lull in the medical literature of the day in regard to the ''big bugs''—the stinging and biting *Hexapoda* and *Arachnoidea*—most of them being pedantically enumerated in the books, the list being considered as closed, as no new additions have been made for some years. I do not remember of ever having seen a description of the belostoma or an account of its sting in any of the medical books and journals. During the warm, sultry nights of the months of July, August and Septem-



ber the electric lights on the streets attract swarms of insects. Among the multitude of squirming, fluttering insects there is often a very large-sized bug, in fact, larger than any one belonging to the insect convention, making a grand whirl around the bright globe of light, casting its large, dark shadow in every direction. The large bug adverted to is either the so-called "electric light bug," American belostoma, *Belostoma americana*, or *Belostoma griseus*. as it is called by naturalists. The American belostoma, as well as its partner, the *Belostoma griseus*, are quite common in this part of the country (Western Missouri) during the summer. The *Belostoma griseus* looks exactly like the American belostoma, but differs from it, in not having a groove on the front joint nearest to the body.

It is somewhat larger and darker than the former. The American belostoma, I find, is about 5 centimeters long, whilst the *Belostoma griseus* measures nearly 6 centimeters in length. The American belostoma is brownish-black in color (erroneously described as black in the books) and belongs to the group of insects called *Heteroptera* by entomologists.

American works on entomology give but a very meager account of the bug. Prof. Clarence M. Weed is the best authoritative writer on the belostoma and its species in this country. The belostoma has two pairs of wings and is armed with two large front legs, well adapted for catching and holding its prey. A strong, sharp claw is attached to each front leg. The four other legs are thick and flat and are used as paddles for swimming purposes. Along the sides of the four legs are fringes and each limb ends in two sharp claws. The belostoma is an aquatic bug and of course lives also in Kansas! In the good, olden times the belostoma spent its leisure time in ponds and pools, where it led a predatory life, but the nineteenth century electric light has somewhat reformed its mode of living and now takes nightly trips to the cities and often "stays there," as they have the vernacular, being frequently killed by pedestrians who walk unconcernedly over it.

Some four years ago I happened to pick up carelessly, on one of my nightly entomological expeditions, a belostoma that was struggling on the ground. Suddenly I felt a sharp pain shoot up my left arm, starting from my middle finger and was obliged to drop the bug at once and had to nurse my finger. On looking at the painful finger under the rays of the electric light I noticed an erythematous coloring at the point where the finger was stung. In the centre was a minute dot, marking the point of entrance of the sting. I immediately sucked out the minute wound, thereby removing a part of the venom. The stinging pain was much relieved by the application of a solution of sodium biborate. The finger

smarted for a few days. A papule marked the point of ingress of the sting, which dried and scaled off in ten days.

Later on I carefully caught another belostoma and examined it more closely. I found that it possessed a piercing dagger-like beak which was provided with poison glands, operating on the principle of a hypodermatic syringe. I propose at some future time to make a micro-chemical analysis of the poison and give a description of the anatomy of the poison glands and beak. The belostoma is a carnivorous bug, living from insects and tiny aquatic animals. It seizes its victims by means of its strong, rough forelegs and then stabs its beak deeply into them, permitting the poison to enter the prey, which at once paralyses the unfortunate captive, and adds the finishing touches to it by sucking out its blood or juice.

When I was at the World's Fair in 1893, I visited all the entomological exhibitions of the different countries. The Japanese entomological exhibit had some very large specimens which were four or more inches long. They were of a yellowish-brown color. The Brazilian exhibit had also some very large specimens. The large species is called *Belostoma grande*, or, as its name indicates, the great belostoma. No doubt its sting occasions considerable pain and swelling. Before closing I would like to relate my experience with the common undulating back-swimmer (*Notonecta undulata.*) I was bathing in the River Blue and noticed some back-swimmers swiftly gliding over the surface of the water. They are quite difficult to catch. I succeeded, however, in catching one, but it gave me a sting in the wrist, the mark of which remained red for a few hours. I at once sucked out the poison, which operation gave me prompt relief. Stings of insects are painful and inconveniencing. Occasionally they give rise to serious if not fatal consequences. In these days of inoculation and immunization against infectious diseases the thought very naturally arises whether the toxicological effects of stings and bites of poisonons hexapoda and arachnoidea conld not be neutralized or rather antagonized by the attenuated poison obtained from their venom?

Dr. A. Calmette, of Paris, France, has been making extended inoculation experiments against snake poisons. Speaking about scorpions, tarantulas, centipedes and poisonous insects, he remarks that he cannot understand why their venom should not yield to the same treatment. Mineral agents have been the sheet anchor, so to speak, in the treatment of these kinds of poisoned wounds, but the future has more ideal remedies in store in the form of anti-toxins derived from the venom of hexapoda and arachnoidea.