VENOMOUS SPIDERS.

BY NICOLAS PIKE.

In the acquisition of knowledge it cannot be too strongly impressed on the mind that the most common things met with in our daily walks we often know least about, yet they are deserving of our careful attention. Spiders, that we meet everywhere, and that constantly excite the horror of man, woman and child, so that their hands are ever raised against them, are, as a rule, perfectly harmless and often beneficial to man. I must confess that even I do not feel at ease with a large spider crawling over my person. Yet the study of their life history is most interesting. I have watched with delight the "orb weavers" constructing their geometrical webs; the skill with which the cocoon is fashioned and hung with the greatest care, and the adroitness displayed in drawing leaves together for either summer or winter home. It is all wonderful and shows a higher order of intelligence than is generally attributed to these curious creatures.

There has been a great deal written of and published in the newspapers, and also in "Insect Life," issued under the auspices of the government, in relation to venomous spiders, and especially to those of the genus *Latrodectus*. I have met with many of them in different parts of the world. I first procured some in Mauritius, also from Madagascar, La Digue, one of the Seychelles group of islands; from the foot of Table Mount, near Cape Town, South Africa; from Long Island, where it is common, and I have had it from the Southern States and Mexico. I thought Long Island was its northernmost limit, but Mr. Emerton, one of our best arachnologists, tells me he has met with it both in Connecticut and Massachusetts. Thus it will be seen the genus is widespread. As the bite of the *Latrodectus* is said to be very dangerous, I will give a description of and a *resumé* of facts connected with this and other spiders.

We have two species on Long Island—the *L. verecundum* and *L. lineatus*, but it is, I believe, only the bite of the former that is said to be poisonous. The female has a glossy black abdomen, with blood-red spots underneath, that often extend in a chain above, and a few white lines anteriorly, sometimes wanting. The male is noticeable from its slender form and long legs; the abdomen is black or dark brown, with orange or white spots, and the black coil of the palpus is visible. I have generally found it under the bark of old decayed stumps of trees, and in July under dead leaves in the woods. It spins a small web on low bushes, and remains in the center of it, feet uppermost, while the small egg-shaped cocoon is hung on one of the guys of the web. Though reputed to be so poisonous, I have handled quite a number, and brought some home alive to be sketched.

From all descriptions the Madagascar latrodectus has the worst character. It is called *Menavody* by the Malagaches, and from Dr. Vinson's account of it, after several moultings it appears to resemble our American *L. verecundum*. The female is much larger than the male, and does not scruple on the least provocation to devour her spouse. The young are also very pugnacious, and out of a large brood comparatively few arrive at maturity—a fortunate circumstance if it be true that this spider is so venomous.

The Rev. Paul Camboue,* a missionary of Tananarive in Madagascar, has recently published an account of the noxious and beneficial spiders of that island. He refers to the latrodectus as being reputed dangerous, giving even fatal bites, and from further information says he hears from "the east shore of the island that it is not the bite of the spider that is dangerous, but contact with the crushed body. This produces the inoculation of the venom, bringing about the gravest consequences with man and even the zebu."

When Dr. Vinson visited Madagascar he had quite a number of these spiders brought to him, but no case of poisoning came under his observation. He quotes another writer (Achille Percheron), who asks, "Have spiders venom?" and answers, "Yes; they possess it, but its action is relative to the animal attacked. A fly pierced by a spider perishes in a few moments; other insects more slowly according to size, but a man bitten by a spider in Paris would not be hurt any more than from the bite of a gnat. In warmer climates wounds are more serious, local inflammations ensue, and if neglected the heat of the climate brings more or less grave results and even death."

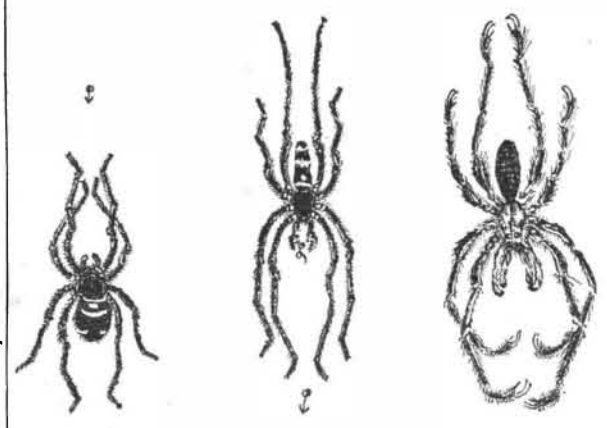
This is just my opinion. Of spiders possessing poisonous qualities and the will to inflict wounds there is not the least doubt. Examine a spider and you will find two falces on the head, each composed of a base and fang, the former simply a support to the cutting instrument. It has a groove on the under surface into which the fang folds down when not in use. The fangs are hard and sickle shaped, armed with numerous sharp teeth, and attached to each is a gland composed of a number of filaments united by a membrane into the form of a sac. The glands secrete a poisonous matter which is deadly to *insect* life. The fang is partly hollow, and through it the poison flows, and escapes from a small opening at the tip. When a spider seizes its prey it bites it with the fangs and partially paralyzes the victim. In all but the large spiders, some of which have strong, powerful fangs, the instruments are far too weak to penetrate the epidermis of a man's hand or foot.

In my studies of the arachnoids I have handled thousands of specimens and have several times been bitten by large ones here. On one occasion an *Epeira riparia* bit me on the cheek, but I did not experience more discomfort than from the bite of a mosquito. I believe the temperament of the individual counts greatly in all such cases. The man who carried my traps was bitten the same day by one of the same species on the ear as he passed through some bushes and broke down a large web, which the enraged spider resented. The bite swelled and produced pain and nausea, but a good dose of brandy soon relieved him, and I bathed the ear with some tincture of *Urtica urens* I always carried in case of an emergency, and he was soon all right.

Even mosquito bites, that only affect me temporarily, so seriously act upon some of my friends that painful swellings ensue and often last for days, probably caused by the impurity of blood, perhaps of a scrofulous nature.

Then a bite of a spider in our northern clime would doubtless have a very different effect to that in a hot country, like Madagascar. Just as our own rattlesnake, for instance, when taken from his winter hibernaculum, does not appear to have half the venom in its bite that it has in July and August, or that is possessed by Texas or Mexican rattlers in their tropical homes.

Numerous cases of spider bites have been reported to me, and some I have carefully investigated, and I must say that nearly all the reputed bites proved to be something else. In one instance, the patient com-



plained of numbness of the parts supposed to have been bitten, nausea, and chills of the whole body. The spider was shown me, and I identified it as *Attus tripunctatus*, a small one, that I saw at once was quite incapable of penetrating a man's hand, from the slight, weak fangs. In two days the hand and arm swelled so badly it was thought advisable to open the wound, when a piece of a needle was discovered that was embedded in the bone. A seamstress had carelessly left her needle sticking in a window sill. The man, seated near, threw his arm on the sill, when the needle broke in the palm of his hand; but the spider, passing over it at the same moment, was captured as the cause of the pain, and, until the opening of the wound, both patient and doctor persisted it had done the mischief, in spite of my protestation, and I could cite many other cases.

Though I have little belief in the poisonous bites of our small northern spiders, I am quite aware there are dangerous ones to come in contact with in hot climates. I will mention one that I think is very little, if at all, known outside of its own habitat. It is a native of Nicaragua, and is met with frequently in dwelling houses, among wearing apparel, and paper, in closets and wardrobes. Especially is it found among cotton and woolen goods, which it eats voraciously. It has been known to live a month on bits of paper, and is very troublesome among books. Truly, this spider appears to be omnivorous, and has cannibalistic tastes also, for it will devour another of the same species whenever opportunity offers. Place two individuals of the same size in a bottle, and in fifteen minutes the stronger will have eaten the other, leaving no vestige of him, and while feeding, the fore appendages work with a sawing movement, backward and forward. It is also found in the dry wood of old cacao trees and in the crevices of mud walls.

The name of this most undesirable tenant of a house in Spanish is *Casimpulga*, supposed to be the *Solpuga limbata*, Luc. It spins no web like a spider's, but deposits its eggs in the same way as she does. It is very pugnacious and will bite sharply if interfered with. The bite gives intense pain, traveling along the motor nerves to the heart, causing sharp, cutting pains in that organ and difficulty of respiration. The bitten member becomes swollen and assumes a dark color; high fever ensues, temperature 104°; black stools and convulsions continue for a month or more. In eight cases carefully investigated there were two deaths.

A young lady was bitten over the nerve of the middle finger of the right hand. The pain was intolerable and ascended up the arm to the heart, where it increased. The tongue was slightly paralyzed, breathing difficult and convulsions at intervals. The third day the temperature was 103° F., with vomitings and dejections black. The fifth day the fever subsided, but the pain lasted for forty days, with frequent convulsions, and the patient remained weak for some time after the pain subsided. I know the above is a fact, as I had it from the father of the young lady, a doctor himself. The solpugas are placed by entomologists among the *Pedipalpi*, below the true spiders, and all are noticeable for enlarged maxillæ, usually ending in a forceps, as this one has. The spider is light brown on the cephalothorax and dark on the abdomen, the legs and joints of various sizes and lengths. The curious appendages in front when examined under a microscope have the form of a crab's claw with strong teeth and forceps. Each of the hairy feet has two long claws and a sharp needle-like spine.

* See "Insect Life," vol. 2, No. 9, p. 273.

Fatal Spider Bites.

It has been generally believed in Jamaica, from quite early times, that serious results will arise from the bites of certain spiders. The following testimony from Dr. Cargill, of Half-Way Tree, confirms this belief, and has value as an independent statement of one who has had long experience in the island. The Queue-rouge is, of course, the *Latro ductus*, which is not uncommon in Jamaica. In the original MS. the omitted names are given, but I have received permission to send it for publication on condition that I omit them. The Colon spider is one of the old genus *Mygale*.—[T. D. A. Cockerell (June, 1893).

"It was supposed that the whitlow, which ended in blood poisoning, originated in a spider's bite (in Mrs. ———'s case), but I was never satisfied that such was really the case. People are very apt to mix up *post* and *propter hoc* occurrences. There can be no doubt that venomous spiders, such as the tarantula and black spider (the little red-tailed *Queue-rouge* especially), have occasioned death in rare instances, either by the direct lethal effects of their poison or by blood poisoning secondarily. I have never had any death from spider bite in my own practice, but I have had many cases attended with severe pain and serious inflammation of the joints of the fingers. Capt. ———'s first wife nearly lost a finger from a black spider bite, and the late Richard Hill (naturalist), an old friend of mine, told me that he had a friend who died from a spider bite on his tongue. The spider was a *Queue-rouge*, and had got between the blades of some guinea grass which he had put in his mouth. There is a very large spider in Colon, which the people call antelope, but which is no doubt a species of tarantula. This spider has been known to kill dogs and horses, and the bottle which contains a good specimen in our museum has a label which states that the spider was supposed to have killed a girl. We have many interesting spiders in Jamaica, and if I can get a red-tailed black spider, I will send it to you. It is far more venomous than a scorpion."—[Jasper Cargill (November, 1891).—*Insect Life*.

Action of Oxygen in Asphyxia.

With regard to the physiological action of oxygen in asphyxia, more especially in coal mines, a committee of the British Association has arrived at the following conclusions:

1. In the case of rabbits asphyxiated slowly or rapidly, oxygen is of no greater service than air, whether the recovery be brought about in an atmosphere contaminated by carbonic acid or completely free of carbonic acid, and whether artificial respiration be resorted to in addition or not.

2. Pure oxygen, when inhaled by a healthy man for five minutes, produces no appreciable effect on the respiratory rate and volume, nor on the pulse rate or volume.

3. Oxygen, whether pure or somewhat diluted, produced no effect on one particular patient, who suffered from cardiac dyspnœa of moderately severe type, in the direction of ameliorating the dyspnœa, and, compared with air inhaled under the same conditions, produced no appreciable effect, either on the respiratory rate and volume or on the pulse rate and volume.

4. An animal may be placed in a chamber, the general cavity of which contains about 50 per cent of carbonic acid, and retained there for a long time without supervention of muscular collapse, provided a gentle stream of a respirable air gas or oxygen, indifferently, be allowed to play upon the nostrils and agitate the surrounding atmosphere.

To Arrest a Cold.

Tincture gelsemium	gtt.	2
Liquid ergot	"	5
Camphor water	dr.	4

Mix, and take every hour immediately the cold is felt. If this is taken for twelve hours, at the same time keeping indoors in the warmth, many a cold will be cut short.—*Corr.-Bl. Schweiz. Aertze.*