

ART. XI.—*On the KATIPO, a poisonous Spider of New Zealand.* By  
F. W. WRIGHT, L.M.B. Toronto, L.M.P. New Zealand.

[*Read before the Medical Section of the Auckland Institute, October 20, 1869.*]

I HAVE presumed to offer for the consideration of the Medical Section of the Auckland Institute the following memorial on the Katipo, a poisonous spider of New Zealand, with a case that occurred in my own practice, believing that the subject deserves a general notice, as it certainly requires colonial investigation at the hands of the medical profession.

In the month of December, 1868, a person of the name of John Huff, living near my residence, came into the surgery complaining that he had been bitten on the shoulder by a spider. He was in the employment of Messrs. Archard and Brown, of Stanley-street, Mechanics' Bay. He was occupied, at the time, in carrying firewood, to supply the furnaces of a brick-kiln; the wood was stacked near the kiln in sedge or coarse grass; this happened between the hours of eleven and twelve o'clock, a.m. At noon he came home to dinner, sat down to table, but upon attempting to eat, found he could not open his mouth, or was scarcely able to articulate, in consequence of stiffness about the jaws. He was alarmed and came into the surgery, when it was difficult to understand what he had to say; all I could learn from him was that he had been bitten by a spider, on the shoulder, in the Bay. Upon examining the spot, I found the surface raised, to an extent as large round as a tea-cup; this elevated surface was white, and was surrounded by a halo of red, not unlike an exaggerated wheal of the nettlerash. He complained of considerable pain in the part, and during the examination became faint, and soon almost pulseless. His pulse was unusually slow, scarcely counting more than twelve or fourteen beats in the minute. His countenance and the general surface of the body assumed a hue of extreme pallor, which gradually turned to a blue tint. His extremities were cold and flaccid; his respiration almost ceased, and indeed I had fears that he was about to expire. Dr. Pinching being in my house at the time, I called for his assistance. He was astonished at the feebleness and prostration of the patient, from such an apparently trifling cause.

From his extreme faintness it was necessary to lay him on the floor, when I applied spirits of ammonia to the wound, which had the effect of lessening the swelling and abating the pain. I also administered ammonia and water, afterwards combined with brandy, in considerable doses; under this treatment his pulse gradually improved, his circulation and respiration became more natural, as was evidenced by his return to a more natural colour. Although a stout strong man, this state of depression remained for upwards of two hours before he was able to return home. In the evening I found him considerably improved, having taken a slight dose of medicine. For several days he could not return to his work, but complained of great lassitude, and nervous depression, which he was sensible of for many days after.

It must be evident from the symptoms of this case, that the man was powerfully affected by a narcotic and irritating poison, which being absorbed into the circulation, affected the heart, brain, and nervous system, to a very considerable extent, almost amounting to fatal syncope,—that the stimulants, by exciting the heart's action, gradually aroused the excretory functions, so as ultimately to remove the poison from the system; for although suffering under its influence for a considerable time, it does not appear to have left any permanent effects behind it, for the man has since been in perfect health.

In corroboration of the nature of this accident, I append the following very graphic description of the bite of the Katipo, furnished by the Rev. Mr. Chapman, whose long residence as a missionary to the Maori race, in the

interior of New Zealand, renders his observations and opinions of peculiar importance.

"In the course of my sojourn in New Zealand, I have had three rather remarkable proofs of the violently poisonous nature of the bite of the Katipo.

"Some twenty years ago a party of natives had taken up a temporary residence at Waihi, near Maketu; their resting place being near the sea-beach. During the period of their morning's meal, a girl was bitten by a Katipo, in the region of the abdomen. She did not seem at first to suffer much pain, but towards noon, inflammation set in, and some native remedies were used. As these had no effect, her friends decided to convey her to my residence, and they reached my house about one p.m. I discovered, on first seeing her, indications of severe pain; and on examining the wound, found a swelling of the size and shape of the obtuse end of a hen's egg. I immediately rubbed the part with strong ammonia. This had no other effect than of lessening the severity of the pain, but failed in decreasing the swelling. I gave the girl also medicine, which was probably salts and tincture of henbane. After this, I saw her nearly every day, for a fortnight, using such means as appeared to me suitable. She seemed at this stage to be gradually recovering, but suddenly became faint and pallid, lost all desire for food, and though offered whatever my house afforded, would only take a little bread and tea, and sometimes a little wine. She lingered in this way for about six weeks and then died.

"The next case was the son of a trader resident at Maketu; three of his boys went up the river on a ramble and lingered at the Tumu, resting themselves by sitting on the tufts of sedge growing on the sand-hills just above the reach of the tide. These tufts are the principal haunts of the Katipo. While so resting, one of them was bitten by this insect, on the fleshy part of the thigh, it having crawled unperceived up his trowsers. The boys were at this time about two miles from home. They returned immediately, but not thinking the bite of any consequence, delayed applying to me until towards evening, at which time the sufferer became ill, and the place bitten inflamed. I attended him, using the same remedies as in the other case; but he suffered long, wasting, and losing all energy, soon having the appearance of one going into a decline. If I recollect correctly, he was three months before he rallied, and probably another three before he fully recovered.

"The next case occurred to that remarkable man Toke, the chief of Maketu. We were travelling together up the coast from Whakatane, and halting to dine, he seated himself upon a large tuft of sedge. He had not been resting many minutes before he sprang upon his feet, saying, 'I am badly bitten by a Katipo.' He was bitten on the upper part of the thigh. I directed him to lie down; I then dissolved some carbonate of soda in a very small quantity of water, and adding to this some brandy from my flask, I quickly made a crucial incision over the part bitten, and squeezed out forcibly, the blood, and then rubbed in this antacid solution, keeping up this action alternately for some ten minutes, when he said he no longer felt the pain. He remarked on rising, 'Had you not been with me, I should have had a long illness.' Only two or three minutes could have elapsed after the bite, before a spot about the size of the top of the little finger appeared, and of a peculiar white colour, in strong contrast with the dusky shade of Toke's skin. He was very careful to secure all the blood I had forced out of the wound I had made, by absorbing it in a piece of rag torn from his shirt; this relic, now so doubly sacred, he carried into the middle of a swamp close by, and I saw him stamping it down into the ground very violently, to preserve it from possible desecration.

"The natives generally avoid sleeping on the sea-beach, but have no fear of the Katipo half a stone's throw inland of the sea-beach line. I never knew

them (of themselves) use any other remedy than rubbing and applying hot, half-scalded leaves to the part, and as soon as convenient taking the bitten one to the priest, to receive the benefit of his incantations, as they then believed in the efficacy of prayers, made to their gods of the hills and valleys."

Here again are the evidences of a narcotic and irritating poison, whose absorption into the system produced more permanent effects upon the body; the elimination of the poison had not been so perfect and rapid as in Huff's case. The strength and tone of the constitution in these individuals was, in all probability, not so powerful, hence the elimination of the poison was not so ready, producing a more permanent influence, in all probability causing a degraded condition of the constitution, a blood-poisoning, that caused subsequent disease. Again, in all these cases the effect of the poison may, in some degree, have been modified by the condition of the insects' poison-bags, the locality and character of the bite, under any circumstances, however, it is plain that the deleterious effects of the bite of the Katipo, and its poisonous character, has long been recognised and feared by the natives; and in Huff's case was plainly demonstrated. In Toke's case we can but admire the skill and decision of the missionary, who, all alone in a wild and savage land, could have treated the case so actively and with such good effect,—he, in all probability, preventing the absorption of the poison into the system, by the means he employed.

From all the information that I can collect, the Katipo is a small spider of about half an inch to three-quarters of an inch in diameter, measuring across the body and legs, according to the authority of Major Heaphy, who having been Surveyor-General of the Colony, has had abundant opportunity to know the insect, and is familiar with its resorts.

The Katipo are said to be of two kinds,—one having a dark-glossy body, with a marked red spot on the back; the other, of about the same size, having a similar round black and shining body, but without the spot.

Mr. Taylor, in his book, "A Leaf of the Natural History of New Zealand," writes thus: "The Katipo—venomous Spider—one kind red, and one black with a red spot upon its back. Their bite appears to be very poisonous, occasioning a violent swelling of the part." Major Heaphy is inclined to believe that Mr. Taylor is mistaken in describing a red Katipo; but agrees with him that the one with the black body and red-vermilion spot upon its back, is the most poisonous.

A difference in the habitat of the Katipo would seem to point to a variety, the one inhabiting the sandy beaches of the sea-shore, taking refuge among the drift wood and roots of sedge or rushes found there, while the other one, with the black body without the red spot, may be discovered in the garden, or among the rafters of any old building.

Major Heaphy says, "I saw one, with the red-vermilion spot upon its back, at Massacre Bay, near Nelson, in the Middle Island; a native there obtaining it for me, after a few minutes' search, for a small reward. It was found among the roots of the Wiwi, or ru-h, around some dry drift wood, on the sandy beach. The natives were very careful not to allow it to touch them, they said it would kill them; but on close enquiry they admitted they never knew of a case of the bite ending fatally, although the bite from them was not uncommon. Great suffering, however, they said ensued, the part swelling considerably."

On the original plan of the North Shore, near Auckland, the sea beach nearest the north side of the lake, was indicated, in a marginal note, as very celebrated for the number of Katipo existing there.

The other variety, with the black body without the red spot, is of about the same size as the other, of a dark glossy brown or black colour. This, as

well as the preceding, is a very beautifully shaped insect, the abdomen is, as generally seen from above, perfectly spherical, like a "number one" shot, very glossy. The legs are compact, not straggling. It is found amongst dead wood in a garden, and, with a slight web, amongst the rafters of an out-building or loft. The natives have no distinguishing name for either variety, they are both called Katipo, to distinguish them from the Punga-were-were, or common Spider.

I have never heard of a case of bite from one of this kind, but the natives say that they are equally venomous with the spotted variety. I am convinced that the one with the red spot, indicates a different variety, and is not the result of age or sex, as among hundreds of the black kind I never saw a spotted one.

There is no doubt but that several of the Arachnidæ are of a poisonous character, that their mandibles are furnished with a curved claw, perforated at the extremity something like the poison-fang of a venomous snake, and used for a similar purpose. A gland furnishes a secretion which is forced through these organs, and is injected into any object that may be wounded by the sharp claw. The fluid which is secreted for the service of the fangs is nearly colourless, and is found to possess most of the properties that exist in the venom of the rattle-snake, or viper.

It is certain that the bite of a moderate-sized Spider will kill a house-fly in a few seconds. Without believing all the stories that have been told of the Tarantula, it is certain that its bite is poisonous,—that it is of a character similar to that of the Katipo. Dr. Graperon states, that he saw two cases in which the bite of the Tarantula proved fatal in the Crimea,—one in forty-eight hours, the other in six days. The wound, which was inflicted on the patient's neck, was very painful, and had left a brownish-violet mark; the head, neck, and shoulders were swollen; from the clavicle to the false ribs was of a bluish colour, and respiration became difficult forty-four hours after the injury. Scarifications, the actual cautery, oil externally and internally, and ammonia, were all employed in vain. A comparison of the symptoms in this case with those exhibited by Huff, will surely bear me out in the conclusion, that the poisons are similar, at least in their effect.

---

ART. XII. — *On four FISHES commonly found in the River Avon; with a consideration of the question: "What is Whitebait?"* By LL. POWELL, M.R.C.S.St.A.

[Read before the Philosophical Institute of Canterbury, December 2, 1869.]

I VENTURE to hope that an attempt to settle the vexed question, "What is Whitebait?" will not be unprofitable. The fish, in question, is one of the most important of our fresh-water fishes, and forms a very agreeable variation in our somewhat-restricted colonial diet. A similar question has been raised, from time to time, regarding the English Whitebait, which has been looked upon as the young of the Sprat, the Shad, and the Herring. Naturalists are now, however, tolerably well agreed that it is an adult fish of a distinct species; and it appears amongst the Clupeidæ under the name of *Clupea alba*. The New Zealand Whitebait has no affinity with the English fish, whose name it bears, not belonging to the same family, even; and the question at issue is this, "Is the Whitebait an adult fish, or the young of some other species? if the latter, what is its adult form?" Attempts have been made to solve the doubt, by keeping Whitebait in confinement, so that they might develope under observation, but these experiments have always been performed without