

A FLORIDA "MULE KILLER" (*Thelyphonus giganteus*).
BY DANIEL C. BEARD.

To any one interested in entomology, a glance at the accompanying illustration will be sufficient to satisfactorily locate the "mule killer" among that interesting intermediate group known as the Thelyphoridae.

None of the spiders possesses real antennae. In the scorpions the antennae appear in the form of pincers; in the spider they are transformed into horrid, poisonous, jaw-like organs, instead of the harmless feelers seen on the heads of lobsters, beetles, moths, and butterflies.

The antennae of the whip scorpion, like the spider's, are changed to venomous fangs or chelicerae, which, in this case, take the form of large prehensile claws, and remind one of a crab or scorpion.

The most remarkable part of the anatomy of the whip scorpion, however, is the structure of the anterior pair of legs, which are much thinner than the other three pairs. The fore feet are formed of a great number of joints, so that the front limbs are converted into flexible organs of touch. Here we see a creature whose antennae are changed into poisonous jaw-like claws, and the fore legs transformed to antennae or feelers.

The name whip scorpion comes from the peculiar caudal appendage resembling a whip lash, which can be moved about at the will of the owner. The abdomen is distinctly ringed, after the manner of a scorpion.

The animal is nocturnal in its habits, hiding under chips, etc., but is very active and pugnacious. When kept in captivity, it will greedily devour horse flies and small bugs.

Amid the tangled underwood in the dark damp, re-



WHIP SCORPION (*Thelyphonus giganteus*).

cesses of the Florida forests, along with many other curious, horrid, or beautiful creatures beneath the mouldy leaf or bit of bark, the mule killer lurks during the day, awaiting with the owls the grateful twilight, when it can wander forth in search of crickets, flies, bugs, and other defenseless insects, which it seizes and greedily devours. It sometimes happens that a planter riding through the wood disturbs the "mule killer," and sadly rues the day he did so.

According to the following stories, this little animal is well equipped for the battle of life:

Some road makers had occasion to go into camp at night, and hardly had they comfortably rolled themselves in their blankets before one of them gave a scream of pain. His companions quickly came to his assistance. A light was speedily procured, when a large whip scorpion was discovered in the poor fellow's blanket. Although this incident happened some years ago, the sufferer has never fully recovered from the effects of the poison, and it is said that he is still a helpless invalid. The illustration accompanying this article was made from this identical whip scorpion, now quite harmless, owing to its long sojourn in a bottle of spirits.

Another party of road builders were at work during a spell of cold weather on the Anclote. One of the party, returning to camp after a hard ride, picked up a blanket and buckled it around his sweating mule, to prevent the animal taking cold, but the poor mule caught something worse in the blanket, and commenced to kick, rear, and plunge, finally rolling upon the ground in agony. As quickly as possible the blanket was removed, disclosing a brown object, about 2½ inches long, hanging by a pair of prehensile claws to the mule's back—it was a mule killer, and the mule was dead within an hour.

Near the same place, under very similar circumstances, a horse was lost.

A gentleman well known along the Florida coast as a cattle buyer, while riding a young mare through the "flat woods," had occasion to cross a swampy bit of ground, known in local parlance as a "palmetto bog head." He had not proceeded far before his mare began

to kick frantically. Fearing that she had been bitten by a snake, the rider hastily dismounted and discovered a "mule killer" sticking fast to his mare's hind leg, just above the hoof. In this case also the poison is said to have proved fatal within an hour or two.

There are many stories afloat relating the fatal effects from this ill omened, but interesting, animal's bite, some of which add man to the list of its victims.

Poivrette—a New Adulteration of Pepper.

BY PROF. J. CAMPBELL BROWN, D.S.C.

The substance known in the pepper trade as "poivrette," or "pepperette," is now so frequently used for the purpose of "fraudulently increasing the weight and bulk" of commercial pepper, that the members of this society ought never to omit a careful search for it in all samples of pepper officially submitted to them. As many commercial analysts do not appear to be yet familiar with poivrette, and as some public analysts have applied to me for specimens, a short account of it may be of use to the society. It made its first appearance in Liverpool last summer, when more than one wholesale pepper merchant brought me samples and inquired what the substance was, and what were its properties. During the last three months I have met with it in between twenty and thirty retail samples of pepper.

Poivrette is a pale, slightly buff or cream colored powder, resembling in the bulk the principal middle layers of the pepper berry, when ground; and when mixed with pepper cannot be distinguished by the eye, nor even by the hand lens, from particles of pepper. In the earlier samples the coarser particles could be isolated by spreading the pepper on a stiff sheet of paper, held in a nearly, but not quite, horizontal position. On tapping this with the finger tips, so as to make the larger particles jump gradually to the lower edge of the sheet, the poivrette particles could then be picked out, and easily distinguished from pepper by crushing them between the teeth. Recently, however, it has been so finely ground and sifted that it cannot always be partly separated in this way, although the toughness and hardness of the particles can always be distinguished by the teeth in a mixture.

Microscopic examination, with a one-sixth or one-eighth objective, shows that it consists of pale dense ligneous cells, some entire and marked with linear air spaces, some torn and indistinct.

The stones of olives, imported in pickle for table use, gave 3.68 per cent of ash, but well washed olive stones, thoroughly burnt to a white ash, gave under 2 per cent of ash-like poivrette. "White poivrette" is therefore cleaned very pale, and perhaps partly bleached olive stones, or precisely similar tissue; black poivrette is the same, mixed with a little black husk. It is to be noted that, although it contains no starch, yet it yields some sugar to Fehling's solution, after being boiled for some time with dilute hydrochloric acid. The quantity depends on the length of time and strength of acid, but may be stated approximately about 10 per cent. It is important to bear this fact in mind when making a full chemical analysis of pepper containing poivrette. After removing from such a mixture the matters soluble by boiling in dilute caustic alkali, the woody fiber which remains has a yellow color; it consists of the poivrette and some of the cells of pepper husk and one of the subcortical layers of the pepper berry. The pepper cells are made lighter, and the poivrette cells darker by the alkali, so that the two are more nearly of a similar yellow color after treatment with alkali. This renders it more difficult to distinguish such of the cells as have somewhat similar markings; but it enables us to distinguish more clearly, as poivrette, the many torn particles which have no definite form or markings. The final examination of the complete cells is better made with good daylight rather than with artificial light, and in a portion which has been treated with water only.

The pepper cells are mostly different in shape, and are colored, and have generally a dark substance in the interior. They are not numerous, but the quantity varies in commercial samples, owing to the modern practice of decorticating the pepper berry to every different extent possible, and mixing the various portions so obtained, including husks, in every variety of proportion with each other or with ordinary pepper. Each individual analyst must make himself familiar with both kinds of cells, as no description can convey an adequate idea of either.—*The Analyst*.

Early Date of Some of Capt. Ericsson's Inventions.

Capt. Ericsson's secretary, in answer to a published statement that the Destroyer is taken from ideas published in the *Army and Navy Journal* in 1863 or 1864, writes to the *Daily News* of New York as follows:

"Captain Ericsson, in September, 1854, submitted to Emperor Napoleon his system of expelling projectiles from submarine guns for the purpose of destroying ships of war. The Emperor promptly acknowledged the receipt of the plans in very flattering terms.

"Regarding the revolving turret, Captain Ericsson has published elaborate illustrations (see *The Century*, December, 1885), showing that the device is very old, and that Abraham Bloodgood of this State, in the

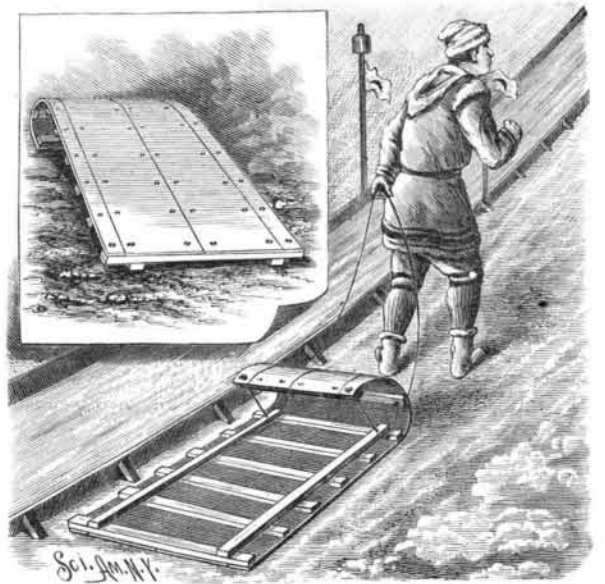
year 1807, designed a floating tower armed with a battery of revolving cannon, Timby's revolving tower being a palpable plagiarism of Bloodgood's invention. It will be seen also by reference to *The Century* of the date mentioned that Ericsson studied the system of revolving cannon more than sixty years ago.

"Regarding the screw propeller, it suffices to state that Captain Ericsson obtained a patent in England for this invention, 1836, and that Mr. Petit Smith simultaneously obtained a patent for propelling vessels by a modification of the Archimedean screw. These rival methods of propelling vessels, in a practical point of view essentially different, have been much discussed among English engineers, but Captain Ericsson having successfully applied as early as 1842 his propeller to the American screw frigate Princeton, his claims cannot be disputed. Indeed, *The London Mechanics' Magazine* said a long time ago, 'The undivided honor of having built the first practical screw steamer belongs to John Ericsson.'

S. W. TAYLOR."

A CHEESE BOX TOBOGGAN.

To illustrate in the cut a toboggan made of such primitive material as cheese boxes. These boxes are made of oak or other hard wood. Of this a thin piece, from one-eighth to one-quarter of an inch in thickness, and about five feet long, is bent around in a circle, and is provided with a bottom and cover. To make the toboggan, one or two such boxes are required. A single large box affords material for a small one. The selection should be made with a view to procuring one of the thickest that is attainable. Its bottom is removed, and all nails carefully extracted. It is then gradually



A CHEESE BOX TOBOGGAN.

straightened out. No steaming is necessary. A strip of board is placed across one end, and is nailed outside of the edges of the piece to the floor. This gives a starting point. The curved board is straightened out and secured by other transverse pieces. For a week or more it is well to leave it thus extended. Undoubtedly a good soaking with hot water would help the process along. One end is left bent, the straightening process only being applied to four-fifths of its length.

The thin board thus procured is fitted with cross battens and side rails, as shown. A cross batten is required every six inches. They are three-quarters of an inch square, and are cut so as to project about an inch beyond the board. On top of these the side rails, a trifle heavier, and with rounded corners, rest. The outside of the rails is on a line with the edges of the board. These parts are secured by screws that enter from below, go through the board and cross battens, and enter the side rail. The holes for these must be carefully bored and countersunk in the bottom board. One screw goes through each intersection of batten and side rail. No intermediate ones are necessary if the bottom is in one piece. The weak part of such a toboggan is its side edges. To fortify these an extra piece, about an inch wide, is screwed to the projecting ends of the battens. If anything happens to this, it is easily replaced. The front is battened, as shown, and drawn back and down as far as desired, and secured with wire or cord.

The extra side pieces may be made from another cheese box, or may be heavy hoops. They should be a little thicker than the rest. As shown in the cut, the bottom board is in two pieces. This presents some advantages, especially as regards warping. It, also, is not easy to find a cheese box wide enough. If made thus, care must be taken to see that both halves are of precisely the same thickness. Screws will be required along the inner edges running into the battens. The outer skin may be smoothed with a piece of pumice stone, washed, dried, and rubbed up with beeswax. The only care necessary is never to leave the toboggan on damp ground, as it warps badly under such circumstances.