

as 225 of them are running in this country. The speed at which the looms may be run seems also to be exceptionally high—so much so as to give a maximum production, with skilled labor, of 35 yards of carpet per day. The general all-round average production per day, amongst a variety of labor, is about 25 yards per day, which certainly speaks well for the construction and easy working of the loom.

**THE WATER SNAKE—HOW IT EATS.**

BY C. FEW SEISS.

If we wish to keep serpents alive and healthy in captivity they must of course be fed. They must, with few exceptions, have living food. I have endeavored in various ways to entice them to eat raw beef, without, however, any success. In only one instance, I believe, did I ever succeed in making a serpent devour a lifeless object. This was a water snake which I enticed to seize and swallow a dead minnow by moving it rapidly about in the snake's bath tub, with a piece of slight wire. But even after the fish was seized, I was obliged to move the minnow's tail from side to side, to imitate life, for fear the snake should perceive his mistake and relinquish his hold.

Garter snakes must be fed upon toads and frogs, and water snakes upon frogs, tadpoles, and fishes.

I cannot say I enjoy seeing a snake swallow a frog. The last time I witnessed our water snake (*tropidonotus sipedon*, Linn.) devour a frog, I must confess a feeling of pity for the little frog came upon me. The snake first, by a sudden dart through the water, caught the frog by one of its hind legs. The frog struggled in terror, and madly endeavored to free itself from its ferocious captor. It struggled in vain, for the snake slowly drew the frog into the dark vale from whence

no frog ever returns. From the instant the frog was seized, until it was entirely swallowed, and the snake's mouth closed, it cried most piteously, first loudly, but by degrees growing fainter and fainter, until entirely hushed in the gullet of the snake. I imagine I can yet hear that young frog's death cry. It was repeated at intervals, and sounded something like the words "quaak! uck! uck! quaak! uck! uck!" uttered in a plaintive tone.

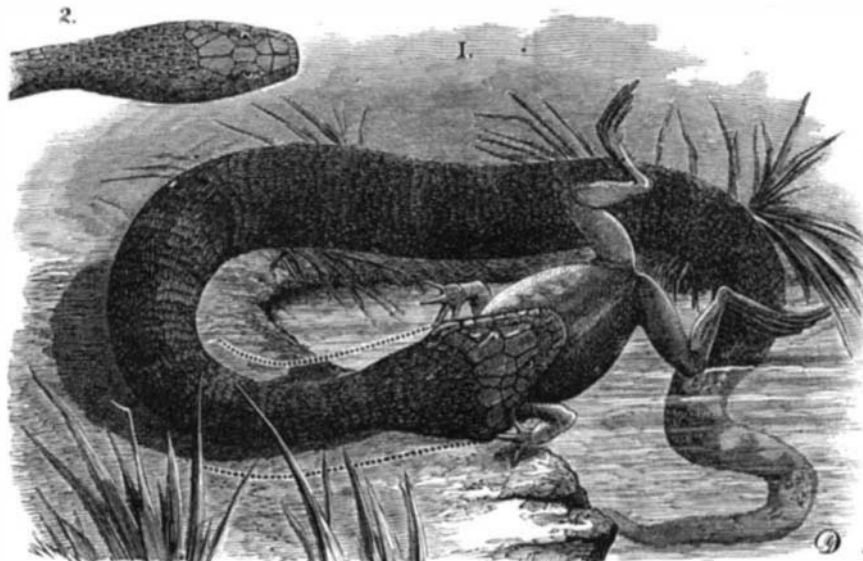
While the frog was passing through the oesophagus of the snake, and even after it had arrived in the ophidian's stomach, I observed by the external agitation of the snake's body how violently the frog kicked and writhed to extricate itself from its untimely tomb.

It may be said of most serpents that rather than eat, in the general sense of the word, they drag their jaws over and around their prey, previous to swallowing it.

Supposing the object to be made food of by a water snake is a frog. After seizing it, the snake unhooks from the frog the teeth of one side of its upper jaw, and forces them further forward upon the frog, where it rehooks them, and draws them backward; then the teeth of the opposite side of the jaw performs the same action, and thus they move alternately and regularly, the inferior jaw going through much the same action, until the head of the snake is drawn completely over the frog. The snake then forces the frog through its oesophagus to its stomach by violently contracting the muscles of its neck and body, at the same time its neck is contorted in a horizontal waving manner.

When the object swallowed is passing through the oesophagus, and into the stomach of the serpent, that is if the prey be of any considerable size, the ribs expand, widely distending the skin of the neck and body, leaving spaces between the scales, which, being generally light in color, cause the serpent, especially if it be a dark one, to have the appearance of being prettily speckled with white.

Fig. 1 represents a *tropidonotus sipedon* in the act of devouring a frog. The movable quadrate bones are forced outward, thus widely distending the head and neck of the serpent. The dotted line indicates the size of expansion while the frog is passing through the oesophagus of the serpent. Fig. 2 represents the same serpent in a state of quiet. The occipital plates of this specimen are somewhat smaller than they generally are in this species.



THE WATER SNAKE.

**Reynier's New Electric Lamp.**

The author's object in this invention has been to produce an electric lamp capable of acting for 24 hours. He has succeeded in almost completely suppressing the occultations hitherto supposed inherent in the use of discs. M. Cance submitted to the Academy of Paris a novel system of electro-magnets with a multiple nucleus, analogous to that of M. Camacho, but in which the tubular nuclei are replaced by series of small rods of soft iron in juxtaposition and enveloping in pairs the different layers of spirals.

**Requirements for a Good Ship's Compass.**

In order that a compass may be good, the needle should be very hard and well magnetized so as to retain its power, the cap should be of ruby or agate, carefully hollowed so as to be even and smooth, and the point should be hard, fine, and sharp.

No dirt or dust should be permitted to get into the cap, as it will make the needle sluggish, and enable the point to grind into the cap. The point should be examined from time to time and kept sharp. It is important also that the point should be exactly in the intersection of the two diameters passing through the gimbals, and that it should be exactly at the same height as the centers of the gimbals, a matter frequently neglected by the maker. It has been shown that a compass is more steady, and that the quadrantal correction is more perfect when the card has two parallel needles, the ends of which intersect the circumference of the card at points 60° apart. The admiralty compass has four needles.

If the bowl is of copper, or better if a stout copper ring surrounds the card, the vibrations of the needle will be calmed, that is their amplitude will be reduced, while the time of vibration will remain the same, owing to an action being set up which appears to be due to currents generated by the relative motion of the needle and the copper.

It may be suggested that no means of cutting off the action of the ship's iron from the compass can be effectual, since anything which will do that will also cut off the action of the earth's magnetism also, and render the compass useless.—From Fairman Rogers' work on "The Magnetism of Iron Vessels."

**THE CURLY-HAIRED ANTELOPE.**

Very little is known of this antelope in its wild state. Siebold, in his "Fauna Japonica," calls it *antelope crèssue*, and mentions that it is known to the Japanese by the name of "Nik," but that it is rarely found, and only then in the highest mountains of the Island of Nippon and Sikok. The appearance of the animal would indicate that it is a hardy inhabitant of a mountainous country.



THE CURLY-HAIRED ANTELOPE.—(JAPANESE CHAMOIS).