machine. When one machine, weighing 450 lb., driven from the dynamometer, was connected with another exactly like it, the current of electricity from the first machine would drive the second backwards, and the power recorded was 0·25 of a horse power. Any friction on the second machine showed instantly on the dynamometer, while to stop it completely sent the needle up to 7·50. Some points in this dynamometer resemble Edison's; but, we are informed, Mr. Maxim had his in operation some months before Mr. Edison made his.

Fig. 3 shows a new electrical lamp designed for use in stores, factories, etc. It is nicely incased in ornamental bronze work. One novel feature of this lamp consists of telescopic side rods, which facilitate the dropping of the bottom to remove or replace the glass globe and carbons.

The United States Electric Lighting Company, 120 Broadway, New York, are the owners and manufacturers of Mr. Maxim's inventions.

THE SPOTTED TRITON.

BY C FEW SEISS.

The spotted triton (*Diemyctylus viridescens*, Rafinesque) is of an olive green or brown color above and yellow beneath. On each side of the body is a row of three or more vermilion spots, each encircled by a black ring. These spots vary greatly in number and distribution. Thus, in specimen No. 1, there are two spots on the head, two on one side of the body, and five on the other; in No. 2, there are four on the head, and three on one, and four on the other side of the body; in No. 3, two on the head, and four on the right side and two on the left; No. 4, which is much darker in color, has seven spots on each side, three of the spots being double on one side, and one spot on the occiput; No. 5 has two small spots on the occiput and three on each side of the body. The throat, abdomen, legs, and tail are generally studded with black dots. The hind legs are twice the size in bulk of the front. The latter has four digits and the former five, the first and fifth being rudimentary. The tail is compressed laterally, of natatory form. The length of our largest specimen is 3¾ inches; of the medium, 3 6/16 to 3 11/16 inches.

The spotted triton is an aquatic species, but it must be remembered that it has lungs and is an air-breathing animal, and consequently is obliged to come frequently to the surface of the water for fresh air. The immature tritons or larvæ are gill bearers like other urodelans; they are of a dirty brown color, and the vermilion spots are wanting.

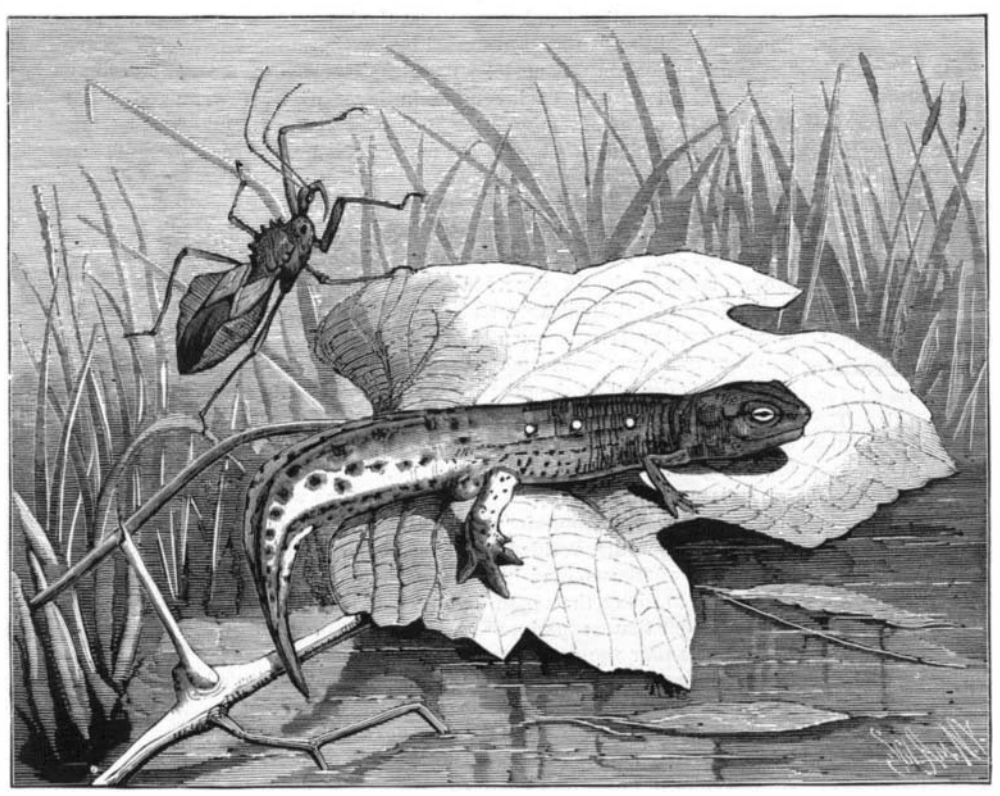
The food of this triton consists of insects and worms. The stomach of one which I lately dissected contained two mosquito larvæ. Our aquarium specimens have seemed to thrive on small bits of raw meat. In the aquarium they are sometimes attacked with a fungoid disease, which is common to many water animals in captivity. They become greatly emaciated, and at length are unable to eat, and subsequently perish.

At the pairing season the male embraces the female in a peculiar manner; not with his arms or forelegs, as might be supposed, but with his stronger posterior extremities he clasps her firmly immediately back of her forelegs. The female fastens her roundish jelly-like masses of eggs, which somewhat resemble frog spawn, to water plants, where they remain until hatched.

I agree with Dr. Hallowell and others in considering the yellow-bellied salamander, *D. miniatus*, Rafinesque (*Salamandra symmetrica* of Harlan), as merely a terrestrial variety of the present species.

The insect above the triton in my drawing is the *Prionotus novenarius*. I can find no English name for it, but as I have from childhood called it the *Devil's camel*, it may be well, even if it is not a pleasing name, to retain it. It is of a dark ash color and pubescent; its long cylindrical head is armed with a strong curved beak or rostrum; its thorax is arched, compressed laterally, and deeply serrated, and its abdomen is flattened above and turned up at the sides. With its forelegs, which are raptorial, it catches caterpillars and other insects, and inserting its beak sucks all the juices from the caterpillar's body before it will drop it. It inserts its beak into the different segments of its prey to make sure no good is lost. Three or four different kinds of caterpillars I have seen it devour; it is, therefore, beneficial, and should be protected.

The devil's camel is most numerous about Philadelphia during the month of September. I have a note of one that was captured as late as the 5th of November, 1879. The young are wingless, and have the abdomen turned upward and forward. I have never felt the evil effects of his rostrum, but Dr. Horn says, when it is caught by one not expert, it inserts its rostrum into the hand, causing a feeling of acute pain which may last for some hours, but gradually passes away, leaving a feeling of numbness in the part bitten.



THE SPOTTED TRITON.

A Large Importation of Percheron Horses.

Ninety-seven horses of the Percheron breed, the largest lot ever brought to this country, recently passed through New York on their way to Wayne, Du Page County, Illinois, where their owner, Mr. M. W. Dunham, has a large stock farm. About one-fourth of them were colts, the rest were full-grown stallions, ranging in weight from 1,400 to 2,000

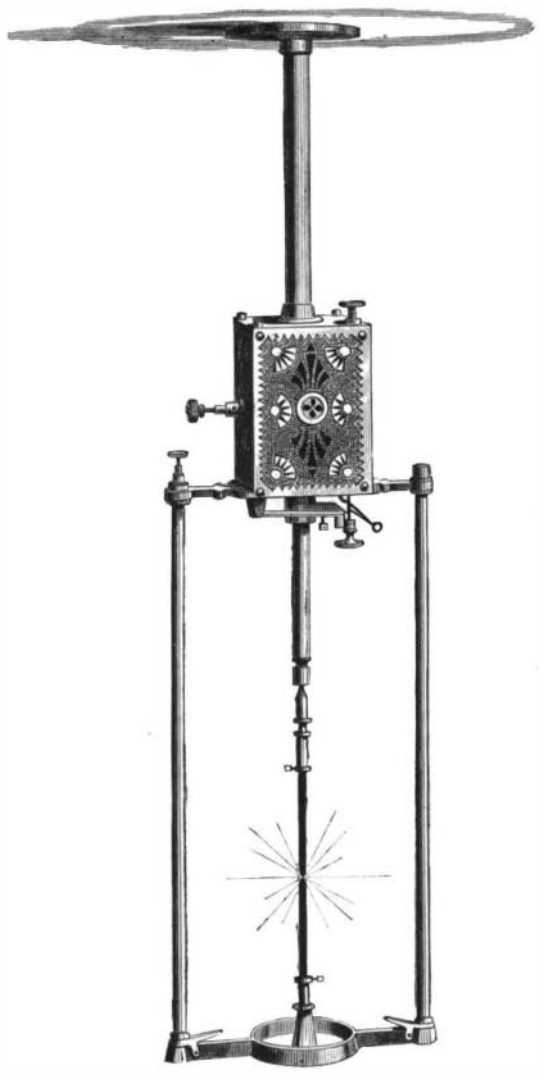


Fig. 3.—MAXIM'S ELECTRIC LAMP.

pounds. They cost in Perche, France, from $800 to $2,000 each, and were conveyed to the sea coast in a special train, the first ever run on a French railroad. To a reporter of the *Tribune* Mr. Dunham said:

"In 1873 it cost me $500 for every horse I brought across the ocean. Now, however, when I bring them in large numbers it costs only a little more than half as much for each. It will cost me $100 a car for my special train to Wayne. I put six of the horses in a car. I insure them when I start, and I have to pay four or five per cent on the insurance. You see there are large risks in this business. When I sell these stallions, however, I will get from $1,500 to $3,000 each for them."

The first Percheron stallions ever brought to this country were imported by Mr. William Harris, of Moorestown, N. J., in 1839. Mr. Charles Fullington, of Ohio, imported the next lot in 1851. In 1856 one of the stallions imported by Mr. Fullington was sent to Illinois, where for twelve years he was the only one of the kind in that State. In 1868 Mr. Dunham imported two Percheron stallions, and in 1872 went regularly into the business. Since then he has brought over between three and four hundred of them.

Drying a Specific Gravity Bottle or Flask.

It not unfrequently occurs that a clean, *dry* sp. gr. bottle or flask is wanted for use, and in hurried drying sometimes gets cracked. The following little device has been found useful: Wash the bottle or flask with distilled water and drain it for a moment or two. Then wash with a little strong alcohol and drain the bottle a second time. The alcohol need not be wasted, as it is but slightly diluted with the residual water from the first washing. When the bottle is again drained it remains wet with the diluted alcohol. Pour in a little dry ether and wash the bottle out with this. Again drain, and the warmth of the hand or very little extra heat will then completely dry the bottle or flask. The alcohol must of course be *strong*, and the ether *dry*, or the device fails.—*J. Shea, M.D.*

Evolution of Species in Butterflies.

As well known, many butterflies have two or even three broods in a year; one brood appears in spring, their larvæ having fed during the preceding autumn and passed the winter in the pupa state, while the others appear later in the year, having passed rapidly through all their transformations and thus never having been exposed to the cold of winter. In most cases the insects produced under these opposite conditions present little or no perceptible difference: but in others there is a constant variation, and sometimes this is so great that the two forms have been described as distinct species. In order to learn something of the origin and nature of the latter curious phenomenon, Dr. Weismann, of Freiburg, has, for many years, carried on a variety of experiments, breeding the species in large numbers, and subjecting the pupæ to artificial heat or cold for the purpose of hastening or retarding the transformation. The result of these experiments is, that by subjecting the summer brood to severe artificial cold in the pupa state, it may be made to produce insects, the great majority of which are of the winter form; but, on the other hand, no change of conditions that have yet been tried have any effect in changing the winter to the summer form. Taking this result in connection with the fact that in high latitudes, where there is but one brood a year, it is always the winter form, Dr. Weismann was led to the hypothesis that this winter form was the original type of the species, and that the summer form has been produced gradually, since the glacial epoch, by the summer becoming longer, and thus admitting of the production of the second or summer brood. This explains why the production of the winter form from summer larvæ is easy, it being a reversion to the ancestral type; while the production of the summer form from autumnal larvæ is impossible, because that form is the result of gradual development, and processes of development which have taken thousands of years to bring about cannot be artificially reproduced in a single season. Dr. Weismann lays great stress on the varied effects of temperature in modifying allied species or the two sexes of the same species, from which he argues that the essential cause of all these changes is to be found in the peculiarities of physical constitution, which causes different species, varieties, or sexes to respond differently to the same change of temperature; and he thinks that many sexual differences can be traced to this cause alone, without calling in the aid of sexual selection. The general result arrived at by the laborious investigation of these phenomena is that "a species is only caused to change through the influence of changing external conditions of life, this change being in a fixed direction which entirely depends on the physical nature of the varying organism, and is different in different species, or even in the two sexes of the same species; and, he adds: "According to my view, transmutation by purely internal causes is not to be entertained. If we could absolutely suspend the changes of the external conditions of life, existing species would remain stationary. The action of external exciting causes, in the widest sense of the word, is alone able to produce modifications; and even the never-failing individual variations, together with the inherited dissimilarity of constitution, appear to me to depend upon unlike external influences, the inherited constitution itself being dissimilar because the individuals have been at all times exposed to somewhat varying external influences." Almost exactly similar conclusions to these have been arrived at by Mr. Alfred R. Wallace, from a study of the geographical distribution and specific variation of animal forms.

TO RELIEVE CASKS FROM MUSTINESS.—Burn a little sulphur in the empty casks, bung, and let them stand for a day.