

**THE CAROLINA MANTIS**

BY C. FEW SEISS.

One of the most peculiar of orthopterous insects found in the Southern and Western States is the mantis or "race horse" (*Mantis Carolina*, Linnaeus). It will easily be recognized among other insects by its large, spiny, raptorial fore legs or arms. With these it captures its prey, which consists entirely of insects. While devouring an insect it holds it firmly between the tibiae and tarsi of its fore legs, which are strongly toothed or spined on their lower or posterior surfaces. When holding the insect to its mouth while eating, I have often thought it had a half human appearance, like a child devoid of table etiquette, with the end of a turkey's leg in each hand, tearing with its teeth the meat from the femur.

The mantis is savage in its habits, and they often have fierce combats among themselves. They rush to the attack with their raptorial legs elevated and wings expanded; but when the most expert of the two combatants has once firmly seized its adversary, they fold their wings and fight with tooth and claw. I have on two instances witnessed the victorious mantis partially devour the vanquished adversary.

The mantis does not merely "suck the blood" of its prey, as stated by a popular entomologist, but it generally devours blood, internal organs, and shell, especially if the object be a soft bodied insect. In the case of a caterpillar, if it should be a hairy species, the hair and skin are generally rejected.

In September the female attaches a cluster of eggs (Fig. 2) to the limb of a tree, or to the rail of a fence. Here they remain until the following summer, when the young mantes hatch out. I take the following from my journal: April 9, 1877.—The eggs of the *Mantis Carolina*, sent me from Baltimore in November last, hatched to-day. "The young mantes escape only from the upper, longitudinally, central portion of the convex sub-ovoid egg-cluster. They work themselves out by moving backward and forward and from side to side. Their legs are closely folded to the body when they emerge, giving them the appearance of a large gnat larva, and it requires several minutes before they fully extricate themselves, and are able to walk. In a short time they can run quite briskly, and will throw themselves in an attitude of defence when disturbed. When they quit the egg, they leave a small thin shell behind them, adhering to the egg case. The young mantes, when just hatched, are of a pale brown color; their legs and head pale green, the former with dull brown bands above the joints; their eyes are dark and prominent; their bodies linear; the abdomen but little wider than the thorax; no vestiges of wings visible. They became much darker in color after several hours' exposure to the sun. Each little mantis was about five sixteenths of an inch in length. They drank greedily from drops of water which were sprinkled about the board upon which they were sunning themselves, throwing back their antennae to prevent them becoming wet.

From sixty to seventy individuals came from each egg-cluster. As the egg packets were kept in a warm room during the winter, their hatching was accelerated, and consequently the coming forth of the young mantes was premature. They lived only a few days, being killed by the coldness of the weather.

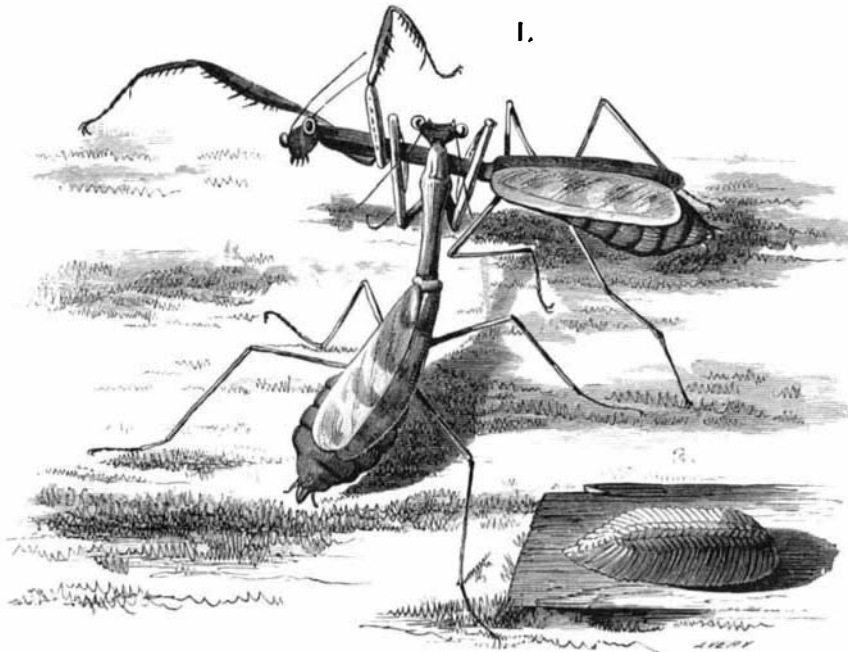
The specimens from which I made my drawing, and also the egg packet, were procured in Baltimore, Md., where it is common enough; but I have never met with it in the vicinity of Philadelphia.

**THE TRUNCATED PICHICIAGO.**

The "truncated pichiciago" is one of the smallest of four-footed animals. It is not more than two inches in length. The shield which covers the entire upper portion of its body is composed of a single piece, and consists of regular, uniform, and smooth scales neatly arranged like mosaic. This coat of mail is truncated vertically at its rear portion. The animal has a curious cut-off appearance owing to the apparent absence of a tail, but in reality due to the position of that member, which is short and closely pressed against the body. All the lower portions, the neck, stomach, sides and legs are covered with long and fine hairs.

The pichiciago is found chiefly in the Cordilleras mountains, in Chili, where it feeds on earth worms, snails, and insects. It uses its long, large, and sharp nails to make burrows, which are often very deep. In these it remains concealed during the greater part of the day, and rarely ventures to wander to any great distance even by night. It can

not jump or run swiftly; hence when attacked by an enemy it has no means of escape but by its subterranean gallery; hence, when hard pressed, it seeks safety in digging a new hole, and very often succeeds in thus escaping; but when this resource fails, the animal rolls its head and legs under its stomach, forming a ball like a hedgehog, and thus incased in armor defies the teeth or claws of its adversary. It is sometimes called the chlamyphore. As is the case with the



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mole and other subterranean animals, the eyes are of minute dimensions, and are hidden under the soft and profuse fur of the face.

**Tinted Paper.**

Tinted paper may be prepared in any desirable shade as follows: 1 gm. of any aniline color is dissolved in 30 gms. of strong alcohol, 300 gms. of distilled water are added, and finally a solution of 1 1/4 gms. of tannin in 15 gms. of alcohol. The tannin acts as a mordant. Moderately sized white paper is spread on a marble slab, or other smooth, hard surface, and the coloring liquid is applied in even hor-

divisible into a very humid cool forest-clad coast range; the great hot, drier Californian valley, formed by the San Juan river flowing to the north and the Sacramento river flowing south, both into the Bay of San Francisco; and the Sierra Nevada flora, temperate, sub-alpine, and alpine. (3.) The Rocky Mountain region, subdivisible into a prairie flora, a desert or saline flora, a Rocky Mountain proper flora, temperate, sub-alpine, and alpine.

The difference between the floras of the first and second of these regions is absolute; not a pine or oak, maple, elm, plane, or birch of Eastern America extends to Western, and the genera of thirty to fifty species are confined to each.

The Rocky Mountain region, though abundantly distinct from both, has a few elements of the eastern region, and still more of the western.

**Magnetic Nickel.**

The magnetic properties of pure nickel have been lately investigated by M. Wild, of St. Petersburg, who procured a nickel magnet in the form of a flat pointed bar, made by Wharton, in Philadelphia. The results are as follows: 1. Pure nickel takes, as compared with the behavior of pure soft iron, a considerable quantity of permanent magnetism; but the maximum of this is only a half to a third of the permanent magnetism which may be acquired by hard steel. 2. The magnetism remaining in nickel after cessation of the magnetizing force is less permanent than in well hardened steel; the gradual loss of magnetism in course of time, both in warming and cooling, is in nickel greater than in hard steel, even when, by repeated heating and cooling it has, like steel, been brought to a certain state of permanence. 3. The temperature co-efficient of nickel magnets in the latter state is less than that of well hardened steel. 4. The temporary magnetism which pure nickel acquires is about double its permanent magnetic moment, half of the temporary magnetism which hard steel can acquire, and a fourth of that which soft iron can acquire. In its magnetic behavior, nickel is thus throughout subordinate to steel and iron.

**Dangers of Galvanizers' Waste.**

Pollution of streams by manufacturers' refuse has been assigned as the cause of more evils than can be fairly brought home to it. A new charge has been brought against it, not only of serious pecuniary waste, but also of great and increasing danger to life and property. It appears that the galvanizers of the Wolverhampton district, England, are in the habit of discharging their waste acid into the sewers. The damage caused by this practice is almost incredible; but it is clearly proved that the sewers themselves are being rapidly destroyed; the irrigation farms which dispose of the sewage are being rendered unproductive; and, most serious of all, the boilers of the surrounding factories, which are fed from the neighboring canals, are rapidly corroded.—*Ironmonger.*



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horizontal lines by means of a small sponge. The paper is then hung up to dry, and may be covered after a few days with a concentrated solution of sodium silicate, to every 100 parts of which 10 parts of glycerin have been added, if it is desired to impart to it a gloss.

**DRYER FOR OIL COLORS AND VARNISHES.**—Water, 100 parts; gum lac, 12 parts; borax, 4 parts.