TEMMINCK'S CHELYDRA.

Among the turtles that inhabit ponds or rivers, and that Dumeril and Bibron have arranged in a particular family under the name of Elodites, although their organization differs little from that of land turtles, one of the most interesting is undoubtedly Temminck's chelydra (*Chelydra Temminckii*), for which Agassiz established the genus *Gypochelys*.

The species, of which the menagerie of the Paris museum has two fine specimens, makes itself at once remarked by its huge head, which is very wide at the temples, but decreases rapidly in front and terminates in a pointed snout at whose extremity are situated the nostrils. The eyes are large and brilliant and are surrounded with a row of small, hard protuberances that project over the iris. The jaws are armed with a horny facing, sharp upon its free edge and particularly strong. The upper overlaps the under, and the two, in moving, constitute a formidable pair of shears. The upper jaw ends in front in a strong median vertical hook, followed by a rounded groove, an arrangement that recalls the beak of a vulture. A similar hook is observed on the lower jaw, but it is covered by the preceding and nestles in a small cavity in the upper jaw. Under the chin there is a pair of wattles.

The neck is stout, and is covered with a wrinkled, rugose skin, which is dotted with warty projections that often terminate in horny spines. This skin does not adhere to the subjacent tissues, and is so loose that it forms a sort of sheath into which the neck can withdraw by bending behind under the vertebral column in order to take a position under the carapax. Under such circumstances, the head seems to be directly supported by the body, and this is the state that is represented in the engraving, and that in which the animal habitually remains, although the head itself at times almost entirely disappears. But, let prey or enemy present itself within reach, and the neck suddenly straightens under the action of peculiar protractive muscles, and the head is thrust out in front on the object attacked, which is at once seized between the animal's powerful jaws.

The carapax is wide, oblong, and quite depressed, and is traversed by three longitudinal ridges. Its front edge is excavated above the neck, while the posterior is denticulated. The plastron is narrow and cruciform, and is immovable. The fore legs are strong, and the toes, which are connected by a flexible membrane, terminate in strong claws, that are five in number on the fore feet, but four only on the hind. The tail, which is long and thick, especially at the base, is covered with a warty skin and three rows of oval plates, one on each side, and one on the median dorsal line. The plates of this latter row stand out so as to resemble a discontinuous dorsal crest.

The carapax, neck, and top of the head are of a somewhat dark brown, but the plastron and a large portion of the jaws is of a pale yellow.

The animal seems to live to a very advanced age. Of the two specimens owned by the museum, one has been in captivity for eleven years, and the other for nine, and their size, which is very large, has not perceptibly increased during that time. The carapax of one of them is 24 inches in length by 20 in width at the broadest part, and, when the neck is entirely hidden beneath the carapax, the distance from the snout to the end of the tail is four feet.

The chelydras are peculiar to North America. The species under consideration is met with chiefly in the Mississippi and its affluents, as well as in some of the other rivers that empty their waters into the Gulf of Mexico. The museum specimens both came from the Mississippi. They usually keep themselves entirely submerged and immovable at the bottom of the tank in which they are placed, with their snouts directed obliquely upward. From time to time they slowly lift their heads and stick their noses out of the water to get a fresh supply of air, and then disappear again. They are frequently observed to expel from their nostrils a stream of water, which is made manifest on the surface by the uplifting and disturbance of the liquid. But whence comes this water, from the stomach or the lungs, and what is its role? These are questions that are yet to be solved.

The diet of the chelydras is essentially flesh. In a state of liberty they live chiefly upon fish, but they do not disdain aquatic birds, which they seize with their powerful jaws and drag under water and drown, and afterward feed upon. In captivity they content themselves with meat or fresh fish, and rats or kittens previously killed. Their regimen doubtless has an influence upon their character, which is savage and fiery to such a point that, according to reliable authors, they become furious when irritated. What is certain is that the first feeling provoked by the chelydra when it is examined at the bottom of its tank, the snout raised and the eyes fixed, is one of distrust; and this feeling increases in intensity when it is reflected that its huge head, which seems to be soldered to the body, can, by a rapid motion, be thrown forward the entire length of the neck. The anatomical arrangement that allows it to pull its neck back under the carapax and afterward to extend it like a spring is, for it, the equivalent of a trap that it can use at will, and that it keeps constantly set for its victims. One other circumstance renders it more dangerous still; as it usually keeps entirely motionless in the water, a parasitic vegetation develops upon its carapax, and covers it in such a way that it is difficult to distinguish it from surrounding objects. This is the case with the museum specimens, which disappear under a thick stratum of confervæ.

Despite its savage nature, Temminck's chelydra lives on good terms with another species of the same genus, the *Chelydra serpentina* (the common snapping turtle), which does not attain so large a size, but the disposition of which is more ferocious and the character more treacherous, as its specific name indicates. In a state of liberty, it falls upon everything it meets, and does not fear to attack and profoundly wound those who chance to bathe in the watercourses that it inhabits.

The chelydras are capable of swimming in water with agility, but upon land their movements are slow and uncertain. So they scarcely adventure upon it except for the purpose of laying their eggs. The eggs of the snapping turtle, which are laid to the number of twenty or thirty, and are relatively small, are, it appears, much sought for; but the flesh of these animals exhales a strong odor of musk and is not edible.—*La Nature.*

CHELYDRA TEMMINCKII.

The Weymersch Battery.

The Weymersch electric battery is of the Bunsen type, the difference between the two lying in the depolarizing fluid. In the Bunsen cell this is nitric acid, but it has not yet been announced what it is that Mr. Weymersch uses. Whatever it is, it effects, says *Engineering*, a most remarkable improvement in the constancy and output of the battery, and raises it to the front rank among this class of electric generators. According to tests made by Messrs. Alabaster, Gatehouse & Co., on five cells, each measuring 8¼ in. by 8¼ in. by 12 in., and containing an inner porous cell measuring 7¼ in. by 1½ in. by 12 in., having within it, in addition to the carbon electrode, 3¾ pints of depolarizing fluid, the electromotive force on open circuit was about 9·26 volts for the whole series, and 5·70 volts on a closed circuit in which the current was adjusted by resistances to 10·1 amperes. At the expiration of 31½ hours' continuous working the electromotive force had only fallen to 8·95 volts on open circuit and 5·65 volts on closed circuit, the current being 10 amperes. During the whole run the free potential did not vary more than about three per cent. The working electromotive force was practically the same at the end of the test as at the beginning, and the current only varied between 10 and 10·6 amperes. The actual consumption of zinc was only 10 per cent in excess of the theoretical amount. The internal resistance of the battery varied between 0·057 ohm and 0·070 ohm per cell.

THE directors of the Panama Canal Company fixed June 26 for the issue of the lottery loan. There are to be 2,000,000 bonds at 360 francs, bearing 15 francs interest, and repayable within ninety-nine years at 400 francs. There will be six drawings a year till 1913, and afterward four. Three of these drawings will each have a prize of 500,000 francs, the other three each a prize of 250,000 francs, besides smaller prizes, the aggregate of the annual prizes being 3,390,000 francs. The prizes and redemption will be guaranteed by a deposit of French rentes.

THE new mill of the Holyoke Envelope Company is nearly completed. The boilers have a capacity of 200 horse power. There are 64 envelope machines, with a producing capacity of about 3,000,000 envelopes a day, where the greatest amount of work turned out in one day was 1,860,000 envelopes. The building has 900 water sprinklers and 18 stands of pipe, together with a huge water tank holding 6,000 gallons.