

GREEN CAROLINA ANOLIS; OR, THE AMERICAN CHAMELEON.

BY DANIEL C. BEARD.

Perhaps the first creature that attracts the eye of the Northern naturalist upon landing at Florida is a small, slender lizard, which appears omnipresent, to be seen running up and down the walls of the Old Fort at St. Augustine, peering in at the windows of the hotel at Pilatka, scampering over the logs of the swamp at Toco, or scrambling along the garden fences at Jacksonville. It may also be seen exhibited for sale along with young alligators, wildcats, black bears, and many other queer objects to be found in the jewelry stores at Jacksonville.

The specimen from which my illustrations are made I captured at Toco. When first taken he was of a sooty black; five minutes afterward, when I opened the handkerchief in which I was carrying him to show my prize to a friend, I was amazed to find, in the place of the dark, dingy little creature I had wrapped up, a beautiful emerald green lizard. It was only then that I discovered my specimen to be the so-called American chameleon. I was somewhat ashamed of my ignorance until I met a certain naturalist from Michigan, who had made quite a collection of what he took to be distinct species of saurians, and had carefully preserved them in spirits, only to find upon inspection, that they were all exactly alike in form and color, all having assumed a yellowish-brown tint after immersion

in alcohol. Two anoli that I kept in captivity proved very gentle pets, and would run over my hands waiting eagerly for me to catch flies for them. Although quick in their movements, and able by the help of their tail to spring quite a distance, these little animals never could capture the flies for themselves unless I first crippled the insect by removing a wing. They loved the sunshine and fresh air; the latter they would swallow occasionally in great gulps, expanding a sort of pouch under their neck by the process. Though gentle when treated with kindness, when tormented they would show fight, opening their mouths in a ludicrous way. One, after trying in vain to bite a lead pencil, with which I had been stroking his back and otherwise plaguing him,

deliberately shook off his tail, and scampered away, leaving three fifths of his length wriggling upon the floor, where it continued to twist for some time. A drop or two of blood moistened the stump where the tail had been, but though the loss of the latter appeared to cause no physical pain the little cripple seemed ashamed of his odd appearance and hid himself in corners. He remained in my room for a month longer, but I seldom caught sight of him.

It is the color-changes of this little saurian that attract and interest all observers.

The negroes and even intelligent white inhabitants of the district frequented by this reptile tell many fabulous stories of its wonderful powers in this respect. Experiments with specimens which were in my possession at different times seemed to demonstrate that emerald green, gray, and sooty black and reddish yellow were the limits of its power. When frightened or pleased it turned green; if agitated for some time in apparent indecision, the color would fade and return in blotches. Under an ordinary magnifying glass it could be seen that the hollow around the eye changed first. Then the hexagonal plates upon the head showed the color, commencing at the edges and gradually spreading over each plate, the centers being the last points to turn. If a number of these animals be placed in alcohol they will be found to assume a dirty yellow or brown tinge. This is probably the natural hue of the skin with the coloring matter removed. The pigments appear to be contained in a network of vessels beneath the skin, and to be somewhat, though not altogether, under control of the animal. One, placed upon a bright crimson cloth, assumed a reddish yellow color, and though it did not approach the brightness of the cloth, a

near apex of the nose; the animal has no apparent external ears; it has bright, intelligent, almond-shaped eyes; large mouth, ten well defined teeth upon each side of the upper jaw, and four well defined teeth in the lower jaw, the intermediate space being filled with minute points; and four well developed legs, five toes upon each, each toe swelling out into a soft pad, terminating in a hooked claw. The pad or middle of the toe, under the magnifying glass, shows an odd arrangement of folds or founces in the skin, each founce, tuck, or fold being armed upon its edge with minute points, one half of them pointing up and the other half down, as shown in the illustration. Thus may we explain the creature's ability to run up or down the side of a house with equal facility.

In the illustration I have shown the lizard upon my finger, with mouth open; the dark color representing its favorite green hue. At the bottom in the moss is the same animal in his gray coat. In the circle appears a magnified view of the teeth, the second toe of the hind foot much enlarged, showing the peculiar arrangement of the folds of the skin upon the under side; and an enlarged view of the hind leg, and the head as it appeared under the glass while changing its color.

#### A NEW TORPEDO BOAT.

The accompanying engraving represents partly in section a torpedo boat recently patented by Mr. H. Mortensen, of Leadville, Col. The hull A, of the boat, has an arc-shaped keel, B, that runs the entire length, and projects beyond the stern. A portion of the keel is cut away at the stern to receive the rudder, C, which is pivoted in the support thus formed, and is provided with two arms, *a*, one on each side, that project at right angles to the face of the rudder, to receive the thrusts of the screw rods, which project through the stern of the boat, one on each side of the keel. The hull is divided into several compartments, one of which is designed to contain the men that operate the torpedo-projecting mechanism, another contains the men who introduce the torpedo into the projecting apparatus and attach it to the movable rod, and there are compartments for containing either air or water, as occasion may require. In the upper part of the boat there is a chamber which contains compressed air for the supply of the crew and for working the machinery. Under the several compartments already mentioned, there is a compartment for containing water forced in against an air cushion. This chamber acts as an accumulator of power which is expended in working the torpedo projecting apparatus.

A cylinder containing a piston is placed longitudinally in the hull, and provided with a loading chamber which projects through the bow of the boat.

The water required for working the piston may be forced into the accumulator chamber before the boat is started, or it may be forced in by hand or otherwise while the boat is under way.

The rods by which the rudder is operated are threaded, one being provided with a right hand and the other with a left hand thread, and work in fixed nuts, and are provided with driving mechanism operated by a suitable motor or by hand.

The boat has a removable upper portion, which is secured to the hull by means of bolts. The top is compartmented in the same manner as the hull, and both top and hull are provided with valves for the admission and escape of air and water.

In the top there are two entrances, *c* and *d*, provided with hinged covers that are packed to render them water-tight.

The compartments for containing the crew are provided with windows, which open inwardly, so that they may be repaired or replaced in case of breakage.

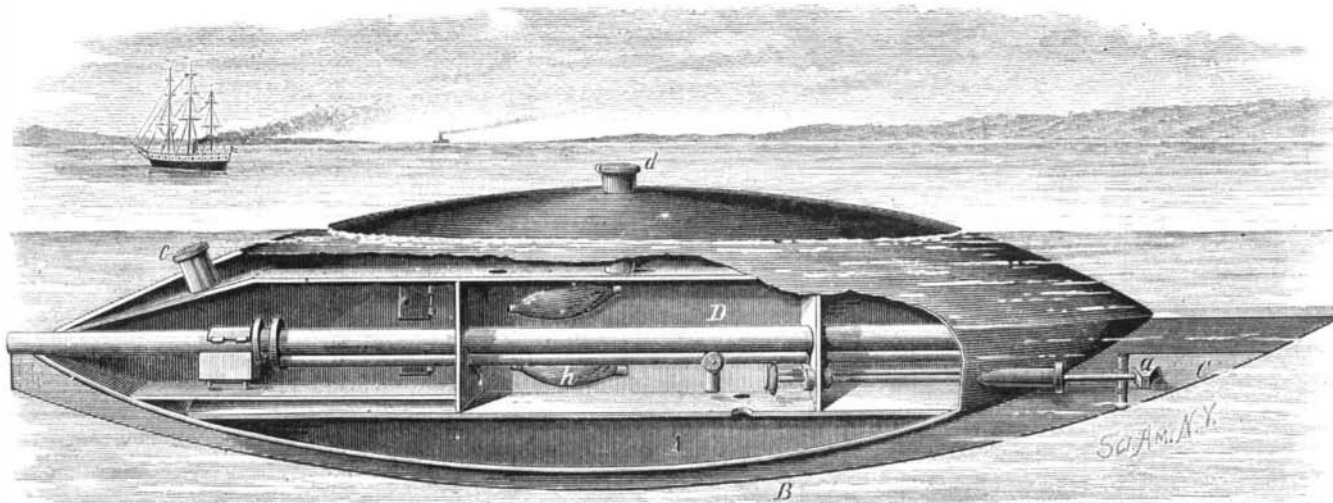
In each side of the boat there are recesses inclined in opposite directions; each of these recesses contains a screw propeller, the shaft of which extends into the boat, and is connected with a motor. By

means of these screws the boat may be propelled forward or backward, and raised or lowered, as may be required.

The boat is capable of being operated wholly under the water; or the top portion may be removed, when it may be propelled on the surface.

#### Development of the Lizard.

At a recent meeting of the Royal Society Prof. K. Parker presented a communication embodying part of his work on the structure and development of the skulls in the lizard group. His researches on the embryos of the common British lizards have led him to very unexpected results. Hitherto we have been accustomed to regard the crocodiles and



MORTENSEN'S TORPEDO BOAT.

casual observer would hardly have noticed the lizard motionless upon it.

Green is its favorite color, and black I never saw but in one instance. When hiding in the Spanish moss or upon a tree trunk it assimilates the gray, while yellowish red it assumes with apparent effort. When put and left upon a red substance or in a cigar box, the color of the latter it approaches very nearly. From tip of nose to tip of tail measures from five to six inches, the tail being three fifths of its total length. The head is rather large, triangular in shape, apex at the nose, and covered with small hexagonal plates from the nose to just behind the eyes. The rest of the body is covered with small papillous points; the nostrils are