

Natural History.

A CURIOUS INHABITANT OF THE SARGASSO SEA AND ITS NEST.

What is generally known as the Sargasso Sea is the vast area of 260,000 square miles, more or less, to the west and south-west of the Azore islands, reaching to the Bahamas westward, and finding its northern and southern boundaries in the 36th and 19th degrees of latitude. Other areas, notably that in the Pacific, five hundred miles E. S. E. of New Zealand, and, again, one thousand miles west of San Francisco, possess the same characteristics, but the former is the best known and defined. The great Atlantic currents form a gigantic eddy, thus collecting the algae that forms its component parts. The vegetable fauna is generally comprehended in the two genera, *Fucus* and *Sargassum*, of the latter two species, namely, *vulgare* and *bacciferum*.

The disconnected masses of weed that make up the "Sargasso Sea" are usually "from a couple of feet to two or three yards in diameter, some times much larger; we have seen, on one or two occasions, fields several acres in extent, and such expanses are probably more frequent nearer the centre of its area of distribution. They consist of a single layer of feathery bunches of the weed (*Sargassum bacciferum*), not matted, but floating nearly free of one another, only sufficiently entangled for the mass to keep together. Each tuft has a central brown thread-like branching stem studded with round air vesicles on short stalks, most of those near the centre dead and coated with a beautiful netted white polyzoon.

After a time vesicles so incrustated break off, and where there is much gull weed the sea is studded with these little separate white balls. A short way from the center, toward the end of the branches, the serrated willow-like leaves of the plant begin; at first brown and rigid, but becoming, further on in the branch, paler, more delicate, and more active in their vitality. The young fresh leaves and air vesicles are usually ornamented with the stalked vessels of a *Campanularia*. The general color of the mass of weed is thus olive in all its shades, but the golden-olive of the young and growing branches greatly predominates. This color is, however, greatly broken up by the delicate branching of the weed, blotched with the vivid white of the incrustating polyzoon, and reddened by reflections from the bright blue water gleaming through the spaces in the net work. The general effect of a number of such fields and patches of weed, in abrupt and yet most harmonious contrast with the lanes of intense indigo which separates them, is very pleasing.

The animal life of this area is characteristic and has certain peculiarities well worthy the attention of the student. It consists of *Squilla mollusca*, as the *Scilla pelagica*, a short-tailed crab, the *Nautilogr. pl. sinuatus*, quantities of membranipora, and a peculiar fish, the subject of our illustration, known as the *Antennarius marmoratus*. The writer was fortunate in observing the latter on the outskirts of this vast area. It forms one of the most interesting examples of the many creatures that find safety in protective resemblances. As above mentioned, the weed as it floats assumes all shades of olive, and the fish in color is its exact prototype, flecked with irregular patches of darker and lighter shades. Not only in color does it mimic the weed, but in general appearance, the head and fins being dotted here and there with fantastic bar-bells of flesh that to the ordinary observer seem bits of weed growing upon it. Even the white polyzoon growing on the algae is imitated, and a careful examination is necessary to distinguish the fish from its surroundings. It was often found lying in among the weed, but where the patches were small, was frequently seen lazily swimming around in clear water. Its nest, seen in the accompanying illustration is, no less a curiosity. It is a round or oval ball of weed, intertwined and wound together in a most complicated manner by an invisible viscid secretion from the fish. The pieces of weed are first roughly caught together, and the eggs deposited among the branches; then the invisible bands are wound around, gradually drawing them into the oval form, about as large as a baseball. The instinct, and its peculiar endowment by nature, place this fish among the most interesting of the funny tribe.

STEAM PACKING.—Mr. Watson in his *Mechanical News*, says that the best packing he ever used for faced joints, either steam or water, is common drawing paper soaked in oil. After a short time the heat of steam converts it into a substance like parchment, so that it is practically indestructible. It has the advantage of stripping readily from surfaces when it is desired to break a joint.

Inventions.

SKETCHES OF INVENTORS AND DISCOVERERS.

DR. HORACE WELLS, THE DISCOVERER OF ANÆSTHESIA.

The names of the three claimants are Dr. Horace Wells of Hartford, Conn.; Dr. Wm. T. G. Morton and Dr. Charles T. Jackson, of Boston.

On the memorable evening of the 10th of December, 1844. Dr. Horace Wells attended a lecture and an "Exhibition" of the amusing effects of nitrous oxide, or "laughing gas," given by Dr. G. Q. Colton of Hartford. Among the persons who inhaled the gas was a young man by the name of Cooley. While under its influence Cooley danced and jumped about the stage, and bruised his legs badly by running against some wooden benches. On sitting down he was surprised to find that his legs were bloody and that he had severely bruised himself. He told Dr. Wells, who sat next to him, that he was not aware that he had run against the benches, neither did he feel any pain so long as the effects of the gas lasted.

At the close of the entertainment Dr. Wells asked Dr. Colton why a tooth might not be drawn without pain while under the influence of the gas; and related the experience of Cooley. Dr. Colton replied that he did not know, as he had never tried the experiment. Dr. Wells said he believed it could be done, and was willing to try the experiment on himself. He asked Dr. Colton to bring a bag of the gas to his office the next day, and he would have a tooth drawn while under its influence. Accordingly, on the 11th of December, 1844, Dr. Colton took a bag of the gas to the office of Dr. Wells. Dr. Riggs, a neighboring dentist was called in to perform the operation. Dr. Colton administered the gas, and Dr. Riggs extracted a molar tooth. On recovering consciousness Dr. Wells exclaimed: "It is the greatest discovery ever made; I did not feel it so much as the prick of a pin!"

This was the first operation ever performed with a true anæsthetic. Dr. Colton then instructed Dr. Wells how to make the gas, and started off on his exhibition business. Dr. Wells got up the apparatus, made the gas, administered to a number of persons for teeth extraction, and then went to Boston to make the discovery known to the world. He called on a large number of his brother dentists, as also a number of leading surgeons, stating what he had done. They all treated him with ridicule, and scouted his pretended discovery. Among others who ridiculed his discovery was his former pupil in dentistry, Dr. Wm. T. G. Morton. Dr. Wells went to Cambridge College, and asked old Dr. Warren, the lecturer on surgery, to introduce him to the class at the close of one of his lectures. Dr. Warren did thus introduce him saying: "Here is a gentleman who pretends that he has discovered something which will destroy pain in a surgical operation. He wants to address you; if any of you wish to remain and hear him, you can do so." Dr. Wells addressed the class—or such portion as remained—and at the close of his remarks administered the gas to a boy and extracted a tooth. The bag was taken away a little too soon, and the boy screamed out, though afterward he said he felt no pain. The students hissed, and considered the experiment a failure.

Wells, after laboring and meeting rebuffs on all sides for several weeks in Boston, returned to Hartford and resumed his dental practice—using the gas successfully as an anæsthetic. Bishop Brownell, and some forty of the most respectable citizens of Hartford have given their depositions, that during the year 1845 Wells extracted teeth for them without pain, using the gas as the anæsthetic. Among these was Dr. P. W. Ellsworth, now living in Hartford, Conn.

At the close of 1845 or the beginning of 1846, Wells went to Europe with the hope of regaining his impaired health. While in Paris he presented the subject to the Academy of Sciences, and the Academy conferred upon him the honor of an M.D.

We come now to Drs. Morton and Jackson. Dr. Morton, having seen newspaper notices of Wells' operations with the gas, and remembering the statements of Wells, went to Dr. Jackson, who was a chemist, to learn how to make the gas, as he wished to test the value of Wells' pretended discovery. This was during the month of September, 1846. Dr. Jackson said to him, that "gas exhilarates, and makes people, laugh, dance, etc. If you wish to try anything, why don't you try ether? That will exhilarate"—evidently having no faith in the success of either gas or ether. Upon this hint or suggestion, Morton purchased some ether, and tried it on a boy, Eben Frost, on the 30th of September, 1846. This was the first experiment made with ether. Morton reported the success of the experiment to Dr. Jackson,