

ST. JOHN, N. B., SATURDAY, AUGUST 15, 1896.

CURIOUS MARINE LIFE.

THE SANKNESS OF THE OCEAN IS ALL ON THE SURFACE.

Strange Revelations Made by the Searches of Science—The Beauty of Vegetable and Animal Marine Life—Its Gorgeousness of Sea Anemones and Corals.

Within the last quarter of a century science has claimed the watery world as a part of her heritage equally with terra firma. The territory has been explored and mapped out. Dredge and sounding apparatus have been at work. The ocean bed has revealed its varying level of hill and dale, table land and abyss. From a vast array of facts relating to different depths knowledge of its currents and of the varying temperature and salinity of its waters has grown to something like a complete whole. The Norman conquest is not a more important landmark in English history than is the Challenger expedition in the story of deep sea exploration.

The scientists who cruised for four years under the leadership of Sir Wyville Thomson saw the fog banks of obscurity roll away; the dredge brought them tribute of strange forms of life upon the like of which the eye of man had never before rested. "The 'dark, unfathom'd caves of ocean' merited the epithet no longer; the deepest abyss was sounded, though fire miles of line ran out before the usual indications of having touched the bottom were noted. By an ingenious contrivance the dredge brought to the surface each time a sample of the clay, ooze, or gravel upon which it had rested. But while knowledge in all its branches has grown deeper and richer for the spoil which watery provinces have yielded, our acquaintance with the wonders of animal life has advanced by leaps and bounds. It has been the work of twenty years to sum up in twice as many volumes the discoveries made by the Challenger alone. It becomes more evident that the sea is the one far distant ancestral home of animals in general. Of those found in fossil form, all the most ancient ones seem to have made their homes in the waters. The changing level of the land may from time to time have insulated a bay or inlet and turned it into a lake or inland sea. Parted from the ocean, its waters would become fresh, but so gradually that the fish and other occupants had time to adapt themselves to new conditions. But a further step, and a long one, was needed before the fish could take possession of another element. Perhaps the tadpole in its change to the frog throws out a hint of how it came about. The African mud-fish, when the lake in which it lives dries up, buries itself in the mud, and as its gills are use less, breathes air, using its swim bladder as a lung. Here we seem to have a fish on the high road to become a land animal.

Seen from our own standpoint, nothing could be more uniform than the sea. One mile of gray, heaving water is the counterpart of the last and of the many that are to follow. But there is no sameness about the innateness of the sea; life below water seems to have shaken off those invisible shackles, so varied, and often fantastic, are the forms which it assumes. No magician's wand could have conjured the spirit of being into strange guise. Free swimming fishes may roam at large, but the most of the tenants of the sea have their own domains, whose visible bounds they do not pass. The weed-grown rocks, covered by the flowing tide or left bare as it retreats, are peopled by races which know nothing of life beyond the shallows. With increasing depth of water the growth of seaweeds comes to an end, and those forms which depend upon them for shelter or food do not stray out of reach of their groves and pastures.

When the comparatively shallow waters, which form a margin of varying breadth round the shores of every continent, are left behind, and the true ocean depths are reached, a world is entered where all is new and strange. The creatures which make their home upon the sea bottom are not those of the mid-waters, and the latter again are totally unlike those which haunt the topmost story, and, like the jelly fish, swim upon the surface or near it. Instead of three floors which we have pictured, the zones may be so many that a house of twelve stories would furnish a better illustration. The surface waters are populated with those atoms of sentient jelly to which naturalists have given the names foraminifera and radiolaria. Each speck of existence builds for itself a shell or casing with walls delicately fretted and rarely sculptured. When its inmate dies the shell sinks slowly through the water to add a new particle of lime or flint to the ooze which is nothing more than a mass of skeletons of its myriad predecessors. A long past change of level may have raised ooze above waters and turned it into chalk, but the microscope reveals its true composition and shows that every lump of chalk is a vast cemetery of animal oolite. What the infinitely little may accomplish is shown by the fact that a great part of the bed of the

Atlantic consists of this soft, whitish mud. The ooze has been brought up from a depth of nearly three miles; at greater depths it is wanting, as the frail shells are corroded and dissolved in their descent to such an all but featureless abyss.

Other tenants of the waters which have contributed to the deep-sea deposits are the sharks and the whales. The sharks' skeleton, being the nature of gristle, has not been preserved, so that the denton tiger of the seas is represented only by his teeth; in the same way the ear bones of the whale, hard and compact as stone, have outlasted every other part of the monster's framework. This wear and tear of surface life, ooze and bone and shell, may in time, by slow additions to the pile, reach to within a few fathoms of the surface. This is the opportunity of the coral polyp, which need for their well being the light and movement of the upper waters. In the heap of rejectments they strike the foundations of their city. Each member of this colony abstracts lime from the water, and benefits by the support thus gained, till, dying, it leaves its fabric of lime as a basis upon which its successors may build. So the structure becomes broad and massive, and spreads by growth of stem and branch till it nears the surface. The polyp can carry the work no further but the stems do the rest. Fragments are broken off and heaped one upon another till the reef is level with the waves. The story has been told so often that we need follow it no further to tell how the reef becomes an island, how ocean currents and wandering sea birds bring the germs of shrub and tree, till, sheltered by the cocoanut palms rise the huts of brown-skinned natives. Kingdoms and States owe their very being to the coral polyp.

In our own seas corals are few and little noticed. The sea anemones, though not very near skin, may be called their representatives. They are the flowers which brighten the rock pools, opening out in the still water which the ebbing tide has left, and with slow waving of arms, crimson, or pink, or grass green, feeling for any passer-by which may serve as food. Won betide the juvenile scrimp or other incautious swimmer which comes into contact with those soft-moving tentacles! Active enough the moment before, one touch deprives it of all power of movement. For each of the anemone's feelers is an arsenal of offensive weapons, containing a battery of pointed threads coiled up till the right moment comes, when they are shot out to harpoon the victim. The prey is pierced by a thousand viewless darts, each one barbed to give it sure hold. This is the explanation of the sudden paralysis which even a small fish may feel, and this is why the victim sticks to those ruddy tentacles, as our own fingers do if we touch them.

The jellyfish pulsating through the water with its translucent dome and train of tentacles bears but small resemblance to the anemone. But, as a matter of fact, it once formed a part of a very different individual whose appearance shows its kinship with the anemone at a glance. The parent stock is stationary, fixed by its stalk; the jellyfish, though it so quickly contracts to great when water is scarce, is something more than water and slime. The stay-at-home polype can boast of little or nothing of the nature of sense organs, but the jellyfish goes to see the world, and hence is furnished with what we may fairly call eyes and ears, and even with a simple nervous system.

From our own chill and turbid seas we may wander in fancy to those gardens beneath the waves in which travellers to the East Indies and South Sea Islands tell through the clear waters of the lagoon fishes, many colored as the rainbow, may be seen to glide and turn, swift and graceful as swallows, threading the alleys of the seaweed forest, whose growth of frond and tuft vies with them in color. Cuttlefish swim past, changing color as by magic to accord with their surroundings, flushing to a kindred tint as they near the groves of coral, or growing pale as they pass above a trace of silvery sand. Sea snails crawl with stealthy ease browsing upon each fringe of greenery. They have sacrificed freedom of movement to safety, dwelling, burdened but secure, in shells of some of the rarest of which the collector would pay hundreds of pounds.

From the teeming life and brilliant hues of the coral lagoon no transition could be greater than to the cold and gloomy chasms of ocean's furthest depths. As we pass downward light and warmth are left behind, and the few fish which are met with are suited to altered conditions. Beyond the first 100 fathoms are fishes with eyes rather larger than usual, to profit by the few dim rays which reach them. At twice this depth we should begin to meet with fishes whose small eyes and well-developed tentacles show that they have given up the attempt to see and learned to depend upon touch. Side by side with them are forms with larger eyes seeing by the faint glimmer of phosphorescence. As some of them emit light, they may be said to carry their own lanterns. In the greatest depth blind fishes grope, structurally fitted for their dreary, sunless world, and knowing no other.

But there is no end to the strange histories which the dredge has brought to light.

ABOUT THE OLIVE.

Its Usefulness to Mankind and Interesting Facts about its Culture.

Spain is the country for oils and wines. The grapes are delicious, the olives are appetizing. Olive oil is so extensively used for cooking purposes in Spain, Italy, and France that to the casual observer it attributed the strength of the digestive organs so remarkable with the people of those countries. In fact, the elsewhere

dreaded dyspepsia is unknown among them.

Until the advent of petroleum, the olive oil was used for illuminating purposes, and is yet so used in Spain. This is particularly the case in the rural towns. The Spanish beauties keep their black tresses so soft and lustrous by zealous applications of the olive oil. It is also extensively used in the manufacture of soaps and for the lubrication of machinery. Also in some chemical preparations.

We have said the olive oil is largely used for cooking in the Southern European countries. In Spain almost everything, except meat, is cooked with olive oil. The Spaniard would be horrified to think of frying fish with lard. Nobody would eat. Even macaroni and eggs are cooked with oil. The cabbage is boiled and dressed with oil and sweet red pepper. The oil is used to preserve the wine intended to be kept a long time; a layer of oil is put on top of the wine before the demijohn is corked and sealed. It would surprise an American cook to see how fish is fried in Spain. The cuts are simply swimming in a pan half filled with oil.

The olive oil is, indeed, so nutritious that the shepherds of Spain depend largely on it for their daily food. While driving their sheep about the country they are always provided with a good-sized bottle of the oil, a loaf of rye bread, and half a dozen onions. All these they carry in a canvas bag hanging from their shoulders. They come to a halt near a road inn, cut two slices of bread and soak them with the greasy fluid. A bite of bread and a bite of onion are washed down with a couple of glasses of wine taken at the counter in the inn, and they are ready to start again on their journey. Stronger men than the Spaniards can hardly be found in any country.

The children are given a light lunch in the afternoon; the mother makes a toast from white bread, and sprinkles it with salt and pure oil. There is hardly anything more appetizing; the children eagerly devour it. Unquestionably, this oil toast keeps their bowels in good condition. Another popular morsel is a cake in which are imbedded a few sardines with plenty of oil around them and with a layer of fine-cut parsley on top. In this shape the cake is baked.

In some rural towns of Spain they celebrate the new crop of honey by holding a public fete in the main street. From early in the morning the bunoleros (cruel makers) fill with olive oil a number of large pots and place them on bricks, lighting a wood fire underneath; one of these pots is half filled with water, and into it is put a vessel of special form filled with new honey. The people commence to arrive and the bunoleros prepare the dough. Cruller after cruller is thrown into the pot filled with boiling oil. In a few minutes they are served with a cup of warm honey, in which to dip them. It is really a delicious morsel, as the cruller comes from the pot very spongy, with a golden tint that is inviting. The olive oil, exposed to the light, loses to color. The oxygen also exercises a detrimental influence on the qualities of the oil. Exposed for a length of time to the air, it becomes rancid. The elementary composition of the olive oil is oxygen, hydrogen, and carbon. The oil contained in an olive is said to be 27 per cent. of its weight.

The manufacture of olive oil antedates the birth of Christ. Of course, in primitive times the implements used for its extraction were of the simplest design, and it was long carried on without even the stone mill operated by a horse. It has been found that the oil contained in the kernel of the stone of the olive is inferior in quality to the oil of the pulp that covers the stone. If the two are thoroughly ground together, the mixture is detrimental to the final product.

To circumvent this difficulty a 'pulper' was designed which detaches the meat from the stone without breaking the latter, but the process is too slow and has not found favor among the millers, so they have adopted the three-roller mill, which crushes the pulp, but very little of the kernel.

The operation of grinding the olive is simply preliminary to the extraction of the oil by the press. A primitive affair is the press shown above. It is all of wood, the screw included. Other presses of more modern make are operated by steam, and the most powerful by water. These hydraulic presses have been introduced lately. The olives are put into bags made of woven Spanish grass, and these are placed on the press; the oil rushes through the meshes and falls into a receptacle very much like the American cider press.

The modern press can be made to crush in twenty-four hours 500 bushels of olive pulp, the press being operated by a four-horse power steam engine.

The oil, as it comes from the presses, has a sweet taste and is very aromatic. During the period of clarification that follows, the oil is improved every time it is changed into new vessels; it loses the water contained in the pulp, and also a

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anuliginous constituent that is very perceptible. People not accustomed to the natural taste of the oil generally do not like it after using it for some time. Some oils, and perhaps the best, have a greenish color, others are golden. While this consumption of oil was more or less confined to the three European countries that produce the most of it, its manufacture did not go beyond its clarification. When other countries began to use it, objection was made to the greenish color.

The fructification is slow, requiring between five and six months before the olive is formed and ripe; first the stone is being shaped, and this happens towards the middle of July and August, and when it is almost fully developed the pulp commences to cover the stone, but before it is fully covered very many olives drop to the ground. This period of development is as dangerous to the fruit as the period of setting it to children, although many of the olives fall from the tree because of an excess of fruit over the strength or resources of the tree. When the equilibrium is re-established the fruit ripens, toward the end of the fall. The olive is gradually increasing in weight, until its full development, when it remains stationary for a short time, and commences to decrease.

It has been found difficult to ascertain the right time for picking the olives; the quantity and the quality of the oil much depend on this. It is very interesting to know the calculations made by several agriculturalists on this subject; they add up the medium temperature of the months that have elapsed since the appearance of the blossoms, this sum is divided by the number of months and multiplied by the number of days: the result will usually be between 3,400 and 4,000 degrees, using the centigrade. Failing to aggregate that number of degrees, the olive is not supposed to be ripe. The Spanish farmer picks a sample olive, and if the color of the pulp is violet, the fruit is ripe; if, on the other hand, it is more or less whitish, it has to grow some time yet.

The olive groves are so extensive in Spain and Italy that the oil is abundant and very cheap, and in general use by all classes, and yet vast quantities, both of the olives and the oil, are shipped abroad every year. The people in the United States have no idea of the ripe olive from which the oil is made, accustomed as they are to eat the olives green and pickled. The fruit does not contain the agreeable acid of that pickled green, and its color has been changed into a bluish black. The juice of the ripe olive is oily and the meat is soft. It is quite a distinct article from the green olive. It is kept in brine in large casks. It is not exported to the extent of the green olive because of the difficulty in keeping it from getting rancid.

In the large plantations the gathering is made by hand, men and women climb on ladders and pick only the ripe fruit. In older times the idea prevailed that the olive tree became unproductive if any woman under forty years of age was allowed to climb it to pick the fruit. In Italy it was believed the olive trees rendered a very large yield if they were cultivated by maidens whose parents were known to the owner. This custom was yet in existence in the sixteenth century. In Andalusia, Spain, where thousands of men and women gather the crop, the women wear wide trousers and climb the trees with great dexterity.

The injured olive is never mixed with the sound one, and is ground separately, its oil being used for industrial purposes. The olive must be rather green than over-ripe at the time of gathering, as the oil is less liable to get rancid should the grinding go slow or be interrupted.

A. TALTAVALLE.

Cloth of Wood Fibre.

The important question of how best to withstand winter's frosty weather interests everybody. And this question is now settled by the great possibilities offered by Fibra Chamois. It is a large pure fibre of the spruce tree made as soft as silk or wool by an interesting chemical process, and then felted together just as wool or cotton is, making a strong, windproof and cheap fabric. Nearly every one knows that wool is one of the best non-conductors of heat and cold to be found, so this interestingly made entirely from the wood affords thorough protection from the most cold and searching winds, at the same preserving the natural heat of the body. These facts united with its light weight and pliable nature make it an invaluable interlining for outer clothing of every description.

High explosive shells have proved so successful with quick-firing breech loaders in the French experiments that the British admiralty has already supplied the Channel fleet with them and will soon provide shells for the whole navy.

CANNOT ALWAYS CASH CHECKS.

Trouble May Arise When the Banks are Closed for Two Days.

"Were you ever vexed so that you couldn't get \$200 or so when you wanted it in a hurry?"

"Very often," the questioner's friend remarked, expressively.

"I mean, have you ever tried to get a check cashed and failed everywhere, although it was perfectly good? To be more particular, perhaps I should describe the situation. It came about because a holiday came on a Saturday. For several days I expected to be called to the west on business, and I thought I might be obliged to leave town in a hurry."

"When I went home on Friday I over-looked the fact that the banks would be closed the next day, and I had only a few dollars in my pocket. On Saturday morning I got a telegram that indicated that I might be obliged to start away on Sunday, and I began to get some clean linen together."

"Then I thought of my cigars, and I went to my dealer for a supply. All of a sudden it struck me that I hadn't any money for railroad fare, and I asked the cigar man whether he could cash a check, but he had only \$10 in the store."

"I always have about \$1,000 in my personal account with our business bank, and as I have drawn on it for this big expense the situation I thought I could get a check cashed where I trade. I tried the grocer, but he couldn't raise \$200. Then I went to the butcher, the baker, and the druggist. I could not raise \$200 from the whole lot. 'I didn't know what to do,' I explained the situation to some of my neighbors, but not one of them had more than a few dollars as pocket money. I thought of going down town and trying there, but I knew that every place of any account would be closed."

"I didn't believe that the ticket agent would take a strange check, and I couldn't go to a strange place like a hotel or the telegraph office and ask for the money. 'Then I thought of raising the money by getting a money order by telephone, but on second thought I realized that my correspondent out west would have the same trouble in trying to raise \$200 on a holiday. It looked as if I would be obliged to wait until my bank opened on Monday or get a small check cashed and have the balance sent to me later.'"

"What did you do?" "Nothing. I didn't get another telegram. If I had been summoned to the side of a deathbed I would have been in a similar fix. When the banks close for two days they can create lots of trouble and anxiety. Just keep that in mind if you expect to be called away suddenly."—New York Times.

SWARMS OF THEM NOW IN LONDON.

The 50,000 American Tourists Sojourning in Old England.

The world will surely turn upside down if the English begin to change their ways. It looks as if this were going to happen. They are showing an intelligent acquaintance with our geography and our public men, for one unheard of thing. The Prince of Wales has had electric lights put in his town house; the suffocating, sulphurous, underground railway is experimenting with electric motors, and the newspapers are printing pictures. Vestibuled trains with saloon cars are appearing on the railways and the theatres are beginning to give away programmes to the audiences. But the most surprising, rock-shivering revolution makes the latest news of the week—the city merchants have formally agreed to let their clerks wear straw hats. It has been as hot as Chicago during a national convention, so something had to be done for the clerks, but who would have dreamed that the traditional dress of the tens of thousands of clerks who have always gone about sweltering in their hearts was thus suddenly to be changed? It probably has taken ever since the French revolution for them to get their high hats, and no one supposed they would lose them inside of another century.

This change makes it bothersome for me to pick out the Americans in the streets. For weeks I have been riding about on the tops of buses (the chariots of the masses) and picking out Americans by their derby hats and straw tiles. Fancy my surprise

then, when I see on the Strand my cigar counter clerk in a straw hat, and Bob Fitzsimmons, the champion of the world, in a silk tile. By the way, I stepped down from my chariot when I saw the pugilist, and said 'Hello! are you over here to fight?' 'No,' said he, and his answer was such as Alexander might have made when he had rounded up the world: 'There's nobody here to fight. I can stop them all in four rounds.'"

There are about 50,000 of us here, and part of this huge burg has become almost homelike in consequence. Westminster Abbey is as American a resort as the Fifth Avenue hotel, and you could not go amiss in St. Paul's or the Tower if you went up to the first man or woman in the crowd and said: 'Hurrah for Old Glory!'

Some of the American men who come here are a terror to their countrymen. They seem to have had enough money to get here with, and once here, they borrow to get back. They catch us who are rooted here and cannot get away. One American resident, a well-known novelist, got a card from a hard-up the other day, and asked him in. The visitor began to tell him how much he admired the novelist's work, how he had read every line he had ever written and—there the novelist stopped him. "See here," said he, "you have run short of money and are 3,000 miles from home, and want the slight favor of a—and so forth and so forth. Now, don't you think you are wasting your time with me? I am only a novelist, and I have a family. I could not possibly loan you more than five shillings, but if you would go to Astor and spend the same time and money on him telling him how fond you are of his books, he could give you a hundred dollars."

The visitor rose to his feet. "You are a brick," said he. "Thank you very much. I'll go and see Astor at once." There is another way of telling Americans without looking at their hats. It is by their quick, alert, nervous movements, their bright, wide awake faces and their conscious independence and pride. You thought I was going to say by their speech, but that is not so. The sharp, nasal speech that the English ascribe to us is only the heritage of a few of us, and we get it from the English. Down in Cornwall and up in Yorkshire they have the same short 'a' that we use. Here in London the cockneys all say 'caow' and 'raound,' and 'naow,' just as our Philadelphians and some Yankees do. No; there is no scruple in that old gibe about our speech. We got it from these folks, and we left it here besides.—New York Journal.

Misfit.

He—I don't understand it. Harriet and Percy only married a year and a half, and she wants a divorce. Has he been ugly to her or the baby?" She—"No, it's incompatibility. You know Percy is extremely tall and Harriet is short. They look so ridiculous on a tandem that she can't endure it."

An Irishman's View.

I overheard a conversation between two Irishmen last evening: "How much does Grogan owe you, Pat?" asked one. "Twenty dollars," answered Pat. "But he added, 'I guess it's silver debt.' Communication to New York Sun.

Badly Mixed.

Mr. Jones was in love—hopelessly, irretrievably in love—and he felt sure that his passion was returned. That being the case, and his financial condition warranting him marrying whenever and whomever he pleased, one might expect him to be a very happy man indeed, instead of which he was plunged into the very depths of despair.

WHY?

Because he could never manage to look nice in the suit that he got cleaned and dyed. He got married however, and afterwards took his work to Ungar, and a happier home cannot be found anywhere.

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