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BY JULES VERNE

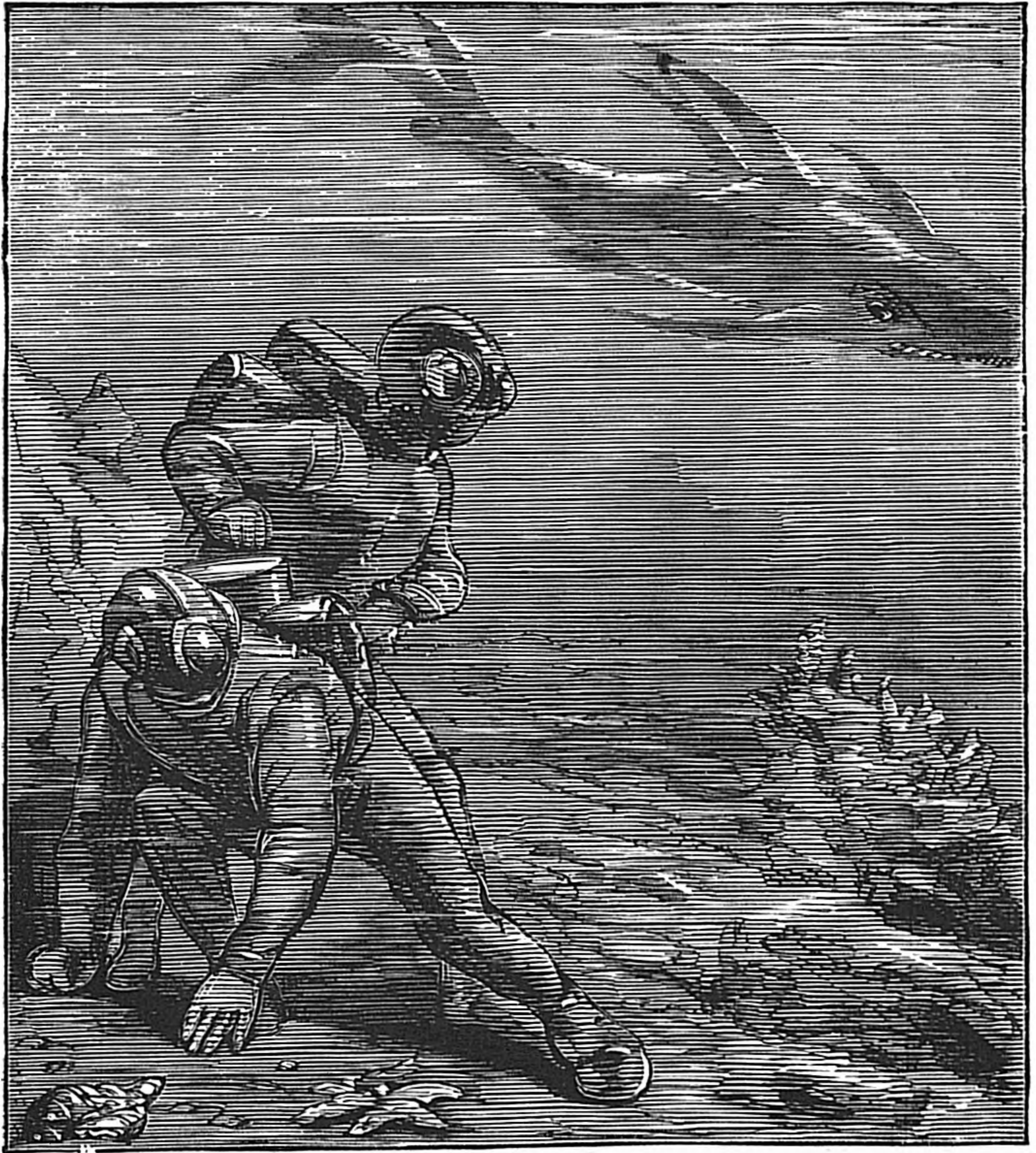


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“20,000 LEAGUES UNDER THE SEA.”—PART I.

TWENTY THOUSAND LEAGUES
UNDER THE SEA

BY

JULES VERNE

AUTHOR OF "THE ADVENTURES OF CAPTAIN HATTERAS"
"JOURNEY TO THE CENTRE OF THE EARTH"
ETC. ETC.

COMPLETE EDITION

TRANSLATED BY HENRY FRITH

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TWENTY THOUSAND LEAGUES UNDER THE SEA.

CHAPTER I.

A MOVING ROCK.

THE year 1866 was marked by a very strange event, an inexplicable and unexplained phenomenon, which must still be in the recollection of our readers. Without mentioning rumours which agitated the population of the sea-ports, and extended to the interior of various countries, the maritime population were more particularly exercised in their minds. Merchants, ship-owners, ship-captains, skippers, and masters, both European and American, officers of the Marines of both countries, and, subsequently, the Governments of various States of these continents, were deeply engrossed respecting this phenomenon.

As a matter of fact, for some time many vessels had encountered "an enormous thing," long, spindle-shaped, phosphorescent at times—very much larger and swifter than a whale.

The facts relating to this apparition, as recorded in various "logs," agreed sufficiently respecting the formation of the object—or being—in question, the unheard-of celerity of its movements, its wonderful power of motion, the peculiar life with which it seemed endowed. If it were of the whale species, it exceeded in bulk all that science had hitherto classified. Neither Cuvier, nor Lacépède, nor Dumeril, nor M. de Quatrefages, had admitted the existence of such a monster.

But to strike a medium of the observations made at intervals, rejecting the timid estimates which pronounced this object to be 200 feet long, and putting away the exaggerated opinions which gave it a breadth of one mile and a length of three, we may state, nevertheless, that this extraordinary being exceeded anything hitherto discovered by ichthyologists—supposing it ever existed.

Now if it existed, the fact could not be denied, and with the instinct for the marvellous, indulged in by the average brain of humanity, one can understand the effect produced upon the world by this supernatural apparition. It was quite impossible to treat it as a mere fable.

In fact, upon the 20th July, 1866, the steamer *Governor Higginson*, of the Calcutta and Burnach Steam Navigation Company, had encountered this moving mass five miles to the east of Australia. Captain Baker was at first under the impression that he had met with an unknown rock, and was preparing to take the bearings of it, when two columns of water, impelled by this extraordinary object, were spurted 150 feet into the air. So, unless this rock were subject to the intermittent expansions of a geyser, the *Governor Higginson* had in good earnest encountered some aquatic mammifer hitherto un-

known, which spurted through its blow-holes two columns of water mixed with air and steam.

A similar occurrence was observed on the 23rd July in the same year, in the Pacific Ocean, by the *Christopher Columbus* of the West India and Pacific Steam Navigation Company. On this occasion the wonderful cetacean must have moved from place to place with extreme velocity, since the *Governor Higginson* and the *Christopher Columbus* had observed it at two places separate more than seven hundred nautical leagues.

Fifteen days later, two thousand leagues from the above latitude, the *Helvetia*, of the National Steamship Company, and the *Shannon*, of the Royal Mail, sailing between Europe and America, noticed the monster respectively $42^{\circ} 15'$ N. lat., and $60^{\circ} 35'$ W. long., of the meridian of Greenwich. In this simultaneous observation the minimum length of the mammifer was estimated at 350 feet, for the *Shannon* and *Helvetia* were smaller than it, inasmuch as they measured 300 feet only from stem to stern. Now the very largest whales—those which inhabit the neighbourhood of the Aleutian Islands, Kulammak and Umgillick—have never exceeded 180 feet, even if they reached that length.

These reports arrived in quick succession. Further observations made on board the Transatlantic "liner" *Pereire*; a collision between the *Etna* of the Inman Line and the monster; an official report sent in by the officers of the French frigate *La Normandie*; a very serious report obtained by the Secretary of State from Commodore Fitz-James of the *Lord Clyde*, stirred up public curiosity. In a country possessing some sense of humour the subject would have been treated as a joke,

but in such grave and practical nations as England, America, and Germany, people were very much exercised in their minds.

In the large towns this monster became quite the rage; they sung about it in the cafés, they derided it in the newspapers, and joked upon it in the theatres. The *canards* had now every opportunity to lay eggs of every colour. One might have noticed in the papers drawings and descriptions of all the terrible and imaginary beings, from the white whale—the fearful Moby Dick of the Arctic regions—to the immense Kraken, whose tentacles were sufficient to grasp a ship of 500 tons and drag it to the depths of the ocean. They reproduced even the statements of ancient writers, the opinions of Aristotle and Pliny, who admitted the existence of these monsters; the Norwegian narratives of the Bishop Pontopidan, the tales of Paul Heggede, and, finally, the reports of Mr. Harrington, whose good faith no one could impugn, when he declared he had seen, when on board the *Castillan* in 1857, that enormous serpent, which up to that time had only infested the waters of the ancient *Constitutional*.

Then there arose the interminable discussions between the credulous and the incredulous amongst scientific societies and publications. This “monster question” inflamed their minds. Journalists who professed themselves scientific in contradistinction to those who professed to be intellectual, “slung ink” to a great extent during this memorable campaign; some even shed a few drops of blood, for the sea-serpent gave rise to some very offensive personalities.

For six months this paper-war continued with varying

success. To the leading articles of the Geographical Institute of Brazil, of the Royal Academy of Sciences at Berlin, of the British Association, of the Smithsonian Institute at Washington, to the discussions in the "Indian Archipelago," in the "Cosmos" of the Abbé Moigno, in the "Mittheilungen" of Petermann, in the scientific notices of French and other journals, the comic papers replied with unflagging energy, their lively writers parodying a speech of Linnæus, quoted by the opponents of the monster, maintained in effect that Nature did not do foolish things, and abjured their contemporaries not to give Nature the lie by admitting the existence of krakens, sea-serpents, "Moby Dick," and other inventions of drunken sailors. At length, in a very celebrated satirical journal, the editor attacked the monster, gave him a last blow, and conquered, amid universal laughter. Wit had vanquished science.

During the first months of the year 1867 the question remained in abeyance, and did not appear likely to crop up again, when suddenly some new facts were brought to the knowledge of the public. These did not take the shape of a scientific problem which had to be solved, but of an actual danger to be avoided. Thus the question assumed a totally different aspect. The monster was still an islet, a rock, a reef, but a moving rock, indeterminable and unassailable.

On the 5th March, 1867, the *Moravian*, of the Montreal Ocean Company, in $27^{\circ} 30'$ N. lat. $17^{\circ} 52'$ W. long., during the night struck, on the starboard quarter, a rock, which no chart had ever laid down. Impelled by steam and wind, the vessel was progressing at the rate of thirteen knots. Had the *Moravian* not been very stoutly

built she would have sprung a leak, and have gone to the bottom with her 237 passengers and crew.

The accident happened at about 5 A.M., at daybreak. The officers of the watch hurried to the stern of the ship. They scanned the ocean with minuteness. They perceived nothing except a strong eddy, which broke about two cables' length distant, as if the surface of the sea had been violently disturbed. The bearings of the spot were accurately taken, and the *Moravian* continued her voyage apparently uninjured. Had she struck upon a sunken rock or on some wreckage? They could not tell, but upon examination in dock it was discovered that a portion of the keel had been carried away.

This occurrence, although sufficiently serious in itself, would perhaps have been forgotten, like many others, if, three weeks afterwards, it had not occurred again under exactly similar conditions. Only, thanks to the nationality of the ship, the victim of this system of running foul of vessels, and to the reputation of the company to which the ship belonged, the event created a great sensation.

No one can be ignorant of the name of Cunard, the celebrated English shipowner. This gentleman founded in 1840 a postal service between Liverpool and Halifax, N.S., with three wooden vessels and engines of 400 horse-power, and 1,162 tons measurement. Eight years afterwards the fleet of the company had increased by four ships of 650 horse-power and 1820 tons, and two years later two other steamers of greater size were built. In 1853 the Cunard Company, which had again secured the concession to carry the mails, added successively to its fleet the *Arabia*, *Persia*, *China*, *Scotia*, *Fava*, *Russia*, all vessels of the first-class, and the largest (except the

Great Eastern) that had ever crossed the ocean. Thus, in 1867, the company possessed twelve ships, eight paddle and four screw-steamers.

I give these details so that every one may appreciate the importance of this company in maritime affairs. No enterprise connected with transatlantic transport has been conducted with such ability, or crowned with so great success. For six-and-twenty years the Cunard "liners" had crossed the Atlantic, and had never missed a voyage, had experienced no serious delays, nor even lost a man, a letter, or a vessel. So passengers choose them still, notwithstanding the great competition, as can be perceived from an abstract from the official reports. Under these circumstances it is not surprising that some excitement should have been created when the news came of an accident that had happened to one of the best steamers.

On the 13th April, 1867, the sea was smooth, the wind light, and the *Scotia* was in $15^{\circ} 12' W.$ long. $45^{\circ} 37' N.$ lat. She was steaming over thirteen knots. Her draught of water was about six metres and a half, her displacement 6,680 cubic metres.

About four o'clock in the afternoon, while dinner was proceeding in the saloon, a shock, but not a very great one, was distinctly felt somewhere on the starboard quarter abaft the paddles.

The *Scotia* had not struck; it had been struck, and, moreover, by some sharp or pointed thing, which contused her. This "hulling" of the vessel was so gentle that no one on board would have felt anxious had not someone run upon the bridge and exclaimed, "We are sinking! we are sinking!"

Of course the passengers immediately took alarm, but Captain Anderson soon reassured them. Indeed, the danger could not be imminent, as the *Scotia* is divided into seven water-tight compartments, and can put up with a little leakage.

Captain Anderson descended at once into the hold. He perceived that the fifth compartment had sprung a leak, and the rate at which the water was pouring in proved that the injury was of considerable extent. Very fortunately the furnaces were not situated in this portion of the ship, else they would have been quickly extinguished.

Captain Anderson stopped the *Scotia*, and sent one of the sailors to examine the injury. He soon discovered a large hole in the hull. Such damage could not be trifled with, and the *Scotia* was put at half-speed for the rest of the voyage. She was then 300 miles from Cape Clear, and, after a delay of three days, which caused great anxiety in Liverpool, she arrived in port.

The surveyors then set about their examination of the *Scotia*, which was dry-docked for the purpose. They could scarcely believe their eyes. About six feet below the water-line there was a regular rent, in the shape of an isosceles triangle. The fissure in the iron plating was perfectly even, and could not have been more neatly done with a punch. It must have been caused by an instrument of no common hardness, and after it had been launched against the ship with such prodigious force as to pierce an enormous hole in the iron, it had been withdrawn by a retrograde movement almost inconceivable.

This was the last occurrence which had so excited

public curiosity. From that time all disasters at sea which could not be accounted for were put to the credit of the monster. This fantastic animal bore the responsibility of all shipwrecks—whose numbers are, alas ! considerable—for out of the 3,000 vessels whose loss is annually recorded, the number supposed to be lost, because no intelligence concerning them has been received, scarcely reaches 200. Now this was the monster which, justly or unjustly, was accused of their destruction ; and, thanks to him, the communication between the continents became more and more dangerous, and the public demanded that the ocean should be cleared of this formidable cetacean.

CHAPTER II.

FOR AND AGAINST.

WHILE the events above described were taking place, I was returning from a scientific expedition into the wild territory of Nebraska, U.S.A. In my position as assistant professor to the Natural History Museum in Paris, the French Government had nominated me to the expedition. After six months passed in Nebraska, I arrived in New York about the end of March, in charge of a valuable collection. I had arranged to sail for France at the beginning of May. In the meantime I was occupying myself in classifying my mineral, botanical, and zoological collections, when the accident happened to the *Scotia*.

I was perfectly well acquainted with the topic of the day: how could it be otherwise? I had read again and again the European and American journals without being any more enlightened. This mystery puzzled me. In the impossibility to form an opinion, I drifted from one extreme to the other. That there was something was an undoubted fact, and the unbelieving were invited to put their fingers into the side of the *Scotia*. When I arrived in New York the subject was being freely discussed. The

hypotheses of the floating island and the unassailable rock, upheld by some minds, had been altogether abandoned. And indeed, unless this rock possessed a machine in its interior, how could it move at such a tremendous pace ! The floating hull of some large wrecked vessel was also set aside as untenable, and for the same reason.

There thus remained two possible solutions to the question, which called into existence two distinct clans or cliques—those who believed in a monster of enormous size, on the other hand those who supported the idea of a submarine vessel of a wonderful motive-power.

Now this last hypothesis, allowable after all, could not be supported in face of the inquiry directed against it. That any one person had such a mechanical power at his disposal was scarcely likely. Where and when had he manufactured it, and how had he kept the construction a secret?

A Government only could have possession of such a destructive machine, and in these disastrous days, when everyone is bending his energies to multiply the effect of offensive weapons, it was possible that one State might, unknown to others, attempt such a formidable engine. After *chassepôts*, torpedos—after torpedos, submarine rams ; then—a reaction. At least, I hope so !

But the suggestion of an engine of war was dissipated by the declarations of the various Governments. As the question agitated was of public interest, since inter-oceanic communication was being interrupted, the statement of the Governments could not be called in question. Moreover, how could the construction of such a machine have escaped notice ? To guard such a secret under the circumstances would be a very difficult task

for an individual, and certainly impossible for a State, whose acts are jealously watched by powerful rivals.

So, after inquiries had been instituted in England, France, Russia, Prussia, Spain, Italy, America, and even Turkey, the suggestion of a submarine monitor was definitely rejected.

The monster appeared by fits and starts, in spite of the incessant fire of jokes directed against it by the comic press, and in this direction imagination went to the most absurd lengths in fantastic ichthyology. On my arrival at New York many people had done me the honour to consult me upon the phenomenon in question. I had already published in France a work in two volumes quarto, entitled "The Mysteries of the Great Ocean Depths." This work, which was much relished by the scientific world, dubbed me a specialist in this somewhat obscure branch of natural history. My opinion was asked. So long as I could deny the reality of the occurrence I took refuge in absolute denial, but soon, driven to the wall, I was obliged to explain categorically; and "the Honourable Pierre Aronnax, Professor at the Museum in Paris," was formally called upon by the *New York Herald* to pronounce an opinion.

I complied with the request, because I was unable to remain silent. I discussed the question in all its bearings, politically and scientifically, and I give below an extract from a well-digested article which I published in the issue of the 30th April.

"Thus," said I, "after having examined one by one the various hypotheses, all other suppositions being rejected, we must necessarily admit the existence of a marine animal of great power.

“The profound depths of the ocean are entirely unknown to us. Soundings have never reached to the bottom. What goes on in these abysses? What beings inhabit or can inhabit the regions twelve or fifteen miles beneath the surface of the water? What is their organisation? One can scarcely even conjecture.

“Nevertheless, the solution of the problem which has been submitted to me assumes this shape—

“Either we are acquainted with all the varieties of beings which inhabit our planet, or we are not.

“If we do not know them all, if Nature has still secrets from us in ichthyology, nothing can be more rational than to admit the existence of fishes or cetacea of new species, or even new genera, of an essentially primary organisation, which inhabit the beds of ocean inaccessible to the sounding line, and which some accident, a fancy or caprice, if they will it, impels, at long intervals, to the upper waters of the ocean.

“If, on the contrary, we *do* know all living species, we must, necessarily, seek for the animal in question amongst the marine animals already catalogued, and in this event, I am disposed to admit the existence of a gigantic narwhal.

“The common narwhal or sea-unicorn often attains a length of sixty feet. Five or ten times this extent would give to this cetacean a force proportionate to its size; increase its offensive power, and you obtain the animal you desire. It will have the proportions mentioned by the officers of the *Shannon*, the instrument needed for the perforation of the *Scotia*, and the force necessary to pierce the hull of a steamer. As a fact, the narwhal is armed with an ivory sword, or halberd—as some natural-

ists have termed it. It is a tooth of the hardness of steel. Some of these teeth have been discovered in the bodies of whales, which the narwhal can attack with success. They have also been extracted, and not without labour, from the hulls of ships, which they have pierced through and through, as a gimlet pierces a cask. The Museum of the Faculty of Medicine in Paris contains one of these weapons, two metres and a quarter in length, and forty-eight centimetres broad at the base.

“Well, then, suppose a weapon ten times as powerful, and the animal ten times as great as the ordinary narwhal, let it rush through the water at the rate of twenty miles an hour, multiply the mass by the velocity, and you will obtain a resultant capable of producing the shock required.

“So far as information can go, I am of opinion that this monster is a sea-unicorn of colossal dimensions, armed, not merely with a ‘halberd,’ but with a veritable spur like an iron-clad or a ‘ram,’ possessing, at the same time, a force and motive power in proportion.

“Thus I can explain this almost inexplicable phenomenon, unless there is really nothing at all—in spite of all that has been seen, written, and felt—which is still possible.”

These last words were rather weak on my part, but I wished, up to a certain point, to shroud myself in my dignity as a professor, and not to give the Americans anything to ridicule, for they laugh well when they do laugh. I reserved a loophole for myself. In my heart I admitted the existence of the monster.

My article was warmly criticised, and this gave it popularity. It gained a number of adherents. The

solution it advanced also gave free scope to the imagination. The human mind is pleased with great conceptions and supernatural beings. Now the sea is precisely the best vehicle for them, the sole medium where these giants, compared to which terrestrial animals, elephants or rhinoceros, are but dwarfs, can be produced and developed. These ocean depths contain the largest known species of mammalia, and perhaps contain molluscs of unheard-of size, crustacea frightful to behold, such as lobsters of 100 metres, and crabs weighing 200 tons ! Why not ? Formerly terrestrial animals of the geological epochs—the quadrupeds, apes, reptiles, and birds—were all formed upon gigantic models. The Creator cast them in a colossal mould, which time has by degrees reduced. Why cannot the sea, which never changes, while the earth is ever changing, still retain in its unknown depths these immense specimens of the animal life of former ages ? Why cannot it hide within its bosom the last varieties of this Titanic species, whose years are centuries, and whose centuries thousands of years ?

But I must not indulge in unbecoming speculations. A truce to these fancies, which time has shown me are terrible realities. I repeat the opinion then expressed of the nature of the phenomenon, and the public admits, without question, the existence of an enormous being which has nothing in common with the fabulous sea-serpents.

But if one party saw in this nothing but a scientific problem to be solved, the others, more positive, above all in England and America, were anxious to purge the ocean of this redoubtable monster, so as to secure safety in transatlantic communication. The commercial and

trade journals took the matter up mainly with this view. The *Shipping and Mercantile Gazette*, *Lloyd's List*, *The Steamboat*, *The Maritime and Colonial Review*, all the papers devoted to the Insurance Companies, which threatened to raise their premiums, were unanimous on this point.

The opinion of the public being thus pronounced, the United States took the initiative.

Preparations were made at New York for an expedition destined to pursue this narwhal. A frigate of great speed—the *Abraham Lincoln*—was fitted out for sea at once. Commodore Farragut pushed forward the armament of the ship rapidly.

At this very time, as always happens, when they had determined to pursue the monster, the monster did not turn up. For two months nothing was heard about it. No vessel had fallen in with it. It seemed as if this unicorn had some knowledge of the toils being spread around it. Too much had been said about it, and by means of the Atlantic cable too. So argued the funny ones, who maintained that this "sly dog" had intercepted some telegram, which he had turned to his own advantage.

So there was the frigate supplied with material for a lengthened cruise, and formidable apparatus for the monster's capture, and no one knew whither she must sail. The general impatience was increased when, on the 2nd of July, it was announced that a steamer of the San Francisco and China line had seen the animal three weeks before in the South Pacific Ocean.

The excitement caused by this intelligence was intense. Commodore Farragut had not twenty-four

hours' notice. His provisions were put on board. The bunkers were filled with coal. Not a man of the crew was missing. He had only to light the fires, get up steam, and put to sea. People would not have tolerated the delay of half a day. Besides, Commodore Farragut was only too anxious to set out.

Three hours before the departure of the *Abraham Lincoln*, I received a letter couched in the following terms :—

“ M. ARONNAX,

“ Professor of the Museum of Paris,

“ Fifth Avenue Hotel,

“ New York.

“ SIR,—

“ If you wish to accompany the expedition on board the *Abraham Lincoln*, the United States' Government will be pleased that France should be represented by you, in this enterprise. Commodore Farragut will hold a cabin at your disposal.

“ Yours very truly,

“ J. B. HOBSON,

“ Secretary to the Admiralty.”

CHAPTER III.

“JUST AS MONSIEUR PLEASES !”

THREE seconds before the arrival of Mr. Hobson's letter, I had no more notion of going in search of the unicorn than of attempting the North-West Passage. Three seconds after I had read the Secretary's letter, I quite believed that my true vocation, my only aim in life, was to hunt up this monster, and rid the world of him.

Meanwhile, I was about to undertake a trying journey, with all its fatigue and absence of repose. I had been wishing above everything to see my native land, my friends, my little house in the Jardin des Plantes, my cherished and valuable collections, once again. But now nothing would stop me. I forgot all this—friends, collections, and perils—and I accepted, without hesitation, the offer of the American Government.

Moreover, I thought every track leads to Europe, and the unicorn may be amiable enough to lead me to the coast of France. This worthy animal would doubtless permit himself to be taken in European waters, for my especial benefit, and I did not wish to bring back less than half a metre of his ivory halberd, for the Museum of Natural History.

But, meantime, it was necessary to search for this narwhal in the North Pacific Ocean ; so to reach France, I should probably have to go by way of the antipodes !

“Conseil !” I cried peremptorily.

Conseil was my servant, a devoted fellow, who accompanied me in all my wanderings—a brave Fleming, whom I like very much, and who serves me well ; phlegmatic by nature, regular on principle, zealous from habit, taking life very easy, very handy and apt in all things, and, his name notwithstanding, never giving advice, even when he was *not* asked for it.

In consequence of associating with *savants* in our little world in the Jardin des Plantes, Conseil had picked up some information. I possessed in him a specialist well up in the classification of natural history, who could run, so to speak, like an acrobat up the ladder of branches, groups, classes, sub-classes, orders, families, genus, sub-genus, species, and varieties. But there his scientific attainments stopped. To class was his *ultima thule*, but he knew nothing beyond that. Completely versed in the theory of classification, but little in the practice, I do not believe he could distinguish a cachalot from a whale. Nevertheless, he was a brave and worthy fellow.

For the last ten years Conseil had followed me whithersoever science had drawn me. He never commented upon either the duration or the fatigue of a journey. He had no objection to start for any country, China or Congo it was all the same to him. He would go to one or the other and ask no questions. Moreover, he enjoyed excellent health, which set all illness at defiance ; solid muscles, no nerves—not even the appearance of nerves—I mean moral nerves, of course. He

was thirty years of age, and his age was to his master's as fifteen to twenty, so I need not add that I was forty years old. But Conseil had one fault. A strict formalist, he never addressed me except in the third person—enough to set your teeth on edge !

"Conseil," I repeated, as I began, with feverish hands, to make preparations for [departure. Certainly, I was sure of this devoted fellow. In ordinary circumstances I never asked him whether it would suit him or not to accompany me in my travels ; but this time it was upon an expedition which might be indefinitely prolonged, and hazardous, in the pursuit of an animal capable of crunching a frigate like a nutshell. There was need of reflection in this, even for the most impassible man in the world. What would Conseil say ?

"Conseil," I cried, for the third time.

Conseil appeared.

"Did Monsieur call ?" he asked as he entered.

"Yes, my lad. Get my things and your own ready. We start in two hours."

"Just as Monsieur pleases," replied Conseil calmly.

"There is not an instant to lose. Pack up my trunk quickly."

"And Monsieur's collections ?" asked Conseil.

"We will see about those later."

"What ! the archiotherium, the hyracotherium, the oreodons, the cheropotamus, and the other specimens ?"

"The hotel people will take care of them."

"And the babiroussa ?"

"They will keep it during our absence. Besides, I will leave orders to forward our menagerie to France.

"We are not returning to Paris, then ?" said Conseil.

“Well—yes—certainly,” I replied evasively; “but we shall take a little round.”

“Any *detour* that Monsieur pleases.”

“Oh! that will not be of much consequence. By a less direct route, that’s all. We shall sail in the *Abraham Lincoln*.”

“As may be most convenient to Monsieur,” replied Conseil quickly.

“You are aware, my friend, of the question about this monster—this narwhal. We are about to purge the sea of him. The author of a work in quarto, and in two volumes, upon the “Mysteries of the Great Ocean Depths,” cannot give up the idea of embarking with Commodore Farragut. A glorious enterprise, but dangerous. One cannot tell where they may go. These animals are very capricious; but we shall go all the same. We have a commander who has no fear.”

“If Monsieur goes, I will go,” replied Conseil.

“But mark well, for I have no wish to hide anything. This is one of the journeys from which one cannot always return.”

“Just as Monsieur pleases.”

A quarter of an hour afterwards our trunks were ready. Conseil had done everything, and I was sure nothing was forgotten, for this fellow could classify shirts and coats as well as birds and beasts.

The hotel “lift” deposited us in the great vestibule of the *entresol*. I descended to the hall, paid my bill, and gave directions to have my various collections of plants and animals forwarded to Paris. I opened a credit for the *babiroussa*, and, followed by Conseil, jumped into a carriage.

The fly, at twenty francs the course, descended Broadway as far as Union Square, proceeded along Fourth Avenue to its junction with Bowery Street, entered Katrin Street, and stopped at the thirty-fourth pier. There the Katrin ferry took us all over—men, horses, and carriage, to Brooklyn, the great suburb of New York, situated upon the left bank of the river; and in a few minutes we reached the quay, close to which the *Abraham Lincoln* was vomiting huge volumes of black smoke from her two funnels.

Our baggage was immediately put on board. I hurried after it, and asked to see the commodore. One of the sailors conducted me up to the poop, where I found myself in the presence of an officer of pleasant appearance, who offered me his hand.

"Monsieur Pierre Aronnax?" said he.

"The same," said I. "Have I the pleasure to address Commodore Farragut?"

"Yes, in person. You are welcome, sir, and your cabin is prepared."

I saluted him, and leaving the commodore to his duties, I descended to the cabin destined for my reception.

The *Abraham Lincoln* had been well selected and fitted out for its novel enterprise. She was a quick sailer, fitted with superheating apparatus, which permitted the expansion of the steam to seven atmospheres. With such a pressure, the *Abraham Lincoln* attained an average speed of eighteen miles and a quarter an hour, a very considerable speed, too, but not sufficient to cope with the gigantic cetacean.

The interior arrangements of the frigate were in keep-

ing with her sea-going qualities. I was much pleased with my cabin, situated at the stern, opening to the ward-room.

“We shall be very comfortable here,” said I to Conseil.

“Very much so, indeed, if Monsieur is not displeased to live like a hermit crab in a whelk-shell.”

I left Conseil to arrange the cabin, and ascended to the deck to investigate the preparations for getting under weigh. At this moment Commodore Farragut gave orders to “let go,” so, had I been a quarter of an hour later, I should have been left behind, and missed this extraordinary and improbable expedition, of which this truthful narrative may perhaps contain some incredible statements.

But Commodore Farragut did not wish to lose an hour in searching the seas in which the animal was reported to be found. He sent for the engineer.

“Is steam up?” he asked.

“Yes, sir,” replied the engineer.

“Go ahead, then,” said the commodore.

At this order, which was conveyed to the engine-room by a speaking tube, the engineers started the engines. The steam hissed into the cylinders, the long pistons set the connecting-rods of the shaft in motion. The blades of the screw beat the waves with increasing rapidity, and the *Abraham Lincoln* advanced majestically in the midst of a crowd of ferry boats and tenders, filled with spectators, which composed the procession.

The quays of New York and Brooklyn, bordering the East river, were crowded with the curious. Three cheers were given by half a million throats. Thousands of

handkerchiefs were waved in salute to the frigate, until she reached the Hudson, at the point of the long peninsula on which stands the town of New York.

The frigate coasting the New Jersey side, on which so many pleasant villas are erected, passed the forts, which saluted. The *Abraham Lincoln* replied, dipping and hoisting the American flag three times, whose thirty-nine stars shone at the peak; then slackened speed, so as to make the buoyed channel which leads into the inner bay, formed by the point of Sandy Hook, where many thousands of spectators gave the frigate a parting cheer.

The procession of boats still followed the *Abraham Lincoln*, and did not quit her until they reached the lightship at the entrance of the channel.

It was then three o'clock. The pilot got into his boat and was pulled on board his little schooner, which lay hove-to awaiting him. The frigate's fires were coaled up, the screw revolved quicker than before, the frigate passed the yellow low coast of Long Island, and at eight o'clock P.M., having lost sight of Fire Island, she proceeded at full speed across the Atlantic.

CHAPTER IV.

NED LAND.

COMMODORE FARRAGUT was a good sailor, and worthy of the frigate he commanded. His ship and he were one. He was the soul of it. On the question of cetaceans he entertained no doubt. He would not permit any discussion respecting it. He believed in it as some good women believe in Leviathan, by faith, not by reason. The monster was in existence, and he had sworn to rid the seas of him. He was a sort of Knight of Rhodes ; a Dieudonné de Gozon, marching to encounter the serpent that was devastating his island. Either Farragut must kill the narwhal or the narwhal would kill Farragut. There was no compromising the matter.

The officers were of the same opinion as their commander. One could hear them speak, discuss, dispute, and calculate the various chances of an encounter, as they scanned the ocean expanse. More than one imposed a voluntary watch upon himself, and ascended to the fore-topmast cross-trees, which under other circumstances would have been voted an awful bore. So soon as the sun got hot, the masts were ascended by sailors,

to whose feet the planks of the deck were too warm. Meanwhile, the *Abraham Lincoln* had not yet entered upon the suspected waters of the Pacific.

As for the ship's company, they asked for nothing better than a meeting with the unicorn, to harpoon him, hoist him on board, and to cut him up. They watched the sea with scrupulous attention. Moreover, Commodore Farragut had spoken of a certain sum of \$2,000, reserved for whosoever he be, ship-boy or able seaman, master or officers, who should first signal the animal. So I leave you to imagine whether they used their eyes on board the *Abraham Lincoln*.

For my own part, I was not behind-hand with the others, and delegated to no one my part of the daily observations. The frigate might, with much reason, have been called *Argus*. Only amongst them all Conseil protested by his indifference on the question which absorbed us, and was somewhat a "damper" of the general enthusiasm on board.

I have already mentioned that Commodore Farragut had carefully provided proper apparatus to catch this enormous cetacean. A whaling ship could not have been better armed. We possessed all known weapons, from the simple hand-harpoon to the barbed arrows fired from a blunderbuss, and the explosive bullets of the duck gun. On the forecastle was trained the latest pattern of breech-loading cannon, of great thickness and accuracy, the model of which was in the Exhibition of 1867. This valuable weapon of American construction could carry with ease a conical shot, weighing four kilogrammes, to a distance of sixteen kilometres.

Thus no means of destruction were wanting on board

the frigate. But there was better than this still. There was Ned Land, the king of harpooners.

Ned Land was a Canadian of almost incredible sleight of hand, and unrivalled in his perilous profession. Skill and coolness, bravery and tact, he possessed in a very high degree, and it must, indeed, be a very malignant whale, or a very astute cachalot, that could escape from his harpoon.

Ned Land was about forty. He was of large frame, and over six feet high, strongly built, grave, silent, sometimes passionate, and very angry when contradicted. He attracted attention by his appearance, and chiefly by the steadiness of his gaze, which gave a singular expressiveness to his countenance. I believe that Commodore Farragut had wisely engaged this man. He was worth the whole crew for steadiness of eye and hand. I can only compare him to a powerful telescope, which could be immediately used as a loaded cannon.

A Canadian is a Frenchman, and little communicative as Ned Land was, I think he conceived a certain liking for me. My nationality attracted him, no doubt. It was an opportunity for him to speak, and for me to listen to the old language of Rabelais, which is still in use in some parts of Canada. The family of the harpooner were originally from Quebec, and had already grown into a tribe of hardy fishermen when that town belonged to France.

By degrees Ned got to like a chat, and I was glad to hear the recitals of his adventures in the Arctic seas. He recounted his fishing exploits and his combats with much natural poetry of expression. His narratives assumed the epic form, and I could fancy I was listening

to some Canadian Homer chanting an Iliad of the Arctic regions. I am now describing this hardy companion as I actually knew him. We have become quite old friends, united by the unalterable band of friendship, which is born of and cemented by the most terrible experiences in common. Ah, brave Ned, I only ask to live a hundred years so as to think the longer of you!

And now what was Ned Land's opinion respecting this marine monster? I should state that he scarcely credited the unicorn theory, and was the only one on board who did not share in the general conviction. He even avoided the subject, upon which I thought he ought to have entered some day.

One lovely evening, the 30th July, that is to say, three weeks after our departure, the frigate was about thirty miles to windward of Cape Blanco, on the coast of Patagonia. We had passed the tropic of Capricorn, and the straits of Magellan were scarcely 700 miles to the south. Before eight days had passed the *Abraham Lincoln* would be ploughing the waters of the Pacific.

Sitting on the poop, Ned Land and I were chatting of various things, watching that mysterious sea whose depths are still inaccessible to human research. I led the conversation up to the subject of the gigantic unicorn, and treated of the chances of success or failure of our expedition. Then perceiving that Ned permitted me to speak without replying, I put the direct question:

“How is it, Ned, that you cannot be convinced of the existence of this cetacean we are pursuing? Have you any particular reasons for being so incredulous?”

The harpooner looked at me for some seconds before he replied, then striking his forehead with a gesture habitual to him and closing his eyes, as if to collect his thoughts, he said at last, "Perhaps I have, M. Aronnax!"

"Why, Ned! a man like you, a 'whaler' by profession, and familiar as you are with all such marine animals—you, whose imagination can easily entertain the hypothesis of an enormous cetacean—you ought to be the very last person to harbour a doubt under such circumstances."

"It's just there where you make the mistake, sir," replied Ned. That common people may believe in wonderful comets, or in the existence of antediluvian monsters inhabiting the centre of the earth, is not surprising; but neither the astronomer nor the geologist will admit such a theory. In the same way the whaler. I have hunted hundreds of cetaceans, harpooned quantities of them, killed them by dozens; but powerful and armed as they were, neither their tails nor their tusks were able to pierce or damage the hull of an iron steamer."

"But, Ned, there have been cases in which the tooth of the narwhal has pierced ships through."

"Wooden ships, perhaps," replied the Canadian. "All the same, I have never seen any. But, on the contrary, I deny that whales, cachalots, or narwhals can produce such an effect."

"Just listen to me, Ned."

"No, sir, no. Anything you like, except that. A gigantic polypus, for instance."

"Still less. The polypus is only a mollusc; and the

name of it even indicates the consistency of its flesh. Is it 500 feet long ever? Why, the polypus does not belong to the branch of vertebrates, and is perfectly harmless towards such vessels as the *Scotia* and the *Abraham Lincoln*. We may, then, relegate to the land of fables all tales of the exploits of krakens and other monsters of like nature."

"Then, sir," said Ned, in a bantering tone, "you admit the existence of an enormous cetacean?"

"Yes, Ned; I repeat it with a conviction founded upon the logic of facts. I believe in the existence of a mammifer of a powerful organisation, belonging to the vertebrate animals, like whales, cachalots, and dolphins, and furnished with a horny defence, whose power of penetration is very great."

"Hum," replied the harpooner, nodding his head with the air of a man unwilling to be convinced.

"Just consider, my worthy Canadian," I replied, "that if such an animal exist, if it inhabit the depths of the ocean, if it live some miles below the surface, it necessarily possesses an organism defying all comparison."

"And why should it have such a powerful organism?"

"Because it must possess a tremendous strength to enable it to live so far below the surface and resist the pressure of the water."

"Really?" inquired Ned, with a wink.

"Certainly; and figures can easily demonstrate it."

"Oh, figures!" cried Ned. "One can do anything with figures!"

"In business, Ned, but not in mathematics. Listen.

Granting that the pressure of the atmosphere may be represented by the pressure of a column of water thirty-two feet high. In reality the column of water would be of less height, since it would be sea-water, whose density is superior to that of fresh-water. Well, when you dive, Ned, so long as you have thirty-two feet of water above you your body is supporting a pressure equal to that of the atmosphere, that is to say a kilogramme for each square centimetre of surface. It follows that at 320 feet this pressure would be equal to 10 atmospheres, and to 100 atmospheres at 3,200 feet, and 1,000 atmospheres at 32,000 feet, which is about two and a half leagues. This is equivalent to saying that if you could reach this depth, each square centimetre of your body would bear a pressure of 1,000 kilogrammes. Now, my brave Ned, do you know how many square centimetres of surface there are in your body?"

"I cannot tell, M. Aronnax."

"About 17,000."

"So many as that?"

"And as, in fact, the atmospheric pressure is a little greater than one kilogramme to a square centimetre your 17,000 square centimetres are at this moment supporting a pressure of 17,568 kilogrammes (97,500 lbs.).

"Without my being sensible of it?"

"Without your being sensible of it. And, if you are not crushed by this pressure, it is because the air enters the body with an equal force. So the inward and outward pressure are equal, and neutralise each other, and you can support it without inconvenience. But in the water it is a different thing."

"Yes, I understand," replied Ned, who was now

very attentive, "because the water surrounds me, and does not enter the body."

"Precisely, Ned ; so at thirty-two feet below the surface of the sea you would be subject to a pressure of 17,568 kilogrammes ; at 320 feet ten times that pressure, that is to say, 175,680 kilogrammes ; at 3,200 feet 100 times that pressure, viz., 1,756,800 kilogrammes ; at 32,000 feet at least 1,000 times that pressure, viz., 17,568,000 kilogrammes. In other words, you would be flattened out as if you had been under a hydraulic press."

"The devil !" exclaimed Ned.

"So, my worthy harpooner, if vertebrates, many hundred metres long and large in proportion, live at such depths, and whose surface is represented by millions of centimetres, we must estimate the pressure to which they are subject by thousands of millions of kilogrammes. Calculate now what the strength of their bony structures and organism must be to enable them to resist such pressure."

"They must be like ironclad frigates," replied Ned.

"Just so, Ned ; and now think of the damage such a mass could do, if, going at express speed, it encountered the hull of a ship."

"Well — yes — perhaps," replied the Canadian, staggered by these figures, but unwilling to yield to them.

"Well, are you convinced ?"

"You have convinced me of one thing, sir, and that is that if such animals live at the bottom of the sea, they must necessarily be as strong as you state."

“But if they do not exist, how can you explain the accident to the *Scotia*?”

“Perhaps——” began Ned.

“Well, go on.”

“Because it is not true,” replied the Canadian, imitating unconsciously a celebrated reply of Arago.

But this reply only proved the harpooner’s obstinacy—nothing more. I said no more upon that occasion. The accident to the *Scotia* was undeniable. The hole existed, and it had to be stopped up, and I do not think that the existence of any hole could be more conclusively demonstrated. Now as the hole did not get there of its own accord, and since it had not been produced by rocks or submarine engines, it must have been caused by some animal.

Now, according to my view, and for reasons already given, this animal belonged to the vertebrate branch, class mammalia, group pisciform, and to the order of cetacea. It was of the whale family (or of the cachalots or dolphins), its genus and species was a matter for later decision. To decide this it must be dissected; to dissect it, it must first be caught; to catch it we must have the harpooner—that was Ned Land’s business; the harpooner must see it, which was the ship’s affair; and to see it, it must first be in sight, which was a matter of chance!

CHAPTER V.

“AT A VENTURE.”

THE voyage of the *Abraham Lincoln* was not marked by any particular incident for some time. Nevertheless, a circumstance occurred which brought out the wonderful skill of Ned Land, and showed what confidence might be reposed in him.

On the 30th June the frigate communicated with some American whalers, and we learnt that they had seen nothing of the narwhal. But the captain of one vessel, the *Monroe*, hearing that Ned Land was on board the *Abraham Lincoln*, asked for his assistance in chasing a whale then in sight. The commodore, wishing to see Ned Land at work, gave him leave to go on board the *Monroe*. Chance favoured the Canadian, who, instead of one whale, harpooned two, “right and left,” striking one to the heart, and taking possession of the other after a chase of some minutes. Certainly, if the monster should ever come into contact with Ned Land, it would be very bad for the monster.

The frigate ran along the south-east coast of America at a rapid rate. On the 3rd July we opened up the

Straits of Magellan near Virgin Cape. But the commodore did not wish to enter upon this winding passage, so we directed our course round Cape Horn.

The crew thought him right. Was it at all likely that the narwhal would be encountered in the sinuous strait? A number of the sailors declared that the monster was too big to pass it.

Upon the afternoon of July 6th the *Abraham Lincoln* doubled the solitary island—that isolated rock at the extremity of the American continent named Horn by the Dutch sailors who discovered it, in compliment to their native town. The course now lay N.W., and next day the frigate’s screw beat the waves of the Pacific Ocean.

“Keep your eyes open now,” cried the sailors to each other. And they did very considerably.

Eyes and telescopes—somewhat dazzled, it is true, by the prospect of the \$2,000—rested not a minute. Day and night the ocean was scanned, and those who had night-glasses, whose facilities of seeing increased their opportunities fifty per cent., had a good chance of gaining the reward.

For myself, though the money was no attraction, I was not the least attentive of those on board. Giving but a few minutes to meals or repose, careless of the sun or wind, I scarcely quitted the deck. Sometimes perched in the nettings on the forecastle, sometimes on the poop-rail, I watched with anxious eyes the creamy wake of the frigate. And often have I partaken of the emotions of the officers and crew when some capricious whale elevated his black back above the surface of the waves. The deck of the frigate was crowded in an

instant, officers and men came "tumbling up" from below, panting for breath, with restless eyes watched the course of the cetacean. I looked also, and became nearly blind over it, while Conseil, always so phlegmatic, would say calmly :

"If Monsieur would have the goodness to open his eyes a little less widely he would see very much better."

But all this excitement was to no purpose. The *Abraham Lincoln* would change her course and approach the animal signalled at the time, a whale or cachalot, which soon disappeared in the midst of a volley of curses.

Meantime the weather continued favourable, and the voyage was proceeding under pleasant circumstances. It was then the winter season, for July in those latitudes corresponds to our January in Europe, but the sea remained calm, and could be observed for miles in every direction.

Ned Land still remained incredulous. He would not even pretend to examine the sea, save during his watch, except when a whale turned up ; and, nevertheless, his wide range of vision would have rendered great service. But eight hours out of twelve this peculiar fellow was either reading or sleeping in his cabin. A hundred times I have expostulated with him.

"Bah," he would reply, "there is nothing at all, M. Aronnax, and if there were some animal what chance have we of seeing it? Are we not cruising at random? People have, they say, seen this now invisible beast in the Pacific ; I admit it, but two months have passed since then, and your narwhal does not care to remain long in

the same neighbourhood. It is gifted with great speed. Now you know as well as I, monsieur, that nature would not have bestowed this attribute of speed upon the animal were it not for some useful purpose ; so if the beast exist, he is far away from here by this time.”

I had no reply to this. Evidently we were groping in the dark, but how else were we to proceed? So our chances of success were limited. However, no one despaired of ultimate success, and not a sailor on board had bet against the narwhal and his next appearance.

We crossed the tropic of Cancer in the 105° of longitude on the 20th July, and on the 27th of the same month we passed the equator on the 110° meridian. The frigate now directed her course towards the west, into the centre of the Pacific. Commodore Farragut thought, and with reason, that the monster would most likely frequent the deep waters at a distance from any land, which it feared to approach, “without doubt because there was not sufficient water for it,” as the master remarked. The frigate passed by the Marquesas and the Sandwich Islands, crossed the tropic of Cancer at 132° longitude, and sailed towards the China seas.

We had at last reached the scene of the monster’s latest gambols, and as a matter of fact, we lived for nothing else. Our hearts palpitated fearfully, and laid the foundation of future aneurism. The whole ship’s company were suffering from a nervous excitement, of which I can give no idea. No one ate, no one slept. Twenty times a day a mistake or an optical delusion of some sailor perched upon the yards, gave rise to intolerable startings and emotions, twenty times repeated, which

kept us in a state of "jumpiness," too violent not to bring upon us a reaction at no distant date.

And the reaction did not fail to set in. For three months—three months of which every day seemed a century—the *Abraham Lincoln* traversed the South Pacific, running up when a whale was signalled, making sudden turns, going first on one tack then on the other, stopping suddenly, "backing and filling," or reversing, and going ahead, in a manner calculated to put the engine altogether out of gear; and thus did not leave a point unexplored on the American side of the Japanese coast. And nothing—nothing after all was to be seen but the watery waste. No sign of a gigantic narwhal, nor a moving rock, nor of anything at all out of the common.

The reaction came. Discouragement seized upon all, and incredulity began to appear. A new feeling arose on board, which was composed of three-tenths shame and seven-tenths anger. They all felt very foolish, but were much more annoyed at having been taken in by a chimera. The mountains of argument which had been piled up for a year, crumbled away at once, and no one had any thought, except to make up for lost time, in the matters of food and sleep.

With the natural fickleness of the human mind, they went from one extreme to the other. The warmest adherents of the enterprise became, as a matter of course, the most ardent detractors. Reaction set in from the lowest ranks to the highest, and certainly, had it not been for the firmness of Commodore Farragut, the frigate's head would have been put to the south again.

However, this useless search could not go on for ever. The *Abraham Lincoln* had nothing to reproach itself with,

it had done its utmost to insure success. Never had ship or crew shown more patience or determination, the non-success could not be laid to their charge. Nothing now remained but to return home.

A representation to this effect was addressed to the Commodore. He was firm. The sailors did not conceal their disappointment, and the service was suffering accordingly. I do not mean to insinuate that there was a mutiny, but after a reasonable period, Farragut, like another Columbus, demanded three days more. If during that time the monster did not appear, the helmsman should have orders to put the ship about for American waters.

This promise was made upon the 2nd November. The result was to re-animate the failing courage of the crew. The ocean was scanned with fresh zeal. Everyone wished to give a last look in which memory might be summed up. Telescopes were used with a feverish activity. This was the last defiance hurled at the giant narwhal, and he could not in reason decline to reply to the challenge to appear.

Two days had passed. The *Abraham Lincoln* cruised about at half-speed. They employed a thousand means to awake the attention or to stimulate the apathy of the animal, in the hope that he was in the neighbourhood. Enormous quantities of lard were thrown over the stern, to the great satisfaction of the sharks, I may add. The boats pulled in all directions round the frigate, while she was hove-to, and did not leave any part unexplored. But the evening of the 4th of November arrived and nothing had been heard of the submarine mystery. On the following day, at noon, the three days' grace would

expire. After that, Commodore Farragut, faithful to his promise, would give the order to "'bout ship," and abandon the Southern Pacific Ocean.

The frigate was then $31^{\circ} 15'$ N. lat. and $136^{\circ} 42'$ E. long. Japan was 200 miles to windward. Night came on. Eight bells was struck. Heavy clouds veiled the moon, then in her first quarter. The sea was calm, and rose and fell with a gentle swelling motion. At this time I was forward, leaning on the starboard nettings. Conseil, close to me, was looking ahead. The ship's company, perched in the shrouds, were scanning the horizon, which was darkened, and then lighted up occasionally. The officers, with their night glasses, peered into the increasing obscurity. At times the dark sea scintillated under the moon's rays, which darted between the clouds: then all luminous effects would be again lost in the darkness.

Observing Conseil I fancied that he was yielding to the general influence. Perhaps, and for the first time, his nerves were moved by a sentiment of curiosity.

"Well, Conseil," said I; "here is our last opportunity to pocket \$2,000."

"Monsieur must permit me to say that I have never counted upon winning this reward; and the Government of the Union might have promised \$100,000 without being any the poorer."

"You are right, Conseil, this is a foolish business after all, and into which we rushed too hurriedly. What time has been lost! What useless worry! We might have been in France six months ago."

"In Monsicur's little apartment," replied Conseil, "in the museum. And I should have already classified

the fossils, and the babiroussa would have been installed in his cage in the Jardin des Plantes, and been visited by all the curious people of Paris.”

“Just so, Conseil, and no doubt they are all laughing at us.”

“In reality,” replied Conseil quietly, “I think that they do laugh at us, Monsieur. And—— May I say it?”

“You may.”

“Well, then, Monsieur has only got what he deserves.”

“Indeed!”

“When one has the honour to be a *savant* like Monsieur, one does not make oneself conspicuous——”

But Conseil never finished his compliment. In the midst of the universal silence a voice was heard. It was Ned Land’s voice, and Ned Land cried out:

‘Hallo, there! There is our enemy, away on the weather beam!’”

CHAPTER VI.

FULL SPEED.

AT this announcement the whole crew ran towards the harpooner—commodore, officers, mates, sailors, and boys ; even the engineers left the engine-room, and the stokers the furnaces. The order to “stop her” was given, and the frigate now only glided through the water by her own momentum.

The darkness was profound : and the Canadian must have had very good eyes. And I wondered what he had seen, and how he had been able to see it. My heart was beating fast.

But Ned Land had not been mistaken, and we all perceived the object he indicated with his outstretched hand.

Two cables' lengths from the *Abraham Lincoln*, and on the starboard quarter, the sea appeared to be illuminated from below. It was not a common phosphorescence, and could not be mistaken for it. The monster, some fathoms beneath the surface, gave forth this intense light, which had been referred to in the reports of many captains. This wonderful irradiation must

have been produced by some tremendously powerful illuminating agent. The luminous part described an immense elongated oval upon the water, in the centre of which was condensed a focus of unbearable brilliancy, which radiated by successive gradations.

“It is nothing but an agglomeration of phosphorescent molecules,” cried one of the officers.

“No, sir,” I replied, firmly, “neither the pholades nor salpæ produce such a powerful light. This brilliancy is essentially electric. But look—look—it moves, it advances—it retreats—it is rushing towards us !”

A general cry arose.

“Silence,” cried Farragut. “Put the helm up—hard ! Turn astern !”

The sailors rushed to the wheel ; the engineers to the engine-room. The engine was reversed, and the *Abraham Lincoln* payed off to larboard, and described a semi-circle.

“Steady !”—“Go ahead !” cried Commodore Farragut.

These orders were executed, and the frigate rapidly distanced the luminous object. I should have said, attempted to distance it, for the supernatural animal moved with twice the speed of the frigate.

We were speechless. Astonishment more than fear kept us silent and motionless. The animal gained upon us easily. He swam round the frigate, which was then going fourteen knots, and wrapped us in his electric beams like a luminous dust. He then went away for two or three miles, leaving a phosphorescent line behind him, like the volumes of steam left by the engine of an express train. All at once, from the dark limit of the horizon

where he had gone to take his start, the monster launched himself suddenly against the *Abraham Lincoln* with fearful rapidity, stopped suddenly within twenty paces of the frigate, extinguished the light—not by plunging beneath the surface, since the gleam was not withdrawn by degrees—but suddenly, as if the source of the brilliant light had been suddenly dried up. It then reappeared at the other side of the frigate, so either it had turned, or the monster gone underneath it. At every moment a collision seemed imminent, and that would have been fatal to us.

Meantime, I wondered at the behaviour of the frigate. She was flying and not attacking. She was pursued, instead of being the pursuer, and I said so to Commodore Farragut. His usually impassible face betrayed the greatest astonishment.

“M. Aronnax,” he replied, “I do not know with what formidable being I have to do—and I do not wish to risk my ship in this darkness. Besides, how can I attack it, or how defend myself from its attack? Let us wait for daylight and the sides will be changed.”

“You have no doubt respecting the nature of the animal, commodore?”

“No, it is evidently a gigantic narwhal, but also an electric one.”

“Perhaps,” I added, “we should not approach it any more than a torpedo?”

“Quite so,” replied the commodore, “and if it possess the power to emit a shock, it is the most terrible animal ever created. That is why, sir, I am on my guard.”

The crew all remained on deck during the night. No

one dared to sleep. The *Abraham Lincoln*, not being able to cope with the animal in speed, had moderated her pace, and was kept under easy steam. On his part the narwhal, imitating the frigate, lay rocking at the will of the waves, and appeared to have made up its mind not to abandon the struggle.

It disappeared, however, about midnight, or, to employ a better term, extinguished itself like an enormous glow-worm. Had it fled? We might fear, but could not hope so. But at seven minutes to 1 A.M. a deafening rushing noise was heard, like that produced by a column of water expelled with extreme violence.

Commodore Farragut, Ned Land, and I were then on the poop searching into the profound obscurity.

“Ned Land,” asked the commodore, “you have often heard the blowing of whales?”

“Often, sir, but never of such whales, the sight of which has brought me \$2,000.”

“You have a right to the reward. But tell me is this noise the same as whales make in ejecting water from their ‘blow-holes?’”

“The same noise, sir, but ever so much louder. One cannot mistake it. It is truly a cetacean which is here with us. With your permission,” added the harpooner, “we will have a word or two with him to-morrow morning.”

“If he will listen to you, Master Land,” I said, in a sceptical tone.

“If I get within four harpoons’ length of him,” replied the Canadian, “I will engage that he will listen to me.”

“But to approach him I must put a whale-boat at your disposal?” said the commodore.

“Certainly, sir.”

“And by so doing risk the lives of my men?”

“And mine also,” replied Land quietly.

About two o'clock A.M. the luminosity reappeared, not less intense, five miles to windward of the frigate. Despite the distance and the noise of the wind and waves, the sound made by the formidable beatings of the monster's tail could be distinctly heard, and even its hoarse respiration could be distinguished. It seemed that when this immense narwhal was breathing, that the air rushing from the lungs was like the steam from the cylinders of an engine of 2,000 horse-power.

“Hum,” I muttered, “a whale with the force of a regiment of cavalry ought to be a fine one.”

Everyone remained on the watch till daybreak, and prepared for the combat. The fishing material was arranged along the nettings. The mate had charge of those blunderbusses which can throw a harpoon to the distance of a mile, and the long duck-guns, with the explosive bullets, whose wound is mortal, even to the most powerful animals. Ned Land was content with his harpoon, which in his hands was a terrible weapon.

At six o'clock day began to dawn, and at the first beams of sunrise the narwhal's light was extinguished. At seven o'clock the light was sufficiently strong for our purpose, but a very thick mist hung around the horizon, and the best glasses could not pierce it. Much disappointment and anger was the result.

I ascended to the mizzen-yard. Several officers were already perched at the mast-head.

At eight o'clock the mist began to disperse slowly. The horizon gradually cleared. Suddenly the voice of Ned Land was heard,

“ Here is the animal astern !”

Everyone looked in the direction indicated. There, about a mile and a half from the frigate, a long black body raised itself about a yard above the waves. Its tail, which moved quickly, kept up a considerable agitation in the water ; never had tail beaten the water with such force. An immense frothy wake marked the course of the animal, and described an extended curve.

The frigate approached the cetacean. I examined it carefully. The reports of the *Shannon* and *Helvetia* had exaggerated its dimensions a little, and I estimated its length at only 250 feet. As for its bulk, it could not be easily arrived at, but the animal appeared to me to be admirably proportioned throughout. While I was looking at this phenomenal creature, two jets of water and steam spurted from the blow-holes, up to a height of forty yards, which settled its manner of respiration in my mind. From that I concluded that the animal belonged to the vertebrates, class mammifer, sub-class monodolphins, pisciform group, cetacean order, and family—Here I was unable to pronounce an opinion. The cetaceans comprise three families : whales, cachalots, and dolphins ; and it is with the last-named that narwhals are ranged. Each of these families is divided into several genus, each genus into species, each species into varieties. Varieties, species, genus, and family failed me here, but I did not doubt that I should be able to complete my classification with the assistance of heaven—and Commodore Farragut !

The crew were impatiently awaiting orders. The commodore, having attentively observed the animal, called the engineer. He came at once.

“Have you plenty of steam?”

“Yes, sir,” replied the engineer.

“Good. Fire-up; and go a-head full speed.”

Three cheers accompanied this order. The struggle had come. In a few moments after the frigate’s chimneys poured forth their black smoke, and the deck shook with the action of the engines.

The *Abraham Lincoln*, impelled by her powerful screw, “went for” the strange animal direct. It permitted the frigate to approach to within half a cable’s length, then, disdainingly to dive, went on a little, and contented itself by keeping its distance. This manner of pursuit continued for about three-quarters of an hour, without the frigate having gained upon the cetacean. It became evident that if we kept thus we should never reach it.

Commodore Farragut got very angry. “Ned Land!” he cried.

The Canadian approached him.

“Well, Master Land, do you still advise me to launch a boat?”

“No, sir,” replied Ned Land; “for this beast will not let you take him unless he please.”

“What are we to do, then?”

“Keep up the highest possible pressure, and, if you will permit it, I will get under the bowsprit, and if I come within casting distance I will harpoon him.”

“Go, Ned,” replied the commodore. “Go a-head faster,” he cried to the engineer.

Ned Land took up his position. The furnaces were coaled up, the screw made forty-three revolutions in the minute, and the steam went roaring through the safety-valves. They heaved the log, and found that the frigate was going at the rate of eighteen and a half miles an hour.

But the cursed animal also went at eighteen and a half miles an hour.

For an hour and a half the frigate went at this pace, without gaining a foot. This was rather humiliating for one of the swiftest vessels of the American navy. The ship's company got sulky. They reviled the monster, which did not condescend to reply. Commodore Farragut no longer twisted his chin-tuft—he bit it. The engineer was summoned once more.

“Are you going at your fullest possible pressure?”

“Yes, sir,” replied the engineer.

“The valves are charged?”

“Up to two atmospheres and a half.”

“Charge them up to ten,” cried the commodore.

That was a true American order. It could not be surpassed on the Mississippi, to distance a rival steamer.

“Conseil,” said I to my faithful servitor, who was near, “do you know where we are likely to go to?”

“Wherever Monsieur pleases,” replied Conseil.

“Well, I confess I am not indisposed to take the chance,” said I.

The steam-gauge went up; the furnaces were filled. The speed increased. The masts shook fearfully, and the chimneys seemed scarcely sufficient to permit the escape of the immense volumes of smoke.

They heaved the log again.

“What pace now, eh?” inquired the commodore.

“Nineteen and a quarter, sir.”

“Press on more.”

The engineer obeyed. The steam-gauge showed ten atmospheres' pressure. But the narwhal had also “fired-up,” for it was now going at “nineteen and a quarter,” also.

What a chase it was! I cannot describe my feelings. Ned Land was at his post—harpoon in hand. Many a time the animal permitted us to approach.

“We are gaining, we are gaining,” cried the Canadian.

But at the moment he was prepared to strike, the cetacean went ahead with a speed of scarcely less than thirty miles an hour. And even at our greatest speed, it cruised round the frigate. A cry of fury then escaped from all.

At mid-day we were not more advanced towards the attainment of our object than we had been at eight o'clock.

Commodore Farragut then decided to employ more direct measures.

“Well,” he said, “that animal can go faster than the *Abraham Lincoln*. We will see if he can distance a conical bullet. Gunner, get the forward gun ready for action.”

The bow-gun was immediately loaded, pointed, and fired. The ball passed over the cetacean, now half a mile distant.

“Take better aim next time, you lubbers, and there's \$5 to the man who puts a shot into the infernal beast.”

An old gunner with a grey beard came forward, with a determined air and resolute eye. He pointed the gun

and took a long steady aim. A loud detonation was heard amid the cheers of the crew.

The shot had hit the animal, but not fairly; it glanced off its smooth side, and fell into the sea two miles distant.

“Ah !” cried the gunner, angrily, “those kind of fellows are sheeted with six inches of iron, I suppose.”

“Tarnation !” cried Commodore Farragut.

The chase recommenced, and the Commodore coming towards me, said :

“I will pursue that thing till the frigate blows up.”

“Yes,” I replied, “you are quite right.”

But I could not but hope that the animal might become exhausted, and not be so indifferent to fatigue as a steam-frigate. But it was no use. Time passed without the animal showing any signs of fatigue.

But I must confess that the *Abraham Lincoln* kept up the chase with great spirit. I do not think that we traversed less than 300 miles during that inauspicious 6th of November. Night came and enveloped the swelling ocean in its shadows.

I then began to believe that our expedition was at an end, and that we had seen the last of the fantastic monster. But I was mistaken. About 10 P.M. the electric gleam again appeared about three miles off, as clear and bright as upon the preceding night.

The narwhal was motionless. Perhaps, fatigued by its day's run, it was asleep, rocked by the billows. This was a chance by which Farragut determined to profit.

He gave orders that the frigate should be put at easy speed and advance cautiously towards its enemy. It was by no means an uncommon occurrence to meet sleeping whales at sea, when they have been successfully attacked,

and Ned Land had frequently harpooned them under these circumstances. He took up his former position at the bows, while the frigate noiselessly approached the animal, and stopped the engines about two cables' length distant, merely advancing by its momentum. The crew were in a state of breathless attention. Profound silence reigned on deck. We were not a hundred paces from the light which flashed into our eyes.

At this moment I saw Ned Land beneath me, holding by one hand to the martingale, with the other brandishing his fatal harpoon. Scarcely twenty paces separated us from the sleeping monster.

Suddenly Ned launched his harpoon. I heard the blow with which it hit the prey ; it sounded as if it had come in contact with a hard substance.

The electric gleam was suddenly extinguished, and two enormous columns of water were directed over the deck of the frigate, rushing like a torrent fore and aft, overturning the men, and breaking the seizings of the spars. A terrible shock was felt, and, thrown over the bulwark, before I had time to save myself, I was precipitated into the sea.

CHAPTER VII.

AN UNKNOWN SPECIES OF WHALE.

So surprised was I by my unexpected fall that I have but little recollection of my sensations at the time.

I was first dragged down about twenty feet. I am a good swimmer, not so good as Byron or Edgar Poe, and this plunge did not embarrass me. Two vigorous strokes brought me to the surface. My first care was to seek the frigate. Had the crew observed my fall? Had the *Abraham Lincoln* put about? Was the commodore sending a boat for me? Could I hope to be rescued?

The darkness was profound. I could perceive a black mass disappearing in the east, whose lights were extinguished by distance. It was the frigate. I felt I was lost!

“Help! help!” I cried, swimming in the direction of the *Abraham Lincoln* despairingly. My clothes weighed upon me heavily. The water glued them to my body; they paralysed my movements. I was dying; I was suffocating. “Help!”

This was the last cry I uttered. My mouth filled

with water ; I was overwhelmed—dragged beneath the surface.

Suddenly my clothes were seized by a strong hand. I was drawn up, and I heard—yes, heard these words :

“If Monsieur will have the great kindness to support himself upon my shoulder he will swim more easily.”

I seized the arm of my faithful Conseil.

“Is it you?” I said ; “*you !*”

“Myself,” replied Conseil, “at Monsieur’s orders.”

“And you were thrown into the sea by that shock as well as I?”

“Not at all ; but being in Monsieur’s service I have followed him !” The worthy fellow saw nothing extraordinary in this.

“And the frigate?” I asked.

“The frigate,” replied Conseil, turning on his back ; “I think we had better not count upon her !”

“What !”

“I say, that as I jumped into the sea I heard the steersman cry, “The screw and the helm are both broken !”

“Broken !”

“Yes ; by the teeth of that monster. It is the only damage the *Abraham Lincoln* has suffered. But, unfortunately for us, she cannot steer.”

“Then we are lost !”

“Perhaps so,” replied Conseil calmly. “But we have still some hours before us, and a great many things may happen in that time.”

The imperturbable coolness of Conseil reassured me.

I swam more vigorously, but, impeded by my clothes, I found great difficulty in keeping afloat. Conseil perceived this.

“Will Monsieur permit me to make a little incision? There,” said he; and with a quick movement he passed the blade of his knife from my back downwards. Then he slowly took off my garments, while I swam for both.

I, in my turn, then rendered him a like service; and we continued to swim close together.

Nevertheless, the situation was no less alarming. Perhaps our disappearance had not been remarked, and if it had the frigate could not return for us, being deprived of her rudder. We then could only count upon one of her boats to pick us up.

Conseil coolly reasoned upon this hypothesis, and made his arrangements accordingly. He was apparently quite at home.

We made up our minds that our only chance of safety lay in our rescue by the boats of the frigate, and we therefore ought to arrange so as to remain as long as possible above water. I resolved to divide our strength, so that we should not succumb simultaneously, and this is how we did it. While one lay upon his back, motionless, with folded arms and extended limbs, the other was to swim and push him along. The part of following in his companion's wake was not to last more than ten minutes, and by thus taking it in turn we might be able to swim for some hours, and perhaps until dawn.

It was but a chance, but hope is firmly anchored in the human breast. Then we were two. In fact, I

declare, though it may appear improbable, if I tried to destroy all expectation, if I wished to despair, I could not have done so.

The collision between the frigate and the monster had occurred about 11 P.M. I counted upon eight hours' swimming until sunrise. This was very practicable by helping each other as explained. The sea, being smooth, did not trouble us much. Sometimes I tried to pierce the thick darkness, which was broken only by the phosphorescence created by our movements. I kept looking at the luminous waves, which broke upon my hand, whose sparkling surface was spotted with bright bubbles. It looked as if we were swimming in a bath of mercury.

About one o'clock I began to feel very tired. My limbs were knotted with violent cramps. Conseil did his best to support me, and our preservation now depended upon his care. I soon heard the brave fellow gasping for breath. I understood that he could not hold out much longer.

"Let me go," I cried. "Leave me."

"Abandon Monsieur! Never!" he replied. "I am looking forward to drowning before him."

At this moment the moon broke through the clouds. The surface of the sea sparkled in its rays. This pleasant light reanimated our courage. I raised my head again and looked around the horizon. I saw the frigate five miles away—a black and scarcely distinguishable mass. But there were no boats!

I was about to cry out; but for what purpose at such a distance? My swollen lips refused to utter a sound.

Conseil could articulate a little, and I heard him repeat many times, "Help, help!"

Suspending our movements for a moment, we listened. Was that a buzzing noise in the ear, or was it an answer to Conseil's cry for assistance?

"Did you hear that?" I murmured.

"Yes, yes!" and Conseil again cried for help despairingly.

This time there was no mistake. A human voice replied. Was it the voice of some unfortunate person, abandoned in the midst of the ocean—some other victim of that collision? or rather, was it a boat from the frigate hailing us in the darkness? Conseil made a last effort, and leaning on my shoulder, while I gave all the support of which I was capable, he raised himself half out of the water, and fell back exhausted.

"What have you seen?"

"I have seen," he murmured, "I have seen—but let us not talk, let us husband all our strength."

"What had he seen?" At that moment the monster came to my mind with all its old force. But there was the voice. The times were past for Jonahs to live in whales' bellies.

Nevertheless, Conseil pushed me forward once more. He raised his head at times to look before him, and uttered a cry, to which a voice replied nearer and nearer each time.

I could scarcely hear it. My strength was spent; my fingers were no longer at my command; my hands could no longer make the strokes; my mouth, convulsively opened, was filled with the salt water, and

cold was seizing upon my limbs. I raised my head for the last time, and sank.

At that moment a hard substance struck me. I clung to it. It drew me upwards, and so soon as I regained the surface I fainted. I came to myself very speedily, thanks to the vigorous friction applied to my body. I opened my eyes.

“Conseil,” I murmured.

“Did Monsieur call?” he asked.

The moon again burst forth, and by her light I recognised another figure beside Conseil.

“Ned!” I exclaimed.

“In person, sir, looking after his reward.”

“You were also thrown into the sea by the collision, I presume?”

“Yes, sir,” replied he; “but, more fortunate than you, I got upon a floating island at once.”

“An island?”

“Yes; or rather upon our gigantic narwhal.”

“Explain yourself, Ned.”

“There is only this. I have discovered why my harpoon did not injure the creature, and was blunted by the hide.”

“Why, Ned? Why?”

“Because this beast is clothed in sheet-iron.”

It was now necessary for me to recover my spirits and collect my thoughts. The last words of the Canadian had produced a sudden change of thought. I pulled myself up to the top of the object or being upon which we had taken refuge. I kicked it. It was certainly a hard body, and not of the material of which immense marine mammals are composed.

But this hard substance might be a bony covering like those possessed by some antediluvian animals; and I might be free to class it amongst amphibious animals—the tortoises and alligators. But the black surface that supported us was smooth and polished, not imbricated. It gave out a metallic sound when struck, and, incredible as it may appear, it seemed to me to be composed of riveted iron plates. No doubt about it. The animal, the monster, the phenomenon which had puzzled the entire scientific world, upset and mystified the minds of sailors in both hemispheres, was a greater wonder still—a phenomenon constructed by human agency.

I should not have been nearly so much astonished by the discovery of the most fabulous and mythological of animals. However extraordinary the being may be that is from the hands of the Creator, it can be understood; but to discover all at once, under one's very eyes, the human realisation of the impossible, was sufficiently startling. But we must not hesitate. Here we were sitting upon the top of a species of submarine boat, which presented, so far as we could judge, the form of an immense fish of iron. This was Ned Land's opinion. Conseil and I could not classify it.

“But,” said I, “he must contain within him the machinery for locomotion, and a crew to direct his course.”

“Certainly,” replied the Canadian; “and nevertheless, during the three hours I have been here, I have perceived no signs of life.”

“The boat has not moved?”

“No, M. Aronnax; it has lain rocked by the waves, but has not otherwise moved.”

“We know already that it possesses great speed. Now as there is a machine with this attribute, and a machinist to direct it, I conclude that we are safe.”

“Hum,” replied Ned Land, doubtfully.

At this moment, and as a commentary upon my remark, a disturbance arose at the stern of this strange vessel, whose mode of propulsion was evidently a screw, and it began to move. We had scarcely time to secure ourselves to the higher part, which was about a yard out of water. Fortunately the speed was not great.

“So long as it goes over the waves, I have no particular objection,” said Ned Land. “But if it should take a dive, I would not give \$2 for my skin.”

The Canadian might have made even a lower estimate. But under the circumstances, it was necessary to communicate with the beings shut up in this machine. I looked for an opening—a panel—a “man hole,” to use the technical term, but the lines of rivets solidly fixed upon the joinings of the iron plates were whole and regular.

Moreover, the moon deserted us, and left us in profound obscurity. We were, therefore, obliged to wait for daylight, to find means to penetrate into the interior of this submarine vessel.

Thus our safety depended entirely upon the caprice of the mysterious helmsman who guided this machine: if he descended we were lost. Unless this occurred, I had no doubt of being able to communicate with the crew. And indeed if they did not manufacture the air they breathed, they must come to the surface from time to time to replenish the supply. Thus the necessity for an aperture communicating with the outer air.

We had given up all hope of being rescued by Commodore Farragut. We were proceeding westwards, and I estimated our speed at twelve miles an hour. The screw revolved regularly, sometimes emerging and throwing phosphorescent jets of water to a great height.

About 4 A.M. the speed increased. We had some difficulty in resisting this giddy pace, as the waves beat upon us in full volume. Fortunately Ned felt a large ring, let in to the upper part of the iron back, and we fastened ourselves to it securely.

This long night at length came to an end.

My imperfect recollection cannot recall all the impressions of those hours. One detail comes to my mind. During certain lulls of the wind and waves, I fancied I could hear, vaguely, a sort of fugitive harmony, produced by distant chords. What was, then, this mystery of submarine navigation, of which the world was vainly seeking the key? What kind of beings inhabited this vessel? What mechanical agency permitted them to move at such a prodigious rate?

Daylight appeared. The morning mists wrapped us in their folds, but soon dispersed. I was making a careful survey of the hull, which formed, at its upper part, a sort of horizontal platform, when I found myself sinking by degrees.

“Eh! thousand devils,” cried Ned Land, striking the iron a sounding blow with his foot. “Open, I say, you inhospitable travellers!”

But it was no easy matter to make them hear while the screw was working. Fortunately the descent was arrested.

Suddenly a noise, as of bars being pushed back within

the boat, was heard. A plate was raised, a man appeared, uttered a singular cry, and immediately disappeared. Some time after, eight strong fellows, with veiled faces, silently rose up and pulled us into the formidable machine.

CHAPTER VIII.

MOBILIS IN MOBILE.

THIS movement, though so roughly executed, was performed with lightning rapidity. My companions and I had not time to look about us. I do not know that it was a great trial, our being thus introduced into the floating prison, but, for my own part, I must say that a rapid shudder went through me. With whom had we to do? Doubtless with some pirates, who were exploring the seas after their own fashion.

Scarcely had the narrow panel been closed than we were surrounded by thick darkness. My eyes coming from the daylight so suddenly could distinguish nothing. I felt that I was upon an iron ladder. Ned Land and Conseil, held tightly, followed me. At the bottom of the ladder a door was opened, and was shut upon us with a loud noise. We were left to ourselves. Where? I could not say—scarcely fancy. All around us was of such an absolute blackness that even after a time my eyes perceived none of those rays which are perceptible in the darkest nights.

Ned Land, furious at such treatment, gave free vent to his indignation.

“A thousand devils,” he cried; “they call this hospitality. They only want to be cannibals to be perfect. I should not be surprised; but I will give them something before they make a meal of me!”

“Be quiet, friend Ned, keep quiet,” said Conseil calmly. “Don’t look too far ahead. We are not roasted yet.”

“Roasted, no,” replied Land; “but we are in the oven. It is as dark, at any rate. Fortunately, I have not lost my bowie-knife, and I can generally see well enough to use it. The very first of these robbers who lays a finger on me——”

“Don’t put yourself out, Ned,” I said; “we shall gain nothing by useless violence. Who can tell whether they can hear us? Let us rather endeavour to ascertain where we are.”

I advanced with outstretched hands. After five paces I touched a wall of riveted iron plates. Returning, I ran against a wooden table, near which were some stools. The floor was covered with a thick matting, which deadened the sound of our footsteps. The bare walls had neither door nor window perceptible. Conseil, who had been making a tour in the opposite direction, rejoined me, and we came into the centre of this cabin, which appeared to be about twenty feet long and ten wide. Even Ned Land, with his great height to assist him, could not touch the ceiling.

After half an hour had passed in this way, our eyes were suddenly exposed to a violently brilliant light. Our

prison was suddenly illuminated. In the whiteness and intensity of this gleam I recognised the electric light which produced the appearance of a magnificent phosphorescence round the submarine vessel. I was involuntarily obliged to close my eyes, and when I again opened them I found that the light had been placed in a ground-glass globe, which was fixed at the upper end of the cabin.

“At last we can see something,” cried Ned Land, who, bowie-knife in hand, stood on the defensive.

“Yes,” I replied, risking the antithesis, “but the situation is not the less obscure.”

“If Monsieur will only have patience,” said the impassible Conseil.

The sudden illumination of the cabin gave me the opportunity to examine it more minutely. It only contained a table and five stools. The invisible door was hermetically closed. No sound reached our ears. Everyone seemed dead on board. Whether it was still moving over the surface of the ocean, or plunged in its depths, I could not divine.

However, the lamp had not been lighted for nothing. So I was in hopes that the crew of the vessel would soon put in an appearance. When people wish to put an end to prisoners they do not illuminate the *oubliettes*.

I was not mistaken; the noise of withdrawing bolts was heard, the door opened, and two men entered.

One was rather short but strongly made, with immense breadth of shoulder, intellectual looking, with thick black hair and beard, piercing eyes, and with the vivacity which characterises the provincial population of France.

Diderot has justly maintained that man's gesture is metaphorical, and this little man was the living proof of that statement. One had a sort of feeling that his habitual discourse was made up of prosopopœia, metonymus, and hypallages. But I was not able to verify this, as he always used a peculiar and utterly incomprehensible idiom.

The second arrival deserves a more detailed description. A pupil of Gratiolet or Engel would have read his face like a book. I can easily recall his characteristics. Confidence in himself, for his head rose nobly from the arc formed by the line of his shoulders, and his dark eyes regarded you with a cool assurance. He was composed, for his face, more pale than ruddy, betokened a dispassionate nature. Energy he possessed, as demonstrated by the rapid contraction of the eyebrows. Finally, he was courageous, for his deep breathing denoted great vitality.

I should add that this man was proud, his firm and composed look seemed to reflect elevated thoughts, and, added to all this, the homogeneity of expression in the movements of his body and face, according to the observation of physiognomists, resulted in an indisputable open-heartedness.

I felt myself involuntarily reassured in his presence, and I augured well of our interview. This person might have been any age between thirty-five and fifty. He was tall, a wide forehead, straight nose, a well-shaped mouth, beautiful teeth, long, thin, and very muscular hands, worthy to serve an elevated and passionate mind. This was certainly the most admirable type of individual that

I had ever seen. To descend to detail, his eyes, set a little apart, could embrace nearly a quarter of the horizon.

This faculty, which came to my knowledge later, gave him a great advantage over the excellent sight of Ned Land. Whenever this unknown personage was looking intently at anything he frowned, his large eyelids contracted so as to conceal the pupils, and to considerably circumscribe his line of sight—and he *did* look! What a gaze that was, as if he was making distant objects larger, or penetrating your very soul by his gaze; as if he could pierce the depths of the waves, so opaque to our eyes, and could read the secrets of the sea.

The two strangers wore otter-skin caps and sea-boots of seal-skin, and clothes of a peculiar texture, which sat loosely upon them, and allowed of great freedom in their movements.

The taller of the two—evidently the captain—regarded us with great attention, without speaking. Then turning to his companion, he conversed with him in a language I did not understand. The other replied by a nod, adding a few unintelligible words. Then with a glance he appeared to interrogate us personally.

I replied, in good French, that I did not understand his language; but he did not appear to comprehend mine, and the situation became somewhat embarrassing.

“If Monsieur would relate our adventures,” suggested Conseil, “perhaps the gentlemen would understand some of it.”

I then commenced a recital of our experiences, dis-

tinctly dwelling upon all the words, and without omitting a single detail. I announced our names and station—then I presented in due form M. Aronnax—his servant Conseil, and Ned Land, the harpooner. The individual with the calm eyes listened quietly, even politely, and with great attention. But his face betrayed no sign that he understood a word. When I had finished, he remained perfectly silent.

There still remained the English language, as a last resource. Perhaps he would understand that almost universal tongue. I was acquainted with it, and with German sufficiently to read fluently, but not to speak it correctly. Now here it was absolutely necessary to be understood.

“Do you try,” I said to the harpooner, “speak the best English ever heard, Master Land, and try to be more successful than I have been.”

Ned made no objection, and repeated my recital, so as I could understand it pretty well. The issue was the same, but the form was different. The Canadian was more energetic. He complained bitterly at being imprisoned, against the rights of nations, demanded legal satisfaction for his detention, invoked the Habeas Corpus Act, threatened to prosecute those who had kept us prisoners unlawfully. He kicked about, gesticulated, cried out, and finally, by a most expressive pantomime, gave them to understand that we were almost dying of hunger.

This was true as a matter of fact, but we had nearly forgotten it.

To his intense surprise, the harpooner did not appear

to have been more intelligible than I was. Our hosts did not move a muscle of their faces. It was evident that they understood neither the language of Arago nor Faraday. I was very much puzzled what to do next, when Conseil said :

“ If Monsieur will permit me, I will speak to them in German.”

“ What ! do you know German !” I cried.

“ Like a Dutchman,” replied he ; “ if Monsieur has no objection.”

“ I am much pleased. Go on my lad.”

And Conseil recounted, for the third time, the various adventures we had met with. But notwithstanding the excellent accent and the elegantly-turned phrases of the speaker, German was not a success. At length, pushed to the very last position, I recalled all I could of my former studies, and essayed to tell the tale in Latin. Cicero would have stopped his ears, and declared it was “ dog Latin,” but, nevertheless, I went on. But with the same result !

This last attempt having miscarried, the two strangers exchanged some words in their incomprehensible language, and retired, without bestowing upon us even one of those signs which are universally understood. The door was again shut upon us.

“ This is infamous,” exclaimed Ned Land, who burst out for the twentieth time. “ Why, we have spoken French, English, German, and Latin to those rascals, and they have not had the civility to reply.”

“ Calm yourself, Ned,” said I to the angry harpooner ; “ anger will do no good !”

“But don't you know, sir, that we may die of hunger in this iron cage?”

“Bah!” said Conseil, with his usual philosophy, “we can hold out for some time yet.”

“My friends,” said I, “we must not despair. We have not come to the worst yet. Do me the favour to wait before you form an opinion respecting the captain and crew of this vessel.”

“My opinion is already formed,” replied Ned; “they are a set of rascals.”

“Good; and of what country?”

“Of a rascally country.”

“My brave Ned, that country is not clearly laid down upon the map of the world; and I confess that the nationality of these two strangers is difficult to determine. That they are neither English, French, nor German we can affirm. Now I am tempted to admit that they were born in lower latitudes. There is a southerly look about them; but whether they be Spaniards, Turks, Arabs, or Indians, their physical types do not enable me to decide. Their language is simply incomprehensible.”

“There is the drawback of not knowing every language,” replied Conseil, “and the disadvantage of not having a universal one.”

“That would not help us at all,” replied Ned Land. “Do you not understand that these fellows have got a language of their own, invented to drive to despair those brave people who ask for something to eat? But in any country in the world, if you open your mouth, move your jaws, smack your lips, would they not understand what you meant? Would not that be sufficient?”

to indicate, equally in Quebec as in Pomaton, in Paris, or the antipodes, 'I am hungry; give me something to eat?'"

"Oh!" cried Conseil, "there are some natures so utterly stupid——"

As he spoke the door opened and a steward entered. He brought us clothing, vests and trousers, fit for sea wear, of a material with which I was unacquainted. I hastened to clothe myself, and my companions followed my example.

Meantime the steward—silent, perhaps deaf—had laid the table and set on three dishes.

"There is something satisfactory," said Conseil; "this promises well!"

"Bah!" cried the spiteful Canadian; "what the devil do you expect to get to eat here; tortoise livers, fillet of shark, or a slice from a sea-dog?"

"We shall soon see," replied Conseil.

The dishes, with their silver covers, were placed symmetrically upon the cloth, and we took our places. Decidedly we had to do with civilised beings; and were it not for the electric light which surrounded us, I should have fancied we were sitting in the Adelphi Hotel in Liverpool, or in the Grand Hotel in Paris. I must say that we had neither wine nor bread on this occasion. The water was pure and bright; but it was water, which was not acceptable to Ned Land. Amongst the meats served to us I recognised various kinds of fish very delicately cooked; but upon some of the dishes I could not pronounce an opinion, as I was perfectly unable to say to what kingdom, animal or vegetable, they belonged. The table-service was elegant, and in perfect taste. Every

knife, fork, spoon, or plate, was marked with a letter surrounded by a motto, of which the following is a *fac simile*:

MOBILIS IN MOBILE
N

Mobile in a mobile element. This applied exactly to this submarine machine, if you translate the preposition "in" as "in," and not "upon." The letter N no doubt stood for the initial of the name of the eccentric individual who commanded.

Ned and Conseil did not waste much time in reflection. They began to eat, and I quickly followed their example. I was, moreover, now reassured as to our fate, and it was very evident that our hosts did not intend that we should die from inanition.

Everything must have an end in this world, and so must the appetites of people who have fasted for fifteen hours. The want of sleep now began to make itself felt—a natural reaction, after the long night during which we had struggled face to face with death.

"Faith, I shall sleep well," said Conseil.

"I am already asleep," replied Ned Land.

My companions lay down upon the floor, and were quickly in a profound slumber.

For my part I yielded less quickly to the drowsy god. A number of thoughts crowded my brain, insoluble questions pressed upon me, a troop of mental images kept my eyes open. Where were we? What strange power held us? I felt, or fancied I felt, the machine

sinking to the bottom of the sea. Fearful nightmares beset me. I saw in mysterious passages the whole of the unknown animal kingdom, of which the submarine vessel appeared to be the congener, living, moving, and as formidable as they. Then my brain cooled, my imagination was steeped in sleep, and I soon fell into a peaceful slumber.

CHAPTER IX.

NED LAND'S ANGER.

How long we slept I do not know, but it must have been some time, as we awoke completely refreshed. I was the first to awake. My companions had not stirred, and remained stretched in the corner like lifeless beings.

Scarcely had I got up from my hard bed, when I perceived that my brain was clear and my mind invigorated. I then began to re-examine our cell attentively.

Nothing had been altered in its arrangement. The prison was still a prison—the prisoners still prisoners. But the steward had cleared the table while we slept. There was no symptom of any approaching change for the better, and I began to wonder whether we were destined to live for ever in that cage.

This prospect was so much the more unpleasant, as, if my brain were clear, I felt my chest very much oppressed. My breathing had become difficult, the heavy air was not sufficient for the play of my lungs. The cell was certainly of large size, but it was evident that we had consumed the greater part of the oxygen it had contained. Each man breathes in an hour the amount of oxygen

contained in 100 litres (22 gallons) of atmospheric air, and this air, then almost equal to carbonic acid gas, becomes insupportable.

It was, therefore, necessary to renovate the air of our prison, and, without doubt, also the atmosphere of our submarine boat.

Here was a puzzling question. How did the commander of the floating dwelling get on? Did he obtain air by chemical means, by disengaging the oxygen contained in chlorate of potash, and by absorbing the carbonic acid by the caustic potash? In this case he must keep up a communication with the earth to obtain a supply of these materials. Did he only take the precaution to store the air under great pressure in reservoirs, and free it again according to the requirements of the ship's company? Perhaps so. Or, what was a much easier method, more economical, and therefore more probable, was that he came up to the surface of the water to breathe, like a cetacean, and for twenty-four hours renew his supply of oxygen. However it might be, and by whatever means, it appeared to me prudent to employ it without delay.

In fact I was already obliged to breathe more quickly to extract what little oxygen the cell contained, when I was suddenly refreshed by a current of pure air, perfumed with the odour of the sea. It was the true sea-breeze vivified and charged with iodine. I opened my mouth wide. I was sensible of a rocking motion, a rolling of some extent, but perfectly determinable. The monster had evidently come up to the surface to breathe, after the fashion of the whale. The mode of ventilating the ship was now perfectly apparent.

While I was enjoying the pure air I looked for the medium of its introduction, and was not long in discovering it. Over the door was an aperture, through which the fresh air entered and renovated the vitiated atmosphere of the cabin.

I had got so far in my observations when Ned and Conseil woke almost at the same moment, under the influence of the fresh air. After sundry rubbings of the eyes and stretchings of the arms they got upon their feet.

“Has Monsieur slept well?” inquired Conseil, with his usual politeness.

“Very well indeed,” I replied. “And you, Master Land?”

“Soundly,” was the answer. “But—perhaps I am mistaken—I fancy I can detect the smell of the sea.”

A sailor could make no mistake on this point, and I told the Canadian what had passed.

“That explains the roarings we heard when the supposed narwhal was near the *Abraham Lincoln*,” said Ned.

“Quite so, Ned, that was its breathing.”

“Only, M. Aronnax, I have no notion what time it is, unless it is dinner-time.”

“Dinner-time, my worthy harpooner? say rather breakfast-time, for we are certainly in another day.”

“Which shows that we have slept for twenty-four hours!”

“That is my opinion,” I replied.

“I will not contradict you,” replied Ned Land.

“But dinner or breakfast, I shall be glad to see the steward, whichever he may bring.”

“Both,” said Conseil.

“Just so,” replied Ned. “We are entitled to two meals, and, for my part, I could do justice to both.”

“Listen, Ned,” said I. “It is very evident that these people do not intend to starve us, else the dinner yesterday would have had no meaning.”

“Unless they wanted to fatten us up a bit.”

“I must protest against that,” said I. “We have not fallen among cannibals.”

“Once is not a custom,” replied the Canadian seriously; “who can tell whether these people have not been deprived of fresh meat for some time? and, in that case, three such individuals as you, Monsieur, your servant, and I——”

“Banish such thoughts, Land,” I said, “and above all things do not go out of your way to abuse our hosts—that will only make matters worse.”

“In any case,” said Ned, “I am as hungry as a thousand devils; dinner or breakfast, the meal is not here.”

“We must conform to the regulations of the ship,” I replied. “Possibly our appetites are in advance of the galley clock.”

“And I suppose that is set correctly?” said Conseil calmly.

“That is so like you, friend Conseil,” replied the impetuous Canadian. “You don’t ever trouble yourself much, you are always calm. You are the kind of fellow to say grace before your *benedicite*, and die of hunger rather than complain.”

“And what is the use of complaining?” asked Conseil.

“But it will do good. And if these pirates—I say ‘pirates’ with all respect, as the professor objects to my calling them cannibals, and I don’t want to hurt his feelings—if these pirates imagine that they are going to keep me a prisoner in this stifling cage without hearing some pretty strong observations from me they are very much mistaken. Look here, M. Aronnax, tell me frankly, do you think we shall be kept long in this iron box?”

“To say the truth, I cannot tell any more than yourself.”

“Well, but what do you think?”

“I imagine that chance has made us masters of an important secret. Now, if the crew of this submarine vessel are much interested in keeping it, and if such interest is as important as the lives of three men—I do think that we are in danger. But in the contrary case, the monster may put us ashore again amongst our species.

“Unless he enrol us with the crew,” said Conseil, “and take care of his secret that way.”

“Until some day,” replied Ned, “when some frigate better ‘found’ and faster than the *Abraham Lincoln*, takes possession of this nest of robbers, and sends us and them to swing at the yard-arm.”

“A good argument, Land,” said I, “but nothing of all this has yet happened. It is useless to discuss what may happen, until the case arises. I repeat, let us wait and act according to circumstances. We need do nothing, because there is nothing to do.”

“On the contrary, sir,” replied the Canadian, who would not give in, “we ought to do something.”

“Well, what?”

“Save ourselves—try to escape!”

“To escape from a prison on land is difficult; but to get out of a submarine prison, appears to me impracticable.”

“Now, friend Ned,” said Conseil, “what do you say to Monsieur? I cannot believe that an American is ever at a loss.”

The harpooner, visibly embarrassed, was silent. Flight under the circumstances was out of the question. But a Canadian is half a Frenchman, and master Land showed that by his reply.

“So, M. Aronnax,” he said, after some minutes’ consideration, “you do not know what people ought to do who cannot escape from their prison?”

“No, my friend.”

“It is very simple—they ought to arrange in what manner they will remain.”

“By Jove,” said Conseil, “I think you are better inside than either above or below!”

“But having overcome gaolers, keys, and bolts?”

“What, Ned, is it possible that you are seriously contemplating escape from this vessel?”

“Very seriously, indeed,” replied the Canadian.

“Impossible!”

“Why so, sir? Some favourable opportunity may arise; and I do not see why I should not profit by it. If there are not more than twenty men on board, they will not be able to resist two Frenchmen and a Canadian, I suppose?”

It was better to admit this proposition than to discuss it, so I contented myself by saying :

“Wait events, and see. But till the time comes pray curb your impatience. We cannot act except by stratagem, and it is not in our power to create opportunities. So promise me that you will take things as they come, quietly.”

“I promise, sir,” replied Ned, in a tone but little reassuring. “Not a coarse nor violent word shall pass my lips, not a gesture shall be perceived, even if the table be not served with desirable regularity.”

“I have your promise, Ned,” I replied.

Our conversation ceased, and each of us began to reflect. For myself, I confess, notwithstanding the assurance of the harpooner, I did not delude myself. I did not admit those favourable chances of which Ned had spoken. To be so well manœuvred, the submarine boat must be well manned and equipped, and consequently in the event of a dispute we should get the worst of it. Besides, above all it was necessary to be at liberty, and we were not. I did not perceive any means of flight from this close prison. And if the strange commander of this vessel had a secret to preserve—which was at least probable—he would not permit us to be at large on board. Now whether he would get rid of us by violence, or land us safely upon some corner of the earth, was the question. All these hypotheses appeared to me extremely plausible, and one needed to be a harpooner to hope to regain his liberty.

I comprehended, moreover, that Ned Land's intentions were by no means in keeping with his reflections. I heard him beginning to mutter strange oaths, and his

gestures were becoming threatening. He got up and walked about like a wild beast in a cage, hitting and kicking the walls as he passed. By-and-by his anger evaporated, and hunger began to assail him cruelly, and yet the steward appeared not. Our position, as shipwrecked people, had been forgotten too long if they had really been well-intentioned towards us. Ned Land, really suffering from hunger, got more and more angry; and, notwithstanding his promise, I was afraid of an explosion should any of the crew enter our cabin. For two hours longer Ned's anger burned. He called, he shouted in vain. The walls were impervious to sound I could not hear any sound within the boat. It was not moving, for we should in that event have felt the throbbings of the screw. Plunged in this state of uncertainty beneath the waves, we seemed to belong to earth no more. The death-like silence was appalling.

I did not dare to contemplate the chances of a lengthened abandonment and isolation in this cell. The hopes I had conceived after our interview with the commander faded by degrees. His kind expression of countenance, pleasant look, and nobility of mien all faded from my memory. I recalled this extraordinary personage, as he had now become, necessarily pitiless and cruel. I put him out of the pale of humanity, inaccessible to every sentiment of pity, the remorseless enemy of his fellow-creatures, against whom he had sworn an undying enmity.

But was this man, then, going to let us perish of hunger, incarcerated in an iron cell, at the mercy of those terrible temptations which assail men under the influence of extreme hunger? This fearful thought

burnt itself into my brain, and imagination being at work, I felt myself becoming the prey of a maddening terror. Conseil was quite resigned. Ned was raging.

At this juncture a voice was heard outside, footsteps were heard on the iron flooring, the bolts were drawn back, and the steward appeared.

Before I could interpose to prevent him, the Canadian had thrown himself upon the unfortunate man, felled him to the ground, where he held him by the throat. The steward was strangling beneath that powerful grasp. Conseil had already attempted to loosen the deadly grasp of the harpooner, and I was about to assist, when I was glued to the spot by hearing a voice call out in French :

“Calm yourself, Master Land, and you also, professor, and be so good as to listen to me !”

CHAPTER X.

THE MAN OF THE SEA.

It was the commander of the vessel who had spoken.

At those words, Ned Land suddenly arose ; the steward, half strangled, staggered out at a sign from his master ; but such was the discipline enforced, that the man did not even by a gesture betray his resentment against the Canadian. Conseil was interested, in spite of himself, and I stood petrified with astonishment. We all awaited the *dénouement* in silence. The commander, leaning against the table, regarded us fixedly. Did he hesitate to speak, or was he regretting having addressed us in French ? It might be so.

After a silence of some minutes, which none of us ventured to break :

“Gentlemen,” said he, in a calm and penetrating tone, I can speak French, English, German, and Latin with equal facility. I was therefore quite capable of replying to you at our first interview, but I wished to learn first, and reflect afterwards. Your respective accounts of your adventures agreeing in all important particulars assured me of your identity. I am now aware that chance has

brought to me Monsieur Pierre Aronnax, Professor of Natural History in the museum at Paris, charged with a scientific mission ; Conseil, his servant, and Ned Land, a Canadian by birth, harpooner on board the frigate *Abraham Lincoln*, of the United States Navy."

I bowed assent. There was no necessity for further reply. The man expressed himself with perfect ease, with no foreign accent. His phraseology was good, his words well chosen, his facility of speech remarkable. Nevertheless, I did not take to him as a countryman.

He continued :

"You have doubtless thought that I have been a long time in paying you a second visit. It was because, your identity once established, I wished to consider seriously how to act towards you. I hesitated for a long time. Unfortunate circumstances have brought you in contact with a man who has forsworn his fellow-creatures. You have come to disturb my existence——"

"Unintentionally," I put in.

"Unintentionally !" repeated the stranger, raising his voice. "Was it unintentionally that the *Abraham Lincoln* chased me through the ocean so long? Was it unintentionally that you came on board that ship? Was it unintentionally that your shot came hustling against the hull of my vessel? Was it unintentionally that Land here struck it with his harpoon?"

I perceived a subdued anger in these questions. But to all these recriminations I had a perfectly plain answer to make, and I made it.

"Monsieur," said I, "you are ignorant of the dis-

cussions which have arisen in Europe and America about you. You are not aware that the various collisions you have caused have evoked public observation in both continents. I spare you the numerous hypotheses by which people have endeavoured to explain the inexplicable phenomenon of which you alone possess the secret. But you must know that in pursuing you the *Abraham Lincoln's* crew were under the impression that they were pursuing some powerful marine monster, of which it was necessary to rid the ocean at any cost."

A half-sigh parted the lips of the stranger; then, in a calmer tone he said:

"Monsieur Aronnax, can you affirm that your frigate would not have followed and fired at a submarine vessel as well as a monster?"

This question caused me some little embarrassment, for certainly Commodore Farragut had not hesitated. He would have deemed it his duty to destroy an apparatus of the kind as well as a gigantic narwhal.

"So you perceive, Monsieur," said the stranger, "that I have a right to treat you as enemies."

I did not reply, and for a good reason. Where was the use to answer a proposition, when force could overcome a thousand arguments.

"I have hesitated for a long time," said the commander. "There is no reason why I should extend my hospitality to you. If I leave you, I have no interest in seeing you again. If I replace you upon the platform outside, upon which you took refuge, I can sink beneath the surface and forget that you ever existed. Have I not this right?"

These thoughts chased rapidly across my mind,

while the strange personage was silent, absorbed, and plunged in thought. I was regarding him with a melancholy interest, much as Œdipus may have looked at the Sphinx. After a long silence the commander again spoke :

“ I have waited before speaking,” said he, “ because I was thinking that my own interest may be in keeping with the natural consideration to which every human being has a right. You shall remain on board, since fate has thrown you in my way. You will be free here, and in exchange for this liberty, I will only impose one condition. Your word of honour that you agree to it will be sufficient.”

“ Speak, Monsieur,” said I, “ I have no doubt the condition is one that brave men may accept.”

“ Certainly, and this is it. It is possible that certain circumstances may compel me to confine you to your cabin for some hours, on some days. As I have no wish to use force, I expect from you, above all, the most passive obedience. In acting thus, I take all responsibility off your shoulders, and you are free ; for it will be my business to see that you do not become acquainted with what it is inexpedient for you to know. Do you accept the condition ? ”

“ We accept,” I replied. “ But I wish to ask one question—only one.”

“ Speak, Monsieur,” he said.

“ You have stated that we shall be free on board ? ”

“ Entirely.”

“ I would ask what you mean by such freedom ? ”

“ Permission to go and come and look about as you please, to see all that takes place here. In fact the same freedom as I and my companions enjoy.”

“That is perhaps the right of a savage,” I said, “but not of a civilised being.”

“Monsieur, I am not, so to speak, a civilised being. I have broken with the world altogether, for reasons which I can alone appreciate. I obey no laws, and I recommend you never to put them in force against me.”

This was sternly spoken. An angry and disdainful gleam shone in his eyes, and in this man's life I could discern a terrible past. Not only had he put himself out of reach of all human laws, but he was independent, free—in the largest acceptation of the term—beyond all reach.

Who would dare to pursue to the bottom of the sea a being, who at the surface baffled all efforts to overtake him? What ship could resist the shock of this submarine “ram?” What armour-plate could sustain his blows? None among men could demand an account of his actions. Providence, if he believed in Him; his conscience, if he had one, were the only judges before whom he could be brought.

It was evident that we did not altogether understand each other.

“I beg your pardon,” I added, “but the liberty you would accord is only that granted to a prisoner, to walk round his prison. That is not enough for us.”

“Well, it must suffice, nevertheless.”

“What! You would debar us from ever seeing our friends, relatives, and our native land again?”

“Yes, Monsieur; but to renounce the insupportable yoke of earth which men call freedom, is not such a very great sacrifice as you imagine.”

“Well,” cried Ned, “I will never give my word of honour not to attempt to escape.”

“I did not ask you for your word of honour, Master Land,” replied the commander in a freezing tone.

“Sir,” said I, carried away in spite of myself, “you take an unfair advantage of your position. It is cruel.”

“No, sir; it is mercy. You are my prisoners of war. I take care of you, when, by a word, I could have you thrown into the sea. You have attacked me. You have come here, and have discovered a secret which no one in the world ought to know—the secret of my existence. And do you believe that I shall put you ashore upon that earth which shall know me no more? In keeping you here it is not you whom I take care of, it is myself.”

These words indicated a resolution which no argument could overturn.

“Thus,” I replied, “you give us simply a choice between life and death?”

“Exactly.”

“My friends,” said I, “to such a question there is no answer. But we are not bound to the master of the ship.”

“Not at all,” replied the captain. Then, in a more pleasant tone, he resumed: “Now permit me to finish what I have to say. I know you, M. Aronnax. You, personally, have not perhaps much reason to complain that you have cast in your lot with mine. You will find amongst the books which are my favourite studies your own work upon the greatest depths of the sea. I have often read it. You have extended your work as far as

terrestrial science permitted. But you do not know everything, and have not seen everything. Allow me to tell you that you will not regret the time you may pass on board with me. You are about to sail through a world of wonders. Astonishment and stupefaction will be the prevailing feelings you will experience. You will not easily get tired of the never-ceasing spectacle before you. I am about to make a new tour of the submarine world—perhaps the last, who knows?—to study, as far as possible, at the bottom of those seas through which I have so frequently coursed, and you shall be my companion. From this day you will enter upon a new existence; you will see what no man has ever seen—for my companions and myself do not count—and our planet, thanks to me, shall yield its deepest secrets to you.”

I could not deny it. The captain's words had a great effect upon me. I was assailed at my weak point, and forgot, at the moment, that the contemplation of these wonderful things could not compensate for my lost liberty. However, I counted upon the future to solve this question, so I answered:

“Monsieur, if you have quarrelled with humanity, I like to think that you have not renounced every human feeling. We are shipwrecked people, received charitably on board your vessel, we do not forget that. As for me, I am not sure but that, if the interests of science will permit me to forget the want of freedom, I can promise myself that our intercourse will be very pleasant.”

I fancied that the commander would tender me his hand to ratify our agreement. He did not do so, and, for his sake, I was sorry for it.

“One last question,” I said, as this strange individual was about to retire.

“Well, Monsieur?”

“By what name shall I address you?”

“Sir,” he replied, “to you I am but Captain Nemo, and your companions and yourself are to me only passengers in the ship *Nautilus*.”

Captain Nemo then called the steward, to whom he gave his orders in that strange language which I could not make out; then turning to Conseil and the Canadian he said to them:

“A meal awaits you in your cabin. Be so good as to follow that man.”

“This is not to be refused,” said the harpooner, and Conseil and he quitted the cell in which they had been interned thirty hours.

“Now, M. Aronnax, our breakfast is ready. Allow me to lead the way.”

“At your orders, captain.”

I followed Captain Nemo, and as soon as I had passed the door I entered a sort of corridor, illuminated by electric light, and resembling the waist of a ship. After proceeding a short distance a second door was opened before me.

I was ushered in a dining-room ornamented and furnished in perfect taste. Oaken shelves inlaid with ebony were erected at each end of this room, upon which were displayed, in varying order, china, earthenware, porcelain, and glass of inestimable value. The table-services glittered beneath the rays which extended to the ceiling, whose fine frescoes toned down the powerful light.

In the centre of the room was a splendidly-served table. Captain Nemo pointed out my place.

“Sit down,” said he, “and eat like a man who is dying of hunger.”

The meal was composed of a certain number of dishes which only the sea could have supplied, and some of which I was entirely ignorant. They were very good, but of curious flavour, to which, however, I speedily became accustomed. These various dishes were rich in phosphorus, and from this I argued that they were of oceanic origin.

Captain Nemo was looking at me. I asked him nothing, but he divined my thoughts, and replied voluntarily to the questions I was burning to address to him.

“The greater part of these dishes are unknown,” said he; “but you may eat without fear. They are wholesome and nourishing. For years I have renounced all sustenance derived from the earth, and am none the worse. My crew, who are strong fellows, live as I do.”

“All these things are produced in the sea, then?”

“Yes, the ocean furnishes me with all I require. Sometimes I spread my nets astern, and haul them in ready to break. Sometimes I go hunting in this element so inaccessible to man, and I take the game that inhabits the submarine forests. My flocks, like those of father Neptune, feed fearlessly in the submarine pastures, and share a vast estate which I cultivate myself, and which is always sown by the hand of the Creator of all things.

I gazed at Captain Nemo in astonishment, and replied :

“ I can quite understand that your nets furnish you excellent fish, but I do not quite comprehend how you hunt the aquatic game in the submarine forests, and, least of all, why so small a portion of meat appears at your table.”

“ For the reason that I never consume the flesh of terrestrial animals.”

“ But this, now ? ” I retorted, pointing to a dish upon which some slices of a “ fillet ” were placed.

“ That which you believe to be meat is nothing but tortoise fillet. Here is likewise some dolphin liver which you might take for pork. My cook is an experienced hand, and excels in preparing the various productions of the sea. Taste those. Here is a *conserve d'hololurics*, which Malais declared unrivalled. Here is a cream made of the milk from the breast of a cetacean, and sugar from the great fucus of the North Sea ; and, finally, allow me to offer you these *confitures d'anemones*, which are equal to the most pleasant fruits.”

I tasted them, more out of curiosity than hunger, while Captain Nemo amused me by his improbable tales.

“ But this inexhaustible sea not only feeds but clothes me. That material you wear is made from the byssus of certain shell fish. They are coloured with the purple of the ancients, variegated with violet tints, which I extract from the aplysis of the Mediterranean. The perfumes you will find upon your dressing-table have been produced by the distillation of marine plants. Your bed is

composed of the softest zostera of the ocean. Your pen is from the fin of a whale ; your ink is the liquor secreted by the cuttle-fish. Everything now comes from the sea, and will return to it again some day."

"You are fond of the sea, captain."

"Yes ; I love it. The sea is everything. It covers seven-tenths of the terrestrial globe. Its breathings are pure and healthy. It is an immense desert, in which man is never lonely, for life is spread around him. The sea is only the medium for a supernatural and wonderful existence ; it is nothing but movement and affection ; the living infinite, as one of the poets has said. In fact, nature is herein represented by all three kingdoms—the mineral, vegetable, and animal. The last is largely represented by the four groups of zoophytes, three classes of articulated animals, five classes of molluscs, three classes of vertebrates, the mammifers, reptiles, innumerable legions of fish, an infinite order of animals, which includes more than 13,000 species, of which only a tenth part inhabit fresh water. The sea is the vast reservoir of nature. It was by the sea that the world may be said to have commenced ; and who knows whether it will not finish it also ! There alone is perfect quiet. The sea is not for despots. At the surface it can still exercise its iniquitous rights ; there it beats furiously and devours greedily ; there it bears all earthly horrors. But at thirty feet below the surface its power ceases, its influence is extinguished, its strength dies out. Ah, Monsieur, live in the bosom of the waters. There alone you will find independence ; there I recognise no master ; there I am free !"

Captain Nemo suddenly stopped in the midst of

his enthusiastic address. Had he been betrayed out of his habitual reserve? Had he said too much? For some time he walked about, evidently agitated. Then he became calmer; his face resumed its usual impassibility, and turning to me he said :

“ Now, Monsieur, if you wish to inspect the *Nautilus*, I am at your service.”

CHAPTER XI.

THE "NAUTILUS."

CAPTAIN NEMO got up from his chair. I followed him. A double door at the end of the room was passed, and we entered a chamber of similar size to that we had just left.

It was a library. High ebony book-cases, inlaid with brass, contained a large number of books similarly bound. These followed the curvature of the walls, and terminated at their lower part in large sofas covered with maroon leather, which presented most comfortable resting-places. Light, moveable desks were attached thereto, adapted either for reading or writing. In the centre was a large table, littered with pamphlets, with here and there some old newspapers. The electric light fell upon all these from four swinging globular lamps fastened in the fluting of the ceiling. I gazed admiringly around me at this ingeniously-arranged room, and could scarcely believe my eyes.

"Captain Nemo," said I to my host, who had stretched himself upon a couch, "this library would do

credit to a palace ; and I am fairly astounded when I reflect that it can be equally available at the bottom of the sea."

"You can find true solitude and silence here," replied the captain. "I do not think that your study at the Museum can offer you such perfect quiet."

"No, indeed ; and it will appear very poor after this. You must have 6,000 or 7,000 volumes on these shelves."

"Twelve thousand," replied Captain Nemo. "Those are the only things that bind me to the earth. The world was dead to me when my *Nautilus* plunged for the first time beneath the waves. Upon that day I purchased my last volumes, my last pamphlets, my last papers ; and since then I wish to believe that the human race has neither thought nor written anything. These books are, however, quite at your disposal, and you may use them freely."

I thanked my host, and approached the shelves. There were books of science, and moral and literary subjects in every language ; but I did not perceive any work upon political economy. One curious feature was that the books were mingled together, not arranged according to the language in which they were written ; and this seemed to prove that the captain read whatever volumes came to hand.

Amongst the books I noticed the greatest works of ancient and modern celebrities, that is to say, all the finest works that humanity has produced. There was poetry, romance, and science represented, from Homer to Victor Hugo, from Xenophon to Michelet, from Rabe-

lais to Madame Sand. But science composed the bulk of the works ; books upon mechanics, balistics, hydrography, meteorology, geography, geology, &c., held a no less important place than works on natural history, which I fancied was the captain's chief study. I perceived the complete writings of Humboldt, Arago, Foucault, Henry St. Claire Deville, Chasles, Milne-Edwards, Quatrefrages, Tyndall, Faraday, Berthelot, of the Abbé Secchi, Petermann, Commodore Maury, Agassiz, &c. The memoirs of the Academy of Science, the transactions of various geographical societies, &c., and, in a conspicuous position, those two volumes to which, perhaps, I was indebted for Captain Nemo's clemency.

Amongst the works of Joseph Bertrand, his book entitled "Les Fondateurs de l'Astronomie," gave me a fixed date, and as I knew that the book had appeared during the year 1865, I was enabled to arrive at the conclusion that the institution of the *Nautilus* had not been at a date more remote than that. Thus for three years or more Captain Nemo had led a submarine existence.

I was in hopes that more recent works would enable me to fix more definitely the exact period, but I had plenty of time before me, and did not wish to delay an exploration of the wonders of the *Nautilus*.

"I thank you," said I to the captain, "for having placed this library at my disposal. There are some treasures of scientific research which I shall be able to profit by."

"This is not only a library, it is also a smoking-room," said he.

"A smoking-room!" I exclaimed. "So you have some cigars on board?"

"Certainly."

"Then I am obliged to think that you must preserve relations with Havana."

"Not at all," replied the captain. "Try this cigar, and though it is very certain it never came from Havana, I think you will like the flavour."

I took the cigar, which was made like those sold in London, but it appeared to be composed of leaves of gold. I lit it at a little bronze brazier and inhaled its fragrance with all the gusto of a man who had not smoked for two days.

"It is excellent," I said, "but it is not tobacco."

"No," replied the captain, "that weed never grew in Havana nor the East. It is a kind of sea-weed, rich in nicotine, which the ocean supplies to me somewhat sparingly. Do you regret your London cigar?"

"My dear sir, I shall despise them henceforth."

"Well, then, smoke as much as you like, and without thinking of the origin of the cigars. They bear the brand of no nation, but they are not the less good, I fancy."

"On the contrary."

Captain Nemo then opened a door opposite to that by which we had entered, and I passed into a large and brilliantly-lighted *salon*.

It was a large oblong with walls sloping inwards, ten yards long, six wide, and five high. The lighted ceiling, decorated by arabesques, distributed a clear and

soft light upon all the marvels of this museum. For a museum it really was, in which an intelligent and prodigal mind had united all the treasures of nature and art, with a little of that "mixing" which distinguishes the "studio" of a painter. Thirty masterpieces in handsome frames ornamented the walls, covered with tapestry of chaste design.

Here I perceived pictures of the greatest value, which for the most part I had admired in private collections and exhibitions. The various schools of the old masters were represented by a "Madonna," by Raphael ; a "Virgin," by Leonardo da Vinci ; a "Nymph," by Correggio ; a "Lady," by Titian ; an "Adoration," by Veronese ; an "Assumption," by Murillo ; a portrait, by Holbein ; a "Monk," by Velasquez ; a "Martyr," by Ribeira ; a "Kermesse," by Rubens ; two Flemish landscapes by Teniers, three small pictures of the school of Gerard Dow, Metsu, and Paul Potter, two by Géricault and Prudhon, some sea views by Backuysen and Vernet. Amongst modern works were those of Delacroix, Ingres, Decamp, Troyon, Meissonnier, Daubigny, &c., and some admirable reductions from statues of the first models stood upon pedestals in the corners of this splendid museum.

The state of stupefaction predicted by the captain of the *Nautilus* had already taken possession of my mind.

"Monsieur," said the extraordinary man, "you will, I hope, excuse the informal manner in which I have received you, and the disorder of this room."

"Without seeking to know who you are, sir," I said, "I may remark that you are an artist."

"An amateur, no more ; I like to collect these beautiful specimens of human workmanship. I was a great collector at one time, and have been able to obtain some works of great value. These are the last *souvenirs* of the earth which is now dead to me. To my eyes, your modern artists cannot compare with the old masters, who have two or three thousand years' existence, and I confuse them. They have no 'age.'"

"And these musicians?" said I, pointing out works of Weber, Rossini, Mozart, Beethoven, Haydn, Meyerbeer, Herold, Wagner, Auber, Gounod, and others, scattered upon a piano-organ, which filled up one of the panels of the room.

"Those musicians," replied Captain Nemo, "are the contemporaries of Orpheus, for chronological difficulties are passed over in the memories of dead men ; and I am dead, equally dead as any of your friends lying six feet under ground."

He ceased speaking, and appeared plunged in a profound reverie. I gazed at him with emotion, analysing his features in silence. Leaning against a beautiful Mosaic table, he was quite unconscious of my presence.

I respectfully recalled his attention, and we continued to inspect the curiosities of the *salon*.

After the works of art, the rare natural specimens held the most important position. They consisted chiefly of plants, shells, and other productions of the ocean, which Captain Nemo had himself picked up. In

the centre of the room was a small jet of water, illuminated by the electric light, and falling into a simple tridone. This shell, produced by the greatest of acephalous molluscs, measured about six yards round the delicately-curved edge. It thus surpassed in size those that were presented to Francis I. by the Republic of Venice, and of which the church of St. Sulpice in Paris has constructed two immense holy-water basins.

Around this vase were classed and ticketed the most precious productions of the sea that had ever gladdened the eyes of a naturalist. You can picture my delight.

The zoophytes presented most curious specimens of the two groups of polypes and echinodermes. In the first group, tubipores, gorgons displayed fan-wise, soft sponges from Syria, &c., and a series of those madrepores, which my master Milne-Edwards has so cleverly classed in sections. In fine, the whole represented a collection complete in individual specimens of the various groups.

The collection of shells was of inestimable value, and time would fail me in attempting to describe them all. Amongst them I well remember the elegant royal hammer-fish of the Indian Ocean, whose regularly-placed white spots showed out upon the red or brown beneath—an imperial spondyde of vivid colouring, bristling with spines, a rare specimen in European museums, and worth, I should say, 20,000 francs; a common specimen of hammer-fish from New Holland, where it is not easy to procure, however; "buccardia" of Senegal, fragile white bivalves, which one may blow away like a soap-bubble; a whole series of "trochi," some greenish

brown, from American waters, some a reddish-brown, related to those of New Holland; the former from the Gulf of Mexico, remarkable for their imbricated shells; the latter, the stellaria, found in the South Seas, and rarest of all, the magnificent "spar" shell of New Zealand; and, in fine, ovula, oliva, buccini, voluta, harpa, cassis, cerethia, fissurella, patella, and other delicate and fragile shells, to which science has given most charming names.

Besides, and in special compartments, were displayed rows of pearls of great beauty, which the electric light tipped with little scintillations. Rose-pearls torn from the Red Sea; green pearls of the halistoid iris; yellow pearls, and blue, and black; curious products of various molluscs in every ocean, and in certain water-courses, besides many other specimens of immense value.

Some of these pearls surpassed a pigeon's egg in size, and were worth more than that which the traveller Tavernier sold to the Shah of Persia for three millions, and excelled that other pearl of the Imaum of Muscat, which I fancied without a rival in the world.

So to calculate the value of this collection was almost impossible. Captain Nemo must have spent millions on his specimens, and I was thinking how he could thus afford to gratify his tastes, when I was interrupted by his saying:

"You are examining my shells, monsieur; they can interest a naturalist, but they have a greater charm for me, for I have collected them all myself, and there is not any part of the oceanic world that has escaped my search."

"I can quite understand," said I, "the pleasure of

floating in the midst of such riches. You are one of those who have made their own fortune. No museum in Europe possesses such a collection as yours. But if I go on admiring these so much, I shall have no wonder left for the vessel that carries us. I do not wish to pry into your secrets, but I confess that the speed of the *Nautilus*, the machinery that guides her, the power that animates her, all have excited my curiosity to a very high pitch. I see hanging from these walls some instruments with whose uses I am unacquainted. May I know what they are?"

"M. Aronnax," replied the captain, "I have already told you that you are free on board my ship, and so no part of the *Nautilus* is forbidden you. You can go over her, and I shall be very happy to be your conductor."

"I really don't know how to thank you, monsieur, but I will not abuse your confidence. I will only enquire the uses of those instruments."

"Similar instruments will be found in my room, and I will explain their uses there. But first come and see your own cabin. You ought to know how you are likely to be lodged on board the *Nautilus*."

I followed the captain, who, by one of the doors pierced in each side of the room, brought us back into the "waist" of the ship. He led the way forward, and there I found not merely a cabin, but an elegantly-fitted chamber, containing a bed, wardrobe, and other furniture.

I was not able to express my thanks to my host.

"Your room is contiguous to mine," said he, opening a door as he spoke, "and mine opens into the room we have just left."

I entered his room; it had an austere appearance, almost monkish. An iron bedstead, a work-table, and some toilette furniture. The light was dim. There was nothing "cosy" about it; what was necessary was there, but nothing more.

Captain Nemo pointed to a seat.

"Won't you sit down," he said.

I sat down, and he addressed me as follows :

CHAPTER XII.

ENTIRELY BY ELECTRICITY.

“MONSIEUR,” said he, as he indicated the instruments suspended against the walls of the room, “there is the apparatus necessary for the navigation of the *Nautilus*. Here, as in the other room, I have them always under my eyes, and they point out to me my exact situation and direction in mid-ocean. Some of them are known to you, such as the thermometer, which tells me the temperature of the *Nautilus*; the barometer, which tells me the weight of the air, and predicts changes of weather; the hygrometer, which marks the dryness of the atmosphere; the storm-glass, whose mixture decomposing, tells me of the approaching tempest; the compass, which guides me: the sextant, which, by the sun’s altitude, tells me my latitude; the chronometers, which show my longitude; and finally, the day and night telescopes, by which I can scrutinise all parts of the horizon when the *Nautilus* comes up to the surface of the sea.”

“These are the instruments in general use on board ship,” I said, “and I know their uses. But there are

some others, intended, no doubt, for the peculiar requirements of the *Nautilus*. That dial-plate I see with the moveable needle. Is it a manometer?"

"It is a manometer, in fact. Placed in the water, of which it indicates the exterior pressure, it gives me at the same time the depth at which I am keeping my boat."

"And those novel sounding-lines?"

"They are the theometric 'leads,' which inform me of the temperature at various depths."

"And those instruments, with the use of which I am unacquainted?"

"On these points, I must give you some little explanation, if you will listen to me."

After a short pause, he recommenced.

"There is an agent here, powerful, obedient, rapid in action, natural, which adapts itself to everything on board. It does everything by itself. It gives me light, it warms me, it is the very soul of my mechanical arrangements. This agent is electricity."

"Electricity!" I exclaimed.

"Yes, monsieur."

"But," said I, "you move at a great pace, which is not in accord with the power of electricity. So far as we know, its dynamic power remains very limited, and is not able to produce any great forces."

"Monsieur," replied Captain Nemo, "my electricity is not that of the world in general, and that is all that I feel at liberty to tell you."

"I will not insist upon it, of course, and will content myself by being very much astonished at the result. One question I would ask, to which, of course, you need not

reply. Do not the elements you employ soon expend themselves? Zinc for instance. How can you replace it if you have no communication with the land?"

"Your question shall have an answer," replied Captain Nemo. "I may tell you, however, that mines of zinc, iron, silver, and gold, all exist at the bottom of the sea, and the exploration of them is surely practicable. But I am in no wise indebted to the minerals of earth, and I only ask the sea to produce my electricity!"

"The sea!"

"Yes, and the means are these. I have been able to establish a circuit between the threads, cast in different depths, to obtain electricity by the difference of the temperature they underwent, but I prefer an easier plan."

"And that is?"

"You know the composition of sea-water. In 1,000 grammes there is $96\frac{1}{2}$ per cent. of water; two and one-third per cent. of chloride of sodium, then small quantities of chlorides of magnesium and potash, bromide of magnesium, sulphate of magnesia, sulphate and carbonate of lime. So you perceive that the chloride of sodium is present in a large proportion. Now, it is this sodium which I extract from the water, and of which I make my elements."

"The sodium?"

"Yes. Mixed with mercury it forms an amalgam, which takes the place of the zinc in the Bunzen elements. The mercury remains, the sodium only gives off, and the sea itself furnishes that. I may tell you, moreover, that the sodium battery may be considered as the most

powerful, and the electric force is double that of the zinc battery."

"I quite understand the value of the sodium in the condition in which you find it. The sea contains it. So far so good. But still it is necessary to extract it. How do you do that? Your batteries could evidently be of use to extract it, but if I do not mistake, the expenditure of sodium, necessitated by the electric apparatus, exceeds the quantity extracted. So you would consume more of it than you could produce."

"But I do not extract it by the assistance of the battery. I simply employ the heat of pit-coal."

"Pit-coal?" I said, meaningly.

"Well, let us say sea-coal, if you prefer it," replied Captain Nemo.

"And can you dig out mines of sea-coal?"

"M. Aronnax, you shall see me work it. I only ask a little patience, since you have time to be patient. Only recollect this—I owe everything to the ocean. It produces electricity, and electricity gives the *Nautilus* heat, light, speed, and, in a word, life!"

"But not the air you breathe!"

"Oh! I can make the air necessary for my use, but it is unnecessary, since I go up to the surface whenever I please. However, if electricity do not furnish me with air to breathe, it at least sets in motion some powerful pumps, which enable me to store in reservoirs for the purpose, sufficient to enable me to remain, at need, as long as I choose at the bottom of the sea."

"Captain Nemo," said I, "I can only admire you. You have discovered, what men will some day find out, the true dynamic power of electricity."

“I do not know if they will or not,” replied Nemo, coldly. “However that may be, you already know the first application that I make of this precious agent. It gives us light with an equality and continuity equal to the sun. Now that clock is electric, and goes with a regularity that defies a thousand chronometers. I have divided it into twenty-four hours, like the Italian clocks, for, for me no night exists, and no day; nor sun, nor moon, but only this artificial light, which I produce from the depths of the sea. Look! at this moment it is 10 A.M.”

“Just so!”

“Here is another application of electricity. That dial hanging before us indicates the speed of the vessel. An electric cord places it in communication with the screw’s log, and the needle indicates the speed. Look here! at this moment we are going at the moderate speed of fifteen miles an hour.”

“It is, indeed, marvellous; and I see that you are right to employ this agent, which is destined to supersede wind, water, and steam.”

“We have not finished yet, M. Aronnax. If you like to follow me, we will go astern.”

I already was acquainted with the forward portion of the ship, which was divided into two parts in the centre. The *salle-a-manger*, separated from the library by a watertight bulkhead; the library; the grand saloon, separated from the captain’s room by another watertight partition; this room and mine and an air-reservoir composed the forward portion—in all thirty-five yards in length. The bulkheads were pierced with doors, which could be

hermetically sealed, and assured the safety of the *Nautilus* in the event of any influx of water.

I followed Captain Nemo across the waist, and reached the centre. There was a sort of well, which opened between two bulkheads. An iron ladder led upwards. I asked the use to which this ladder was put.

“It leads to the ‘launch.’”

“What, have you a boat, too?”

“Certainly, and an excellent one—light, and impossible to sink; which serves for pleasure or fishing.”

“But when you wish to embark in it you must surely go up to the surface of the sea?”

“By no means. This boat is fastened to the upper part of the hull of the *Nautilus*, and rests in a cavity prepared for it. It is decked, absolutely staunch, and kept secured by solid bolts. This ladder leads to a man-hole in the hull of the *Nautilus*, which corresponds to another hole in the side of the launch. It is through these openings that I enter the boat. In shutting one I open the other, by pressure of a screw. I pull out the bolts, and the boat rises with great swiftness to the surface. I then open the deck-panel, hitherto carefully closed. I ‘step’ the mast, hoist my sail, or take to the oars and pull about.”

“But how do you return on board?”

“I do not return; it is the *Nautilus* which comes up.”

“At your order?”

“Yes. An electric cord is extended between us. I merely send a telegram, and that is sufficient.”

“In fact,” said I, intoxicated by these wonders, “nothing can be more easy.”

Having passed the staircase leading to the platform,

I saw a cabin in which Conseil and Ned Land had enjoyed an excellent meal. Thence a door opened into a kitchen, situated between the immense store-rooms.

There the electricity, more energetic and more obedient than gas, did all the cooking. The wires, passing into the fireplaces, communicated to the platinum sponges a heat which was evenly maintained. It equally heated the distilling apparatus, which, by vaporisation, made a very drinkable water. From the kitchen opened a bath-room, comfortably arranged, and with hot and cold water laid on. Beyond the kitchen was the sailors' cabin. But the door was closed, and I was not able to inspect its arrangements, which might have given me some idea of the number of men required to navigate the *Nautilus*.

At the end another bulkhead separated this cabin from the engine-room. A door was opened, and I found myself in the compartment in which Captain Nemo, a most accomplished engineer, had arranged the machinery.

This engine-room, well-lighted, was of great extent. It was properly divided into two parts, one for the elements which produced the electricity, the other for the mechanism which moved the screw.

I was at first surprised by the smell—*sui generis*—which pervaded the room. Captain Nemo noticed my impressions.

“It is only an escape of gas produced by the use of the sodium—but it is not very unpleasant. Moreover, every morning we purify and ventilate the ship thoroughly.”

But now I began to examine with a lively interest the engine of the *Nautilus*.

“You perceive,” said the captain, “that I employ the Bunzen elements in preference to the Ruhmkorff, which did not answer. The Bunzen elements are fewer, but stronger, as experience has shown. The electricity produced goes to the stern of the vessel, where it acts by means of electro-magnets of great power upon a particular system of levers and gearing, which transmit the motion to the shaft of the screw. Thus, a diameter of six metres, and a pitch of seven and a half, can give me a hundred and twenty revolutions in a second.”

“And you obtain from that?”

“A speed of fifty miles an hour.”

There was some mystery here, but I did not insist upon an explanation. How could electricity yield such a force. Where did this illimitable force take its origin. Was it in the excessive tension obtained by a novel kind of bobbins? Was there in its transmission through the system of levers the power to increase it indefinitely? That was what I could not understand.

“Captain Nemo,” said I, “I see the result, and I do not seek the explanation of the means. I have seen the *Nautilus* manœuvre before the *Abraham Lincoln*, and I know its speed. But speed is not everything. You must be able to see whither you are going. You must have the power to direct your course to the right or left—up or down. How do you reach the deeps, where you must support a pressure of hundreds of atmospheres? How do you rise to the surface of the ocean? Finally, how do you maintain your vessel halfway when it suits you to do so? Am I indiscreet in asking all these questions?”

“Not at all,” replied the captain, after a little hesitation, “since you never are likely to quit this submarine vessel. Come into the saloon. It is our ‘study,’ and there you shall be made acquainted with all you ought to know respecting the *Nautilus*.”

CHAPTER XIII.

A FEW FIGURES.

WE were soon seated in the saloon, enjoying our cigars. The captain placed a diagram in my hands, showing the sections and elevation of the *Nautilus*. He then commenced his description as follows :

“ You perceive, M. Aronnax, that my boat is an elongated cylinder, pointed at the extremities. It is of much the same shape as a cigar, a form which has already been tried in England and several vessels. Its length is exactly seventy yards ; its greatest breadth ten yards. It is not, you see, constructed exactly on the principle of your swift-going steamers, but its lines are sufficiently lengthened to permit the displacement of water to pass away easily, and to oppose no serious resistance to its progress.

“ The above measurement will enable you to arrive at the displacement and weight of the *Nautilus*. Its surface measures $11,000\frac{45}{100}$ square metres, its volume $1,500\frac{2}{10}$ metres. So when completely immersed it displaces or weighs 1,500 cubic metres or tons.

“ When I planned this vessel for submarine naviga-

tion, I intended that nine-tenths should be immersed, and one-tenth out of the water. Consequently, it would not displace more than nine-tenths of its volume, that is to say $1,356\frac{48}{100}$ square metres, or the same number of tons. I was therefore obliged not to exceed that weight in constructing it according to the following dimensions.

“The *Nautilus* is composed of two hulls, one within the other, fastened by T-shaped bolts, which give the vessel great strength. In fact, it has as much resistance in this form as a solid mass would possess. The bulwark cannot be broken, it adheres by itself, and is not riveted. The homogeneity of its construction and the joining of the materials enables it to defy the most violent seas.

“The two hulls are made of iron-plates, whose density with respect to the water is as $7\frac{8}{10}$. The first is not less than two-and-a-half inches thick, and weighs $364\frac{96}{100}$ tons. The second ‘skin’ includes the keel, twenty inches high and ten thick, which weighs by itself sixty-two tons; the engine, the ballast, the various accessories and gear, the compartments and supports of the interior, weigh $961\frac{62}{100}$ tons, which gives a total of $1356\frac{48}{100}$ tons. Is that clear?”

“Perfectly!” I replied.

“Well,” continued the captain, “when the *Nautilus* is in the sea, under these conditions, it emerges one-tenth. Now, I make the reservoirs of a capacity equal to this tenth, that is to say of $150\frac{72}{100}$ tons, and fill them with water; the vessel will then be completely immersed. That is the case. These reservoirs exist in the lower part of the *Nautilus*; I open the tops, the reservoirs are

filled, and the boat sinks to a level with the surface of the water.

“Very good, captain, but now we have arrived at the real difficulty. I can understand that you can get level with the surface. But in going lower down in your submarine vessel, do you not encounter a pressure, and consequently endure a pressure, from below, which may be estimated at an atmosphere for thirty feet of water, or about 15 lbs. for every square inch?”

“Quite so.”

“Then unless you fill up the *Nautilus* altogether, I do not see how you can get her down to the bottom of the sea.”

“Monsieur,” replied Captain Nemo, “you cannot confuse statics and dynamics without running the risk of grave errors. It gives me very little trouble to reach the depths of the ocean, for all bodies have a tendency to sink. Do you follow me?”

“I am listening, captain.”

“When I wish to determine what increase of weight I must give the *Nautilus* to sink her, I have only to think of the reduction in the volume of sea water, according as we get lower and lower down.”

“That is clear enough,” I replied.

“Now, if water be not absolutely incompressible, it is nearly so. In fact, according to the latest calculations, it is only $\cdot000436$ per atmosphere for each thirty feet of depth. If I want to descend 1,000 yards, I calculate the reduction of volume of a column of water of 1,000 yards—that is to say, under the pressure of 100 atmospheres. This reduction will then be 436 hundred-millionths. I must then increase the weight

so as to sink, to $1,513\frac{7}{10}$ tons, instead of $1,507\frac{2}{10}$. The increase will consequently only be $6\frac{5}{10}$ tons."

"Is that all?"

"Yes, and the calculation can be easily verified. I have supplementary reservoirs capable of holding 100 tons. So I can descend to a very considerable depth. When I wish to come up again to the surface, I have only to eject the water in all the reservoirs, and the *Nautilus* will float with one-tenth emerged."

I could not object to these figures.

"I admit your calculations, captain," I replied, "and it would be very bad taste to dispute them, since experience has proved them right every day. But I confess to a difficulty."

"What is that?"

"When you are at a depth of 1,000 yards, the sides of the *Nautilus* support a pressure of 100 atmospheres. So then, at the time you employ your reservoirs for the purpose of rising to the surface, you must overcome by means of your pumps this pressure of 100 atmospheres which is 1,500 lbs. for a square inch. Such a power——"

"Electricity alone can give me," interrupted Captain Nemo. "I repeat that the dynamic power of my engines is almost infinite. The pumps have enormous power. For instance, look at the columns of water thrown like a torrent upon the deck of the *Abraham Lincoln*. Besides, I do not fill my supplementary reservoirs, except to reach moderate depths. But when the fancy seizes me to visit the very bottom of the sea, or two or three leagues below the surface, I employ other more complicated but not less certain measures."

“What are they?” I inquired.

“That naturally leads me to tell you how the *Nautilus* is worked.”

“I am very anxious to know, I assure you.”

“To steer her to larboard or starboard, to work her horizontally, in a word, I make use of an ordinary rudder, with a large blade fixed behind the stern post, and which a wheel and tackling puts in motion. But I can also move the *Nautilus* up or down vertically, by means of two inclined planes attached to her sides, at the centre of flotation. These are moveable, and fitted to take any position, and which are worked from inside by powerful levers. These are kept parallel to the vessel when she is moving horizontally; but if inclined upwards or downwards, the *Nautilus* follows the same direction, and by the power of her screw, plunges or rises at any angle I please. And even if I wish to return very rapidly to the surface, I ship the screw, and the pressure of the water sends the *Nautilus* vertically to the surface—as a balloon, filled with hydrogen, mounts into the air.”

“Bravo, captain!” I cried; “but how can the steersman find the proper direction beneath the water?”

“The helmsman is placed in a glazed compartment, which opens upon the upper part of the vessel, which is fitted with lenticular glasses.”

“Glasses capable of resisting so great a pressure.”

“Certainly. Crystal, though fragile to a blow, will resist considerable pressure. In fishing experiences by electric light in the North Sea, in 1864, plates of this material, of only one-third of an inch in thickness, resisted a pressure of sixteen atmospheres, to say nothing of the heated rays which divided the heat unequally. Now the

glasses I make use of are not less than twenty-one centimetres thick in the centre—that is to say, thirty times more than those.”

“Admitted,” said I; “but to be able to see the light you must overcome the obscurity of the water. How is that accomplished?”

“Behind the steersman a powerful electric light is placed, which lights up the sea for half a mile ahead.”

“Well done, indeed, captain! I can now comprehend the phosphorescence of the pretended narwhal, which has puzzled all the “knowing ones.” By the way, may I ask if the collision between the *Nautilus* and the *Scotia* was purely accidental?”

“Entirely so. I was moving two yards under water when the collision occurred. I saw that it had no unpleasant result.”

“None; but how about your meeting with the *Abraham Lincoln*?”

“I am very sorry, Monsieur, for one of the ships of the fine American navy; but she attacked me, and I only defended myself. Moreover, I was content to let the frigate off easily. They will have no difficulty to repair her in the nearest port.”

“Ah!” I cried, with an air of conviction, “there is no doubt that your *Nautilus* is a wonderful vessel.”

“Yes,” replied Captain Nemo, with emotion, “indeed she is, and I love her as my own child. If all is danger upon one of your vessels launched upon the ocean, if upon the sea “the first impression is of the gulf beneath”—as has been well said by Jansen—in the *Nautilus* a man has nothing to fear. No injury, for the double hull is as strong as iron can be; no inconvenience from

rolling or pitching ; no sails for the wind to carry away ; no boilers to burst ; no fire to fear, since the fittings are all iron ; no coal to exhaust, because electricity is the motive power ; no collisions need be feared, because we can traverse the very deeps of the ocean ; no storm to brave, because at a few yards beneath the surface all is still. So there, Monsieur, there is *the ship par excellence*. And if it be true that the engineer has more confidence in the ship than the builder, and the builder more than the captain himself, you can understand how proud I am of my *Nautilus*, since I am constructor, engineer, and captain in my own person."

He spoke with a persuasive eloquence. The flashing eye, the passionate gesture, seemed to change him completely. Truly he loved his ship as a parent his child !

But another, perhaps an indiscreet question, naturally presented itself, and I risked it.

"You are an engineer, then, Captain Nemo?"

"Yes," he replied. "I studied in London, Paris, and New York."

"But how could you secretly construct such a vessel as the *Nautilus*?"

"Each part, M. Aronnax, reached me from a different part of the world, and under a false name. The keel was forged at Creusot ; the screw-shaft by Penn & Co., London. The iron plates were made by Laird, of Liverpool ; the screw was by Scott, of Glasgow. The reservoirs were constructed by Cail & Co., in Paris ; the engine by Krupp, in Prussia ; the "spur," in the workshop of Motala, in Sweden ; the instruments at Hart Brothers', New York ; and each manufacturer received my plans under a different name."

“But when the parts were made it was necessary to put them together.”

“I established my workshops in a desert island in the open sea. There my workmen—that is to say, the brave companions whom I have instructed and got together—and I built our *Nautilus*. When we had finished, we destroyed by fire every trace of our work. I would have destroyed the island had I been able.”

“Then I may conclude that the price of the vessel was very great.”

“M. Aronnax, a ship of iron costs 1,155 francs per ton. The *Nautilus* cost 1,500. That is, therefore, 1,687,000 francs cost. Allow two millions for the fittings, and four or five millions for the works of art and collections, and you have the total.”

“A last question, Captain Nemo.”

“What is it?”

“I suppose you are very rich?”

“Infinitely wealthy, Monsieur. I could without inconvenience pay the ten milliards of the French debt.”

I looked steadily at this extraordinary individual as he spoke thus. Was he taking advantage of my credulity? The future will show!

CHAPTER XIV.

THE BLACK RIVER.

THE portion of the terrestrial globe occupied by water is estimated at 80,000,000 of acres. This liquid mass includes 2,258,000,000 of cubic miles, and forms a sphere, of a diameter of sixty leagues, whose weight is three quintillions of tons. To understand this it must be stated that the quintillion is to the billion as the billion is to the unit; so there are as many billions in a quintillion as there are units in a billion. Now this mass of water is nearly as much as would flow through all the rivers in the world during a period of forty years.

During the geological epoch, when fire succeeded water, the ocean was universal. Then, by degrees, the summits of mountains appeared; islands emerged; disappeared again under partial floodings; re-appeared; united themselves; formed continents; and, at length, the earth remained as we see it. The solid had gained from the liquid 37,000,657 square miles.

The configuration of the continents permits of the

division of the waters into five great oceans: the Arctic and Antarctic, the Indian, the Atlantic, and the Pacific.

“The Pacific Ocean extends from north to south, between the polar circles, and from west to east, between Asia and America, to a distance of 145° of longitude. It is the most tranquil of seas; its currents are wide and slow; its tides not excessive; its rains abundant. Such was the ocean which fate had destined me to traverse under such strange conditions.

“Professor Aronnax,” said Captain Nemo to me, “let us endeavour to ascertain our true position, and fix the point of departure for this voyage. It wants a quarter to twelve noon. I am about to go up to the surface.”

The captain pressed an electric bell three times. The pumps began to expel the water from the reservoirs; the needle of the manometer marked the ascent of the *Nautilus* by the different pressures. She stopped.

“We are at the surface,” said the captain.

I advanced to the central staircase, which led to the platform, and by the open panel I reached the upper surface of the *Nautilus*.

The platform was not far above the water. The *Nautilus* was of the fusiform shape, which had been compared to a long cigar. I noticed that the iron plates, lightly imbricated, resembled the scales which clothe certain reptiles. I could then understand why this boat had always been taken for a marine animal, in defiance of the best glasses.

Towards the middle of the platform lay the launch, half buried in the hull of the ship. Fore and aft were

two cages of medium height, with sloping sides, and partly closed by thick lenticular glasses. One of these cages was for the steersman, the other contained the electric light which lighted up the ship's course.

The sea was lovely, the sky clear. The long vessel scarcely rose to the lazy undulations of the ocean. A light breeze from the east ruffled the surface. The horizon was perfectly clear for observations. There was nothing in sight—not a rock, not an island. No more of the *Abraham Lincoln*!

Captain Nemo, furnished with his sextant, took the sun's altitude, which was to give him his latitude. For some minutes he waited till the level of the horizon was fixed. While he made his observations, not a muscle moved, and the instrument was as motionless as in a hand of marble.

“Now, professor,” he said. “Now, if you are ready——”

I threw a last glance over the sea, and descended to the large saloon.

There the captain was making his longitude by chronometers altered in accordance with horal angles of his observations. Then he said: “We are $137^{\circ} 5'$ west longitude.”

“Of what meridian?” I asked, hoping from his reply to discover his nationality.

“Monsieur,” said he, “I have chronometers regulated for the meridians of Paris, Greenwich, and Washington. But in your honour, I will use the Paris meridian.”

I gained nothing from this reply. I bowed; he continued:

“Thirty-seven degrees fifteen minutes longitude west of Paris, and $30^{\circ} 7'$ north lat., so we are 300 miles from the Japanese coasts. So to-day, the 8th November, and at mid-day, we commence our exploration under the sea.”

“May God preserve us!” I said.

“Now I must leave you to your studies,” said the captain. “I have told them to proceed north-east about fifty metres down. There are maps on which you can trace the course. The saloon is at your service, but I must ask your permission to retire.”

Captain Nemo saluted me, and withdrew. I remained absorbed in my reflections, which all turned to the commander. Should I never know to what nation this mysterious man belonged, who boasted that he was no longer of any? The hatred he had vowed against the human race, too, I wondered who had provoked that! Was he one of those misunderstood *savants*, a genius to whom all was bitterness—a modern Galileo—or even one of those scientific men like Commander Maury, whose career had been cut short by political revolutions? I could not then determine. He met me coolly, though he had taken me on board and treated me hospitably while my life was in his hands. But he had not accepted my extended hand, neither had he offered me his own.

For a whole hour I remained plunged in these reflections, seeking to pierce this mystery which interested me so deeply. Then my gaze became fixed upon the large map upon the table, and I placed my finger upon the very spot where the latitude and longitude lately arrived at, intersected.

The sea has its rivers as a continent. These are the special currents recognisable by their temperature and their colour, of which the most remarkable is the Gulf Stream. Science has determined the direction of five principal currents on the globe. One in the North Atlantic, one in the South Atlantic, a third in the North Pacific, a fourth in the South Pacific, and a fifth in the Southern Indian Ocean. It is even probable that a sixth current existed formerly in the Northern Indian Ocean, since the Caspian and Aral seas, united with the great Asian lakes, only formed one and the same sheet of water.

Now, at the point indicated on the map, one of these currents started—the Kuro Scivo, of the Japanese—the Black River, which, leaving the Bay of Bengal, warmed by a tropical sun, traverses the Strait of Malacca, extends along the coast of Asia, flows into the North Pacific near the Aleutian Islands, bearing trunks of the camphor-tree and other indigenous products, and contrasting the pure indigo of its warm waters with the waves of the ocean. This was the current that the *Nautilus* was about to follow. I traced it up and perceived that it was lost in the vastness of the Pacific, and I felt myself “carried away” by it, when Ned Land and Conseil appeared at the door of the apartment.

My two brave companions appeared petrified at the sight of the marvels presented to their gaze.

“Where are we?” cried the Canadian. “In the Quebec Museum?”

“If Monsieur has no objection, this may rather be the Hôtel of the Sommerard!”

“My friends,” I said, as I signed for them to enter,

“you are neither in Canada nor France, but on board the *Nautilus*, at fifty yards beneath the surface of the sea.”

“We must credit Monsieur if he says so,” replied Conseil, “but this *salon* is enough to astonish even a Fleming like myself.”

“Give rein to your astonishment then, and look around you ; for, for a classifier of your reputation, there is something to do here.”

I had not much need to encourage Conseil. The brave lad, bent over the cases, was already muttering “Class Gasteropods, family Buccinoids, genus Porcelain, species *Cypræa Madagascariensis*,” &c.

Meantime, Ned Land, who was not much of a naturalist, was making inquiries respecting my interview with Captain Nemo. Had I found out who he was, whence he came, whither he was going, to what depths he was dragging us ? and a thousand questions to which I had no time to reply.

I told him all I knew, or rather all that I did not know, on those points, and inquired what he had heard or seen on his side.

“Nothing at all,” he replied ; “not even the crew. I suppose they are not electric by any chance, are they, sir ?”

“Electric !” I exclaimed.

“Faith, I am inclined to think so. But you, M. Aronnax,” asked he, who had his own idea, “how many men do you think there are on board ? Ten—twenty—fifty—a hundred ?”

“I do not know how to answer, Ned,” I said. “Moreover, take my advice, give up the idea of yours

to seize the *Nautilus* and make your escape. This boat is one of the *chefs d'œuvre* of modern industry, and I would have been sorry not to have seen it. Many people would accept the situation, if it were only to wander about amongst all these wonderful things. So keep quiet, and try to see what passes around us."

"See!" replied the harpooner; "there is nothing to see; one will see nothing in this iron prison. We are moving, we are sailing blindly——"

As Ned was speaking the light was suddenly extinguished, and a profound darkness supervened. So rapidly was the light withdrawn that my eyes retained an impression somewhat similar to that which is produced when darkness is suddenly illuminated.

We remained silent and motionless, not knowing what surprise, agreeable or otherwise, awaited us. A rustling noise was heard, as if the panels at the side were being moved.

"It is the end of the world," said Land.

"Order of Hydromedusæ," murmured Conseil.

Suddenly daylight appeared at each side of the room across two oblong openings. Liquid masses appeared vividly illuminated. Two crystal plates separated us from the sea. I shuddered at first at the thought that these fragile walls might give way; but the strong copper supports afforded them an almost infinite resistance against pressure.

The sea was distinctly visible in a radius of a mile around the *Nautilus*. And what a spectacle it was! What pen can describe it? Who could depict the effects of the light across these transparent waves, and

the softness of the successive gradations to the upper or lower depths of the ocean.

The diaphonous quality of the sea is well known. We know that its clearness is superior to fresh water. The mineral and organic substances which it holds in suspension, even increase its transparency. In certain parts of the ocean—in the Antilles—the sand can be perceived at a depth of 145 yards; and the force of penetration of the solar rays seems to descend to a depth of 300 yards. But in the middle course of sea pursued by the *Nautilus*, the electric light was produced in the very bosom of the deep. It was no more like a luminous ocean—it was a liquid light.

If we can admit Erhemberg's hypothesis, that there is a phosphorescent illumination at the bottom of the sea, then nature has certainly reserved for the inhabitants of the ocean one of its most wonderful sights, and I was able to judge of it here by the "play" of this light. Upon each side a window opened upon these unexplored abysses. The darkness of the room made the exterior more clearly visible, and we kept gazing as if the pure crystal was the glass case of an immense aquarium.

The *Nautilus* did not appear to move, because guiding-marks were absent. Sometimes the lines of water, divided by the "spur," passed before our eyes with wonderful rapidity. Perfectly amazed we were seated before these glasses, and no one spoke till Conseil said:

"You wanted to see something, friend Ned—do you see now?"

"Very curious indeed," exclaimed the Canadian, who, forgetful of his anger and his plans for flight, had sub

mitted to the fascination ; “ and people would come from a very great distance to see such a sight as this ! ”

“ Ah,” I thought, “ I understand the life of this man. He has made a world of his own, which reserves for him her most extraordinary wonders ! ”

“ But the fish ! ” the Canadian cried ; “ I don’t see any fish ! ”

“ What does that matter,” replied Conseil, “ since you do not know them.”

“ I ! why, I am a fisherman ! ”

And on this subject a discussion arose between the friends, for they knew the fish, but each in a different fashion.

Everybody knows that fishes form the fourth and last class of the vertebrate animals. They have been correctly defined as “ vertebrates, with double circulation and cold blood, breathing by means of gills, and destined to live in water.” They form two distinct series—that of osseous fishes (that is to say, those whose dorsal fin is made of osseous vertebræ, and the cartilaginous fishes, whose dorsal fin is composed of cartilaginous vertebræ. The Canadian may have been acquainted with this distinction, but Conseil knew a good deal more, and now, bound in friendship to Ned, he could not hint that he knew less than himself. So he said :

“ Friend Ned, you are a killer of fish, and a very skilful fisherman. You have captured a great number of those animals. But I will bet that you do not know how they are classed.”

“ Indeed ! ” replied the harpooner. “ They are classed as fish you may eat, and those you may not.”

“ That is merely the distinction of a *gourmand*,”

said Conseil. "But tell me if you know the difference between osseous and cartilaginous fishes."

"Perhaps so!" replied the Canadian.

"And the subdivision of these two great classes?"

"I have some doubt about it."

"Well then, friend Ned, listen and learn. The osseous fishes are subdivided into six orders. First, the 'acanthopterygians,' whose upper jaw is complete and moveable, and whose gills somewhat resemble a comb. This order consists of fifteen families—that is to say, three-quarters of the known fishes. Type, the common perch."

"Not bad to eat," said Land.

"Secondly," continued Conseil, "the 'abdominal,' which have the ventral fins suspended beneath the abdomen, and in rear of the pectoral fins, without being attached to the shoulder-bone; this order is divided into five families, and includes the greater part of the fresh-water fish. Type, the carp and the jack."

"Pooh!" said the Canadian, with contempt. "Fresh-water fish, indeed!"

"Thirdly," said Conseil, "the 'subrachians,' whose ventral fins are fastened beneath the pectorals, and directly suspended from the bone of the shoulder. This order contains four families. Types, the plaice, dab, turbot, brill, soles, &c."

"Excellent, excellent!" cried Ned, who only looked at the fish from the gastronomic point of view.

"Fourthly," continued Conseil, without heeding the interruption, "the 'apodals,' with long bodies, unprovided with ventral fins, and covered with a thick, and

frequently slimy skin—an order which consists of only one family. Type, the eel.”

“Middling, middling!” said Ned.

“Fifthly,” said Conseil, “the ‘lophobranchiata,’ which have jaws complete and free, but whose gills are formed of little tufts, placed in pairs along the branchial arches. This order has only one family. Type, the sea-horse.”

“Bad, bad!” replied the harpooner.

“Sixthly, and lastly,” said Conseil, “are the ‘plecognathes,’ whose maxillary bone is firmly fixed to the intermaxillary, which forms the jaw, and of which the ‘palatine anal’ is connected by suture with the skull, which renders it immoveable—an order which has no true ventrals, and consists of two families. Type, the sun-fish.”

“Would disgrace a copper,” said Ned.

“Do you understand, friend Ned?” asked the learned Conseil.

“Not the least in the world, friend Conseil. But go on, for it is very interesting.”

“The cartilaginous fishes,” replied Conseil, “only include three orders.”

“So much the better,” said Ned.

“First come the cyclostomi, whose jaws are connected by a moveable ring, and the gills open in numerous holes—an order which includes only one family; type, the lamprey. Secondly, the selacians, with gills resembling those of the cyclostomi, but whose lower jaw is moveable. This order, which is the most important of its class, comprehends two families; types, the ray and the shark.”

“What!” cried Ned, “rays and sharks in the same

order! Well, in the interest of the rays, I do not advise you to put them in the same tank."

"Thirdly," said Conseil, "the sturiones, whose gills are open, as usual in fishes, but with a single aperture, provided with an operculum. This order includes four genera; type, the sturgeon."

"Ah, friend Conseil, you have kept the best to the last—in my opinion, at least. Is that all?"

"Yes, my brave Ned; and you may as well note, that when you know all this you know nothing at all; for the families are divided into genus, sub-genus, species, and varieties."

"Well, friend Conseil," said Ned, leaning against the glass, "look at the varieties passing."

"Yes; one could almost believe oneself in an aquarium."

"No," I said, "for an aquarium is a cage, and those fish are as free as a bird in the air."

"Come, now, name them, Conseil; name them," cried Ned Land.

"I," he replied; "I am not equal to that. You must ask my master."

In fact, Conseil, though an excellent classifier, was nothing of a naturalist; and I do not think he could tell the difference between a tunny and a bonito. He was just the opposite of the Canadian, who could name the fish without hesitation.

"A balista," I had said.

"And a Chinese balista," added Ned.

"Genus balista; family sclerodermes; order plectognathes," murmured Conseil.

The Canadian had not been mistaken. A shoal of

balistas, with their flattened bodies and "grained" skin, armed with a prickly fin on the back, were playing around the *Nautilus*, moving the four ranges of spines, which bristled on each side of their tails. Nothing could be more beautiful than their skins, grey above and white underneath, the golden spots shining in the darkness of the waves. Amongst them rays were swimming, like a cloth undulated by the wind; and amongst them I could perceive, to my delight, the Chinese ray, yellow on the upper surface, light rose-colour underneath, and furnished with three spikes behind the eye; a very rare species this, and even doubtful in the time of Lacépède, who had never seen one, except in a collection of Japanese drawings.

For the space of two hours a regular aquatic army surrounded the *Nautilus*. In the midst of their gambols, in which they rivalled each other in beauty, speed, and agility, I distinguished the green wrass; the goby, with its rounded tail, white and violet tinted; the Japanese scomber, the beautiful mackerel of these seas, blue and white, the brilliant azure exceeding all description. The streaked sparus, with varied blue and yellow fins; the "fessy" sparus, relieved by a black band across the tail; the zonephorus sparus, elegantly streaked across the body; auloxtones—the sea woodcocks, with regular beaks, some specimens attaining the length of nearly a yard; Japanese salamanders; eels six feet long, like serpents, with quick small eyes and large mouths bristling with teeth, &c.

Our wonder continued unabated. Exclamations of delight were frequent. Ned named the fish, Conseil classed, while I went into ecstasies before the vivacity of

their movements and the beauty of their appearance. I had never had an opportunity to observe these animals living and in their native waters, till now. I will not mention all the varieties which passed before my dazed vision, this wonderful collection of the Japanese and China seas. These fishes were more numerous than are birds in the air, and were doubtless attracted by the electric light.

Suddenly light again appeared in the room—the panels were closed, and the enchanting vision disappeared. I thought of what I had seen for a long time, until my gaze fell upon the instruments suspended upon the wall. The compass, I noticed, pointed N.N.E. ; the manometer gave a pressure of five atmospheres, corresponding to a depth of fifty yards, and the electric gong indicated a speed of fifteen miles an hour.

I waited for Captain Nemo. He did not appear. It was five o'clock.

Ned and Conseil returned to their cabin, and I went to my room. There I found my dinner prepared. It was composed of turtle soup, mullet fillets, prepared from the "emperor holocanthus," the taste of which appeared to me to be superior to salmon.

I passed the evening in reading, writing, and reflection. Then sleep asserted its sway, and I retired to my grass couch and slept soundly, while the *Nautilus* skimmed across the rapid current of the black river.

CHAPTER XV.

A NOTE OF INVITATION.

WHEN I awoke next morning I found I had slept twelve hours. Conseil came as usual to inquire "how Monsieur had passed the night," and to offer his services. He had left the Canadian sleeping like a man who had never done such a thing in his life before.

I let Conseil chatter away, but did not reply. I was thinking of the absence of Captain Nemo, and I was hoping to see him again.

I was soon dressed in my garments of byssus, upon which Conseil commented freely. I informed him that the material was made from the silky fibres which attach the "jambouneaux"—a sort of shell-fish very common in the Mediterranean—to the rocks. Formerly stockings and gloves were made of these filaments, and proved to be very warm and soft. The crew of the *Nautilus* could thus clothe themselves at will, independently of cotton, wool, or silkworms. When I was dressed I proceeded to the saloon. It was empty.

I plunged at once into conchology. I also inspected the large collection of aquatic plants of the rarest kinds,

and which, although dried, still preserved their wondrous colourings. Amongst these beautiful hydrophytes I remarked the verticillated cledostephes, the vine-leaved caulupes, &c.—in fact, the whole series of sea-weeds.

The whole day passed without my receiving a visit from Captain Nemo. The panels did not open ; perhaps he was afraid I should get tired of the sight.

The *Nautilus* still headed N.N.E. ; the pace was sixteen miles an hour, and the depth sixty metres.

Next day (Nov. 10) there was the same freedom and the same solitude. I saw none of the ship's company. Ned and Conseil passed the greater part of the day with me. They were astonished at the inexplicable absence of the captain. Was he ill ? Had he altered his plans concerning us ?

After all, as Conseil remarked, we enjoyed complete freedom, and were well and abundantly fed. Our host observed the terms of the treaty ; and, moreover, even the singularity of our situation had some real compensation, so that we had no right to find fault with him. Upon that day I commenced to write a record of our adventures, which has enabled me to relate them with such exactness ; and I wrote upon a paper made from the sea-wrack.

Upon the 11th November, the influx of fresh air, very early in the morning, apprised us that we had risen to the surface to replenish the store of oxygen. I ascended the staircase, and passed out upon the platform.

It was six o'clock. The sky was cloudy, the sea looked grey, but calm ; scarce a ripple ruffled the surface. I wondered whether Captain Nemo would

appear. I expected to see him, but could only perceive the helmsman in the glass cage. I sat down upon the protuberance formed by the hull of the launch, and inhaled the delicious sea-breeze.

The mist gradually rose, under the influence of the rising sun, which soon flashed up over the eastern horizon, throwing a fiery track, like a lighted powder train, across the sea. The scattered clouds were tinged with bright and variegated colours, while the numerous "mares' tails" indicated a breeze.

But what did a storm matter to the *Nautilus*? I was admiring the beautiful sunrise, when I heard someone ascend to the platform. I expected to see Captain Nemo, but it was his mate, whom I had already met at the first interview with the captain. The mate came up, but did not seem to notice my presence, and he proceeded to "sweep" the horizon with his powerful glass. His observation having terminated, he approached the panel and pronounced the following sentence. I remember the exact terms, because every morning the same words were repeated under the same conditions. The sentence ran thus—

"Nautron respoc lorni virch."

What that meant, I cannot say.

Having pronounced those words, the mate descended, and I, fancying that the *Nautilus* would now resume her course, followed him, and returned to my room.

Five days passed in a similar manner. Every morning I ascended the platform. The same phrase was pronounced by the same person—but Captain Nemo never appeared.

I had made up my mind that I should see him no

more, when, on the 16th November, as I entered my room with Conseil and Ned, I found a note on my table addressed to me.

I opened it quickly. It was written in a clear, bold hand, something of a German type was evident.

“To M. Aronnax,

“On board the *Nautilus*,

“16th November, 1867.

“Captain Nemo requests the pleasure of Professor Aronnax’s society at a shooting party, to be held to-morrow morning, in the woods of the island of Crespo. Captain Nemo hopes that nothing will prevent M. Aronnax from attending, and will be pleased if his companions will also join the party.”

“A shooting party!” cried Ned.

“And in his forests of Crespo!” added Conseil.

“But this particular gentleman must go ashore then!” said Ned.

“That is sufficiently clear from the note,” I said, re-reading it.

“Well, we must accept the invitation,” said the Canadian. “Once on shore we shall know what to do. Moreover, I shall not be sorry to have a little fresh meat.”

Without stopping to reconcile the inconsistency of Captain Nemo, who, while professing horror of continents and islands, yet goes shooting in a wood, I merely accepted the invitation.

“Let us find where this island of Crespo is!”

I turned to the map, and at 32° 40′ N. lat., and 167° 50′ E. long., I found the island discovered by Captain Crespo, in 1801. The old Spanish maps call it “Rocca

de la Plata," or "Silver Rock." We were then about 1,800 miles from our starting-point, and the course of the *Nautilus* was now rather S.E.

I pointed out to my companions the little rock situated in the midst of the Pacific Ocean.

"If Captain Nemo is going to land at all," I said, "he has chosen the very smallest of desert islands."

Ned Land nodded without speaking, and then he and Conseil left me to myself. After supper, which was served by the silent and impassible steward, I retired—but much pre-occupied.

Next morning I perceived that the *Nautilus* was stationary. I dressed hastily and proceeded to the saloon.

There I found Captain Nemo. He was awaiting me. He got up, saluted me, and asked whether it would suit me to accompany him.

As he made no allusion to his absence during the last eight days, neither did I, and merely replied that my companions and myself were ready to go with him.

"But, Monsieur," said I, "I must ask you a question."

"Ask it, M. Aronnax," said he, "and if I can reply to it, I will."

"How is it that you who have renounced all intercourse with the earth, can possess woods in the island of Crespo?"

"The woods I possess," he replied, "require no light nor heat from the sun. No lion, tiger, panther, nor any other quadruped inhabits them. They are known

to me alone. They exist but for me. They are not terrestrial, but submarine forests."

"Submarine!" I exclaimed.

"Yes."

"And you ask me to go thither?"

"Precisely."

"On foot?"

"Yes, and dry-shod!"

"And shoot?"

"And shoot."

"With gun in hand!"

"Gun in hand."

I looked at the captain of the *Nautilus* with an air by no means flattering.

"He is evidently mad," I thought. "He has had an attack during the last eight days, which has not yet passed away. What a pity! I would rather see him eccentric than lunatic."

These ideas were clearly expressed by my countenance, but Captain Nemo merely invited me to follow him, and I did so. I was prepared for the worst.

We reached the dining-room, where breakfast was served.

"M. Aronnax," said the captain, "I beg you will partake of my breakfast, without any ceremony. We can talk while we are eating. But though I have promised you a 'turn' in the forest, I cannot promise you a *restaurant* there. So you had better breakfast like a man who will not dine till late."

I did honour to the meal, which was excellent. Captain Nemo at first ate without speaking, at length he said :

“Professor, when I first suggested your joining in a shooting-party in my forest in Crespo, you believed I was inconsistent. When I told you that these woods were under water, you thought I was a lunatic. You should never judge men hastily.”

“But, captain——”

“Listen to me, if you please, and you will see whether I am to be accused of folly or inconsistency.”

“I am listening.”

“You are aware that man can live under water so long as he can carry with him a supply of atmospheric air. In all submarine works, the artisan is clothed with a waterproof dress, and his head is covered with a metal helmet. He receives the air by means of force-pumps and regulators of the supply.”

“Like the diver’s jacket,” I said.

“Somewhat, but in those conditions the man is not free. He is attached to a pump by an india-rubber tube, a chain which binds him to the bank; and if we were thus tied to the *Nautilus*, we could not go far.”

“And how do you obtain the desired freedom?” I asked.

“By employing the Rouquayrol-Denayrouze apparatus, invented by two of your countrymen, but which I have perfected for my own use, and which you may yourself make use of, without any inconvenience whatever. The apparatus is composed of a reservoir of sheet-iron, in which I store the air, under a pressure of fifty atmospheres. This reservoir is carried on the back, like a soldier’s knapsack. The upper part forms a box, from which the air, restrained by a sort of bellows, cannot escape, except at the normal tension. In the Rouquayrol

apparatus, as we employ it, two india-rubber tubes from this box open into a sort of respirator, which covers the head of the operator, one for the introduction and the other for the expulsion of the air, and the tongue closes one or the other, as the exigencies of inspiration and respiration demand. But I, who have to dare considerable pressure at the bottom of the sea, enclose my head in a helmet, as the divers do, and it is to this that the two tubes are attached."

"Excellent, Captain Nemo. But the air you carry must be quickly expended; and so soon as it contains more than fifteen per cent. of oxygen it ceases to be respirable."

"Certainly; but as I have said, the pumps of the *Nautilus* allow of the stowing of the air under a great pressure, and so the air in the reservoir will last for nine or ten hours."

"I have no objection to make," I said. "I only want to know how you can obtain light at the bottom of the ocean."

"By means of the Ruhmkorff apparatus. If the first be carried on the back, the other is fixed to the chest. It is composed of a Bunzen pile, which acts, not with bi-chromate of potash, but with sodium. An induction bobbin collects the electricity produced, and directs it towards a lamp of peculiar construction. In this lamp is a glass serpentine, which contains only a residuum of carbonic acid gas. When the apparatus is at work the gas becomes luminous, and gives forth a white and steady flame. Thus provided, I can both breathe and see."

"Captain Nemo, to all my objections you return

such satisfactory replies, that I do not dare to express a doubt. But if I am obliged to accept the Rouquayrol and Ruhmkorff apparatus, I must make a reservation in regard to the gun with which you will arm me."

"But it is not an ordinary gun," replied the captain. "We do not use powder."

"It is an air-gun, then?"

"Certainly. How did you fancy I could make gunpowder on board, having neither saltpetre, sulphur, nor carbon."

"Besides," I said, "to fire under water in a surrounding medium, 855 times denser than the air, you must overcome a tremendous resistance."

"That need not affect the question. Certain cannons exist, improved upon Fulton's idea by the Englishmen Coles and Burley, by the Frenchman Farcy, and the Italian Laudi, which are made upon a particular system, and can be used under these conditions. But I repeat, that having no powder, I have to replace it by air at high pressure, which I can obtain in abundance by means of the pumps of the *Nautilus*."

"But this air must be rapidly expended."

"Well! have I not my Rouquayrol reservoir, which can furnish me with a supply at a pinch. A tap is sufficient. But you will see for yourself, M. Aronnax, that during our submarine shooting there is no great expenditure of air or bullets."

"Yet it seems to me that, in the semi-darkness, and in a medium much denser than the atmospheric air, the bullets would not travel far, and would not be frequently mortal."

"Monsieur, on the contrary, all hits made by this gun

are mortal, and however lightly the animal may be struck, he falls dead."

• "Why?"

"Because I do not use ordinary bullets—but little glass capsules, invented by the Austrian chemist Zeniebrock, and of which I have a large supply. These are covered with steel and weighted with lead—true Leyden jars in fact—in which electricity reaches a high tension. At the slightest resistance they burst, and the animal, however powerful he may be, falls dead. I may add that these capsules are no bigger than 'No. 4,' and that six of them is the usual charge."

"I do not question it," I said, rising, "and I have no more to do than take my gun. So where you go—I go."

Captain Nemo then led me to the stern of the *Nautilus*, and as we passed the cabin where Ned and Conseil were seated, I called them to accompany us.

We all soon reached a small cabin near the engine-room, and in which we were to be fitted out for our expedition.

CHAPTER XVI.

A WALK AT THE BOTTOM OF THE SEA.

THIS little cabin was, properly speaking, the arsenal and the vestry of the *Nautilus*. A dozen diving costumes hung upon the walls ready for use.

Ned Land, on seeing them, manifested a decided objection to adopt one.

“But,” I said, “the forest of Crespo is under the sea, Ned.”

“Ah,” said the harpooner, disappointed as he saw his dream of fresh meat disappear. “And are you going to get into one of those dresses, M. Aronnax?”

“I must do so, Ned.”

“Well, you are free to do so, of course,” said he shrugging his shoulders; “but unless I am compelled to do so, I won’t, I can tell you.”

“No one will force you, Master Ned,” said Captain Nemo.

“And is Conseil going to risk his life, too?”

“I go where Monsieur goes,” replied Conseil.

At a sign from the captain two men came forward to assist us in donning the heavy waterproof dresses. They

were like yielding suits of armour, and were composed of trousers and vest. The former terminated in a thick pair of leaden-soled boots. The vest was fastened by copper plates, which protected the chest against the pressure of the water, leaving the lungs free to act; the sleeves ended in flexible gloves, which did not interfere with the movements of the hands.

Captain Nemo, one of his crew—a perfect Hercules—Conseil, and I, were soon ready. It only remained for us to put on the helmet. But before I did so I asked the captain's permission to examine the guns.

I was handed an ordinary gun, the stock of which was made of sheet-iron, and hollow. It served as a reservoir for compressed air, which a valve, worked by a "tumbler," permitted to escape into the barrel. A box, hollowed out in the stock, contained twenty electric bullets, which the elasticity of the air placed in the barrel. So soon as one shot was discharged, the gun was again loaded automatically.

"Captain Nemo," I said, "this is a perfect weapon, and easily managed. I am anxious to try my skill. But how are we to reach the bottom of the sea?"

"At this moment the *Nautilus* is aground. We have not far to go."

"But how are we to get out?"

"You shall see."

Captain Nemo then put on his helmet. Conseil and I did likewise, not without hearing the Canadian's ironical wishes for "good sport."

The upper part of the vest was encircled by a copper collar with screws, to which the helmet was fastened. Three glazed apertures permitted us to see in all direc-

tions. So soon as we were ready, the Rouquayrol apparatus was placed upon our backs, and immediately began to act, so that I felt no inconvenience in breathing.

The Ruhmkorff lamp at my waist, and gun in hand, I declared myself ready to set out. But in those heavy garments and boots, I found it impossible to stir a step. This had been provided for, for I felt that I was carried into an adjoining chamber. My companions followed. I heard a door spring back, and darkness enveloped us. After some minutes, I heard a loud hissing noise—I am certain a sensation of cold rose from my feet to my chest. Evidently, the water had been admitted, and the chamber was filled. Then another door in the side of the *Nautilus* opened. A dim light was visible, and an instant afterwards, our feet touched the bottom of the sea.

And now, how can I recall the impressions which this expedition at the bottom of the sea has left upon me? Words are powerless to describe such marvels. Where the pencil cannot depict, how can the pen reproduce these wonders? Captain Nemo walked in front, his friend behind us, while Conseil and I remained together, as if any interchange of words were possible under the circumstances. I no longer felt the weight of my garments, or boots, or the reservoir of air; my head moved about in my helmet like a nut in its shell. All objects plunged into water lose a portion of their weight, equal to that of the water displaced, and I recognised that physical law discovered by Archimedes. I was no longer an inert mass, but had considerable freedom of movement. The light, which illuminated the ground thirty feet below the surface, surprised me by its power. The

solar rays easily penetrated this aqueous mass and dispersed its colouring. I could distinctly perceive objects 100 yards distant. Beyond, the depths toned down in fine gradations of ultramarine, then got bluer in the distance, and finally disappeared in a sort of undefined obscurity. The water around us was really but a kind of air, more dense than the terrestrial atmosphere, but almost as transparent. Above I could perceive the calm surface of the ocean.

We were walking upon a fine firm sand, not furrowed as that is upon which the waves leave their traces. This dazzling carpet, a true reflector, refracted the rays of the sun with surprising intensity. This is the cause of the tremendous reflection which penetrated all the liquid molecules. I should scarcely be credited, if I stated that, at this depth of thirty feet, I could see as plainly as in the daylight above—but it is a fact.

For a quarter of an hour we trod this glittering sand, composed of the impalpable dust of shells. The hull of the *Nautilus*, standing out like a rock, disappeared by degrees, but the light was burning to facilitate our return in the evening. It is difficult for those who have only seen the electric light on shore, to realise its vivid stream of brilliancy. There the dust which the air contains gives it the appearance of a luminous fog, while under the sea the light is transmitted with incomparable purity.

We kept going forward, and the plain of sand appeared boundless. I put by with my hands the liquid curtains which immediately closed behind me, while the pressure of the water obliterated our footsteps in the sand.

Some objects in the distance now attracted our attention. I recognised magnificent first formations of rocks covered with zoophytes of the most beautiful species, and I was struck with the peculiar effect of the sea at this depth.

It was ten o'clock. The sun's rays struck the water at a somewhat acute angle, and the light, decomposed by the contact as in a prism, flowers, rocks, plants, shells, polypes, were variegated with all the colours of the solar spectrum. It was wonderful, a perfect feast for the eyes. The mixture of colours and tones of colour formed a regular kaleidoscope of green, orange, yellow, violet, indigo, and blue ; in a word, all the colours of the palette of an artist gone mad. How I longed to exchange with Conseil the sensations and ideas which possessed me ! and I did not know even how to converse by signs as Captain Nemo and his companion did. So, as a last resource I talked to myself, and in so doing very likely used more air than was altogether desirable.

Conseil was equally delighted. He was evidently classing all these specimens of zoophytes and molluscs as hard as he could. Polypes and echinodermes abounded. The variegated "isis," the "cornulaires" which live by themselves, the clumps of virgin "ocularis" or white coral, the mushroom-like fungi, the anemones fixed by their muscular discs, formed quite a *parterre* of flowers, enamelled by the porpites dressed out in their necklaces of blue tentacles ; the starfish, which shone upon the sand, and the "asterophytions," like beautiful lace, worked by naiads, moved in gentle undulations as our footsteps pressed upon the sand. It was a real sorrow to me to crush beneath my feet such splendid

molluscs as lay around in thousands. But it was necessary to get along, and we went ahead, while above us the "physalides" waved their long tentacles over our heads; the umbrella-like medusæ with their opal and pink colouring surrounded by a scroll-work of azure, sheltered us from the sun's rays; and the palagia pano-pyres, which, in the obscurity, sprinkled our path with phosphorescent light.

All these wonders were observed within the space of a quarter of a mile, and I scarcely stopped to observe them. Following Captain Nemo, who beckoned us onward, we found the nature of the ground began to change. To the plain of sand succeeded the viscous deposit termed "ooze," composed entirely of siliceous or calcareous shells. We then passed through a prairie of algæ—plants which the water had not disturbed, and whose growth was of a fungous nature. These grassy plants were soft to the feet, and rivalled in the softness of their texture the finest carpets ever made. A light arch of marine plants, also belonging to this extensive family of algæ, of which there are more than 2,000 known species, crossed the surface of the ocean. I could see, floating in long bands of *fucus*, some globular, some tubular, *laurenciæ*, *cladostephi*, the "palm" *rhodymeniæ*, like the fans of the cactus. I also observed that the green plants kept near the surface, while the red varieties grew lower down, leaving to the black and brown hydrophytes the formation of the lowest gardens of the sea.

These algæ are really wonderful. This "family" produces the largest, and at the same time the smallest vegetation in the world. While one may count forty

thousand almost imperceptible plants in the space of a few square inches, one can collect *fucus* whose length exceeds many hundred feet.

We had been absent from the *Nautilus* about an hour and a half. It was nearly noon. I could see that the sun's rays were perpendicular, and did not refract. The magical appearance of the colours disappeared by degrees, and the shades of sapphire and emerald disappeared from our "sky." We proceeded at a steady pace, stepping together in a manner which resounded loudly from the ground. The slightest noises were transmitted with a clearness to which the ear on land is unaccustomed. Water is a much better conductor of sound than air, and the rapidity of the transmission of sounds is quadrupled in the former compound.

Now the ground descended steeply, and the light assumed a uniform tint. We had reached a depth of 100 yards, and under a pressure of ten atmospheres; but our divers' dresses were so constructed that we felt no inconvenience from the pressure. I only felt a little uncomfortable sensation in my fingers, which, however, quickly passed away. I felt no fatigue whatever, notwithstanding the unaccustomed "harness" I wore. My movements, assisted as they were by the water, were perfectly unconstrained.

At this depth of 300 feet I could still see the sun's rays, but feebly. To their intense brilliancy a crepuscular ruddiness had succeeded a sort of twilight. We could, however, see sufficiently well to proceed, and the Ruhmkorff was not required.

Captain Nemo stopped here. He waited till I had

rejoined him, and he then pointed to some mass, which formed a thick shade at a little distance.

“That is the Forest of Crespo,” I thought ; and I was not mistaken.

CHAPTER XVII.

A SUBMARINE FOREST.

WE had at length reached the borders of this forest, without doubt one of the most beautiful in the extensive domains of Captain Nemo. He looked upon them as his own, and arrogated to himself the same rights as the first inhabitants in the world's infancy. Moreover, who would dispute with him the possession of this submarine domain? What other and more hardy pioneer would have come, hatchet in hand, to cut down these dark coppices.

This forest was composed of immense arborescent plants; and as soon as we had entered it I was struck by the peculiar disposition of their branches, such as I had not ever before observed. None of the grasses which carpeted the earth, nor any of the branches of the plants were curved, or crept along the ground; they all grew perpendicularly upward towards the surface. Not a filament nor a reed, thin and delicate as they were, but stood up straight as a rod of iron. The *fucus* and the bind-weeds grew rigid

and perpendicular, sustained by the density of the element which gave them birth. So stiff were they that when put aside by the hand they sprang back into their former places. This was indeed a kingdom of uprightness !

I soon grew accustomed to this peculiarity, and also to the partial obscurity which surrounded us. The ground was encumbered with sharp blocks of stone, difficult to avoid. The submarine flora appeared to me to be as extensive, and even more rich, than under the tropical or arctic zones, where the productions are less numerous. But for some minutes I involuntarily confounded the zoophytes and hydrophytes, the animals and the plants.

And who would not have done so? so thickly are the flora and fauna of this submarine world interspersed. I observed that all these productions of the vegetable kingdom were only attached to the ground by a single superficial base. Deprived of roots, indifferent to a solid body, sand, shellfish, shells, or shingle, which supported them, they only asked a support, not life. These plants are born of themselves. The principle of their existence is the water, which nourishes and sustains them. The greater number of them, instead of leaves, possessed only capriciously-formed lamels, and very limited in their scales of colour, which only included rose-carmine, green, olive, fawn-colour, and brown.

I perceived here—but not dried, as on board the *Nautilus*—the “peacock-padines,” spread out in a fan-like form, as if to woo the breeze, and a number of other marine plants totally devoid of flowers. “A curious anomaly, a whimsical element,” as has been said by a

witty naturalist, "in which the animal kingdom flowers, and the vegetable kingdom does not flower at all."

Amongst the various shrubs, as large as in the trees of temperate zones, and under their damp shade, were massed, actual thickets of living flowers, hedges composed of zoophytes, upon which bloomed the striped and furrowed "encandrines," the yellow cariophylliæ, with their translucent tentacles, the gauzy tufts of "zoanthanes," and, to complete the illusion, the flying-fish darted between the branches like humming-birds, while the yellow lepisacanthi, with a bristling mouth and pointed scales, dactylopteri, and monocentrices rose under our feet like so many snipe.

In about an hour Captain Nemo signed to us to halt. I was not sorry for this, and we lay down under a canopy of alariæ, with long, arrow-like prongs.

The rest was most welcome to me. All we wanted was the charm of conversation. But it was impossible to speak. I put my great headpiece close to Conseil. I could perceive his eyes gleaming with happiness, and, as a token of his satisfaction, he moved himself in his heavy dress in a most comical manner.

After these four hours, I was astonished that I did not feel more hungry. Why I did not feel hungry, I do not know; but then, on the other hand, like all divers, I began to feel very sleepy. So my eyes soon closed behind the thick glass, and I fell into a deep sleep, which the action of walking had hitherto resisted. Captain Nemo and his robust companion, stretched in this liquid crystal medium, set us the example.

I do not know how long I slept, but when I woke, it appeared as if the sun were sinking towards the west.

Captain Nemo had already risen, and I was beginning to stretch my limbs, when an unexpected sight caused me to spring nimbly to my feet.

A few paces off there was an enormous sea-spider, about three feet high, regarding me with its cross-squinting eyes, and ready to attack me. Although the diver's dress was sufficient to protect me from the bite of the animal, I could not restrain a movement of horror. Conseil and the sailor of the *Nautilus* now awoke; Captain Nemo pointed to the creature, and the sailor killed it by repeated blows with the stock of his gun, while I saw the terrible limbs of the monster twisting and curving in the agonies of death.

This meeting made me think of other and more dangerous animals which inhabited these dark depths, and against whose attacks my dress would be no protection. Up to this time I had not thought about such things, and I determined to be on my guard. I supposed also that this halt was to indicate the turning point of our expedition, but I was mistaken, for Captain Nemo continued his daring excursion.

The ground still fell away, and led us into very great depths. It was nearly three o'clock when we reached a narrow valley, hollowed out between two perpendicular walls, and at a depth of 150 yards. Thanks to the perfection of our dresses, we had exceeded by ninety yards the limit that nature appears to have hitherto put to man's sub-aqueous excursions.

I say 150 yards, although I had no instrument to measure the distance. But I know that in the clearest seas the solar rays cannot penetrate farther. Now the obscurity had become profound. Nothing was visible at

a distance of ten paces. I was therefore obliged to grope my way, when I perceived a brilliant white light suddenly appear. Captain Nemo had put his electric apparatus into gear. His companion followed his example, and Conseil and I followed suit. I established the communication by turning a screw, and the sea, lit up by our four lamps, was illuminated to a distance of five-and-twenty yards.

Captain Nemo continued to plunge into the dark depths of the forest, in which the "copses" became fewer and fewer. I noticed that the vegetable disappeared more quickly than animal life. The aquatic plants had already quitted the inhospitable soil, while an immense number of animals, zoophytes, molluscs, fish, &c., were still visible.

All the time we were walking I thought that the lights we carried would probably attract some of the inhabitants of these gloomy depths. But if they did approach, they kept at a safe distance from our guns. Many times I saw the captain stop and bring up his gun, but after a pause he lowered it again and resumed his course.

At length, about four o'clock, the notable excursion reached its limit. A superb wall of rock, and of most imposing appearance, barred our passage. Enormous cliffs of granite, hollowed out into dark caves, presented no practicable breach. This was the shore of the island of Crespo—the earth itself.

Captain Nemo stopped at once. He signed to us to halt, and desirous as I was to cross the wall of rock, I was obliged to comply. Here Captain Nemo's territory ceased. He had no wish to go farther. Beyond that

lay the portion of the globe which he never wished to tread.

The return journey was commenced. Captain Nemo reassumed the lead, and proceeded without hesitation. We did not return by the same route as we had come. This new direction, very "stiff," and consequently very laborious, brought us rapidly to the surface of the ocean. Nevertheless, the ascent was not so steep as the descent had lately been, and which sudden changes lead to grave disorders, and are the cause of fatal internal injuries to divers. The light quickly reappeared and increased, the sun was already low in the sky, and the refraction again surrounded the various objects with a spectral halo.

At a depth of ten yards we met a crowd of little fishes of all kinds, more numerous and more active than birds in the air; but no aquatic "game" worthy of a bullet met our gaze. Just then I saw the captain shoulder his gun, and follow some moving object in the coppice. He fired; I heard a feeble hissing, and the animal fell dead a few paces off.

It was a magnificent sea-otter, the only exclusively marine animal. This was about four feet long, and would fetch a high price. Its skin, of a dark chestnut hue above, and silver below, would make one of those splendid furs so sought after in Russian and Chinese markets; the fineness and the lustre of the skin would make it worth 2,000 francs. I admired its rounded head, small ears, round eyes, its white "moustache," resembling that of a cat, its webbed feet, and tufted tail.

This valuable animal, hunted and trapped by fisher-

men, is becoming extremely rare, and it usually takes refuge in the southern portions of the Pacific, where, apparently, its species will soon become extinct. Captain Nemo's messmate shouldered the animal, and we resumed our route. For an hour the sand-plain extended round us. It ascended often to within six feet of the surface. I could at these times perceive our images clearly reflected upside down above us, and an identical party imitated all our gestures in every way like ourselves, except that their heads were at the surface, and their feet in the air. There was another effect to be noted. This was the passage of thick clouds, which formed and vanished rapidly; but, as I reflected, I understood that these supposed clouds were only due to the varying thickness of the long furrows at the bottom, and I could perceive even the fleecy masses which their broken crests multiplied upon the water. They were only the shadows of the great birds which flew over our heads, and whose rapid skimming over the surface I could not detect.

At this time I was witness to one of the most splendid shots that ever thrilled a sportsman with delight. A large bird, with immense spread of wing, was distinctly visible. Captain Nemo's friend levelled and fired, when it was only a few yards above the waves. The bird fell, and almost exactly at the feet of the keen shot, who secured it. It proved to be an albatross of the most beautiful species, a splendid specimen of sea-bird.

Our progress had not been interrupted by this incident. For two hours we followed, sometimes a sandy plain, sometimes a prairie of wrack, very difficult to cross. Frankly, I could not have accomplished much more,

when I distinguished a vague gleam, which broke the obscurity, about half-a-mile distant. It was the lantern of the *Nautilus*. In less than twenty minutes we should be on board, and there I should be able to breathe more at ease, for it appeared to me that the air supplied by my reservoir was deficient in oxygen. But I did not count upon an incident which delayed our arrival. I was about twenty paces behind the others, when Captain Nemo hurriedly returned towards me. He dragged me to the ground by main force, while his companion did the same to Conseil. I did not know what to make of this sudden attack, but was somewhat reassured to perceive that the captain lay down close beside me, and remained motionless.

I was stretched upon the ground, under the shade of a clump of sea-wrack, when, as I raised my head, I saw some enormous masses pass noiselessly by, emitting a phosphorescent gleam as they went.

My blood ran cold. I recognised the shark. They were two terrible specimens, with enormous tails, a dull and glassy stare, and they gave forth a phosphorescent matter from the holes pierced near the muzzles. Their enormous fiery mouths could engulf a man whole within those fearful teeth. I do not know whether Conseil amused himself in classifying them, but, for my own part, I regarded their shining bellies, and their formidable throats, bristling with teeth, in a very unscientific manner, and more from a victim's than from a naturalist's point of view.

Fortunately, these voracious animals cannot see very distinctly. They passed without noticing us, although they almost brushed us with their black fins, and we

escaped as by a miracle from this encounter, even more dangerous than an encounter with a tiger in a jungle.

Half-an-hour later, guided by the electric light, we reached the *Nautilus*. The outside door was still open, Captain Nemo closed it when we had entered. He then pressed a spring. I heard the pumps working, and felt the water subsiding around me. In a few moments the cell was quite emptied. Then the inner door was opened and we stepped into the "vestry."

There our divers' dresses were doffed, but not without difficulty ; and worn out, giddy from the want of food and rest, I regained my chamber, quite knocked up by this most extraordinary excursion to the bottom of the sea.

CHAPTER XVIII.

FOUR THOUSAND LEAGUES BENEATH THE PACIFIC.

I HAD quite recovered from my fatigue on the next day (18th Nov.), and, as usual, ascended to the platform, just as the mate of the *Nautilus* was giving his daily report. It occurred to me that this was to announce the appearance of the sea, or rather that it signified "no vessel in sight."

As a fact the ocean was perfectly clear. The Isle of Crespo had disappeared. There was not a sail to be seen. The sea, which absorbed all the prismatic colours, except the blue rays, reflected them in all directions, and bore a beautiful indigo tint. It appeared like a broadly-striped watered silk.

I was admiring its beauties when Captain Nemo appeared. He took no notice of my presence, and busied himself with astronomical observations. He then seated himself upon the lantern-cover, and gazed abstractedly at the ocean.

Meantime, twenty sailors, all strong and wiry fellows, had reached the platform. They came to draw the nets

they had "shot" during the night. The crew seemed to be of all nations, but the European types were predominant. I recognised, if I was not much mistaken, Irish, French, Slaves, a Greek, a Candian. They were chary of speech, and only conversed in that strange idiom, the origin of which I could not determine ; so I gave up my idea of questioning them.

The nets were hauled on board, and appeared to be like those in use on the Normandy coast ; vast pockets, kept open by a large piece of wood and a chain fixed in the lower meshes. These nets, dragged upon iron fittings, swept the bottom of the ocean, and picked up everything in their way. Upon that occasion they brought to light many curious specimens of fish ; lophies, whose comical movements reminded one of actors ; black commersons, balistæ, tetrodons, some lampreys, trichures, whose electric power is equal to that of the electric eel or torpedo, many varieties of gobies, and some extremely large fish ; a cavanx, with its very prominent head, about a yard long, some beautiful scombres, laced with blue and silver, and three splendid tunny-fish, whose rapid swimming could not save them from the net.

I estimated the take at about 1,000 lbs. of fish, which was a good but not a surprising quantity. These nets might be kept at the bottom of the sea for many hours, and would then enclose specimens of the whole marine world. It was evident there would be no stint of excellent food, and the rapidity of the *Nautilus*, and the attraction of its electric light, could always insure us a new supply at any time.

The various productions were immediately sent down

to the storé-rooms ; some for use while fresh, the other to be pickled.

Now that the fishing was over and the supply of air renewed, I thought that the *Nautilus* would resume her submarine voyage, and I was preparing to go below when Captain Nemo addressed me suddenly as follows :

“Is not that ocean endowed with real life? Has it not its angry and its tender moments? Yesterday it slept like ourselves, and now it is awake after a peaceful night.”

No salutation had passed between us. Would not one have thought that this strange captain was only continuing a conversation.

“Do you see,” he continued, “it has awakened under the sun’s caresses. It will live anew its daily life. It is an interesting study to follow the play of its organism. It has a pulse, arteries, it has its spasms too, and I agree with Maury, who has discovered in it a circulation, as real as the circulation of the blood in animals.”

It is certain that Captain Nemo expected no reply from me, and it appeared useless to throw in the “evidentlys,” “certainlys,” and “quite rights.” He seemed to be talking rather to himself than to me, and paused between each sentence. He was thinking aloud!

“Yes,” he continued, “the ocean possesses a real circulation, and to excite it, it is only necessary that the Creator should increase its temperature, the salt, and the animalcules. Heat causes different densities, which bring about currents and counter-currents. Evaporation, which is *nil* in extremely cold latitudes, is very

active in tropical zones, and constitutes a regular change between the tropical and polar waters. Further, I have detected currents from beneath the sea to the surface, and *vice versa*, which constitute the true breathings of the ocean. I have seen the molecule of sea-water warmed at the surface, redescend towards the depths, attain its maximum of density at 2° below zero, and then freezing once more become lighter, and mount upwards again. At the poles, you will perceive the consequences of this phenomenon, and you can understand why, by this law of all-provident nature, congelation can only be produced at the surface of water."

While Captain Nemo was speaking, I was thinking.

"The pole! is it possible that he intends to visit such latitudes!"

The captain was again silently regarding the element he had so completely studied, and yet was incessantly studying. He resumed.

"Salts," he said, "are in the sea in large quantities, and if you could take all that it holds in solution, you would form a mass of 4,500,000 cubic leagues, which, spread out upon the globe, would reach to a height of more than ten yards. Do not imagine, either, that the presence of these salts is only due to nature's caprice. Not at all. They make the water less liable to evaporate, and prevent the winds from raising too much vapour, which, in again resolving, would drown the temperate zones. There is a great part played by the sea, it possesses great weight in the interior economy of the globe!"

Captain Nemo stopped speaking, took a few

turns up and down, and again approaching me, said :—

“As regards the *infusoria*, the milliards of animalcules which exist by millions in every drop of water, and of which 800 weigh about the thousandth part of a grain, their part is not less important. They absorb the marine salts, they assimilate the more solid elements of the water, and the true constructors of calcareous lands, they make the corals and the madrepores. And then the drop of water deprived of its mineral nourishment gets lighter and ascends to the surface. It there absorbs the salts set free by evaporation, which makes it heavier and it descends, and carries new elements of absorption to the animalcules below. So there is a double current, ascending and descending, ever moving, ever living. A life more exuberant, more infinite, and more intense than that of earth, spreading out in every part of the ocean, the element of death to mankind, an element of life to myriads of other animals, and to me.”

While Captain Nemo thus spoke his whole countenance was lighted up, and he produced an extraordinary impression upon me.

“Besides,” he added, this is life indeed. “And I can imagine the establishment of nautical towns and groups of submarine houses, which, like the *Nautilus*, might come up every morning to the surface to breathe. Free towns, so to speak, independent cities ! And yet, who knows but some despot——”

Captain Nemo accompanied this speech with a violent gesture. Then addressing himself directly to me, like one who would get rid of an uncomfortable thought—

“Monsieur Aronnax,” he said, “do you know the depth of the ocean?”

“I, at least, know the principal soundings that have been obtained,” I replied.

“Can you quote them so that I may correct them if necessary?”

“These are some,” I replied, “that I can remember. If I mistake not, an average depth of 8,200 yards in the North Atlantic, and 2,500 yards in the Mediterranean. The most remarkable soundings have been made in the South Atlantic, near the 35th degree, which have given 12,000 yards, 14,091 yards, and 15,149 yards. To sum up, it has been estimated that if the bottom of the sea were levelled it would give a depth of about five miles and a-half.”

“Very good, professor,” said Captain Nemo; “but we will show you something better than that, I hope. I may tell you that the average depth of this part of the Pacific is but 4,000 yards.”

As he spoke, Captain Nemo advanced to the panel and descended, and I regained the saloon. The screw was set in motion, and we proceeded at twenty miles an hour.

During the days and weeks that passed I saw very little of Captain Nemo. The mate made the direction regularly, which I found entered on the map, so that I could always tell the route of the *Nautilus*.

Conseil and Land passed the days with me. The former had related the marvellous incidents of our expedition, and the Canadian regretted that he had not accompanied me. But I hoped that another occasion might arise to visit the sub-oceanic forests.

Each day, for some hours, the panels of the saloon were drawn back, and our eyes were by no means fatigued.

The *Nautilus* was kept in a south-easterly course, and at about 150 yards below the surface. One day, however, for some reason, she descended diagonally by means of the inclined planes, to a depth of 2,000 feet. The thermometer indicated 4.25 centigrade, a temperature that at this depth appears to be common to all latitudes.

On the 26th November, at 3 A.M., the *Nautilus* crossed the tropic of Cancer at 172° longitude. On the 27th we passed the Sandwich Islands, where the illustrious Captain Cook met his death, on the 14th February, 1779. We had then made 4,860 leagues from our starting-point. In the morning, when I came up on the platform, I perceived, about two miles to windward, the island of Hawaii, the largest of the seven composing the group. I could distinctly perceive its cultivated borders, the chains of mountains parallel to the coast, and the volcanoes, of which Mouna Rea is the highest, rising 15,000 feet above the level of the sea. Amongst other souvenirs of these regions, the nets pulled in some polyps peculiar to this part of the ocean.

The *Nautilus* still ran south-east. We passed the equator on the 1st December, in 142° longitude, and on the fourth of the same month, after a rapid passage, but devoid of incident, we reached the Marquesas Isles. I perceived three miles away, in $8^{\circ} 57'$ south latitude, and $139^{\circ} 32'$ longitude, Point Martin, in Nouka-Hiva, the principal of the group which belongs to France. I could only distinguish the wooded hills, for Captain Nemo did

not like to hug the shore. Here the nets secured some splendid fish, the choryphenes, with blue flesh and golden tail, the flesh being unrivalled; hologymnoses, nearly scaleless, but of exquisite flavour; ostorhinques, with bony jaws; and the yellow thasards, which are equal to the bonita. All these fish were worthy of being "classed" in the kitchen.

Quitting these beautiful islands in the interval between the 4th and 11th December, the *Nautilus* ran about 2,000 miles. This part of the voyage was marked by one meeting with an immense shoal of calmars, a curious mollusc, very like the cuttle-fish. The French fishermen call them "horned" calmars, and they belong to the class of cephalopodes and the family of di-branchia, which includes likewise the cuttle and the argonaut. These animals were studied particularly by the naturalists of old, and furnished numerous metaphors to the orators, at the same time that they supplied an excellent dish to wealthy citizens—that is, if we may believe Athene, a Greek doctor, who lived before Galen.

It was during the night, 9-10th December, that the *Nautilus* encountered this army of nocturnal molluscs. They could be reckoned by millions. They emigrate from the temperate to the warmer zones, and follow the same mode of travelling as the herring and the sardine. We watched them through the thick crystal plates, swimming backwards with extreme rapidity, moving by means of their tubular locomotive power, and pursued by fish and molluscs, eating the smaller ones and being eaten by the larger, and moving to and fro in indescribable confusion the ten legs that nature had fixed upon their heads like a

wreath of pneumatic serpents. The *Nautilus*, notwithstanding her speed, kept meeting these animals for many consecutive hours, and the nets brought in an innumerable quantity — when I recognised the nine species that d'Orbigny has classed for the Pacific Ocean.

During this voyage the sea displayed her marvels with a prodigal hand, and with an infinite variety. She changed her decorations and *mise en scène* at our will apparently, and we were permitted to observe, not only the works of the Creator in mid-ocean, but even to penetrate the most hidden mysteries of the sea.

During the 11th December I was engaged reading in the saloon. Ned and Conseil were watching the glittering waters through the panels. The *Nautilus* was at rest. Her reservoirs were full, and she lay at a depth of 1,000 yards, a somewhat uninhabited level, in which large fish were very seldom seen.

I was reading a very interesting book by Jean Macé, entitled "Les Serviteurs de l'Estomac," and I was relishing its ingenious teaching when Conseil interrupted my reading.

"Will Monsieur come here for a moment?" he said in a peculiar tone.

"What is it, Conseil?"

"Monsieur will see."

I got up, sat before the sheet of glass, and looked out.

In full glare of the electric light was an immense black mass, suspended in mid sea. I looked at it attentively, seeking to recognise the nature of such an

enormous cetacean. Suddenly a thought flashed into my mind.

“It is a ship!” I cried.

“Yes,” replied the Canadian, “an abandoned vessel which has sunk.”

He was right. It was a ship before us, the shrouds cut and hanging down as they had fallen. The hull appeared to be in good condition, and yet her wreck was not of yesterday. Three stumps, broken about two feet above the deck, indicated that her masts and rigging had been cut away. But she lay, full of water, heeling over to port. A sad spectacle, indeed, was this noble vessel beneath the waves; but a far sadder sight were the dead bodies, still held by the cords lying as they had been entangled. I counted four—four men, of whom one was still at the tiller—then a young woman, half hanging from the sky-light in the poop, holding a child in her arms. I could plainly see, by the light of the *Nautilus*, the features not already decomposed. In the supreme moment she had held the infant above her head, who—poor little thing!—was clasping its mother’s neck with its tiny arms. The attitude of the four sailors appeared terrible to me—tortured in their convulsive efforts to release themselves from the cordage that bound them helpless. Alone, more calm, with a quiet, grave face, his grey hair pressed down over his forehead, and with one shrivelled hand still grasping the tiller, the steersman appeared to be still guiding his shipwrecked vessel amidst the depths of the ocean.

What a spectacle! We sat dumb with beating hearts before this shipwreck, taken in the fact, as it were, and photographed at the last moment. And I could see

already advancing, with fiery eyes, the enormous sharks attracted by this bait of human flesh.

But the *Nautilus* moved, and as we turned round the stern of the wreck, I read the name, "Florida, Sunderland."

CHAPTER XIX.

VANIKORO.

THAT terrible sight inaugurated the series of maritime catastrophes which the *Nautilus* encountered. Since we had been passing through more frequented seas we often noticed shipwrecked vessels decaying in mid-sea depths, and, deeper down, the cannons, anchors, chains, cannon-balls, and a number of other things that were being devoured by rust.

Still going forward in this *Nautilus*, in which we existed like an isolated set of beings, as we were, we entered the archipelago of Pomotou on the 11th December. This was the group of "dangerous isles" in ages past, and extend across a space of five hundred leagues from E.S.E. to W.N.W., between $13^{\circ} 30'$ and $23^{\circ} 50'$ S. lat., and $125^{\circ} 30'$ and $151^{\circ} 30'$ W. long., from the Isle Ducie to the Isle Lazareff. This archipelago covers an area of 370 square leagues, and is composed of sixty groups of islands, amongst which is the Gambier group under French protection. These isles are coralligenous. A very gentle but surely building-up process by

the polypes will some day form a communication between them. Then the new island will (later on) become united to neighbouring islands, and a fifth continent will extend from New Zealand and New Caledonia to the Marquesas.

When I suggested this to Captain Nemo, he coldly replied :

“It is not new continents that are required, but new inhabitants of the old ones.”

The chances of navigation had conducted the *Nautilus* towards the island of Clermont-Tonnerre, one of the most curious of the group which was discovered in 1822 by Captain Bell of the *Minerva*. I was thus able to study the system by which islands are formed in this ocean by madrepores.

The madrepores, which must not be confounded with the coral, have a tissue enclosed in a calcareous crust, and the modifications of the structure have enabled Mr. Milne-Edwards, my illustrious master, to class them in five sections. The tiny animalcules which secrete this polypary live in thousands of millions at the bottom of the little cells. These are the calcareous depôts which become rocks, reefs, islets, islands. Here they form a ring, enclosing a lagoon or interior lake, in which an opening permits communication with the sea. There they construct reefy barriers like those which exist on the coasts of New Caledonia and the various islands of Pomotou. In other places, like Reunion and Maurice, they build fringed reefs, high upright walls, alongside which the sea is extremely deep.

At a few cables' lengths from the shore of the island of Clermont-Tonnerre I inspected the work done by

those microscopic workers. These walls were exclusively the work of madrepores known as "millepores," "porites," "astrea," and "meandrines." These polypes are chiefly developed at the moving and higher beds of the ocean, and consequently it is their upper parts which commence these works, and which are buried by degrees with the *débris* of the secretions which support them. This, at least, is the theory of Mr. Darwin, who thus explains the theory of "atolls." A better theory, as I think, is that the madrepores have as a basis the summits of mountains or volcanoes upon which to work, and which are at some distance below the surface.

I was enabled to observe these curious walls very closely, for in perpendicular depth the soundings gave more than 300 yards, and our electric light made these brilliant calcareous masses gleam again.

Replying to a question of Conseil's, respecting the time these barriers had taken to construct, I astonished him somewhat by telling him that savants estimated the progress at the eighth of an inch in a hundred years.

"Then to build up these walls," he said, "it must have taken——"

"One hundred and ninety-two thousand years, my brave friend, which lengthens the Biblical days. Moreover, the formation of the pit-coal—that is to say, the mineralisation of the forests buried by the deluge—has required a much longer time. But I may add that the Biblical days are not the epochs, and not the interval of time between sunrise and sunrise; for, according to the Bible itself, the sun was not made upon the first day of the creation.

While the *Nautilus* remained at the surface of the

sea, I was able to inspect, in all its development, this small and wooded island of Clermont-Tonnerre. Its madreporical rocks were evidently fertilised by water-spouts and tempests. One day some corn, carried by a hurricane from neighbouring islands, fell upon its calcareous formation, mixed with the detritus which forms the vegetable mould, and which is made of decomposed fish and marine plants. A cocoa-nut, impelled by the waves, reaches this new coast. The germ takes root, the tree grows, absorbs the watery vapour. The stream is born, vegetation increases apace. Animalcules, worms, insects, arrive upon these island beginnings. Turtles come and lay their eggs there. The birds build their nests in the young trees. In this way animal life is developed, and attracted by the verdure and fertility, man appears. Thus these islands are formed, the vast works of microscopic animals.

Towards evening Clermont-Tonnerre disappeared in the distance, and the course of the *Nautilus* was sensibly diverted. After touching the Tropic of Capricorn at the 130° degree of longitude, she turned to the W.N.W., ascending towards the intertropical zone. Although the summer sun was extremely powerful, we did not suffer from the heat, for at thirty or forty yards below the surface the temperature did not increase more than ten or twelve degrees.

On the 15th December we passed the Society Isles and Tahiti, the queen of the Pacific. In the morning I perceived the elevated summits of the mountains of that island. Its waters supplied us with some excellent fish—mackerel, bonita, albicoras, and a variety of sea-serpent, called “muneoplics.” The *Nautilus* had ac-

completed 8,100 miles : 9,720 miles were recorded on the log when we passed the archipelago of Tonga-Tabou, where the *Argo*, the *Port au Prince*, and the *Duke of Portland* were lost ; and the Navigator Isles, where Captain Langle, the friend of La Perouse, was killed. Then we came to the Fiji Islands, where the savages murdered the sailors of the ship *Union*, and Captain Bureau, of Nantes, of the *Aimable Josephine*. This archipelago extends 100 leagues to the north and south, and 90 leagues from east to west, and is comprised between 6° and 2° S. lat., and 174° and 179° W. long. It is composed of islands, islets, and rocks, amongst which are the islands of Viti-Levou, Vanona-Levou, and Kandubon.

Tasman discovered this group in 1643, the same year that Toricelli invented the barometer, and in which Louis XIV. ascended the throne. I leave my readers to reflect which of these facts has proved most useful to mankind.

After Tasman, Cook, in 1714, Entrecasteaux, in 1793, and, finally, Dumont d'Urville, in 1827, came to clear up the obscurity of these regions. The *Nautilus* now approached the Bay of Wailea, the scene of the terrible adventures of Captain Dillon, who was the first to clear up the mystery connected with the shipwreck of La Perouse.

This bay, dredged many times, furnished us with abundance of oysters. We ate quantities of them, opening them at our own table, as recommended by Seneca. These belonged to the species known as the *ostre lamellosa*, which is very common in Corsica. That the bank of Wailea will become of great extent, is certain ; and if destructive agencies be not increased, the quantities

of oysters will soon fill up the bay, as we counted 2,000,000 of eggs in a single oyster. And if Master Ned Land did not repent of his gluttony in this respect, it was because the oyster is the only thing that does not cause indigestion. In fact it would necessitate the consumption of sixteen dozen oysters to furnish the 315 grammes of azote substance necessary to nourish one man. On the 25th December the *Nautilus* sailed into the midst of the group of the New Hebrides, discovered by Quiros, in 1606, which Bongainville explored in 1768, and to which Captain Cook gave its name in 1773. This group is composed principally of nine large islands, and forms a band of 120 leagues from N.N.W. to S.S.E., included between 15° and 2° S. lat., and 164° and 168° long. We also passed close to the island of Auron, which at midday appeared to be a mass of green woods, commanded by a mountain of immense height.

This was Christmas Day, and Ned Land appeared to regret keenly the usual celebration of the day—the family gathering in which some people are so fanatical.

I had not seen Captain Nemo for eight days, when, on the 27th, very early in the morning, he entered the saloon, having as usual the air of a man who had left you but five minutes before. I was engaged in tracing our course upon the map. The captain approached, placed his finger upon a spot in the map, and uttered the single word, “Vanikoro!”

The word was magical. It was the name of the island where the ships of La Perouse were lost. I rose up suddenly.

“Is the *Nautilus* carrying us to Vanikoro?” I said.

“Yes,” replied the captain.

“And can I explore those islands upon which the *Boussole* and the *Astrolabe* were lost?”

“If you wish to do so,” was the reply.

“When shall we reach Vanikoro?”

“We are there now, professor.”

Following the captain, I ascended to the platform, and eagerly scanned the horizon.

In the north-west, two volcanic islands of unequal size showed themselves; they were surrounded by a coral reef of forty miles in circumference. We were close to the island of Vanikoro, properly so called, which Dumont d'Urville designated the “Isle of Research,” and immediately opposite the small harbour of Vanou in $16^{\circ} 4' S.$ lat., $164^{\circ} 32' E.$ long. The island appeared covered with verdure from shore to summit, and was dominated by Mount Kapogo, 2,856 feet high.

The *Nautilus*, having cleared the outward rocks through a narrow passage, was safely within the line of breakers in a depth of thirty to forty fathoms. Beneath the mangroves I distinguished some savages, who appeared much astonished at our appearance. In the long black mass moving along the surface of the water, they probably only recognised some formidable cetacean, which they were bound to challenge.

Captain Nemo now asked me what I knew of the shipwreck of La Perouse.

“What everyone else does,” I replied.

“And can you tell me what everyone else knows about it?” he asked, with a touch of irony.

“Very easily.”

And I then recounted to him what the last works of

Dumont d'Urville had made known, of which the following is a very succinct account.

La Perouse, and his mate, de Langle, were despatched by Louis XVI., in the year 1785, to circumnavigate the world. They embarked in the *Boussole* and *Astrolabe*, which never again returned.

In 1791, the French Government, naturally uneasy respecting the fate of these vessels, fitted out two large store-ships, the *Recherche* and *Espérance*, which left Brest on the 28th September, commanded by Bruni d'Entrecasteaux. Two months after it became known by the deposition of a certain Captain Bowen, of the *Albemarle*, that the remains of some wrecked vessels had been seen upon the coast of New Georgia. But Entrecasteaux, ignorant of this, and equally uncertain, moreover, sailed towards the Admiralty Isles, described in the report of a Captain Hunter, as being the scene of the shipwreck of La Perouse.

Entrecasteaux's search was fruitless. The *Espérance* and the *Recherche* even passed Vanikoro without stopping, and the voyage altogether was most disastrous, as it cost the lives of Entrecasteaux, two of his lieutenants, and many of his crew.

An old hand, one Captain Dillon, was the first to discover some traces of the shipwrecks. On the 15th of May, 1824, his vessel, the *Saint Patrick*, passed close to the island of Tikopia, one of the New Hebrides. There a Lascar, who sold him the silver hilt of a sword, stated that six years previously, during his stay at Vanikoro, he had seen two Europeans who had belonged to the ships wrecked many years before upon the reefs of that island. Dillon suspected that the man was referring to

the ships of La Perouse, whose disappearance had interested the entire civilised world. He wished to reach Vanikoro, where, according to the Lascar, he would find many traces of the wrecked vessels ; but the winds and opposing elements prevented him.

Dillon returned to Calcutta. There he made known his discovery to the Asiatic Society and to the East India Company. A vessel, to which they gave the name of the *Research*, was placed at his disposal, and he sailed on the 23rd of January, 1827, accompanied by a French agent.

The *Research*, having touched at several ports in the Pacific, anchored before Vanikoro on the 7th of July, 1827, in the same harbour of Vanou in which the *Nautilus* is now lying.

There they picked up many relics of the wrecks : iron utensils, anchors, block-strops, swivel-guns and shot, astronomical instruments, a part of the taffrail, and a bronze timepiece, with the inscription, *Bazin m'a fait* marked by the manufactory at Brest, 1785. Doubt was no longer possible.

Dillon remained at the ill-fated spot to complete his arrangements. In October he quitted Vanikoro, and sailing towards New Zealand, reached Calcutta on 7th April, 1828. He then proceeded to France, where he was kindly received by Charles X. But meantime Dumont d'Urville, ignorant of what Dillon had accomplished, had sailed to discover the scene of the shipwreck. He had learnt from a whaler that a medal and cross of St. Louis had been seen in the hands of savages in New Caledonia.

D'Urville then put to sea, and, two months after

Dillon had quitted Vanikoro, he anchored before Hobart Town. There he heard of Dillon's success, and further he learned that a certain James Hobbs, mate of the *Union*, of Calcutta, had landed on an island situated in $8^{\circ} 18'$ south lat., and $156^{\circ} 30'$ east long., and had remarked the iron bars and the red stuffs which were in use by the aborigines.

Dumont d'Urville was much perplexed, and did not know whether he could believe these reports, so he finally decided to follow Dillon's tracks.

On the 10th February, 1828, the *Astrolabe* appeared before Tikopia, and, taking on board as guide a deserter who had taken up his abode in the island, he made Vanikoro on the 12th February, and anchored in the harbour of Vanou.

On the 23rd, many of the officers explored the island and brought back a few unimportant relics. The natives, by denials and evasions, refused to lend them assistance in discovering the locality of the disaster. This suspicious conduct gave the French reason to believe that the natives had maltreated the shipwrecked crews, and, in fact, they appeared to be fearful that d'Urville would avenge La Perouse and his unfortunate companions.

However, on the 26th, by presents, &c., the natives were induced to believe that there was nothing to fear, and they conducted the mate, M. Jacquinet, to the scene of the wreck.

There, in three or four fathoms of water, between the Pacon and Vanou reefs, lay anchors, cannon, pig-iron, and lead, embedded in the calcareous secretions. The long boat and the whaler of the *Astrolabe* were sent to the spot, and after much labour they returned with an

anchor, a cannon, some pig-lead, and two brass swivel-guns.

Dumont d'Urville, by interrogating the natives, also discovered that La Perouse, after having lost his ships, had constructed a smaller vessel, in which he was again lost—where they did not know.

The commander then caused a cenotaph to be erected to the memory of the bold navigator and his companions. It was a simple quadrangular pyramid erected on a basis of coral, and in which was no ornamentation likely to excite the cupidity of the natives.

D'Urville then wished to return home, but fever and malaria had attacked his crews, and even he himself was very ill. He was not able to get away before the 17th March.

Meantime, the French Government, fearing that Dumont d'Urville had not followed Dillon's route correctly, sent the corvette *Bayonnaise*, commanded by Legoarant de Tromelin, which was stationed on the west coast of America. The *Bayonnaise* arrived at Vanikoro some months after the departure of the *Astrolabe*, and did not find anything further, but took note that the mausoleum had been respected by the natives.

That is the substance of the narrative I told Captain Nemo.

“So,” said he, “nobody knows yet what became of the third ship, constructed by the shipwrecked sailors on the island of Vanikoro.”

“No one.”

Captain Nemo made no reply, but signed to me to follow him into the saloon. The *Nautilus* was then at

some distance below the surface, and the panels were opened.

I hurried to the glass, and beneath the workings of the coral, clothed with fungi, and amid hundreds of beautiful fish, I recognised certain *débris* which the drags had not been able to recover, such as iron "stirrups," anchors, cannon-balls, cannon, capstan and bars, the stern of a vessel, all belonging to the shipwrecked vessels, and now strewn upon that living floor.

While I was looking at these desolate waifs and strays, Captain Nemo said gravely :

"The commander, La Perouse, left on the 7th December, 1785, with the *Bussole* and the *Astrolabe*. He touched first at Botany Bay, visited the Friendly Isles, New Caledonia, sailed thence towards Vera-Cruz, put into Namonka, one of the Hapa group. His ships then arrived at the unknown Vanikoro reefs. The *Bussole*, which was in advance, struck them on the south side ; the *Astrolabe* went to her assistance, and shared her fate. The former vessel was soon entirely knocked to pieces, but the latter, being to leeward, lasted some days. The natives treated the crews kindly. They lodged them on the island, and there they built a smaller vessel from the timbers of the ships. Some sailors elected to remain at Vanikoro. The rest, weak and ill, accompanied La Perouse. He made for the Solomon Isles, and there the adventurers all perished upon the western side of the principal island, between capes Deception and Satisfaction."

"And how do you know all this ?" I exclaimed.

"See what I found at the scene of the last shipwreck."

Captain Nemo then showed me a tin box stamped

with the French arms, but much corroded by the salt water. I opened it, and within I found a bundle of yellow, but still readable, papers.

They were the actual instructions issued by the Minister of Marine to La Pérouse, and were annotated in the margin by Louis XVI. himself.

“Ah ! it was a fine death for a sailor,” said Captain Nemo. “The coral is a peaceful resting-place, and constitutes the only heaven for me and my companions.”

CHAPTER XX.

TORRES STRAIT.

DURING the night of the 27th December the *Nautilus* quitted Vanikoro, and resumed her voyage at a great speed. We sailed S.E., and in three days had cleared the 750 leagues which divide the Isles of La Pérouse from the S.E. point of Papua.

Very early in the morning of the 1st January, 1863, Conseil joined me on the platform.

“Monsieur,” said he, “Monsieur, will allow me to wish him a happy new year.”

“What, Conseil! Just as if I were in my study at the Jardin des Plantes at Paris? I accept your good wishes, and thank you heartily. But I would ask you what you mean by the happy new year under present circumstances? Will the year put an end to our imprisonment, or see the end of this strange voyage?”

“Faith,” replied Conseil, “I do not know what to say to Monsieur. It is certain that we have seen some curious things, and for two months have not found our

sojourn tiresome. The last marvel is always the greatest, and if we go on at this rate I do not know what we shall eventually arrive at. My opinion is that we shall never have such another experience."

"Never, Conseil."

"Besides this Captain Nemo, who fully justifies his Latin name, as he is not any more trouble than if he never existed."

"Just so, Conseil."

"I think, therefore, if Monsieur has no objection, that a happy new year will be one which may permit us to see everything——"

"To see everything! Why, that will take a very long time. What does Ned Land say?"

"Ned Land is of the exactly opposite opinion," replied Conseil. "He has certainly an obstinate brain and a powerful appetite. Look at the fish he is always eating, and is never satisfied. The want of wine, bread, and meat does not agree with a worthy Saxon, to whom beef-steaks are familiar, and who is not alarmed at brandy and gin."

"So far as I am concerned, Conseil, that is not the point that troubles me. I can get on very well with the supplies on board."

"So can I," replied Conseil. "So I think as much about stopping here as Master Land does of escaping. Therefore, if the new year is not good for me, it may be so for him, and *vice versa*. In this way somebody is sure to be satisfied. So, in conclusion, I wish Monsieur whatever pleases him best."

"Thank you, Conseil; but I must ask you to remit, for the present, the question of New Year's gifts; and,

meantime, accept a shake of the hand ; I have nothing else to offer."

"Monsieur has never been so generous," said Conseil. And the brave lad descended.

On the 2nd January we had made 11,340 miles, or 5,250 leagues from our starting-point in the Japanese seas. In front now extended the dangerous coral-reefs of the north-east coast of Australia. We skirted this wonderful bank (on which Cook's vessels were lost in 1770) for a distance of many miles. The ship which carried Cook ran upon a rock, and that it did not sink was owing to the fact that a piece of coral, detached by the blow, remained fast in the hole it had made in the ship's hull.

I wished very much to visit this reef, which is 360 leagues in length, and against which the sea, always rough, breaks with a roar like thunder. But at this moment the inclined planes of the *Nautilus* directed us to a very great depth, and I could see nothing of these high walls of coral. So I was obliged to content myself with various specimens of fish, brought up in the nets. I remarked, amongst others, the germons, a sort of large scombres, as large as tunny-fish, with bluish sides, and striped transversely. These stripes faded at the death of the animal. These fish accompanied us by hundreds, and furnished us with excellent dishes. We caught, also, a large number of sparus vertor, tasting like a John Dory, and the flying pyrapeds, true sea-swallows, which, in dark nights, illuminate the air and water alternately with their phosphorescent glimmerings. Amongst the molluscs and the zoophytes I found in the meshes of the

nets, were various species of alcyoniæ, sea-hedgehogs, "cadrans," "hammers," acrites, and hyattæ.

The flora were represented by beautiful floating algæ laminariæ and macrocystes impregnated with the mucilage which exuded from their pores, and amongst them I found a splendid *Nemastoma Gelinarioide*, which was placed amongst the natural curiosities in the museum.

Two days after crossing the coral sea, on the 4th of January, we made the Papuan coast. The captain then informed me of his intention to gain the Indian Ocean by Torres Strait. His communication was limited there. Ned hailed with delight the prospect of approaching European waters. Torres Strait is no less dangerous by reason of the rocks with which it abounds, than on account of the savage races on its coasts. It separates New Holland from the large island of New Guinea, or Papua.

New Guinea is 400 leagues in length, and 130 in breadth, and has a superficies of 40,000 geographical miles. It is situated between $0^{\circ} 19'$ and $10^{\circ} 2'$ S. lat., and $128^{\circ} 83'$ and $146^{\circ} 15'$ long. At mid-day, while the mate was taking an observation, I discerned the summits of Mount Arpalx rising into sharp peaks.

This land, discovered in 1511 by the Portuguese Serrano, was visited successively by Don José de Menesis in 1526 ; by Grijalva, in 1527 ; by the Spanish general, Alvar de Saavedra, 1528 ; by Juigo Ortez, in 1545 ; by Shonten, in 1616 ; by Nicholas Srinck, in 1753 ; by Tasman, Dampier, Furnel, Carteret, Edwards, Bougainville, Cook, Forrest, MacCluer, and Entrecasteaux, in 1792 ; by Dupeney, in 1823 ; and by Dumont d'Urville,

in 1827. "It is the worst passage of all in the Malayan Archipelago," as M. de Runzi has said, and I had little doubt that this hazardous bit of navigation would bring us to the celebrated Andaman Islands.

The *Nautilus* was then at the entrance of the most dangerous strait in the globe, and one which the hardiest sailors scarcely dare to traverse, and which Louis Paz de Torres braved in returning from the south into the Malaynesia, and in which the ships of Dumont d'Urville were nearly lost. The *Nautilus* itself, superior to all the perils of the sea, was nevertheless obliged to exercise great caution amongst those coral reefs.

Torres Strait is about thirty-four leagues wide, but it is obstructed by innumerable islands, and islets, shoals, rocks, &c., which render navigation almost impracticable. Consequently Captain Nemo took all necessary precautions. The *Nautilus*, floating at the surface, proceeded at a moderate pace. The screw beat the water slowly, like the tail of a cetacean.

Profiting by these circumstances, my two companions and I took up our position on the platform. Before us rose the steersman's cage, and I believe Captain Nemo was also there directing the *Nautilus* himself.

I had the excellent maps of Torres Straits designed and drawn up by the hydrographical engineers, Vincendon Dumoulin and Lieutenant Coupvent Desbois, who is now an admiral, who formed part of the staff of Dumont d'Urville during his last voyage of circumnavigation. These are, with those of Captain King, the best maps, and which unravel the intricacies of this narrow passage; therefore I studied them attentively.

The sea broke furiously around the *Nautilus*. The

current ran from south-east to north-east, -at a rate of two and a half miles an hour, and broke in foam against the coral-reefs, which rose at frequent intervals.

“That is a nasty sea,” I said to Ned Land.

“This lunatic captain of ours must be very sure of his course,” replied the Canadian, “for I can see some reefs there which would splinter this vessel if she touched them.”

The situation was really perilous, but the *Nautilus* appeared to glide magically between these foaming rocks. She did not follow the route of the *Astrolabe* and the *Zelée*, which was fatal to Dumont d’Urville, but took a more northerly course, coasting Murray Island and turning to the south-east, towards Cumberland Passage. I really did think we should be wrecked when, bearing to the north-west, we passed amid a quantity of unknown islets towards the island of Tounel and the Dangerous Passage.

I was already reflecting whether Captain Nemo, imprudent even to foolhardiness, wished to bring his ship into this passage where the corvettes of Dumont d’Urville had been lost, when, changing his course a second time and bearing westward, he made for the island of Gueberoar.

It was then 3 P.M. The waves raged. It was almost high water. The *Nautilus* approached the island, which I could see scarcely two miles distant. Suddenly a shock threw me down. The *Nautilus* had struck upon a rock, and remained immovable, with a gentle “list” to port.

When I got up again I noticed Captain Nemo and the mate on the platform. He was examining the

situation of the vessel, and they exchanged a few words in their extraordinary dialect.

We were about three miles to windward of the island of Gueberoar, whose shore trended from north to west like an immense arm. Towards the south and east some coral-reefs were already being uncovered by the ebb tide. We were, in truth, stranded; and in a sea where the tides are never high—an unfortunate circumstance with reference to the refloating of the *Nautilus*. However, the vessel had not suffered at all, as the hull was so solidly built. But if it could neither float nor be opened there was a great chance that we should be stuck here for ever, and then there would be an end of Captain Nemo's submarine vessel. I was thinking of all this when the captain, calm and cool as ever, neither appearing to be excited nor depressed, approached.

“An accident has happened?” I said.

“No, an incident,” he replied.

“But an incident which may oblige you to return to that earth you wish to avoid,” I replied.

Captain Nemo gazed at me with a curious expression, and made a sign in the negative, thereby intimating that nothing would induce him ever to become an inhabitant of the continent again. Then he said:

“However, M. Aronnax, the *Nautilus* is not lost. It will yet carry you into the midst of the ocean marvels. Our voyage has scarcely begun, and I do not wish to deprive myself of the honour of your company so soon.”

“But, captain,” I replied, without noticing these ironical expressions, “the *Nautilus* is stranded at this moment in the open sea. Now the tides are not high in the Pacific, and if you cannot lighten the *Nautilus*—which appears

to me impossible—I do not see how you can get her off.”

“You are right about the tides, Professor, but in Torres Strait there is still a difference of a yard and a half between high and low water. To-day is the 4th January, and in five days there will be a full moon. Now I shall be much surprised if this complaisant planet does not raise the water sufficiently to render me a service which I do not wish to owe to anyone but her.”

As he spoke, Captain Nemo, followed by the mate, descended. The ship never moved, and remained as motionless as if the coral polyps had enclosed her in their indestructible cement.

“Well, sir?” said Ned Land, who came up to me after the captain had left.

“Well, Ned, we must wait patiently for the tide of the 9th, for it appears that the moon will be good enough to float us again.”

“Without assistance?”

“Yes.”

“And is not the captain going to try to warp her off?”

“Not if the sea will be sufficient,” said Conseil.

The Canadian looked at Conseil, and shrugged his shoulders—the sailor in him had spoken.

“Monsieur,” said he, “you would not believe me when I told you that this bit of metal would not travel either above or below the ocean. It is no good, except to sell for the iron. I think, therefore, that the time has come to part company with Captain Nemo.”

“Friend Ned,” I replied, “I do not despair, as you do, and in four days we shall know to what we have to trust to. And your suggestion as to flight would be

opportune were we in sight of the coast of England or France, but in the Papuan Archipelago it is a different thing; and we can always fall back upon it if the *Nautilus* is not floated, which I look upon as a very serious question."

"But may we not go ashore at least. Here is an island, and there are trees. Beneath those trees are animals in which are cutlets and steaks, to which I would gladly introduce my teeth."

"Now here Ned is right," said Conseil, "and I agree with him. Cannot Monsieur obtain permission to land, so that we may not lose the habit of walking on dry land altogether?"

"I could ask him," I said, "but he will refuse."

"Well, Monsieur, risk it, and we shall then know how far we may count upon the captain's good nature."

To my great surprise, Captain Nemo made no objection, and accorded his permission in a most polite and gracious manner, without even exacting any promise of return. But a walk in New Guinea was somewhat dangerous, and I would have advised Ned Land not to attempt it. Better be a prisoner on board the *Nautilus* than fall into the hands of the natives.

The launch was placed at our disposal for the next morning. I did not inquire whether Captain Nemo would accompany us. I thought that none of the crew would be "told off," and that Ned Land would be sufficient to steer the boat. Moreover, the land was only two miles off; and it was only "child's play" for the Canadian to steer a boat amongst the reefs so fatal to large vessels. Next morning the boat was launched by

two men. The oars were in the boat, and we had only to take our places.

At eight o'clock, armed with guns and hatchets, we left the *Nautilus*. The sea was calm, but there was a slight land-breeze. Conseil and I took the oars and pulled vigorously, and Ned steered. The boat was well managed, and went at a good pace.

Ned Land was unable to restrain his exultation. He was like an escaped prisoner, and did not think it was by any means necessary to return to prison.

"Aha, meat!" he cried, "we shall now eat some meat; and what meat? Game. No bread, perhaps. I am far from saying that fish is not a very good thing; but you may have too much of it; and a bit of venison grilled on the hot embers will be an agreeable variety."

"*Gourmand!*" cried Conseil; "you make my mouth water."

"We do not yet know whether there is any game in these woods," said I, "or whether the game is not such as is more likely to hunt the hunter than to be hunted itself."

"Very good, M. Aronnax," said Ned, whose teeth must have been lately sharpened; "then I will eat the sirloin of a tiger if there be no other quadruped in the island."

"Ned is getting alarming," said Conseil.

"Come what will," said Ned, "the first animal on four legs, without feathers; or the first on two legs, with feathers, shall be saluted by a shot from my gun, I assure you."

"Now," said I, "Master Land's imprudence is beginning to manifest itself."

“Don’t you be alarmed, M. Aronnax,” replied the Canadian, “and pull strong. I only ask for twenty-five minutes to offer you a meal of my providing.”

At half-past eight the launch ran gently upon a sandy beach, having safely traversed the coral-studded sea which washes the island of Gueboroar.

CHAPTER XXI.

SOME DAYS "ASHORE."

I WAS much impressed upon landing. Ned trod the ground as if he had come to take possession. We had been two months "passengers in the *Nautilus*," to use Captain Nemo's expression—that is to say, prisoners of the commander.

We were soon at gun-shot distance from the shore. The soil was almost entirely madreporic, but some dry beds of torrents, scattered with granite *débris*, betokened the primal formation of the island. The horizon was completely hidden by the woods. Enormous trees, nearly 200 feet high, intertwined by bind-weed of the tropics, formed actual hammocks, which were rocked by the gentle breeze. There were mimosas, figs, teaks, hibiscas, palms, in mingled profusion; and beneath their verdant shade the orchids, both vegetable and ferny, were growing. But without noticing the beautiful flora, the Canadian abandoned the agreeable for the useful. He perceived a cocoa-nut tree. He knocked down a

nut, broke it, and we drank the milk; we ate the kernel with a satisfaction which was a mute protest against the *Nautilus* dinners.

"Excellent," said Ned.

"Exquisite," replied Conseil.

"And I did not think that your Nemo would object to our expedition if he saw the prospect of a cargo of cocoa-nuts," said Ned.

"I do not believe so myself, but he will not want to taste them," said I.

"So much the worse for him," said Conseil.

"And the better for us," replied Ned. "There will be more left."

"Just one word, Master Land," said I, as he was preparing to attack another tree; "the cocoa-nut is a very good thing, but before we fill the launch with them let us see whether the island does not produce something equally useful. Fresh vegetables will be welcome in the store-rooms of the *Nautilus*."

"Monsieur is right," said Conseil; "and I propose to have three divisions in the boat—one for fruit, one for vegetables, and one for venison, of which we have hitherto had not the slightest trace."

"Conseil, you must never despair of anything," said Ned.

"Let us get on," I said; "but keep a sharp look-out. Although the island appears to be uninhabited, it may contain some individuals who would be less hard to please as to the quality of 'game.'"

"Ha, ha!" laughed Ned Land, as he moved his jaws significantly.

"Well, Ned?" cried Conseil.

"Faith," he replied, "I am beginning to understand the charms of anthropophagy."

"Ned, Ned, what are you saying? You a cannibal! I shall not be safe so near you in the cabin now. Suppose I should wake up some fine morning, half eaten?"

"Friend Conseil, I like you very much, but not enough to eat you, unless under the pressure of necessity."

"I am not proud," replied Conseil. "Let us go on. We must kill some game to satisfy this cannibal, or one of these mornings Monsieur will only have the fragments of a servant to wait on him."

All this time we were penetrating into the wooded glades of the forest. We looked through it in every way.

Chance brought about what we desired in this search for vegetables, and one of the most useful products of tropical regions furnished us with an article of food much needed on board. I mean the bread-fruit, which is very plentiful in the island of Gueboroar, and I there noticed the variety without grains, which in Malaya is entitled "rima."

This tree is distinguished from others by its upright stem, which is about forty feet high. The top is gracefully rounded, and is composed of large multilobed leaves, known to naturalists at once by this "artocorpus." From this green mass the fruit detaches itself. It is nearly four inches long, and of hexagonal form. A most useful vegetable supplied by nature to countries where corn does not grow, and which, without any cultivation, yields its fruit during eight months of the year.

Ned Land was well acquainted with this fruit ; he had eaten them on former occasions, and he knew how to prepare them. Thus the sight of them excited a desire to possess them, and he did not long delay the attempt.

"Monsieur," he said, "I shall die if I do not taste a little of this bread-fruit."

"Eat at your leisure, Ned," I replied. "We are here to experimentalise. Get them down."

"That will not take long," replied the Canadian ; and, armed with a match, he lit a fire of dead wood, which crackled joyously. Meantime, Conseil and I chose the best fruits. Some had not yet reached maturity, and their thick skin was covered over with a white fibrous pulp. In other places great numbers, yellow and gelatinous, had not waited to be gathered.

These fruits do not contain noyau. Conseil brought a dozen to Ned Land, who placed them on the fire, after cutting them in thick slices. In so doing he kept saying :

"You will see how good the bread will be."

"Particularly as we have been so long deprived of it," said Conseil.

"It is even better than bread," added the Canadian. "It is like fine pastry. Have you ever eaten it, Monsieur?"

"No, Ned."

"Well, then, prepare yourself for something very nice ; and if you do not enjoy it, I am no longer the king of harpooners."

In a few moments the part of the fruit exposed to the

fire was completely baked. The interior appeared like a white dough, like the crumb of bread; the taste was something like the artichoke.

It must be admitted that the bread was excellent, and I ate it with much gusto.

"Unfortunately," said I, "it will not keep fresh, and it seems to me useless to attempt to lay in any store of it on board."

"Indeed, Monsieur!" cried Ned. "But you speak as a naturalist; now I speak as a baker. Conseil, collect a quantity of those fruits for us to carry on board."

"And how will you prepare them?" I asked.

"By making a fermented paste with their pulp, which will keep it sweet for an indefinite period. When I want to use the bread I have only to cook it on board, and, notwithstanding a slightly acid taste, you will find it excellent."

"Then, Master Ned, I see that the bread will be all right."

"If," replied the Canadian, "we had some fruit and vegetables."

"Let us look for them."

When our search was ended we set about completing our dinner.

Our efforts were not fruitless, and towards mid-day we had laid in a quantity of bananas. These delicious products of the torrid zone ripen all the year round, and the Malays, who call them "pisang," eat them raw. We also found some enormous "jaks," somewhat "strong" in their flavour, savoury mangoes, and ananas of an immense size. But this collecting

took up a long time, which, however, we did not regret.

Conseil kept his eyes upon Ned. The harpooner marched in front, and as he went through the forest he collected with unerring skill the fruit we required.

"Well, now," said Conseil, "you want nothing more, eh?"

"Hum," replied the Canadian.

"What! not satisfied?"

"Vegetables and fruit alone do not constitute a meal," said Ned. "They come in at the end like dessert. Where is the soup and the joint?"

"In fact," I said, "Ned has promised us cutlets, and they appear to me doubtful."

"Monsieur," replied Ned, "not only has our hunting not finished, but it has not even commenced. Patience. We are sure to meet some feathered or hairy animal—if not in this spot, somewhere else."

"And if not here to-day it will be here to-morrow," added Conseil, "for it cannot be far off. I vote we return to the boat."

"What, already?" exclaimed Ned.

"We ought to be back before night," I said.

"But what time is it now?" asked Ned.

"About two o'clock," replied Conseil.

"How quickly time passes on firm ground," said Ned Land with a sigh.

"Let us return," said Conseil.

We again passed through the forest, and completed our supply of provisions by making a raid upon the cabbage-palms, which we had to climb up to obtain the fruit; some small beans, which I recog-

nised as the "abrou" of the Malays; and some excellent yams.

We were overloaded when we reached the launch; nevertheless, Ned still found the supply insufficient. But fortune favoured him. As we were embarking he caught sight of some trees which appeared to be a species of palm. These trees are justly reckoned amongst the most useful of the Malayan products. They were sago trees. They grew naturally without culture, and were reproduced, like the mulberry, by their shoots and seeds.

Ned Land knew how to treat them. He seized a hatchet, and, working with great determination, he soon felled two or three sago trees, whose maturity he recognised by the white dust powdering their leaves.

I watched him from a naturalist's point of view, rather than as a hungry man. He began by raising a strip of bark, about an inch thick, from each tree, which covered a network of long fibres, forming inextricable knots, which were cemented together by a sort of gummy farine. This was the sago which forms a principal article of food amongst the Malays. Ned Land, for the moment, only cut the trees in pieces as for firewood, intending to extract the sago later by separating it from the fibrous ligatures, evaporating the water by the sun's heat, and leaving it to harden in the moulds.

At length, about 5 P.M., laden with our treasures, we quitted the island, and half an hour later climbed on board the *Nautilus*. No one was to be seen. The vessel appeared deserted. We embarked our provisions. I descended to my room, where I found my supper prepared. I ate it and went to bed.

Next morning, the 6th January, nothing new appeared on board. No sound was heard, not a sign of life. The launch lay alongside as we had left it. We resolved to return to the island. Ned Land was hoping to be more successful as a hunter than he had been the day before, and wished to visit another portion of the forest.

At sunrise we were *en route*. The boat, assisted by the tide, soon reached the island.

We disembarked, and thinking it better to trust to the instinct of the Canadian, we followed Ned Land, whose long legs threatened to distance us.

He took his course towards the west, then finding some torrents, he gained the high ground, which is surrounded by beautiful woods. Some kingfishers darted along the water-courses, but would not allow us to approach them. Their caution was to me evidence that they were acquainted with mankind; and if the island was not actually inhabited, it was frequently visited by human beings.

Having crossed an immense grass prairie, we reached the edge of a little wood, which resounded with the songs and rustlings of a quantity of birds.

"They are nothing but birds," said Conseil.

"But there is something to be eaten," replied the harpooner.

"Not at all," replied Conseil, "for I can see nothing but parrots."

"Friend Conseil," said Ned, gravely, "a parrot becomes a pheasant to those who have nothing but parrots to eat."

"And I will add," said I, "that, nicely prepared, they are worth eating."

A whole race of parrots were flitting from branch to branch, beneath the thick foliage of this wood, and only required a little careful teaching to be able to speak. They chattered with paroquets of all colours, grave cockatoos, which seemed to be considering some problem; the loris, of a beautiful scarlet, darted like a bit of stamen carried by the wind; and every variety of bird, beautiful to behold, but not usually good to eat.

Nevertheless, there was one bird wanting, which never passes the limits of the Aroo and the Papuan Islands. But fate had decreed that I should admire it before long.

We crossed through a thicket, and found ourselves on a plain sprinkled with clumps of bushes. I then saw get up some beautiful birds, whose long feathers obliged them to fly against the wind. Their undulating flight, their graceful curves in their aerial course, the varying play of colour, attracted and charmed the eye. I had no difficulty to recognise them.

"These are birds of paradise!" I cried.

"Order, sparrows; section, clystomores," said Conseil.

"Family partridges?" inquired Ned Land.

"I do not know, Master Land. Nevertheless, I count upon your skill to procure one of them."

"I can try, though I am more accustomed to handle a harpoon than a gun."

The Malays, who drive a great trade in these birds with the Chinese, have various methods of catching them, which we could not employ. Sometimes they fix snares

at the top of the high trees, for which the birds of paradise have a preference. Sometimes they secure them with a kind of bird-lime. They sometimes even poison the pools where the birds drink. But we were reduced to taking flying shots at them, which left us little chance of success; and in fact we did expend some of our ammunition in vain. Towards eleven o'clock we had crossed the hills which rise in the centre of the island, and had hitherto killed nothing. Hunger began to attack us.

The sportsmen had trusted to the produce of their skill, and had been mistaken. Fortunately Conseil, to his own great amazement, fired "right and left," and secured our breakfast. He killed a white pigeon and a wood-pigeon, which quickly were plucked, and, suspended to a stick, were roasted over a fire of dead wood. While these interesting fowls were cooking, Ned prepared the bread-fruit. Then the pigeons were eaten, the bones picked, and the meal declared excellent. The nutmeg, upon which they feed, perfumes their flesh and gives it a pleasant flavour.

"It is as if the fowls had been fed upon 'trouffles,'" said Conseil.

"Now Ned, what do you want?" I said.

"Some four-footed game, M. Aronnax," he replied. "All these pigeons are only side-dishes, and whets for the appetite. So until I have killed some animal available for cutlets, I shall not be satisfied."

"Nor shall I, Ned, unless I catch a bird of paradise."

"Let us go, then," replied Conseil, "but in the direction of our boat. We have reached the first

mountains, and I think it will be better to re-enter the forest."

This was sensible advice, and was followed. After an hour's walking, we reached a regular forest of sago-trees. Some harmless serpents fled at our approach. The birds of paradise disappeared, and I was beginning to despair of getting a specimen, when Conseil, who was ahead, stooped suddenly, uttered a triumphant cry, and came back to me carrying a magnificent bird of paradise.

"Bravo, Conseil!" I cried.

"Monsieur is very good," replied Conseil.

"Not at all, my lad. You have made a master-stroke, to catch one of those birds alive in your hand!"

"If Monsieur will examine it more nearly, he will see that there is nothing very wonderful in it after all."

"Why, Conseil?"

"Because the bird is as drunk as an owl!"

"Drunk!"

"Yes, sir: intoxicated with the nutmegs under the tree, where I took him. Just see, friend Ned, the terrible effects of intemperance!"

"A thousand devils!" exclaimed the Canadian, "it is rather hard to reproach me with intemperance—I, who have not tasted spirits for two months!"

Meanwhile I was examining this curious bird. Conseil was right. The bird of paradise, intoxicated by the "heady" juice, had become helpless. It could not fly, scarcely walk. But that did not trouble me at all, and I let it "get over it."

This bird belongs to the most beautiful of the eight

species which are found in Papua and the neighbouring islands. This was the "Emerald" bird of paradise—one of the rarest. It measures nearly a foot in length. Its head is relatively small. Its eyes are placed near the opening of the beak, and are likewise small. But it presents a wonderful combination of colour; the beak is yellow, the feet and claws brown; hazel wings, tipped with purple at their extremities; pale yellow on the head and behind the neck; throat emerald green, and the chest and stomach is a fine maroon. Two curved and soft feathers growing above the tail, and prolonged in beautiful light and lengthy plumes of admirable softness, complete the *ensemble* of this wonderful bird, which the natives call the "bird of the sun."

I was very anxious to bring back this lovely specimen to Paris, and to present it to the "Jardin des Plantes," where there was not a living one.

"Is it, then, so very uncommon?" asked the Canadian, in the tone of a hunter who did not regard game from the artistic point of view.

"Very rare, indeed, and, above all, very difficult to catch alive; and even dead these birds are the object of much business traffic. So the natives have conceived the idea of 'making them up,' as people might imitate diamonds or pearls."

"What!" exclaimed Conseil, "fabricate birds of paradise?"

"Yes, Conseil."

"Can Monsieur explain the process?"

"Certainly. During the east monsoon these birds lose their magnificent plumage, which surrounds the tail. These are the feathers which are collected by the false

traffickers in birds, and which they fix cleverly into some unfortunate paroquet, previously mutilated for the purpose. Then they dye the suture, varnish the bird, and export to the museums and amateurs in Europe—the result of their industry."

"Well, at any rate," said Ned, "if you have not got the bird you have got his feathers; and so long as you don't want to eat the animal it is no great matter."

But if my wishes were satisfied in the possession of the bird of paradise, Ned's were not so. Happily, during the afternoon he shot a magnificent wild pig, which the natives call "bari-outang." This animal came in very opportunely, and was welcomed accordingly. Ned Land was very proud of his shooting. The pig, touched by the electric bullet, had fallen dead on the instant.

The Canadian prepared him in workmanlike manner, after having taken some cutlets from him for our evening meal. Then the chase was resumed, which was further distinguished by the exploits of Conseil and Ned Land.

These two, by beating, roused a herd of kangaroo, which bounded away as actively as usual. But they did not fly so rapidly as the electric bullets, which checked their bounding career.

"Aha! Professor!" cried Ned, into whose head the sportsman's passion for killing had mounted, "what excellent game, particularly stewed. What a provision for the *Nautilus*. Two, three, five head. And when I think that we are eating all this fresh meat, and the idiots on board have not a crumb——"

In the excess of his joy the Canadian, if he had not talked so much, would have slain the whole herd. But he was content with a dozen of these marsupials, "which form the first order of aplacentary mammifers," as Conseil told us.

These animals were small. They were a species of the "rabbit kangaroo," which live in the trees, and whose rapidity of movement is extreme; but if only of medium height they furnish excellent food.

We were very well pleased with the results of our "hunting." The delighted Ned proposed to return again upon the following morning, with the view to depopulate all the game. But he was reckoning "without his host."

At 6 P.M. we arrived at the shore. Our boat was as we had left it. The *Nautilus*, like a great rock, rose up from the waves about two miles off. Ned Land at once occupied himself respecting the important question of dinner. He understood the cooking part of this very well. The cutlets, grilled upon the wood embers, soon spread a delicious odour around us.

And I perceived that I was following Ned in this. Here was I delighted at the prospect of pork chops. I trust I may be forgiven, even as I forgave Master Land, and for the same reason.

In fact the dinner was a success. The pigeons wound up this (to us) extraordinary meal. The sago *pâté*, the bread fruit, some mangoes, half-a-dozen bananas, some fermented cocoa-nut milk put us in good trim. I really believe that the ideas of my worthy companions were not altogether so clear as they might have been.

"Suppose we do not return to the *Nautilus* to-night?" said Conseil.

"Suppose we don't return to the *Nautilus* at all?" added Ned Land.

At this moment a large stone fell at our feet, and cut short the harpooner's suggestions.

CHAPTER XXII.

CAPTAIN NEMO'S LIGHTNING.

WE turned towards the forest without getting up. My hand was arrested in the act of putting a morsel in my mouth. Ned did not stop his hand.

“A stone does not fall from heaven,” said Conseil, “unless it be an aërolite.”

A second stone, well aimed, which knocked a savoury bit of pigeon out of Conseil's hand, gave a point to the remark.

We all rose, shouldered our rifles, and were ready to repulse any attack.

“Are they apes?” said Ned.

“Nearer relatives,” said Conseil. “They are savages.”

“Let us gain the boat,” I cried, retreating towards the shore.

We were obliged to retreat fighting, for twenty natives, armed with bows and spears, appeared at the edge of a coppice which lay to the right, scarcely a hundred paces distant.

Our launch was sixty yards away.

The savages approached steadily, but very demonstrative in their hostility. Stones and arrows whistled round us.

Ned Land had no intention to abandon his provisions, and, despite our danger, with the pig in one hand and the kangaroos in the other, he retired at a moderate pace.

In two minutes we had reached the shore. To throw ourselves into the boat with our arms and provisions, push off, and man the oars, was the work of a moment. We had scarcely gained two cables' length when a hundred savages, shouting and gesticulating, ran into the water up to their waists in pursuit. I looked to see whether anyone was on the deck of the *Nautilus*. But no, the enormous machine appeared absolutely deserted.

Twenty minutes later we were on board. The panels were open. We pulled up the launch, and entered the *Nautilus*.

I descended to the saloon, whence I heard music. Captain Nemo was there, seated at the organ, and plunged in a musical reverie.

"Captain," I said.

He did not hear me.

"Captain," I repeated, touching him as I spoke.

He started, and turned round.

"Ah, Professor; is it you?" said he. "Well, have you had good sport; have you had success in your botanising?"

"Yes, captain. But we have unfortunately met with some bipeds, whose near neighbourhood makes me uneasy."

"What bipeds?"

“Savages !”

“Savages !” repeated Captain Nemo ironically. “And are you astonished at meeting savages anywhere on the earth ? Savages ! Where are they not ? And are these savages worse than any others ?”

“But, captain——”

“For my part,” he said, “I have met them everywhere.”

“Well,” said I, “if you do not wish to receive them on board you had better take some precautions.”

“Be at ease, Professor. There is nothing to worry about.”

“But these natives are numerous.”

“How many did you reckon them to be ?”

“A hundred at least.”

“M. Aronnax,” replied Captain Nemo, who again turned to the instrument, “if all the natives of Papua were assembled on this coast, the *Nautilus* would have nothing to fear.”

The captain's fingers ran over the notes, and I remarked that he only played the black keys, which gave his melodies an essentially Scotch tone. He soon forgot my presence, and was again plunged in the reverie from which I had aroused him, and which I did not again venture to disturb.

I remained alone for some hours, sometimes thinking of the savages, but not fearing them, as the confidence of the captain inspired me ; sometimes forgetting them, to admire the beauties of the tropical night. My thoughts turned to France, following those zodiacal stars which would shine over it in a few hours. The moon shone brilliantly amidst the northern constellations.

I wondered whether this complaisant planet would raise the waters for us to-morrow and float the *Nautilus*. Towards midnight, seeing that all was quiet around us, I retired and slept quietly. The night passed without incident. The Papuans were afraid, no doubt, even at the view of the monster stranded in their bay, for the panels had been left open, and access to the *Nautilus* was easy.

At six o'clock the next morning I ascended to the platform. The morning mists were rising. The island, its shores and mountains, would soon be distinctly visible.

The natives were still there, and in greater numbers than before—five or six hundred, perhaps. Some of them advanced over the coral reefs—the tide being out—to within two cables' length of the *Nautilus*. I could distinguish them plainly. They were of the true Papuan type—tall, athletic men, high foreheads, large noses, not flattened, and white teeth. Their long hair, tinted red, fell over their shoulders, and their skin was as black and glossy as that of the Nubian. The lobes of their ears, cut and distended, were hung with bone ornaments. The men were naked, as a rule. Amongst them there were a few women, clothed from waist to knee in a regular crinoline of grassy texture, sustained by a girdle of bark. Some of the chiefs had ornamented their necks with a painted crescent, and with rows of red and white beads. They were nearly all armed with bows and arrows and shields, while over the shoulder they wore a kind of net, in which they carried the round stones which they sling with much accuracy of aim.

One of the chiefs approached the *Nautilus* pretty

closely, and examined it attentively. He appeared to be a "mado" of high rank, for he was dressed in a mat of banana leaves, fringed at the edges, and trimmed up with bright colours.

I could easily have shot this fellow, who was so unguardedly gazing at us, but I thought it better to wait the actual commencement of hostilities. Between Europeans and savages it is always better to let the latter commence an attack.

So long as the tide was low these natives prowled around the *Nautilus*, but they were not demonstrative. I heard them frequently repeat the "assai," and by their gestures they invited me to go ashore, an invitation which I felt myself obliged to decline.

All that day, therefore, the launch did not leave the ship, much to Land's disappointment, as he wished to complete his stock of provisions. The "handy" Canadian, however, occupied himself in preparing the food and vegetables we had brought on board. The savages returned to *terra firmâ*, as the tide rose about eleven o'clock, but their numbers still kept increasing considerably on the shore. It is probable that they came from the neighbouring islands, but I had not yet perceived any of the native canoes.

Having nothing better to do, I thought I would "drag" the clear water, in which numbers of shell-fish could be distinctly seen, as well as zoophytes and marine plants. This was, moreover, the last day which the *Nautilus* was to pass in this place, if it was to be again afloat the next day, according to Captain Nemo's promise.

I called to Conseil to bring me a light chag-net,

something like those which are used in oyster dredging.

“If Monsieur is not displeased at my remark, I would say that these savages are very wicked ; are they ?” asked Conseil.

“They are at any rate cannibals, my friend.”

“Still they can be cannibals and brave men too,” replied Conseil ; “just as one may be a *gourmand* and an honest man. The one does not exclude the other.”

“Well, Conseil, I grant you that there may be honest cannibals, who honestly devour their captives. However, as I do not wish to be eaten, even honestly, I will be upon my guard ; for it seems that the captain of the *Nautilus* is taking no precaution whatever. Now let us get to work.”

We fished for two hours, without pulling up anything extraordinary. We caught some “Ears of Midas,” some “harpes,” some “holotures,” some pearl oysters, and a dozen little turtles, which we handed over to the cook. But at a moment when I was least attentive, I lighted upon a wonderful specimen—I might almost say a natural deformity—very rarely met with. Conseil dragged the net, and it came up filled with a number of ordinary specimens ; when suddenly I plunged my hand quickly into the net and pulled out a shell-fish, and uttered the cry of a conchologist, which is the most piercing cry that the human throat can produce.

“What is the matter ?” asked Conseil, in surprise. “Has Monsieur been bitten ?”

“No, but nevertheless my finger has paid for my discovery.”

“What discovery?”

“This shell,” I said, displaying it.

“It is only an olive porphyry—genus, olive; order, pectinibranchal; class, gasteropodes; branch, mollusc.”

“Yes, Conseil; but instead of curving from right to left, this ‘olive’ turns from left to right.”

“Is it possible!” exclaimed Conseil.

“Yes, my lad.”

“A ‘sinister’ shell!”

“Look at the spiral.”

“Ah! Monsieur,” said Conseil, “I can believe it; but I have never had such an experience before.”

There was, after all, something to excite surprise. Everyone is aware that nature, as a rule, works as it were from right to left. The planets and stars, in their movements, go from right to left. Mankind use the right hand more than the left, and consequently all his instruments, &c., are made with the view of being employed as from right to left. Nature has generally carried out this principle in the “whorl” of shells. With very rare exceptions, they all have the spiral from right to left, and when by chance a “left-handed” whorl is discovered, it is worth its weight in gold.

“Conseil and I were engaged in the contemplation of our treasure, and I was anticipating its presentation to the museum, when a stone, only too well directed by a native, shivered the precious object in Conseil’s hands.

I uttered a cry of despair. Conseil seized my gun and levelled it at a savage who was swinging his sling about a dozen yards off. I tried to stop him, but he

fired, and struck the bracelet of beads which was hanging from the arm of the savage.

“Conseil !” I cried, “Conseil !”

“Well, did not Monsieur see that the cannibal began the attack ?”

“A shell is not worth a man's life,” I said.

“Ah, the blackguard !” cried Conseil ; “I would rather he had broken my shoulder.”

Conseil was sincere, but I did not agree with him. However, the situation had altered during the last few minutes, and we had not perceived the change. Twenty canoes now surrounded the *Nautilus*. These canoes, hollowed out from trunks of trees, are long and narrow, and well put together for speed, and kept in equilibrio by double sets of bamboo poles, which floated on the surface of the water. They were worked by skilful hands, and it was not without some misgivings that I perceived their approach. It was evident that the Papuans had already been in communication with Europeans, and that they knew their ships. But this long cylinder of iron, without masts or chimney, what could they make of it? Nothing very pleasant apparently, as they kept at a respectful distance. However, seeing it motionless, they regained confidence by degrees, and sought to make themselves acquainted with the *Nautilus*.

Now it was precisely this familiarity that it behoved us to check. Our arms, which gave no report, only produced a slight effect upon the natives, who respected loud-mouthed guns. People are not so much frightened by lightning when unaccompanied by thunder, although

it is really the lightning, and not the thunder, which constitutes the danger.

At this moment the canoes approached the *Nautilus*, and a shower of arrows struck it.

"The devil!" cried Conseil; "here is a regular hail-storm; and perhaps the hail is poisoned too."

"We must acquaint Captain Nemo," I said, entering the panel as I spoke.

I descended to the saloon; no one was there. I ventured to knock at the door which opened into the captain's room.

A "Come in" answered me, and I found the captain immersed in algebraical calculations.

"I am disturbing you, I fear," I said politely.

"Well, yes, M. Aronnax; but I daresay you have very good reasons for so doing."

"I have indeed. We are surrounded by canoes filled with the natives, and in a short time we shall be attacked by hundreds of savages."

"Ah!" said Captain Nemo quietly; "so they have come in their canoes, eh?"

"Yes."

"Well, we have only to close the panel."

"Precisely; I came to tell you so."

"Nothing can be easier," was the reply; and pressing an electric bell, it gave the order.

After a pause, he said:

"That is done. The launch is in its place, and the panels are closed. You have no fear, I suppose, that these gentlemen outside will break the walls which the shot from your frigate could not hurt?"

“No, captain ; but there is still danger.”

“In what way ?”

“To-morrow we must open the panels again for fresh air.”

“Certainly ; we breathe like cetaceans, you know.”

“If at this moment the savages were on the outer platform, I do not see how you could prevent their entrance.”

“Then you suppose they will get on board ?”

“I am sure of it.”

“Well, let them if they like. I see no reason to prevent them. After all, they are but poor devils, these Papuans, and I do not wish that my visit to the isle of Gueboroar should cost one of them his life.”

At that I rose to retire, but Captain Nemo detained me, and invited me to sit beside him. He questioned me with much interest respecting our excursions to the island, and our hunting, and did not appear to understand the Canadian's desire for fresh meat. The conversation then became more lively, and without being too communicative, Captain Nemo displayed great amiability.

Amongst other things, we spoke of the position of the *Nautilus*, stranded upon the precise spot where Dumont d'Urville was so nearly lost. Speaking of this the captain said :

“He was one of your greatest and best sailors. He was the French Captain Cook. Unfortunate man ! Having braved the icebergs of the southern polar regions, the coral reefs of the ocean, and the cannibals of the Pacific, to perish miserably in a railway train. If this majestic man was able to reflect during the last moments

of his existence, you can imagine what his thoughts may have been."

Captain Nemo appeared to be moved, and I gave him credit for the feeling.

Then, maps in hand, we traced the discoveries of this bold navigator, his voyages round the world, his two attempts to reach the South Pole, which resulted in the discovery of "Adélie" and "Louis Philippe," and finally his hydrographical survey of the principal oceanic islands.

"What your D'Urville did at the surface, I have done beneath," said Captain Nemo, "and more easily and completely than he. The *Astrolabe* and *Zélée*, continually knocked about by the winds and waves, were not as good as the *Nautilus*, where there is a quiet 'study,' and really motionless in the water."

"Nevertheless, there is one point of resemblance between the ships of Dumont d'Urville and the *Nautilus*."

"What is that?"

"That the *Nautilus* has stranded, just as they did."

"The *Nautilus* has not stranded," replied Captain Nemo, coldly. "The *Nautilus* is merely reposing on the bed of the ocean, and the persistent labour and work which D'Urville had to refloat his vessels will not be necessary with us. The *Astrolabe* and the *Zélée* ran a great risk of being lost, but we are in no danger. To-morrow, the day named, and at the time I mentioned, the tide will raise us quietly, and we shall resume our voyage."

"Captain," I said, "I have no doubt about it."

"To-morrow," added he, rising, "to-morrow, at

2.40 P.M., the *Nautilus* will float, and leave Torres Strait uninjured."

These words were spoken quickly, and Captain Nemo reseated himself and bowed slightly. This was the signal for my departure, and I regained my room.

There I found Conseil, anxious to hear the result of my interview with the captain.

"My lad," I replied, "when I fancied his *Nautilus* was threatened by these Papuans, he replied to my fears in a bantering tone. I have but one thing to say—have confidence in him, and go to sleep in peace."

"Monsieur does not want me?"

"No. What is Ned Land doing?"

"Monsieur will excuse me, but Ned is making a kangaroo pie, which will be a great success."

I was left alone, and I went to bed, but slept badly. I heard the savages trampling overhead, and uttering discordant yells. The night passed in this manner, and none of the crew seemed to be in the least disturbed about it. They no more disturbed themselves about these cannibals, than in an iron battery they would trouble about the ants crawling on it.

At six o'clock I got up. The panels had not been opened. The air in the interior had not therefore been renewed, but the reservoirs, which were destined to act under such circumstances, forced fresh oxygen into the vitiated atmosphere within the *Nautilus*.

I worked in my room up to mid-day, without even having a glimpse of Captain Nemo. There did not appear any preparation for departure.

I waited some time longer, then went into the saloon. The clock showed it was half-past two. In ten minutes

the tide would have attained its maximum height, and if Captain Nemo had not made a rash promise, the *Nautilus* would be soon at liberty again. If not, then several months must elapse before we could quit this coral bed.

However, some little vibrations began to be felt in the hull, and I could hear the coral grinding beneath the weight of the ship.

At 2.35, Captain Nemo appeared:

“Well!” said I.

“I have given orders to have the panels opened.”

“And the Papuans——?”

“The Papuans!” he exclaimed, shrugging his shoulders.

“Will they not penetrate into the interior of the *Nautilus*?”

“How?”

“Through the panels you have just opened!”

“M. Aronnax,” replied Captain Nemo, calmly, “they will not enter, even though the panels be open.”

I looked at the captain.

“You do not understand?” he said.

“Not at all.”

“Well, then, come and see for yourself.”

I accompanied him to the centre staircase. There I found Ned Land and Conseil very much puzzled to see the crew open the panels, while cries and shouts of rage resounded outside.

The mantelets were beaten down, and twenty horrible figures appeared. But the first of the natives who placed his hand upon the balustrade of the staircase was hurled backwards by some invisible force; and he fled,

uttering terrified yells, and executing most extraordinary antics.

Ten of his companions succeeded him, but all met the same fate.

Conseil was delighted. Ned Land, carried away by his impetuosity, advanced to the staircase ; but so soon as he had touched the balustrade, he was upset bodily in his turn.

“A thousand devils!” he cried ; “I am struck by lightning.”

That one word explained everything. It was not a balustrade, but a metal cable charged with electricity, and whoever touched it immediately received a fearful shock, which would have been fatal if Captain Nemo had permitted the full power to be used. One could truly say that between himself and his assailants he had drawn an electric chain which none could pass. Meanwhile the astonished Papuans had beaten a retreat, quite overcome with terror. We, half laughing, consoled and rubbed the unfortunate Ned Land, who kept swearing like a trooper.

But now the *Nautilus*, raised by the last waves of the high tide, left her bed of coral, and at the exact moment predicted by Captain Nemo. The screw slowly beat the ebbing waters. Her speed increased by degrees, and sailing upon the surface of the sea, she quitted the dangerous Torres Straits safe and sound.

CHAPTER XXIII.

ÆGRI SOMNIA.

ON the following day, 10th January, the *Nautilus* resumed her course beneath the waves at a speed which surprised me, and which could not have been less than thirty-five miles an hour. The revolutions of her screw were too rapid to admit of being reckoned.

When I thought of this marvellous electric agency, which gave light, heat, and movement to the *Nautilus*, protected her from attack, and transformed it into an ark, into which no one could enter without running the risk of death by lightning, my admiration knew no bounds; the machine was worthy of the hand that made it.

We proceeded due west, and on the 11th of January we doubled Cape Wessel (situated in 135° E. long. and 10° N. lat.), which forms the eastern point of the Gulf of Carpentaria. The reefs were numerous, but easily distinguished, and shown upon the map with great accuracy. The *Nautilus* easily avoided the breakers of Money to larboard and the Victoria reefs to starboard, situated

in 130° long., and on the tenth parallel, which we steadily followed.

On the 13th of January, Captain Nemo reached the Timor Sea, and sighted the island of that name in 122° long. This island is ruled by the Radjahs. These princes call themselves the “sons of crocodiles;” that is to say, descended from the highest rank to which human nature can lay claim. So these scaly ancestors abounded in the streams, and were the object of peculiar veneration. The people protected them, petted them, worshipped them, and fed them, even giving them their young children to eat; and woe to the stranger who raised his hand against these sacred lizards.

But the *Nautilus* had nothing to do with these horrible animals. Timor was only visible for a moment at mid-day, while the mate made the observations. And equally I could only catch a glimpse of the little island of Rotti, which made one of the group, the women of which bear a high reputation for beauty in the Malayan markets.

The *Nautilus* now went south-west, and bore up for the Indian Ocean. Whither was Captain Nemo taking us? Was he about to run up the Asian coasts, and towards Europe? This was not likely to be the idea of a man who kept aloof from inhabited continents. Would he descend to the southward, double the Cape of Good Hope and Cape Horn, and advance to the Antarctic regions? Or would he return to the Pacific, where the *Nautilus* found easy and independent navigation? Time would show.

Having skirted the rocks of Cartier, Hibernia, Seringapatam, and Scott—the last barriers of the land

against the water—on the 14th January we were beneath all lands. The speed of the *Nautilus* was slackened, and she became very capricious in her movements, sometimes sailing beneath and sometimes at the surface of the water.

During this portion of the trip Captain Nemo made some very interesting observations respecting the temperature of the sea at different depths. Under ordinary circumstances the results are obtained by means of complicated instruments, and are at least doubtful as regards theometric soundings, as the glasses frequently break under the pressure of the water, or of those appearances based upon the principle of the variation of the resistance of metals to the electric currents. The results thus obtained cannot be really depended upon.

Captain Nemo, on the contrary, went down to ascertain the temperature in those depths, and his thermometer, put in communication with the various zones of liquid, gave him surely and immediately the looked-for temperature. Thus it was, whether in filling the reservoirs, or in descending obliquely by means of the “inclined planes,” the *Nautilus* attained successively the depths of 3,000, 4,000, 5,000, 7,000, 9,000, and 10,000 yards, and the definite result of these experiences was that the sea gave a permanent temperature of $4\frac{1}{2}^{\circ}$ at a depth of 1,000 yards* in all latitudes. I followed his experiments with the greatest interest. Captain Nemo was passionately fond of this work. I often wondered what was the use of all these observations. Was it for the benefit of his fellow-creatures

* Metres.

This was not likely, for some day or other his work would perish with him in some unknown sea. It was not likely that he destined them for me, as that would be to admit that my strange voyage would have an end ; and this termination I did not yet perceive.

However, Captain Nemo made me equally acquainted with himself with various results obtained by him, and which established the agreement of the densities of the water in the principal seas. From this communication I drew a personal lesson, which had nothing scientific about it.

On the morning of the 15th January the captain, with whom I was walking on the platform, asked me if I knew the different densities of sea-water. I replied in the negative, and I added that exact observations on the subject had not been recorded.

“I have made such observations, and I can vouch for their accuracy,” said the captain.

“Very good,” said I, “but the *Nautilus* is a world in itself, and the secrets of its wise men have not reached *terra firmâ*.”

“You are right, Professor,” he replied after a pause. “It is a world apart. It is as great a stranger to the earth as the planets which accompany the globe round the sun ; and the earth does not yet know the secrets of the *savants* in Saturn and Jupiter. However, since chance has thrown us together, I will tell you the result of my observations.”

“I am all attention, captain.”

“You know,” said Captain Nemo, “that salt water is more dense than fresh water, but this density is not uniform. For example, if I represent the density of

fresh water by 1, I find $1\frac{28}{1000}$ as the density of the Atlantic, $1\frac{26}{1000}$ that of the Pacific, $1\frac{30}{1000}$ that of the Mediterranean——”

“Ah!” thought I, “he has sailed in the Mediterranean.”

“In the Ionian Sea $1\frac{18}{1000}$, and $1\frac{29}{1000}$ in the Adriatic.”

The *Nautilus* certainly did not avoid the crowded seas of Europe, and I judged from this that it would carry us, perhaps before very long, towards the more civilised lands. I fancied that Ned Land would appreciate this very highly.

For a long time the days passed in experiments of all kinds, to ascertain the saltness of the sea-water at different temperatures—its electrification, its colouration, its transparency; and under all circumstances Captain Nemo displayed an ingenuity which was only equalled by his great politeness to me. Then for many days I did not see him, and I remained almost isolated on board.

On the 16th January the *Nautilus* appeared to sleep at a few metres only beneath the surface. The electric apparatus was not at work, and the screw being immovable, she drifted at the will of the currents. I supposed that the machinery was being repaired, such a course being necessary after the late violent working.

My companions and I were witnesses of a curious spectacle that day. The side panels of the saloon were open, and as the lamp of the *Nautilus* was not alight, a vague obscurity reigned in the water. The stormy and clouded sky could give but little light even to the first beds of the waters.

I was observing the sea under these conditions, and the largest fish only appeared like indistinct masses, when the *Nautilus* was suddenly in a bright zone of light. I at first believed that the electric light had been set going, and was thus illuminating the surrounding sea ; but I was mistaken, and soon perceived my error.

The *Nautilus* was floating in the midst of a phosphorescent zone, which in the prevailing obscurity became dazzling. This was produced by myriads of luminous animalcules, whose sparkling increased as they glided against the metallic hull of the vessel. I could perceive spots of light in the midst of this luminous sheet, like the lumps of iron in a furnace when the metal is at a white heat ; and sometimes, on the contrary, certain luminous portions would become dark in the midst of the brilliant mass, from which all shade had apparently been banished. No, this was not the calm irradiation of our usual light. There was a vigour and an unwonted movement in it all. It was a living light.

In fact, it was an innumerable collection of pelagian infusoria of noctiluqueous glands, regular globules of diaphonous jelly, provided with a filiform tentacle ; and of which animals there are about 25,000 in thirty cubic centimetres of water. And their light was doubly increased by the gleams of the medusæ, the asteroids, and other phosphorescent zoophytes impregnated with the oily substance of organic matter decomposed in the sea, or, perhaps, with the mucus secreted by the fish. For a long time the *Nautilus* continued to float in these brilliant waves, and our admiration was increased at perceiving great marine animals disporting themselves like salamanders. I saw in that fire which did not burn

the elegant and rapid porpoise, indefatigable clown of the sea, and sword-fish three yards long, those intelligent prophets of storms, whose formidable weapons now and then struck the glass of the saloon panels. Smaller fish also appeared, which flashed amidst the luminous waters.

There was a fascination in this dazzling spectacle. Perhaps some atmospherical condition increased the brilliancy of the phenomenon. Some storm perhaps, from which the *Nautilus*, so low down, was secure, and so lay peacefully in the midst of calm waters.

Thus we proceeded, incessantly being charmed by some new marvel. Conseil observed and classed the zoophytes, the articulates, the molluscs, and fish. The days passed rapidly away, and I no longer took note of them. Ned, as usual, employed himself in finding out some additions to our table. Like snails, we were fastened to our shell; and I can state that it is not difficult to become a perfect snail.

Therefore this life appeared to us easy and natural, and we were no longer thinking of a different existence on land, when an event suddenly recalled us to the strangeness of our position.

On the 18th January the *Nautilus* was in long. 105° and 15° S. lat. The weather was threatening, the sea rough, and the wind blew strongly from the east. The barometer had for some days predicted an approaching storm.

I was on the platform when the mate was taking the usual angles. I was awaiting, as usual, for the customary sentence to be pronounced, but that morning another phrase, equally incomprehensible, was uttered. Almost

immediately I saw Captain Nemo approach, and direct his glass towards the horizon.

For some minutes the captain remained motionless, without taking his eyes from the telescope. He then dropped the glass and exchanged a few words with the mate. He appeared to be the prey of an irrepressible emotion; but Captain Nemo, more master of himself, remained cool and collected. He seemed, moreover, to be making certain objections, to which the mate responded by formal assurances. So at least I fancied, judging from their voices and gestures. I had been carefully looking in the direction indicated without discovering anything. The sea and sky met without any intervening object to break the continuity.

Meanwhile, Captain Nemo walked up and down the platform without noticing me, perhaps without being aware of my presence. His step was firm, but less regular than usual. Sometimes he stopped, folded his arms across his chest, and gazed fixedly at the sea. What could he be seeking in that immense expanse? The *Nautilus* was then some hundreds of miles from the nearest land.

The mate had taken up the glass and swept the horizon, going and coming, stamping his feet, and contrasting generally with his chief in the nervous agitation of his manner.

However, the mystery was about to be cleared up, and before long, for by the captain's order the screw was set going at a great rate.

At this moment the mate again attracted the captain's attention. Captain Nemo stopped in his walk and

levelled his glass in the direction indicated. He gazed for a long time steadily. I was now somewhat disturbed, and descending to the saloon, brought up an excellent telescope which I was in the habit of using. Then resting the glass upon the cage forward, I disposed myself to observe the sea and sky. But scarcely had I applied my eye to the telescope when it was snatched from my grasp. I turned round. Captain Nemo stood before me, but I scarcely recognised him. His face was completely altered. His eyes, flashing with a lurid light, glanced at me beneath his frowning brows. His mouth was half open, his body was rigid, his hands clenched, his head bowed between his shoulders—all bearing testimony to the violent emotion that possessed him. He did not move an inch. My glass, fallen from his hand, rolled to his feet. What had happened that I had thus unwittingly provoked his anger? Did he imagine that I had discovered some secret interdicted from the guests of the *Nautilus*?

No, I was not the object of his hatred, for he was not looking at me, but gazing steadily on the particular portion of the horizon.

At length he became calm, his face and figure resumed their usual impassibility. He spoke some words to the mate in the unknown tongue, and he then turned to me.

“M. Aronnax,” said he, in a somewhat haughty tone, “I would recall your attention to one of the conditions I imposed upon you.”

“What is the question, captain?”

“You and your companions must be content to be

incarcerated until I shall judge it desirable to release you."

"You are master here," I replied, looking at him steadily. "But may I ask you a question?"

"No, Monsieur."

There was no disputing this. I had not to discuss, but to obey. Any resistance was impossible.

I descended into the cabin occupied by Conseil and Ned, and told them of the captain's resolve. I will leave you to imagine how my tidings were received by the Canadian. However, there was no time for explanations. Four of the crew appeared at the door and conducted us to the cell in which we had passed our first night on board the *Nautilus*.

Ned Land wished to expostulate, but the door was shut upon him for all reply.

"Will Monsieur tell me what all this means?" asked Conseil.

I related all that had passed. They were as much astonished, but no more enlightened than I was. I fell into a reverie, and the strange expression of fear in Captain Nemo's face haunted me. I was quite incapable of putting two logical ideas together, and I had lost myself in the most absurd hypotheses, when I was aroused by Ned saying:

"Hullo! Breakfast is served."

And as a fact the table was prepared. Captain Nemo had evidently given this order at the time he directed the increase of the speed.

"Will Monsieur permit me to recommend him something?"

"Yes, Conseil," I replied.

“Well, then, I recommend that Monsieur eat his breakfast. It is prudent, for we do not know what may happen.”

“You are right, Conseil.”

“Unfortunately,” said Ned, “they have only given us ship’s fare.”

“Friend Ned,” said I, “what would you have done had there been no breakfast at all?”

This remark put an end to the harpooner’s grumbling. We sat down and ate in silence. I ate little; Conseil forced himself to eat, as a matter of prudence; and Ned Land, nevertheless, did not lose a mouthful. Then, breakfast over, we rested on the table as we sat.

Just then the luminous globes were extinguished, and we were left in utter darkness. Ned Land went to sleep on the spot, and to my astonishment Conseil also yielded to a heavy drowsiness. I was wondering what had caused this sudden accession of sleep in him when I felt my brain affected by a drowsy feeling. My eyes closed in spite of all my efforts to the contrary. I became a prey to a terrible hallucination. Evidently some soporific had been mixed with the food we had eaten. It was therefore not enough to imprison us to prevent the betrayal of Captain Nemo’s secret—it was necessary to drug us as well.

I heard the panels shut. The undulation of the water ceased. The *Nautilus* had then quitted the surface of the ocean. Was she again descending to the motionless zones of the seas?

I tried to resist sleep; it was impossible. My breathing became weaker; I felt a death-like chill ex-

tend over my frame. My eyelids fell over my eyes like lumps of lead ; I could not raise them. A morbid trance, and full of fancies, took possession of my whole being. Then the visions disappeared, and left me completely prostrated.

CHAPTER XXIV.

THE REALMS OF CORAL.

NEXT day I awoke, and my head was wonderfully clear. To my great surprise I was in my own room. My companions doubtless had been taken to their cabin without being more aware of the transfer than I was. They were quite as ignorant as I was respecting the occurrences of the night, and I could only hope that chance would develop the mystery at some future time. I then thought I would leave my chamber; but was I free, or still a prisoner? Free. I opened the door and went out upon the central staircase. The panels were now open. I reached the platform.

Ned Land and Conseil met me there. I questioned them; they knew nothing. Wrapped in such a heavy slumber that they remembered nothing, they had been much surprised to find themselves in their cabin.

All this time the *Nautilus* was as quiet and mysterious as ever. It floated at the surface and progressed slowly. Nothing was changed on board. Ned Land kept his eyes fixed upon the sea; it was deserted. The

Canadian signalled nothing new—no land, not even a sail. The west wind blew stiffly, and the long waves gave a perceptible motion to the *Nautilus*.

After the air had been renewed, we descended to a depth of fifteen metres, so that we might quickly return to the surface. This operation, contrary to custom, was often performed during the day. The mate then ascended to the platform, and the usual phrase was transmitted to the interior of the vessel.

Captain Nemo did not appear. Of all the ship's company, I only saw the impassible steward, who waited on me with his usual punctuality and silence.

About two o'clock I was in the saloon arranging my notes, when the captain entered. I saluted him. He acknowledged my greeting in an almost imperceptible manner, but did not speak. I resumed my occupation, hoping that he would offer some explanation of the events of the preceding night. He said nothing. I looked at him attentively. He appeared fatigued—his eyes had not been refreshed by sleep, and his face expressed a deep sadness, a real sorrow. He moved about, seated himself, then got up again, took up any book that came to hand, threw it down again immediately, looked at his instruments vacantly, and appeared thoroughly restless.

At length he came to me and said :

“Are you a doctor, M. Aronnax?”

I paused a little at this unexpected question.

“Are you a doctor?” repeated Captain Nemo. “Many of your colleagues have studied medicine—Gratiolet, Moquin-Tandon, and others.”

“Well, in fact,” I said, “I am a doctor, and a house-

surgeon. I practised many months before I entered the museum."

"Good," was the reply.

My answer evidently satisfied the captain. But not knowing what might come of it, I waited for further questions, resolving to reply according to circumstances.

"M. Aronnax," said the captain, "will you extend your skill to one of my men?"

"There is an invalid on board, then?"

"Yes."

"I am ready."

"Come with me."

I confess that my heart was beating. I do not know why I perceived some connection between this patient and the events of the preceding day, and the mystery troubled me at least as much as the sick man.

Captain Nemo led me abaft, into a cabin close to the men's quarters.

There lay a man about forty years old, a determined face too—a regular Anglo-Saxon.

I knelt beside him. He was not only a sick, but a wounded man. His head was wrapped in blood-stained bandages, and lay on a double pillow. I took off the bandages, and the wounded man, gazing at me with his great round eyes, made no sign and uttered no complaint. The wound was fearful. The skull, fractured by some blunt instrument, had laid the brain bare, and the cerebral substance had suffered complete attrition. Some clots of blood had formed within the mass, which was like the dregs of wine. There was a contusion and concussion of the brain here. The breathing of the patient was laboured, and spasmodic movements agitated his

features. The cerebral phlegmasia was complete, and induced paralysis both of body and mind.

I felt the sick man's pulse. It was intermittent. The extremities were already cold, and I could perceive that death was approaching without any possibility of my staying its approach. Having dressed his wounds I readjusted the bandages, and, turning to Captain Nemo, said :

“How did this man come by this hurt?”

“What matters?” he replied evasively. “The *Nautilus* struck, and broke one of the levers of the engine, which struck this man. But what is your opinion?”

I hesitated.

“You may speak fearlessly, he does not understand French.”

I looked again steadily at the wounded man.

“He will not live two hours longer,” I said.

“Can nothing save him?”

“Nothing.”

Captain Nemo clenched his hand, and tears glittered in his eyes, which I did not think were made to weep.

For some minutes I kept looking at the dying man as his life ebbed away. His paleness appeared more ghastly beneath the electric light that illuminated his death-bed. I looked at that intellectual head, and the face seemed furrowed by premature wrinkles, which sin, or perhaps trouble, had placed there long ago. I endeavoured to learn the secret of his life from the last words that escaped his lips.

“You can retire, M. Aronnax,” said the captain.

I left him in the cabin of the dying man, and regained my own room very much impressed by the scene I had witnessed.

All day I was haunted by sinister presentiments. At night I slept little, and amid my frequently interrupted dreams I fancied I heard distant sighings and the sound of a funeral hymn. Was it the prayer for the dead, uttered in that language which I did not understand.

Next morning I went on deck. Captain Nemo was there before me. So soon as he saw me he approached and said :

“Would it be convenient for you to make a submarine excursion to-day?”

“With my friends?” I asked.

“They can go if they like.”

“We are at your orders, captain.”

“Will you, then, put on your divers’ dresses, please?”

There was no question of the dying or the dead. I told Conseil and Ned Land what Captain Nemo had suggested.

Conseil was anxious to go, and the Canadian appeared very willing to accompany him.

It was eight o’clock, A.M. At half-past eight we were equipped for our expedition, and furnished with the lighting and breathing apparatus. The double door was opened, and, accompanied by the captain and followed by a dozen of the crew, we trod, at a depth of ten yards, upon the ground where the *Nautilus* was firmly reposing.

A gentle slope led us to a bottom much furrowed,

and about fifteen fathoms down. This ground was very different from that which we had first met with beneath the Pacific Ocean. Here was no fine sand, no submarine prairies nor forests. I immediately recognised that wonderful region of which Captain Nemo did the honours. It was the Kingdom of Coral.

In the branch of zoophytes, and in the class of alayonnares, we remarked the order of gorgonares, which includes the three groups of gorgonians, the insidians, and the corallines. It is to the last named that the coral is attributed—a curious substance, which has been classed by turns in the animal, mineral, and vegetable kingdoms. A remedy with the ancients, an ornament in modern days, it was only in 1694 that Peyssonnel classed it definitely in the animal kingdom.

Coral is a conglomeration of animalcules, united on a natural, brittle, and stony polypary. These polypes have a single generator, which produces them by a budding process ; they have a separate existence, while participating in a common life. It is a kind of natural solecism. I had read the latest works upon this curious zoophyte which mineralises itself in growing like a tree, following the very just observation of naturalists, and nothing could be more interesting to me than a visit to one of these petrified forests which nature has planted at the bottom of the sea.

The Rumhkorff apparatus were set going, and we followed a coral bank in course of formation, which in time will form a barrier to this part of the Indian Ocean. The way was by the side of inextricable thickets, formed by the entanglement of the branches which covered the little starry flowers with white rays, only, inverse to the

plants of earth, those fixed to the rocks all grew downwards.

The lights we carried produced a thousand beautiful effects amid those coloured branches. It appeared to me that the membranous and cylindrical tubes trembled at the undulation of the water. I was tempted to collect some of these beautiful fresh corals with such delicate tentacles, some newly opened, some just sprouting, which the fish, with rapid fins, moved as they passed, as a bird might move the twigs of the trees. But as my hand approached these living flowers, these sensitive plants, all were immediately on the alert. The white corals retired into their red cases, the flowers disappeared from my sight, and the "coppice" was changed into a block of stony hills.

Chance put me in possession of the most valuable specimens of this zoophyte. The coral is equal to that found in the Mediterranean, on the French, Italian, and Barbary coasts. It fully justifies its names of "Fleur de sang" and "Écume de sang," which trade has bestowed upon the most beautiful kinds. Coral is sold at 500 francs the kilogramme; and in this spot the beds would have made the fortunes of a thousand fishers. This valuable material, often mixed with other polypes, forms the compound called "Macciota," and amongst which I remarked some splendid specimens of rose coral.

But the "bushes" soon became smaller, and the tree growths increased. A petrified underwood and long fantastic arches opened before us. Captain Nemo penetrated beneath a dark gallery, whose gentle descent led us to a depth of 100 yards. The lights at

times produced magical effects, and caught the angles and projections of these natural arcades, until they appeared tipped with fire. Amidst the branching corallines I noticed other polypes no less curious—melites, articulated iris ; some tufts of corallines—some red, some green ; true algæ, crusted in their calcareous salts, which naturalists, after much discussion, have definitively ranged in the vegetable kingdom. But in the words of a deep thinker, “perhaps the real point to get at is where the life obscurely rises from the stony sleep, without being yet detached from this rude starting-point ”

After about two hours' walking, we attained a depth of about three hundred yards ; that is to say, the extreme limit at which coral begins to form. But here was no thicket nor modest bush, but an immense forest of coral, enormous petrified trees. We passed freely underneath the high branches which were lost in the shade of the waves, while at our feet the tubipores, meandrines, fungi, &c., formed a flowing carpet, sprinkled with sparkling gems.

It was an indescribable sight. Oh, that we could have exchanged confidences. Why were we imprisoned in this head-piece of metal and glass ? Why could we not speak to each other ? Why could we not live like the fish, or even like the amphibious animals, which for hours can roam at will in the domains of the land or water ?

Meantime Captain Nemo had stopped. We all followed his example, and turning round, I perceived that the men had formed themselves in a semicircle round their chief. And looking more closely, I perceived that four of them carried something on their shoulders.

We had arrived at a large open space in the coral forest. Our lamps threw around this clearing a sort of twilight, which cast long shadows on the ground. Beyond the reach of our lamps the darkness was profound, and only here and there a gleam fell upon the points of the coral.

Ned Land and Conseil were close to me. We looked on, and it appeared to me that I was about to take part in a very curious drama. On examining the ground I saw that it was heaped up in places, and these heaps were disposed with a regularity which betrayed man's handiwork.

In the midst of the clearing, upon a pedestal of rocks piled up to a great height, was a cross of coral, and its long, extended arms looked almost like petrified blood. At a sign from Captain Nemo one of the men advanced, and at some paces from the cross he began to dig a hole with a pick-axe which he detached from his girdle.

I understood it all. This clearing was a cemetery, this hole a grave, that long object the body of the man who had died during the night. Captain Nemo and his men had come hither to bury their companion in this their common resting-place at the bottom of the ocean.

Never had my mind been so impressed. Never had more impressive thoughts crowded my brain. I did not wish to see what was being enacted before me.

Meanwhile the grave was being slowly excavated. The fish fled hither and thither. I heard the iron ring upon the calcareous ground, and sometimes a spark would break forth as the pick came in contact with some

lost piece of silex. The hole extended and widened, and was soon sufficiently large to receive the body.

The bearers then approached. The corpse, wrapped in white byssus, was laid in its damp tomb. Captain Nemo, with folded arms, and all the friends of the dead man, knelt down ; I and my companions knelt also.

The grave was then covered with the *débris*, which had been dug out, and which thus formed a slight mound.

When this had been done, Captain Nemo and his men rose up, and approaching the grave all bent the knee once more, and waved a last adieu to their dead friend.

The funeral procession then returned to the *Nautilus*, repassing in its way beneath the arcades and the long bush-like formations of the coral.

At length the light appeared burning on board. The long gleam led us to the *Nautilus*. At one o'clock we had regained the ship.

As soon as I had changed my dress, I ascended to the platform, and beset by a crowd of mingled feelings, I sat down near the lighting apparatus.

Captain Nemo joined me. I got up and said :

“So, as I warned you, the man died during the night?”

“Yes, M. Aronnax,” he replied.

“And he now rests among his companions in the cemetery of coral.”

“Yes, forgotten by all—except by us. We have dug his grave, and the polypes will take care to seal up our dead for ever.” And hiding his face in his hard hands, the captain tried in vain to conceal a tear. Then he added :

“It is our most peaceful burying-ground, some hundreds of feet beneath the surface of the waves.”

“Your dead sleep there tranquilly at least ; out of reach of sharks.”

“Yes,” replied the captain, gravely, “out of the reach of sharks—and men.”

END OF VOL. I.

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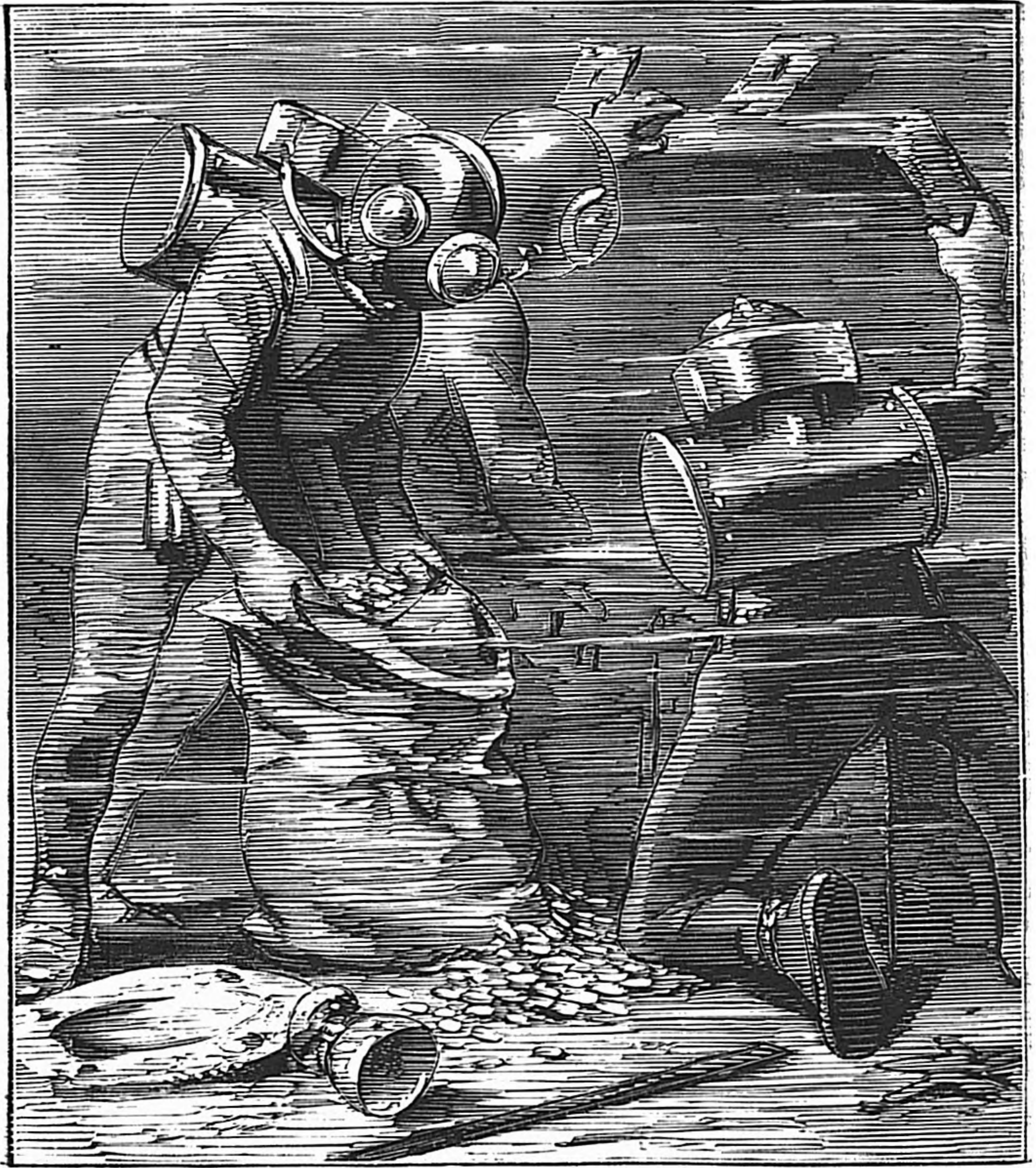
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“20,000 LEAGUES UNDER THE SEA.”—PART II.

TWENTY THOUSAND LEAGUES
UNDER THE SEA

BY

JULES VERNE

AUTHOR OF "THE ADVENTURES OF CAPTAIN HATTERAS"

"JOURNEY TO THE CENTRE OF THE EARTH"

ETC. ETC.

VOLUME II.

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TWENTY THOUSAND LEAGUES UNDER THE SEA.

CHAPTER I.

THE INDIAN OCEAN.

WE now commence the second part of the voyage under the sea. The first ended with that sad scene at the cemetery of coral, which left a deep impression on my mind. Thus, then, in the bosom of the deep sea the life of Captain Nemo was entirely passed, and he had even prepared his last resting-place in the most impenetrable of its abysses. There no ocean monster will ever disturb the last sleep of these companions of the *Nautilus*, of those friends united in death as in their lives. "Nor will any man, for ever," the captain had added—always the same strange implacable defiance towards mankind! For my part I was not any more contented by the hypothesis which satisfied Conseil. He persisted in taking the commander of the *Nautilus* for one of those mistaken *savants* who return man's indifference by dislike. So to Conseil the captain was an eccentric genius, who, disgusted by the falseness of earthly things, had been obliged to take refuge in the inaccessible seas where he could exercise his tastes freely. But in my opinion

this idea only explained one of the sides of Captain Nemo's character. In fact, the mystery of the night during which we had been imprisoned and drugged, the precaution so violently taken by Captain Nemo to snatch the telescope from my grasp, the mortal wound inflicted upon the sailor by some unexplained collision of the *Nautilus*—all these things led me into a new vein of thought. No; Captain Nemo did not content himself by merely avoiding mankind. His formidable apparatus not only served his tastes, but for some terrible vengeance.

At this time nothing is clear to me. I can only grope in the dark, and only write, so to speak, under the dictation of events.

Furthermore, nothing binds us to Captain Nemo. He knows that escape from the *Nautilus* is impossible. We are not even prisoners on parole. No promise binds us. We are merely captives—prisoners, called guests by courtesy. Ned Land has never given up the idea of recovering his liberty. He will surely take advantage of the very first opportunity that chance may throw in his way. I shall do the same. Nevertheless, it will not be without a sense of regret that I shall carry away with me all the mystery of the *Nautilus* that the captain's kindness has permitted me to penetrate. For, after all, was he a man to be hated or admired? Was he a victim or an executioner? And then, to be frank, I would like, before I quitted the vessel for ever, to finish this tour of the submarine world whose opening scenes are so splendid. I should like to see the marvels scattered beneath the seas, to behold what man never yet has seen, even if I pay by my life for this insatiable desire for knowledge. What have I discovered so far? Nothing, or scarcely more than nothing, since we have only travelled 6,000 leagues across the Pacific. Still, I know

very well that the *Nautilus* is approaching some inhabited land, and that if chance befriend us it would be cruel to sacrifice my companions to my passion for discovery. I must follow—perhaps lead them. But would the opportunity ever present itself? Then man, forcibly deprived of his liberty, wishes for it; the connoisseur—the *savant* fears it.

On the 21st January, 1868, at midday, the mate came up to take the sun's altitude. I was on the platform, and, lighting a cigar, I watched the operation. It seemed evident to me that this man did not understand French, for I often spoke my thoughts aloud, and the very words would have drawn from him some involuntary sign of attention if he had understood the language, but he remained impassible and silent.

While he was taking the observation, one of the sailors—the same who had accompanied us in our first excursion to the island of Crespo—came to rub up the lantern glasses. I then examined the fixing of this apparatus whose power is multiplied by lenticular rings arranged as in lighthouses, and which keep the light in the horizontal plane. The electric lamp was so arranged as to yield all its illuminating power. The light was produced in a vacuum, so the regularity and intensity were assured at the same time. By these means the points of graphite between which the light was developed were economised. This economy was very important for Captain Nemo, who could not easily renew the points. But under these conditions the expenditure was almost insensible.

So soon as the *Nautilus* was ready to recommence her submarine journey, I descended to the saloon. The panels were shut down and the course directed to the west.

We skimmed through the waves of the Indian Ocean, a vast liquid plain containing five hundred and fifty millions of hectares,* and the water is so transparent as to make those giddy who lean over them. The *Nautilus* usually floated at a depth of between 100 and 200 yards (metres). So we passed many days. To any one but myself, who is so passionately fond of the sea, the hours would have appeared, no doubt, long and wearisome; but the daily walks upon the platform, where I was able to drink in the healthy sea-air, the sight of the teeming waters through the crystal side-panels of the saloon, the books, the editing of my memoirs, engaged all my time, and did not leave me a moment for lassitude or *ennui*.

The health of the whole ship's company was still extremely good. The food suited us perfectly, and, for my own part, I could well have dispensed with the variations which Ned Land, in his spirit of protestation, studied hard to supply. Besides, in this even temperature we had no fear of catching cold, while the Madrepore dendrophylle, known in Provence as the "Sea-fennel," and of which a supply remained on board, furnished us by the melted flesh of its polyps with an excellent remedy against coughs.

We saw great numbers of aquatic birds as we proceeded; there were palmipeds, sea-mews and gulls, some of which we shot, and prepared in a particular way, furnished us with an acceptable supply of "water game." Amongst the larger birds which had flown long distances and were resting upon the water, I perceived a magnificent albatross, whose discordant cry is not unlike a donkey's bray. It belongs to the family of "longipennes." The family of totipalmes was represented by the frigate birds, which rapidly brought the

* A hectare is 2 acres, 1 rood, 35 perches.

fish to the surface, and by a number of "phaetons," or tropic birds, some as large as a pigeon; and of this kind, the red-tipped variety, the white plumage is shaded with rose-colour, which sets off the dark tints of the wings.

The nets captured many sorts of marine tortoise of the convex-backed genus, the shell of which is much sought after. These reptiles, which dive easily, can remain a long time under water by shutting the valve of flesh situated at the external orifice of the nose. Some of them when taken were still asleep beneath the marine animals. The flesh of these tortoises was generally only "middling," but their eggs were most excellent.

The fish continually roused our admiration as we watched them through the open side-panels of the vessel. I remarked here many species that I had not seen before.

I will notice principally the ostraceans native to the Red Sea, to the Indian Sea, and to that portion of the ocean which washes the coasts of equatorial America. These fish, like the tortoise, the turtle, the echinus, the crustacea, are protected by a cuirass which is neither cretaceous nor stony, but actually bony. Sometimes this covering takes the form of a triangular solid, sometimes of a quadrilateral form. Amongst the former kind I noticed some of the length of an inch and a half, the flesh most wholesome and of pleasant taste. The tail was brown, fins yellow; and I recommend the acclimatisation of these fishes in fresh water, to which some sea fish soon accustom themselves. There were also quadrangular ostraceans, bearing four large tubercles on the back; the spotted ostraceans, with white spots on the belly, which grow as tame as birds; the trigons, provided with prickles formed by the prolongation of their bony covering—these fish have been dubbed "sea-pigs," on account of the singular grunting

noise they emit; then there were "dromedary" fish, with large humps, whose flesh is hard and coarse.

I also extract from the notes daily taken by Conseil certain fish of the tetrodon genus peculiar to these seas with red backs and white bellies, which are marked by three longitudinal rows of filaments; and electric eels seven feet in length, adorned with most beautiful colours.

Then, as specimens of other genus, there were ovoïds like a brownish-black egg, striped with white bands, and tailless; disdons, regular sea-porcupines, furnished with quills, and able to swell themselves out so as to present the appearance of a ball bristling with spikes. The sea-horses common to all oceans; the flying pegasus, with long snouts and with their pectoral fins so elongated and disposed in the form of wings that they can almost fly—at least rise into the air; pigeon-spatulæ, whose tails are covered with numerous scaly rings; macrognathes, with long jaws—excellent fish, twenty-five centimetres long, and shining with various colours; pale calliomores, with reddish heads; myriads of blennies, striped with black, and shooting to the surface with prodigious velocity, aided by their long pectoral fins; the trichopteres, whose wings are formed of filaments; trygles, whose liver is considered poison; bodians, which wear a movable blinker on the eyes; and, finally, the blow-fish, or chætodons, having a long tubular snout; fly-catchers, armed with a gun which neither chassépots nor Remingtons can beat, and which kill the insects by shooting a drop of water at them.

In the eighty-ninth genus of fishes classed by Lacépède, which belongs to the second sub-class of Ossians, characterised by an operculum and a bronchial membrane, I remarked the scorpena, the head of which is furnished with spikes, and which only possesses a single dorsal fin; these

animals are supplied with or deficient of little scales according to the sub-genus to which they belong. The second sub-genus gives us specimens of didactyles, thirteen or fourteen inches in length, striped with yellow, with very odd-looking heads. The first sub-genus furnishes many specimens of a curious fish justly named the "sea-frog." It is a large-headed fish, sometimes shrunken, sometimes puffed out, bristling with spines, and sprinkled with tubercles; it has irregular and ugly horns, its tail and body are furnished with a hard skin, its prickles inflict dangerous wounds, and it is altogether horrible and repugnant.

From the 21st to the 23rd of January, the *Nautilus* steamed at the rate of 250 leagues in twenty-four hours; that is to say, 540 miles, or twenty-two miles an hour.

Any fish we recognised on the passage were those which were attracted by our electric light; the greater number were speedily distanced, but some managed to keep up with the *Nautilus* for a time.

On the morning of the 24th, in S. lat. $12^{\circ} 5'$, long. $94^{\circ} 33'$, we sighted the isle of Keeling, planted with magnificent cocoa-nut trees. It was formed by the madrepores, and was visited by Mr. Darwin and Captain Fitzroy. The *Nautilus* gave the shores of this desert island a wide berth. We brought up in the drags numerous specimens of polypi and echinodermes, and some curious shells of molluscs. Some beautiful specimens of the delphinale species were added to Captain Nemo's treasures, to which I contributed an *Astræa punctifera*, a sort of polype parasite often fixed upon a shell.

Keeling Island soon disappeared, and we steered N.W. towards the southern point of Hindostan.

"Some civilised territory," said Ned, "would be better than these islands, where there are more savages than goats.

In India, sir, there are roads, railways, towns inhabited by English, French, and Hindoos ; one could not go for five miles without meeting a fellow-countryman. Is not this the time to stir up Captain Nemo's sense of politeness ?”

“ No, Ned,” I replied, in a determined tone. “ Let us go on as we are. The *Nautilus* is approaching habitable continents. We are returning towards Europe. Once arrived in our own seas we shall see what prudence suggests as best to be done. Besides, I do not suppose that Captain Nemo would permit us to go ashore to hunt upon the coasts of Malabar or Coromandel, as we did in the forests of New Guinea.”

“ Well, but cannot we go without leave ?”

I made no reply, for I did not wish to discuss this point. At heart I was ready to go through the adventure to the end.

After leaving Keeling Island our progress was slower and more erratic, leading us at times to great depths. The inclined planes were often used, and which levers within the vessel placed obliquely to the line of flotation. We went in this manner for about two miles, but without ever reaching the enormous depths of the Indian Sea, in which sounding lines of 7,000 fathoms have not touched bottom. The temperature of the low zones is always four degrees above zero. I observed, however, that in the upper zones the water was always colder in the high levels than in the open sea.

On the 25th January the ocean was absolutely deserted, the *Nautilus* passed the whole day at the surface, knocking up great waves with her powerful screw. Who would not, under these circumstances, have mistaken her for an enormous cetacean ? I passed the greater portion of the day upon the platform, looking at the sea. There was nothing in sight

till about 4 P.M. we saw a large steamer running westward, on the opposite tack. Her masts were for an instant visible, but she could not perceive the *Nautilus*, which was so low in the water. I fancied that this steamer belonged to the Peninsular and Oriental Company, plying between Ceylon and Sydney, touching at King George's Point and Melbourne.

At 5 P.M., before the quickly-passing twilight, which joins day and night in tropical countries, Conseil and I were astonished by a very curious sight.

It was a pretty animal we saw, the appearance of which, according to the ancients, betokened good luck. Aristotle, Pliny, &c., had studied its habits and exhausted in respect of it all the poetry of the *savants* of Greece and Italy. They called them *Nautilus* and *Pompylius*; but modern science has not endorsed these appellations, and the mollusc is now known as the argonaut.

If anyone had consulted Conseil, he would have told them that the molluscs are divided into five classes; that the first class, that of the cephaloids, are shell-less sometimes, sometimes tentacular, and include two families—the *dibranchiæ* and the *tetrabranchiæ*. The former family includes three genus—the argonaut, the calmar, and the “seiche,” while the other has only one genus—the *nautilus*. If, after this distinction, anyone confuses the argonaut, which is *acetabulifer*, or air-carriers, with the *nautilus*, which is *tentaculifer*, or carrying tentacles, there can be no excuse for him.

Now this was a shoal of argonauts which were sailing along. We could reckon them by hundreds; they belonged to the tubercular argonauts, which are peculiar to the Indian seas.

These graceful molluscs moved backwards by mean of

expelling the water they had aspired. Of their eight tentacles, six long and thin floated in the water, while the others, rolled up in a rounded, flattened form, were extended to the wind, and acted as sails. I could easily see the spiral and undulating shells, which Cuvier justly compared to an elegant boat. A boat indeed, for it bears the animal without the animal being fixed to it.

“The argonaut is free to quit its shell,” I said to Conseil, “but it does not do so.”

“Just like Captain Nemo,” replied Conseil, judiciously. “Perhaps it would be better to have called this vessel the *Argonaut*.”

For about an hour the *Nautilus* was surrounded by this shoal of molluscs. Suddenly they took alarm, I know not why. At a signal all the sails were furled, the arms were folded, the bodies contracted; the shells, turning over, changed the centre of gravity, and the whole fleet disappeared beneath the waves. It was instantaneous, and no ships in the navy could execute a manœuvre with greater smartness.

Night now fell, and the waves, scarcely ruffled by the breeze, rolled quietly alongside the *Nautilus*.

The following day we crossed the equator at the eighty-second meridian, and passed into the northern hemisphere.

During the day a formidable tribe of sharks kept us company. Terrible animals they are, and render these seas very dangerous. These were the “Phillipi” species, with brown backs and whitish bellies, having eleven rows of teeth; the “eyed” sharks, which have a great black patch surrounded by white on their backs, which resembles an eye; and the “Isabelle” sharks, their round backs spotted with black. These powerful animals often struck the glass panels of the saloon with a violence that was rather alarming. At those

times Ned Land got very impatient ; he wanted to go up to the surface and harpoon some of the monsters ; and some, whose mouths were studded with teeth, disposed like a mosaic, and enormous tiger-sharks, five yards long at least, provoked him incessantly. But the *Nautilus* increased her speed, and soon left the most rapid of the sharks astern.

On the 27th January, opening up the Bay of Bengal, we repeatedly encountered a horrible sight—viz., dead bodies, which were floating at the surface. These were the dead from the Indian towns on the Ganges, and which the vultures, the only scavengers of the country, had not been able to devour. But the sharks had no need of assistance in their horrid banquet.

About 7 P.M. the *Nautilus*, half emerged, was ploughing through a sea of milk. As far as one could see the ocean appeared to be covered with milk. Was this the effect of the lunar rays ? No, for the moon was scarcely two days old, and was still below the horizon. The whole sky, although illuminated by the sheen of the stars, appeared dark in contrast with the whiteness of the sea.

Conseil could not believe his eyes, and inquired the cause of this singular phenomenon. Fortunately I was able to answer.

“ It is what is called a ‘ milk sea,’ ” I replied, “ a vast expanse of white waves, which is frequently observed upon the coasts of Amboyna and in these latitudes.”

“ But,” said Conseil, “ Monsieur will perhaps inform me what is the cause of this, for I do not imagine that the sea is changed to milk.”

“ No, my lad, this whiteness which astonishes you is due to the presence of myriads of infusoria, a kind of luminous worm, gelatinous and colourless, about as thick as a hair,

and not more than $\frac{1}{1000}$ of an inch in length. Some of these animals adhere to each other for many leagues.”

“For many leagues!” exclaimed Conseil.

“Yes, and do not seek to ascertain the number of these infusoria. You will never arrive at it, for, if I do not mistake, people have sailed through these milk seas for more than forty miles.”

I do not know whether Conseil attended to my advice, but he seemed to be deep in thought, seeking, no doubt, to calculate how many $\frac{1}{1000}$ ths of an inch were contained in forty square miles. I continued to observe the phenomenon. For many hours the *Nautilus* drove through these white waves, but towards midnight the sea resumed its usual appearance, but behind us, as far as we could see, the sky, tinged by the reflection from the waves, seemed to be covered with the indistinct gleams of the aurora borealis.

CHAPTER II.

A NOVEL PROPOSITION OF CAPTAIN NEMO.

ON the 28th February, when the *Nautilus* came up to the surface, in $9^{\circ} 4'$ N. lat., we were in view of land about eight miles westward. I noticed first a range of mountains about 2,000 feet high, whose forms were very uneven. After our position had been ascertained and reported, I found that we were close to Ceylon, the pearl which hangs from the lobe of the Indian peninsula.

I searched in the library for some book about this island, which is one of the most fertile in the world. I found a volume entitled, "Ceylon and the Cingalese."

At that moment Captain Nemo appeared with the mate. The captain cast a hasty glance at the map, then turning to me, he said :

"Ceylon is celebrated for its pearl fisheries. Would you like to visit one of them?"

"Very much indeed, captain," I replied.

"Well then, that is easily managed. Only, if we go to the fishery, we must go as fishermen. The annual search has not yet commenced, but never mind. I will give orders

to 'pull up' in the Gulf of Manaar, where we shall arrive during the night."

The captain then said something to the mate, who went out immediately. The *Nautilus* soon descended again, and remained at a depth of about thirty feet.

Map in hand I searched for the Gulf of Manaar. I descried it in the 9th parallel on the N.E. coast of Ceylon.

"Professor Aronnax," said Captain Nemo, "pearls are found in the Bay of Bengal, in the Indian Ocean, in Japanese and Chinese seas, in the South American waters, in the gulfs of Panama and California, but it is at Ceylon that this fishery obtains the best results. We shall soon get there. The divers only assemble in March in the Gulf of Manaar, and there for thirty days their 300 boats reap a glorious harvest. Each boat is fitted for six rowers and six divers. These in two parties descend alternately to a depth of more than 150 feet by means of a heavy stone, which they retain between their feet, and which is fastened to the boat by a rope."

"This," said I, "was the primitive method. Is it still used?"

"Yes," replied the captain, "even now when the fisheries belong to the English, to whom they were ceded by the Treaty of Amiens in 1802."

"It seems to me, captain, that the diver's dress you have would suffice in this expedition."

"Yes, for the poor fishers cannot remain long under water. Perceval, an Englishman, in his 'Travels in Ceylon,' spoke highly of a Caffre, who remained for five minutes under water, but I can scarcely credit it. I know that some divers can stay for fifty-seven seconds, and very skilful ones for eighty-seven, which is very seldom done, and when they return to the boat, these unfortunate fellows bleed from

the nose and ears. I believe the average time these divers can exist under water to be thirty seconds, during which time they detach all the pearl oysters they can seize, but these men do not live long as a rule; they are weakened, ulcers form in their eyes, sores come upon their bodies, and they are frequently seized with apoplexy at the bottom of the sea."

"Yes," I replied, "it is an unpleasant avocation, and only to satisfy a caprice. But what number of oysters can a boat capture during the day?"

"From 40,000 to 50,000. It is said that in 1814 the English Government, having taken the fishing on its own account, the divers, during twenty days' working, brought up 76,000,000 of oysters."

"Well, at any rate these fishers are well paid?"

"Not at all. In Panama they make only one dollar a week. More frequently they receive a halfpenny for every pearl oyster; and how many do they bring up which contain no pearl!"

"A halfpenny for these poor people who enrich their masters! It is iniquitous."

"Well, Monsieur, you and your companions shall visit the Manaar Bank, and if by chance we find some early fisher there we will see him at work."

"That's a bargain, captain."

"By-the-by, M. Aronnax, are you afraid of sharks?"

"Sharks!" I exclaimed.

This appeared a somewhat difficult question, to me at least.

"Well?" asked the captain.

"I must confess," I said, "that I am not yet very familiar with that genus."

"Well, we people here are accustomed to them, and so

will you be in time. Besides, we are armed, and as we go along we may perhaps have a shark hunt. It is a very interesting occupation. So to-morrow, Monsieur ; and very early."

And saying this in an airy manner, Captain Nemo quitted the saloon.

If you were invited to a bear hunt on the Swiss mountains what would you say? "Well, to-morrow we will go bear-hunting." If asked to hunt lions on the plains of the Atlas, or the tiger in an Indian jungle, you would reply, "All right. It seems we are going to hunt the lion or the tiger (as the case may be)." But if you were asked to hunt the shark in his native element, you would, perhaps, request a little time to consider before accepting the polite invitation.

I passed my hand over my forehead as I mused, and found it covered with a cold perspiration.

"Let us think over this," I said to myself ; "and take our time. To hunt otters, as we did, in the forest of the Isle of Crespo is one thing, but to go down to the bottom of the sea where one is nearly certain to encounter sharks is another. I know very well that in some places—the Andaman Islands, for instance—the negroes do not hesitate to attack the sharks, a dagger in one hand a lasso in the other, but I also am aware that many of the venturesome individuals never return. Besides, I am not a negro ; and even if I were, I do not think a little hesitation would be at all out of place under the circumstances."

And so I dreamt of sharks, and of their vast jaws armed with rows of teeth capable of snapping a man in half. I already began to experience a curiously unpleasant sensation about the waist. But I could not understand the easy way in which the captain had given this deplorable invitation ;

he had said it in much the same way as one would ask you to go fox-hunting.

“However,” I thought, “Conseil will not want to go, and that will give me an excuse to let the captain go without me.”

As for Ned Land, I was obliged to confess that I was not so sure of his sagacity. Any peril, however great, had always an attraction for his bellicose nature. So I returned to my book on Ceylon, but between the lines I could perceive the formidable jaws opening still.

At this moment Conseil and Ned returned with quite a cheerful air; they little knew what was in store for them.

“Faith, Monsieur! your Captain Nemo—may the devil take him—has made us a very nice offer.”

“Ah!” I exclaimed, “you know——”

“If Monsieur has no objection,” replied Conseil, “the captain has asked us to accompany Monsieur to the magnificent pearl fisheries of Ceylon. He made the suggestion like a gentleman.”

“He said nothing more than that?”

“Nothing,” replied Ned, “except that he had spoken to you on the subject.”

“So, in fact, he gave you no details?”

“None. You will accompany us, won’t you?”

“I? Certainly. I perceive you like the idea, Master Land.”

“Yes, it is curious, very curious!”

“A little dangerous, perhaps?” I insinuated.

“Dangerous?” exclaimed Ned. “A little excursion on an oyster-bank—dangerous?”

It was evident that Captain Nemo had decided that it would be useless to awake the idea of sharks in the minds of my companions. I already looked upon them with a

pitying glance, as if they had lost a limb. Ought I to warn them? Yes, doubtless, but I did not quite know how to set about it.

“Monsieur,” said Conseil, “will Monsieur tell us how they set about this oyster fishing.”

“The fishing itself, or the incidents connected with it?”

“About the fishing,” said the Canadian. “Before getting to the ground, we ought to know something of it.”

“Well, then, if you will sit down, I will tell you all I have read upon the subject.”

Ned and Conseil took their seats, and suddenly the Canadian asked :

“What is a pearl?”

“My brave Ned,” I replied, “to a poet a pearl is a tear of the sea ; to the Orientals it is a solidified dew-drop ; to ladies it is a jewel of oblong shape, of a material like mother-of-pearl, which they wear on the finger, the neck, or ears ; for the chemist it is a mixture of the phosphate and the carbonate of lime with a little gelatine ; and, finally, for naturalists it is merely a morbid secretion of the organ which produces the mother-of-pearl in some bivalves.”

“Branch of mollusca—class acephali ; order testacea,” said Conseil.

“Precisely, Professor Conseil. Now amongst these testacea, the sea-ear iris, the turbot, the tridanaë, and all those which secrete the mother-of-pearl—that is to say, that blue, bluish-violet, or white substance which lines the interior of their shells—are not unlikely to produce pearls.”

“And mussels also?” asked the Canadian.

“Yes, mussels in certain districts of the coast of Scotland, Wales, Ireland, Saxony, Bohemia, and France.”

“Ah ! in future I will pay them a little attention,” replied Ned.

“But I said the mollusc that really forms the pearl is the pearl-oyster—the *Meleagrina margaritifera* pintadines. The pearl is only a nacreous concretion which is disposed in a globular shape. It adheres to the oyster-shell, or encrusts itself in the body of the animal. Upon the shells the pearl adheres, in the flesh it is loose ; but in any case it possesses a little hard nucleus, which may be a barren-egg—a grain of sand around which the nacreous matter has been disposed, during many years, by delicate and concentric layers.”

“Are many pearls found in one oyster?” asked Conseil. “Yes ; there are certain ‘pintadines’ which form a regular casket of pearls. I have heard of an oyster—though I rather doubt the story—which contained no less than 150 sharks !”

“A hundred and fifty sharks !” exclaimed Ned.

“Did I say sharks ?” I cried quickly, “I meant pearls ; sharks would be absurd.”

“Of course,” said Conseil. “But Monsieur has not yet told us how the pearls are obtained.”

“In many ways, and frequently when the pearls adhere to the shells, the divers tear them with pincers. But more commonly the ‘pintadines’ are extended on the esparto fibres which are laid on the banks. They then die in the open air, and at the end of ten days they are in a satisfactory state of putrefaction. They are then thrown into large reservoirs of salt water, and are then opened and washed. At this period the real labour of the sorters begins. First they separate the layers of mother-of-pearl, known in commerce as *franche argentée*, bastard whites and bastard blacks, which are sent off in cases of 200 or 300 pounds each. The ‘parenchyma’ of the oyster is then raised, boiled, and sifted for the pearls.”

“ I suppose pearls vary in price according to size ? ” said Conseil.

“ Not only according to size, but according to shape and the ‘ water,’ or colour, and their ‘ orient,’ that is the ‘ shot’ coloured hue which is so beautiful. The most beautiful are called virgin pearls, or paragons ; they form only in the tissue of the mollusc. They are white, often opaque, but sometimes of an opaline clearness, and more usually oval or rounded. The spherical pearls are made into bracelets, the oval into pendants, and, being the most valuable, they are sold singly. The other pearls adhere to the oyster-shell, and, not being so good, are sold by weight. Finally, in the inferior class come the small pearls, known as ‘ seed-pearls,’ which are sold by the measure, and are chiefly used to embroider church furniture.”

“ But is it a long or difficult job to separate the pearls according to size ? ” asked Ned.

“ No ; this work is performed by means of sieves or screens of various meshes. The pearls that remain in the largest sieves are reckoned of the first class, those that do not pass through the medium screens are counted in the second class, and those are called ‘ seed-pearls,’ for which the smallest sieves, pierced with 900 to 1,000 holes, are used.”

“ It is ingenious, but I see the classing of pearls is only a mechanical operation,” said Conseil. “ But can Monsieur tell us what the cultivation of oyster-beds yields to the owner ? ”

“ According to my information, the annual value of the Ceylon fisheries is three millions of sharks.”

“ Of francs, I suppose,” said the Canadian.

“ I mean francs—three millions of francs. But I do not think the fisheries yield as much as formerly. It is the

same with the American beds, and in fact we may estimate nine millions as the whole value of the pearl fisheries."

"But are there not some celebrated pearls which command a very high price?"

"Yes, my lad. They say Cæsar offered Servillia a pearl estimated at 120,000 francs of our money."

"I have even heard it stated that some woman of antiquity used to drink pearls dissolved in vinegar," said Ned.

"Cleopatra," replied Conseil.

"That must have been very unpleasant," added Ned.

"Detestable, friend Ned; and a little glass of vinegar that cost 1,500,000 francs *was* dear!"

"I am sorry I didn't marry that woman," said the Canadian, raising his arm in a menacing manner.

"Ned Land Cleopatra's husband!" exclaimed Conseil.

"But I ought to marry, Conseil, and it is not my fault that the business has not come off. I have even purchased a necklace of pearls for Kate Tender, my *fiancée*, who, meanwhile, married somebody else; the necklace cost only a dollar and a half, and yet, if Monsieur will believe me, the pearls would not have passed through the biggest sieve."

"My good Ned," I said, laughing, "they were artificial pearls, simple glass drops filled with essence of orient."

"Is that expensive?" asked the Canadian.

"Not at all. It is only the silvery substance of the scales of the bleak collected in the water and preserved in ammonia. It has no value."

"Perhaps that is the reason why Kate married the other fellow," said Ned, philosophically.

"But," said I, "to return to our high-priced pearls. I do not believe any sovereign ever possessed any so valuable as those Captain Nemo has,"

“This?” said Conseil, indicating a splendid one in a glass case.

“Certainly. I do not think I am wrong in estimating it as worth two millions of——

“Francs!” said Conseil, quickly.

“Yes, two millions of francs; and I daresay that sum would not repay the captain for the trouble of obtaining it.”

“Eh!” said Ned; “but who knows that we may not get such another to-morrow.”

“Bah!” said Conseil.

“Why not?”

“What would be the use of millions to us here?”

“On board, no. But otherwise——”

“Oh! otherwise,” echoed Conseil, with an upward toss of his head.

“Master Land is right, though,” said I, “and if we could bring back to Europe a pearl worth a few millions there will be at once a proof of the truth and success of our expedition.”

“I believe it,” said the Canadian.

“But,” said Conseil, who always came back to the instructive side of things, “is this pearl-fishing dangerous?”

“No,” said I quickly, “not if you take proper care.”

“What risks do you run?” asked Ned. “The taste of some mouthfuls of sea water?”

“Just so, Ned. By-the-by, are you afraid of sharks?”

I asked this in as airy a tone as I could assume.

“I?” exclaimed Ned. “A harpooner by profession? Why I laugh at them!”

“But,” said I, “it is not the question of fishing for them, hauling them on board ship, and cutting them up, and throwing the heart into the sea.”

“Then it is——”

“Yes, exactly.”

“In the water?”

“Yes, in the water.”

“Faith, with a stout harpoon, I don’t know. You understand that these sharks are very ill-made beasts. They must turn on their backs to snap you up, and meantime——”

Ned’s way of pronouncing “snap you up” made my blood run cold.

“Very well. And, Conseil, what do *you* think of the sharks?”

“I will be frank with Monsieur,” he said.

“So much the better,” I thought.

“If Monsieur will encounter the sharks, his faithful servant will also encounter them by his side.”

CHAPTER III.

A PEARL OF TEN MILLIONS.

NIGHT came. I went to bed, but slept badly. The sharks played an important part in my dreams. I was awakened by the steward at four o'clock. I got up at once, and, dressing quickly, passed into the saloon.

There Captain Nemo was waiting for me.

"M. Aronnax," said he, "are you ready to start?"

"I am."

"Will you follow me, please?"

"And my companions also, captain?"

"They have gone, and are waiting for us."

"Shall we not put on our diving dresses?" I asked.

"Not yet. I have not permitted the *Nautilus* to come very close to the shore, and we are still at some distance from the Manaar Bank; but the launch is ready to take us to the exact spot, and will save us a long way. It has the apparatus on board, and we can put our dresses on at the moment we commence our submarine journey."

Captain Nemo then led the way towards the central staircase to the platform. There we found Ned and Con-

seil, delighted at the "pleasure party" in prospect. Five sailors were resting on their oars in the boat alongside.

Day had not yet appeared. The sky was cloudy, and but few stars were visible. I looked towards the land, but could descry nothing but a dark line across the horizon from S.W. to N.W. The *Nautilus*, having run up the western side of Ceylon during the night, was west of the bay, or rather of the gulf formed between the "main island" and the island of Manaar. There, beneath the dark waters, lay the bank of pintadines, an inexhaustible pearl-field twenty miles in length. Captain Nemo, Ned Land, and I, took our places in the stern-sheets of the launch. The coxswain took the tiller, the sailors were ready, the "painter" was "cast-off," and we started.

The course was to the south; the rowers did not hurry. I noticed that, while they pulled strongly, they rested for about ten seconds between each stroke, like man-o'-war's men. As the boat proceeded the bubbles broke crisply upon the dark waves like drops of molten lead. A slight swell rolling in from the offing gave some motion to the boat, and broke beneath the bows in curling waves.

We were all silent. What was Captain Nemo thinking about? Perhaps of the land we were approaching, and which was too near for him, as it was still too far for the Canadian. As for Conseil, he was with us merely as a spectator. About half-past five the first tints on the horizon showed the coast-line more clearly. It appeared to be somewhat flat on the east side, but became more undulating towards the south. We were still five miles away, and the coast was not very distinctly seen, owing to the mist. Between us and the shore nothing was to be seen. Not a diver nor his boat. A death-like silence reigned in this

trysting-place of pearl-fishers. So, as Captain Nemo had said, we had arrived a month too soon.

At six o'clock the day broke with that suddenness peculiar to tropical climes. The sun's rays pierced the bank of clouds on the eastern horizon, and the orb ascended rapidly in the heavens. I could now see the land distinctly, with the trees scattered here and there upon it.

The launch approached the island of Manaar, which trended to the south. Captain Nemo rose from his seat, and gazed over the sea.

At a sign from him the anchor was let go, and the chain ran out; but not far, for the depth was not much more than a yard; and just here was the highest portion of the pearl-oyster beds. The launch immediately swung to the ebb-tide.

"Well, here we are, M. Aronnax," said the captain. "You see this bay is well enclosed. Here, in a month's time, will assemble numerous fishing-boats, and in these waters the divers will go boldly to work. This bay is wonderfully formed for this kind of fishing. It is protected from the strongest winds, and the sea is never very high, which is a favourable circumstance for the divers. We will now put on our dresses, and commence our excursion."

I made no reply, and, all the time gazing at the "suspected" sea of sharks, I was assisted into my dress by one of the sailors. Captain Nemo and my companions were also inducted into their habiliments. None of the sailors of the *Nautilus* were to go with us.

We were soon clothed up to the neck in the india-rubber garments, and the air apparatus was fastened to our shoulders by braces. There was no necessity to use the Ruhmkorff lighting apparatus. Before putting on my helmet I spoke to the captain about it.

“They would be useless,” he said, “as we shall not go to any great depth, and the sunlight will suffice for us. Besides, it would not be very prudent to carry an electric lamp under these waters. The light might attract some dangerous inhabitants inopportunately.”

As Captain Nemo spoke, I turned towards Ned and Conseil. They had already put on their helmets, and could neither hear nor reply.

One last question I must address to the captain.

“Our arms,” I said; “what about our guns?”

“Guns, for what?” he said. “Do not mountaineers attack bears with daggers? and is not the steel more certain than lead? Here is a true bit of steel for you. Stick it in your waist-belt and let’s go.”

I again looked at my friends. They were also furnished like ourselves, and besides the dagger, Ned Land brandished an enormous harpoon, which he had placed in the boat before we left the *Nautilus*. Then following the captain’s example, I put on my head-piece, and the air-reservoirs immediately began to act.

An instant after the sailors let us gently down into the water, and at about ten yards from the surface we touched a fine sand.

Captain Nemo signed to us; we followed him, and descending a gentle slope, we disappeared under the waves.

Once beneath the water, the fearsome ideas I had hitherto indulged disappeared, and I was quite calm. The ease with which I was able to move, gave me confidence, and the unusual sights around me captivated my imagination.

The sun already gave us sufficient light. The smallest objects were perceptible. After walking for ten minutes, we were about six yards beneath the surface, and the sand became more level.

Shoals of fish, as we advanced, rose up before us like snipe in a bog. These fish were of the monoptera genus, having no other fin than the tail. I recognised the Javanese, a true serpent, about three feet long, which might easily be mistaken for the conger, without the line of gold on his sides. Amongst the stromatas, whose bodies are very compressed and oval-shaped, I observed "parus" of brilliant colours, with scythe-like dorsal fin, an eatable fish, and which, when dried and salted, makes an excellent food called *karawade*; there were tranquebars that belong to the apsiphoroïdes, the bodies of which are covered with a scaly protection.

Meantime the light increased as the sun rose higher in the heavens. The nature of the ground changed by degrees. A regular causeway succeeded to the fine firm sand, and the stones were clothed with a carpet of molluscs and zoophytes. Amid the specimens of these two branches, I remarked the placons, with thin and unequal shells, a sort of ostracea peculiar to the Red Sea and the Indian Ocean; some orange lucinæ with orbicular shells, and many other interesting varieties, panopines, oculines, &c. In the midst of these living plants, and beneath the hydrophytes, lay legions of articulates, chiefly the *rania dentata*, the carapace of which make a slightly rounded triangle. A hideous animal, and one I have encountered many times, was the enormous crab observed by Mr. Darwin, on which nature has bestowed the instinct and strength necessary to live upon cocoa-nuts. It ascends the trees on the beach, knocks off the nuts, which are cracked by the fall, and it then "prizes" them open with its powerful claws. Here beneath these transparent waves this animal moves with incredible velocity. Towards seven o'clock we reached the oyster-beds, on which the pearl-oysters reproduce themselves by

millions. These valuable molluscs adhere to the rocks, and are there strongly attached by the byssus which will not allow them to move. In this respect, the oyster is inferior to the lowly mussel, to which nature has granted certain powers of locomotion.

Captain Nemo indicated a prodigious number of pinta-dines, and I could understand that the supply was really inexhaustible, for the creative power of nature is beyond man's destructive tastes. Ned Land, faithful to his instinct, hastened to fill his net with the best oysters he could gather.

But we could not stay, we were obliged to follow Captain Nemo, who appeared to be striking out paths known to him alone. The ground was getting higher evidently, and sometimes my arm, when held up, was above the surface of the water. The levels of the beds were very irregular, we often turned high rocks worn into pyramid shape. In their gloomy fissures enormous crustacea, standing on their long limbs like war-machines, looked at us with fixed eyes, while beneath our feet were many others.

A large grotto now opened before us, excavated amid a picturesque mass of rock, covered with thick submarine flora. The grotto at first sight seemed very dark indeed. The sun's rays seemed to be extinguished gradually, and the vague transparency might fitly be termed "drowned light."

Captain Nemo entered it, however; we all followed him. My eyes soon got accustomed to the gloom. I perceived that the springings of the arches were irregular, and supported by natural pillars standing on broad granite bases like Tuscan columns. Why did our guide lead us into this submarine crypt? I was to know ere long.

Having descended a somewhat steep decline, we reached

a kind of circular pit. Here Captain Nemo stopped and pointed out to us something I had never seen before.

It was an oyster of most extraordinary size, a gigantic tridacne, a shell which would have held a lake of holy water, a vase whose breadth was more than two and a half yards, and, therefore, larger than that which was in the saloon of the *Nautilus*.

I approached this enormous mollusc. It was fixed to a granite slab, and there it grew by itself beneath the calm waters of the grotto. I estimated its weight at 600 pounds. Now an oyster like this would contain about thirty pounds' weight of meat, and one must have the stomach of a Gargantua to swallow a few dozen of such "natives."

The captain was aware of the existence of this bivalve; evidently it was not the first time he had visited it, and I thought that in coming hither he had only wished to show us a natural curiosity. I was mistaken. Captain Nemo had a personal interest in ascertaining the actual condition of this tridacne.

The shells were open. The captain thrust his dagger between them so as to prevent them shutting again. He then raised the membraneous tissue with its fringed edges which formed the covering of the oyster. There, between the plaits, I saw a loose pearl of the size of a small coconut. Its globular form, its perfect transparency, the splendid "water," stamped it as a jewel of inestimable price. Actuated by an impulse of curiosity, I extended my hand to seize it and weigh it, but the captain stopped me, shook his head, and, withdrawing his dagger, permitted the shells to close suddenly.

I then understood his motives. By leaving this pearl hidden within the tridacne, he allowed it to grow insensibly. With each year of existence the mollusc added new con-

centric rings. The captain alone was acquainted with this grotto, in which this admirable fruit of nature was ripening; he alone would reap it, so to speak, for his famous museum. Perhaps, after the fashion of the Chinese and Indians, he had brought the pearl into existence, by introducing into the folds of the mollusc a piece of glass or iron, which became covered by the nacreous substance by degrees. In any case, comparing this pearl to those which I already knew, and to those which glittered amid the captain's collection, I should say its value was ten millions of francs at least (£400,000). It was a magnificent natural curiosity, and not a jewel, for there are no ladies' ears capable of sustaining such a weight.

Our visit to this "aristocrat" tridacne was over. Captain Nemo left the grotto, and we remounted to the oyster-beds into those clear waters not yet disturbed by divers.

We walked singly, in an easy sort of way, stopping or advancing as suited our respective fancies. For my part I had no thought for the dangers I had previously conjured up. We were advancing sensibly towards the surface, and my head soon rose high above it as I stood in less than four feet of water. Conseil drew near me, and, putting his helmeted head close to mine, "made eyes" at me in the most friendly manner. But this high ground did not extend for any great distance, and we soon were below the surface of our *element*. I believe I am entitled to say so now!

Ten minutes after, Captain Nemo stopped suddenly. I fancied he had only halted in order to retrace his steps. No. By a gesture he directed us to crouch near him, at the bottom of a large fissure. He pointed towards a particular spot. I looked steadily at it. About six yards off a shadow appeared and fell on the ground. The nervous idea of sharks crossed my mind. But I was wrong, and this time

we had not to encounter these ocean monsters. It was a man—a living man, an Indian : a poor devil of a diver, no doubt, who came to glean before the corn was cut. I could perceive his canoe anchored some feet above his head. He dived and ascended again ; a stone which he held between his feet (a cord that secured him to the boat) was sufficient to cause him to descend rapidly. This was his whole apparatus. As he reached the bottom he fell upon his knees and filled his net with pintadines, collected indiscriminately. He then ascended, emptied the net, replaced the stone, and recommenced his operations, which never exceeded thirty seconds' duration.

The diver did not perceive us. The shadow of the rock hid us ; and, besides, how could this poor Indian suppose that beings like himself would be there under water watching his movements, not losing a detail ?

Many times he ascended and dived again. He did not bring up more than ten oysters at a time, for he was obliged to tear some away by main force ; and how many of these oysters had no pearls, for which he was risking his life !

I was watching him with fixed attention ; his movements were regular, and during half an hour no danger threatened him. I was getting accustomed in watching this interesting fishing, when suddenly, as the Indian was kneeling on the ground, I saw him make a gesture of terror, rise up, and spring for his boat.

I understood the position. A gigantic shadow appeared above the terrified diver. It was a shark of the largest size, which was swimming diagonally—eyes flaming, and with extended jaws.

I was petrified with horror.

The voracious fish, by a vigorous stroke of his fins, darted towards the Indian, who threw himself aside, and

avoided the open jaws of the shark, but not the stroke of his tail, for he received a blow in the chest which stretched him on the ground. This was the work of a few seconds. The shark came again to the attack, and, turning on his back, seemed about to cut the Indian in two, when Captain Nemo jumped up, poinard in hand, and, rushed straight at the monster, ready for a "hand-to-hand" encounter.

The shark perceived this new adversary just as he was about to snap up the unfortunate diver, and, turning on his belly, he went for the captain.

I can still see Captain Nemo, as he stood.

With wonderful self-possession he coolly waited the attack of this enormous shark, and, when it rushed at him, the captain, jumping aside with surprising dexterity, avoided the contact and plunged his dagger into the belly of the animal. But all was not over. A terrible fight ensued.

The shark seemed to roar, as it were. The blood poured in torrents from the wounds. The sea was tinged with red, and through this opaque liquid I could not perceive how the fight was waging.

I saw nothing more until the moment when, as the ensanguined waves cleared away, I perceived the undaunted captain holding to one of the shark's fins, and dealing him blow after blow, but unable to deal a mortal one at the heart. The shark in its struggles so agitated the water that I could scarcely keep my position.

I wished to get to the captain's assistance, but I was nailed by horror to the spot.

I looked on with haggard eye. I saw the varying fortunes of the combat. The captain fell upon the ground, overturned by the enormous mass that weighed upon him. Then the shark's jaws opened like enormous shears, and would have made an end of the captain, had not Ned Land,

quick as thought, precipitated himself, harpoon in hand, upon the shark, and driven the terrible weapon into his side.

The waves were immediately a mass of blood, and rolled in large billows as the shark beat them in his struggles. Ned Land had struck home; this was the monster's last gasp. Pierced to the heart, he beat out his life in spasmodic writhings, the shock of which upset Conseil.

Meantime, Ned Land had gone to the captain's assistance, and he, again on his feet, hastened to the Indian, cut the cord which fastened the stone, and, taking him in his arms, by a vigorous stroke ascended to the surface. We all followed, and, in a few minutes, most miraculously preserved from death, we reached the diver's boat.

Captain Nemo's first care was to restore this unfortunate man to life. I was afraid he would not succeed—I hoped he would, for the poor man's immersion had not lasted long—but the blow from the shark's tail might have been fatal.

Happily, by vigorous rubbing, I perceived the diver regaining consciousness. He opened his eyes, and great was his astonishment to perceive four great copper-helmeted heads leaning over him.

And still greater must have been his surprise, when Captain Nemo, taking a string of pearls from his dress, placed them in his hand. This munificent present from the man of the seas to the poor Cingalese was accepted with trembling hands. His startled eyes showed that he did not know to what superhuman beings he owed at once his fortune and his life.

At a sign from the captain we regained the oyster beds, and retracing our steps, we reached the anchor of the launch in about half an hour. Once again on board, we with the sailors' assistance took off our dresses,

Captain Nemo's first words were addressed to the Canadian.

"Thank you, Master Land," he said.

"It was only a 'return match,'" said Ned. "I owed you that."

A wan smile flitted across the captain's features, and that was all.

"To the *Nautilus*," he cried.

The boat flew over the waves. Some minutes later we encountered the dead body of the shark floating on the surface.

In its black marking at the extremities of the fins, I recognised the terrible melanopteron of the Indian Seas, sharks properly so called. Its length was twenty-five feet: its enormous mouth occupied a third of its body. It was a full-grown specimen, as we could perceive by the six rows of teeth, disposed in the form of an isosceles triangle in its upper jaw.

Conseil regarded it from an entirely scientific point of view, and I am sure he classed it, and not without reason, amongst the cartilaginous animals—order of chondropterygians with fixed gills, family selacian—genus sharks.

While I was looking at it, a dozen of its voracious relatives appeared close by; but, without noticing us, they threw themselves upon the corpse, and fought for the fragments.

At half-past nine we were on board the *Nautilus* again.

There I began to reflect upon the incidents of our excursion to the Manaar Bank. Two reflections suggested themselves at once. One was the unparalleled bravery of Captain Nemo; the other, his devotion to a human being, a representative of the race he shunned. Whatever he

might hint to the contrary, I was persuaded that this extraordinary man was not entirely devoid of heart.

When I said as much to him he replied, with some little emotion, "That Indian, monsieur, is an inhabitant of an oppressed country. I am, and shall be to my last day, such an one myself!"

CHAPTER IV.

THE RED SEA.

DURING the day the island of Ceylon disappeared from view, and the *Nautilus* steamed at about twenty miles an hour into the labyrinth of canals that separate the Maldives from the Lacadive Isles. We skirted the island of Kitlan, of madreporic formation, which was discovered by Vasca de Gama in 1499, and is one of the nineteen large islands of the Lacadive group, situated between 10° and $14^{\circ} 30'$ N. lat. and 69° and $50^{\circ} 72'$ E. long. We had now made 16,220 miles, or 7,500 leagues, since our departure from Japan.

Next day, 30th January, when the *Nautilus* rose to the surface, no land was in sight. We steered N.N.W. towards the Sea of Oman, between Arabia and Hindostan, and which is the mouth of the Persian Gulf.

There was evidently no egress. Whither was Captain Nemo leading us? I could not say. This did not satisfy Ned, who asked me where we were going.

"We are going," said I, "whither the captain's fancy leads us."

“This fancy will not lead us very far, then. There is no other outlet to the Persian Gulf, and if we enter it we shall soon have to retrace our steps.”

“Well, then, we must come back again, Master Land; and if, after the Persian Gulf, the *Nautilus* chooses to visit the Red Sea, the Strait of Bab-el-Mandeb is always free to us.”

“I need scarcely tell you, sir,” replied Ned Land, “that the Red Sea is closed equally with the Gulf, since the Isthmus of Suez is not yet cut through; and if it were, a mysterious vessel like ours would not risk herself in a canal intersected with sluices. So the Red Sea is not our road to Europe.”

“But I have not said that we were going back to Europe.”

“What do you think, then?”

“I suppose that, after having seen the curious localities of Arabia and Egypt, the *Nautilus* will go back into the Indian Ocean again, perhaps through the Mozambique Channel, perhaps outside Madagascar, so as to gain the Cape of Good Hope.”

“And when we have reached the Cape?” asked the Canadian, with peculiar insistence.

“Well, then we shall explore that part of the Atlantic we do not yet know. Ah! friend Ned, you are getting tired of this submarine travelling. You are *blasé* with the incessant wonders of the sea, varied though they be. For my own part, I shall be sorry to come to the end of a voyage such as is given to few men to enjoy.”

“But are you aware that we have been shut up in the *Nautilus* nearly three months?”

“No, Ned, I did not know it. I do not wish to—and I reckon neither hours nor days.”

“ But what is the end to be ? ”

“ The end will come in good time. Besides, we can do nothing, and there is no use talking about it. If you should come to me and say : ‘ I see a chance of escape for us, ’ I would go into the question with you ; but that is not the case now, and I tell you frankly I do not think that Captain Nemo will ever venture into European waters. ”

By this short conversation you will perceive that I was almost as much attached to the *Nautilus* as its commander. Ned Land brought the interview to a conclusion by the following muttered words :

“ That is all very well, but in my opinion, when one is tired of the thing, there is no fun in it. ”

For four days the *Nautilus* explored the Sea of Oman at various depths, and with varying speed. We appeared to be sailing at random, as if there were some hesitation respecting our route, but we did not pass the Tropic of Cancer.

As we left this sea we caught a glimpse of Muscat, the most important town of the Oman territory. I admired its strange aspect in the midst of the black rocks surrounding it, and against which the white houses and forts stood out in strong relief. The round domes of the mosques, the tapering points of the minarets, the fresh green terraces, were all before us. But it was only a fleeting vision, for the *Nautilus* again plunged under Oman’s green water.

We afterwards coasted the Arabian shore for six miles, and its line of undulating mountains dotted with ancient ruins.

On the 5th of February we entered the Gulf of Aden, a regular funnel introduced into the neck of Bab-el-Mandeb, which serves as the entrance for the waters of the Indian Ocean to the Red Sea.

Next day the *Nautilus* lay off Aden, which is perched up upon a promontory united to the mainland by a narrow isthmus—a miniature Gibraltar, the fortifications having been built by the English in 1839. I could see the octagon minarets of the town, which was formerly one of the richest commercial stations on the coast.

I was certain that Captain Nemo would now retrace his steps, but, to my surprise, he did nothing of the kind.

On the 7th we entered Bab-el-Mandeb, which in Arabic signifies “Gate of Tears.” The strait is twenty miles wide and about thirty long, and, for the *Nautilus* at full speed, the passage was accomplished in less than an hour. But I saw nothing, not even the island of Perim, by which the British Government has strengthened the position of Aden. Too many steamers of all nations passed this strait for the *Nautilus* to venture to show herself, so we prudently kept under water. At noon we were in the Red Sea. This sea, celebrated in Bible history, is scarcely refreshed by rain, nor is it supplied by any important river; it is subject to an excessive evaporation, and loses each year a layer of water about two yards high. A singular gulf, which, enclosed, and under similar conditions to a lake, would be dried up, and in this respect inferior to its neighbours the Caspian or the Dead Sea, the levels of which have only descended to the points where their evaporation exactly equals the amount of water received by them.

The Red Sea is between 1,500 and 1,600 miles long, and about 150 miles in width. At the time of the Ptolemys and the Roman Empire, it was the great commercial artery of the world; and the cutting of the Suez Canal will restore it to its former importance, a result that the railway has already partly brought about.

I did not even seek to understand the caprice of the

captain, which had decided him to enter the Red Sea ; but I quite approved of this course. He went at less speed, sometimes at the surface, sometimes plunging down to escape observation ; and I was able to notice both the upper and lower parts of this curious sea.

On the 8th of February, at dawn, we sighted Mocha, a town now ruined ; whose walls would fall down at the report of a single cannon. It was formerly an important city, enclosing six public markets, twenty-six mosques, and the walls, defended by fourteen fortresses, were more than two miles in circumference.

The *Nautilus* approached close to the African side, where the depth of water is greater. There, in a medium as clear as crystal, we were able to gaze upon the beautiful corals and the enormous masses of rock covered with algæ and fuci. It was indescribable ! What a variety of landscapes there were among those rocks and islands which border on the Libyan coasts. But it was on the eastern side that these appeared in full beauty, and the *Nautilus* was not long in reaching them. This was on the Tehama coast, for there not only did the expanse of the zoophytes flourish below the level of the sea, but they entwined themselves picturesquely some feet above the surface. These were more extensive but less beautiful than those which were kept fresher by the surrounding vitality of the waters.

How many pleasant hours I passed at the open panels of the saloon. What numbers of specimens of submarine flora I admired by the gleam of the electric light. Mushroom-shaped fungi, red-coloured sea-anemones, amongst others, the *thalassianthus aster* ; tubipores like flutes, which only waited the breath of the "great god Pan ;" shells peculiar to this sea, which were resting in the holes made

by the madrepores, and the bases of which were turned in a short spiral; and finally, what I had never seen in its natural polype state—the common sponge.

The class of sponges, first in the group of polypi, has been precisely created by this curious product, the uses of which are indisputable. The sponge is not a vegetable, as some naturalists think it, but an animal of the lowest order, a polype inferior to the coral. There is no doubt of its being an animal, and one cannot even adopt the classification of the ancients, who put it between the plants and animals. I ought to mention that naturalists do not agree respecting the mode of organisation of the sponge. Some say it is a polypus; others, such as Mr. Milne-Edwards, that it is an isolated species, and unique.

The class of sponges include about 300 species, which are met with in many seas, and even in water-courses, where they received the name of “fluviatiles.” But they are chiefly found in the Mediterranean, in the Grecian Archipelago, on the coasts of Syria, and in the Red Sea. There the softest and most beautiful sponges grow, and rise to a value of six pounds sterling, such as the white Syrian sponge, Barbary sponge, &c. But as I could not hope to study these zoophytes in the Levant, from which we were separated by the Isthmus of Suez, I was obliged to content myself by examining them in the Red Sea.

I called Conseil to me while the *Nautilus* slowly passed by the beautiful rocks of the eastern coast at about ten yards below the surface.

Sponges of all shapes and sizes were there, pediculated, foliated, globulous, and digital. They justified the appellations of baskets, vases, distaffs, elk-horns, lion’s feet, peacock-tail, Neptune’s glove, which have been bestowed upon them by the fishermen, more poetical than naturalists. From the

fibrous tissue coated with a semi-gelutinous substance, a thread of water is incessantly escaping, which, having carried life into each cell, is expelled by a contractile movement. This substance disappears after the death of the polypus, which, when putrifying, disengages ammonia. Nothing is then left but the horny or gelutinous fibres, forming the domestic sponge, which takes a russet tinge, and is used in various ways, according to its elasticity, permeability, or resistance to maceration.

These polypes adhere to rocks, to shells of molluscs, and even to the stalks of hydrophytes. They garnish the smallest crevices, some extending outwards, others close or hanging down like corals. I told Conseil that these sponges are fished for in two ways, by a drag or by hand. The latter method is preferable, for the divers take care of the tissue of the polype, and this gives the commodity greater value.

The other zoophytes which live near the sponges are chiefly medusæ of a beautiful species. Molluscs were represented by the varieties of calmar, which, according to Orbigny, are peculiar to the Red Sea, and the reptiles by the *virgata* turtle belonging to the *Cheloniæ* genus, which furnishes our table with such delicate and wholesome food.

The fish were numerous and often remarkable. The nets of the *Nautilus* were frequently drawn, and we found rays of a reddish brick colour, mullet, gobies, blennies, balista, hammer-fish, and a thousand other fish common to the oceans which we had already traversed. On the 9th of February the *Nautilus* was in the broadest part of the Red Sea, which is between Souakin on the west and Quonfodah on the east coast, a distance of ninety miles.

At noon Captain Nemo came upon the platform, where

he found me. I determined not to allow him to go away without having at least given me some hint as to his future proceedings. He approached as soon as he saw me, and offered me a cigar.

“Well, monsieur,” he said, “does the Red Sea please you? Have you sufficiently examined the wonders it contains—its fish and zoophytes, its sponges and corals? Have you seen the towns on the coast?”

“Yes, Captain Nemo,” I replied, “and the *Nautilus* is wonderfully fitted for such studies. It is a very cleverly-designed vessel.”

“Yes, sir; clever, fearless, and invulnerable. It neither fears the tempests of the Red Sea, its currents, nor its rocks.”

“In fact,” said I, “this sea is quoted as being one of the worst, and, if I do not mistake, its reputation in ancient times was very bad indeed.”

“Detestable, M. Aronnax. The Greek and Latin writers do not speak well of it, and Strabo says that it is particularly dangerous during the season of the Etesian winds and in the rainy season. The Arab historian, Edrisi, who has described it under the name of the Gulf of Colzoum, relates that ships have perished in great numbers on its sand-banks, and that no one would venture to navigate it during the night. It was, he states, subject to terrific hurricanes, and interspersed with barren islands, and ‘had nothing good in it,’ either above or below. Such, indeed, was the opinion of Arrian, Agatharchides, and Artemidorus.”

“One can very easily perceive that these historians never navigated it in the *Nautilus*,” said I.

“Exactly,” replied the captain, smiling; “and in this respect the moderns are not much more advanced than were the ancients. It has taken many centuries to develop the

mechanical powers of steam. Who knows but that in a hundred years they may see another *Nautilus*. Progress is slow, M. Aronnax."

"It is true," said I, "that your vessel is a century, many centuries perhaps, in advance of its time. What a pity it is that the secret should die with its inventor."

Captain Nemo made no answer. After a pause he said: "We were speaking of the opinions of the ancient historians respecting the dangers of the Red Sea."

"Yes," I said, "but were not their fears exaggerated?"

"Well, yes—and no, M. Aronnax," replied the captain, who seemed to have physically and morally gone deeply into the Red Sea. "That which is not dangerous for a modern ship, well found and solidly built, and, thanks to steam-power, master of its course, would offer considerable danger to ancient galleys. We must consider these first navigators in their roughly-built vessels. They had not any instruments to take bearings, and they sailed at the mercy of almost unknown currents. Under such conditions shipwrecks were, as might be expected, frequent. But in our time the steamers that perform the service between Suez and the Southern Seas have nothing to fear in this sea, despite of monsoons even. Captains and passengers do not offer propitiatory sacrifices before starting, and when they return they do not carry gilded ornaments and fillets as thank-offerings to the gods."

"I agree with you," I said; "and steam appears to have killed thankfulness in the hearts of sailors. But, captain, as you appear to have made this sea your study, can you tell me the origin of its name?"

"Numerous explanations exist. Should you like to know the opinion of a chronicler of the fourteenth century?"

“Very much indeed.”

“This writer pretends that the name was bestowed upon it after the passage of the Israelites, when Pharaoh perished at the closing in of the waters :

“As sign of miracle so dread,
The waves became a rosy red.
And since by ages handed down,
As the Red Sea the gulf is known.”*

“A poetical explanation, captain,” I replied, “but I cannot accept that reason. I should like your own opinion.”

“You shall have it. In my opinion, M. Aronnax, the name Red Sea is a translation from the Hebrew word ‘Edrom,’ and if the ancients gave it that name, it was in consequence of the peculiar colouring of its waters.”

“Till now, nevertheless, I have observed nothing but clear water, without any peculiar tint whatever.”

“No doubt, but towards the end of this gulf, you will perceive this singular appearance. I remember having seen it in the Bay of Tor, perfectly red, like a lake of blood.”

“And this colour you attribute to the presence of microscopic algæ?”

“Yes—it is a purple mucilaginous seaweed, produced by the plants known as trichodesmia, and of which it requires forty thousand to occupy a space of a surface about

* The original is as follows :—

En signe de cette merveille,
Devint la mer rouge et vermeille.
Non puis ne surent la nommer,
Autrement que la rouge mer.

.04 of an inch square. Perhaps at Tor we may meet them."

"I perceive, captain, that this is not the first time you have traversed the Red Sea."

"No."

"Well, as you were speaking just now of the passage of the Israelites, and the destruction of the Egyptians, I would ask if any submarine traces of this fact have been discovered?"

"No, Monsieur, and for a very excellent reason."

"What is that?"

"Because the spot where Moses crossed over with his people is now so silted up that camels can scarcely bathe their limbs there. Even my *Nautilus* could not float in that spot."

"And where is the place?"

"It is situated a little below the Isthmus of Suez, in the arm that formerly formed a deep estuary at the time when the Red Sea extended to the Salt Lakes. Now, whether this passage was miraculous or not, the Israelites did not the less pass there to gain the Promised Land, and the army of Pharaoh perished at that identical spot. I think, therefore, that excavations into these sands would be successful in discovering a quantity of ancient Egyptian arms and accoutrements."

"No doubt," I replied, "and it is to be hoped, for archæologists, that these excavations will be made when towns shall be built upon the isthmus after the construction of the Suez Canal. A very useless canal for such a ship as the *Nautilus*."

"I daresay; but very useful to the world in general," replied Captain Nemo. "The ancients understood the utility of establishing a water communication between the

Red Sea and the Mediterranean, but they did not think of cutting a canal direct, and they took the Nile as the intermediary route. Very probably the canal which united the Nile to the Red Sea was commenced under Sesostris, if tradition may be accepted. It is certain, however, that in 615 B.C., Necos undertook the excavation of an 'alimentary' canal across the plain of Egypt opposite Arabia. This canal might be ascended in four days, and its width was that of two triremes abreast. It was continued by Darius, the son of Hydaspes, and probably completed by Ptolemy the Second. Strabo saw it in use for vessels, but the very slight 'fall' between its point of departure near Bubastes to the Red Sea rendered it navigable only for a few months in the year. This canal served for commerce up to the age of Antoninus, when it was abandoned, then silted up, but restored by the Caliph Omar. It was finally filled in in 761 or 762 by the Caliph Al-Mensor, who wished to prevent food from reaching Mohammed-Ben-Abdullah, who had revolted against him. During Napoleon's expedition to Egypt, the traces of the work were discovered in the desert of Suez, and, surprised by the tide, the French were nearly lost some distance from Hadjaroth, the same place where Moses had encamped three thousand years before."

"Well, captain, if the ancients failed to make this canal, which would shorten the distance from Cadiz to India by water by nearly 6,000 miles, M. de Lesseps has done it, and before long he will have changed Africa into an immense island."

"Yes, M. Aronnax ; and you have reason to be proud of your countryman. He is a greater hero to a nation than a great general. He began, like many others, under slights and rebuffs, but he has triumphed, for he has brain and good

will. It is sad to think that this undertaking, which ought to have been international, and is sufficient to add lustre to any reign, was only successful owing to the energy of one man. So all honour to M. de Lesseps !”

“Yes, all honour to this great citizen !” I replied, surprised by the manner in which Captain Nemo spoke.

“Unfortunately,” he said, “I cannot take you up the Suez Canal, but the day after to-morrow you will see the long piers of Port Saïd, when we shall be in the Mediterranean.”

“In the Mediterranean ?” I exclaimed.

“Yes. Does that astonish you ?”

“Yes, it does. The idea that we shall be there the day after to-morrow !”

“Really !”

“Yes, captain. Although I confess I ought not to be surprised at anything while on board your vessel.”

“But why are you surprised ?”

“Because I think of the awful speed you must make to double the Cape of Good Hope, go round Africa, and enter the Mediterranean the day after to-morrow.”

“And who told you that I am going to double the Cape and go up the African coast, eh ?”

“Well, you will admit that even the *Nautilus* cannot sail on dry land, across the Isthmus of Suez.”

“Nor beneath it, M. Aronnax ?”

“Beneath it ?” I echoed.

“Certainly,” replied the captain, calmly. “Nature long ago made, underneath, what mortals have only to-day completed on the surface.”

“What do you say ? A passage exists ?”

“Yes, a subterranean passage does exist. I call it the Arabian Tunnel; it commences underneath Suez and ends in the Gulf of Pelusium.”

“But the isthmus is only composed of shifting sand!”

“To a certain depth—yes. But at about sixty yards down there is a solid rock.”

“And did you discover this passage by chance?”

“By chance and reason, professor; and by reason even more than chance.”

“Captain Nemo, I *hear* you, but my ears can scarcely take it all in.”

“Ah, Monsieur, *ures habent et non audient* is a motto for all ages. Not only does this passage exist, but I have often taken advantage of it. Were it not for it, I should not have come into the Red Sea at all just now.”

“May I ask how you discovered the tunnel?”

“Monsieur,” replied the captain, “there is no reason to keep any secret between people who will never be separated.”

I did not notice the insinuation, and waited for the captain’s explanation.

“M. Aronnax,” said he, “it was the simple reasoning of a naturalist that led me to the discovery of this passage, with which I alone am acquainted. I had remarked that in the Red Sea and in the Mediterranean there existed a number of fish identical in every respect. Once certain of this fact, I began to consider whether there might not be some communication between the two seas. If such existed, the subterranean current would flow from the Red Sea to the Mediterranean by the simple difference of level. I then caught a quantity of fish off Suez; I placed on their tails brass rings, and let them go. Some months later, on the Syrian coasts, I pulled up some specimens of fish which

were decorated with brass rings on their tails. Thus the communication between the seas was demonstrated. I made search with the *Nautilus*, I discovered the passage, I ventured into it, and before long, sir, you will also have passed the Arabian Tunnel.”

CHAPTER V.

THE ARABIAN TUNNEL.

THAT day I reported to Conseil and Ned Land such portions of my conversation with Captain Nemo as directly interested them. When I told them that in two days we should be in the Mediterranean, Conseil clapped his hands, but the Canadian shrugged his shoulders.

“A submarine tunnel!” he cried. “A communication between the seas! Who ever heard of such a thing?”

“Friend Ned,” replied Conseil, “had you ever heard of the *Nautilus*? No, but it nevertheless is a fact. Therefore, do not shrug your shoulders so quickly, and do not disbelieve things because you have never heard of them.”

“Well, we shall see,” said Ned, nodding his head. “After all, I desire nothing better than to make this passage into the Mediterranean.”

The same evening, in $21^{\circ} 30'$ N. lat., the *Nautilus* approached the Arabian coast. I could see Djeddah, an important “exchange” of Egypt, Syria, Turkey, and the Indies. I could distinguish clearly its houses, the vessels alongside the quays, and those anchored farther out. The

setting sun fell full upon the houses, making them appear so very white, while farther off some cabins of wood or reeds indicated the Bedaween quarter.

Djeddah was soon lost in the gloom, and the *Nautilus* descended beneath the phosphorescent water.

Next day, February 10th, many vessels appeared to windward. The *Nautilus* resumed her submarine navigation ; but at midday, at the time for taking "bearings," the sea was clear of ships as we came to the surface again. Accompanied by Ned and Conseil, I sat down upon the platform. The coast on the east side was half hidden by a thick mist.

Leaning against the launch, we were chatting on various topics, when Ned, extending his hand, said :

"Do you see anything over there, sir?"

"No, Ned," I replied, "my eyes are not so good as yours."

"Look steadily," replied Ned, "a little above the lantern to starboard. Don't you see something moving?"

"In fact," I said, after gazing attentively in the direction indicated, "I do believe there is a long black body at the surface of the water."

"Another *Nautilus*?" suggested Conseil.

"No," said the Canadian ; "if I mistake not, it is some marine animal."

"Are there any whales in the Red Sea?" asked Conseil.

"Yes," I replied, "they are sometimes met with."

"It is not a whale," said Ned, who still kept his gaze fixed upon the object. "Whales and I are such old acquaintances, that I cannot mistake them."

"Let us wait," said Conseil. "The *Nautilus* is going in that direction, we shall soon see what it is."

The black object was soon within a mile of us. It

looked like a great sandbank. What could it be? I was not able to decide.

“Aha! it moves, it dives!” cried Ned. “Thousand devils! what can it be? Its tail is not divided like the whales’ and cachalots’, and its fins look as if they had been cut.”

“But then——”

“Look there!” cried the Canadian, “it is on its back!”

“It is a siren, a true siren,” cried Conseil. “If Monsieur has no objection.”

The term “siren” gave me a hint, and I perceived at once that this animal belonged to that order of marine animals which are fabulously called sirens—half-female, half-fish.

“No,” I said to Conseil, “it is not a siren, but a very curious being of which very few specimens exist in the Red Sea; it is a dugong.”

“Order, sirens; group, pisciform; sub-class, monodolphin; class, mammifer; branch, vertebrates,” replied Conseil.

When Conseil had said this there was nothing to add.

Meanwhile Ned kept his eyes fixed on the dugong, and they shone with expectation. His hand seemed ready to grasp his harpoon, and one would have said that he only awaited the proper moment to throw himself into the sea and attack the animal in his native element.

“Oh, Monsieur!” he said, in a voice trembling with eagerness, “I have never killed one of that kind.”

All the harpooner was in these words.

Just then the captain appeared. He noticed the dugong. Understanding the attitude of the Canadian, he at once addressed him:

“If you had a harpoon in your hand just now, Master Land, it would burn your palm, would it not?”

“Quite true, sir.”

“And it would not displease you to return to your former avocation for a day, and to add yonder cetacean to the list of your victories?”

“It would not displease me in the least.”

“Well, then, you can try.”

“Thank you, sir,” replied Ned Land, with kindling eyes.

“Only, I advise you not to miss that creature, for your own sake.”

“Is the dugong a very dangerous animal to attack?” I asked, notwithstanding Ned’s shrug of the shoulders.

“Sometimes,” replied Captain Nemo, “the animal will turn and attack its assailant; but, with Master Land, this danger is not to be apprehended. His eye is quick, his arm sure. If I recommended him not to miss his stroke, it was because I look at it as fine game, and I know Master Land has no objection to tid-bits.”

“Ah!” cried Ned, “so he is good to eat, is he?”

“Yes, his flesh is held in high estimation, and the Malays universally reserve it for the tables of their princes. Indeed, they hunt the animal so persistently that, like its relation the manatee, it has become very scarce.”

“Then, Monsieur,” said Conseil to the captain, “if that dugong be the last of his race, would it not be better to spare him, in the interests of science?”

“Perhaps so,” replied Ned, “but in the interests of cookery it will be better to give him chase.”

“Well, go ahead, Master Land,” cried Captain Nemo.

Now seven of the crew, silent as ever, appeared upon the platform. One of them carried a harpoon and line similar to those used in whaling. The boat was lowered. Six rowers took their places, and the coxswain seized the tiller. Ned, Conseil, and myself sat in the stern-sheets.

“Are you not coming, captain?”

“No, professor, but I wish you good sport.”

The boat shoved off, and, impelled by six sturdy rowers, rapidly approached the dugong.

We slacked speed a few cables' length from the creature, and pulled silently. Ned Land, harpoon in hand, took up his position in the bows. The usual whaling harpoon is attached to a long cord, which is paid out when the animal dives; but in this instance there were only about twelve fathoms of line, and at the end of this a barrel was fastened so as to indicate the course of the dugong in the water.

I got up and took a good look at the enemy. The dugong—also known as the halicore—is very much like the manatee, or lamantine. Its body is terminated by a long tail, and its lateral fins by fingers. The difference between the dugong and manatee consists in the former being armed with two long and pointed teeth in the upper jaw, which form a defence for each side.

This was the animal that Ned was about to attack; its length was about twenty-four feet. It did not move, and appeared to be sleeping, which circumstance would render its capture more easy. The launch approached cautiously to within three fathoms. The oars were eased. I half raised myself. Ned Land, his body thrown back a little, brandished his harpoon.

Suddenly a hissing noise was heard, and the dugong disappeared. The harpoon, forcibly cast, had only struck the water apparently.

“Thousand devils!” cried Ned furiously. “I have missed it.”

“No,” I said, “the animal is wounded, look at the blood, but the weapon did not stick in the body.”

“My harpoon, my harpoon!” cried Ned.

The sailors pulled and the coxswain steered for the barrel. The harpoon was picked up, and the chase recommenced. The dugong came up to the surface to breathe occasionally. The wound had not disabled him, for he swam with great rapidity. The boat, impelled by vigorous arms, flew upon his track. Many times we were close to him, and the Canadian was prepared to strike, but the dugong plunged suddenly, and it was impossible to reach it.

You may imagine Ned Land's indignation. He heaped the most energetic forms of expression upon the unhappy animal. For my part, I was annoyed to see the dugong escape us.

We pursued it steadily for an hour, and I was beginning to believe that its capture would be a very difficult operation, when the animal was suddenly seized with the idea of retaliation (of which we had cause to repent later), and came to attack the boat.

This manoeuvre did not escape the Canadian.

"Look out, men!" he cried.

The coxswain addressed his crew in his peculiar tongue and no doubt put them on their guard.

Arrived at twenty feet from the boat, the dugong pulled up. He sniffed the air with his immense nostrils, pierced in the upper part of the muzzle, then with a spring he threw himself upon us.

The boat could not avoid the shock. It was nearly upset, and took in a couple of tons of water, which it was necessary to get rid of. But, thanks to the coxswain, we received the blow sideways, and we were not upset.

Ned Land, holding on tightly in the bows, struck blow after blow at the gigantic animal, which, having fastened its teeth in the gunwale, nearly lifted the boat out of the water. We were thrown all together in a heap, and I do not know

how the adventure would have terminated, had not the Canadian sent a lucky blow direct to the creature's heart.

I heard its teeth grinding upon the gunwale, and the animal disappeared, taking the harpoon with him. But the barrel soon came to the surface again, and a few minutes afterwards, the body of the dugong appeared floating on its back. We pulled towards it, took it in tow, and returned to the *Nautilus*.

It was necessary to employ some very strong tackle to hoist the dugong on board. It weighed more than four tons. It was cut up under the superintendence of the Canadian, and the same afternoon the steward served me with slices of the excellent flesh. I found it very good, superior to veal, if not to beef.

Next day our larder was again enriched by some choice game. A flock of sea-swallows alighted on the *Nautilus*. They were a species of *Sterna milotica* peculiar to Egypt; the beak is white, the head grey and pointed; the eyes are surrounded by white spots; the back, wings, and tail are greyish, the belly and throat white; the feet are red. We also captured some dozen Nile ducks, wild birds of a high flavour.

The speed was then lowered. We strolled along, so to speak. I noticed that the water of the Red Sea became less and less salt as we approached Suez.

About 5 P.M. we sighted the Cape of Ras Mohammed. This cape forms the extremity of Arabia Petræa, which is included between the gulfs of Suez and Acabah. The *Nautilus* entered the Jubal Straits, which lead to the Gulf of Suez. I could distinctly see a high mountain rising up between the two gulfs. It was Mount Horeb, at the summit of which Moses met God face to face in the midst of the fiery bush.

At six o'clock the *Nautilus* passed Tor at some distance; at the end of the bay, the waters appeared red as Captain Nemo had stated. Night fell, and the deep silence was sometimes broken by the cry of the pelican or some night birds, and by the noise of the waves, or the distant beat of the paddles of a steamer.

From eight to nine o'clock the *Nautilus* remained some yards below the surface. As far as I could judge, we were very close to Suez. Through the windows of the saloon I could perceive the adjacent rocks lighted up by our electric gleam. The straits seemed to be getting narrower and narrower.

At a quarter-past nine we rose to the surface. I went upon the platform. I was very impatient to go through Captain Nemo's tunnel. I could not keep quiet, and I sought the fresh air.

Very soon I perceived a pale light breaking through the gloom, and half discoloured by the surrounding fog. It appeared to be shining about a mile off.

"A floating lighthouse," said some one close to me.

I turned round and recognised the captain.

"It is the Suez floating light," he said; "we shall not be long ere we reach the entrance to the tunnel."

"The entrance is not very easy, I suppose?"

"No; and therefore I am in the habit of taking the helm myself as we go through. Now, M. Aronnax, if you will be so good as to go below, the *Nautilus* will do the same, and not return to the surface until she has cleared the Arabian Tunnel."

I followed the captain; the panels were closed; the reservoirs of water filled, and the vessel descended for a distance of forty feet, or so.

Just as I was about to enter my room, Captain Nemo stopped me.

“Would you like to come with me to the pilot-house?” he asked.

“I scarcely dared to ask you,” I said.

“Come along; you will see all that can be seen at once beneath the earth and under water.”

Captain Nemo led the way to the central staircase. Half-way up he opened a door and reached the pilot-cage, which was, as may be remembered, at the extremity of the platform.

It was a cabin measuring about six feet square, and somewhat like those occupied by pilots in the Mississippi and Hudson steamers. A wheel, vertically placed, occupied the centre, and chains connected it with the rudder astern. Four “ports” gave sufficient light to the man at the wheel to see all around him.

The cabin was dark, but my eyes soon accustomed themselves to the gloom, and I saw the pilot, his hands resting upon the spokes of the wheel. Outside the sea appeared vividly illuminated by the lamp which was burning behind us at the other end of the platform.

“Now,” said Captain Nemo, “let us look for our passage.”

Electric wires connected the helmsman’s cage with the engine-room, and the captain could communicate at the same time the necessary speed and direction of his vessel. He pressed a button, and the speed was sensibly diminished.

I gazed in silence at the high perpendicular wall alongside of which we were running at that moment, the unyielding foundation of a sandy coast. We proceeded thus for an hour at a few yards’ distance only. Captain Nemo never took his eyes from the compass suspended in the cabin.

By a gesture he indicated to the steersman the proper directions.

I was placed on the port-side, and could perceive the magnificent formations of coral ; the zoophytes, algæ, and crustacea moving their enormous claws which were extended from the holes in the rocks.

At a quarter-past ten Captain Nemo himself took the helm. A large black gallery opened before us ; the *Nautilus* entered it boldly. An unusual rushing sound of water accompanied us ; this was caused by the waters of the Red Sea which the incline of the tunnel sent rushing to the Mediterranean. The *Nautilus* was borne upon the torrent like an arrow notwithstanding that the screw was reversed to counteract the speed.

Upon the walls of the tunnel I could distinguish nothing but brilliant rays, lines of fire traced by the speed of our electric light ; my heart beat fast and I put my hand to my chest.

At 10·35 Captain Nemo gave up the wheel to the helmsman, and, turning to me, said :

“ The Mediterranean ! ”

In less than twenty minutes the *Nautilus*, carried along by the current, had passed beneath the Isthmus of Suez !

CHAPTER VI.

THE GRECIAN ARCHIPELAGO.

AT dawn next day (February 12) the *Nautilus* came up to the surface again. I ran up to the platform. Three miles to the southward I could see the outline of Pelusium. A torrent had carried us from sea to sea. But the tunnel, though easy to descend, seemed to me impossible to ascend.

About 7 A.M. Ned and Conseil joined me. These two "inséparables" had been calmly sleeping, without troubling themselves about the exploits of the *Nautilus*.

"Well, sir," asked the Canadian, in a bantering tone, "and how about this Mediterranean?"

"We are floating on its surface, friend Ned!"

"What," said Conseil, "last night——"

"Yes, last night, in a few minutes, we cleared the Isthmus of Suez."

"I don't believe a word of it," said Ned.

"Well, you are wrong, Master Land. That low coast trending to the south is Egypt."

"Or some other," replied the infatuated Canadian.

“But since Monsieur says it is so,” says Conseil, “you must believe him.”

“Besides, Ned, Captain Nemo showed me the tunnel. I was close to him in the pilot-house while he steered the *Nautilus* through the passage.”

“Do you hear, Ned?” asked Conseil.

“And since you have such good eyes, Ned,” I added, “you can perceive the piers of Port Saïd.”

The Canadian looked attentively at them.

“Well,” he said, “you are right, sir, and this captain is a wonderful fellow. We are in the Mediterranean. Good. We may talk of our own little business if you please, but so that we may not be overheard.”

I saw very well what the Canadian was driving at. In any case I thought it better that he should talk, since he wanted to do so, and we all sat down by the lamp, where we were less likely to be subject to the spray.

“Now, Ned, we are listening,” said I. “What have you to tell us?”

“It is not much,” he replied; “we are in Europe, and before Captain Nemo’s vagaries plunge us into the Polar Seas, I vote we quit the *Nautilus*.”

This style of conversation always embarrassed me. I did not wish to be any tie upon my friends, and at the same time I did not want to leave Captain Nemo. Thanks to him and his vessel, I was day by day increasing my studies, and I was re-writing my book respecting the submarine depths in those very depths themselves. Should I ever have such another chance to observe the wonders of the ocean? Certainly not; and I could not bear to leave the *Nautilus* before our round of exploration was completed.

“Friend Ned,” I said, “answer me frankly. Are you

tired of being on board? Do you regret the fate that placed you in Captain Nemo's hands?"

The Canadian did not reply immediately; then folding his arms, he said:

"Frankly, then, I do not regret this voyage. I am very glad to have made it, but to have made it, it must have an end. That is my opinion."

"It will come to an end, Ned!"

"When and where?"

"Where, I cannot say; when, I do not know; but I suppose it will end when we can learn nothing more from the sea. Everything must have an end in this world."

"I agree with Monsieur, that when we have been all round the world, Captain Nemo will give us our liberty."

"We have nothing to fear from the captain," I said, "but I do not so far agree with Conseil's ideas. We are master of the secret of the *Nautilus*, and I cannot expect that the captain will take the risk of releasing us and letting his secrets be known."

"Then what do you expect?" inquired Ned.

"That circumstances may occur by which we may and ought to profit as well six months hence as now."

"All very well, but where shall we be six months hence?"

"Here perhaps, or in China. You know the *Nautilus* is a rapid sailer. It can cross the seas as a swallow the air, or like an express train on land. It does not fear frequented seas. Who can tell whether we may not close with the coasts of France, England, or America, when an attempt to escape might be made with at least as much hope of success as now."

"M. Aronnax," said Ned Land, "your arguments won't hold water. You speak of the future. We shall be here or

there. But I speak of the present. We are here, let us profit by the opportunity."

I was hit hard by Ned's logic, and felt beaten. I had no other argument to advance.

"Sir," replied Ned, "let us suppose, as an impossibility, that Captain Nemo were to offer you liberty to-day—would you accept it?"

"I am not sure," I replied.

"And were he to say that he would not renew his offer, would you then accept it?"

I did not answer.

"And what do you think of it, friend Conseil?" demanded Ned.

"Friend Conseil!" replied that worthy, "friend Conseil has nothing to say on the subject. He is absolutely disinterested. As the master, and as is Ned, he is a single man. No wife, children, nor parents await his return. He is in his master's service. He thinks and speaks as his master does; and, to his great regret, you must not count on him for a casting-vote. There are only two persons here—my master on one side, Ned Land on the other. So Conseil listens, and will mark the points for you."

I could not repress a smile to see how completely Conseil annihilated his personality. The Canadian ought to have been delighted at not having him against him.

"Then, Monsieur, since Conseil does not exist, the discussion is confined to us two. I have spoken, what is your reply?"

The thing must be settled once for all, and evasion was distasteful to me.

"Friend Ned," I said, "here is my answer. "You have had the best of it, and my arguments have not been able to stand against yours. We must not count upon the good-

will of Captain Nemo. The most common prudence would prevent him from releasing us. On the other hand, prudence bids us to take advantage of the first opportunity to quit the *Nautilus*."

"You speak wisely, M. Aronnax."

"But just one observation," said I. "The occasion must be a good one, for our first attempt will surely be our last; and, if retaken, Captain Nemo will not forgive us."

"Quite right," replied the Canadian, "but your remark applies to all attempts at flight—in two years' time, or two days. Now the question is this: If a favourable occasion present itself, we must seize it."

"Quite so. And now, Ned, what do you consider as a favourable occasion?"

"When, some dark night, the *Nautilus* is not far from some European coast."

"And you will endeavour to save yourself by swimming?"

"Yes, if we are not too far from the beach, and if the ship be on the surface. Not if we were far away or under water, of course."

"And in that case?"

"In that case I would endeavour to get out the launch; I know how to work it. We should have to get inside it and draw the bolts, when we should come to the surface without even the steersman, who is forward, being aware of our flight."

"Good, Ned! Look out for the opportunity, and remember that a hitch in the arrangements will be fatal."

"I will not forget, sir," replied Ned.

"Now, Ned, would you like to hear my opinion of your project?"

"Gladly, M. Aronnax."

“Well, I think—I do not say hope—I think that this occasion will never present itself.”

“Why not?”

“Because Captain Nemo cannot hide from himself the idea that we hope to recover our liberty some day, and he will be on his guard ; particularly in European waters, and in sight of European coasts.”

“I agree with Monsieur,” said Conseil.

“We shall see,” replied Ned, nodding his head in a determined manner.

“And now, Ned Land,” said I, “let the matter rest thus as it is. Not a word of all this. When you are ready, let us know, and we will follow you. I leave the matter entirely to you.”

So this conversation, which was destined to lead to grave results, terminated here. I ought to mention that the facts appeared to confirm my predictions, to the Canadian’s despair. Did Captain Nemo distrust us while in these crowded seas, or did he only wish to conceal his ship from the numerous vessels that sailed the Mediterranean? I cannot say, but we certainly were more often underneath the water, and at a greater distance from the coast, than formerly. When the *Nautilus* emerged, nothing was visible but the pilot’s house, and we went to great depths also ; for between the Grecian Archipelago and Asia Minor we found more than a thousand fathoms of water.

I only knew we were near the island of Carpathos, one of the Sporades, by Captain Nemo quoting me Virgil’s lines, as he placed his hand on the map :

Est in Carpathio Neptuni gurgite vates
Cœrulcus Proteus—

This was the ancient residence of Proteus, the shepherd

of Neptune's flocks—now the Isle of Scarpanto, situated between Rhodes and Crete—but I saw nothing but the granitic foundations from the windows of the saloon.

Next day, the 14th of February, I made up my mind to devote a few hours to the study of the fish of the Archipelago, but for some reason the panels remained closed. Upon taking the course of the *Nautilus*, I perceived that we were approaching Candia—the ancient Crete. When I had embarked on board the *Abraham Lincoln*, I had heard that the inhabitants of this island had revolted against the Turks, but how the insurrection had prospered since that time I was absolutely ignorant, and Captain Nemo could not, of course, give me any information on this point.

I made no allusion to it when in the evening I was alone with him in the saloon. Besides, he seemed to be taciturn and preoccupied. Then, contrary to his usual custom, he ordered the panels of the saloon to be opened, and he watched the water attentively from one or the other. What his purpose was in so doing, I could not divine, and I amused myself by watching the fish.

I remarked the gobies mentioned by Aristotle, and vulgarly called sea-loaches, which are chiefly found in the salt-water about the Delta of the Nile. Near these were a semi-phosphorescent bream, a sort of sparus which the Egyptians hold sacred, and the arrival of which in the Nile announces a rich overflow, and is celebrated by religious ceremonies. I also saw some cheilones, a bony fish with transparent scales, which are great devourers of marine plants, are most excellent to eat, and were much prized by the epicures of ancient Rome.

Another inhabitant of these seas attracted my attention, and renewed all my recollections of antiquity. This was the remora, which travels fixed upon the belly of the shark.

According to the ancients, this little fish fastened to the keel of a ship could stop its course, and one of them in this way kept back the galley of Antony at the battle of Actium, and thus facilitated the victory of Augustus. On how little the destinies of nations hang! I also noticed some beautiful anthiæ which belong to the lutjan order, a fish sacred to the Greeks, who attribute to them the power to chase marine animals from the waters they frequent. Their name means *flower*, and is justified by their colours, which comprise every shade of red, from the rose to the ruby-tint. I was gazing earnestly at these marvels of the sea, when an unexpected apparition appeared.

A man appeared suddenly—a diver, carrying at his waist a leathern purse. He was not shipwrecked, but a vigorous swimmer, disappearing occasionally to breathe, and then returning immediately.

I turned to Captain Nemo and exclaimed: “Here is a shipwrecked man, we must save him at all hazards.”

The captain made no answer, but approached the window.

The diver came near, and putting his face against the glass he looked at us.

To my utter astonishment Captain Nemo made a sign to him. The diver waved his hand; at once ascended, and did not again appear.

“Don’t alarm yourself,” said Captain Nemo. “It is only Nicholas, of Cape Matapan, surnamed Pesca. He is well known in the Cyclades. A daring diver, water is his element, he lives in it more than on land, passing between the islands even as far as Crete.”

“You know him, captain?”

“Why not, M. Aronnax?”

As he said this, he advanced towards a cabinet placed near the left window of the saloon. Near to this I saw a coffer bound with iron, on the cover of which was a plate of copper, engraved with a representation of the *Nautilus*, and the motto *Mobilis in Mobile*.

The captain opened the chest, which held a quantity of ingots.

Golden ingots! Whence could he have collected this enormous sum of money? What was he going to do with it?

I did not speak. I looked on. Captain Nemo took these ingots and placed them mathematically one by one in the chest, which he filled completely. I estimated that there must have been 4,000 lbs. weight of gold—five millions of francs (£200,000).

The chest was securely fastened down, and the captain wrote upon the lid an address, in characters which appeared to me to be modern Greek.

That done, the captain pressed a button communicating with the men's quarters. Four men appeared, and without any trouble they pushed the chest out of the saloon. Subsequently I could hear them hauling it up the iron staircase.

Captain Nemo then turned to me and said: "You were saying——?"

"I was saying nothing," I replied.

"Then, sir, you will allow me to bid you good night," and he quitted the saloon.

I returned to my room much exercised in my mind.

I tried in vain to sleep. I sought some connection between the appearance of the diver and the chest of gold. I soon perceived by the motion of the *Nautilus* that we were ascending to the surface.

Then I heard some noise on the platform, I fancied that they were launching the boat ; it struck the side and all was quiet.

Two hours later the same noise and movement were repeated ; the boat was hoisted up and secured, and the *Nautilus* plunged once again beneath the waves. So the millions had been forwarded to their destination ; but on what part of the continent. Who was Captain Nemo's correspondent ?

Next day I related all I had seen to Conseil and Ned. My companions were not less astonished than I had been.

“But where does he take his millions to?” asked Ned Land.

This we could not answer. After breakfast I went into the saloon and sat down to work. Till 5 P.M. I was arranging my notes, when I suddenly felt a great heat, and I was glad to take off my outer garment of byssus. This heat was extraordinary in effect, for we were not in tropic latitudes ; and, besides, the *Nautilus* being under water, would not be affected in any case. I looked at the manometer ; we were at a depth of sixty feet, to which the heat of the air could not reach. I continued to work, but the heat became intolerable.

“Is the ship on fire ?” I thought.

I was about to leave the saloon when Captain Nemo entered. He looked at the thermometer and, turning to me, said :

“Forty-two degrees.”

“So I see, captain ; and if the heat increases we shall not be able to bear it.”

“It will not get hotter if we do not like it.”

“You can reduce it, then, if you wish, captain ?”

“No, but I can go farther from the cause of it.”

“Is it, then, outside the ship?”

“Certainly ; we are floating in a current of boiling water.”

“Is it possible?” I exclaimed.

“Look !”

The panels were opened, and I could perceive that the sea was quite white around the *Nautilus*. A sulphurous vapour rolled amid the waves, which boiled like water in a copper. I placed my hand against one of the windows, but the heat was so great I had to withdraw it.

“Where are we?” I asked.

“Close to the island of Santorin,” replied the captain, “and in the canal which separates Nea-Kamenni from Palea-Kamenni. I wished to let you see a submarine eruption.”

“I thought that this formation of new islands had ceased,” I said.

“Nothing is ever at an end in volcanic localities,” replied Captain Nemo ; “and the globe is always being moved by these subterranean fires. According to Cassiodorno and Pliny, a new island—Thera (the divine)—appeared in the very place in which these islands have been formed, about the nineteenth year of our era. Then they sank, to rise again in 69, and again disappeared. Since then, to our time, this Plutonian work has been suspended. But on the 3rd of February, 1866, a new island, called George Island, rose near Nea-Kamenni, and disappeared upon the 6th of the same month. Seven days after, the island of Aphroessa appeared, leaving a passage about twelve yards wide between it and Nea-Kamenni. I was in these seas when it happened, and was able to observe the phases. The island of Aphroessa, of a rounded form, measured 300 feet across and 30 feet in height. It was composed of a black and vitreous lava, mingled with felspar. Finally, on the 10th of March, a smaller

island called Reka arose close to Nea-Kamenni, and since these three islands have been united."

"And the canal in which we now are?" I asked.

"There it is," replied Captain Nemo, indicating it on a map of the Archipelago. "You see that I have put down all the newest islands."

"But this canal will some day be filled up, surely?"

"Very likely, M. Aronnax, for since 1866 eight little islands of lava have risen opposite the harbour of St. Nicholas, in Palea-Kamenni. It is, therefore, evident that Nea and Palea will be joined together some day. If in the Pacific there are infusoria, which form continents, here it is by eruptive phenomena. You can see, sir, what work is being done beneath the waves."

I turned to the window. The *Nautilus* was not going fast. The heat became almost unbearable. The white appearance of the sea had given place to a red tinge, which colour was due to salts of iron. Notwithstanding the hermetic ceiling of the saloon, an almost insupportable smell of sulphur was present, and I could perceive that the bright red of the flames completely overcame the electric light.

I felt in a bath. I was choking. I was almost broiled. I really did feel as if I were cooking!

"We cannot remain in this boiling-water any longer," I said.

"No," replied the captain, calmly, "it would be scarcely prudent."

An order was passed along—the *Nautilus* went about, and soon left the furnace at a distance. A quarter of an hour later, we were breathing at the surface of the sea.

It occurred to me, that if Ned Land had selected those

places to make his escape in, we should never emerge alive from the fiery sea !

The following day (February 16th) we left the basin between Rhodes and Alexandria, which can boast of a depth of about 4,500 yards, and the *Nautilus* giving Cerigo a wide berth, doubled Cape Matopan, and left the Greek Archipelago astern.

CHAPTER VII.

THE MEDITERRANEAN IN FORTY-EIGHT HOURS.

THE Mediterranean : the blue sea *par excellence*. The "great sea" of the Hebrews, "*The sea*" of the Greeks, the "Mare Nostrum" of the Romans, bordered by orange-trees, aloes, cactus, pines, perfumed with myrtle, enclosed by rude mountains, enveloped with a pure and transparent atmosphere, but ever worked by the earth's fires, is the regular battle-field of Neptune and Pluto disputing for the empire of the world. It is here on its banks as on its waters, says Michelet, that man acquires new vigour, in one of the most wonderful climates in the world !

But beautiful though it be, I could only indulge in a very hasty glance. The personal experience of Captain Nemo failed me here, for that extraordinary personage did not appear once during the passage through, which we made at full speed. I estimated the distance that the *Nautilus* ran under the water was about 600 leagues, and she performed it in eight-and-forty hours. We left the Grecian Archipelago on the 16th of February, and on the 18th, at sunrise, we had passed the Strait of Gibraltar.

It was evident to me that Captain Nemo did not like being surrounded by these countries he wished to avoid. The winds and waves carried too many *souvenirs*—if not regrets to his mind. Here he did not possess the same liberty of motion as in the ocean, and his *Nautilus* was in a Strait, so to speak, between Europe and Africa.

Our speed was about twenty-five miles an hour.

It is needless to say that Ned Land, to his great disappointment, was obliged to renounce his plan of escape. It was of no use to think of launching the boat at the pace we were travelling. To leave the *Nautilus* under these circumstances was like jumping out of a train at full speed, which is not the most prudent thing to do at any time. Besides, the ship only came to the surface during the night to renew the air, and was solely guided by the compass and the log.

Therefore I saw no more of the Mediterranean than a traveller by an express can see of the country through which he passes. Nevertheless, Conseil and I were able to note some of the Mediterranean fish, whose swimming powers enabled them to keep alongside the *Nautilus* for a few moments. My notes enable me to reproduce some account of the ichthyology of this sea.

Of the many fish inhabiting it I saw some, and only caught a glimpse of others ; so I must class them in a somewhat fantastic manner.

Amongst those surrounded by our light were lampreys, about three feet long, which are common to all seas ; oxyrhinchia, a kind of ray, about five feet wide, with white belly, spread out like shawls carried along by the current. Other rays passed so quickly that I could not ascertain whether they were the “ eagles ” of the Greeks, or the “ rat,” “ frog,” and “ bat,” which modern fishermen have dubbed them. Sea-foxes, several feet long, and gifted with acute

scent came along like great blue shadows. Dorades got up in blue and silver, sacred to Venus, the eyes chased with a gold pencilling; a precious species, but suited to either salt or fresh water, living in all climates and all temperatures, and though belonging to the geological era, have preserved all their pristine beauty. Magnificent sturgeons, ten or eleven yards long, of great speed, and knocking their powerful tails against the windows of the saloon, showed their bluish backs spotted with brown. They are like sharks, though inferior in strength, and are found in all seas. In the spring they like to ascend great rivers like the Volga, the Danube, the Po, the Rhine, the Loire, and Oder, living on herrings, mackerel, &c. But of the various inhabitants of the Mediterranean those which I could see best were of the sixty-third genus of osseous fishes. These were tunny, with blue-black backs. They are stated to follow ships in search of the refreshing shade from the fiery tropical sky, and they certainly proved the saying, for they followed the *Nautilus* just as they followed the ships of La Pérouse. For hours they emulated the speed of our ship. I could not help admiring them, they seemed so built for speed; small head, lissome body, fins of great power, and forked tails. They swam in a triangle, as some birds fly. But with all their speed they do not escape the Provençals, and these blind and stupid yet precious creatures throw themselves by millions into the nets of the Marseillaises.

I could quote numbers of other fish—gymnotes, congers of four yards length, trygles, red mullet, the ocean “bird of Paradise;” and if I do not put down balista, tertodrons, hippocampus, blennies, and numerous others, it is because the speed of the *Nautilus* made it impossible to note them accurately.

I fancied I saw at the entrance to the Adriatic two or

three cachalots, some dolphin of the genus globicephali, peculiar to the Mediterranean, the back of the head being variegated with small lines; and some seals known as "Monks," and which have really something of the appearance of a Dominican.

Conseil thought he saw a tortoise six feet wide. I was sorry I had not noticed it, for, from Conseil's description, I believed it to be the "luth," which is very rare. I only remarked a few caconans, with elongated shell coverings.

As regards zoophytes, I was able to admire for some minutes an admirable orange-coloured galcolaria, which had attached itself to the panel on the port side. I, unfortunately, was unable to secure this splendid specimen; and perhaps no other Mediterranean zoophytes would have presented themselves if the *Nautilus*, during the evening of the 16th, had not unexpectedly slackened speed, under the following circumstances.

We were passing between the coasts of Sicily and Tunis. In this narrow space, between Cape Bon and the Strait of Messina, the bottom of the sea rose very suddenly. A regular reef had formed, above which there was not sixty feet of water. The *Nautilus* had therefore to move very carefully, so as not to knock against the reef.

I pointed out to Conseil the position of the reef on the chart.

"But, if Monsieur has no objection, this is a regular isthmus, uniting Europe to Africa."

"Yes," I replied, "it is a perfect bar to the Libyan Straits, and the soundings of Smith have proved that those continents were formerly united between Cape Boco and Cape Furnia."

"I can easily believe it," replied Conseil.

"I may add that a similar reef exists between Ceuta and

Gibraltar. These bars, in the geological epoch, completely shut in the Mediterranean."

"Ah!" said Conseil, "and suppose some volcanic action should raise these reefs again?"

"That is scarcely probable."

"At least, if Monsieur will allow me to finish; if this should happen, it will be very awkward for M. de Lesseps, who has taken so much trouble to cut the Suez Canal."

"I agree with you, Conseil; but I repeat I do not think it likely to happen. The violence of the subterranean forces is always diminishing. The volcanoes, so common in early ages, are now comparatively few; the interior heat is dying out, the temperature of the earth's strata is being lowered appreciably every century, and to the detriment of our globe, for this heat is life."

"Yet the sun——"

"The sun is not enough, Conseil. Can it warm a corpse?"

"No, I should say not."

"Well, my friend, the earth will one day become a cold body; it will become uninhabitable and uninhabited; like the moon, which has long ago lost its vital heat."

"In how many centuries?" asked Conseil.

"In some hundreds of thousands of years."

"Then," said Conseil, "we have still time to complete our voyage, if Ned Land does not interrupt us."

And Conseil, reassured, applied himself to the study of the high bank that the *Nautilus* was skirting at a moderated pace.

There, beneath a rocky and volcanic soil, was outspread a living flora of sponges, holotines, cydippes, ornamented with ruddy foliage, which emitted a slight phosphorescence; beroës, commonly known as sea-cucumbers, and bathed in

glittering light of a solar spectrum ; walking comatula a yard long, whose purple hue coloured the water.

Conseil occupied himself chiefly in observing the molluscs and the articulates. Time failed him to complete the crustacea by the examination of the stomapodes, the amphipodes, the homopodes, the trilobites, the branchiopodes, the ostracods, and the entomostaces. But the *Nautilus* having passed the high bank on the right of the African coast, redescended into deep water, and proceeded at her full speed. No more molluscs, no more articulates, no more zoophytes. Only a few large fish passed us, like great shadows.

During the night of the 16-17th February we entered the second Mediterranean basin, whose greatest depth is 3,000 yards. The *Nautilus* descended almost to the very bottom.

There, in default of natural wonders, the great mass of waters offered me very moving and terrible scenes. We were then traversing that portion of the Mediterranean so fertile in shipwrecks. From the Algerine coast to Provence what vessels have disappeared ! The Mediterranean is but a lake compared to the Pacific, but it is a capricious and changeful lake : to-day smiling and beautiful, to-morrow raging, roaring, and swept by furious winds, disabling the finest vessels, and smashing them against its precipitous rocks.

So in this rapid transit, at these immense depths, I could perceive anchors, cannon, cannon-balls, iron utensils, threads of screws, pieces of the engines, cylinders, boilers, hulls floating mid-way, some upright, some overturned !

Of these shipwrecked vessels, some had been injured by collision, others from striking on the rocks. I saw some which had gone down "all standing." They looked as if

they were at anchor in a foreign harbour, and were waiting the signal to depart. When the *Nautilus* passed between them and wrapped them in the electric light, it seemed as if these ships were going to salute the flag and hoist their numbers. But no ! nothing but the silence of death reigned in this scene of a great catastrophe.

I noticed that towards Gibraltar these sinister traces became more numerous. The coasts of Europe and Africa get closer here, and the meetings were more frequent. I perceived numerous iron hulls, remains of steamers, some careened over, some upright, like some formidable animals. One of these vessels presented a terrible spectacle. How many had gone down with her, who of all those on board had survived to tell the tale, or did the waves still guard this terrible secret ? I do not know why, but it occurred to me that this was the *Atlas*, which had disappeared about twenty years ago, and of which no one had ever since heard. Ah ! what fearful history might be written about these depths, this vast mortuary of the Mediterranean, where so much wealth has been lost, and where so many victims have found death !

But the *Nautilus*, indifferent to this, continued her rapid course amid all this ruin. On the 18th of February, about 3 A.M., she entered the Straits of Gibraltar.

Here two currents exist ; the upper long known, which takes the water from the ocean into the Mediterranean, the other in the opposite direction of which reason has proved the existence. In fact, the bulk of the Mediterranean waters, incessantly increased by the Atlantic, and by the rivers it receives, would rise each year to the level of the sea, for its evaporation is not sufficient to establish the equilibrium. Now, it is not so, and the existence of an under-current is only natural, and this current empties

the surplus water of the Mediterranean into the Atlantic, through the Straits of Gibraltar. This is a fact, and the *Nautilus* took advantage of this current. It rapidly advanced. For an instant I caught sight of the beautiful ruins of the temple of Hercules (according to Pliny and Avienus), buried with the island that supported it, and a few moments later we were floating in the waves of the Atlantic Ocean.

CHAPTER VIII.

VIGO BAY.

THE Atlantic! A vast expanse of water, whose superficial area covers 25,000,000 of square miles, is 9,000 miles long, and has an average breadth of 2,700 miles. This enormous ocean was almost unknown to the ancients, unless the Carthaginians perhaps, who in their commercial progression followed the coasts of Europe and Africa. An ocean whose winding and parallel shores embrace an immense area; supplied by the largest rivers in the world—the St. Lawrence, the Mississippi, the Amazon, La Plata, Orinoco, Niger, Senegal, Elbe, Loire, Rhine, which bear their waters to it through the most civilised, and also through the most barbarous countries. A magnificent sheet of water ploughed by vessels over which the flag of every nation waves, and which is bounded by those two points, so terrible to sailors, the Cape Horn and the “Cape of Storms.”

The *Nautilus* was cutting her way through these waters, having made 10,000 leagues in three months and a half—a distance greater than one of the earth's great circles. Whither were we now bound, and what had the future in store for us?

The *Nautilus* having cleared the straits, kept well in the offing. We came to the surface, and our daily airings on the platform were resumed.

I ascended at once, accompanied by Conseil and Ned Land. Cape St. Vincent appeared about twelve miles away. The wind was blowing stiffly from the south, the sea was very rough indeed, and the *Nautilus* rolled tremendously. It was almost impossible to stand upon the platform, which was swept by the waves almost every instant. We descended, therefore, after having taken in a few mouthfuls of fresh air.

I retired to my room, Conseil went to his cabin also, but the Canadian, who appeared preoccupied, followed me. Our rapid passage through the Mediterranean had not permitted him to put his design into execution, and he did not conceal his disappointment. When he had closed the door he sat down and contemplated me in silence.

“Friend Ned,” I said, “I understand you, but you have nothing to reproach yourself with. Under the circumstances in which the *Nautilus* was worked, it would have been utter folly to have attempted to leave it.”

Ned made no reply, his compressed lips and lowering brow showed how deeply the idea of escape possessed him.

“But,” said I, “we will not despair. We are coasting up by Portugal. France and England are not far off, where we may easily find refuge. If the *Nautilus* had gone southwards after clearing the straits we should have been again carried away into mid-ocean, and I should have shared your uneasiness, but we know that Captain Nemo does not fear these frequented seas, and in a few days I believe we shall be in safety.”

Ned Land gazed at me still more intently, and at length opening his lips, said :

“It is for this evening.”

I jumped up. I was, I confess, unprepared for such a communication. I could not reply.

“It was arranged to wait an opportunity. It is at hand. This evening we shall be only a few miles from the Spanish coast. The night will be dark. The wind is high. You promised, M. Aronnax, and I depend upon you.”

As I still was silent the Canadian rose and came towards me.

“To-night at nine o’clock,” said he. “I have warned Conseil. At that time Captain Nemo will be shut in in his own room, and most likely asleep. Neither the engineers nor the crew will be able to see us. Conseil and I will gain the centre staircase. You, M. Aronnax, can remain in the library close by till I give the signal. The oars, mast, and sail are in the launch; I have even succeeded in laying in some provisions, and I have got an English ‘key’ to undo the bolts which fasten the boat to the *Nautilus*. You see all is prepared. This evening, mind.”

“The sea is very rough,” I said.

“I know that,” replied the Canadian, “but we must risk it. Our freedom is worth a little danger. But the boat is strong, and a few miles with a favourable wind is nothing after all. Who knows, by to-morrow we may be a hundred leagues away. If only fate be propitious, by ten or eleven to-night we shall have landed somewhere or be dead. Therefore, until the evening, adieu.”

The Canadian retired, leaving me speechless. I had fancied that, the chance once gone, I should have had time to reflect or discuss the point. My obstinate companion would not allow this; but, after all, what could I have said? Ned Land was right—a hundred times right. Here was a chance of an opportunity, and he was taking advantage of it. Could I retract my promise, and assume the responsibility

to compromise my companions by my selfishness? Tomorrow Captain Nemo might take us out to sea again.

At this moment a loud hissing noise made me aware that the reservoirs were filling, and the *Nautilus* was descending beneath the Atlantic waves.

I remained in my room. I wished to avoid the captain, to hide from him the emotion that overcame me. I passed a very wearying day, and left my submarine studies, as I was balanced between the desire for liberty and my regret at quitting the *Nautilus*. To quit this ocean—"my Atlantic," as I liked to call it—without having visited its greater depths, without having gained its secrets, while the Indian and Pacific Oceans had yielded theirs! My romance fell from my hand at the first volume; my dream was interrupted at the most pleasant moment! What unhappy hours I passed thus! Sometimes picturing myself and my companions in safety; sometimes hoping, against my own reason, that something would prevent Ned Land's project from being carried out.

Twice I came into the saloon. I wanted to look at the compass. I wished to see in what direction the *Nautilus* was going; whether bringing us nearer to, or taking us farther from the coast. But there was no change, we continued in Portuguese waters.

I must therefore make up my mind to depart. My baggage was not excessive—only my notes!

I wondered what Captain Nemo would think of our flight. What unhappiness, what evil might it not bring upon him; and how would he act in either event—on success or failure? I had certainly no cause to complain of his conduct—on the contrary—he was hospitality itself. But in leaving the ship I could not be taxed with ingratitude; I was bound by no oath. He depended on circumstances,

and not upon any promise, to keep us with him. But this claim, which openly avowed his intention to keep us prisoners for ever, quite justified our attempt to escape.

I had not seen the captain since our visit to the island of Santorin. Would chance bring us together before we escaped? I desired, and yet feared, the meeting. I listened to hear if he were walking up and down in his room. I heard no sound; the room must be empty! Then I began to wonder whether he were on board. Since the evening that the boat had left the *Nautilus*, on some mysterious service, my ideas had been slightly modified concerning him. I fancied, and I wish I could say so, that Captain Nemo still kept up some communication with the earth. Would he never leave the *Nautilus* altogether? Weeks had passed without our meeting. What did he do in that time? And, while I believed him a prey to misanthropy, might he not be at a distance, carrying out some secret plans?

All these and a thousand similar ideas crowded my brain. Conjecture could be infinite under such circumstances. I was terribly uneasy. The day appeared interminable. The hours struck too slowly for my impatience. My dinner was served as usual in my room. I ate little, I left the table at seven o'clock. One hundred and twenty minutes more separated me, from the moment I was to join Ned Land. My agitation increased: my pulse beat violently, I could not rest a moment. I moved about, in the hope to calm my mind by so doing. The idea of non-success was the least painful of my cares, but the thought of having our enterprise discovered before we quitted the ship; of being arraigned before Captain Nemo, irritated, or what would be even worse, sad at my abandonment of him, made my heart beat painfully.

I wished to take a last look at the saloon. I gazed at all its riches, and treasured specimens, like one on the brink of exile, and who was never to see these things again. Those marvels of Nature, the masterpieces of Art, amongst which my life had moved on for so long—was I about to abandon them for ever! I wished to take a glance through the windows across the Atlantic waves, but the panels were closed, and an iron cloak separated me from the ocean which I should no longer know.

As I wandered round the saloon, I reached a door that opened into the captain's room. To my great surprise it was ajar. I drew back involuntarily. If Captain Nemo were in his room, he would see me. However, not hearing any noise, I approached the room—it was empty. I pushed the door and entered. All was still, and plain of aspect as ever.

Just then some engravings, which I had not noticed in my previous visit, attracted my attention. They were portraits of men renowned in history, whose existences have been devoted to some grand aim. Kosciusko, the Pole; Botzaris, the Leonidas of modern Greece; O'Connell, the Irish Patriot; Washington, the founder of the American Republic; Mauin, the Italian Patriot; Lincoln, who fell by the assassin's bullet; and finally that martyr to the freedom of the black races—John Brown, depicted on the gibbet, as drawn with such terrible truthfulness by Victor Hugo.

What fellow-feeling existed between these heroic souls and the mind of Captain Nemo? Could I now unravel the mystery of his existence! Was he a champion of an oppressed people—the liberator of a race of slaves? Had he taken part in the later political and social commotions of the century? Was he one of the heroes of that terrible, lamentable, yet glorious American war?

The clock struck eight. The sound of the first stroke

aroused me from my dreaming. I trembled as if some invisible eye had read my most secret thoughts, and I hurriedly left the room.

In the saloon my eye fell upon the compass. We were still going north. The log indicated a moderate speed, the manometer gave a depth of about sixty feet. These circumstances were favourable for the Canadian's plan.

I regained my room. I clothed myself warmly, sea-boots, a cap of otter-skin, a coat of byssus, lined with seal-skin—I was ready—waiting. The vibrations of the screw alone broke the profound silence that reigned throughout the ship. I listened most attentively. Would no uproar tell me that Ned Land had failed? A mortal uneasiness was upon me. I in vain endeavoured to assume my usual coolness.

It was nearly nine o'clock; I put my ear close to the door of the captain's room. No sound whatever! I left my room and entered the saloon, which was rather dark, but quite deserted.

I opened the door communicating with the library. The same semi-obscurity reigned here, but there was sufficient light. I placed myself close to the door opening to the central staircase. Here I awaited Ned Land's signal.

At this moment the beatings of the screw diminished sensibly, then ceased altogether. Why this change in the pace of the *Nautilus*? Whether this stoppage would facilitate or prevent the designs of Ned Land, I could not imagine.

I could hear no sound but the throbbing of my heart. Suddenly a slight shock was felt, and I perceived that the *Nautilus* had grounded at the bottom of the ocean. My uneasiness increased, the Canadian made no sign. I had a great mind to join Ned Land, and induce him to forego

his attempt to escape; I felt that our progress was no longer being made under ordinary conditions.

The door of the saloon now opened, and Captain Nemo appeared. He perceived me, and without preamble, addressed me.

“Ah! professor, I was seeking you. Do you know your Spanish history?”

One might know the history of one's own country perfectly, while, under the conditions in which I then was—mind upset, and head in a whirl—one could not recall a fact.

“Well,” repeated Captain Nemo, “did you hear my question? Do you know Spanish history?”

“Not very well,” I replied.

“There are *savants* then,” replied the captain, “who know! Well, sit down, for I am going to relate to you a curious episode in this history.”

The captain lay down upon a sofa; mechanically I sat beside him.

“Listen attentively, Monsieur, if you please,” he said. “This history will interest you, for it will answer a question you have, no doubt, not yet been able to solve.”

“I am listening, captain,” I replied, not knowing what he was leading up to, and whether he was about to touch upon our projected escape.

“If you have no objection,” said Captain Nemo, “we will go back to the year 1702. You are aware that at that time your King Louis XIV., thinking that his gesture was enough to bring the Pyrenees into his kingdom again, imposed his grandson, the Duke of Anjou, on the Spaniards. This prince, who reigned more or less badly under the name of Philip V., had to do with a strong party abroad.

“In fact, in the preceding year Holland, Austria, and England had concluded a treaty of alliance at the Hague

with the view to snatch the crown from Philip V., and bestow it upon an archduke whom they prematurely designated Charles III.

“Spain felt she ought to resist this, but she was almost deprived of soldiers and sailors. However, money would be forthcoming if only all those galleons laden with gold and silver could arrive from America. Now, towards the end of 1702, the Spaniards awaited a rich convoy which France was escorting by a fleet of twenty-three ships under the command of Admiral Chateau-Renaud, for the combined fleets were already in the Atlantic.

“This convoy was to arrive at Cadiz, but the admiral, hearing that the English fleet was cruising in the neighbourhood, resolved to enter a French port. The Spanish officers protested against this. They wanted to be conducted into a Spanish port—if not Cadiz, Vigo, situated on the N.E. coast of Spain, and which was not blockaded.

“Admiral Chateau-Renaud was weak enough to comply, and the galleons entered Vigo Bay. Unfortunately this bay forms an open roadstead which could not be defended. It was then necessary to hurry on the discharge of the galleons before the arrival of the hostile fleet, and plenty of time was available for the operation had not a petty question of precedence arisen.

“You are following the facts?” asked Captain Nemo.

“Perfectly,” I said; not knowing how all this was to be applied to me.

“Well, then, this is what occurred, the Cadiz merchants had a privilege according to which they were to receive all merchandise which came from the West Indies. Now, to disembark ingots at Vigo was against their privileges. They, therefore, lodged a complaint at Madrid and obtained from the weak Philip V. permission for the convoy to remain in

sequestration in the roadstead of Vigo until the hostile fleet had disappeared from the neighbourhood.

“But while this decision was being arrived at, the English fleet appeared in Vigo Bay. Admiral Chateau-Renaud, notwithstanding his inferior force, gave them battle. But when he saw that the convoy was likely to fall into the enemies’ hands, he burnt and sunk the galleons, which went to the bottom with the immense treasure on board.”

Captain Nemo paused; I could not yet perceive how this history could interest me.

“Well?” I said.

“Well, sir,” replied Captain Nemo, “we are now in Vigo Bay, and, if you please, you can penetrate its mysteries.”

He rose and begged me to accompany him. I had had time to recover myself. I obeyed. The saloon was dark, but the sea scintillated before the windows; I looked out.

All round the *Nautilus*, to a distance of perhaps half a mile, the sea appeared to be illuminated by electric light. The sandy bottom was clear and distinct. Some of our crew in their diving-dresses were engaged in clearing rotten barrels and empty chests from the wrecks. From these barrels and cases ingots of gold and silver were escaping, cascades of money and jewels. They were piled up on the sand. Then, laden with their booty, the men returned to the *Nautilus*, and, depositing their loads, went back for another haul in this inexhaustible fishery of silver and gold.

I understood it all. This was the scene of the battle of the 22nd October, 1702. It was here that the galleons, laden for the Spanish Government, had been sunk. Here Captain Nemo was enabled to secure, as he chose, millions to ballast the *Nautilus*. ’Twas for him, and him alone, that America had yielded that precious metal. He was the sole

heir to these treasures, torn away from Incas, and from the conquered people of Ferdinand Cortez.

“Were you ever aware that the sea contained such riches, professor?”

“I have heard that the silver in suspension in these waters has been estimated at two millions.”

“No doubt; but to extract this silver, the expenses would carry away all profit. Here, on the contrary, I have only to collect what has been lost; and not only here, but at the scenes of a thousand other shipwrecks, which I have noted on the chart. Now do you perceive why I am so rich?”

“Yes, captain; but allow me to inform you that, in exploring the Bay of Vigo, you are only a little ahead of a rival.”

“What is that?”

“A society has received from the Spanish Government the privilege to search for these sunken galleons. The shareholders are attracted by the promise of a large booty, for they value the contents of these ships at five hundred millions.”

“They were five hundred millions,” replied Captain Nemo, “but they are not so now.”

“In fact, then,” said I, “a warning to these shareholders would only be a charitable action. But how would it be received? That which gamblers regret above all, usually, is less the loss of their money than that of their foolish expectations. I pity them less, after all, than the numbers of unhappy people to whom so much treasure, well bestowed, would have been a boon; while they will be for ever useless to them.”

No sooner had I made this remark than I felt it had wounded Captain Nemo.

“Useless!” he said, with animation. “Do you imagine,

Monsieur, that these treasures are lost because I gather them? Is it for myself—as you imagine—that I give myself all this trouble to collect this wealth? Who has told you that I do not make a good use of it all? Do you think I do not know that suffering people and oppressed races exist on the earth—unhappy ones to console and victims to avenge? Do you not understand——”

Captain Nemo checked himself, regretting, perhaps, that he had said so much. But I had guessed. Whatever the motives that had forced him to seek freedom on the ocean, after all he was a man at heart. His bosom throbbed for the sufferings of mankind, and his unlimited charity was extended to oppressed races, as well as to individuals.

And I understood then to whom these millions were forwarded by Captain Nemo, when the *Nautilus* was cruising in the neighbourhood of the Crete insurgents.

CHAPTER IX.

A SUBMERGED CONTINENT.

THE next morning (19th February) Ned Land entered my room. I rather expected him. He wore a very disappointed look.

“Well, Monsieur,” he said.

“Well, Ned, fate was adverse yesterday.”

“Yes, because that damned captain stopped exactly at the hour we were about to get into the boat.”

“Yes, Ned; he had some business to transact with his banker.”

“His banker !”

“Or rather, I should say his banking-house. I mean by that this ocean, in which his treasures are more safe than in the coffers of a state.”

I then narrated the occurrences of the previous evening, in the secret hope to bring him back to the idea not to abandon the captain, but my recital had no other result than to cause him to regret, in the most energetic manner of which he was capable (which was something), of not having been able to make a little excursion on his own account into the “battle-field” of Vigo.

“However,” he said, “all is not lost yet. It is only a ‘cast’ lost. We will recoup ourselves another time, and this evening——”

“How is the ship’s head?” I asked.

“I do not know,” he replied.

“Well, to-morrow at noon we shall see the observations.”

The Canadian returned to Conseil. So soon as I was dressed I entered the saloon. The compass did not give us any hope, the course was S.S.E. We were turning our backs on Europe.

I waited with some impatience till the bearings were taken. About half-past eleven the reservoirs were emptied, and we mounted to the surface of the ocean.

I hastened up to the platform, Ned Land had anticipated me.

Land was no longer in view. Nothing was to be seen but the expanse of ocean. There were a few sails on the horizon seeking at Cape St. Roque favourable winds to double the cape. The weather was overcast, a storm was brewing.

Ned, in rage, attempted to pierce the misty horizon. He was in hopes still that behind all this cloud there might be some land for which he was so anxious.

At mid-day the sun showed himself for an instant. The mate profited by this burst to take the elevation. Then the sea got up again, we descended accordingly, and the panels were closed.

An hour afterwards, when I was looking at the chart, I saw that the position of the *Nautilus* was $16^{\circ} 17'$ long. and $33^{\circ} 22'$ lat., about 150 leagues from the nearest shore. There was no chance even to think of escape, and I may

fairly leave you to guess the feelings of Ned Land when he fully recognised the situation of things.

I did not worry myself particularly. I felt in a manner relieved from a weight that had oppressed me, and I was able to return to my usual occupations with some degree of calmness.

About 11 P.M. I received a very unexpected visit from Captain Nemo. He inquired very politely whether I felt fatigued by my exertions of the preceding evening. I replied in the negative.

“Then, Monsieur, I will suggest a very interesting excursion.”

“By all means, captain,” I said.

“Hitherto you have only visited the ocean depths by day and with the light of the sun. Should you like to see them on a dark night?”

“Very much, indeed.”

“I warn you the excursion will be tiring. We shall have to walk for a long distance and scale a mountain. The roads are not very well marked.”

“What you say only redoubles my curiosity. I am quite ready to accompany you.”

“Come along, then,” replied the captain, “let us put on our diving-dresses.”

As we reached the room in which the dresses were kept, I perceived that none of the crew, nor had either of my companions, been selected to follow us on this excursion. Captain Nemo had not proposed my taking either Conseil or Ned.

We were ready in a few minutes. We shouldered a reservoir of air each, but the electric lamps were not prepared; I called the captain's attention to this.

“They would be of no use,” he said.

I fancied I was mistaken, but I could not repeat the suggestion, for the captain had already put on his helmet. I managed to equip myself, and I felt somebody put an iron-pointed stick into my hand, and some moments later we touched the bottom of the Atlantic, at a depth of three hundred yards.

Midnight was at hand. The water was very dark, but Captain Nemo pointed to a reddish gleam in the distance, a sort of extended light, which burned at about two miles distant from the *Nautilus*. What this fire was, how it was fed, why and how it burned amid the waters, I could not hazard a conjecture. In any case it gave us light, vaguely 'tis true, but I soon became accustomed to the peculiar obscurity, and I understood the inutility of the Rumhkorff apparatus under the circumstances.

We advanced side by side directly towards the fire. The flat ground mounted gradually. We made very long strides, assisted by our sticks, but still our progress was not rapid, for our feet often sank into a sort of ooze.

But, still advancing, I heard a sort of pattering noise overhead. This sometimes increased until it sounded like a hailstorm. I soon understood the cause; it was the rain-drops falling upon the surface of the waves. Instinctively I had an idea that I should get very wet. Wetted by rain-water in the middle of the sea! I could not refrain from a quiet chuckle inside my helmet at the idea; but, as a fact, in the thick diver's dress one does not feel the water, and can fancy oneself in an atmosphere only a little more dense than the terrestrial atmosphere, that's all.

After half-an-hour's walking the ground became stony. Medusæ, small crustacea, &c., lit up with their light phosphorescent gleams. I caught glimpses of piles of rocks

covered with millions of zoophytes and algæ. My foot often slipped upon the viscous carpet of varech, and had it not been for my *bâton* I should have fallen more than once. When I turned round I could see the white lamp of the *Nautilus*, though paling a little, in the distance.

These stony heaps of which I have spoken were disposed at the bottom of the ocean with a degree of regularity which I could not explain. I saw gigantic furrows which lost themselves in the obscurity, and whose length exceeded all computation. Other curious experiences presented themselves. It appeared to me that my heavy leaden soles crushed a litter of bony fragments which cracked with a loud noise. What was this vast plain which I was treading? I should have liked to ask the captain, but his language of signs, which permitted communication with his companions when they accompanied him in his submarine excursions, was utterly incomprehensible to me.

Meanwhile, the flame which guided us increased, and lighted up the horizon. The existence of this fire beneath the ocean puzzled me considerably. Was it electric? Was I about to become acquainted with a natural phenomenon hitherto unknown? Or had the power of man aught to do with this? Were men fanning this flame? Was I about to meet in these depths friends and companions of Captain Nemo, living like him this strange life, and whom he was about to visit? Should we find here below a colony of exiles, who, tired of earth and its troubles, had sought and found independence in the lowest depths of the ocean? These foolish and utterly absurd ideas pressed upon me, and in my condition of mind, over-excited by the wonders I beheld at every step, I should not have been very much astonished to enter, at the bottom of this ocean, one of those submarine towns of which Captain Nemo dreamed.

Our route got more and more illuminated. The white gleam radiated from a mountain about 800 feet in height. But what I could see was only a reflection thrown up by the crystal of the sea depths. The fire, the original cause of this extraordinary illumination, lay at the opposite slope of the hill.

Captain Nemo advanced amid the rocky masses without the least hesitation. He evidently was acquainted with this dark road. He had doubtless frequently traversed it, and would not lose his way. I followed him in full confidence. He seemed to me like one of those genii of the sea, and as he walked in front, I admired his lofty stature, which was thrown out in strong relief against the luminous horizon.

It was 1 A.M. We reached the first slopes of the mountain, but to cross them we were obliged to attempt a difficult path in a vast thicket. Yes, a thicket of dead trees, trees mineralised by the action of the water, with here and there a gigantic pine dominating them. It was like a standing coal-pit, whose ramifications, like cuttings upon black paper, stood out clearly against the watery ceiling. It was like a submerged forest of the Hartz, clinging to the mountain sides. The paths were encumbered with algæ and fucus, amongst which crawled a whole colony of crustacea. I went on jumping over the rocks, striding over the tree-trunks, breaking away the bind-weed that extended from branch to branch, and frightening the fish. Carried onward, I felt no weariness. I followed my guide, who knew no fatigue.

And what a sight it was! How can I reproduce it? How can I depict the aspect of those trees and rocks in this liquid medium, the black foundations, while red-tinged tops glowed in the light, which was doubled by the reflecting powers of the water? We clambered up rocks which gave

way as we passed, and fell with the roar of an avalanche. Right and left there were long dark galleries. In other places were vast clear spaces, apparently man's handiwork, and I wondered whether some inhabitant of these submarine districts would not suddenly appear!

Captain Nemo still kept ascending, and I could not stay. I followed him boldly. My *bâton* was of great assistance; a false step would have been dangerous on those narrow places, but I walked carefully, and without feeling giddy. Sometimes I was obliged to jump a crevasse, the depth of which would have repelled me on land; sometimes I ventured across the unsteady trunk of a tree, thrown over an abyss; and without looking to my feet, for my eyes were fully occupied in admiring the wild scenery. Monumental-like rocks, perched upon irregular bases, here seemed to defy all laws of equilibrium. Between their stony embraces trees sprang up, like a jet under the influence of great pressure, and sustained those which sustained them in turn. Then natural towers and escarpments which inclined at an angle that gravitation would never have permitted on land.

I, myself, felt the influence of the great density of the water, for, notwithstanding my heavy clothing, I was able to scale these stiff ascents with the lightness and ease of a chamois.

In thus narrating my expedition under water, I am aware that it may appear incredible. I am merely the historian of things apparently impossible, but none the less real and incontestible. I did not dream all these things; I saw, and came in contact with them.

Two hours after leaving the *Nautilus*, we had cleared the line of trees; and the mountain, a hundred feet above us, threw a long shadow upon the opposite slope. Some petrified trees appeared to move in fantastic zigzags.

Fishes rose in masses under our feet, like frightened birds in the long grass. The massive rocks were seamed with immense fissures; deep grottos, unfathomable holes, in which formidable creatures were moving about. The blood went back to my heart when I perceived an enormous antenna blocking up the way, or a frightful claw shutting with a loud noise in the depths of the caverns. Thousands of luminous points glittered in the darkness. These were the eyes of enormous crustacea; giant lobsters, holding themselves upright like so many halberdiers, and moving their claws with a clanking sound; titanic crabs, and fearful octopi, waving their arms like a nest full of serpents. What was the extraordinary world which hitherto I had never known? To what order did these articulates belong, for whom the rocks formed a second carapace? Where had nature discovered the secret of their vegetative life, and how long—how many centuries—had they lived thus in the lowest depths of the ocean?

But I was unable to halt. Captain Nemo, evidently familiar with these terrible creatures, paid no heed to them; so we reached the first platform, where there were other surprises in store for me. There were scattered ruins which betrayed the hand of man, not of the Creator. Amongst the piles of stones, rose the vague forms of chateaux and temples, clothed with zoophytes in full flower; and over which, like ivy, the algæ and fucus threw a thick vegetable mantle.

I would have fain asked Captain Nemo for an explanation of all this, but, not being able to do so, I stopped and seized his arm; but he shook his head and, pointing to the last peak of the mountain, motioned me onward. I followed, and in a few minutes we gained the top, which, in a circle of ten yards, commanded the whole of the rocky expanse beneath.

I looked down the ascent we had just climbed. The mountain was only about 700 feet high from that plain we had left, but on the other side it looked down twice the height to the depths of the Atlantic. My gaze roamed over a vast space, lighted up by a violent conflagration. The mountain was, in fact, a volcano. Fifty feet below the summit a large crater was vomiting torrents of lava in the midst of a rain of stones and scoriæ ; the volcano lit up the plain below like an immense torch, even to the limits of the horizon.

I have said that the volcano cast up lava but no flames. To have flame oxygen of the air is necessary, and flame cannot be developed under water, but lava possesses in itself the principle of incandescence, and reaches a white heat, and, in contact with the liquid element, gains the upper hand and vaporises it. Rapid currents, carrying all the gases in diffusion, and the lava torrents, flowed to the base of the mountain, like the eruptions of Vesuvius upon another *Torre del Greci*.

In fact, beneath my eyes, ruined and destroyed, appeared the remains of a town, its roofs open, its temples fallen, its architecture gone, and, in the columns still remaining, the Tuscan style could be recognised.

Further on were the traces of a gigantic aqueduct, and again the base of an Acropolis, with the dim outlines of a Parthenon. Here were vestiges of a quay, as if an ancient harbour had been existent, and had sunk, with its merchantmen and ships of war, to the bottom. At a greater distance still were long lines of sunken walls and streets—a Pompeii engulfed in the ocean.

Where was I? I was determined to know at any hazard. I wished to speak, and would have taken off my helmet had not Captain Nemo stopped me by a gesture. He then

picked up a piece of chalky stone, and, advancing towards a black rock, he wrote the single word—

ATLANTIS.

A sudden light flashed through my mind. Atlantis! The ancient Meropis of Theopompus! The Atlantis of Plato! The continent whose existence was denied by Origen, Porphyry, Jamblicus, D'Anville, Malte-Brun, and Humboldt, who ranked its disappearance amongst the old legends. Admitted by Passidonius, Pliny, Tertullian, Engel, Sherer, Tournefort, Buffon, d'Avezac, there it was now before my eyes, bearing witness to the catastrophe. The region thus engulfed lay astride Europe, Asia, and Africa; beyond the Pillars of Hercules, in which lived a people—the powerful Atlantides—against whom was waged the first battles of ancient Greece.

Plato, himself, is the historian who has recounted the events of the heroic times.

“One day Solon was conversing with some aged sages of Sais, a town then 800 years old, as its graven annals bear witness. One of the old men was narrating the history of another town more ancient still. This first Athenian city, 800 years old, had been attacked and partly destroyed by the Atlantides. These people occupied an immense continent, greater than Africa and Asia put together, which covered a surface between the 12° to 14° N. lat. Their domination extended even to Egypt, and they wished to conquer Greece also, but were repulsed by the indomitable resistance they met with. Centuries rolled on. A cataclysm occurred—inundations and earthquakes. A night and a day sufficed for the destruction of the Atlantis; the highest summits—Madeira, the Azores, the Canaries, and the Cape Verd Islands—only remaining above water.”

Such were the historical souvenirs which Captain Nemo's inscription called up in my mind. Thus, led by the strangest destiny, I was standing upon one of the mountains of that continent; I was touching these ruins, a thousand centuries old, and of the geological epoch; I was walking in the places where the contemporaries of the first man had walked; I was crushing under foot the skeletons of animals of a fabulous age, which the trees, now mineralised, once covered with their shade.

Ah! If time had not failed me, I should have descended those steep hills and explored the whole continent—which, no doubt, unites Africa to America—and visited the grand antediluvian cities. Here lived those gigantic races of old, who were able to move those blocks which still resisted the action of the water. Some day, perhaps, a convulsion of nature will heave these ruins up again. Many submarine volcanoes have been reported in this portion of the ocean; and many ships have felt extraordinary shocks in passing over these disturbed depths. The whole of the soil, to the equator, is still rent by these Platonian forces; and who knows but that at some distant day the summits of these volcanic mountains will appear once more above the surface of the Atlantic!

As I was musing thus, and endeavouring to fix the details on my memory, Captain Nemo remained immovable, and as if petrified. Was he thinking of those former generations, and endeavouring to elucidate the secret of human destiny. Was it to this place he came to revel in historical memories, and to revive the ancient life—he to whom a modern one was distasteful. What would I not have given to have known his thoughts, to share them, to understand them!

We remained in the same place for a whole hour, con-

templating the vast plain by the gleam of the lava, which at times glowed with intense brilliancy. Loud noises were clearly transmitted by the water, and were echoed with majestic fulness of sound.

The moon now appeared across the waters, and threw her pale rays over the engulfed continent. It was but a gleam, but it had a wonderful effect. The captain rose, threw a last look at the immense plain, and then signalled to me to return.

We rapidly descended the mountain. The mineral forest once passed, we could perceive the lantern of the *Nautilus* shining in the distance like a star. The captain made directly for it, and we got on board just as the first rays of dawn were brightening the surface of the ocean.

CHAPTER X.

THE SUBMARINE COAL-FIELDS.

I AWOKE very late next morning, the 20th February. I dressed quickly, and hastened to ascertain the course of the *Nautilus*. The instruments indicated a southerly direction at a speed of twenty miles, and at 100 yards below the surface.

Conseil entered. I related to him the incidents of our nocturnal excursion, and the panels being open, we could catch a glimpse of the sunken continent.

In fact, the *Nautilus* was only about ten yards from the bottom of the Atlantic, and skimmed along like a balloon, hurried across terrestrial prairies, but it would be more correct to say that we were apparently in a saloon carriage of an express train. The first objects that we passed were fantastically splintered rocks, forests which had been changed from the vegetable to the animal kingdom, and whose immovable outline was shadowed beneath the waves. Stony masses hidden beneath a carpet of axidies and anemones, bristling with long vertical hydrophytes, and strangely twisted blocks of lava, which attested the fury of the eruptions.

While these strange things were clearly observable under our electric light, I made Conseil acquainted with the history of the Atlantides; which, from a purely imaginative point of view, inspired Bailly with material for many charming pages. But Conseil appeared somewhat indifferent to my wish to discuss those questions respecting ancient Atlantis, and his indifference was soon explained.

So many fish passed before him, and when fish were in the way Conseil plunged into the depths of classification, and went out of the world altogether. In this case I could only yield, and study with him.

The fish in the Atlantic, as a rule, do not differ much from those we have already noticed. There were gigantic rays, various kinds of sharks, a glaucus about fifteen feet long, with sharp triangular teeth, brown sagre, humanteris, sturgeons, trumpet syngnathes, about a foot and a half long, without teeth or tongue, which swam like beautiful and lissome serpents.

Amongst the bony fishes, Conseil noted the black mokairas, nine feet long, and armed with a long sharp "sword" in the upper jaw; other coloured animals known in the days of Aristotle, as the sea-dragon, whose spikes and sharp dorsal fin make it dangerous to grasp with the bare hand, coraphines whose brown backs were prettily striped with blue and surrounded by a golden edging; beautiful dorades also, and troops of enormous sword-fish, fierce animals, some of them more than twenty-four feet in length. They are more herbivorous than carnivorous, and the males obeyed the slightest gesture of the female fish, as well-trained husbands should do.

But all this time I did not fail to examine the long plains of Atlantis. Sometimes the nature of the bottom obliged the *Nautilus* to slacken speed, and it glode with the

dexterity of a cetacean amongst the scattered hillocks. If the labyrinth appeared inextricable the vessel rose like a balloon, and, the obstacle overcome it resumed its course at the lower level. An admirable and charming way of sailing which recalled a balloon voyage with the difference that the *Nautilus* always obeyed the hand of the steersman.

About 4 P.M. the appearance of the soil, hitherto composed of thick mud and petrified wood, began to change. It was more stony now, and sprinkled with conglomerate and basaltic lumps, with lava and sulphurous obsidian. I fancied that a mountainous region would soon succeed the plains, and at a movement of the *Nautilus* I perceived the southern horizon was barred by a high wall which appeared to block all further progress. The summit of this was evidently above the sea level. It must be a continent or an island, perhaps one of the Canaries, or Cape Verd islands. The observations not having yet been taken, perhaps designedly omitted, I was ignorant of our position. At any rate this wall appeared to me to mark the limit of Atlantis, only a very small portion of which we had traversed after all.

Night put an end to my observations. I was left alone. Conseil had retired to his cabin. The *Nautilus* slackened speed, sometimes it passed over high ground, sometimes it almost touched bottom, and at times it rose capriciously to the surface of the ocean.

I could have remained much longer at the window but the panels were closed. The *Nautilus* had now reached the high wall. What would be done now? I regained my room; the *Nautilus* did not move. I went to sleep with the determination to wake after an hour or two.

But it was eight o'clock next morning when I re-entered the saloon. I perceived by the manometer that the *Nautilus*

was floating on the surface. Besides, I could hear a noise upon the platform. Nevertheless, no rolling motion betokened that we were lying at the surface of the water.

I ascended to the deck panel. It was open. But instead of the daylight I expected, all around was dark. Where were we? Had I made a mistake and it was still night? No, not a star glittered, and no night is so absolutely dark.

I did not know what to think of this when a voice close to me said :

“ Ah, Professor, is that you ? ”

“ Oh, Captain Nemo,” I cried, “ where are we ? ”

“ Under ground ! ” he replied.

“ Under ground, and the *Nautilus* afloat, too ! ”

“ It always does float,” replied the captain.

“ I do not understand,” I said.

“ Wait a minute or two and you will. Our lantern will soon be lighted, and if you like light you will then be satisfied.”

I accordingly waited. The darkness was so thick that I could not even see Captain Nemo. Nevertheless, just exactly overhead I fancied I could detect a glimmer of twilight coming through a circular hole.

At this moment the lamp was lighted, and its strong light quite extinguished the gleam overhead.

I looked round me so soon as I could accustom my eyes to the sudden change from the darkness. The *Nautilus* did not move. It was floating alongside a mountain like an enormous quay. The water in which it floated formed a lake enclosed within a circle of rocky walls about two miles in diameter. The level indicated by the manometer was only that of the exterior sea-level, for a communication, of course, existed between the lake and the ocean. The high

rocks leant over and united in a vaulted roof about 500 or 600 yards above us. At the top was a circular hole, through which I had caught that glimpse of daylight.

“Where are we?” I asked.

“In the heart of an extinct volcano,” replied the captain; “a volcano to which the sea was admitted by some great natural convulsion. While you were asleep the *Nautilus* entered this lagoon by a canal which opens about ten yards below the surface of the ocean. This is our harbour of refuge, sure, safe, commodious, and mysterious, perfectly sheltered. Can you find me any harbour in the world so completely out of the reach of all storms?”

“You are certainly in perfect safety here, captain—who could reach you in the centre of a volcano? But is there not an opening at the top?”

“Yes, the crater, which now gives passage to the air we breathe.”

“But what is this volcano?”

“It belongs to one of the numerous islands scattered in this sea. A rock for all vessels save mine, for us an enormous cavern. I discovered it by chance, and in that fate befriended me.”

“But can no one descend through the crater?” I asked.

“No more than I can ascend it. For a hundred feet up the interior base of the mountain is practicable, but above the cliffs are perpendicular, and they cannot be scaled.”

“I see, captain, that Nature helps you everywhere, and in everything. You are in perfect safety here, and no one can intrude in these waters. But what is the good of it, after all? The *Nautilus* does not require a harbour.”

“No, but it requires electricity to move it, and the

elements to make the electricity; sodium to supply those elements, carbon to make the sodium, and coal to extract the carbon. In this very spot the sea covers entire forests which were embedded during the geological period, now mineralised and become coal, an inexhaustible mine for me."

"Your crew become miners here, then, captain."

"Certainly. These mines extend beneath the waves, like the Newcastle collieries. Here in their divers' dresses, with pick and shovel, my men dig the coal out, which I do not ask from terrestrial mines. When I burn it to make sodium, the smoke escapes by the crater, which makes the mountain appear as an active volcano."

"Shall we see your companions at work?" I asked.

"Well, not this time, for I am in a hurry to continue our voyage. So I will only draw the sodium from my reserves. We only allow a day to put it on board; so if you wish to see the cavern and make a tour of the lagoon you had better take advantage of that day, M. Aronnax."

I thanked the captain and sought my companions, who had not yet left their cabin. I invited them to accompany me, but did not tell them where we were.

They ascended to the platform. Conseil, who was never astonished at anything, looked upon it as quite a natural thing to wake up in the centre of a mountain, having gone to sleep while under water. But Ned Land thought of nothing but of finding an exit.

After breakfast—about six o'clock—we landed.

"Well, here we are on land again," said Conseil.

"I don't call this land," replied Ned. "And, besides, we are not on land, we are underneath it."

Between the mountain side and the lake ran a sandy

ridge about 500 feet wide at its greatest breadth. We could easily walk round the lake upon this shore. At the base of the rocks was a rough soil, upon which, in picturesque confusion, lay volcanic blocks and enormous pumice boulders. All these masses, polished as they were by the action of fire, shone under the gleam of our electric lamps. The micacious dust flew around like sparks.

The ground ascended as we left the margin, and we soon arrived at long inclined planes or slopes, but we were obliged to step carefully amongst those loose conglomerates, upon which the feet often slipped.

The truly volcanic nature of the place was everywhere observable, and I pointed it out to Ned and Conseil.

“Can you imagine,” I asked, “what this crater must have been when choked with boiling lava, and when the level of the boiling liquid rose to the aperture of the mountain?”

“I can imagine quite well,” replied Conseil. “But will Monsieur tell me why the Great Founder has suspended this operation, and how it is that the furnace is filled by the tranquil waters of a lake?”

“Most likely,” I replied, “because some convulsion of nature produced the opening through which the *Nautilus* entered. The waters of the Atlantic then deluged the interior of the mountain. It must have been a terrible struggle between the two elements, but Neptune gained the day. Many ages have elapsed since then, and the submerged volcano is now a peaceful grotto.”

“All right, sir!” said Ned, “I will accept the explanation, but I should have preferred, for our sakes, that the opening of which you speak had been above the sea level.”

“But, friend Ned,” replied Conseil, “if the passage were not submarine, the *Nautilus* would not have been able to enter it.”

“And I may add that, if the water had not rushed in under the mountain, the volcano would have remained in activity. So your regrets are altogether superfluous.”

We continued to ascend. The slopes became more and more narrow and perpendicular. There were many deep crevasses which we were obliged to cross. Overhanging rocks had to be turned. We crawled on our knees and even on our stomachs; but Conseil’s skill and Ned’s strength succeeded in surmounting all obstacles.

At a height of about ninety feet, the nature of the ground underwent an alteration, though it became no more practicable for us. Black basalt succeeded to the conglomerates and trachytes; the former in an extended surface, sprinkled with bubbles; the latter in prisms, placed like a colonnade, an admirable specimen of nature’s architecture. Amongst the basalt wound streams of cold lava, incrustated with bituminous rays; and in places there were quantities of sulphur. A stronger gleam entered by the crater, and lit up vaguely the eruptive remains buried for ever in the bosom of the mountain.

But our ascent was soon arrested at a height of about 250 feet. A vault overhung our heads, and our ascent gave way to a circuitous walk. Here the vegetable kingdom struggled with the mineral. Some shrubs and even a few trees appeared in the fissures. I saw some euphorbias with the caustic juice exuding from them; some heliotropes—quite unable to justify their name, since the sun never reached them—drooped their flowers, both scent and colour being half gone. A few chrysanthemums pushed their timid way up at the stems of the aloes, with

their sad and sickly leaves. But, amid the lava, I perceived some little violets, still scented, and I confess that I inhaled their perfume with delight. Perfume is the soul of a flower, and sea flowers—the splendid hydrophytes—have no souls.

We had reached some fine dragon trees, which had thrust away the stones by their strong roots, when Ned said :

“Look here ! Here’s a hive—a hive !”

“A hive ?” I exclaimed, incredulously.

“Yes, a hive ; and the bees humming around it, too.”

I approached, and was bound to confess the fact. There it was, in a hole in the dragon tree, inhabited by some thousands of bees so common in the Canary Isles, where their produce is held in particularly high estimation.

The Canadian naturally wished to lay in a stock of honey, and I was loth to prevent him. He soon got together some leaves, and with a quantity of sulphur he began to fumigate the bees. The humming gradually subsided, and the hive yielded several pounds of excellent honey, which Ned placed in his havresack.

“When I have mixed the honey with a paste of arto-carpus,” he said, “I shall be ready to offer you an excellent cake.”

“By Jove !” said Conseil, “that will be like gingerbread.”

“Bother the gingerbread !” I said. “Let us continue our excursion.”

At various turns of the path we had the view of the lake from end to end. The lantern lit up the whole of the unruffled surface. The *Nautilus* was perfectly motionless. The crew were at work at the side of the mountain and upon the platform, like black shadows, clearly defined against the light.

At this time we were rounding the highest crests of the most elevated of the first pillars of rock supporting the vaulted roof. I then saw that the bees were not the only representatives of animal life in the volcano. Birds of prey flew hither and thither in the obscurity, or rose from their nests on the pinnacles of rock. There were sparrow-hawks and kestrels. Several bustards scampered down the slopes. You can imagine how Ned's mouth watered at the sight of this game, and how he regretted he had no gun with him. He endeavoured to make up for the absence of lead with stones and, after several misses, he did manage to disable a splendid bustard. It is only right to say that he risked his life twenty times in his endeavours to secure it, but he succeeded, at length, in pouching the bird along with the honey.

We had to descend towards the shore, for the crest had become impracticable. Overhead the crater gaped like a great pit shaft, and we could see the sky distinctly, and the clouds flying to the eastward, leaving mist on the mountain as they passed.

Half an hour later we gained the inner shore. Here the flora were represented by marine crystal, a little umbelliferous plant very good for pickling, and also known as sea-fennel. Conseil picked some. The fauna were represented by thousands of crustacea of all kinds, lobsters, crabs, spider-crabs, &c., &c.

Here we lighted upon a beautiful grotto. We stretched ourselves gladly upon the smooth, fine sand. Ned Land amused me by sounding the rocky sides with the view to ascertain their thickness. The conversation turned upon the everlasting project of escape, and I believed I was justified, without stating so absolutely, to give Ned hope by telling him that Captain Nemo had only come down south

to renew his supply of sodium. I hoped that now he would return to the European and American coasts and give the Canadian the opportunity to put his scheme into execution with success.

We stayed in the grotto for more than an hour, but as the conversation languished, sleep stole over us. We slept, and I dreamt that I was a mollusc, and that the grotto formed the two valves of my shell. Suddenly I was awakened by Conseil.

“Get up, get up!” he cried.

“What is the matter?” I said, sitting up.

“The water is rising!”

I jumped up. The sea was rushing into the grotto like a sluice, and as we were not really molluscs, it was advisable to save ourselves.

In a few moments we were safe at the summit of the grotto.

“What is the cause of that; some new phenomenon?” asked Conseil.

“Oh, no,” I replied, “it is only the tide that has surprised us, like Walter Scott’s hero. The ocean has risen, and, of course, this lake must rise to the same level. We have escaped with a little wetting only. Let us go on, we can change on board.”

Three-quarters of an hour later we had finished our circular tour and got back to the *Nautilus*. The crew had finished embarking the sodium, and the *Nautilus* could start at once. However, the captain gave no order to that effect. Perhaps he wished to wait till nightfall, and pass secretly through the secret canal.

Whatever his reason was, the next day the *Nautilus* was clear of her harbour and, far from land, was skimming along some yards beneath the surface of the Atlantic.

CHAPTER XI.

THE SARGASSO SEA.

No alteration was made in the course of the *Nautilus*, and all hope of gaining European waters was now gone. Where Captain Nemo was hurrying I could not imagine.

That day we crossed a curious portion of the Atlantic. Everyone is acquainted with the existence of the great warm current called the Gulf Stream. Leaving Florida it flows towards Spitzbergen. But before entering the Gulf of Mexico, about the 44° N. lat., the current divides, one branch going towards the Irish coast and up to Norway while the other trends southwards up to the Azores, then touching the coast of Africa, and describing a long oval, it turns again towards the Antilles.

Now, this second arm (or rather collar), surrounds with its warm water the portion of the cold ocean denominated the Sargasso Sea, a veritable lake in the open Atlantic, and it takes the great current no less than three years to encircle it.

The Sargasso Sea, properly speaking, covers the submerged Atlantis. Certain authors have even admitted that the herbs with which it is strewn have been torn from the fields of that ancient continent. It is more probable, how-

ever, that these algæ and fucus, loosed from the coasts of Europe and America, are carried hither by the Gulf Stream.

This was one of the reasons why Columbus believed in the existence of a new world. When this hardy navigator arrived in the Sargasso Sea the ships sailed with difficulty in the midst of the herbs, to the terror of the crews, and it took three long weeks to get through them.

Such was the region the *Nautilus* entered, a regular prairie, a carpet of seaweed, fucus, and berries, so thick and compact that a vessel could hardly make way through it. Captain Nemo, not wishing to get the screw entangled in the weeds, kept the *Nautilus* at some distance beneath the surface.

This name of Sargasso is derived from the Spanish word "Sargazzo," signifying sea-wrack. This wrack or varech is the principal constituent of this immense bank. And the following is the reason, according to Maury, why hydrophytes unite in this peaceful basin in the Atlantic.

"The only possible explanation," says Maury, "seems to me the result of a world-wide experience. If you place in the centre of a vase some fragments of cork or other floating substance, and give to the water a circular motion, the fragments will unite in the centre, in the least agitated part. In the phenomenon we are considering the vase is the Atlantic, the Gulf Stream is the circular current, and the Sargasso Sea the central point where the floating bodies unite."

I agree with Maury, and was enabled to study the phenomenon in the very centre where ships but rarely penetrate. Overhead floated all kinds of products, trunks of trees torn from the Andes or Rocky Mountains, and floated out to sea by the Amazon or the Mississippi; nume-

rous wrecks, keels, and hulls, and planks so heavy with shells and barnacles as to be unable to float on the surface. And time will justify Maury in his other opinion, that these accumulations of centuries will petrify and form inexhaustible coal fields ; a valuable reserve which Nature is preparing for the time when continental coal-mines shall be exhausted.

In the midst of this tangled mass of plants and fucus, I noticed some beautiful rose halcyus trailing their long tentacles, and green, red, and blue medusæ, particularly the great rhizostoms of Cuvier, the blue "umbrella," of which is bordered by a violet fringe.

We passed the whole of the 22nd of February in the Sargasso Sea, where the fish, great admirers of marine plants and crustacea, found abundant food. Next day the ocean had assumed its usual appearance.

For the next nineteen days the *Nautilus* kept in mid-Atlantic. We proceeded steadily, at the rate of 100 leagues in the twenty-four hours. Captain Nemo was evidently determined to carry out his programme, and I had no doubt that he intended, when he had doubled Cape Horn, to return to the South Pacific.

Ned Land had therefore some cause for alarm. In these immense expanses of sea, with but few islands, it would not do to think of escape, nor were there any means to oppose Captain Nemo's wishes. We could only submit, but we might gain by diplomacy what we could not attain by force or stratagem. Once the voyage was over, would not Captain Nemo restore us our liberty, under an oath never to betray him. Now could I claim this liberty? He had declared that the secret of his life entailed in return our lasting incarceration on board the *Nautilus*, and would not my silence for four months look like a tacit acceptance of the conditions? In fact I was forced to confess that our chances

of seeing our relatives again diminished more and more from the day Captain Nemo went south again.

During the nineteen days I have referred to, no incident of any note occurred. I saw but little of the captain. He was at work. In the library I often found his books upon natural history left open.

At this part of our voyage we often sailed for whole days at the surface. The sea was, as it were, deserted. A few sailing vessels bound to India, *viâ* the Cape, were all we perceived. One day we were pursued by the boats of a whaler, who no doubt took us for some valuable whale. But Captain Nemo was unwilling that these brave fellows should lose both time and trouble, and so he plunged incontinently into the depths. This incident appeared to interest Ned Land mightily. I rather think he regretted that our iron cetacean had not been captured by the fishermen.

The fish we observed here were not greatly different from those we had previously noticed; the principal specimens were various kinds of sharks.

We also saw tremendous dog-fish, about which many extravagant stories are related by fishermen, one of which was reported to have swallowed two pickled tunnies and a sailor, clothes and all, another a soldier fully equipped, and, a third, a cavalier and his horse complete. But I do not think we can rank the credit of these tales among our articles of faith. At any rate we caught none, so I could not verify even one story.

Troops of dolphins accompanied us for whole days at a time, and I noticed also some curious specimens of the fish of the acanthopterigian order of the family of scienoïdes.

Some authors, chiefly poets, pretend that these fish sing, and their voices form quite a concert, to which human voices

cannot compare. I do not deny this, but at any rate we were not serenaded by them, and I am sorry for it.

We also saw quantities of flying-fish. Nothing can be more curious than to see the dolphins giving chase with such wonderful precision. No matter how the unfortunate fish flew, or what course he took, even across the *Nautilus*, he always dropped into the mouth of his pursuer.

Up to the 13th of March our voyage continued like this. On that day we took some soundings, which interested me particularly.

We had made nearly 13,000 leagues since our departure from the Pacific high seas. The bearings we took gave us $45^{\circ} 37'$ S. lat. and $37^{\circ} 53'$ E. long. We were in the same locality where Captain Denham, of the *Harold*, gave out 14,000 yards of line without touching bottom. There, also, Lieutenant Parker, of the American frigate *Congress*, did not find soundings at 15,140 yards.

Captain Nemo resolved to bring down the *Nautilus* to the greatest depth, to test these different soundings. I made preparation to note the results. The panels were opened and we set about reaching the depths of the ocean.

One might imagine that to dive it was only a question of filling the reservoirs. But perhaps they would not be sufficient. On the other hand, perhaps the pumps were not sufficiently powerful to overcome the exterior pressure.

Captain Nemo resolved to get to the bottom by a long diagonal by means of the inclined planes at the side being placed at an angle of 45° . Then the screw was worked at full speed, and it beat the waves with tremendous violence.

Under this tremendous pressure the *Nautilus* quivered like a chord, and descended straightway into the water.

The captain and I, posted in the saloon, followed the movements of the manometer, which moved rapidly. We

soon passed the habitable zone in which the greater number of fish live. I asked Captain Nemo whether he had ever observed fish at a very great depth.

“Very seldom,” he said; “but what does science say?”

“It is known,” I replied, “that towards the very low depths vegetable life disappears more quickly than the animal; and it is known that where even animated beings are met with no vegetation is observable but hydrophyte. It is known that pelerines and oysters live at 2,000 yards under water, and that Captain McClintock, the Polar hero, has brought up a living star-fish from a depth of 2,500 yards. The nets of the *Bulldog* of the Royal Navy fished up an asteroid from 2,620 fathoms. But, Captain Nemo, perhaps you will say they know nothing about it.”

“No, professor; I should not be so rude. And, moreover, I should like you to explain how these things are able to live at such great depths.”

“I can give you two reasons,” I replied. “First, because the vertical currents, determined by the difference in the saltness and density of the water, produce a movement which is sufficient to give a rudimentary life on the ecrines and asteroids.”

“Quite so,” replied the captain.

“Secondly, because, if oxygen be the basis of life, we know that the quantity of oxygen contained in the sea increases with the depth, instead of diminishing, and that the pressure helps to compress it.”

“Ah! they know that,” said the captain, in a light tone of surprise. “Well, they are right. I will add that the swimming-bladders of fish contain more azote than oxygen when the animal is near the surface, and more oxygen than azote when at a great depth. That gives your system probability. But let us continue our observations.”

My gaze was fixed on the manometer. The instrument indicated a depth of 6,000 yards. We had been immersed for an hour, and the *Nautilus* was still descending. The water was beautifully clear. An hour later we had reached 13,000 yards—about three and a quarter leagues—and the bottom of the ocean had not yet been attained.

At 14,000 yards I saw some black peaks rising up; but these summits appeared to be those of mountains as high as the Himalayas or Mont Blanc, or higher, and the depths appeared as far off as ever.

The *Nautilus* still descended, notwithstanding the tremendous pressure. I felt it tremble, and the bolts seemed to start; the partitions groaned, and the windows of the saloon seemed to “cave in” with the enormous pressure. And the whole thing would have given way, had it not been, as the captain had said, capable of resisting any possible pressure, like a solid block of iron.

The last remnants of animal life soon disappeared, and at three leagues down the *Nautilus* had passed the limits of submarine existence. We had attained a depth of 16,000 yards—four leagues—and the sides of the *Nautilus* bore the pressure of 6,000 atmospheres, or 2,000 lbs. (about) for each two-fifths of an inch square of its surface.

“What a position!” I cried. “Sailing through these profundities, where human kind has never been. Look at those splendid rocks, captain! those uninhabited grottos, the last receptacles of the earth, where life is impossible! What unknown sites are here, and how impossible it is that we should retain any souvenir of them!”

“Would it please you to have a souvenir of them?” asked Captain Nemo.

“What do you mean?”

“I mean that nothing is easier than to take a photograph of this submarine view.”

I had no time to express my surprise, for at a summons from Captain Nemo the apparatus was brought in. The water was electrically illuminated, and the perfectly distributed light could not have been surpassed by the sun's rays. The *Nautilus*, under the pressure of her screw, and overcome by the inclined planes, remained steady. The camera was fixed, and in a few seconds we had obtained a beautiful "negative."

I can only give the "positive proof" here. The primitive rocks which have never met heaven's light, the lower granite strata which form the foundations of the earth, the deep grottos included in the stony masses, those clear profiles with black edges. Then, beyond a horizon of mountains, an admirable undulating line, which makes the perspective of the picture. I cannot describe this assemblage of smooth, black, and polished rocks, and of the strange forms which glittered beneath the gleam of our electric light.

When Captain Nemo had finished, he said :

"Let us ascend again now. We must not go too far, nor expose the *Nautilus* to such a pressure."

"Ascend again?" I said.

"Hold tight, I advise you," said he.

I had no time to understand this caution, when I was thrown upon the floor.

The screw was hauled in, the inclined planes pointed upwards, and the *Nautilus*, carried up like a balloon, rose with fearful rapidity. It cut through the waters with a roar. Nothing whatever was visible as we ascended. In four minutes we had passed the four leagues which lay between us and the surface, and after emerging from the water like a flying-fish, we fell back to float upon the waves, making the billows rise to a prodigious height as we did so.

CHAPTER XII.

CACHALOTS AND WHALES.

DURING the night of the 13th March the *Nautilus* steered towards the south. I thought that when Captain Nemo had got to the latitude of Cape Horn he would put the helm up for the Pacific, and complete his tour of the world. But he did not, and still kept his southerly course. Whither was he bound? To the Pole? That was madness! I really began to think that the captain's rashness sufficiently justified the apprehensions of Ned Land.

The Canadian had not spoken to me respecting his plans of escape for some time. He had become less communicative—almost silent. I perceived how this long imprisonment preyed upon him. I felt that he was “bottling up” his indignation. Whenever he met the captain his eyes gleamed with a fierce light, and I was always fearful that his violent temperament would impel him to some rash action. On that day, the 14th March, Conseil and he came to see me in my room. I inquired the object of this visit.

“To ask a simple question, Monsieur,” replied the Canadian.

“Speak, Ned.”

“How many men do you think there are on board the *Nautilus*?”

“I cannot tell you, my friend,” I replied.

“It seems to me,” said Ned, “that she does not require a large crew to work her.”

“As a matter of fact, under present circumstances, ten men would suffice,” I replied.

“Well, why should there be any more?” said Ned.

“Why?” I asked.

I looked steadily at Ned, whose ideas were not difficult to fathom.

“Because,” I continued, “if my presentiments are correct, and I have understood the captain, the *Nautilus* is not merely a ship—it is a refuge for those who, like its commander, have broken all worldly ties.”

“Perhaps so,” replied Conseil, “but it can only contain a certain number of men, and Monsieur can give us the maximum.”

“How so, Conseil?”

“By calculation. Given the capacity of the vessel, which Monsieur knows, and consequently the quantity of air it can contain, and knowing, also, how much each individual would require for respiration; and, by comparing the result with the recurring necessity for returning to the surface for air every twenty-four hours.”

I saw at once what Conseil meant.

“I understand,” I said, “but such a calculation could give but an uncertain result.”

“Never mind,” insisted Ned Land.

“Well, this is the calculation,” I said. “Every man in one hour consumes the oxygen contained in 100 litres (twenty gallons) of air, so in twenty-four hours that would be 480 gallons. We must now endeavour to find out how

many times 480 gallons of air are contained in the *Nautilus*."

"Exactly," said Conseil.

"Now," I continued, "the capacity of the *Nautilus* is 1,500 tons, and that of a ton is 200 gallons; the *Nautilus*, therefore, contains 300,000 gallons of air, which, divided by 480, gives 625. So the air contained in the *Nautilus* would suffice for 625 men for twenty-four hours."

"Six hundred and twenty-five!" repeated Ned.

"But you may take for granted that, including ourselves, crew, and officers, there is not a tenth part of that number on board."

"But there are still too many for three men," muttered Conseil.

"Therefore, my poor Ned," I said, "I can only advise you to be patient."

"And what is better, be resigned," said Conseil. Conseil had used the right word.

"After all," he resumed, "Captain Nemo cannot always keep going to the south. He must stop somewhere, and return into more civilised seas. It will then be time to put Ned Land's plans in action."

The Canadian shook his head, passed his hand over his forehead, and went out, but did not answer.

"Will Monsieur permit me to make an observation," said Conseil. "Poor Ned is ever wanting what he cannot have. All his past life returns to him. He regrets everything that is forbidden to us. Old memories oppress him, and he has a large heart. We must try to understand him. What has he to do here? Nothing. He is not a *savant*, and cannot take the same pleasure in admiring the sea as we do. He would risk all he possesses to be able to enter an inn in his own country again."

It is certain the monotony of ship-life had become insupportable to the Canadian, used to an active existence. Events which could rouse him up were rare. However, an incident happened that day, which recalled bright days to the harpooner.

About 11 A.M., being at the surface, the *Nautilus* fell in with a school of whales, at which I was not surprised, as I knew that the creatures, hunted to death, seek refuge in the high latitudes.

The part played by the whale in the marine world, and its influence upon geographical discovery, has been considerable. It is the whale that successively induced the Basques, the Asturians, the English, and the Dutch to accustom themselves to the dangers of the sea, and has led them from one end of the earth to the other. Whales frequent the Arctic and the Antarctic Seas. Ancient stories say that these cetaceans have brought fishers to within seven leagues of the North Pole. If this be not true, it soon will be, and in their chase of the whale, men will reach this unknown point of the globe.

We were sitting upon the platform—the sea was calm. But October of these latitudes gave us some lovely autumnal days. The Canadian—he could not err—signalled a whale on the horizon to the east. As we gazed attentively, we could distinguish his black back rising and falling with the sea, about five miles from us.

“Ah!” cried Ned, “if I were only on board a whaler, there is an encounter that would do me good. It is a splendid animal. Look with what force he is ‘spouting.’ Why am I bound to this iron plate?”

“What, Ned,” said I, “then you have not forgotten your old tastes?”

“Can a whale-fisher ever forget his trade, sir? Can the excitement incident to such a chase ever die out?”

“You have never fished in these seas I suppose?”

“Never, sir, only in the north, in Behring’s and Davis’ Straits—about equally.”

“Then the whale of the southern seas is unknown to you. You have hitherto only hunted the Greenland whale, which would not pass the warm waters of the equator.”

“Ah, monsieur! What do you mean?” cried Ned, in a somewhat incredulous tone.

“I am stating a fact.”

“Well, now, for instance; I, myself, in 1865, that is two years and a half ago, fell in with a whale near Greenland, which carried another harpoon in his side; a harpoon marked as belonging to a Behring whaler. Now I ask you how, having been struck on the west side of America, the animal could come up to be killed in the east, unless he had doubled the Cape, and crossed the equator?”

“I agree with you, Ned,” said Conseil, “and should like to have an explanation.”

“Whales are localised,” I replied, “according to their species, in certain seas which they do not leave; and if one of them did pass from Behring’s to Davis’ Strait, it is simply because some passage must exist beneath Asia or America.”

“Must we believe that?” asked the Canadian, with a wink.

“We must believe Monsieur,” said Conseil.

“All right, then,” said Ned; “and as I have never fished in these seas, I do *not* know the species of whale that frequents them.”

“I have told you so, Ned.”

“All the more reason why we should make their acquaintance,” replied Conseil.

“Look, look!” cried Ned, excitedly, “it is coming nearer; it is aggravating; it knows that I cannot get at it.”

Ned stamped his foot. His hand shook as if he were brandishing a harpoon.

“Are these cetaceans as big as those of the North seas?” he asked.

“Very nearly,” I replied.

“I have seen whales 100 feet long, and I am told that, at the Aleutian Islands, they have been known to exceed 150 feet in length.”

“That seems an exaggeration,” I replied. “These animals are only balenopterous, provided with dorsal fins, and, like the cachalots, are usually smaller than the Greenland species.”

“Ah!” said the Canadian, whose eyes never left the sea, “it is approaching nearer still;” then, resuming the conversation, he said: “You speak of the cachalot as a small animal, but enormous specimens have been known. They are intelligent cetaceans; some of them, it is said, cover themselves with seaweed, and are sometimes mistaken for islands; then people land and encamp, light a fire——”

“And also build houses on them,” added Conseil.

“Yes, you joker,” replied Ned. “Then at last, some fine day, the animal takes it into his head to dive, and drowns all the inhabitants.”

“That is like the ‘Travels of Sinbad the Sailor,’” I said, laughing.

“Ah! Master Land, it appears you are fond of extravagant tales. ‘Very like a whale’ your cachalot! I hope you do not believe it.”

“Monsieur,” replied the Canadian, seriously, “we must believe anything about whales. (Look how that fellow is going along!) People say that these animals can go round the world in fifteen days.”

“I do not assert the contrary.”

“But you are doubtless aware, M. Aronnax, that at the creation whales swam even more rapidly.”

“Indeed, Ned; why was that?”

“Because they then had their tails like fishes, vertically, placed so that they struck the water from left to right, and from right to left. But the Creator, perceiving that they moved too quickly, altered the tail so that it now beats the water upwards and downwards to the detriment of great speed.”

“Good, Ned,” I replied; but, borrowing his own expression, I added, “Must we believe that?”

“Not unless you like,” said he, “and not any more than if I told you that there exist whales 300 feet long, and 100,000 pounds weight.”

“Well, that is something,” I said. “Nevertheless, it must be admitted that some cetaceans reach an enormous size, since they furnish, it is said, nearly 120 tuns of oil.”

“I have seen as much,” said the Canadian.

“I willingly believe it, Ned, as I believe that some whales equal 100 elephants in size. Judge of the effect which would be produced by such a mass coming in contact with a vessel!”

“Is it true that vessels are wrecked by them?” asked Conseil.

“No,” I replied, “I do not believe ships are. But a tale is told that in the year 1820, in these very seas, a whale launched itself against the *Essex*, and ‘rammed’ her backwards at the rate of four yards in a second. The waves entered over the stern, and the vessel sank almost immediately.”

Ned looked at me quizzically.

“I have received a blow from the tail of a whale,” he

said, "in my boat, of course. My companions and I were flung six or seven yards into the air. But, beside your animal, sir, mine was but a baby."

"Do those animals live long?" asked Conseil.

"A thousand years," replied Ned.

"How do you know that, Ned?"

"Because I have been told so."

"And why did they tell you so?"

"Because they knew it."

"No, Ned," I said, "they do not know it, they only supposed so. Four hundred years ago, when whale-fishing first began, these animals were larger than they are at present. Therefore people suppose that the smaller size is due to the fact that they have not had time to grow to their full bulk. That caused Buffon to state that whales lived a thousand years. Do you see?"

Ned Land neither heard nor understood. The whale was approaching, and he was devouring him with all his eyes!

"Ah!" he exclaimed, "it is not one whale, there is a whole school. And I unable to do anything, tied here hand and foot."

"But, friend Ned," said Conseil, "why do you not ask permission to hunt them?"

Scarcely were the words uttered, than Ned Land had descended in search of the captain. In a few moments they appeared together.

Captain Nemo looked at the whales, which were spouting about a mile away.

"They are the southern whales," he said, "and would make the fortune of a whaling fleet."

"Well, then, Monsieur, may we not chase them, if it be for nothing else than to keep my hand in."

“For what object,” replied the captain, “simply for the sake of killing? We have no use for oil on board.”

“Nevertheless, in the Red Sea you permitted us to kill the dugong.”

“It was then with a view to procure fresh meat for my crew. Here it is only killing for killing’s sake. I know very well it is man’s privilege, but I do not like killing for pastime. In destroying the southern whales—like the Greenland whale, inoffensive and useful animals—people like you, Master Land, are very culpable. They have already decimated them in Baffin’s Bay, and a class of useful animals is being annihilated. Leave these poor cetaceans alone. They have plenty of natural enemies—cachalots, sword-fish, and saw-fish—without you.”

I leave you to imagine what a figure the Canadian cut during this homily. To talk like that to a hunter was to throw words away. Ned gazed at the captain, and evidently did not understand him. Nevertheless the captain was right. The barbarous and indiscriminate fishing will soon clear off all the whales from the ocean.

Ned Land whistled “Yankee Doodle,” thrust his hands into his pockets, and turned his back on us.

Captain Nemo continued to watch the cetaceans, and turning to me, said,

“I was right in saying that, without counting man, whales had enemies enough. Those will have enough to occupy them soon. Do you see those black moving spots about eight miles to leeward, M. Aronnax?”

“Yes,” I replied.

“Those are cachalots—terrible animals, too. I have sometimes met them in ‘schools’ of two hundred or three hundred at a time. They are cruel creatures, and one will do well to kill *them*.”

The Canadian turned quickly—

“Well, captain, there is still time, even in the interest of the whales.”

“It is no use to expose one’s self. The *Nautilus* will suffice to disperse them. It is armed with a steel spur as good as Ned Land’s harpoon, I imagine.”

The Canadian did not even trouble to shrug his shoulders. Who had ever heard of attacking cetaceans with a spur!

“Wait, M. Aronnax,” said the captain, “and you will see a novel chase. We need not pity these ferocious beasts. they are only mouth and teeth.”

All mouth and teeth! No better description of the macrocephalous cachalot could have been given. It is sometimes seventy-five feet in length. Its enormous head is fully one-third of its body. It is better armed than the whale, whose upper jaw is only furnished with whalebone, while the cachalot has twenty-five large teeth about eight inches long, round, and pointed at the top, weighing about 2 lbs. each. In the upper part of the enormous head, the valuable spermaceti is found in large quantities. The cachalot is a very disagreeable animal, more tadpole than fish, according to Fré dol; it is very badly made (so to speak), and one side is quite a failure, for it can only see with the right eye.

Meanwhile, this ‘school’ of monsters was approaching. They had perceived the whales, and hastened to attack them. One could predict victory for the cachalots, not only because they were better fitted for the encounter than their defenceless adversaries, but also because they could remain longer beneath the waves without rising to breathe.

There was scarcely time to go to the assistance of the whales. The *Nautilus* went under water. Conseil, Ned and I, took our places at the windows of the saloon. Captain,

Nemo stood by the helmsman, so as to work the vessel like an engine of destruction. I soon heard the beating of the screw, and our speed increased.

The fight had already commenced when the *Nautilus* arrived on the scene. We steered so as to divide the cachalots. They at first appeared little impressed at the sight of the new monster which had come to take part in the battle. But very soon they had to guard its attack.

What a struggle it was! Ned Land, very quickly excited, clapped his hands. The *Nautilus* was like a tremendous harpoon brandished in the captain's hand. He turned it against the thick, fleshy masses, cutting them asunder, leaving the quivering portions of the animal in the wake.

We did not feel the furious blows applied to the sides of the *Nautilus*, nor the shocks they produced, to any great extent. One cachalot slain, we rushed at another; backing, going ahead or astern, under water, or re-mounting to the surface, and then striking it full or diagonally; cutting or tearing in every direction, at all paces, piercing them with the terrible "spear."

It was a massacre. The noise was prodigious. The hissing and snorting of the enraged animals was deafening. In these usually calm waters there were enormous waves.

For an hour this Homeric massacre continued. The cachalots could not get away. Frequently ten or a dozen would get together and attempt to crush the *Nautilus* beneath their weight. We could see from the window their enormous throats lined with teeth, and their formidable eyes. Ned Land threatened and cursed them alternately. We could feel them fasten upon the hull and "worry" it like wild dogs their prey. But the *Nautilus*, putting on the steam, would carry them along, either up or down, without

heeding their enormous bulk, or their tremendous "pull" on the vessel.

At length the cachalots fled. The sea became calm again. We ascended to the surface; the panels were opened; we hastened to the platform. The ocean was covered with mutilated bodies. A tremendous explosion could not have had more terrible effects. We were floating surrounded by gigantic corpses. Some cachalots were visible on the horizon in full retreat. The waves were tinged with red for several miles, and we appeared to be sailing in a sea of blood.

Captain Nemo now joined us.

"Well, Master Land!" he said.

"Well, sir!" replied the Canadian, whose ardour had somewhat abated. "It is really a terrible spectacle; but I am not a butcher, myself; I am merely a hunter, and this has been butchery."

"It was only a massacre of mischievous animals," replied the captain; "and the *Nautilus* is not a butcher's knife."

"I prefer my harpoon," replied Ned.

"Everyone to his own weapon," replied the captain, looking steadily at the Canadian.

I was afraid the latter would give way to some violence, which would have deplorable consequences. But his wrath was turned aside by the sight of a whale, which the *Nautilus* had just reached. The animal had not escaped scot-free from the jaws of the cachalots. I recognised the southern whale by its black and flattened head. Anatomically it is distinguished from the white and the North Cape whales by the joining of the seven cervical vertebræ, and it possesses two more ribs than the others. This unhappy specimen was lying upon its side, the belly bitten to pieces, quite dead.

From a mutilated fin still hung a young whale, which the poor animal could not save from the massacre. The water flowed in and out of its open mouth with a sound like waves breaking on the shore.

Captain Nemo guided the *Nautilus* close to the body. Two men then mounted it, and with no little astonishment I saw them draw all the milk from the breasts, about two or three tuns.

The captain offered me a glass of the still warm liquid. I could not conceal my repugnance, but he assured me it was excellent, and could not be in any way distinguished from cows' milk.

I tasted it, and found he was right. This, therefore, gave us a very useful supply, for cheese and butter would improve our table.

From that day I noticed that Ned Land grew more and more badly disposed towards the captain, and I resolved to keep a strict watch on the sayings and doings of the Canadian.

CHAPTER XIII.

THE ICEBERG.

THE *Nautilus* still continued her southerly course. Was it Captain Nemo's wish to reach the Pole? I did think so, for hitherto all such attempts had signally failed. Besides, the season was too far advanced, as the 13th of March, in those latitudes, corresponds to the 13th of September in northern climates, when the equinoctial period commences.

Upon the 14th of March, I perceived ice floating in latitude 55°, merely field ice, in patches twenty to twenty-five feet long, upon which the waves broke. The *Nautilus* remained at the surface. Ned Land, having fished in Arctic seas, was familiar with icebergs. Conseil and I admired them for the first time.

Towards the southern horizon, in the air, lay extended a white band of dazzling appearance. This is what English whalers have called the "ice-blink." No matter how thick the clouds, they cannot obscure its rays. It betokens the near approach to a pack or floe of ice.

And, sure enough, blocks of considerable size soon began to make their appearance, whose brilliancy was modified by the caprice of the fogs. Upon some of these masses we

could trace green veins, as if caused by sulphate of copper. Others appeared like immense amethysts, through which the light penetrated.

Some reflected the rays from the thousand facets of their crystals, while others, clouded with vivid calcareous reflections, would have passed for a town of marble.

The further we got southward the greater became the size and frequency of the icebergs. Polar birds built in them by thousands. Petrels, damiers, and puffins deafened us with their screams. Some of these birds, taking the *Nautilus* for the dead body of a whale, came to rest upon it and pecked the iron skin.

During our progress through the ice, Captain Nemo kept upon the deck. He took note of these desolate places. I perceived his calm face light up now and then. Was he thinking how much at home he was in these polar seas, denied to other men? Perhaps so; but he did not speak. He piloted the *Nautilus* with consummate skill, avoiding skilfully any encounter with those masses, some of which were many miles long, and of a height varying from 200 to 250 feet. The horizon often appeared entirely shut in. At the 60° of latitude all passage seemed barred, but the captain, after a careful search, found a narrow opening, through which he glided boldly; knowing very well, however, that it would close in on his wake.

Thus the *Nautilus*, skilfully steered, passed all this ice, classed, with a precision that delighted Conseil, according to their form or size—icebergs or mountains; ice fields, or united and apparently boundless expanses; drift ice or packs, when circular called *palchs*, or streams when they are lengthened out.

The temperature was very low; the thermometer marked 2° to 3° below zero in the open air. But we were warmly

clad in furs, at the cost of the seal and sea-bear. The interior of the *Nautilus*, warmed by the electric apparatus, defied the most intense cold. Besides, we had only to go under water a few yards to find a comfortable temperature.

Two months earlier we should have enjoyed perpetual day in these latitudes, but now we had three or four hours' night; and, later six months darkness would envelope these circumpolar regions.

On the 15th March we passed the latitude of the islands of New Zealand and the South Orkneys. The captain informed me that at one time quantities of seals inhabited those islands, but the English and American whalers, in their zeal for killing, massacred males and females indiscriminately; and, where once life had been, after their departure was the silence of death.

On the 16th March, about 8 A.M., the *Nautilus* crossed the Antarctic Circle. Ice lay all round us and closed in upon the horizon; nevertheless the captain still kept on towards the Pole.

"But, where can he be going?" I said to Conseil.

"Ahead," he replied; "and when he cannot get any farther he will stop."

"I wouldn't swear to that," I said.

And, to tell the truth, I was not displeased at this adventurous kind of life. I cannot express the degree of pleasure I experienced in these novel regions. The ice assumed the most impressive and beautiful forms. Here was an oriental town with innumerable mosques and minarets; there a city thrown headlong to the ground by some natural convulsion. These appearances were continually varied by the oblique rays of the sun, or lost amid the grey mists in hurricanes of snow. On all sides were the detonations and the sounds of the falls of great masses of ice,

which changed the aspect at once, like the passing scene of a diorama.

Whenever these falls took place while the *Nautilus* was under water, the noise was astounding to our ears, and the waves were moved even to the lowest depths. At these times the *Nautilus* rolled and pitched like an abandoned vessel at sea.

On several occasions, as I could not discover any exit, I thought we were actually hemmed in by the ice; but as if it were by instinct Captain Nemo would always hit upon a passage. He was never mistaken when he could see the little blue rivulets trickling through the field-ice. I had now no doubt that he had already ventured into these Antarctic seas.

However, on the 16th March, the ice stopped us completely. Not icebergs, but vast ice-fields. This could not stop the captain, however, and he rushed into the ice with tremendous speed. The *Nautilus* penetrated like a wedge into this brittle mass, dividing it with loud cracking. It was like the old "battering-ram" impelled with tremendous power. The fragments of ice thrown high in the air fell round us like hail. By its own impulsive force the *Nautilus* made a channel through it. Sometimes carried forward by its impetus it rose over the ice and crushed it beneath its weight, sometimes when beneath the ice-field it broke it up by a simple pitching movement.

All this time we encountered violent squalls, and thick fogs prevented us seeing from one end of the platform to the other. The wind blew sharply from all round the compass, and the snow lay so thickly that we had to break it up with pickaxes. The temperature was steady at 5° below zero, and the *Nautilus* was completely covered with ice. An ordinary vessel could not have worked her way through,

as the rigging would have been frozen in the blocks and pulleys. Such a ship as ours was had the only chance of success.

Under these circumstances the barometer kept very low ; it fell even to $73^{\circ} 5'$. The compass gave us no guarantee. The erring needles marked contrary directions as we approached the south meridional pole, which must not be confounded with the South Pole of the earth. According to Hausten this pole is situated close to 70° lat. and 130° long., and, according to the observations of Duperrey, in 135° long. and $70^{\circ} 30'$ lat. We were, therefore, obliged to make numerous observations and move the compasses from place to place in the ship to get a meridian. But frequently they trusted to the reckoning to make out the course we had run, a very unsatisfactory method in the midst of these winding passes, in which the "landmarks" were constantly changing.

At length the *Nautilus* was actually blocked on the 18th March. There were no longer streams, packs, nor fields, but an immovable, interminable, barrier formed by mountains of ice wedged together.

"An iceberg," said Ned Land to me.

I knew that to Ned Land, like all other navigators, this was insurmountable. The sun appeared at noon for an instant, and Captain Nemo obtained an observation which gave our position as $51^{\circ} 30'$ long. and $67^{\circ} 39'$ south lat. We were now a point more advanced in the Antarctic regions. We were unable to obtain even a glimpse of sea. Before the *Nautilus* lay a vast confused plain, heaped with ice blocks, with all the capricious "pell-mell" confusion which characterises the surface of a river before the ice thaws on it, but on an immense scale. Here and there sharp peaks and delicate needle-points raised themselves to a height of

200 feet; farther on was a long line of cliffs hewn out into great peaks, and of greyish tint—vast mirrors which reflected the half-obscured sunbeams. The dread silence was scarcely disturbed by the flapping of the sea-birds' wings. Everything—even the noise—seemed frozen up.

The *Nautilus* was obliged to halt in her adventurous course in the midst of the ice-field.

“Monsieur,” said Ned Land to me one day, “if this captain of yours goes any farther——”

“Well?”

“He will be something very wonderful.”

“Why, Ned?”

“Because no one ever crossed an iceberg. Captain Nemo is powerful, but, confound him, he is not stronger than Nature, and where she has placed bounds he must stop willy-nilly!”

“Just so, Ned, and I should like to know what is behind this iceberg. A wall, that is what irritates me more.”

“Monsieur is quite right,” said Conseil. “Walls are only invented to irritate *savants*. There never ought to be any walls.”

“Well,” said the Canadian, “they know very well what is behind this iceberg.”

“What?”

“Ice, nothing but ice.”

“You appear certain about that, Ned,” I replied, “but I am not at all sure, and that is why I want to see.”

“Then, sir, you may relinquish the idea. You have reached the iceberg, which is quite enough, and neither you, nor Captain Nemo, nor his *Nautilus* will go any farther. And, whether he will or no, we must go northwards again, that is to say, amongst honest people.”

Notwithstanding all our efforts, notwithstanding the most

powerful means employed to break up the ice, the *Nautilus* remained motionless. Usually, in like cases, when progress is impossible, the return path is open, but in this case to return was as impracticable as to advance, for all passages were closed astern, and if our vessel remained stationary for a little it would be at once blocked up. This actually happened about two o'clock P.M., and the young ice formed round us with surprising rapidity.

I was obliged to confess that Captain Nemo had been more than imprudent. I was on the platform at the time.

The captain, who had been taking in the situation for some time, said to me :

“Well, professor, what do you think of this?”

“I think we are prisoners, captain.”

“Prisoners! How do you make that out?”

“I mean, as we can neither move backwards or forwards, nor to either side. That is being a prisoner—at least, in civilised countries it is so considered.”

“So, M. Aronnax, you think that the *Nautilus* cannot get away?”

“It will be very difficult, at least, for the season is already too far advanced to give you any hope of a temporary break-up of the ice.”

“Ah, M. Aronnax!” replied the captain, in an ironical tone of voice, “you will always be the same. You see nothing but obstacles and difficulties in the way; now, I not only assert that the *Nautilus* will disengage herself, but that she will go farther on.”

“Further south?” I asked, gazing at the captain.

“Yes, she will go to the Pole.”

“To the Pole?” I exclaimed, incredulously.

“Yes,” the captain replied, coldly, “to the Antarctic Pole; to that unknown point from which every meridian of

the earth springs. You are aware that I can do as I please with the *Nautilus*?"

Yes, I did know that! I knew this man was bold to recklessness; but, to overcome the obstacles surrounding the South Pole—more inaccessible than the North Pole, which had not yet been discovered by the most hardy explorers—was to carry out a mad idea, and one which only the mind of a madman could conceive.

It then occurred to me to ask Captain Nemo whether he had already discovered "the Pole," which had never yet been touched by human foot.

"No, professor," he replied, "we will discover it together. Where other people have failed, I shall not fail. I have never, hitherto, driven my *Nautilus* so far over the southern seas; but, I repeat, we shall go farther still."

"I wish to believe you, captain," I replied, with a playful irony; "I do believe you. Let us get on; there is nothing to hinder *us*. Let us smash up this iceberg; blow it to pieces if it resist. Let us give the *Nautilus* her wings to fly over it."

"Over it, professor?" said the captain, calmly. "Not over it—under it!"

"Under it?" I exclaimed.

A sudden revelation of the captain's plans flashed into my mind. I understood it all. The wonderful qualities of the *Nautilus* were once again to serve in a superhuman enterprise.

"I perceive we are beginning to understand each other, professor," said the captain, smiling. "You already see the possibility, nay, the success of our attempt. What to an ordinary vessel is impracticable, to the *Nautilus* is easy of accomplishment. If a continent is around the Pole, we must stop at the continent, but if, on the contrary, the open sea laves it, we shall run up to the Pole itself."

“In fact,” I said, quite carried away by the captain’s reasoning, “if the surface of the sea be solidified by ice, the lower depths are free, in consequence of the natural law that has fixed the maximum density of salt water at one degree higher than freezing point; and if I am right, the submerged portion of this iceberg is to the part out of the water as four to one.”

“Very nearly, professor, for for one foot of iceberg above the water there are, as a rule, three below. Now, since these icy mountains are never more than 300 feet high, they are not more than 900 feet below; and what is a depth of 900 feet to the *Nautilus*?”

“Nothing at all.”

“We could even seek, at a greater depth, the equable temperature of sea water, and disdain the 30° or 40° of surface cold.”

“Quite so,” I assented.

“The only difficulty for us,” said Captain Nemo, “will be to remain many days under water without renewing our supply of fresh air.”

“Oh, is that all!” I cried. “Why the *Nautilus* has immense reservoirs, and they can supply us with all the oxygen we shall require.”

“Happy thought, M. Aronnax,” replied the captain, smiling; “but as I do not want you to think me reckless, I will submit to you my objections in advance.”

“Have you any more?”

“Only one. It is possible that if there be sea around the South Pole, it may be frozen, and in that case we should not be able to return to the surface at all.”

“Very well. But you forget that the *Nautilus* is armed with a sharp spur; and cannot we cut our way diagonally through the ice, which would give way before us?”

“Certainly, professor, you are brilliant to-day.”

“Besides, captain,” I added enthusiastically, “why may we not find the sea free at the South Pole as well as at the north? The ice-poles and the earth’s poles are not the same in either hemisphere; and, until there is proof adduced to the contrary, we may fairly assume that there is a continent or an ocean free from ice at these extremities of the globe.”

“I agree with you, M. Aronnax,” replied the captain. “I would hint to you, however, that after first making all kinds of objections to my plan, you are now overwhelming me with arguments in favour of it!”

Captain Nemo only spoke the truth. I had been “out-Heroding Herod.” It was I who was taking him to the Pole. I was going ahead of him altogether. But no, poor fool! Captain Nemo knows better than you the *pros* and the *cons* of this question, and it only amused him to see you carried away by visions of the impossible!

All the same, he had not lost a minute. At a signal the mate appeared. These two then conversed rapidly in their incomprehensible language, and whether the mate had been previously warned, or whether he believed the project practicable, he at any rate showed no surprise.

But, impassible as he was, he did not come up to Conseil in that respect, for when I announced to him our intention to reach the South Pole, he merely said, “Just as Monsieur pleases;” and I had to be content with that. As for Ned Land, if ever shoulders were lifted they were those of the Canadian.

“Look here, sir,” said Ned Land, “I pity you and your captain.”

“But we are going to the Pole, Master Ned.”

“Well, you may go there, but you will never come back again.”

And Ned Land went to his cabin, "so as not to make a disturbance," he said as he left me.

Meanwhile the preparations for this rash expedition were commenced. The powerful pumps filled the reservoirs with air, and stowed it at a high pressure. About four o'clock Captain Nemo informed me that the panels on the platform were about to be closed. I took a last look at the thick iceberg which we were about to penetrate. The weather was fine, the atmosphere clear, the cold piercing— 12° below zero ; but as there was no wind this cold was bearable.

A dozen men, armed with axes, cut away the ice around the *Nautilus*. This was soon done, and the young ice was still thin. We all descended into the interior. The usual reservoirs were filled with water, and the *Nautilus* quickly sank.

I sat with Conseil in the saloon. Through the open window we could inspect the lower beds of the Southern Ocean. The thermometer rose. The needle of the manometer deviated on the dial-plate. At about 300 yards down, as the captain had anticipated, we were floating below the moving icebergs. But the *Nautilus* went lower still. It reached 800 yards depth. The temperature of the water was 12° at the surface, down here it was only 10° . Two degrees had been already gained. Of course the temperature of the *Nautilus* was maintained at a higher level by one degree by its heating apparatus. All its movements were executed with wondrous precision.

"If Monsieur please, I think we shall get through," said Conseil.

"I quite expect so," I replied in a tone of conviction.

In this open water the *Nautilus* steered direct for the Pole without quitting the 52nd meridian. From $67^{\circ} 30'$ to 90° , $22\frac{1}{2}^{\circ}$ of latitude remained to be got over, or a little

more than 500 leagues. The average speed was twenty-eight miles an hour. At this rate we should reach the Pole in forty hours.

For a portion of the night the novelty of the situation kept us at the windows of the saloon. The sea was lit up by the electric lamp, but it was deserted. Fish could not live in those prison-waters. They would only find a passage here from the Antarctic Ocean to the open Polar Sea. Our progress was rapid, as we could feel by the quivering of the hull.

About two o'clock A.M. I retired to snatch some sleep, and Conseil did likewise. On my way I did not meet Captain Nemo. I suppose he was in the pilot-house.

Next morning, 19th of March, I again took my place at the window. The speed of the *Nautilus* had been diminished. We were ascending, prudently emptying the reservoirs, but slowly. My heart beat fast. Were we about to emerge and breathe fresh air around the Pole?

No. A shock told me that the *Nautilus* had struck the under-side of the iceberg, still very thick, judging from the sound. We had "touched bottom," to use a sea-term, but in the inverse sense, and at a thousand feet below. This would give us 2,000 feet of ice above us, of which 1,000 feet were above the sea level. So the iceberg must be thicker now than when we started, which was not a very cheerful conclusion to arrive at.

Many times during the day the *Nautilus* tried the ice, and always with the same success. At certain times it encountered this icy ceiling at a depth of 900 yards, which gave a thickness of 1,000 yards in all, 200 being above the sea level. The ice was double the thickness at the surface now than it had been when we first plunged beneath it.

I noted these different depths carefully, and thus obtained

a submarine profile of this chain of mountains, as it were developed under water.

By the evening no change had taken place. Ice everywhere, between 400 and 500 yards deep. The thickness was diminishing, but what a depth yet remained between us and the surface of the ocean! It was eight o'clock. At four o'clock the air of the *Nautilus* should have been renewed as usual. However, I did not suffer much, though no demand had been made on the reservoirs for a supply of oxygen. I slept but little that night. Hope and fear assailed me by turns; I got up many times. The *Nautilus* continued to "tap" the ice. Towards 3 A.M. I noticed that the lower surface of the iceberg was only fifty yards down. Only 150 feet now separated us from the surface. The iceberg was rapidly becoming an ice-field. The mountain was dropping to a plain. My eyes never left the manometer. We kept ascending steadily and diagonally. The surrounding surfaces glittered beneath our electric light. The ice was getting thinner both above and below, mile after mile. At length, at 6 o'clock A.M. on this memorable 19th March, Captain Nemo opened the door of the saloon and said:

"We are in open water!"

CHAPTER XIV.

THE SOUTH POLE.

I HURRIED to the platform. Yes, the sea was clear of ice, with the exception of a few scattered pieces and moving icebergs—in the distance a long extent of open sea. Birds filled the air, fish crowded the sea which, according to its depth, varied from an intense blue to an olive green. The thermometer marked 3° (centigrade) below zero. This was, comparatively speaking, spring, shut up behind the icebergs whose distant masses were visible on the northern horizon.

“Are we at the Pole?” I asked, with a beating heart.

“I do not know,” he said; “I will take the bearings at noon.”

“But shall we be able to see the sun through the fog?” I asked, looking at the dull grey sky.

“If he shine out ever so little it will suffice,” said the captain.

Ten miles to the southward, a solitary islet rose to a height of 200 yards. We advanced towards it cautiously, for it might have been surrounded by shoals. An hour later we had reached it; two hours after that we had explored it;

it was between four and five miles in circumference. A narrow canal separated it from a large tract of land of which I could not see the whole extent. The existence of this land appeared to confirm Maury's theory. That ingenious American has stated that between the South Pole and the sixtieth parallel the sea is covered with floating ice of great size, which is never met with in the North Atlantic. From this fact he has deduced the conclusion that the Antarctic Circle encloses large tracts of land, since the icebergs cannot form in the open sea, but only on a coast. According to his calculations the mass of ice surrounding the South Pole forms an enormous cap, extending about 2,400 miles.

Meanwhile the *Nautilus*, for fear of striking, stopped at three cables' length from a beach crowned by a splendid mass of rock. The boat was launched. The captain, two men carrying the instruments, Conseil, and I, embarked. It was ten o'clock. I had not seen Ned Land. He probably did not wish to stultify himself in the presence of the South Pole.

A few strokes brought us to land. Conseil was about to jump ashore, but I restrained him.

"Sir," said I to Captain Nemo, "to you belongs the honour of first landing on this ground."

"Yes," replied the captain, "and if I do not hesitate to tread this polar soil it is because no man has ever landed here before."

As he ceased speaking, he leaped lightly ashore. His heart was beating with strong emotion. He climbed a rock which terminated in a little promontory, and there, with folded arms, with eager look, motionless and silent, he seemed to take possession of those southern regions. After five minutes he returned to us.

"Now, professor, when you please!" he cried.

I then disembarked, followed by Conseil, leaving the two sailors in the boat.

For some distance the soil appeared to be composed of tufa of a reddish colour, something like powdered bricks. Scoriæ, lava streams, and pumice-stone covered it. We could not mistake its volcanic origin. In some places arose a light smoke which emitted a smell of sulphur, thereby attesting that the subterranean fires had lost none of their expansive power. However, having ascended a high pinnacle of rock, I could perceive no volcano. We know that in these regions James Ross discovered the craters of Erebus and Terror in full activity in the 167th meridian, in latitude $77^{\circ} 32'$ south.

The vegetation appeared very limited. Some lichens of the *Usnea melanoxantha* kind, spread over the black rocks. Some microscopic plants, rudimentary diatoms, a kind of cells placed between two quartz shells, the long purple and scarlet fucus supported by their little swimming-bladders which the surf carried to the shore, composed all the meagre flora of this region.

The beach was covered with molluscs, small mussels, limpets, smooth heart-shaped buccards, and particularly clios with oblong and membraneous bodies, whose heads are formed of two rounded lobes. There were myriads of northern clios about an inch long, of which a whale would swallow a world at one gulp. These charming pteropods, perfect sea-butterflies, gave animation to the shore.

Amongst other zoophytes appeared, in the higher levels, some arborescent corals of the species which, according to James Ross, live in the Antarctic seas at a thousand feet deep. Then there were little alcyores, belonging to the species *Procellaria pelagica*; and also a number of asteroids peculiar to these climates, and star-fish.

But it was in the air that life was so prolific. Thousands of birds flew and wheeled around us, deafening us with their cries. Others crowded upon the rocks and watched us pass without fear, and even came close to our feet. There were penguins, so agile in the water that they have been mistaken for the active bonitos, and yet so very heavy and clumsy on shore. They uttered harsh cries, and formed a numerous assemblage, quiet in their movements, but wonderful as to clamour.

Amongst the birds I recognised the "chionis" of the family of waders. It is as large as a pigeon, white, with a short and pointed beak, with a red circle round the eye. Conseil laid in a stock of these, for, properly prepared, these birds are very good to eat. Albatrosses flew about, the width of their expanded wings being fully twelve feet. They are rightly called the ocean vultures. Gigantic petrels, amongst others the *Quebrante huesas*, with curved wings. These birds are great eaters of seals. Some damiers, a kind of small duck, the upper part of whose bodies is black and white, a quantity of petrels, some white with brown-bordered wings, some blue, peculiar to the Antarctic seas, and so full of oil, I told Conseil, that the inhabitants of the Faroe Isles have only to insert a wick in their bodies before lighting them.

"A very little more and they would be perfect lamps," replied Conseil. "So we can scarcely expect nature to have furnished them with wicks at first."

After half a mile the ground was riddled with ruff's nests. It was a laying-ground, and from which many birds were escaping. Captain Nemo caused some hundreds to be hunted down, for their flesh is tasty. They uttered a cry something similar to the bray of an ass. They are about as large as a goose; body of a slaty colour, white underneath,

and with a yellow ring round the neck. They were killed with stones without making any attempt to escape.

All this time the fog hung over us, and at 11 A.M. the sun had not shone out. His absence caused me some uneasiness, for without his appearance we could get no observations. How, then, could we ascertain whether we had reached the Pole?

When I rejoined Captain Nemo I found him leaning against a rock, gazing at the sky. He seemed impatient—worried. But what was to be done? He could not command the sun like the sea.

Mid-day arrived, and the sun had not appeared for a moment. We could not even see its position through the fog, and the fog soon turned to snow.

“To-morrow,” the captain said calmly, and we returned to the *Nautilus*. During our absence the nets had been drawn, and I noticed with much interest the fish that had been captured, which were chiefly migrates from less elevated zones. I tasted some of them subsequently, and found them insipid, notwithstanding Conseil’s opinion, for he liked them.

The snow-storm continued till next day. It was impossible to remain on the platform. Even in the saloon, where I stayed to make notes of the excursion, I could hear the cries of the petrels and albatrosses sporting in the storm. The *Nautilus* did not remain at anchor, but went down the coast about ten miles to the south in the midst of the twilight left by the sun as it touched the horizon.

Next day, 20th of March, the snow had ceased to fall. The cold was rather more intense; the thermometer was 2° below zero. The mists were lifting, and I was in hopes that to-day we should be able to take the observation.

Captain Nemo not having yet appeared, the boat took

Conseil and myself ashore. The soil was of the same nature—volcanic. All round were traces of lava, scoriæ, and basalt, although I could see no crater. Here, as lower down, myriads of birds enlivened the scene. But their dominion was here divided with troops of marine mammals, which gazed at us from their soft eyes. There were various species of seals, some extended on the ground, others on the ice, many plunging in and emerging from the water. They did not move at our approach, never having before encountered man; and I calculated that there were sufficient to fill hundreds of ships.

“Faith,” said Conseil, “it is a very good thing that Ned Land did not come with us.”

“Why, Conseil?”

“Because he would have killed all these.”

“All of them? That is saying a great deal. But I do not think we should have been able to prevent our Canadian friend from harpooning some of these splendid cetaceans. That would have annoyed Captain Nemo, for he does not spill the blood of inoffensive animals wantonly.”

“He is quite right.”

“Certainly, Conseil; but tell me, have you not already classed these magnificent specimens of marine fauna?”

“Monsieur knows,” replied Conseil, “that I am not well up in it. When Monsieur has told me the names of the animals——”

“They are seals and morses,” said I.

“Two genus which belong to the family of pinnipeds,” said Conseil; “order, carnivorous; group, unguiculus; subclass, monodelphians; class, mammifer; branch, vertebrates.”

“Good, Conseil,” I replied; “but these two genus are divided into species, and, if I am not mistaken, we shall here have the opportunity to observe them. Let us go on.”

It was now 8 A.M. We had four hours before the sun could be observed with advantage. I therefore advanced towards a large bay, which had hollowed itself out in the granite cliffs.

There, as far as we could see, the earth and ice fragments were absolutely covered with marine mammals, and I looked involuntarily for Proteus, the mythological shepherd, who guarded Neptune's immense flocks. The seals were most numerous. They formed distinct groups, males and females, the fathers watching the family, the mother suckling the young, some of which were sufficiently strong to walk a little. When any of the animals wished to move they went along by little jumps, due to the contraction of the body; and they helped themselves along awkwardly enough by means of their fin, which, as in the lamantine, their congener, forms a perfect fore-arm. In the water—their element—the spine is mobile, and they are admirably adapted for swimming, the skin being smooth and the feet webbed. When resting upon the ground their attitudes are extremely graceful. So the ancients, observing their expressive faces, soft looks, which even a beautiful woman cannot surpass, the clear and limpid eyes, their charming positions, and the poetry of their manners, metamorphosed the males into tritons and the females into sirens.

I called Conseil's attention to the great development of the brain-lobes of these interesting animals. No mammal, except man, has such a development of cerebral material. Thus seals are capable of receiving a certain amount of education; they are easily domesticated, and I agree with some naturalists that, if properly taught, they could be easily utilised as fishing dogs.

The greater number of the seals were asleep on the rocks or on the sand. Amongst the seals proper, which have no

external ears, in which they differ from the others whose ears are prominent, I observed several varieties of the *stenorhynchi*, about nine feet long, white, with "bull-dog" heads, armed with ten teeth in each jaw, four incisors above and below, and two great canine teeth, shaped like a fleur de lis.

Amongst them, sea-elephants moved about. They are a kind of seal, having short flexible trunks ; and the giants of the species measured twenty feet round, and more than thirty feet long. They did not move as we approached them.

"Are these creatures dangerous?" asked Conseil.

"Not if they are not molested," I replied. "When a seal is obliged to defend her young, her rage is terrific, and they frequently break the fishing-boats to pieces."

"And quite right, too," replied Conseil.

"I will not contradict you."

Two miles farther we were stopped by a promontory which sheltered the bay from the south winds. It fell perpendicularly to the sea, which foamed round the base in surf. Beyond it we heard loud bellowings.

"Halloa!" cried Conseil, "there is a concert of bulls."

"No," said I, "it is a morse concert."

"Are they fighting?"

"Either that or playing."

"I should like to see them," said Conseil.

"We must have a look at them, Conseil, certainly."

We commenced our ascent of the black rocks, and got many a tumble over the slippery stones. More than once I rolled over, and to the detriment of my ribs. Conseil, more prudent or more steady, did not fall, and was ready to help me up, saying :

“ If Monsieur would take longer steps he would keep his balance better.”

When we arrived at the upper ridge of the promontory, I perceived a vast white plain quite covered with morses. They were frisking about; so what we had heard were bellowings of joy, not anger.

The morses resemble seals in form and the arrangement of their members, but the canine and incisor teeth are wanting in the lower jaw, and the superior canines are two long tusks. These teeth are of ivory, harder than that of the elephant, and less likely to become yellow, and are much sought after. So morses are an object for the hunter, and they will soon be exterminated, as the fishers kill indiscriminately, females and young, upwards of four thousand every year.

We passed close to these curious animals, and I was enabled to examine them at leisure. Their skins are thick and rugged, of a fawn-colour, tending to red; the hair is short and scanty. Some of them were twelve feet long. Quieter and less timid than their northern relatives, they did not post sentinels to warn them of approaching danger.

Having examined this city of morses, I thought it time to retrace my steps. It was eleven o'clock, and, if Captain Nemo could find a favourable moment for his observations, I wished to be present at the time. However, I had little hope of the sun showing that day; the clouds, heaped up above the horizon, hid him from our sight. It seemed as if the jealous orb did not wish to reveal to human beings this inaccessible portion of the globe.

Nevertheless, I made up my mind to return. We followed a narrow track which ran along the top of the cliff. At half-past eleven we reached the landing-place. The canoe was drawn up and had landed the captain and

his instruments; I saw him standing upon a block of basalt. His instruments were ready at hand; his gaze was fixed upon the northern horizon, near which the sun was then describing a long curve.

I took my place beside him, and waited without speaking. Twelve o'clock came, and, as on the previous day, no sun was visible.

It was fatality. The observation could not be made. If it could not be accomplished to-morrow, we must entirely give up the idea of knowing our situation.

We were now at the 20th March; the morrow, the 21st, was the equinox—refraction not counted. The sun would then disappear behind the horizon for six months, and, at his departure, the long polar night set in. Since the September equinox it had risen above the horizon, rising in elongated curves daily till the 21st December; at that time—the summer solstice of northern latitudes—it began to descend; and, on the 21st March, it would pour out its last rays.

I made known my observations and fears to Captain Nemo.

“You are right, M. Aronnax,” he replied. “If to-morrow I do not obtain the height of the sun, I cannot repeat my attempt here for six months. But, also, precisely because the chances of my sailing have led me to these seas on the 21st March, my object will be all the easier to attain, if, at mid-day, the sun will only show himself.”

“Why, captain?”

“Because, when the orb describes such lengthened curves, it is difficult to measure exactly its height above the horizon, and the instruments are not unlikely to return erroneous results.”

“But how do you intend to proceed?”

“I shall only use my chronometer,” replied the captain. “If to-morrow, 21st March, at noon, the disc of the sun—taking account for refraction—is exactly divided by the northern horizon, I shall know we are at the South Pole.”

“Quite so,” said I ; “but, nevertheless, this conclusion is not mathematically correct, since the equinox does not necessarily commence at mid-day.”

“No doubt, but the difference will not be a hundred yards, and we do not want anything more than we shall get. Till to-morrow, then.”

Captain Nemo returned on board. Conseil and I remained until nearly five o'clock, surveying and studying the shore. I did not pick up any curious thing except a penguin's egg of enormous size, for which a collector would have paid a thousand francs. Its isabelle colour, its lines, and the characters which ornamented it like so many hieroglyphics, made it quite a curiosity. I put it into Conseil's hands, and this prudent and sure-footed lad, holding it like a precious bit of china, carried it in safety on board the *Nautilus*. I placed the specimen in one of the glass cases of the saloon, and after an excellent supper of seal's liver, I went to sleep, first invoking the favour of the sun like a Hindoo.

Next morning at five o'clock I ascended to the platform, and there found Captain Nemo.

“The weather is clearing a little,” he said. “I begin to hope. After breakfast we will land to select a post of observation.”

This point settled, I went to find Ned Land. I wished him to come with me, but he refused, and I perceived that his sullenness increased every day. After all I did not regret his decision under the circumstances. There were a

number of seals on shore, and it was needless to submit the harpooner to such temptation.

After breakfast we went ashore. The *Nautilus* had worked up the coast a few miles during the night. We were in the offing quite a league from the shore, which was commanded by a high peak about 1,500 feet high. The boat carried, besides myself and Captain Nemo, two men and the instruments, viz., a chronometer, a field-glass, and a barometer.

During our row I noticed numbers of the three austral species of whale, viz., the "right whale" of the English fishers, which has no dorsal fin; the hump-back, or "balænopteron," with creased belly and large white fins, which, notwithstanding its name, do not form wings; and the fin-back, a brownish-yellow creature, the most lively of all cetaceans. This powerful animal can be heard at a great distance when he throws to a great height columns of air and vapour, which resemble clouds of smoke. These mammals disported themselves in the quiet sea, and I saw that the basin of the South Pole now served as a place of refuge for these cetacea too closely pressed by fishermen.

At nine o'clock we landed. The sky was clearing. The clouds were flying to the south, and the fogs rose.

Captain Nemo directed his steps to the peak, whence he wished to make his observation, no doubt. It was a rough ascent over the sharp lava blocks and pumice stones, amid an atmosphere saturated with sulphurous exhalations. The captain, for a man unaccustomed to walk on land, ascended the steep and difficult slopes with an activity and agility I could not emulate, and which a chamois-hunter would have envied.

We had two hours to wait at the summit. From thence we commanded an extensive prospect of sea, which towards

the north was clearly defined against the horizon. At our feet lay snow fields of dazzling whiteness. Over head was the pale blue sky. In the north, the sun's disc, like a ball of fire, already "horned" by the cutting of the horizon. Magnificent jets of water rose by hundreds from the bosom of the ocean, and in the distance the *Nautilus* lay like a sleeping whale. Behind us, to the south and east, extended an immense tract of land, a chaotic mingling of rock and ice without visible boundary.

Captain Nemo having reached the very top of the peak, carefully took the mean elevation of the barometer, for that he would have to take into account in his observation. At a quarter to twelve the sun, seen only by refraction, showed itself like a disc of gold, and threw its last rays upon this desolate continent, and those seas which man had never yet entered.

The captain, furnished with a reticulated glass, which, by means of a mirror, corrected refraction, began to observe the sun, which was sinking slowly below the horizon in a long diagonal. I held the chronometer. My heart beat loudly. If the disappearance of half the disc coincided with noon on the chronometer, we were at the Pole itself.

"Twelve o'clock!" I cried.

"The South Pole," replied the captain, in a grave tone, and handing me the glass, I perceived the orb of day precisely bisected by the horizon.

I looked at the last rays tipping the peak, and watched the shadows creeping up by degrees.

At that moment Captain Nemo turned to me and said:

"Professor—in the year 1600 the Dutchman Gheritk, driven by currents and storms, reached 64° of S. lat., and discovered New Shetland. In 1773, on the 17th of January, the illustrious Cook, following the 38th meridian

reached $67^{\circ} 30'$, and in 1774, on the 109th meridian, he got to $71^{\circ} 15'$ S. lat. The Russian, Bellinghausen, in 1819, found himself on the 69th parallel, and in 1821 on the 66th, parallel in 110° W. longitude. In 1820, the Englishman, Brunsfield, stopped at the 65th degree. The same year Morel, an American, whose narratives are dubious, mounted to the 42nd meridian, discovered the open sea in $70^{\circ} 14'$ S. lat. In 1825, Powell, an Englishman, was not able to get beyond the 62nd degree. The same year a simple seal-fisher, Weddel, an Englishman, reached as far as $74^{\circ} 15'$ on the 36th meridian. In 1829, Foster, his countryman, captain of the *Chanticleer*, took possession of the Antarctic continent, in $63^{\circ} 26'$ S. lat., and $66^{\circ} 26'$ long. In 1831, Biscoe, upon the 1st of February, discovered the land he called "Enderby," in lat. $68^{\circ} 50'$; in 1832, on the 5th February, "Adelaide," in lat. 67° , and on 21st February, "Graham's Land," in lat. $64^{\circ} 45'$. In 1838, the French explorer, Dumont d'Urville stopped by ice in lat. $62^{\circ} 57'$, found the territory 'Louis Philippe;' two years later, in a new place to the south, on the 24th January, he named 'Adelie,' in $66^{\circ} 30'$; and eight days later, in $64^{\circ} 40'$, the *Clarie* coasts. In 1838, Wilkes, an Englishman, advanced as far as the 69th parallel on the 100th meridian. In 1839, Ballerny, an Englishman, also discovered 'Sabrina Land,' on the edge of the polar circle. Finally, in 1842, James Ross, mounting 'Erebus' and 'Terror,' on the 12th January, in $76^{\circ} 56'$ lat., and $171^{\circ} 7'$ E. long., discovered Victoria Land. On the 23rd of the same month he reached the 74th parallel—the highest point attained to that time. On the 27th day he was in $76^{\circ} 8'$, on the 28th at $77^{\circ} 32'$, on the 2nd February in $78^{\circ} 4'$, and in 1842 he reached the 71st degree, which he could not pass. So then, I, Captain Nemo, on this 21st March, 1868, have reached the South

Pole, on the 90th degree; and I take possession of this part of the globe—equal to one-sixth of the known continents.”

“In whose name, captain?”

“In my own!” he replied.

As he spoke he unfurled a black flag embroidered with an “N” in gold. Then, turning to the sun, whose last rays were tinting the waves on the horizon, he exclaimed:

“Adieu, oh, sun! Disappear, radiant orb! Sleep beneath this open sea, and leave a long night of six months’ duration to extend its shadow over my new dominion!”

CHAPTER XV.

ACCIDENT OR INCIDENT?

NEXT morning, at six o'clock, the preparations for our departure commenced. The last hours of twilight were buried in the night. The cold was intense. The stars shone with wonderful brilliancy, and in the zenith glittered the Southern Cross, the "polar star" of the Antarctic regions.

The thermometer marked 12° below zero, and when the wind got up it "bit" shrewdly. The ice-blocks increased upon the ocean. Numerous black patches spread themselves over the surface, and announced the formation of the young ice. Evidently the southern basin, frozen during the six months of winter, was absolutely inaccessible. What became of the whales during that period? Doubtless they went below the icebergs to seek more open seas. As for the seals and morses, accustomed to live in the most icy climates, they remained where they were. The instinct of these animals bids them to cut holes in the ice, and keep them always open. They come to these holes to breathe, and when the birds, chased away by the cold, have migrated to the north, the mammals are the sole occupants of the polar continent.

However, the reservoirs were filled, and the *Nautilus* slowly descended. At a depth of 1,000 feet it stopped. The screw beat the water, and it went right away towards the north at a rate of fifteen miles an hour. Towards evening we floated beneath the immense icebergs.

The saloon panels had been closed as a matter of prudence, for the *Nautilus* might strike some immersed block of ice. So I employed myself during the day putting my notes in order. My mind was fully occupied in recollections of the Pole. We had reached the hitherto inaccessible point without fatigue or danger, as if our floating waggon had run along a line of railway. And now our return had actually begun. Had Captain Nemo any more such wonders in store? What a series of submarine wonders had I witnessed during the five months I had been on board! We had sailed 14,000 leagues, and incidents of the most curious or terrible nature had given a charm to our journey. The chase in the Isle of Crespo, the threading of Torres Strait, the coral cemetery, the Ceylon fisheries, the Arabian tunnel, the fires of Santorin, Vigo Bay, Atlantide, and the South Pole. During the night all these reminiscences prevented my sleeping.

At 3 A.M. I was disturbed by a violent shock. I sat up and listened, when I was roughly thrown into the middle of the room. The *Nautilus*, having struck, had rebounded violently. I groped my way to the saloon, which was lighted from the ceiling. The furniture was upset. Happily the glass cases were firmly fixed, and had not given way. The pictures on the starboard side—the vessel being no longer upright—were hanging close to the paper, while those opposite were a foot from the wall. The *Nautilus* was lying on the starboard side motionless. I could hear a noise of footsteps and hurried voices, but Captain Nemo

did not appear. Just as I was about to leave the saloon Ned and Conseil entered it.

“What is the matter?” I asked.

“We came to ask Monsieur——” said Conseil.

“Thousand devils! I know what it is very well,” said the Canadian; “the *Nautilus* has struck, and, judging from the ‘heel’ she has, I do not think she will recover as easily as she did in the Torres’ Strait.”

“But, at least,” said I, “we shall go up to the surface.”

“We do not know,” replied Conseil.

“We can easily find out,” I said.

I consulted the manometer: to my great surprise it indicated a depth of 11,000 feet.

“What is the meaning of this?” I cried.

“We must ask Captain Nemo,” said Conseil.

“But where will you find him?” said Ned.

“Follow me,” I said.

We quitted the saloon. There was no one in the library, no one at the central staircase. I fancied that the captain was in the pilot-house, so it was better to wait; we therefore returned to the saloon.

I pass over the recriminations of the Canadian; I let him exhaust his ill-humour at his ease without replying.

We remained thus for twenty minutes, endeavouring to catch the slightest noise, when Captain Nemo entered.

He did not appear to see us; he showed signs of uneasiness; he examined the compass and manometer in silence, and placed his finger on a point on the map of the Southern Seas.

I did not like to interrupt him, but, as he leaned towards me, I made use of the expression he had used in Torres’ Strait.

“An incident, captain?”

“No, sir,” he replied; “an accident this time.”

“Serious?”

“Perhaps.”

“Is there immediate danger?”

“No.”

“The *Nautilus* is stranded, I suppose?”

“Yes.”

“And how has it occurred?”

“From a caprice of Nature, not from our ignorance. No mistake has been made in our course. But we cannot prevent the effects of the laws of equilibrium. We may brave human laws, but not those of Nature.”

This was a curious moment for Captain Nemo to select to give vent to this philosophical reflection; and, on the whole, I got little from his reply.

“May I know how this accident has come about?” I asked.

“A whole mountain of ice has turned over,” he replied. “When icebergs get undermined, either by warmth or repeated shocks, the centre of gravity ascends. Then they topple over. That is what has occurred. One of these blocks, as it fell, struck the *Nautilus* under water; then, gliding beneath the hull, it raised it with irresistible force, and forced us into thinner ice, where the *Nautilus* now lies on her side.”

“But cannot we empty the reservoirs, and get her off by those means?”

“That is now being done. You can hear the pumps at work. Look at the manometer. It shows that the *Nautilus* is rising, but the block of ice is rising with it, and, until its progress is stopped, our situation will be practically the same.”

In fact the *Nautilus* now gave a bound to leeward. She

would right herself, no doubt, when the ice-block was separated from her. But at that moment we could not tell whether we might not be crushed up against the iceberg, and crushed between the blocks.

I kept thinking of the consequences of the situation. Captain Nemo never took his gaze from the manometer. The *Nautilus*, since the fall of the iceberg, had risen about 150 feet, but at the same angle as before.

Suddenly a slight movement was felt. The vessel was evidently righting a little. The objects suspended in the saloon appeared to be recovering their normal position. The sides got more upright. No one spoke a word. With beating hearts we watched, and felt the ship recovering herself. The floor was at length horizontal. Ten minutes elapsed.

“At length we have righted!” I cried.

“Yes,” said the captain, as he advanced to the door.

“But are we floating?” I asked.

“Certainly,” he replied, “since the reservoirs are not empty. When they are empty we shall rise to the surface again.”

The captain went out, and I soon found that the ascent of the *Nautilus* had been stopped. We should soon have struck against the bottom of the iceberg had we gone up, and it was more prudent to remain beneath the waters.

“We have escaped very well,” said Conseil.

“Yes, indeed. We might have been crushed between the blocks of ice, or at any rate imprisoned. And, then, in the absence of opportunity to renew the air——! Yes, we *have* escaped very well.”

“If it is all over,” murmured Ned.

I did not wish to enter on a useless discussion with the

Canadian, so I did not reply. Besides, the panels were just then opened, and the exterior light entered.

We were in open water, as I have said ; but, at about six yards on each side of the *Nautilus*, rose a dazzling wall of ice. Above and below it was the same. Above us the lower surface of the iceberg covered us like an immense ceiling, while below, the overturned iceberg having slipped a little, had found a rest upon the two lateral walls which kept it in that position. The *Nautilus* was thus imprisoned in a regular ice-tunnel, about twenty yards in length, and filled with still water. It was, therefore, easy to get out of it by going backwards or forwards, and afterwards make, at some hundred yards lower down, a free passage beneath the iceberg.

The ceiling light had been extinguished, and, nevertheless, the saloon was brilliantly illuminated. This was the powerful reflection from the glass partitions, caused by the intense light of the electric lamp. I cannot describe the effect of the voltaic rays upon the capriciously-shaped ice blocks ; each angle, ridge, and facet threw off a different gleam according to the vein of the ice. A sparkling mine of gems, and particularly of sapphires, which crossed their blue rays with the green of the emerald. There were also opal shades of infinite softness coursing amidst brilliant diamond-points of fire, whose intense brilliancy the eye could not sustain. The power of the lantern was increased a hundred-fold, like a lamp through the lenticular sheets of a large lighthouse.

“ Is it not beautiful ? ” cried Conseil.

“ Yes, ” I said, “ it is a magnificent sight, is it not, Ned ? ”

“ Yes, confound it, yes it is, ” replied Ned Land. “ It is superb. I am angry at being forced to admit it. Nothing to

equal it has ever been seen. But this sight may cost us dear. And if I must say all I think, I believe that we are now looking at things which God never intended man to see."

Ned was right. It was too beautiful. Suddenly a cry from Conseil made me turn.

"What is the matter?" I cried.

"I am blinded, I believe!"

I turned involuntarily to the window. The vessel was going at a great pace now. I understood what had happened. All the quiet glittering of the icy walls was now changed into flashing lightning. The glare of these myriads of diamonds was absolutely blinding. The *Nautilus* was sailing through a stream of lightning.

The panels were closed. We held our hands before our eyes, still affected by the intense glare. It was some time before our eyes recovered their usual power. At length we removed our hands.

"I should scarcely believe such a thing," said Conseil.

"I do not believe it now," replied the Canadian.

"When we return to earth," added Conseil, "satiated with all the wonders of nature, what shall we think of the miserable continents and the petty efforts of men? No, the habitable world is not enough for us."

To hear such a speech from the impassible Fleming was a proof that some degree of excitement had increased our enthusiasm. But the Canadian did not fail to throw cold water on it.

"The inhabited world!" cried he, nodding his head. "Be easy on that score, friend Conseil; we shall never get there again."

It was then 5 A.M. We suddenly felt a shock. I understood that the spur of the *Nautilus* had struck a block

of ice. This must have been caused by a false movement; for the submarine tunnel, encumbered as it was with ice-blocks, did not offer very good navigation. I thought, therefore, that Captain Nemo, by changing his course, would turn these obstacles, or follow the windings of the tunnel. In any case, our advance could not be entirely stopped. But, contrary to my expectations, the *Nautilus* went astern again.

“We are going back,” cried Conseil.

“Yes,” I replied; “I suppose that there is no outlet this way.”

“And then?”

“Then,” I said, “the plan is very simple: we must retrace our steps, and get out by the south end, that is all.”

I spoke thus, so as to appear more confident than I really felt. Meantime the *Nautilus* retired at a greater pace, and soon at a very high speed.

“This will be a drawback, indeed,” said Ned.

“What can a few hours matter, more or less,” I said, “provided we get out at last.”

“Yes,” said Ned, “provided we *do* get out at last.”

For a short time I walked from the saloon to the library. My companions sat down in silence. I soon threw myself upon a couch, and took up a book, which I began to read mechanically.

After the lapse of a quarter of an hour Conseil approached and said:

“Is that book interesting to Monsieur?”

“Very interesting indeed,” I replied.

“I can quite believe it,” he said. “It is Monsieur’s own work that he is reading!”

“My book!” I exclaimed.

But so it was. I was reading the “Great Submarine

Depths." I had not the slightest idea of it. I closed the book and resumed my walk. Ned and Conseil got up to go.

"Stay here, my friends, let us wait together till we are clear of this ice."

"Just as Monsieur pleases," said Conseil.

Some hours passed. I often consulted the instruments hanging in the saloon. The manometer showed that the *Nautilus* maintained an uniform depth of 300 yards ; the compass showed her on a southerly course ; the log that we were going at twenty miles an hour, a great speed in such a confined space. But Captain Nemo knew what he was about, and every minute was worth a century to us.

At 8.25 a second shock occurred, astern this time. I turned pale. My companions approached me. I seized Conseil's hand. We looked at each other, and our looks interpreted our thoughts better than words could have done.

At that moment the captain entered. I went up to him.

"Our course southward is barred ?" I asked.

"Yes ; the iceberg in turning over has closed every outlet."

"We are blocked up then ?" I said.

"Yes."

CHAPTER XVI.

WANT OF AIR.

So around the *Nautilus*, above and below, was an impenetrable wall of ice. We were imprisoned in the iceberg. The Canadian struck the table with his heavy fist. Conseil said nothing. I looked at the captain. His face wore its usual look. He was standing with his arms crossed, lost in thought. The *Nautilus* did not move.

The captain roused himself and said, in a calm tone, "Gentlemen, there are two ways for us to die under present circumstances."—He spoke as if he were a professor of mathematics, delivering a lecture to his pupils.—"The first is to be crushed up, the other is to die by suffocation. I do not speak of the possibility to die of hunger, for the supplies on board will last longer than we can. Let us therefore calculate our chances of being crushed or suffocated."

"As far as suffocation goes, captain," I replied, "there is not much fear of that, for our reservoirs are filled."

"Quite so," replied the captain, "but they only give us two days' supply. Now we have been under water six-and-thirty hours, and the atmosphere here requires renovating already. In forty-eight hours our reserve will be exhausted."

“ Well, captain, we shall be free before that !”

“ We will try at any rate, by piercing the walls around us.”

“ Which side ?” I asked.

“ The sound must guide us. I will run the *Nautilus* on the lower bank, and my men in their divers' dresses must attack the iceberg at the thinnest spot.”

“ Can they open the windows of the saloon ?”

“ Easily, we are moving no longer.”

The captain went out. A hissing noise soon told me that the water was entering the reservoirs. The *Nautilus* sank slowly, and rested on the ice at a depth of 350 yards, at which distance the lower pack of ice was immersed.

“ My friend,” said I, “ the case is serious, but I count on your courage and energy.”

“ Monsieur,” said the Canadian, “ I am not going to weary you with complaints at such a time as this. I am ready to do anything for the common safety.”

“ Thank you, Ned,” I replied, extending my hand to him.

“ I may add that I am as handy with a pick as with a harpoon, so if I can be of any use to the captain, I am at his disposal.”

“ He will not refuse your assistance, Ned. Come.”

I conducted the Canadian to the room where the crew were putting on their diving dresses. I mentioned Ned's suggestion to the captain, who accepted it. The Canadian then put on the dress, and was ready as soon as the rest. Each one carried on his back the Ronquayrol apparatus, which furnished a reservoir of pure air. A considerable but necessary deduction had been made from the supply on board. The Ruhmkorff lamps were not necessary.

When Ned was dressed I returned to the saloon, the

windows of which were now open, and with Conseil examined the ambient beds which supported the *Nautilus*.

Some moments after we saw a dozen of the crew on the bank of ice. Ned Land was with them, distinguishable by his great height. Captain Nemo also accompanied the party.

Before digging into the ice he sounded it, so as to be certain of the best direction in which to work. Sounding-lines were let into the side walls, but the lead stopped after fifteen yards. It was useless to attack the ceiling, since the iceberg was more than 1,200 feet high. Captain Nemo then sounded the lower part. Ten yards of ice separated us from the water. That, then, was the thickness of the ice-field. It was therefore necessary to cut out a piece equal to the *Nautilus'* line of flotation. There were thus about 6,000 cubic yards to detach, so as to give us an opening to descend to the ice-field.

The work was at once commenced and vigorously prosecuted. Instead of cutting close around the *Nautilus*, which would have been a difficult operation, Captain Nemo determined to describe an immense trench round it, at about eight yards from the starboard side. Then the men worked with "borers" at several points of the circumference, and the picks soon went to work, and immense blocks were detached. By the curious effect of specific gravity, these blocks, lighter than water, flew, so to speak, to the top of the tunnel; which got as much thicker above as it got thinner underneath.

After two hours' hard work Ned Land gave in. His companions and he were replaced by new hands, to whom we were allied. The mate superintended us.

The water appeared to me to be very cold, but I soon warmed myself at work. I could move freely, although under a pressure of thirty atmospheres.

When I entered the *Nautilus*—after two hours' work—to get some food and repose, I perceived a great difference between the air on board and what had been supplied by the apparatus. The air in the *Nautilus* had not been renewed for forty-eight hours, and its vivifying qualities were considerably weakened. But, after a lapse of twelve hours, we had only raised a block of ice a yard thick, on the marked portion, which was about 600 cubic yards. At this rate, we should take five nights and four days to finish the task.

“Five nights and four days,” I said to my companions; “and we have but two days' supply of air in the reservoirs.”

“Without counting,” added Ned, “that, if we ever do get out of this damned prison, we shall still be under the iceberg, and without communication with the open air.”

It was quite true. Who could foresee the minimum of time necessary for our deliverance? Might not we be suffocated before the *Nautilus* had time to reach the surface again? Were we doomed to perish in this tomb of ice which shut us in? The situation was terrible! But everyone looked it in the face, and all were determined to do their duty to the end.

As I had foreseen, another block, a yard square, was raised during the night. But in the morning when, clothed in my diving dress, I explored the water in a temperature of 6° or 7° below zero, it seemed to me that the lateral walls were coming closer! The water at a distance from the trench—not warmed by the presence of the workers—had a tendency to solidify. Our chances of escape were diminished by this discovery. And how were we to stop the solidification of the surrounding water, which, when frozen, would crack the *Nautilus* like glass?

I did not point out this new danger to my companions,

for what good was there to diminish their energy in the hard efforts to escape? But when I returned on board I told Captain Nemo my fears.

“I know it,” he said, in that calm tone of his which the gravest danger could not alter; “it is only one danger more, and I do not see any way to avoid it. The only chance of safety is to work quicker than the solidification. We must be first, that’s all.”

We must be first! I had become accustomed to his manner of speech by this time.

During that day I wielded a pick vigorously for many hours. This toil sustained me. Besides, to work was to quit the *Nautilus* and to breathe the pure air supplied by the apparatus, to abandon a vitiated atmosphere.

Another yard was dug out by evening. When I returned on board I was almost choked by the carbonic acid gas with which the air was saturated. If we had only some chemical appliances with which to get rid of this deleterious gas! We had no want of oxygen. The water contained a very large quantity, and by decomposition we might restore the air. I had thought about it, but it was of no use to attempt it, as the carbonic produced by our respiration had permeated the vessel. To absorb it we must have some caustic potash, and work it about incessantly. Now we had none of this on board, and nothing else would do.

In the evening Captain Nemo let some fresh air escape from his reservoirs, and without it we certainly should not have lived.

Next day (March 26) I resumed my work in taking out the fifth yard. The sides and the upper ice began to thicken visibly. It was evident they would join together before the *Nautilus* could escape. Despair seized upon me for a moment, and my pickaxe fell from my grasp. What

was the use of cutting away the ice if we were to be suffocated and crushed by the rapidly-petrifying water! This was a punishment that even savages had never invented. It seemed to me that we were between the jaws of a monster which were irresistibly approaching. At that moment, Captain Nemo, directing and working by turns, passed near me. I touched his arm, and pointed to the side walls of our prison. The wall on the port side had advanced to within four yards from the *Nautilus*.

He understood and made me a sign to follow him.

We returned on board. I took off my dress and accompanied him into the saloon.

"M. Aronnax," he said, "we must try something desperate, or we shall be sealed up as in cement."

"Yes," said I, "but what can we do?"

"Ah! if the *Nautilus* were only strong enough to resist the pressure!"

"Well?" I said, not catching the idea.

"Do you not understand," he continued, "that this freezing of the water would help us. It would burst through the ice that imprisons us. It can burst the hardest stones when it freezes. We have therefore an agent of safety, not of destruction."

"Yes, perhaps so, but the *Nautilus* could never hold out against this terrible pressure, it would be flattened like an iron plate.

"I know it," replied the captain; so we must only trust to ourselves. We must oppose this solidification. Not only are the lateral walls closing in on us, but there do not remain ten feet of water either before or behind us. The congelation is gaining on all sides."

"How long," I asked, "will the air in the reservoirs permit us to breathe?"

The captain looked at me steadily.

“After to-morrow,” he said, “the reservoirs will be empty !”

A cold sweat came over me. And yet I ought not to have been surprised at his reply. On the 22nd of March the *Nautilus* went under water at the Pole. We had now reached the 26th. We had lived for five days upon the reserve on board, and what air remained respirable must be kept for the working parties. Even now the impression is still so vivid that an involuntary fear seizes me, and my lungs seem to want air.

Meanwhile Captain Nemo was reflecting in silence, and motionless. An idea had apparently occurred to him, but he seemed to reject it. At length he said :

“Boiling water.”

“Boiling water !” I exclaimed.

“Yes, we are shut up in a space relatively small. Would not streams of boiling water, constantly injected by the pumps of the *Nautilus*, raise the temperature of the water and retard the congelation ?”

“We must try it,” I said resolutely.

“Let us do so, professor.”

The thermometer showed 7° outside. Captain Nemo led me to the “galley,” where the vast apparatus for distilling drinking water by evaporation were at work. They were filled with water, and the whole power of the electric heat was directed through the serpentines immersed in the liquid. In a few moments it had reached 100°. It was sent to the pumps while fresh supplies came in proportion. The heat was so great that the cold water drawn from the sea after having only passed through the apparatus came boiling to the pumps.

The pumping commenced, and in three hours the ther-

mometer marked 6° below zero. We had gained a degree. Two hours after the thermometer marked 4° .

“We shall succeed,” said I to the captain, having most carefully watched the progress of the operation.

“I think so,” he said. “We shall not be crushed, and so have only suffocation to fear.”

During the night the temperature of the water rose to one degree below zero. The injections could not carry it any higher. But as the congelation of the sea water is only produced at 2° , I was reassured against solidification.

The following day, 27th March, eighteen feet of ice had been cut away. Twelve feet only remained. We had still forty-eight hours to work in. The air could not be renewed in the interior of the *Nautilus*, so this day would make it worse still. An intolerable weight pressed upon me. About 3 P.M. this feeling of distress affected me in a violent degree. I yawned enough to dislocate my jaws. I panted in endeavouring to inhale the burning fluid so necessary to respiration, and which became more and more rarefied. A mortal torpor oppressed me. I was powerless, almost unconscious. My brave Conseil, similarly affected, and suffering as I did, never quitted my side. He took my hand, he gave me encouragement, and I heard him murmur :

“Ah, if I were not obliged to breathe I should be able to leave more air for Monsieur.” Tears came to my eyes at hearing him speak thus.

If our situation all round was so intolerable on board, you can imagine how willingly we donned our diving-dresses for work. The blows of the pickaxes resounded on the frozen ice-beds. Our arms were aching, the skin was peeling from our hands, but what was fatigue? what did wounds matter? We had air for our lungs, we breathed—we breathed!

Nevertheless, no one prolonged his turn under water beyond his allotted time. His task finished, each one handed to a companion the reservoirs that supplied him with vital air. Captain Nemo set the example, and was the first to submit to this severe discipline. As the time came round he handed his dress to another, and returned to the vitiated atmosphere on board, calm as ever, without a murmur, unflinchingly.

On that day our usual work was accomplished with more than usual vigour. Six feet only remained to be raised. Only two yards separated us from the open sea. But the air reservoirs were almost empty. What little remained must be kept for the working parties. Not an atom for the *Nautilus*.

When I returned on board I felt half suffocated. What a night I passed ! I do not know how to describe it.

Such sufferings are better untold. Next day my breathing was oppressed. A sensation of dizziness oppressed my brain, and I went about like one intoxicated. My companions were affected in the same way, and some of the crew had rattling in the throat.

This, the sixth day of our imprisonment, Captain Nemo, thinking the work progressed too slowly with mattock and pick, resolved to crush the bed of ice that separated us from the open water. He had preserved his coolness and energy throughout. He overcame physical pain by moral force. He deliberated, he combined his reasonings, and acted.

By his order the *Nautilus* was lightened, that is to say, raised from the ice-bed by an alteration in the specific gravity. So soon as it floated it was towed over the top of the circumference of the trench, which had been excavated according to its line of flotation. Then the reservoirs of water were filled, it descended, and was engulfed in the hole.

Then all the crew came aboard and the door of communication was shut. The *Nautilus* was then resting upon a bed of ice, which was about a yard in thickness, and pierced in a thousand places.

The reservoirs were then opened, and 300 cubic feet of water admitted, increasing the weight of the vessel to about 1,800 tons.

We waited, we listened, all suffering forgotten in the tension of those moments, hoping still. We had thrown our last stake for safety.

Notwithstanding the buzzings that filled my brain, I soon heard groanings beneath the hull of the *Nautilus*. The ice cracked in a curious manner, with a sound like the tearing of paper, and the *Nautilus* broke through.

"We have passed it," muttered Conseil in my ear.

I was not able to reply. I seized his hand, and pressed it convulsively.

The *Nautilus*, carried down by the enormous weights within, sank like a stone. Then all the electric force was put on the pumps to clear the water out, and in a few minutes our fall was checked. Soon after the manometer indicated an ascensional movement. The screw going at full speed made the vessel tremble, even to its bolts, and we "steamed" to the north. But how long was this progress beneath the ice to last? Another day? I shall be dead before that!

I lay half-suffocated upon the divan in the library. My face was blue, my faculties suspended. I saw and heard nothing. All idea of time had left me. My muscles refused to contract.

Suddenly I came to myself. Some breaths of air seemed to penetrate my lungs. Had we gained the surface? Had we cleared the iceberg?

No, it was Ned and Conseil, my two brave friends, who were sacrificing themselves to save me. Some molecules of air still remained in some of the apparatus, and instead of respiring them they had preserved them for me, and though almost suffocating, they gave it to me drop by drop. I wished to push the apparatus away. They held my hands, and for a few moments I respired voluptuously.

My eyes turned to the clock. It was 11 A.M. It was then the 28th March. The *Nautilus* was speeding at forty miles an hour, tearing through the water. Where were Captain Nemo and his companions? Had they all succumbed?

At this moment the manometer indicated that we were only twenty feet from the surface. A simple layer of ice separated us from the atmosphere. Could we not break through it?

Perhaps so. In any case the *Nautilus* would try. I could feel it assume an oblique position, and elevate its spur. The introduction of water was sufficient for this change. Then, impelled by the powerful screw, it attacked the ice-field like a formidable battering ram. It broke it by degrees, by retiring and then attacking it with renewed force against the ice-field, which gave way, and at last, carried upwards by its impetus, it crushed down upon the icy fragments, which it splintered beneath its weight.

The panels were opened—torn open I may say—and fresh pure air from the sea permeated all parts of the *Nautilus* once again.

CHAPTER XVII.

FROM CAPE HORN TO THE AMAZON.

How I got up to the platform I have not a notion. Perhaps the Canadian carried me thither. But I breathed, I inhaled the life-restoring sea air. Close to me my two companions were drinking in the fresh molecules. Men deprived of food for a long time must not too suddenly partake of nourishment. We, on the contrary, had no necessity to limit ourselves ; we could inspire to our lungs' content the blessed air, and the breeze alone gave us this delightful sensation of mental intoxication.

“Ah !” cried Conseil, “ how pleasant the oxygen is, and Monsieur need not fear to breathe it. There is enough for us all.”

Ned Land did not speak, but he opened his jaws wide enough to astonish a shark. And what breaths he took ! The Canadian “ drew ” like a furnace in full blast.

Strength quickly returned, and when I looked round me I saw that we were the only occupants of the platform. Not one of the crew was there. Not even Captain Nemo. The strange sailors of the *Nautilus* contented themselves with

the air circulating in the interior. Not one of them had come to imbibe the fresh air.

My first words were of thanks and gratitude to my two companions. Ned and Conseil had prolonged my existence for the last hours of this long agony. All my thanks could not repay such devotion.

“Oh!” said the Canadian, “it is not worth speaking about. What merit is there in what we did? None at all. It was only a question of arithmetic. Your life was worth more than ours, therefore it was necessary to preserve it.”

“No, Ned,” I replied, “it was not worth so much. No one is superior to a good and generous man, and you are that.”

“All right, all right!” repeated the Canadian in an embarrassed manner.

“And you, my brave Conseil, you have also suffered.”

“But nothing compared to Monsieur; I certainly did want air, but I believe that I did right. Besides, I looked at Monsieur, who was fainting, and that gave me no encouragement to breathe.”

“My friends,” I replied, much agitated, “we are bound to one another for ever, and I am under great obligations to you.”

“I shall take advantage of that,” replied the Canadian.

“How?” asked Conseil.

“Yes,” replied Ned: “I claim the right to take you with me when I leave the *Nautilus*.”

“But are we going in the right direction?” said Conseil.

“Yes,” I replied, “since we follow the sun, and here the sun is in the north.”

“Certainly,” replied Ned; “but it remains to be seen

whether we reach the Pacific or the Atlantic, that is to say a frequented or a deserted ocean."

I could not reply to this, and I was afraid that Captain Nemo would carry us rather towards the vast ocean which washes the shores of Asia and America. He would thus complete his tour round the world, and return to the seas where the *Nautilus* found the greatest liberty. But if we should return to the Pacific, what would become of all the projects of Ned Land?

This important point ought to be fixed before long.

The *Nautilus* was going at a great rate. The polar circle was soon cleared, and our course made for Cape Horn. We were off that point of America on March 31st, at seven o'clock P.M.

Then all our past sufferings were forgotten. The remembrance of our icy imprisonment melted away. We only thought of the future. Captain Nemo appeared neither on the platform nor in the saloon. The mark upon the chart each day showed me the position of the *Nautilus*. Now, that evening, to my great satisfaction, it was evident that we were returning to the north by the Atlantic.

I apprised Conseil and the Canadian of this.

"Good news," said the latter, "but whither is the *Nautilus* bound?"

"That I cannot say, Ned."

"Does the captain wish, having seen the South Pole, to discover the North Pole too, and return to the Pacific by the celebrated North-West passage, I wonder?"

"I should not be surprised," said Conseil.

"Well," said the Canadian, "we shall have given him the slip first."

"At any rate we must acknowledge that Captain Nemo

is a first-rate fellow, and we do not regret having made his acquaintance," said Conseil.

"Particularly when we have left him," said Ned.

Next day (April 1st) the *Nautilus* came up to the surface. Some minutes before noon we noticed land to the westward. This was Terra del Fuego, which was so named by early navigators from the quantity of smoke arising from the native huts. It is a vast agglomeration of islands extending for a length of thirty, and a breadth of eighty leagues. The coast seemed low, but in the distance high mountains appeared. I believe I saw Mount Sarmiento, which is more than 6,000 feet high, a pyramidal block of schist with a very peaked top, "which, according as it is clouded or clear, announces bad or fine weather," Ned Land told me.

"A capital barometer, my friend."

"Yes, a natural one, and which was always right all the time I passed in the Straits of Magellan."

On this occasion the top was clearly defined against the heavens. So fine weather was in store for us, and we enjoyed it too.

The *Nautilus* again descended and coasted along. From the saloon windows I could see long sea-weeds and gigantic fucus, and the varech, of which the Polar Seas contain many specimens, with their viscous and polished filaments; they measured nearly 300 yards in length, regular cables, thicker than the thumb and very tough, they often served to fasten ships by. Another plant called "velp," with leaves four feet in length, enclosed in the corralous concretions, carpeted the depths. They served as nests and food for myriads of crustacea. There the seals and otters "lived in clover," mingling the flesh of fish with the vegetables of the sea, in English fashion!

The *Nautilus* passed rapidly over these luxuriant regions. Towards evening we neared the Malouine Isles, whose summits I could see the following day. The sea was of medium depth. I thought, and not unreasonably, that these two large islands, surrounded by a number of small ones, were formerly part of the land of Magellan. The Malouines were probably first discovered by John Davis, who called them "Davis' Southern Isles." Later, Richard Hawkins called them the Maiden, or Virgin Islands, and afterwards they were named Malouines, at the beginning of the eighteenth century by the St. Malo fishers, and finally designated Falkland Isles by the English, to whom they now belong.

In these places the nets brought up some beautiful specimens of algæ, and particularly a certain fucus, whose roots contained some mussels, which are the best in the world. Geese and ducks fell upon the platform in dozens, and were soon in the larder. Amongst the fish I noticed the gobies and "bouberots," spotted yellow and white. There were also numerous medusæ, and the chrysanæ, which are peculiar to those regions. They sometimes appeared like an enormous umbrella, streaked with reddish-brown lines, and terminating in a dozen regular festoons. Sometimes like an inverted cap, from which large leaves and long red twigs escaped in graceful curves. They swam by moving their four foliaceous arms, and letting their long curling tentacles drift behind them. I wished to preserve some specimens, but they evaporate when out of their native element like shadows or apparitions.

When the Falklands had disappeared beneath the horizon the *Nautilus* plunged down about twenty-five yards and followed the American coast. Captain Nemo did not appear. We did not leave the Patagonian coast till April

3rd, and were sometimes above sometimes under water. We passed the large estuary formed by the La Plata, and on the 4th were opposite Uruquay, but at a distance of fifty miles from land. We still steered north, and followed the trendings of the American coast. We had now made 16,000 leagues since our departure from the Japanese seas.

We crossed the Tropic of Cancer on the 37th meridian about 11 A.M., and passed Cape Frio. To Ned Land's disgust Captain Nemo did not hug these Brazilian shores, and we went at a great pace. Not a bird nor fish, however rapid, could keep up with us, and all natural curiosities escaped me.

This pace was sustained for several days, and on the 9th April, in the afternoon, we sighted Cape Roque, the most easterly point of South America. But here the *Nautilus* altered her course again, and sought the deeps of a submarine valley, which extends between this cape and Sierra Leone. This valley bifurcates as high up as the Antilles and ends at the north in a tremendous dip of 2,700 feet. In this place the geological cutting of the ocean forms a perpendicular cliff of three and a half miles as far as the Lesser Antilles; and at the Cape Verd Islands is another wall no less considerable, which thus shuts in the whole of the submerged continent of Atlantis. The bottom of this immense valley is sprinkled with mountains, which gives some picturesqueness to these sub-oceanic depths. I am speaking from information derived from the charts of the *Nautilus*—charts which Captain Nemo had laid down after personal inspection.

For two days we visited the deep and deserted waters. But on the 11th of April we rose suddenly to the surface, and descried the land at the mouth of the Amazon, an estuary large enough to freshen the sea-water for several leagues.

We crossed the equator. The Guianas, a French settlement, lay twenty miles to the west, and on which we could have found refuge easily. But the wind was blowing fearfully, and the waves were so high, that no ordinary boat could live in them. Ned Land saw that, no doubt for he made no remark to me. For my part I made no allusion to his plans, for I did not wish to urge him to make an attempt which could only end in failure.

I amused myself very easily in the interval, by interesting studies. During the 11th and 12th April, the *Nautilus* remained at the surface, and the nets brought in a miraculous draught of zoophytes, fish, and reptiles. Some zoophytes had been dragged up by the chain—these were chiefly phycallines belonging to the actinedian family, and amongst other species were the *Phyctalis protexta*, a native of this part of the ocean, a little cylindrical trunk striped with vertical lines and studded with red dots, which cover a marvellous show of tentacles. The molluscs consisted of those I have already mentioned, such as turntillas, olive prophyras, pteroceras, like petrified scorpions; and cuttle fish, which are very good to eat.

I noted various species of fish on these shores, which I had not hitherto studied. Amongst the cartilaginous specimens were the petromyzous-pricka, a kind of eel, fifteen inches in length, greenish head, fins violet, the back a bluish-grey colour, the belly is brown, of a silvery hue and speckled, the pupils of the eyes are surrounded with a golden circle. A curious animal this, which the current of the river Amazon had carried out to sea—for it is a fresh-water fish. There were “tubercular” rays, with pointed nose, a long and loose tail, armed with a long toothed sting; little sharks, about three feet long, commonly known as pantouffles; lophic-vespertilios, a sort of reddish isosceles

triangle, half a yard long, which look like bats, owing to the prolongation of their pectoral fins, but the horny appendage placed near the nostrils has caused them to be denominated sea-unicorns; finally some specimens of balistæ, the curasavian, spotted with brilliant gold dots, the capriscus, of pure violet, with varying colours of the pigeon's throat.

I will end this somewhat dry (but exact) catalogue, with a series of osseous fishes that I observed; the passans, belonging to the apternotes, with blunt snow-white noses, the body is of a beautiful black, furnished with a long, slender, fleshy stripe; odontagnathes, with spikes; immense sardines, glittering with silver scales; mackerel, provided with two anal fins; black centronotes, for which they fish with torches—these fish are about two yards in length, fat, with white firm flesh, when fresh they taste like eels, when dried, like smoked salmon; and labres, covered with scales at the bases of the anal and dorsal fins; chrysoptera, in which gold and silver scales blend in brightness; anableps, of Surinam, &c. But this “*et cetera*” must not prevent me from mentioning another fish, which Conseil for a long time kept in remembrance, and with good reason.

One of our nets had hauled up a kind of ray-fish, very flat, which with its tail cut off would have formed a perfect disc, and which weighed nearly forty pounds. It was white underneath, red above, with large round spots of blue, surrounded with black and very smooth skin. It struggled as it lay upon the platform, and endeavouring to turn itself, making so many efforts, that it nearly fell back into the sea. But Conseil, wishing to keep it, threw himself upon it, and before I could prevent him, had seized it with both hands. He was immediately knocked down, his legs high in the air, with half his body paralysed—and he cried out:

“Oh, master, master, come to me!”

This was the first time he had not addressed me in the third person.

The Canadian and I raised him up, we rubbed his paralysed arms, and when this inveterate classifier recovered his senses he murmured :

“Class, cartilaginous ; order, chondropterygians ; sub-order, selacians ; family, rays ; genus, torpedos.”

“Yes, my friend,” I replied ; “it is a torpedo that has knocked you over in this way.”

“Ah, Monsieur may believe me, I will be revenged on that animal.”

“How ?”

“By eating him.”

Which was done that same evening, but in pure reprisal, for, to tell the truth, he was very tough.

The unfortunate Conseil had been attacked by a torpedo of the most dangerous species—the *cumana*. This curious animal in a medium conductor like water can give a shock to fish at several yards distance, so great is its power in the electric organs, the two principal surfaces of which measure twenty-seven square feet at least.

During the following day, the 12th April, the *Nautilus* approached the Dutch coast near the mouth of the Maroni. There were several herds of lamantins here ; they were manatees, which, like the dugong and the stelleria, belong to the syrenian order. These beautiful animals, peaceable and inoffensive, measured between eighteen and twenty-one feet in length, and weighed at least three tons (4,000 kilos). I told Ned Land and Conseil that Nature had assigned a very important part to these mammals. They, like the seals, are intended to feed upon the submarine prairies, and so destroy the accumulations of plants which block the mouths of tropical rivers.

“And do you know,” I added, “what has happened since men have almost entirely destroyed this useful race? The grasses have putrified and poisoned the air, and that has given rise to yellow fever, which has laid waste beautiful districts. Poisonous vegetation multiplies in these tropical seas, and the evil is irresistibly developed from the mouth of the La Plata to Florida.”

And, if we can credit Toussenel, this plague is nothing at all to what will happen to our descendants when the seas become depopulated of whales and seals. Then, infested with cuttles, medusæ, and calmars, the waves will become vast hot-beds of infection, since they will no longer possess those “vast stomachs that God has commanded to scour the surface of the seas.”

But, without disputing this theory, the crew of the *Nautilus* caught half a dozen manatees. They did so to provision the ship with excellent meat, superior to beef or veal. The capture was not interesting. The manatees permitted themselves to be killed without resistance. Many thousand pounds weight of meat destined to be dried was stored on board.

This day a tremendous haul of fish increased the reserves of the *Nautilus*; the seas are so very rich. The net brought up a number of fish whose heads terminated in an oval plate with fleshy edges. These were echeneïdes of the third family, of the sub-brachian malacopterygians. This was the *Echeneide osteocheir*, peculiar to those seas. When taken, the sailors put them in buckets filled with water.

When the fishing was over, the *Nautilus* approached the coast. A number of tortoises were sleeping on the surface, otherwise it would have been difficult to capture them, for the least noise awakens them, and their shells are proof against the harpoon. But the echeneïde captured them

with extraordinary precision. This animal is, in fact, a living fish-hook, which would make a tyro's fortune.

The sailors tied to the tail a ring sufficiently large not to encumber its movements, and to this ring was fastened a long cord fastened to the *Nautilus*.

The echeneide, thrown into the sea, fixed themselves to the breastplates of the tortoises. Their tenacity was so great that they suffered themselves to be torn to pieces rather than let go. They were hauled on board with the tortoises to which they had attached themselves.

Several caconanes were also taken, weighing 400 lbs. Their shells, covered with horny plates—thin, brown, and transparent—fetch a high price. They are also excellent eating—like the fresh turtles. This fishing brought our sojourn at the Amazon to a close, and, as night fell, the *Nautilus* steered for the open sea.

CHAPTER XVIII.

THE OCTOPUS.

FOR some days the *Nautilus* gave the American coast a wide berth. Captain Nemo evidently did not wish to encounter the waves of the Gulf of Mexico or of the Antilles Seas. There was no want of water there, for the average depth is about 1,800 yards; but probably the islands, with which the seas are studded, did not recommend them to the captain.

On the 16th April we sighted Martinique and Guadeloupe at thirty miles distance. I saw the high peaks for a moment.

The Canadian, who had counted upon putting his plans of escape into execution in the Gulf—either by landing on some island, or by hailing one of the numerous vessels which ply from one island to another—was very much put out.

Flight would have been practicable had Ned been able to get possession of the boat without the captain's knowledge; but, in the open sea, it was useless to think of it.

Ned, Conseil, and I had a long conversation on this subject. We had now been six months on board the

Nautilus, we had sailed 17,000 leagues, and, as Ned remarked, it was time to put an end to it. He suggested that we should go and put the question boldly to Captain Nemo whether he intended to keep us on board for ever? But to this I would not agree. We had nothing to hope from the captain, we must trust to ourselves. Besides, for some time he had become gloomy, reserved, and unsociable. He seemed to avoid me; I only encountered him at rare intervals. Formerly he seemed pleased to be able to explain the wonders of the sea; now he left me to my studies in the saloon.

What change was come upon him, and why? I had no reason to reproach myself. Perhaps our presence on board worried him. Nevertheless, I did not think he would give us our liberty,

I therefore begged Ned to pause before acting. If this attempt had no result it would only revive his suspicions, and render our position unpleasant, and injurious to the projects of the Canadian. I will add that I could adduce no argument on the score of health. If I except the rough experience beneath the iceberg, we had never been better in our lives. The healthy food, the pure air, and regularity of our lives, with the uniformity of temperature, gave illness no chance, and for a man who did not regret the world, or—like Captain Nemo, who was at home, who went where he chose—I could understand the pleasure of such an existence. But for us, we had not broken with mankind. I did not wish to bury with me my curious and novel studies. I had now the right to write a true book of the sea, and I wished sooner or later to have it published.

Then again, in the waters of the Antilles, at ten yards beneath the surface, by the open panels, what interesting

objects had I to note daily ! Here, amongst other zoophytes, were those known as *Physalis pelagica*, like large oblong bladders with mother-of-pearl rays, lifting their membranes to the breeze, and letting their long blue tentacles float like silken threads, beautiful medusæ to look at, but regular nettles to touch, and distilling a corrosive liquid. Among the articulates were annelides a yard and a half in length, armed with a rose-coloured horn, and furnished with 1,700 organs of locomotion, which twined about in the water and reflected all the colours of the solar spectrum. Amongst the fish were, Malabar-rays—enormous cartilaginous fish, ten feet long and 600 lbs. weight, a triangular pectoral fin on a lumpy back, eyes fixed beyond the head at the extremities of the face, and which floated like wreckage, and appearing sometimes like a shutter before our window. There were the American balistæ, dressed by Dame Nature in black and white, gobies, mackerel of enormous size, of the albacore species. Then we had grey mullet in shoals, striped with gold from head to tail, moving their resplendent fins, which shone like a masterpiece of jewellers' workmanship ; these were formerly consecrated to Diana, and were particularly sought after by rich Romans, and of which the proverb states, "who takes them does not eat them." Lastly, pomacanthæ dorys, ornamented with emerald bands, dressed in silk and velvet, passed like Veronese lords. What a number of other specimens I might have noted had not the *Nautilus* dived to the lowest depths ! Here animal life is not represented except by ecrines, starfish, pentacrines, medusa-heads, troques, and such like.

On the 20th April we had risen to a medium height of 1,500 yards. The nearest land was the Bahamas, lying like a number of paving-stones at the surface of the sea. High cliffs rose up, perpendicular walls, rough blocks

placed in long layers, amongst which were deep holes to the end of which our electric light could not penetrate. These rocks were clothed with immense sea-grasses and weeds, hydrophytes worthy of a Titan world.

From speaking of enormous plants Ned and Conseil naturally turned to gigantic animals in the sea. The former were evidently intended to nourish the latter ; while from the windows of the saloon I did not see any but the principal articulates of the division of brachiousa, long-footed lampreys, violet crabs, and clios, peculiar to the Antilles.

About 11 A.M. Ned Land directed my attention to the extraordinary amount of movement going on amongst the algæ.

“ Well,” I said, “ they are the regular caves of cuttle-fish, and I should not be surprised to see one of those monsters.”

“ What !” cried Conseil, “ calmars, simple calmars, of the class of cephalopods ?”

“ No,” I replied, “ but cuttle-fish of enormous size. But perhaps friend Ned is mistaken, for I can perceive none of them.”

“ I am sorry for it. I should like to see one of those ‘ porpoises ’ of which I have heard, which are able to drag ships under water. They are called krak——”

“ It *is* a regular ‘ cracker,’ altogether, I should think,” said Ned ; “ ‘ cracker ’ will do !”

“ Krakens !” replied Conseil, having got out the word without noticing his companion’s “ chaff.”

“ You will never make me believe that such animals exist,” said Ned.

“ Why not ?” exclaimed Conseil, “ you believed Monsieur’s narwhal.”

“ We were wrong, Conseil.”

“ No doubt, but other people believe it still.”

“It is probable, Conseil ; but I have made up my mind not to admit the existence of these monsters till I have dissected them myself,” said I.

“So,” replied Conseil, “Monsieur does not believe in these gigantic octopi ?”

“Why, who the devil *has* ever believed in them ?” asked Ned.

“Lots of people, friend Ned.”

“No fishermen ; *savants* perhaps may !”

“Excuse me, Ned, both fishermen and *savants*.”

“But,” said Conseil, with the most serious air in the world, “I perfectly remember to have seen a large ship pulled down beneath the waves by one of the arms of a cuttle.”

“You have seen that !” exclaimed the Canadian.

“Yes, Ned.”

“With your own eyes ?”

“With my own eyes.”

“And where, if you please ?”

“At St. Malo,” replied the imperturbable Conseil.

“In the harbour, I suppose,” said Ned, ironically.

“No, in a church.”

“In a church !” exclaimed Ned.

“Yes, there is a picture there, representing the cuttle.”

“Capital !” cried Ned, laughing. “Conseil did puzzle me a bit.”

“As a fact, he is quite right,” I said. “I have heard of that picture, but the subject is taken from a legend, and you know what to think of legends, when applied to natural history. Besides, when monsters are in question, the imagination is apt to run wild a little. Not only has it been stated that these cuttles can drag ships down, but a certain Olaüs Magnus speaks of a cephalopod a mile long, which

was more like an island than an animal. It is also recounted that the Bishop of Nidros one day built an altar upon an enormous rock. Mass concluded, the rock got up and departed to the sea. The rock was a cuttle!"

"Is that all?" said Ned.

"No; another bishop, Pontoppidan de Berghem, also speaks of a cuttle upon which he could exercise a regiment of cavalry!"

"They said something besides their prayers, did those bishops," replied Ned.

"Finally, the ancient naturalists quote monsters whose throats were like gulfs, and which were too large to get through the Straits of Gibraltar."

"Oh! go ahead!" said the Canadian.

"But now, what is the truth of all this?" asked Conseil.

"Nothing, my friends—nothing at least but which passes the limits of truth and reaches legend or fable. Still, there is at any rate some ground or pretext for this play of the imagination of story-tellers. One cannot deny that cuttles and calmars of great size do exist, but they are not so large as cetacea. Aristotle mentioned a calmar of five cubits, nearly ten yards in length. Fishermen have often met with them more than four feet long. The museums of Trieste and Montpellier have skeletons of poulpes measuring two yards. Besides, according to the calculation of naturalists, one of these animals, measuring six feet only, has tentacles twenty-seven feet in length. That would be a formidable monster!"

"Do they fish for them at present?" asked Ned Land.

"If they do not fish for them, sailors see them. One of my friends, Captain Paul Bos, of Havre, has often told me that he met an enormous cuttle in the Indian seas. But the most astonishing incident, and one that will not allow us

to deny the existence of these animals, happened in 1861."

"How was that?" asked Ned.

"In 1861, at the north-east of Teneriffe, not far from where we are now, the crew of the despatch-vessel, *Alecto*, perceived an enormous cuttle. Captain Bonguer approached it, and attacked it with harpoons and guns, without any marked success, for both bullets and harpoons recoiled from its flesh, which is like soft jelly. After many attempts they succeeded in fastening a rope round the animal's body. The noose slipped to the caudal fins, and there it stopped. They then attempted to haul the monster on board, but his weight was so enormous that the tail was separated from the body, and, deprived of this ornament, the cuttle disappeared beneath the waves."

"At length we have a fact," said Ned Land.

"An indisputable fact. So it was proposed to name the poulpe the 'Bonguer cuttle-fish.'"

"How long was it?" asked the Canadian.

"Did it not measure about six yards?" said Conseil, who was posted at the window, watching the fissures in the cliffs.

"Precisely," I replied.

"Was not its head crowned with eight tentacles, which moved about in the water like a nest of serpents?"

"Quite so," I replied.

"Were not the eyes placed at the back of the head and very large?"

"Yes, Conseil."

"And was its mouth like a parrot's beak, but a very terrible one?"

"Quite true, Conseil."

"Well, then, if Monsieur pleases," replied Conseil,

quietly, "if yonder is not Bonguer's cuttle-fish, it is one of the family."

I gazed at Conseil. Ned Land rushed to the window.

"The horrible beast!" he cried.

I in my turn came to look, and could not repress a shudder of disgust. Before my eyes was a fearful monster, worthy to figure in legends of the marvellous.

It was a cuttle of enormous dimensions, eight yards long. It moved sideways with extreme velocity in the direction of the *Nautilus*. It gazed at us with its enormous staring sea-green eyes. Its eight arms, or rather its eight feet, were fixed to its head, which gives these animals the name of cephalopods—were double the length of its body, and turned about like the head-dress of the furies. We could distinctly see the 250 air-holes on the inner side of the "arms," shaped like semi-spherical capsules. Sometimes these air-holes fastened against the window, and thus emptied themselves. The monster's mouth, a horny beak like that of a parrot, opened vertically. Its horny tongue, itself armed with many ranges of sharp teeth, came quivering from out those veritable shears. What a freak of Nature this—a bird's beak on a mollusc! Its body shaped like a spindle, and swollen in the middle, formed a fleshy mass which must have weighed 40,000 or 50,000 lbs. Its colour changed with great rapidity, according to the irritation of the animal, passing successively from a livid grey to a reddish-brown tinge.

What irritated the mollusc? No doubt the presence of the *Nautilus*, more formidable than itself, and on which its beak and tentacles had no effect. What monsters these cuttles are, what vitality they possess, what vigour they must have in their movements, since they have three hearts!

Chance had brought us in contact with this octopus, and I did not wish to lose the opportunity to study the specimen carefully. I overcame the horror with which its appearance inspired me, and, seizing a pencil, I commenced to make a sketch of it.

“Perhaps this is the same that the *Alecto* encountered,” said Conseil.

“No,” said the Canadian, “because this one is complete ; the other fellow had lost a tail.”

“This is no reason,” I replied ; “these animals can reform their arms and tail by redintegration, and in seven years the tail of Bonguer’s cuttle, no doubt, has had time to grow again.”

“Besides,” replied Ned, “if this be not the one, it may be one of those others.”

As he spoke other cuttles appeared at the window. I counted seven of them. They attended on the *Nautilus*, and I heard the grinding of their beaks on the iron hull. We had enough now at any rate.

I continued my work. The monsters kept their places with such precision that they appeared immovable, and I was able to draw them foreshortened on the glass ; besides, we were not going fast.

Suddenly the *Nautilus* stopped. A shock was felt all through her frame.

“What have we struck ?” I exclaimed.

“In any case we are free, for we are floating,” said the Canadian.

The *Nautilus* was floating, certainly, but it was not moving. The screw was not going. A minute passed, when Captain Nemo and his mate entered.

I had not seen the captain for some time ; he seemed preoccupied. Without speaking, perhaps without seeing

us, he went to the panel, looked at the cuttle-fish, and said something to the mate.

The latter went out; the panels were soon closed, and the ceiling was lighted. I approached the captain.

"A curious collection of cuttles," I said, in the easy way a person might speak of them in an aquarium.

"Yes, indeed, professor, and we are going to fight them hand to hand."

I looked at the captain, not thinking I had heard aright.

"Hand to hand?" I repeated.

"Yes, the screw is stopped; I think one of their horny beaks has seized it. That is why we cannot move."

"And what are you going to do?"

"Rise to the surface and kill the vermin."

"Rather difficult, won't it?"

"Yes, indeed, for the electric bullets do not meet with sufficient resistance in their pulpy bodies to take effect."

"But we shall attack them with hatchets."

"And a harpoon," suggested the Canadian, "if you will accept my assistance."

"I do, Master Land."

"We will accompany you," I said; and, with Captain Nemo, we advanced to the staircase.

There a dozen men, armed with boarding hatchets, were in readiness for the attack. Conseil and I armed ourselves likewise. Ned Land seized a harpoon.

The *Nautilus* now floated at the surface. One of the sailors, placed on the top of the ladder, unscrewed the bolts of the panel. But the screws were scarcely loosened when the panel was wrenched violently open, evidently drawn in by the suckers of an octopus.

Immediately one of the long arms glided through the

aperture, and twenty others were moving above. With a single blow Captain Nemo cut off this formidable tentacle, which slid writhing down the ladder.

As we were pressing forward together to reach the platform, two other arms, circling in the air, fell upon a sailor who was in front of Captain Nemo, and raised him up with irresistible power.

Captain Nemo uttered a shout, and rushed in front ; we followed.

What a sight it was ! The unhappy sailor, seized by the tentacle and fixed upon the sucker, was balanced in the air by this enormous "trunk." He gasped ; he was almost stifled ; and cried out "Help, help !" These words, *pronounced in French*, astonished me greatly. I had a fellow-countryman on board—several perhaps. I shall hear that heart-rending appeal all my life.

The poor fellow was lost ! Who could tear him from such a grasp as that ? Nevertheless Captain Nemo threw himself upon the octopus, and cut off one arm at a blow. The mate waged a terrible fight with others, which were assailing the sides of the *Nautilus*. The ship's company fought with hatchets. The Canadian, Conseil, and I wearied our arms hacking at these fleshy masses. A strong odour of musk pervaded the air. The scene was horrible.

For a moment I hoped that the unfortunate sailor seized by the octopus would be released. Seven of the eight arms had been cut off. Only one, now brandishing like a feather, twined aloft. But as Captain Nemo and his mate both rushed at the animal it ejected a column of black liquid, secreted in a bag near the abdomen, at them. They were blinded, and when they recovered the octopus had disappeared with our unfortunate friend.

Enraged against the monsters, we rushed pell-mell

amongst ten or a dozen which had now gained the platform and sides of the *Nautilus*, which were soon covered with waves of inky blood. The viscous tentacles seemed to spring up like hydra heads. Ned Land, at each thrust of his harpoon, blinded the great staring eyes. But my companion was suddenly overturned by the tentacles of a monster that he had not been able to avoid. My heart beat wildly. The beak of the octopus was extended over Ned Land. He would be cut in half. I rushed to his assistance. But Captain Nemo anticipated me. He flung his hatchet between the enormous mandibles, and the Canadian, miraculously rescued, plunged his harpoon into the triple heart of the octopus.

“I owe myself that revenge,” said the captain to Ned Land.

Ned bowed, but made no reply.

The fight had lasted a quarter of an hour. The monsters, conquered, mutilated, beaten to death, left us at last, and disappeared.

Captain Nemo, red with blood, stood motionless near the lantern, gazed into the sea which had swallowed up one of his companions, and great tears stood in his eyes.

CHAPTER XIX.

THE GULF STREAM.

NONE of us will ever forget that terrible scene of the 20th April. I have written the account of it under excitement. But since I have revised the description, and read it to Ned and Conseil. They found it quite correct as to fact, but wanting in effect. To describe such incidents properly one must have the pen of the most illustrious of our poets—the author of the “Toilers of the Sea.”

I have stated that Captain Nemo was much affected while regarding the waves. His grief was intense. This was the second companion he had lost since our arrival on board. What a death too! A friend stifled, crushed, and bruised in the formidable arms of an octopus, and pounded between his iron mandibles, could never repose with his messmates in the peaceful waters of the coral cemetery.

The cry of despair uttered by the unhappy sailor was still ringing in my ears. This poor Frenchman, oblivious of his conventional dialect, was constrained to speak his mother-tongue in a last appeal for help. Amongst the crew of the *Nautilus*, linked body and soul with Captain Nemo, flying with him any contact with mankind, I had

had a fellow-countryman. Was he the only representative of France in this mysterious association evidently composed of individuals of different nationalities? This was one of those unsolvable problems that were continually agitating my mind.

Captain Nemo entered his own room, and I did not see him again for some days. But that he was ill and careless and irresolute I could perceive, as the ship of which he was the soul received all its impressions from him. The *Nautilus* did not maintain the fixed direction. It moved and floated like a corpse tossed by the waves. The screw had been disconnected, and so was no use. We steered at random, and could not get away from the neighbourhood of our late encounter, from those very waves that engulfed our friend.

Ten days passed in this manner, and the 1st of May arrived ere the *Nautilus* actually resumed her old course, having sighted the Bahamas. We then followed the current of the greatest river of the sea, which has its own banks, its fish, and temperature. I mean the Gulf Stream.

It is, in fact, a river which runs freely to the middle of the Atlantic, and whose waters do not mingle with any ocean waves. It is a salt river, more salt than the sea surrounding it. Its average depth is 3,000 feet; its average breadth, sixty miles. In certain places the current runs at the rate of nearly three miles an hour. The unvarying volume of its waters is greater than that of all the rivers of the globe.

The true source of the Gulf Stream, discovered by Commander Maury—its point of departure, if you prefer the term—is in the Gulf of Gascony. There its waters, feeble in colour and temperature, commence to form. It descends to the south by equatorial Africa, warms itself in

the rays of the torrid zone, crosses the Atlantic, touches Cape San Roque on the Brazilian coast, and divides—one branch goes to be again warmed by the waters of the Antilles. Then the Gulf Stream, charged to re-establish the temperature, and to mingle the waters of the tropics with the northern seas, commences to play its part of intermediary. Warmed to a great heat in the Gulf of Mexico, it runs along the American coast nearly to Newfoundland; deviates under pressure from a cold current from Davis' Straits; resumes the ocean route, following the loxodromic line—one of the great circles of the globe; divides into two branches about the 43rd degree. One arm, assisted by the north-east trade-wind, returns to the Gulf of Gascony and to the Azores; while the other, having laved the coasts of Ireland and Norway, flows as far as Spitzbergen, where its temperature falls to 4°, to form the open Polar Sea.

It was this ocean river that the *Nautilus* then entered. At the mouth of the Bahama Canal, about fourteen leagues out, and 350 yards deep, the Gulf Stream flows at the rate of five miles an hour. This pace decreases regularly in proportion as it advances towards the North, and it is to be hoped that this regularity may continue, for if its direction and pace undergo any alteration, the disturbances to European climates would involve very serious consequences.

Towards noon, I was with Conseil upon the platform. I gave him some particulars relative to the Gulf Stream; when I had finished, I suggested his putting his hand into the water. He did so, and was surprised not to perceive any sensation either of heat or cold.

“That is,” I said, “because the temperature of the waters of the Gulf Stream, when leaving the Gulf of Mexico, is very little different from that of the blood. This Gulf

Stream is a vast conductor of warmth, which clothes the coasts of Europe with verdure. And if we may credit Maury, the aggregate temperature of its waters would supply sufficient heat to hold in fusion a river of molten iron, as large as the Amazon or the Missouri."

At this time the speed of the Gulf Stream was 2.25 yards per second. Its current is so distinct from the surrounding sea, that its compressed waters mingle with the ocean waves. Darker than the others and richer in saline matter, the waves of the Gulf Stream trace their course in pure indigo, amid the green waters around them. Such is the distinctness of the line of demarcation, that the *Nautilus*, at the latitude of the Carolines, separated the waters of the Gulf Stream with her prow, while the screw revolved in those of the ocean.

The current carried with it all kinds of living things. Argonauts, so common in the Mediterranean, were here sailing in fleets. Amongst cartilaginous fishes, the most remarkable were the rays, the slender tails constituting nearly one-third of their bodies, and looked like large lozenges twenty-five feet long. Small sharks, a yard in length, large heads, muzzles short and rounded, pointed teeth arranged in several rows, and very scaly bodies.

Amongst the bony fishes I noted the gray goby, peculiar to this region; the black "gilt head," the eyes of which sparkled like fire; sirenes, a yard long, with large mouths filled with little teeth (these fish uttered low cries); blue coryphenes, striped with gold and silver; "parrot" fish—true ocean rainbows—which could rival the most splendid tropical birds in colours; triangular-headed blennies, blue rhombs, denuded of scales; batrachoïdes, covered with yellow transversal bands, something like the Greek letter *T*; little gobies, in crowds; dipterous, with silvery heads and

yellow tails ; salmon ; mugilomores, slender and shining with a soft radiance, which Lacépède consecrated to his amiable wife ; and finally a large fish, called the "American chevalier," which, decorated with many orders and covered with ribands, frequents the coasts of that great nation where "ribands" and "orders" are so very lightly esteemed.

I may add that during the night the phosphorescent waters of the Gulf Stream rivalled our own electric light, particularly during stormy weather.

On the 8th May we passed Cape Hatteras. The width of the Gulf Stream is here seventy-five miles, its depth 210 yards. The *Nautilus* still sailed at random ; all supervision seemed suspended on board. I began to consider that, under these circumstances, escape was possible. The inhabited coasts offered us easy refuge. Steamers from New York or Boston were continually passing on their way to the Gulf of Mexico ; and, night and day, pretty little schooners were darting from point to point of the American coast. We might really hope to be picked up. This was therefore a favourable occasion, notwithstanding the thirty miles of water that separated the *Nautilus* from the United States.

But an untoward circumstance balked the plans of Ned Land. The weather was very bad. We were approaching latitudes where storms are frequent—the district of waterspouts and cyclones, engendered by the current of the Gulf Stream. To launch upon a tempestuous sea in a frail boat was to court certain destruction. Ned Land even confessed as much. So he fretted himself into a regular attack of home-sickness, which flight only could cure.

"Monsieur," said he one day, "this must come to an end somehow. I wish to make a clean breast of it. Your

Nemo is quitting land and going north ; but I declare that I had enough of the South Pole, and I will not go up to the North Pole as well."

"But what are we to do, Ned, since flight, at present, is impracticable?"

"I come back to my original notion ; we must speak to the captain. You said nothing when we were in your national seas ; I wish to speak now that we are in mine. When I consider that in a few days the *Nautilus* will be close to Nova Scotia, and near Newfoundland is a large bay into which the St. Lawrence flows, and that the St. Lawrence is my river—the river of Quebec, my native town!—when I think of all this, I get angry, it makes my hair stand on end with rage, and I would rather throw myself into the sea than stay here."

The Canadian was fast losing patience. His vigorous manhood could not brook this prolonged imprisonment. His appearance was daily altered, his temperament became morose. I knew what he was suffering, for I began to have a touch of that home-sickness. Nearly seven months had elapsed, and we had had no news from earth. Further, the isolation of Captain Nemo, his changed habits, particularly since our encounter with the cuttle-fish, his taciturnity gave all things a very different appearance. I no longer looked at things with my former enthusiasm. One must be a Fleming, like Conseil, to adapt oneself to the present circumstances in this water, reserved for cestacea and such-like animals. Indeed, had Conseil been furnished with gills, instead of lungs, I believe he would have taken a high position amongst fishes.

"Well, sir?" said Ned, perceiving I did not reply.

"Well, do you wish me to ask Captain Nemo what are his intentions concerning us?"

“Yes, sir.”

“Even though he has already made them known?”

“Yes, I should like the matter to be decided. Speak for me in my name only, if you prefer to do so.”

“But I so seldom meet him. He even avoids me!”

“All the greater reason to go and see him.”

“I will ask him, Ned.”

“When?”

“Whenever I meet him.”

“M. Aronnax, shall I go and see him myself?”

“No, let me do it; to-morrow——”

“To-day,” said Ned.

“Well, then, to-day be it. I will go and see him,” I replied.

Had the Canadian gone and got angry, everything would have been compromised.

I was alone. As it had been decided I was to ask, the sooner it was done the better. I entered my own room, whence I meant to go to Captain Nemo’s cabin. I must not permit this opportunity to escape. I knocked. No answer being given, I knocked again; then I turned the handle and entered.

The captain was in his room. Bending over his work, he had not heard me. Determined not to leave without asking him the question, I approached him. He raised his head suddenly, frowned, and said, in a rude tone:

“You here! What do you want?”

“To speak to you, captain.”

“But I am engaged—I am at work. You can be private if you choose, cannot I have the same privilege?”

This reception was not very encouraging, but I was determined to hear all, to answer all.

“Yes,” said I, coldly; “I have to speak to you of a matter that will not admit of delay.”

“What is that?” said he ironically. “Have you made some discovery that has escaped me? Has the sea revealed any new secret to you?”

We were at cross purposes. But before I could reply he said gravely :

“M. Aronnax, here is a MS., written in several languages. It contains the ‘digest’ of my studies beneath the sea, and, please goodness, it will not perish with me. This MS., signed by me, completed by the history of my life, will be enclosed in a small unsinkable case. The last survivor of all of us on board the *Nautilus* will throw this into the sea, and it will go whithersoever the waves may carry it.”

The name of this man, his history written by himself! The mystery shall then be dissolved some day. But at the moment I only saw in this communication an opening to my business.

“Captain,” I replied, “I can but approve your resolve. It is not right that the result of your studies should be lost. But the means you intend to employ are primitive. Who knows where the wind may carry your work, or into whose hands it may fall? Cannot you devise something better? Cannot you or one of your——”

“Never, sir!” he cried, hastily interrupting me.

“But I and my companions are willing to take care of this MS., and if you set us at liberty——”

“At liberty!” exclaimed Captain Nemo, rising.

“Yes; and it is upon this subject I came to speak to you. For seven months we have been on board, and I ask to-day, in my companions’ names, as well as my own, whether you intend to confine us here for ever?”

“ M. Aronnax, I will reply to you to-day as I replied to you seven months ago. Whoever enters the *Nautilus* must never leave it.”

“ But this is slavery you would impose !”

“ You may give it any name you please.”

“ But in every country a slave reserves the right to regain his liberty by whatever means he can.”

“ And who has denied you this right? Have I ever bound you by any oath?” and the captain, folding his arms, regarded me steadfastly.

“ Captain Nemo,” said I, “ to revert to this subject will not be to the taste of either of us, but as we have once entered upon it, let us go through with it. I repeat, it is not only for myself; for my studies are a relaxation, a passion that swallows up all other thoughts. Like yourself, I am one to live unnoticed, obscure, in the distant hope of bequeathing the results of my work to a future age. In a word, I can admire you—you have taken up a line that I can understand in certain points; but there are other aspects to your life surrounded by mysteries and complications in which I and my companions can take no part. And even when our hearts have been moved by your sorrow, or excited by your acts of genius or courage, we have been obliged to repel any expression of sympathy, however small, which is born at the sight of brave or good actions in a friend or enemy. Well, this feeling that we are strangers to everything about you, makes our position unacceptable, impossible even for me, and above all for Ned Land. Every man, worthy of the name of man, deserves consideration. Have you ever told yourself that love of liberty, hatred of servitude, can give rise to projects of revenge in such a nature as the Canadian’s, that he can think, attempt, put in execution——”

I was silenced by the captain, who rose and said :

“Ned Land may think, attempt, or put in execution what he pleases—what does it matter to me? It was not I who sought him. It is not for my pleasure that he remains on board. You, M. Aronnax, are one of those who can understand everything, even silence. I have no more to say. This is the first time you have spoken on this subject to me—let it be the last ; for I will not even listen to a second attempt.”

I retired. Our situation henceforth was critical. I related the conversation to my two companions.

“We now know,” said Ned, “that we have nothing to hope for from him. The *Nautilus* is approaching Long Island. Let us make our escape, no matter what the weather may be.”

But the sky became more and more threatening. Signs of a hurricane were not wanting. The atmosphere became white and misty. Delicate *cirri* clouds were succeeded on the horizon by heavy *cumuli*. The lower clouds passed overhead very rapidly. The sea got up, and rolled in long swelling waves. Birds, with the petrels, disappeared. The barometer fell rapidly, and indicated extreme tension of vapours. The mixture in the storm-glass melted under the atmosphere, now sub-charged with electricity. The strife of the elements was at hand !

During the 18th May the storm burst, just as the *Nautilus* was off Long Island, some miles from New York. I am able to describe the tempest, for by some unaccountable whim Captain Nemo determined to brave it at the surface of the ocean, instead of going beneath the waves.

The wind was south-west, first pretty “fresh,” that is to say, about fifteen yards in a second, which increased to a rate of twenty-five yards a second about 3 P.M.

Captain Nemo, unmoved by the squalls, had taken his place on the platform. He was lashed round the waist to prevent his being carried away by the enormous waves. I managed to hoist myself up also, and made myself secure, dividing my admiration between the storm and the incomprehensible man who encountered it.

The raging sea was swept by great ragged clouds which dipped into the waves. I could not perceive any of those small waves which are formed at the bottom of the great hollows of the billows. Nothing but long rolling compact waves, which did not break. The *Nautilus*, sometimes on her side, and sometimes almost upright, rolled and pitched fearfully.

About five o'clock rain fell in torrents, but neither the wind nor the sea abated. The hurricane blew at the rate of more than forty-five yards a second, or about forty leagues an hour.

Houses are overturned by such gales as this, and cannon are frequently dismounted, but the *Nautilus*, in the midst of the tempest, justified the saying of a certain engineer, viz. : "there is no well-built hull that cannot defy the sea." She was not a resisting mass, which the waves might have overcome ; she was a steel spindle, obedient, mobile, without masts or rigging, and which braved the fury of the waves.

I studied these billows attentively. They measured nearly forty-five feet in height, and from 150 to 175 feet in length, and the rate at which they travelled—less than the wind—was about fifteen yards in a second. Their volume and force increased with the depth of water. I now understood the mission of these waves, which carry a quantity of air in their sides, and carry it to the bottom of the sea, where the oxygen it contains gives life. Their extreme

forces have been calculated at 6,000 lbs. on the square foot. Such waves as these at the Hebrides have displaced a block weighing 80,000 lbs.; and, in the tempest on the 23rd December, 1864, overturned part of the town of Yeddo, in Japan, and going at the rate of about 500 miles an hour, broke the same day upon the shores of America.

The storm with us increased during the night. The barometer fell $\frac{7}{16}$. In the evening I perceived a large ship on the horizon labouring painfully. She appeared to be lying-to under half steam, and was probably one of the New York steamers from Liverpool or Havre. Darkness soon hid her from our sight.

At 10 P.M. the sky was regularly on fire with lightning. I could not support the glare, while Captain Nemo as he gazed at it seemed imbued with the spirit of the storm. A mingled and terrible noise of the surging of the waves, the roaring of the wind, and the crashing of the thunder filled the air. The wind seemed to blow from all quarters, and the cyclone first from the east, "backed" round again to it by the north, west, and south, in the inverse direction adopted by circular storms in southern seas.

Ah! the Gulf Stream well deserves its name of the king of tempests! These violent storms are caused by the difference of the temperature between the air and its current.

The rain had been succeeded by a fiery shower. The drops seemed changed into lightning points. Captain Nemo seemed determined to court death by lightning, a worthy end for such a man! In its violent pitching the *Nautilus* would raise the steel "spur" like a lightning conductor, and long sparks were given out by it.

Bruised and exhausted, I crawled to the panel and

descended to the saloon. The storm was then at its height, and it was impossible to stand up in the *Nautilus*.

Captain Nemo came down about midnight. I heard the reservoirs filled, and the *Nautilus* sank slowly beneath the waves. From the saloon windows I could perceive great fish passing in the briny water, quite terrified ; while some were actually struck by the lightning as I gazed.

The *Nautilus* continued to descend. I fancied we could have reached calm water at a depth of sixteen yards ; but, no ; the upper waters were too rough, and we had to go down to a depth of fifty yards to seek repose.

But, what quiet, what peace and tranquillity reigned there ! Who could have imagined that such a fearful hurricane was raging at the surface of the ocean overhead ?

CHAPTER XX.

FROM LAT. $47^{\circ} 24'$ TO LONG. $17^{\circ} 28'$.

THE tempest had driven us to the east. All hope of landing at New York or on the shores of the St. Lawrence had fled. Poor Ned Land, in despair, kept aloof, like Captain Nemo ; but Conseil and I were together continually.

It would be more correct to state that the *Nautilus* had been carried to the north-east by the storm. For some days we wandered at the surface, sometimes beneath it ; surrounded, when above, by those fogs so dreaded by sailors. The fogs are chiefly owing to the melting of the ice, which causes great moisture in the atmosphere. What ships are lost in these latitudes when attempting to ascertain their whereabouts on this dangerous coast ! Numerous accidents are due to these thick fogs. The noise of the wind drowns the breaking of the surf, and ships go ashore helplessly. Collisions, in spite of whistles and fog-bells. The bottom of these seas looks like a battle-field, where the conquered ones of ocean still lie as they fell. Some old, and already covered up ; some young and bright, reflecting the light of our lantern from bolts and copper sheathings.

What a number of ships have been lost, with all hands,

off Cape Race, St. Paul Island, Straits of Belle-isle, and in the estuary of the St. Lawrence ! The *Solway*, the *Isis*, the *Paramatta*, the *Hungarian*, the *Canadian*, the *Anglo-Saxon*, the *Humboldt*, the *United States*, all foundered. The *Arctic*, the *Lyonnais* sprung leaks ; the *President*, the *Pacific*, and the *City of Glasgow* disappeared from causes unknown—a funeral line along which the *Nautilus* glided, as if it were holding a review of the dead.

On the 16th of May we reached the southern end of the Bank of Newfoundland. This bank is composed of organic matter, alluvial deposits, brought from the equator by the Gulf Stream, or from the North Pole by the counter cold-water current that washes the American coast. There, also, are formed those erratic blocks, drifted along with the broken-up ice. There is also a vast charnel-house of fish, molluscs, or zoophytes, which perish by hundreds of millions.

The depth of the sea is not great off Newfoundland. A few hundred fathoms only. But towards the south it dips suddenly to three thousand yards. There the Gulf Stream widens out, it loses speed and temperature, but becomes a sea.

Amongst the fish I noted the cyclopterus, the murnack of large size and excellent taste, karacks with large dog-like eyes, blennies, gobies, &c., &c.

The nets brought up a very hardy, bold, and vigorous fish, armed with spikes and prickly fins ; a sea scorpion about nine feet long, the determined enemy of blenny, gads, and salmon. We had some difficulty to lay hold of this animal, which, thanks to the formation of its opercules, prevents its respiratory organs from the drying contact of the atmosphere, and can live for some time out of water ; and I must not omit the cod-fish, in its favourite waters on

the inexhaustible Bank of Newfoundland. One may say that these cod are mountain-fish, for Newfoundland is nothing but a submarine mountain.

When the *Nautilus* cut her way through their thick masses, Conseil could not help saying, "Ah, cod! I always fancied that cod were flat-fish like dabs or soles."

"Stupid," I said. "Cod are only flat at the fish-mongers', where they are displayed opened and spread out. In the water they are rounded like mullet, and constructed perfectly for swimming."

"I daresay," replied Conseil, "but what a quantity there are!"

"And there would be a great many thousands more, but they have enemies—fishes and men. Do you know how many eggs there are in a female cod?"

"Let me give a good guess," said Conseil. "Five hundred thousand!"

"Eleven millions, my friend!"

"Eleven millions!" exclaimed Conseil. "I cannot believe that unless I count them myself."

"Well count, Conseil. But the fish is taken in thousands by the French, English, Americans, Danes, and Norwegians. They all consume enormous quantities, and were it not for the fecundity of these animals, the sea would soon be cleared of them. Thus, England and America alone have 5,000 ships, manned by 75,000 sailors employed in the cod-fishery. Each ship takes 40,000 at least, which gives a total of 25,000,000. It is the same on the coast of Norway.

"Well," said Conseil, "I agree: and I will not count them."

"Count what?"

"The eggs—the eleven millions? But I will make a remark."

"What is it?"

"Merely that if all the eggs were hatched, four cod would be sufficient to supply England and America."

During our inspection of the Banks of Newfoundland I could distinguish the long fishing lines, armed with 200 hooks, which every boat throws over by dozens. The *Nautilus* had some trouble to escape this submarine network.

However, we did not remain long in these crowded places. We went up to the 42nd degree of latitude, as high as St. John's and Heart's Content, where the Atlantic cable emerges.

The *Nautilus*, instead of continuing to the north, turned in an easterly direction, as if it wished to follow up the plain upon which the telegraphic cable is laid. It was on the 17th May, about 500 miles from Heart's Content, at a depth of 2,900 yards, that I perceived the cable lying on the ground. Conseil, whom I had not told of it, took it for a large sea-serpent, and was about to "class" it as usual. But I undeceived him, and, to console him, gave him some particulars concerning the laying of the cable.

The first cable was established during the years 1857 and 1858, but, after having transmitted about 4,000 telegrams, it stopped working. In 1863 another was constructed, over 2,000 miles long, and weighing 4,500 tons, which was shipped in the *Great Eastern*. This attempt did not succeed.

Now, the *Nautilus*, on the 25th May, was on the exact spot at which the breakage occurred which ruined the enterprise. It was 638 miles from the Irish coast. At 2 P.M. they perceived that the communication was interrupted. The electricians determined to cut the cable before fishing for it, and at 11 P.M. they found the damaged part.

They spliced it and re-sank it, but some days later it broke again, and, in such deep water, that it could not be recovered.

The Americans were not discouraged. The brave Cyrus Field, the promoter of the undertaking, who had embarked all his fortune in it, started another subscription. It was well responded to. Another cable was made on better principles. The wires were wrapped in gutta percha, protected by a covering of hemp, and surrounded by a metallic skin. The *Great Eastern* sailed with it on the 13th July, 1866.

The operation proceeded successfully, but an incident happened. It was remarked that nails were frequently found inserted in the cable with a view to injure it. Captain Anderson, his officers, and the scientific men held a consultation, and a notice was promulgated that, if anyone were discovered as the author of such an action, he would be incontinently flung into the sea. No further attempt to spoil the cable was made.

On the 23rd July the *Great Eastern* was only about 500 miles from Newfoundland, when a telegram from Ireland apprised those on board of the armistice between Prussia and Austria after Sadowa. On the 27th, in thick fogs, they reached Heart's Content. The enterprise had fairly and happily succeeded, and the first telegram young America sent to Mother England were the grand words so rarely comprehended:

"Glory to God in the highest; peace on earth, goodwill towards men."

I did not expect to find the electric cable in the same state as when it left the manufactory. The long "serpent," covered with the *débris* of shells, was encased with a strong coating, which protected it against boring molluscs. It lay

undisturbed by the motion of the sea, and under favourable pressure for the transmission of the electric spark, which passes from America to Europe in $\cdot 32$ of a second. The duration of this cable will be almost indefinite, for the gutta percha is improved by the salt water.

Besides, on this well-selected level, the cable is never so deeply immersed as to break. The *Nautilus* went to its lowest depth, situated 4,431 yards (mètres), and there it lay without any distention ; we then arrived at the spot where the accident of 1863 happened.

The ocean bed forms a large valley, upon which Mont Blanc might be placed, without the top appearing above the water. This valley is enclosed on the east by a perpendicular wall, more than 2,000 yards high. We arrived there on the 28th May, and the *Nautilus* was then only 120 miles from the Irish coast.

Did Captain Nemo wish to reach the British Isles? No. To my great surprise he again turned southward, and to European seas. In rounding the "Emerald Isle," I perceived Cape Clear for a moment, and the Fastnet lighthouse, which guides the thousands of ships bound for Liverpool and Glasgow.

An important question presented itself to my mind. Did the *Nautilus* dare to enter the English Channel? Ned, who had reappeared since we sighted land, did not cease to inquire. How could I reply. Captain Nemo was still invisible to us. Having permitted the Canadian a glimpse of America, perhaps he was going to give me a look at France !

But we went south still. On the 30th May we passed the Land's End, leaving the Scilly Isles to starboard. If Captain Nemo wished to enter the English Channel, he must now go east, but he did not.

During the whole of the 31st, the *Nautilus* described a series of circles in the sea, which puzzled me greatly. It seemed as if search were being made to find a spot difficult to hit on. At mid-day Captain Nemo came up on the platform to take the position himself. He did not speak a word, and seemed more reserved than ever. What had made him so sad? Was it the proximity of the European shores? Had he some remembrances of his abandoned native land? This thought haunted me, and I began to think that I should soon, by a happy chance, discover the captain's secrets.

Next day, the 1st of June, the *Nautilus* continued her manœuvres. It was evident some precise spot was wanted. Captain Nemo came up, as on the previous day. The sea was calm, the sky clear. Eight miles off a great steamer trailed a line of smoke across the horizon. She showed no colours, and I could not ascertain her nationality.

Captain Nemo took his sextant and began to observe the sun, some minutes before it reached the meridian. The absolute calm assisted this operation. The *Nautilus* did not move at all.

I was on the platform at that time. When the observation had been completed, Captain Nemo merely said :

"Here it is !" and descended to his room.

Had he seen the ship, which had changed her course and now approached us? I could not tell.

I returned to the saloon. The panel was shut. I heard the water entering the reservoirs. The *Nautilus* sank direct, for the screw did not move.

A few minutes later we were aground at 835 yards. The ceiling was lighted up, the windows were opened, and I could watch the sea, brilliantly illuminated by our electric lamp for half a mile round.

To port there was nothing but the watery expanse ; but

to starboard appeared a large mass which riveted my attention. It was like a ruin buried beneath white shells, as under a mantle of snow. Examining it attentively, I fancied I could distinguish a vessel, mastless, which must have foundered. The wreck must be an old one; many years must have passed for it to have become so encrusted with the lime of the ocean.

What was this ship? Why should the *Nautilus* visit its tomb? Was it a shipwreck in the ordinary sense?

I did not know what to think, when suddenly close by me I heard the captain's voice.

"That vessel," he said slowly, "was formerly called the *Marseillais*. She carried seventy-four guns, and was launched in 1762. In 1778, commanded by La Poype-Vertrieux, she fought the *Preston*. On 4th July, 1779, she was at the taking of Grenada, with the fleet of Admiral Estaing. On 5th September, 1781, she took part in the action in Chesapeake Bay. In 1794 her name was changed by the French Republic. On the 16th April of the same year she joined the fleet of Villaret-Joyeuse, at Brest, charged to escort a convoy of corn to come from America, under the command of Admiral Van Stabel. On the 11th and 12th Prairial of year II., the squadron encountered the English fleet. To-day, Monsieur, is the 13th Prairial, the 1st June, 1868. Seventy-four years ago this day, in this place, in $47^{\circ} 24'$ lat. and $17^{\circ} 28'$ long., this ship, after a gallant fight, dismasted, with a leak sprung, a third of her crew disabled, preferred to sink with her 356 sailors than to surrender; and, nailing their colours to the poop, they disappeared beneath the waves, crying '*Vive la Republique.*'"

"The *Vengeur*!" I exclaimed.

"Yes, Monsieur, the *Vengeur*. A good name," muttered the captain as he folded his arms.

CHAPTER XXI.

A HECATOMB.

THE style of address, the unexpected scene, this history of a ship of my country—so coldly told at first—then the emotion with which the strange individual had pronounced the last words, the significance of the name, *Avenger*, were all impressed deeply upon my mind. My gaze did not quit the captain. He, with outstretched hands, was watching with glittering eyes the glorious wreck. Perhaps I should never know who he was, whence he came, or whither he went; but I know that the man disengaged himself from the *savant*. It was no ordinary misanthropy that had caused Captain Nemo to hide himself, with his companions, in the *Nautilus*; but a hatred, whether monstrous or sublime, that time could not enfeeble.

Did this hatred still demand vengeance? The future would disclose this.

Meanwhile the *Nautilus* rose slowly, and the confused forms of the *Avenger* disappeared by degrees. A slight rolling motion indicated our arrival at the surface.

At that moment a dull roar was heard. I looked at the captain; he did not stir.

“Captain!” I said. He did not reply, so I left him and mounted to the platform. Conseil and the Canadian had preceded me.

“What is the meaning of that sound?” I asked.

“It was a cannon-shot,” replied Ned Land.

I looked towards the ship I had seen before. It had approached the *Nautilus*, and was coming at high speed. It was six miles away.

“What ship is that, Ned?”

“Judging by her rigging and spars, I should say she is a man-o’-war. I hope she may come up with us, and, if possible, sink this damned *Nautilus*.”

“Friend Ned!” said Conseil. “What harm can she do the *Nautilus*? Can she attack us under water?”

“Tell me Ned,” I said, “can you see to what nation this vessel belongs?”

The Canadian frowned, lowered his eyelids, and gazed for some seconds at the vessel earnestly.

“No,” he replied, at length, “I do not know to what country she belongs. Her ensign is not at the peak; but I can swear she is a man-of-war, because of the pennant at the main.”

For a quarter of an hour we continued to gaze at the approaching ship. I could not quite believe that she could have distinguished the *Nautilus* at such a distance, still less have guessed that she was a submarine engine.

The Canadian soon informed me that the new-comer was a large man-o’-war, a two-decked, ironclad ram. A thick, black smoke escaped from her two funnels. Her sails were furled; she had no ensign. The distance prevented our distinguishing the colours of the pennant, which blew out like a long ribbon.

She rapidly approached us. If Captain Nemo remained apathetic here was our chance of escape.

“Monsieur,” said Ned Land to me, “when this vessel is a mile distant I will throw myself into the sea, and I should suggest your doing the same thing.”

To this I made no reply, but continued to look at the vessel, which became rapidly more distinguishable. French, English, American, or Russian, she would receive us hospitably if we could only get on board.

“Monsieur will remember,” said Conseil, “that we have some little experience of swimming; he can rest upon me if he decide to follow Ned Land.”

I was about to reply, when a puff of white smoke burst from the man-of-war. Some seconds later the water was splashed up by the fall of a heavy shot astern of the *Nautilus*. A little later the report came to our ears.

“Hullo! they are firing at us,” I exclaimed.

“Good men,” murmured the Canadian.

“They evidently do not take us for shipwrecked sailors,” said I.

“If Monsieur has no objection—— Good,” said Conseil, as another shot ploughed up the water close to us. “If Monsieur has no objection, I think they have recognised the narwhal, and are cannonading it.”

“But they ought to see that there are human beings in question,” I said.

“Perhaps that is why they fire,” said Ned, looking at me.

A sudden idea struck me. No doubt they had formed their own conclusions respecting the pretended monster. Doubtless, on board the *Abraham Lincoln*, when the Canadian struck the narwhal with the harpoon, Commodore

Farragut had perceived that it was in reality a submarine vessel more dangerous than a supernatural cetacean.

Yes, this must be it, and in every sea they were now pursuing this engine of destruction.

It was indeed terrible if, as we thought, Captain Nemo used the *Nautilus* in a scheme of vengeance. Did he not attack some ship that night in the Indian Ocean when we were imprisoned? Had not that man who was buried in the coral cemetery fallen a victim to the attack provoked by the *Nautilus*? Yes, it must be so. One portion of Captain Nemo's mysterious existence was developing itself. And if his identity were not established, at least the several nations had banded against him, and now hunted him, not as a chimera, but as a man who had vowed an implacable hatred against them.

All the terrible past rose up before me. Instead of meeting friends on board the attacking vessel, we should only find pitiless enemies.

Meantime the cannon-shot kept flying about our ears. Some striking the water, ricocheted, and sank at a great distance. But none of them hit the *Nautilus*.

The ironclad was then only three miles away. But notwithstanding the tremendous cannonade, Captain Nemo did not appear on the platform, and yet had one of these conical shot struck the *Nautilus* it would have been fatal. The Canadian then said :

“Ought we not to endeavour to get out of this scrape? Let us make signals, they will perhaps understand that we are honest people.”

Ned Land took his handkerchief to wave to them, but scarcely had he opened it than he was struck down by an iron hand, and, notwithstanding his great strength he fell upon the deck.

“Wretch,” cried Captain Nemo, “do you wish to be immolated on the spur of the *Nautilus* before it is hurled against yonder ship?”

Captain Nemo, terrible to hear, was still more terrible to see. His face was pale as death, from a spasm of the heart, which had for an instant ceased to beat. The pupils of his eyes were contracted. His voice did not sound—it was almost a roar that issued from his throat as he grasped the Canadian’s shoulder. Then he turned from Ned towards the man-of-war from which the shot showered round him.

“Ah, you know who I am, you ship of a cursed race,” he cried in his powerful tones “I don’t want to see your colours to recognise your breed. Look here, I will show you mine!”

And he displayed a black flag similar to that which he had planted at the South Pole.

At that moment a shot struck the *Nautilus* obliquely, and without damaging her flew close by the captain and fell into the sea.

He shrugged his shoulders, then addressing me said:

“Go below, you and your companions.”

“Monsieur,” I cried, “do you intend to attack that ship?”

“Monsieur, I am going to sink her.”

“You will not do that, surely.”

“I will,” replied Captain Nemo coldly; “and I advise you not to pass judgment upon me. Fate has shown you what you ought not to have seen. The attack has begun. The reprisal will be terrible! Go down.”

“What ship is this?” I asked.

“Do you not know? So much the better. Her nationality at least is a secret to you. Go down.”

The Canadian, Conseil, and I had no choice. Fifteen sailors surrounded the captain, and seemed to regard the approaching vessel with intense hatred. We felt that the same spirit of revenge animated them all.

I descended, and at that moment another shot hulled the *Nautilus*. I heard the captain cry out :

“Strike, you mad vessel ; let fly your useless shot. You shall not escape the *Nautilus*. But you shall not perish here. Your wreck shall not mingle with that of the *Avenger* !”

I regained my cabin. The captain and the mate were still on the platform. The screw was put in motion. The *Nautilus* distanced her pursuer very quickly, and was soon out of range. But the chase continued, and Captain Nemo contented himself with keeping his distance.

About 4 P.M., I could not restrain the impatience and restlessness that was consuming me ; I went to the foot of the staircase ; the panel was open. I ventured upon the platform. The captain was walking up and down in a very excited manner. He kept looking at the man-of-war to leeward, about five or six miles away. He was sailing round it, and drawing the pursuit towards the east. But he did not attack it. Perhaps he hesitated to do so after all.

I wished to intercede once again. But I had hardly opened my mouth to Captain Nemo, when he silenced me.

“I am the law here ; I am justice. I am the oppressed and yonder is the oppressor. Through him I have lost everything I loved, cherished, venerated : country, wife, children, father, mother. I have seen them all perish. All I hate is there. Be silent.”

I took a last look at the man-of-war now steaming at high pressure, and then I rejoined Conseil and Ned.

“We will fly this,” I exclaimed.

“Good,” said Ned. “But what ship is it?”

“I do not know,” I replied, “but whatever it be it will be sunk during the night. Better perish with it than be accomplices in a war of reprisal of which we do not understand the justice.”

“That is my opinion,” replied Ned. “Let us wait till night.”

Night came. A deep silence reigned on board. The compass indicated that the *Nautilus* still held her course. I heard the rapid throbbings of the screw. We were still at the surface, and a slight roll affected the *Nautilus*.

My companions and I had determined to escape so soon as the ship was sufficiently near to make ourselves heard or seen, for the moon, which was nearly at the full, shone brightly. Once on board the other ship, we could prevent the attack that threatened her, or at least do all that the circumstances admitted. Many times I thought that the *Nautilus* was ready to attack, but Captain Nemo was contented to let the chase approach nearer, and then the *Nautilus* would again increase her distance.

The first part of the night passed without incident. We watched our opportunity. We spoke little, being too much excited to talk. Ned Land wanted to throw himself into the sea, but I persuaded him to wait. I thought the *Nautilus* would attack the ironclad at the surface of the sea, and then it would be not only possible but easy to escape.

At three o'clock, being restless, I ascended to the platform. Captain Nemo had not quitted it. He was standing up at the “bow,” near his flag, which was waving in the breeze over his head. He did not lift his eyes from the ship; his look was one of extraordinary attention, and

appeared to attract, to fascinate, and to draw the pursuer along as if it were being towed.

The moon was passing to the meridian. Jupiter was rising in the east. Amid this peace, heaven and the ocean rivalled each other in tranquillity, and the sea offered to the stars as lovely a mirror as had ever been presented for their reflection. And when I considered this holy calm of the elements, compared to the passions raging in the *Nautilus*, I felt chilled to the heart.

The man-of-war was within two miles of us. It was approaching nearer and nearer to that phosphorescent gleam which betrayed the whereabouts of the *Nautilus*. I saw the lights—green and red—and the white lamp suspended to the mizzen “stay.” A sort of vibration seemed to make the rigging quiver, which indicated a very high pressure of working. Sparks flew up from the funnels, and shone in the air like stars.

I remained thus till 4 A.M., without Captain Nemo having perceived me. The ship was now a mile and a half away, and at dawn the cannonade recommenced. The moment could not be far distant when, as the *Nautilus* attacked the ship, we could make our escape.

I was about to descend, when the mate appeared upon the platform. Several sailors accompanied him. Captain Nemo either did not see, or did not wish to see them. Certain preparations for action were made. They were very simple. The railing round the platform was removed; in the same way the lantern and pilot cages were lowered to a level with the deck. The surface of the long cigar-shaped vessel did not offer a single obstruction to its free manœuvring.

I returned to the saloon, the *Nautilus* still on the surface. The morning rays were beginning to penetrate the

water. As the waves undulated, the gleam of the rising sun illuminated the windows. This terrible 2nd of June dawned !

At 5 A.M. I perceived that the speed had moderated. I understood that the vessel was to be permitted to approach. Besides, the guns were heard more distinctly, and the shot hissed strangely through the morning air.

“ My friends,” said I, “ the time has come. A grasp of the hand, and may Heaven preserve us ! ”

Ned Land was resolute ; Conseil calm ; I was nervous, and could scarcely control myself. We passed into the library. As I pushed open the door leading to the central staircase, I heard the upper panel shut sharply. The Canadian hurried up the steps. I stopped him. A well-known hissing sound informed me that the water was coming into the reservoirs ; and in fact in a few minutes the *Nautilus* had sunk some yards under water.

I understood it all. It was too late to act now. The *Nautilus* did not dare to attack the ironclad, except below the water-line, where there were no iron plates to offer any resistance.

We were again imprisoned, unwilling witnesses of the tragedy about to be performed. We had scarcely time to reflect even. Shut in my room, we gazed at each other without speaking. A profound stupor had settled upon my spirits. All thought appeared to be arrested in my mind. I was in that state of tension which precedes some expected explosion. I waited, I listened, every sense concentrated in the ear.

The speed of the *Nautilus* increased ; the rush was coming, the whole fabric trembled.

Suddenly I uttered a cry. There was a shock, but comparatively gentle. I felt the penetrating force of the steel

spur. I heard a scraping noise. But the *Nautilus*, carried onward by her immense power of propulsion, passed through the vessel like a needle through canvas.

I could contain myself no longer. I rushed madly out of my room into the saloon. Captain Nemo was there, silent, gloomy, and implacable; he was looking through the port panel. An enormous mass overshadowed the water, and, so as to lose nothing of the death agony, the *Nautilus* slowly sank to the abyss beside the ironclad. Ten yards off was the wounded vessel, into which the waves were pouring like a sluice, and beyond a double tier of guns and nettings. The deck was covered with moving black shadows.

The water rose higher. The unhappy victims crowded into the shrouds, ascended the masts, or struggled in the pitiless water. Paralysed with anguish, my hair grew stiff with terror, my eyes dilated, I could not breathe; and there, breathless, voiceless, I was glued to the spot, and gazed at the sight in horror.

The enormous vessel sank slowly. The *Nautilus* following, watched all her movements. Suddenly an explosion occurred. The confined air had blown up the decks as if by gunpowder. The agitation of the water heeled the *Nautilus* over.

Then the ill-fated vessel sank more rapidly. Her top-masts, covered with victims, appeared before us; then the yards, bending beneath the weight of the crew; at length the main-topgallant-mast came in sight. Then the dark mass disappeared, and with it the drowned ship's company, dragged underneath by the powerful eddy.

I turned to Captain Nemo. That terrible executioner, a true archangel of hate, kept steadily regarding his handi-

work. When all was over, he went to his own room. I looked after him.

On the wall, beneath the portraits of his heroes, I perceived the likeness of a young woman with two little children. Captain Nemo looked at them for some minutes, extended his arms to them, and, falling upon his knees, burst into a passion of sobs.

CHAPTER XXII.

THE LAST WORDS OF CAPTAIN NEMO.

THE panels had been shut upon the dreadful spectacle, but no light had been given to the saloon.

Darkness and silence now reigned in the *Nautilus*. We were leaving the desolation behind us at a tremendous rate, but whither were we flying? North or south? Did that man wish to escape the horrible reprisal?

I re-entered my room, where I found Conseil and Ned sitting in silence. I experienced an insurmountable disgust for Captain Nemo. No matter how much he had suffered from mankind, he had no right to act as he had done. He had made me, if not an accomplice, a witness to his vengeance. It was too much!

At eleven o'clock light was given us. I entered the saloon; it was empty. I inspected the various instruments. We were going north at twenty-five miles an hour, sometimes at the surface, sometimes thirty feet beneath the waves.

Taking the bearings on the chart, I saw that we were passing the mouth of the British Channel, and were advancing rapidly towards the Northern seas. I could

scarcely see the various fish we passed; but it was not now a question of studying and classifying.

In the evening we had crossed 200 leagues of the Atlantic. Evening came, and the sea would be dark till the moon rose. I regained my room. I could not sleep long, I suffered from nightmare. The horrible scene I had witnessed kept recurring to my mind. Who could now tell to what part of the North Atlantic Captain Nemo would take us. We still were travelling at speed, and, in the midst of northern fogs. Should we go up to Spitzbergen or Nova Zembla, or explore those unknown seas, viz., the White Sea, the Sea of Kara, the Gulf of Obi, the Archipelago of Liarroy, and the equally strange coasts of the Asiatic continent? I could not tell. The clocks on board had been stopped, so we could no longer judge the flight of time; it seemed that day and night, as in polar regions, no longer followed in regular rotation. I felt I was being dragged into that wild region where the imagination can run riot as in the mysterious tales of Edgar Poe. At each moment I expected to see, like the fabulous Gordon Pym, that veiled figure, of a size exceeding all inhabitants of earth, thrown across the cataract that defends the approach to the Pole.

I estimated (though, perhaps, I was mistaken) that this wild course of the *Nautilus* lasted fifteen or twenty days, and how much longer it might have continued I do not know, had not a catastrophe brought our voyage to a conclusion. Neither Captain Nemo, the mate, nor any of the sailors ever appeared now. The *Nautilus* was almost always beneath the water. When it did rise to the surface to replenish the air the panels opened automatically. The reckoning was no longer marked on the chart; I could not tell where we were.

Moreover, the Canadian, who had come to an end of

his strength and patience, kept aloof also. Conseil could not induce him to speak, and fearing, in an excess of delirium, and under the influence of the terrible homesickness that devoured him, he would kill himself, he watched him untiringly. One can understand that, under all the circumstances, the situation was scarcely bearable.

One morning—I do not know the date—I was sleeping heavily towards dawn, when I awoke and found Ned Land leaning over me, and he said in a low tone: “We are going to escape!”

I sat up at once.

“When?” I asked.

“To-night. All *surveillance* on board the *Nautilus* seems over; they all appear stupified. You will be ready, sir?”

“Yes. Whereabouts are we?”

“In sight of land, which I observed through the fog this morning, twenty miles to the east.”

“What land is it?”

“I do not know; but whatever land it may be, we will escape thither.”

“Yes, Ned, we will fly to-night, even should the sea swallow us up.”

“The sea is high and the wind is strong, but twenty miles in that light boat does not frighten me. I have succeeded in putting on board some food and water.”

“I will follow you,” I said.

“But,” said the Canadian, “if I am surprised I will fight, and they will perhaps kill me.”

“We will die together, Ned.”

I had decided. The Canadian left me. I gained the platform, upon which I could scarcely withstand the shock of the waves. The sky was threatening, but as we were so

near land we were obliged to make our escape. We must not lose a day, not an hour.

I returned to the saloon, both hoping and fearing to meet Captain Nemo—wishing, and yet not wishing to see him. What had I to say to him? Could I hide the horror with which he inspired me? No! Better not to find myself face to face with him; better to forget him entirely; and, nevertheless——

What a long day this was—the last that I was to pass on board the *Nautilus*. I remained by myself. Ned and Conseil did not speak to me, for fear of betraying themselves

I dined at six o'clock, but I had no appetite. I forced myself to eat, so as to keep up my strength.

At half-past six Ned Land entered my room, and said: “We shall not meet again before we leave. At ten o'clock the moon will not be up; we will take advantage of the darkness. Come to the boat, and Conseil and I will await you there.”

The Canadian went out, without giving me time to reply.

I wanted to verify the course of the *Nautilus*. I went into the saloon. We were running N.N.E. with tremendous speed, at a depth of rather more than fifty yards.

I took a last look at all the marvels of nature around, the art-riches heaped up in this museum, on this unrivalled collection destined to perish some day at the bottom of the sea which had yielded it up. I wished to fix the impression upon my mind. I remained thus for an hour, beneath the light of the luminous ceiling, and, passing in review those beautiful specimens in the glass cases, then returned to my room.

I then donned some stout sea-clothing, and collected

my notes and secured them carefully about my person. My heart beat loudly; I could not help it. My trouble and agitation would certainly have betrayed me to Captain Nemo.

What was he doing at that moment? I listened at the door of his room; I could hear footsteps. Captain Nemo was there, and had not retired to rest. At every movement it seemed to me as if he were about to appear and ask me why I was going to escape. I was nervously sensitive. My imagination magnified everything around me. This impression became so vivid that I began to think whether it would not be better to go into the captain's room, see him face to face, and "beard the lion in his den."

This was madness; fortunately I restrained myself, and lay down on my bed to cool my agitation. My nerves became more calm by degrees, but my brain was at work, and I seemed to see all over again the pleasant and unpleasant incidents that had happened since our disappearance from the *Abraham Lincoln*—the submarine shooting-party, Torres' Strait, the Papuan savages, our stranding, the coral cemetery, the Suez passage, the island of Sautorin, the Cretan diver, Vigo Bay, Atlantis, the iceberg, the South Pole, the imprisonment in the ice, the octopus-fight, the tempest in the Gulf Stream, the *Avenger*, and the last horrible scene of the vessel sent to the bottom with all hands.

All these events passed before my mental vision like the scenes at a theatre. Then Captain Nemo seemed to increase in size tremendously in this strange medley. His apparition forced itself in, and took superhuman proportions. He was no longer my equal, he was the man of the waters—the genius of the seas.

It was then half-past nine. I held my head between my hands to still its throbbing. I shut my eyes, and tried

not to think. Another half-hour—a half-hour of nightmare would drive me mad.

At that moment I fancied I heard the distant notes of the organ, a sad harmony, like the wail of a soul which longed to break its earthly bonds. I listened intently, scarcely breathing, plunged, like Captain Nemo, in one of those musical ecstasies which lead one beyond the limits of this world !

Then a sudden idea terrified me. Captain Nemo had left his room. He was in the saloon, and I must cross it to escape. There I might meet him for the last time. He would see—would speak to me, perhaps. A gesture of his could annihilate me ; a word, chain me to the ship for ever !

It was on the stroke of ten ! The moment had come to leave my room and join my friends.

It would not do to hesitate, for fear that Captain Nemo should anticipate me. I opened the door of my room carefully, and yet it seemed to make a great noise as I opened it ; perhaps this noise only existed in my imagination.

I then crept along the dark passage, pausing at each step to still the beating of my heart. I reached the door of the saloon, and opened it very gently. The room was perfectly dark : the organ sounded faintly. Captain Nemo was there and had not seen me. I really believe that had there been light in the room, he would not have noticed me, so absorbed was he in his music.

I crept along the carpet, avoiding the least contact that would have betrayed my presence. It took me fully five minutes to gain the door, which opened into the library. I was about to open it, when a deep sigh from Captain Nemo glued me to my place. I could perceive that he was rising from the instrument, for some rays of light filtered into the room. He came towards me with folded arms, silent,

gliding like a ghost, rather than walking. His bosom heaved with sobs, and I heard him murmur these words—the last I ever heard him speak :

“ Enough, enough ! Oh ! Almighty God, enough ! ”

Was this the effect of remorse which thus escaped from the over-laden conscience of the man ?

In a sort of despair I precipitated myself into the library and rushed up the central staircase, and, following the upper turn, reached the boat. I entered it by the opening which had already given ingress to my two companions.

“ Let us be off ! let us go ! ” I cried.

“ In one second, ” replied the Canadian.

The opening in the *Nautilus* was first closed and secured by Ned Land by means of a key he had discovered. The opening in the boat was likewise fastened, and then the Canadian began to release the screws which held us to the *Nautilus*.

Suddenly a noise within the vessel was heard. Voices replied loudly. What had happened. Had our flight been discovered ? I felt Ned Land slip a poniard into my hand.

“ Yes, ” I murmured, “ we can die like men. ”

The Canadian ceased working. But a word, repeated twenty times, a terrible word revealed to me the cause of the agitation within the *Nautilus*. The crew were not troubling themselves about us at all.

“ The Maëlstrom ! the Maëlstrom ! ” cried Ned.

“ The Maëlstrom ! No more terrible word, and no more horrible situation than ours could be conceived. We were, then, in close proximity to the dangerous Norwegian coast. Had the *Nautilus* been drawn into the whirlpool just as our boat was about to quit the ship ?

It is well known that at flood-tide the waters pent up between the Loffoden and the Feroë Islands are precipitated together with tremendous violence, and form a whirlpool from which no ship can escape. On every side of us huge waves were rearing their crests and forming a gulf, which has been rightly called the "navel of the ocean," whose power of attraction extends to a distance of about twelve miles round.

There, not vessels only, but whales, and even white bears from the northern regions, meet their doom.

It was to this terrible fate that the *Nautilus*, whether designedly or not, was rushing. It was describing a circle, the circumference of which was gradually lessening, and the boat, which was attached to the side, was thus carried along with appalling speed. I got giddy. I felt that sensation which is produced by turning round for a long time rapidly. We were dreadfully alarmed, horror had reached its limit, circulation had ceased, our nervous force was annihilated; we were bathed in a cold perspiration of agony. What a noise rose round us—roarings which the echoes repeated several miles away. The noise of the waves breaking upon the sharp rocks below, where the stoutest bodies are broken to pieces, where trunks of trees are worn away, and become "like fur," to use the Norwegian term.

What a situation it was! We were tossed about like a cork. The *Nautilus* defended herself like a human being, the steel muscles were strained. Sometimes it rose upright, and we along with it.

"We must hold on tightly," said Ned, "and see about the bolts. If we stand by the *Nautilus* we may be saved yet."

He was still speaking when a crashing noise was heard. The screws gave way, and the boat was hurled like a stone from a sling into the very centre of the whirlpool.

My head was struck by a piece of iron, and the violence of the blow deprived me of consciousness.

CHAPTER XXIII.

CONCLUSION.

THERE was an end to our voyage under the sea. What passed during the night, and how the boat escaped from the terrible jaws of the Maëlstrom—how Ned Land, Conseil, and I ever came out of the gulf alive—I cannot tell.

When I came to myself, I was lying in a fisherman's hut in the Loffoden Islands. My two companions, safe and sound, were beside me, holding my hands in theirs.

We embraced each other joyfully.

We had no chance to return to France then. Communication between the north of Norway and the southern ports is rare. I was therefore obliged to wait for the starting of the steamboat which plies bi-monthly from the North Cape.

So, now, amongst the kind-hearted people who have rescued us, I am revising these notes of our adventures. It is quite true. Not a fact has been omitted ; not a detail exaggerated. It is the faithful narrative of this incredible expedition beneath the element inaccessible to mankind, but which progress will one day open up.

Shall I be credited ! I do not know. After all it matters little. What I now declare is that I have a right to speak of those seas beneath which I have traversed twenty

thousand leagues in less than ten months in a submarine tour of the world, which has revealed to me the wonders of the Pacific, the Indian Ocean, the Red Sea, the Mediterranean, the Atlantic, the Southern and Northern Polar Seas.

But what became of the *Nautilus*? Did it resist the Maelstrom. Is Captain Nemo still living? Does he still exact his terrible reprisals, or did he cease for ever after that last hecatomb? Will the waves one day bring to land that manuscript which contains the whole history of his life? Shall I ever know the name of the man, or will the missing vessel tell us by the fact of its nationality, that of Captain Nemo?

I hope so, and I also trust that his powerful ship has overcome the Maelstrom, and that the *Nautilus* survives where so many vessels have perished. If it be so, if Captain Nemo still inhabits the ocean—his adopted country, so to speak—may the hatred of that savage breast be appeased! May the contemplation of so many wonders calm the spirit of revenge in him: may the judge disappear, and the *savant* continue his peaceful exploration of the sea. If his fate be a strange one, there is something sublime in it also.

Have I not comprehended it myself—have I not lived for ten months of that unnatural existence? So, to the question propounded three thousand years ago by Ecclesiastes—“Who has ever sounded the depths of the abyss?”—two men only of all the world have the right to reply—CAPTAIN NEMO AND MYSELF!

THE END.



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