SAILING IN THE AIR.—HISTORY OF AERONAUTICS.

AERONAUTICS, or the art of sailing in the air, is of very modern date; if, indeed, we are warranted to say that the art has yet been acquired, for we have only got a machine or apparatus capable of sustaining some hundreds of pounds in the air, the means of guiding and propelling it having yet to be discovered. The attention and admiration of men would doubtless be attracted from the beginning to the ease, grace, and velocity with which the feathered race soar aloft, and wing their way in the upper regions; but there is no reason to believe that any of the nations of antiquity—not even Greece and Rome, with all their progress in science and art—ever made the smallest advances toward a discovery of a method of flying, or of aerial navigation.

Archytas of Tarentum, a celebrated Pythagorean philosopher, who flourished about four hundred years before the Christian era, is indeed said to have constructed a wooden flying pigeon; but, from the imperfect accounts transmitted to us of its machinery, there is every probability that its flight was one of the many deceptions of the magic art which the ancients so well understood and so expertly practiced. The attention of man was much earlier, as well as more earnestly and successfully turned to the art of navigating lakes, rivers, and seas. To gratify his curiosity, or to better his condition, he was prompted to emigrate, or to pass from one place to another, and thus he would tax his ingenuity to discover the means by which he might be enabled to accomplish his journey. To make the atmosphere the medium of transit, would, in the early stages of society, hardly strike the mind at all, or, if it did, it would only strike it as a physical impossibility. Nature has not supplied man with wings, as it has done the fowls of heaven, and to find a locomotive means of transportation through the air was in the infancy of all science absolutely hopeless. But advantage would be early taken of the buoyant property of water, particularly of the sea, which must have been known to mankind from the creation. The canoe and the raft would be first constructed, and, in the course of time, experience would teach men to build vessels of a larger size, to fix the rudder to the stern, to erect the mast, and unfurl the sails. Thus would the art of navigating the ocean advance from step to step, while the art navigating the air remained a mystery, practiced, it may be, by flying demons, and flying witches, and the like ethereal beings of a dark mythology, but an achievement to which ordinary mortals could make no pretensions.

Our object in this paper is to give a concise history of aeronautics, commencing at that period when something like an approach was made to the principles upon which the art could be reduced to practice.

The person who is entitled to the honor of the discovery of the main principle of aeronautics—atmospheric buoyancy—is Roger Bacon, an English monk of the thirteenth century. This eminent man, whose uncommon genius was, in that superstitious and ignorant age, ascribed to his intercourse with the devil, was aware that the air is a material of some conistency, capable, like the ocean, of bearing vessels on its surface; and, in one of his works, he particularly describes the construction of a machine by which he believed it was possible to navigate the air. It is a large, thin, hollow globe of copper, or other suitable metal, which he proposes to fill with "ethereal air or liquid fire," and then to launch from some elevated point into the atmosphere, when he supposes it will float on its surface, like a vessel on the water. He afterward says, "There may be made some flying instrument, so that a man, sitting in the middle of the instrument, and turning some mechanism, may put in motion some artificial wings, which may beat the air like a flying bird." But, though Bacon knew the buoyancy of the atmosphere, he was very imperfectly acquainted with its properties. His idea seems to have been, that the boundaries of the atmosphere are at no great height, and that the aerial vessel, in order to its being borne up, must be placed on the surface of the air, just as a ship, in order to its being supported, must be placed on the surface of the water. And, whatever may be meant by his "ethereal air and liquid fire," there is no evidence that he, or any one living in that age, had any knowledge of the various and distinct gases. Bacon merely reasoned and theorized on the subject; he never attempted to realize these flying projects by actual experiment.

It was not till the year 1782 that the art of aerial navigation was discovered, and the merit of the discovery is due to two brothers, wealthy paper manufacturers, at Annonay, not far from Lyons—Stephen and Joseph Montgolfier. This discovery they did not arrive at from any scientific reasoning founded on the elasticity and weight of the atmosphere, for, though attached to the study of mathematics and chemistry, they do not appear to have particularly turned their attention to aerostatics; but, from observing how clouds and smoke rise and float in the atmosphere, it occurred to Stephen, the younger of the two, that a light paper bag, filled with cloud or smoke, would, from the natural tendency of these substances to ascend, be carried by their force in an upward direction.

About the middle of November, 1782, they made their first experiment in their own chamber at Avignon, with a light paper bag of an oblong shape, which they inflated, by applying burning paper to an orifice in the lower part of the bag, and in a few minutes they had the satisfaction of seeing it ascend to the ceiling of the chamber. Constructing a paper bag of larger dimensions, they made a similar experiment in the open air, with equal success, and, the bag being of a spherical shape, they gave it the name of balloon, from its resemblance to a large, round, short-necked, chemical vessel so called. Finding, from repeated trials, that the larger the balloon the more successful was the experiment, they proceeded to construct one of linen lined with paper, 35 feet in diameter; and, on the 25th of April, 1783, after being filled with rarified air, it rapidly rose to the height of 1000 feet, and fell to the ground at the distance of three-quarters of a mile from the spot where it ascended. Encouraged by this success, the Montgolfiers came to the resolution of making a public experiment with this last constructed balloon at Annonay, on the 5th of June following. It was inflated with heated air, by the lower orifice being placed over a pit or well, in which were burned chopped straw and wool. Two men were sufficient to fill it; but, when fully inflated, eight men were required to prevent it from ascending. On being released from its fastenings, it rose majestically to the height of six or seven thousand feet, and made its descent at the distance of a mile and a half from the point of its departure.

This novel experiment, which forms an important epoch in the history of the art of aeronautics, attracted universal attention, and Stephen Montgolfier, having soon after arrived in Paris, was requested by the Royal Academy of Sciences, whose sittings, immediately on his arrival, he had been invited to attend, to repeat the experiment at their expense. He gladly availed himself of their proposal, and speedily got prepared a large balloon of an elliptical shape, 72 feet high, and 41 feet in diameter. It was finished in a style of great magnificence, and elegantly decorated on the outer surface with beautiful and appropriate designs. When completed, it weighed 1000 pounds. As a preliminary experiment, it raised eight men from the ground, and, on the 12th of September, 1783, it ascended, in the presence of the Royal Academy, with a load of from 400 to 500 pounds; but, in consequence of an injury it received in rising from a violent gust of wind, it did not present the same interesting spectacle as the public experiment previously made, and, upon its descent, it was found to be so seriously damaged, as to be unfit for future experiments, A new one of nearly the same dimensions was, therefore, ordered to be made, to which was added a basket of wicker-work, for the accommodation of a sheep, a cock, and a duck, which were intended as passengers. It was inflated, in the presence of the king and royal family, at Versailles, and, when loosened from its moorings, it rose, with the three animals we have named—the first living creatures who ever ascended in an aerial machine—to the height of about 1500 feet, an accident similar to what befell the other preventing it from attaining a higher elevation. It, however, descended safely with the animals, at the distance of 10,000 feet from the place of its ascent.

Hazardous as it might be, it was now fully demonstrated, that it was quite practicable for man to ascend in the atmosphere, and individuals were soon found sufficiently daring to make the experiment. Another balloon was constructed, 74 feet high, and 48 feet in diameter, and M. Pilatre de Rozier, superintendent of the royal museum, and the Marquis de Arlandes, volunteered to make an aerial voyage. At the bottom, it had an opening of about 15 feet in diameter, around which was a gallery of wicker-work, three feet broad, with a balustrade all around the outer edge, of the same material, three feet high; and, to enable the aeronauts to increase or diminish at pleasure the rarified state of the air within, it was provided with an iron brazier, intended for a fire, which could easily be regulated as necessity required. On the 21st of November, in the same year, the adventurers having taken their places on opposite sides of the gallery, the balloon rose majestically in the sight of an immense multitude of spectators, who witnessed its upward course with mingled sentiments of fear and admiration. The whole machine, with fuel and passengers, weighed 1600 pounds. It rose to the height of at least 3000 feet, and remained in the air from 20 to 25 minutes, visible all the time to the inhabitants of Paris and its environs. At several times it was in imminent danger of taking fire, and the marquis, in terror for his life, would have made a precipitate descent, which, in all probability, would have ended fatally, but M. Pilatre de Rozier, who displayed great coolness and intrepidity, deliberately extinguished the fire with a sponge of water he had provided for the emergency, by which they were enabled to remain in the atmosphere some time longer. They raised and lowered themselves frequently during their excursion, by regulating the fire in the brazier, and finally landed in safety five miles distant from the place where they started, after having sailed over a great portion of Paris. This is the first authentic instance in which man succeeded in putting into practical operation the art of traveling in the air, which had hitherto baffled his ingenuity, though turned to the subject for two thousand years. The news of the novel and adventurous feat rapidly spread over the whole civilized world, and aerial ascents in balloons constructed on the same principle were made in other cities of France, in Italy, and in the United States of America.

The two Montgolfiers soon obtained a high and wide-spread reputation; and the Royal Academy of Arts and Sciences of Paris voted a gold medal to Stephen, the younger brother. It was to heated or rarified air that these balloons owed their ascending power; but the Montgolfiers, in the paper in which they communicated their discovery to the Royal Academy, erroneously attributed the ascending power, not to the rarified air in the balloon, but to a peculiar gas they supposed to be evolved by the combustion of chopped straw and wool mixed together, to which the name of Montgolfiers' gas was given, it being believed for a time, even by the members of the Academy, that a new kind of gas, different from hydrogen, and lighter than common air, had been discovered.

Hydrogen gas, or, as it was also called, inflammable air, whose specific gravity was first discovered in 1766, by Henry Cavendish, though the gas itself had been known long before to coal-miners, from its fatal effects, was, from its being the lightest gas known, early taken advantage of for inflating balloons. It indeed occurred to the ingenious Dr. Black of Edinburgh, as soon as he read Mr. Cavendish's paper, which appeared in the Philosophical Transactions for 1766, that if a sufficiently thin and light bladder were filled with this gas, the bladder would necessarily ascend in the atmosphere, as it would form a mass lighter than the same bulk of atmospheric air. Not long after, it suggested itself to Tiberius Cavallo, an Italian philosopher, when he first began to study the subject of air, that it was possible to construct a vessel which, when filled with hydrogen gas, would ascend in the atmosphere. In 1782, he actually attempted to perform the experiment, though the only success he had was to let soap balls, filled with that gas, ascend by themselves rapidly in the air, which, says he, were perhaps the first sort of inflammable air balloons ever made; and he read an account of his experiments to the Royal Society at their public meeting on June 20, 1782. But, during the later part of the year 1783, two gentlemen in the city of Philadelphia actually tested the value of hydrogen gas as a means of inflating balloons. The French Academy, guided by the suggestion of Dr. Black, and the experiments of Cavallo, also concluded to make the experiment of raising a balloon inflated with the same gas. To defray the expense of the undertaking, a subscription was opened, and so great was the enthusiasm excited by the design among people of all ranks and classes, that the requisite sum was speedily subscribed for. A silken bag from lute-string silk, about thirteen feet in diameter, and of a globular shape, was constructed by the Messrs. Roberts, under the superintendence of M. Charles, professor of experimental philosophy; and, to render the bag impervious to the gas—a very essential object in balloon manufacture—it was covered with a varnish composed of gum elastic dissolved in spirits of turpentine. It had but one aperture, like the neck of a bottle, into which was fastened the stop-cock for the convenience of introducing and stopping-off the gas. It was constructed and inflated near the Place of Victories, in August, 1783, and after being inflated, which was then no easy task, occupying several days, it was removed on the morning of the 27th of that month, before daylight, to the Camp of Mars (two miles distant), the place appointed for its ascent. About five o'clock in the afternoon, it was released from its fastenings, and rose, in the presence of some hundred thousands of applauding spectators, to a height upward of 3000 feet; and, after remaining in the atmosphere for three-quarters of an hour, descended in a field near Gonesse, a village about fifteen miles distant from the Camp of Mars. This marks another important era in the history of aeronautics. The hydrogen-gas balloon, in the first place, is attended with less risk than the Montgolfiers' balloon, which requires the dangerous presence of a fire to preserve the air in a sufficiently rarified state; and, in the second place, it has a much greater ascending power than rarified air balloons of the same size, in consequence of its superior lightness.

M. Charles and the two Messrs. Roberts now resolved to undertake an aerial excursion in a balloon of this description. With this view, the Messrs. Roberts formed one of silk, varnished with gum elastic, of a spherical shape, 27 feet in diameter, with a car suspended from it by several cords, which were fastened to a net drawn over the upper part of the balloon. To prevent the danger which might arise from the expansion of the gas under a diminished pressure of the atmosphere in the higher regions, the balloon was furnished with a valve, to permit the free discharge of gas, as occasion might require. The hydrogen gas with which it was filled was $5\frac{1}{4}$ lighter than common air, and the filling lasted several days. On December 17, 1783, M. Charles and one of the Roberts made their ascent from the garden of the Tuilleries, and rose to the height of 6000 feet. After a voyage of an hour and three-quarters, they descended at Nesle, a distance of 27 miles from the place of their departure. On their descent, M. Roberts having left the car, which lightened the vessel about 130 pounds, M. Charles reascended, and in twenty minutes mounted with great rapidity to the height of 9000 feet. When he left the earth, the thermometer stood at 47 degrees, but, in the space of ten minutes, it fell 21 degrees. On making this great and sudden transition into an atmosphere so intensely cold, he felt as if his blood had been freezing, and experienced a severe pain in the right ear and jaw. He passed through different currents of air, and, in the higher regions, the expansion of the gas was so great, that the balloon must have burst, had he not speedily opened the valve, and allowed part of the gas to escape. After having risen to the height of 10,500 feet, he descended, about three miles from the place where M. Roberts stepped out of the car.

Jean Pierre Blanchard, a Frenchman, who had long exerted his ingenuity, but with little success, in attempting to perfect a mechanical contrivance by which he might be enabled to fly, was the next to prepare a balloon upon the hydrogen-gas principle. It was 27 feet in diameter. He ascended from Paris, March 2d, 1784, accompanied by a Benedictine friar. After rising to the height of 15 feet, the balloon was precipitated to the ground with a violent shock, which so frightened the friar, that he would not again leave *terra firma*. M. Blanchard re-ascended alone, and, in his ascent, he passed through various currents of air, as aeronauts generally do. He rose to the height of 9600 feet, where he suffered from extreme cold, and was oppressed with drowsiness. As a means of directing his course, he had attached to the car an apparatus consisting of a rudder and two wings, but found that they had little or no controlling power over the balloon. He continued his voyage for an hour and a quarter, when he descended in safety.

During the course of the year subsequent to the Montgolfiers' discovery, several experiments on the ascending power of balloons had been made in England; but the first person who there ventured on an aerial voyage was Vincent Lunardi, an Italian, who ascended from London, September 21, 1784. In the succeeding year, he gratified the inhabitants of Glasgow and Edinburgh with the spectacle of an aerial excursion, which they had never witnessed before.

The first aerial voyage across the sea was made by M. Blanchard, in company with Dr. Jeffries, an American physician, who was then residing in England. On the 7th January, 1785, a beautiful frosty winter day, they ascended about one o'clock from the cliff of Dover, with the design of crossing the Channel between England and France, a distance of about twenty-three miles, and, at great personal risk, accomplished their purpose in two hours and a half. The balloon at first rose slowly and majestically in the air, but it soon began to descend, and, before they had crossed the Channel, they were obliged to reduce the weight, by throwing out all their ballast, several books, their apparatus, cords, grapples, bottles, and were even proceeding to cast their clothes into the sea, when the balloon, which had then nearly reached the French coast, began to ascend, and rose to a considerable height, relieving them from the necessity of dispensing with much of their apparel. They landed in safety at the edge of the forest of Guiennes, not far beyond Calais, and were treated by the magistrates of that town with the utmost kindness and hospitality. M. Blanchard had the honor of being presented with 12,000 livres by the King of France. Emboldened by this daring feat, Pilatre de Rozier, already mentioned, and M. Romain, prepared to pay back the compliment of M. Blanchard and Dr. Jeffries, by crossing the Channel from France to England. To avoid the difficulty of keeping up the balloon, which had perplexed and endangered Blanchard and his companion during nearly their whole course, Rozier had recourse to the expedient of placing underneath the hydrogen balloon a fire balloon of smaller dimensions, which was intended to regulate the rising and falling of the whole machine. This promised to unite the advantages of both kinds of balloons, but it unhappily terminated in the melancholy death of the two adventurers. They ascended from Boulogne, on the 15th of June, 1785, but scarcely had a quarter of an hour elapsed from the time of their ascent, when, at the height of 3000 feet, the whole machine was discovered to be in flames. Its scattered fragments, with the mangled bodies of the unfortunate aeronauts, who were probably killed by the explosion of the hydrogen gas, were found near the sea-shore, about four miles from Boulogne. This was the first fatal accident which took place in balloon navigation, though several hundred ascensions had by this time been made.

In the early practice of aerial voyages, the chief danger apprehended was from accidental and rapid descents. To countervail this danger, and enable the adventurer, in cases of alarm, to desert his balloon, and descend to the ground uninjured, Blanchard invented the parachute, or *guard for falling*, as the word signifies in French, an apparatus very much resembling an umbrella, but of much larger dimensions. The design is to break the fall; and, to effect this, it is necessary that the parachute present a surface sufficiently large to experience from the air such resistance as will cause it to descend with a velocity not exceeding that with which a person can fall to the ground unhurt. During an aerial excursion which Blanchard took from Lisle in August, 1785, when he traversed a distance of not less than 300 miles, he dropped a parachute with a basket fastened to it, containing a dog, from a great elevation, and it fell gently through the air, letting down the animal to the ground in safety. The practice and management of the parachute were subsequently carried much farther by other aeronauts, and particularly by M. Garnerin, an ingenious and spirited Frenchman, who, during the course of his numerous ascents, repeatedly descended from the region of the clouds with that very slender machine. On one occasion, however, he suffered considerable injury in his descent. The stays of the parachute having unfortunately given way, its proper balance was disturbed, and, on reaching the ground, it struck against it with such violence, as to throw him on his face, by which he received some severe cuts. To let down a man of ordinary size from any height, a parachute of a hemispherical form, twenty-five feet in diameter, is required. But although the construction of a parachute is very simple, and the resistance it will meet with from the air in its descent, its size and load being given, can be exactly determined on scientific principles, few have ventured to try it; which may be owing partly to ignorance, or inattention to the scientific principles by which it is governed, and partly to a growing opinion among aeronauts, that it is unnecessary, the balloon itself, in case of its bursting, forming a parachute; as Mr. Wise, the celebrated American aeronaut, experienced on two different occasions, as he narrates in his interesting work on Aeronautics, lately published at Philadelphia—a work to which we have been mainly indebted in drawing up this article.

In the early part of the French revolutionary war, the *savants* of France, ambitious of bringing to the aid of the Republic all the resources of science, strongly recommended the introduction of balloons, as an effectual means of reconnoitring the armies of their enemies. From the advantages it seemed to promise, the recommendation was instantly acted on by the government, which established an aeronautic school at Meudon, near Paris. The management of the institution, which was conducted with systematic precision, and concealed with the utmost care from the allied powers, was committed to the most eminent philosophers of Paris. Gyton Morveau, a celebrated French chemist, and M. Contel, superintended the operations. Fifty military students were admitted for training. A practicing balloon of thirty-two feet in diameter was constructed, of the most durable materials, and inflated with hydrogen gas. It was kept constantly full, so as to be at all times ready for exercise; and, to make it stationary at any given altitude, it was attached to windlass machinery. Balloons were speedily prepared by M. Contel for the different branches of the French army; the *Entreprenant* for the army of the north, the *Celeste* for that of the Sambre and Meuse, the *Hercule* for that of Rhine and Moselle, and the *Intrepide* for the memorable army of Egypt. The victory which the French achieved over the Austrians, on the plains of Fleurus, in June, 1794, is ascribed to the observations made by two of their aeronauts. Immediately before the battle, M. Contel and an adjutant-general ascended twice in the war-balloon *Entreprenant*, to reconnoitre the Austrian army, and though, during their second aerial *reconnaissance* they were discovered by the enemy, who sent up after them a brisk cannonade, they quickly rose above the reach of danger, and, on descending, communicated such information to their general, as enabled him to gain a speedy and decisive victory over the Austrians.

The balloon was also at an early period taken advantage of for making scientific experiments in the elevated regions of the atmosphere. With the view of ascertaining the force of magnetic attraction, and of examining the electrical properties and constitution of the atmosphere at great elevations, two young, enthusiastic French philosophers, MM. Biot and Gay Lussac, proposed to make an ascent. These gentlemen, who had studied together at the Polytechnic School of Paris, and the latter of whom had especially devoted himself to the study of chemistry, and its application to the arts, while both were deeply versed in mathematical science, were well qualified for the undertaking; and they were warmly patronized by the government, which immediately placed at their command the *Intrepide*, that had returned with the French army from Egypt to Paris, after the capitulation of Cairo. M. Contel, who had constructed the balloon, was ordered to refit it, under their direction, at the public expense. Having furnished themselves with the philosophical instruments necessary for their experiments—with barometers, thermometers, hygrometers, compasses, dipping needles, metallic wires, an electrophorus, a voltaic pile, and with some frogs, insects, and birds—they ascended, at ten o'clock, on the morning of August 23, 1804, from the garden of the Repository of Models. On rising 6500 English feet, they commenced their observations. The magnetic needle was attracted as usual by iron, but it was impossible for them at this time to determine with accuracy its rate of oscillation, owing to a slow rotary motion with which the balloon was affected. The voltaic pile exhibited all its ordinary effects, giving its peculiar copperas taste, exciting the nervous system, and causing the decomposition of water. At the elevation of 8600 feet, the animals which they carried with them appeared to suffer from the rarity of the air. The philosophers had their pulses much accelerated, but they experienced no difficulty in breathing, nor any inconvenience whatever. Their highest elevation was 13,000 feet; and the result of their experiments at this distance from the earth was, that the force of magnetic attraction had not sensibly diminished, and that there is an increase of electricity in the higher regions of the atmosphere.

In compliance with the request of several philosophers of Paris, who were anxious that the same observations should be repeated at the greatest height that could be reached, Gay Lussac alone made a second ascent, on the morning of September 15, 1804, from the garden of the Repository of Models, and rose, by a gradual ascent, to a great elevation. He continued to take observations at short intervals of the state of the barometer, the thermometer, and the hygrometer, of which he has given a tabular view, but he unfortunately neglected to mark the time at which they were made—a point of material importance, for the results would of course be modified by the progress of the day; and it would have added to their value, had these observations been compared with similar ones made at the same time at the observatory. During the ascent of the balloon, the hygrometer was variable, but obviously marked an increase of dryness; the thermometer indicated a decrease in the heat of the atmosphere, but the decrease is not uniform, the ratio being higher in the elevated regions than in the lower, which are heated from the earth; and it was found, by not fewer than fifteen trials at different altitudes, that the oscillations of a finely-suspended needle varied very little from its oscillations on the surface of the earth. At the height of 21,460 feet, Lussac admitted the air into one of his exhausted flasks, and, at the height of 21,790 feet, he filled the other. He continued to rise, till he was 22,912 feet above Paris, or 23,040 feet—that is upward of four miles and a quarter—above the level of the sea, the utmost limit of his ascent, an elevation not much below the summit of Nevado de Sorato, the highest mountain of America, and the loftiest peak of the Himalaya in Asia, the highest mountains in the world, and far above that to which any mortal had ever soared before. One can not but admire the intrepid coolness with which Lussac performed his experiments at this enormous elevation, conducting his operations with the same composure and precision as if he had been seated in his own parlor in Paris. Though warmly clad, he now began to suffer from the excessive cold, his pulse was quickened, he was oppressed by difficulty in breathing, and his throat became parched, from inhaling the dry, attenuated air—for the air was now more than twice as thin as ordinary, the barometer having sunk to 12·95 inches—so that he could hardly swallow a morsel of bread. He alighted safely, at a quarter before four o'clock afternoon, near the hamlet of St. Gourgan, about sixteen miles from Rouen. On reaching Paris, he hastened to the laboratory of the Polytechnic School, to analyze the air he had brought down in his flasks from the higher regions; and, by a very delicate analysis, it was found to contain exactly the same proportions as the air on the surface of the earth, every 1000 parts holding 215 of oxygen, confirming the identity of the atmosphere in all situations. The ascents of these two philosophers are memorable, as the first which were made for purely scientific purposes.

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MAURICE TIERNAY, THE SOLDIER OF FORTUNE

(*Continued from Vol. I. Page* 797.)

CHAPTER XVIII.

"THE BAY OF RATHFRAN."

OUR voyage was very uneventful, but not without anxiety, since, to avoid the English cruisers and the Channel-fleet, we were obliged to hold a southerly course for several days, making a great circuit before we could venture to bear up for the place of our destination. The weather alternated between light winds and a dead calm, which usually came on every day at noon, and lasted till about sunset. As to me, there was an unceasing novelty in every thing about a ship; her mechanism, her discipline, her progress, furnished abundant occupation for all my thoughts, and I never wearied of acquiring knowledge of a theme so deeply interesting. My intercourse with the naval officers, too, impressed me strongly in their favor, in comparison with their comrades of the land service. In the former case, all was zeal, activity, and watchfulness. The look-out never slumbered at his post; and an unceasing anxiety to promote the success of the expedition, manifested itself in all their words and actions. This, of course, was all to be expected in the discharge of the duties peculiarly their own; but I also looked for something which should denote preparation and forethought in the others; yet nothing of the kind was to be seen. The expedition was never discussed even as table-talk; and for any thing that fell from the party in conversation, it would have been impossible to say if our destination were China or Ireland. Not a book nor a map, not a pamphlet nor a paper that bore upon the country whose desti-

nies were about to be committed to us, ever appeared on the tables. A vague and listless doubt how long the voyage might last, was the extent of interest any one condescended to exhibit; but as to what was to follow after—what new chapter of events should open when this first had closed, none vouchsafed to inquire.

Even to this hour I am puzzled whether to attribute this strange conduct to the careless levity of national character, or to a studied and well "got up" affectation. In all probability both influences were at work; while a third, not less powerful, assisted them—this was the gross ignorance and shameless falsehood of many of the Irish leaders of the expedition, whose boastful and absurd histories ended by disgusting every one. To listen to them, Ireland was not only unanimous in her desire for separation, but England was perfectly powerless to prevent it, and the only difficulty was, to determine the future fortune of the liberated land, when once her freedom had been proclaimed. Among the projects discussed at the time, I well remember one, which was often gravely talked over, and the utter absurdity of which certainly struck none among us. This was no less than the intention of demanding the West India Islands from England, as an indemnity for the past woes and bygone misgovernment of Ireland. If this seem barely credible now, I can only repeat my faithful assurance of the fact, and I believe that some of the memoirs of the time will confirm my assertion.

The French officers listened to these and similar speculations with utter indifference; probably to many of them the geographical question was a difficulty that stopped any further inquiry, while others felt no further interest than what a campaign promised. All the enthusiastic narratives, then, of high rewards and splendid trophies that awaited us, fell upon inattentive ears, and at last the word Ireland ceased to be heard among us. Play of various kinds occupied us when not engaged on duty. There was little discipline maintained on board, and none of that strictness which is the habitual rule of a ship-of-war. The lights were suffered to burn during the greater part of the night in the cabins; gambling went on usually till daybreak; and the quarter-deck, that most reverential of spots to every sailor-mind, was often covered by lounging groups, who smoked, chatted, or played at chess, in all the cool apathy of men indifferent to its claim for respect.

Now and then, the appearance of a strange sail afar off, or some dim object in the horizon, would create a momentary degree of excitement and anxiety; but when the "look-out" from the mast-head had proclaimed her a "schooner from Brest," or a "Spanish fruit-vessel," the sense of danger passed away at once, and none ever reverted to the subject of a peril then suggested.

With General Humbert I usually passed the greater part of each forenoon, a distinction, I