



CAMILLE FLAMMARION

ASTRONOMICAL FICTION

ESSENTIAL NOVELISTS

TACET BOOKS

ESSENTIAL NOVELISTS

Camille
Flammarion

EDITED BY

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Author

"What intelligent being, what being capable of responding emotionally to a beautiful sight, can look at the jagged, silvery lunar crescent trembling in the azure sky, even through the weakest of telescopes, and not be struck by it in an intensely pleasurable way, not feel cut off from everyday life here on earth and transported toward that first stop on the celestial journeys? What thoughtful soul could look at brilliant Jupiter with its four attendant satellites, or splendid Saturn encircled by its mysterious ring, or a double star glowing scarlet and sapphire in the infinity of night, and not be filled with a sense of wonder? Yes, indeed, if humankind — from humble farmers in the fields and toiling workers in the cities to teachers, people of independent means, those who have reached the pinnacle of fame or fortune, even the most frivolous of society women — if they knew what profound inner pleasure await those who gaze at the heavens, then France, nay, the whole of Europe, would be covered with telescopes instead of bayonets, thereby promoting universal happiness and peace."

Camille Flammarion, 1880

Camille Flammarion was born in Montigny-le-Roi, Haute-Marne, France. He was the brother of Ernest Flammarion (1846–1936), founder of the Groupe Flammarion publishing house. He was a founder and the first president of the Société astronomique de France, which originally had its own independent journal, BSAF (Bulletin de la Société astronomique de France), first published in 1887. In January 1895, after 13 volumes of L'Astronomie and 8 of BSAF, the

two merged, making L'Astronomie the Bulletin of the Société. The 1895 volume of the combined journal was numbered 9, to preserve the BSAF volume numbering, but this had the consequence that volumes 9 to 13 of L'Astronomie can each refer to two different publications, five years apart from each other.

The "Flammarion engraving" first appeared in Flammarion's 1888 edition of L'Atmosphère. In 1907, he wrote that he believed that dwellers on Mars had tried to communicate with the Earth in the past. He also believed in 1907 that a seven-tailed comet was heading toward Earth. In 1910, for the appearance of Halley's Comet, he believed the gas from the comet's tail "would impregnate [the Earth's] atmosphere and possibly snuff out all life on the planet.

As a young man, Flammarion was exposed to two significant social movements in the western world: the thoughts and ideas of Darwin and Lamarck, and the rising popularity of spiritism with spiritualist churches and organizations appearing all over Europe. He has been described as an "astronomer, mystic and storyteller" who was "obsessed by life after death, and on other worlds, and [who] seemed to see no distinction between the two."

He was influenced by Jean Reynaud (1806–1863) and his *Terre et ciel* (1854), which described a religious system based on the transmigration of souls believed to be reconcilable with both Christianity and pluralism. He was convinced that souls after the physical death pass from planet to planet, progressively improving at each new incarnation. In 1862 he published his first book, *The Plurality of Inhabited Worlds*, and was dismissed from his position at the Paris Observatory later the same year. It is not quite clear if these two incidents are related to each other.

In *Real and Imaginary Worlds* (1864) and *Lumen* (1887), he "describes a range of exotic species, including sentient plants which combine the processes of digestion and respiration. This belief in extraterrestrial life, Flammarion combined with a religious conviction derived, not from the Catholic faith upon which he had been raised, but from the writings of Jean Reynaud and their emphasis upon the transmigration of souls. Man he considered to be a "citizen of the sky," others worlds "studios of human work, schools where the expanding soul progressively learns and develops, assimilating gradually the knowledge to which its aspirations tend, approaching thus evermore the end of its destiny."

His psychical studies also influenced some of his science fiction, where he would write about his beliefs in a cosmic version of metempsychosis. In *Lumen*, a human character meets the soul of an alien, able to cross the universe faster than light, that has been reincarnated on many different worlds, each with their own gallery of organisms and their evolutionary history. Other than that, his writing about other worlds adhered fairly closely to then current ideas in evolutionary theory and astronomy. Among other things, he believed that all planets went through more or less the same stages of development, but at different rates depending on their sizes.

The fusion of science, science fiction and the spiritual influenced other readers as well; "With great commercial success he blended scientific speculation with science fiction to propagate modern myths such as the notion that "superior" extraterrestrial species reside on numerous planets, and that the human soul evolves through cosmic reincarnation. Flammarion's influence was great, not just on the popular thought of his day, but also on later writers with similar interests and convictions." In the English translation

of Lumen, Brian Stapleford argues that both Olaf Stapledon and William Hope Hodgson have likely been influenced by Flammarion. Arthur Conan Doyle's *The Poison Belt*, published 1913, also has a lot in common with Flammarion's worries that the tail of Halley's Comet would be poisonous for earth life.

Uranie

First Part.

The Muse of Heaven.

I.

Dream of Youth.

I WAS seventeen. She was called Uranie. Was Uranie, then, a young girl, fair, with blue eyes, innocent, but eager for knowledge? No, she was simply what she has always been, one of the nine muses; she who presided over astronomy, and whose celestial glance animated and directed the spherul choir; she was the heavenly idea hovering above earthly dullness; she had neither the palpitating flesh, nor the heart whose pulsations can be transmitted through space, nor the soft warmth of humanity; but she existed, nevertheless, in a sort of ideal world, superior to humanity, and always pure; and yet she was human enough in name and form to produce in the soul of a youth a vivid and profound impression; to awaken in that soul an undefined and undefinable sentiment of admiration: almost of love.

The young man whose hand has not yet plucked the divine fruit of the tree of knowledge, whose lips have remained pure, whose heart has not yet spoken, but whose senses begin to awaken in the midst of a sea of new aspirations, has a premonition in his hours of solitude — and even in the midst of the intellectual labors with which our modern system of education overtaxes his brain, — has a

premonition, I say, of the divinity at whose shrine he shall one day worship, and personifies beforehand, under varying forms, the charming ideal which floats in the atmosphere of his dreams. He desires, he longs to embrace this unknown being, but does not yet venture, may never venture, perhaps, in his naïve admiration for her, to do so, unless some favoring chance comes to his assistance. If Chloe is not learned enough, the indiscreet and curious Lycenion must undertake to instruct Daphnis.

Whatever speaks to our souls of the as yet unknown attraction has power to charm, to strike, to allure us. The cold representation in an engraving of the pure oval of a perfect face, a picture of some goddess, it may be a statue — above all a statue — awakens a strange emotion in the heart; the blood rushes on or seems to pause in its course; an idea flashes like lightning through the brain, flushing the brow, to remain floating vaguely in the dreamy soul. This is the beginning of love, the beginning of life, the dawn of a beautiful summer day, heralding the rising of the sun.

As for me, my first passion, the passion of my youth, had — not for its object, indeed, but for its determining cause — a clock! This may seem strange enough, but it is true, notwithstanding. Calculations of an uninteresting character filled all my afternoons from two till four o'clock: it was my task to correct the observations of the stars and planets made on the previous night, by applying to them the reductions due to atmospheric refraction, which itself depends upon the height of the barometer and the temperature. These calculations are as simple as they are tiresome; they are made mechanically by the aid of tables already prepared, while the thoughts may be occupied at the same time by something altogether different.

The illustrious Le Verrier was, at that time, director of the Observatory of Paris. Although he was by no means artistic

in his tastes, he had, in his study, a fine gilt-bronze clock of the time of the First Empire, the work of Pradier. The pedestal of this clock represents in bas-relief the birth of astronomy in the plains of Egypt. A massive celestial sphere, encircled by the zodiac and supported by sphinxes, surmounted the dial. But the beauty of this artistic work consisted, above all, in a ravishing statuette of Uranie — noble, elegant, I might almost say, majestic. The celestial Muse was represented standing. With her right hand she measured, by the aid of a compass, the degrees on the starry sphere; her left hand, falling by her side, held a small telescope. Superbly draped, her attitude was noble and, as I have said, majestic. I had never yet seen a face as beautiful as hers. With the light falling upon it, from the front, it looked grave and austere; falling upon it obliquely, it looked pensive. But if the light came from above or from the side, this charming countenance was illuminated by a mysterious smile, its look became almost caressing; its former serenity gave place to a gracious and joyful expression that it was a delight to contemplate. It was as if some melody were being chanted within. These changeful expressions seemed to endow the statue with life. Goddess and Muse, she was beautiful, she was enchanting, she was adorable. Whenever I had occasion to visit the famous mathematician, it was not the thought of his world-wide fame that was most present to me. I forgot the formulas of logarithms, and even his immortal discovery of the planet Neptune, to yield myself up to the spell of the work of Pradier. That beautiful form, so admirably modeled under its antique drapery, the graceful poise of the head, the expressive face, attracted my gaze and enchained my thoughts. Often, when, at about four o'clock we left the office to return to Paris, I would peep through the open door to see if the director were absent from his study. Mondays and Wednesdays were the best days; the former because of the sessions of the Institute, at which he never failed to be present, the latter on account of

those of the bureau of longitude, which he shunned with the most profound disdain, and which made him purposely leave the Observatory the better to manifest his contempt. Then I would take up my stand in front of my beloved Uranie. I would gaze at her at my ease. I was enraptured with the beautiful outlines of her figure, and I would go away each time more satisfied, but not happier, than the last. She charmed me, but she left me regrets.

One evening — the evening on which I discovered the changes her countenance underwent according to the direction from which the light fell upon it — I had found the study door wide open, a lamp, which stood upon the chimney-piece, causing the figure of the Muse to appear in her most seductive aspect. The oblique light played softly on her forehead, her cheeks, her lips and her throat. The expression was marvelous. I drew near and stood motionless for a time, contemplating her; then it occurred to me to change the position of the lamp, so as to make the light fall upon her shoulders, her arm, her neck and her hair. The statue seemed to live, to think, to move, even to smile. Singular sensation, strange feeling! I was in truth enamored of her; my admiration for her had changed to love. I should have been very much surprised at the time if any one had said to me that this was not a genuine passion, that this platonic affection was nothing more than a childish dream. The Director entered, but he did not seem so surprised at my presence in his study as I had feared (people often passed by the door in going to the Observatory). But just as I replaced the lamp upon the chimney-piece: “You are rather late for Jupiter,” he said. And as I crossed the sill: “Are you by chance a poet?” he added with an air of profound disdain, dwelling with an accent of contempt upon the final syllable.

I might have answered him by mentioning the names of Kepler, Galileo, d'Alembert, the two Herschels, and other illustrious savants who were at the same time poets and astronomers. I might even have reminded him of the first Director of the Observatory, Jean Domingue Cassini who sang the praises of Uranie in Latin, French and Italian verse. But the students of the Observatory were not in the habit of answering the remarks of the Senator-Director. The senators at that time were important personages and the director of the Observatory was appointed for life. And besides, our great geometrician would, beyond a doubt, have regarded the most wonderful poem of Dante, Ariosto, or Victor Hugo with the same disdain as a fine Newfoundland dog might regard a glass of wine, set before him for his delectation. And then, I was incontestably in the wrong.

This enchanting face of Uranie, with all its delightful variety of expression, how it haunted me! How gracious was her smile! And her eyes of bronze had in them, at times, an expression that was truly life-like. Nothing was wanting but speech. On the following night, scarcely had I fallen asleep, when I saw before me the majestic figure of the goddess, and this time she spoke to me.

She was actually alive! And what a lovely mouth. I could have kissed it at every word she uttered. "Come," said she to me, "come with me to the skies — up, far up above the earth. You shall see at your feet this lower world, you will contemplate the immensity of the universe in all its grandeur. Stay, behold!"

II.

The Muse of Heaven — Journey Among Systems and Worlds — Unknown Forms of Humanity.

THEN I beheld the earth sinking into the yawning abyss of immensity. The cupolas of the Observatory, Paris, blazing with light, vanished swiftly from my gaze, while I seemed to be motionless. The sensation I experienced was like that which one feels who is ascending in a balloon, and sees the earth below sinking out of sight. For a long time I continued to ascend, carried on in my magical flight toward the inaccessible zenith. Uranie was at my side, a little above me, regarding me with an expression of sweetness on her countenance, as she pointed out to me the kingdoms beneath us. Day had dawned. I recognized France, the Rhine, Germany, Austria, Italy, the Mediterranean, Spain, the Atlantic Ocean, the British Channel, and England. But all these geographical divisions of the earth, already of Liliputian size, grew smaller every moment. Soon the terrestrial globe was reduced to the apparent dimensions of the moon in her last quarter, then to that of a diminutive full moon.

“Behold!” she said to me, “this famous terrestrial globe, on which so many passions contend, and which holds within its narrow bounds the thoughts of so many millions of beings, whose vision does not extend beyond it. See, how its apparent size diminishes in proportion as our horizon broadens. We can no longer distinguish Europe from Asia. See Canada and North America. How insignificant it all appears!”

In passing near the Moon I had observed the mountainous tracts of our satellite, its peaks glittering with light, its deep valleys shrouded in shadow, and I would have liked to pause, in order to examine more closely this neighbor planet, but Uranie, disdaining to cast a single glance at it, drew me on with her in rapid flight toward the starry regions.

We continued to ascend. The Earth growing smaller and smaller to our gaze, as we left it beneath us, soon looked like a star, shining by the reflected light of the sun in the black void of immensity. We had turned our course toward the Sun, that shone in the depths of space without lighting it up, and at the same time that we saw the Sun, we saw the stars and planets that his rays did not eclipse, because they did not communicate their light to the invisible ether. The celestial goddess pointed out to me Mercury near to the Sun, Venus shining on the opposite side, the Earth, resembling Venus, both in general appearance and in brilliancy; Mars, whose inland seas and streams I recognized; Jupiter, with his four enormous moons; Saturn, Uranus.

“All these worlds,” she said to me, “are sustained in space by the attraction of the sun, around which they swiftly revolve. They are a harmonious choir revolving around a common center. The Earth is but a floating island, a hamlet in this great solar country, and this solar empire is itself only a province in the depths of infinite starry space.”

Still we ascended. The Sun and his system rapidly disappeared from view; the Earth was now only a point in space; Jupiter itself, that colossal world, diminished in size like Mars and Venus, until it looked scarcely larger than the Earth.

We passed in sight of Saturn, girdled by his gigantic rings, which alone would suffice to prove the immense and inconceivable variety that reigns in the universe — Saturn, a veritable system by himself, with his rings formed of atoms thrown off in a rotation of vertiginous velocity, and with his eight satellites, accompanying him like a celestial cortege!

In proportion as we ascended, our sun diminished in size. Soon he sank to the magnitude of a star, then he lost all majesty, all superiority over the sidereal world, seeming himself neither larger nor more brilliant than a star. I gazed at these starry fields of space in which we continued ascending, and tried to recognize the constellations. But they had begun to change their forms perceptibly, owing to the difference of perspective, resulting from my flight through these regions. I thought I saw our sun now, reduced to the size of a star of the smallest magnitude, join the constellation of the Centaur, while a light — pale, blue and unfamiliar — came from the regions toward which Uranie was carrying me. This brightness in no wise resembled terrestrial light; it was like nothing I had seen and admired in the scenery of the Earth, either in the changeful shades of twilight after a storm, or the formless vapors of the morn, or the reflection cast by the rays of the moon in the calm and silent hours of night on the burnished mirror of the sca. This is perhaps what that strange light most nearly resembled, but by degrees it became more and more blue, not with the reflected blue of heaven, or by the force of contrast, as when electric light is brought into proximity with gas-light; but blue, as if the sun that was its source were blue. What was my astonishment when I perceived that we were, in fact, approaching a sun absolutely blue, looking like a brilliant disk cut out of our most beautiful terrestrial skies, and standing out brightly against a background entirely black, besprinkled with stars!

This sapphire sun was the center of a system of planets which received their light from it. We were soon to pass close by one of these planets. The blue sun grew perceptibly larger, but by a new change no less strange than the former one, the light cast from it on the planet had at times a tinge of green. I looked at the sky again, and perceived a second sun, this time of a beautiful emerald green! I could not believe my eyes.

“We are traversing,” said Uranie to me, “the solar system of Gamma of Andromeda, of which you can as yet perceive but a part, because it is composed in reality, not of these two suns only, but of three: a blue sun, a green sun and a yellow-orange sun. The blue sun, which is the smallest, revolves around the green, and this, with its companion, revolves around the great orange sun, which you are now about to behold.”

And in fact, as she spoke, I saw a third sun appear in the heavens, glowing with this vivid color, its rays mingling with those shed by its two companions, and producing, by the contrast, a singular effect. I recognized, indeed, this curious sidereal system, as I had more than once observed it through the telescope; but I had had no conception of its actual splendor. What intensity of light! What dazzling brightness! What vividness of color was there in this wondrous fountain of azure light, in the green radiance of the second sun, and in the tawny gold brilliance of the third!

But we were now close, as I have said, to one of the worlds belonging to the system of the sapphire sun. Everything on it was blue — the landscape, the water, the plants, the rocks slightly tinged with green on that side where the rays of the second sun fell, and scarcely touched by the rays of the orange sun now rising above the far horizon. As we entered the atmosphere of this world, strains of ravishing sweetness filled the air like a perfume, like music heard in a dream. I

had never before heard anything resembling it. It seemed to come from a distant orchestra of harps and violins, whose tones were sustained and prolonged by the deep notes of the organ. It was an exquisite melody which charmed the ear at once, which did not need to be analyzed in order to be understood, and held the soul captive. I felt as if I could have listened to it forever. I dared not address a word to my guide, so much did I fear to lose a single note. Uranie perceived this. She stretched forth her arm toward a lake that was to be seen upon the planet, and pointed out to me with her finger, a group of winged creatures hovering above its blue waters.

They had not the human form of our earth. They were beings evidently organized to live in air. They seemed made of light. Seen from afar, I had taken them at first for dragon-flies; they had the same slender and graceful form as these, the same large wings, the same vivacity and lightness. But on observing them more nearly, I took note of their size, which was not inferior to ours, and I saw from the expression of their eyes that they were not animals. They resembled dragon-flies in their heads as much as their other members, and like those aerial beings, they had no legs. The enchanting music I had heard was only the sound produced by their wings in flight. There was a very large number of them — several thousands, perhaps.

On the summits of the mountains were to be seen plants, which were neither trees nor flowers, whose fragile stems rose to an enormous height, spreading out at the top into branches that looked like extended arms, bearing large tulip-shaped cups. These plants were endowed with life — at least as much as, if not more so than, our sensitive plant. Like the Desmodie, with its mobile leaves, they revealed their inward impressions by their movements. These groves were veritable plant cities. The inhabitants of this world had

no other dwellings than these thickets, and it was among these fragrant sensitive plants that they reposed when they were not floating in the air.

“This world seems fantastic to you,” said Uranie, “and you ask yourself what can be the thoughts of these beings, what can be their manners, what is their history, what species of art, of literature, of science, can they possess? It would take a long time to answer all the questions you might ask. Let it suffice you to know that their eyes are more far-seeing than our most perfect telescopes; that their nervous systems vibrate at the passage of a comet, and that from the impressions transmitted to them through electric currents they discover facts which you upon the earth will never know. The organs you see under their wings take the place of hands more skillful than yours. Instead of printing, events are with them recorded by direct photographic impressions, and their very words phonetically fixed. For the rest, they occupy themselves only in scientific researches — that is to say, in the study of nature. The three passions which fill up the largest part of life on the earth, the eager desire for wealth, political ambition and love are unknown to them, because they need nothing to sustain life, have no political divisions, nor any other government than a council of administration, and because they are androgynes.”

“Androgynes!” I returned. Then I ventured to add, “Is that better?”

“It is different,” she answered. “It spares the race many serious troubles.”

“It is necessary to detach one’s self entirely,” she continued, “from the sensations and the thoughts of earth, to be able to comprehend the infinite diversity manifested by the different forms of creation. Just as on your planet species have changed from age to age, from the strange

beings of the earliest geological periods to the time of the appearance of man; so that now, even the animal and vegetable species of the earth are composed of the most diverse forms; from man to the coral, from the bird to the fish, from the elephant to the butterfly; thus, but over an extent incomparably more vast, the forces of nature have given birth in the innumerable abodes of the sky, to an infinite diversity of beings and substances. The forms of the beings of each world are the result of the elements peculiar to it, such as the substance of which it is composed, its heat, light, electricity, density and gravity. The forms, the organs, the number of the senses — of which you have but five, and those not very perfect ones — depend upon the conditions of life peculiar to each sphere. Life is terrestrial on the earth, martial on Mars, saturnian on Saturn, neptunian on Neptune — that is to say, adapted to its surroundings, or rather, to be more correct, produced and developed by each world, according to its organic state and in consonance with a primordial law which all nature must obey: the law of Progress.”

While she was speaking, my glance had followed the flight of the aerial beings toward the city of flowers, and I had seen with amazement the plants move, raising or lowering themselves to receive their guests; the green sun had sunk below the horizon and the orange sun ascended higher in the heavens; the landscape was lighted up by a strange splendor, above which floated a moon of enormous size, half orange and half green. Then the melody that filled the atmosphere ceased, and in the midst of the profound silence that ensued, I heard a song chanted by a voice so clear and sweet, that no human voice could bear comparison with it.

“What a wondrous system must it be,” I cried, “of which a world like this, lighted by splendors so marvelous, forms a

part! These then, are the double, triple and multiple stars seen near."

"These stars are resplendent suns!" responded the goddess. "United in the gracious bonds of a mutual attraction, you on the Earth behold them cradled two by two, in the bosom of the skies, always beautiful, always bright, always clear. Suspended in the infinity of space, they mutually sustain without touching each other, as if their union, moral rather than material, were governed by an invisible and superior power, and following harmonious curves, they gravitate in rhythm, the one around the other; celestial pairs come into existence in the spring time of Creation, in the starry fields of space. While suns, simple as yours, shine starry, motionless, tranquil, in the deserts of Immensity, the double and multiple suns seem to animate by their movements, their color and their life, the silent regions of the eternal void; these starry timepieces mark for you the ages and the eras of other universes. But," she added, "let us continue our journey. We are only a few trillions of leagues distant from the Earth."

"A few trillions?"

"Yes. If we could hear at this distance the noises of your planet, its volcanos, its cannonades, its thunders, the vociferations of the mob in times of revolution, or the pious songs of the Churches as they rise toward Heaven, so distant from it are we that, granting these noises could traverse space with the rapidity of light, it would take no less than fifteen millions of years for them to arrive here. We could hear now only what passed on the earth fifteen million years ago.

"Yet, compared with the immensity of the Universe, we are still very near your country. You can still recognize your Sun,

a little star there below. We have not yet emerged from the universe to which, with its system of planets, it belongs.

“This universe is composed of myriads of suns separated the one from the other by trillions of leagues.

“Its extent is so great that a flash of lightning with a velocity of three hundred thousand kilometres a second, would take fifteen million years to traverse it.

“And on all sides, wherever we direct our gaze, are suns; everywhere sources of heat and of life; suns of inexhaustible variety; suns of every degree of brilliancy, of every degree of magnitude, of every age, sustained in the luminous ether of the eternal void, by the mutual attraction of all, and by the movement of each; every individual star, an enormous sun, revolves around itself like a globe of fire. Each has its goal. Your sun moves and carries you with it toward the constellation of Hercules; the sun whose system we have just traversed moves to the south of the Pleiades. Sirius rushes toward Columba, Pollux toward the Milky Way. All these millions, all these myriads of worlds rush through space with a velocity two, three, and four hundred thousand metres a second! Action it is, that sustains the Universe in equilibrium, that gives it its organization, its energy and its life.”

III.

Infinite Variety of Beings — Different Metamorphoses.

WE had long since left the tricolor system behind us in our flight. We passed near a great number of worlds very different from my earthly home. Some of them seemed to me to be entirely covered with water, and peopled by aquatic beings; others peopled solely by plants. We passed near several of them. What unimaginable variety!

On one among them, all the inhabitants seemed to me especially beautiful. Uranie informed me that their organization is altogether different from that of the children of the Earth, and that on those planets the human being perceives the physico-chemical operations which take place in the sustenance of the body. In our earthly organism, for instance, we do not see how the food which is taken assimilates; how the blood, the tissues and the bones are renewed; all these functions are automatically performed without the senses perceiving them. Thus it is that we suffer a thousand ailments whose origin is hidden, and often undiscoverable. Thus the human being feels the operations of the vital forces as we feel a pleasure or a pain. From each molecule of the body, so to speak, proceeds a nerve which transmits to the brain the various impressions it receives. If the terrestrial man were endowed with a similar nervous system, he could, by turning his glance inward, see, by the medium of his nerves, how food is transformed into chyle, this into blood, and blood into flesh, muscles, nerves, etc.; he would behold himself. But we are far from this; the vital centre of our perceptions being embarrassed by the many nerves of the lobes of the brain and the optic thalamus.

On another sphere which we passed during the night, that is to say, by its nocturnal hemisphere, the inhabitants are so formed that they are luminous, that they glow as if some phosphorescent emanation radiated from this strange source of light. A nocturnal reunion composed of a large number of persons, presents a truly fantastic appearance, because the light, as well as the color of the eyes, changes according to the diverse passions by which they are animated. In addition to this, the power of these glances are such that they exercise an influence both electric and magnetic of varying intensity and, in certain cases, fatal, causing the victim on whom they are fixed with sufficient concentration of purpose, to fall dead.

A little further on my celestial guide pointed out to me a world of which the inhabitants enjoy a valuable faculty; the soul has the power to pass into another body without undergoing death, which is often disagreeable and always sad. A savant who has spent his whole life laboring for the instruction of humanity, and who sees his end approach without being able to complete his noble tasks, may change his body for that of a young man, and begin a new life, still more useful than his former one. To effect this transmigration the consent of the youth and magnetic treatment by a competent physician are all that is necessary. One also sees, at times, two beings united by the bonds of a strong and sweet affection, effect a similar change of body after several years of union; the soul of the husband comes to dwell in the body of the wife and vice versa, for the remainder of their existence. The intimate experience of life becomes incomparably more complete for each of them. We also see savants, historians for instance, desirous of living two centuries instead of one, plunge themselves into the fictitious sleep of an artificial hibernation, which suspends animation in them for the half of each year, or even longer. Some succeed in prolonging

life in this way to twice the length of the normal life of a centenarian.

A few seconds later, passing through another system, we encountered another species of beings entirely different from, and incontestably superior, to ours. With the inhabitants of the planet which we now had under our eyes, a world lit by a brilliant hydrogenized sun, it is not necessary for thought to be put into words to make itself understood. How often does it happen to us when some bright or ingenious idea visits our mind, to find it dissipated, vanished, obscured, or altogether changed before we have been able to express it in writing or in speech. The inhabitants of this planet have a sixth sense, which might be called autotelegraphic, by virtue of which, when the thinker is not opposed to it, thought transpires, and may be read upon an organ which very nearly takes the place of our forehead. These silent conversations are often the most profound and the most precious; they are always the most sincere.

We are innocently disposed to believe that the human organization, as it is on the Earth, leaves nothing to be desired. Yet, have we never regretted being obliged to listen against our will, to disagreeable words, to an absurd discourse, an inflated sermon, bad music, slander, or scandal! It is in vain for philosophers to pretend that we can close our ears to such sounds. Unhappily this is not the case. You cannot close your ears as you close your eyes. Here then is a hiatus. I was very much surprised to see a planet where Nature had not forgotten to attend to this detail. As we paused there for an instant Uranie pointed out to me that the ears of these beings closed like eyelids. "Here," she said, "there are fewer angry quarrels than on your planet, but political dissensions are much more bitter, as the contending parties close their ears effectually to the

arguments of the opposite side, in spite of the efforts of the most eloquent lawyers to make them hear.”

On another world, where phosphorus plays an important part, where the atmosphere is always charged with electricity when the temperature is very high, and of which the inhabitants have scarcely found it necessary to devise clothing, certain passions manifest themselves by the illumination of a part of the body. Here takes place, on a large scale, what passes on a small one on our earth, when, on a mild summer night we see the glow-worms burning silently with an amorous flame. It is curious to watch the appearance of these luminous pairs in the evening in the large cities. The color of the phosphorescence differs according to the sex, and its intensity varies according to age and temperament. The sterner sex burns with a red flame, more or less brilliant, and the gentler with a bluish flame, at times pale and mild. Only our glow-worms could form any idea, rudimentary indeed, of the nature of the feelings of these peculiar beings. I could not believe my eyes when we passed through the atmosphere of this planet; but I was still more surprised on arriving at the satellite of this singular world. It was a moon alone in the skies, on which a perpetual twilight reigned. Before us lay a somber valley. From the trees, growing on either side of this valley, were suspended human beings enveloped in shrouds. They had fastened themselves to the branches by the hair, and slept there in the midst of the most profound silence. What I had taken for shrouds was a tissue formed by the prolongation of their bleached and bristly hair. As I showed surprise at such a situation, Uranie told me that this was their manner of disposing of the dead, and awaiting a resurrection. Yes, on this world the inhabitants enjoy the faculty possessed by those insects which have the power of failing asleep in the chrysalis state, to emerge from it winged butterflies. Here there is, as it were, a second stage

of being, and those in the first phase, the lowest and most material, aspire only to die in order that they may come to life again by a glorious metamorphosis. Each year of this world is equal to about two hundred terrestrial years. Its inhabitants pass two-thirds of the year in the lowest condition, the remaining third — the winter — in the chrysalis stage, and in the following spring those who are hanging to the trees feel life insensibly returning to their transformed flesh. They move, awaken, leave their locks hanging to the tree, from which they detach themselves, wonderful winged beings, and fly away into the aerial regions, to live there another Phenician year — that is to say, two hundred of our terrestrial years.

We traversed thus a great number of planetary systems, and it seemed to me that all eternity would not be long enough to enable me fully to enjoy the spectacle of all these creations unknown to the earth; but my guide left me scarcely the time to be conscious of this feeling, and we proceeded to visit new suns and new worlds. We had almost come in contact in our journey with several transparent comets, which passed like a breath from one system to the other, and more than once I felt the desire to pause at wonderful planets, with verdant landscapes, of which the inhabitants would have been new subjects for study. The celestial Muse, however, unwearied, drew me on ever higher, ever farther, until at last we came to what seemed to be the outskirts of the Universe. The suns became more rare, less luminous, paler. The nights grew darker among the stars, and soon we found ourselves in the bosom of a veritable desert, the myriads of stars which constitute the Universe, visible from the earth, having withdrawn from view, reduced to a diminutive milky way, isolated in the infinite void.

“Here we are at last, then,” I cried to myself, “at the uttermost verge of Creation.”

“Behold!” she responded, pointing to the zenith.

IV.

Infinity and Eternity — Time, Space and Life — Celestial Horizons.

WHAT, could I believe my eyes? Another universe was descending toward us! Millions and millions of suns grouped together, a new celestial archipelago, moved in space, opening to our view like a vast cloud of stars, as we ascended. I sought to fathom with my gaze the depths of immensity around us, and everywhere, on all sides, I perceived similar gleams of light, similar clouds of stars.

The new universe, into which we had entered, was composed principally of red, ruby and garnet suns; many of them were actually the color of blood. Our passage here was like a flash of lightning. We passed swiftly from sun to sun, but incessant electrical flashes reached us, like the lights of an Aurora Borealis. What strange habitations were these worlds illuminated solely by red suns! Then, in one of the districts of this universe, we beheld a secondary group, composed of a great number of red and blue stars. Suddenly, an enormous comet, of which the head resembled a colossal mouth, rushed toward us and enveloped us completely. I clung with terror to the side of the goddess, who, for an instant, disappeared from my view in a luminous mist; but we met again in a starless desert, for this second universe had withdrawn from our view like the former one.

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“Creation,” she said to me, “is composed of an infinite number of distinct universes, separated the one from the other by abysses of nothingness.”

“An infinite number?”

“The objection of a mathematician,” she responded.

“Without doubt a number, however large it may be, can never be, actually infinite, because it is always possible to the thought to augment it, two, three, or even a hundred fold. But, remember that the passing moment is only a door through which the future hurries toward the past. Eternity is without end, and the number of universes will also be without end. Behold! still new suns, always and everywhere, new archipelagoes of celestial islands, new universes.”

“It seems to me, oh, Uranie! that we have been for a long time, and with great swiftness, ascending a heaven without bounds.”

“We might ascend thus forever,” she replied: “Never would we reach a definite limit. We might journey into it, to the left, to the right, onward, backward, down, in any direction whatsoever, without ever reaching any frontier.

“Never, never should we reach the end. Knowest thou where we are? Knowest thou what road we have traveled over?

“We are — in the vestibule of the Infinite, as we were upon the Earth. *We have not advanced a single step!*”

* * * * *

An overwhelming emotion had taken possession of my mind.

The last words of Uranie had penetrated to the marrow of my bones, causing a cold shudder to pass over me. “Never should we reach the end! never! never!” I repeated; and I had speech or thought for nothing else. Nevertheless, the magnificence of the spectacle before us again attracted my gaze, and my amazement gave place to enthusiasm.