

THE MYSTERIOUS FORCE

*To Jean Perrin and Emile Borel¹
Their admirer and friend,
J.-H. Rosny Aîné*

Part One

I. The Disease of Light

Georges Meyral's reflection in the looking-glass seemed to be subject to misty zones, which sometimes retracted and sometimes broadened out slightly; it seemed to be less luminous than it should have been.

"That's not right!" the young man complained.

The two electric lamps, on examination, seemed normal, and the looking-glass was wiped clean. The phenomenon persisted. It still persisted when Meyral had replaced the lamps, one after the other.

"Something's happened to the mirror, to the electricity, or to me."

A hand-mirror revealed identical peculiarities; in consequence, the looking-glass was above reproach. To eliminate his own vision from consideration, Georges summoned his chambermaid. That haggard creature, with a tanned face and the eyes of a pirate, examined her own image. At first, she did not notice anything, for she had almost lost any sense of coquetry; then, without having been subject to any suggestion, she declared: "There seem to be stripes, and also some mist."

"My eyes are innocent!" Meyral remarked. "Bring me a candle, Marianne."

Two minutes later, by the light of the candle, the phenomenon was confirmed, aggravated by a thickening of the zones. It was reproduced in various rooms of the house and then on the gas-lit stairway. Thus, neither the electricity, nor the mirror, nor Meyral's eyes could be suspected of any anomaly peculiar to them. It was necessary to revert to more general hypotheses. They flowed. It was logical first to consider a singularity of the light. But what evidence was there that the perturbation did not extend to the whole environment? Where did that environment stop? It might be the house, the street, the neighborhood, the entire city, France, Europe...

Meyral lapsed into an impassioned reverie. He was a man of 35, of the kind that is thin but muscular. At first glance, the eyes distracted attention from the rest of his face: those eyes, the color of beryl, speckled with amber, were vigilant but distracted, and had passed from excessive confidence to anxiety or suspicion. His scarlet mouth advertised a child-like mind; his forehead was drowned by fleecy and curly hair that would not obey the metallic brush.

Meyral was one of those scientists for whom the laboratory is a battlefield. Intoxicated by the world of cells, by the depths of its "substrata," he sought the origins of life in hazardous mixtures, in the bosom of the primitive and the murky evolution of colloids. The anomaly that had just taken him by surprise plunged him into one of those crises of exaltation in which he thought he glimpsed "other planes of existence."

Time was pressing, though. He was due to visit Gérard Langre, his master, whom he admired more than any other man. He finished dressing, and did not forget to take a pocket mirror with him.

Three times he stopped in front of mirrors to contemplate his reflection therein. While he was examining it outside Revelle the tailor's, a cracked-crystal voice called out to him: "Do you think you're handsome, darling?"

¹ Jean Perrin (1870-1942) was a noted physicist, whose accomplishments included a demonstration that "cathode rays" were streams of negatively-charged particles and an explanation of solar energy in terms of hydrogen fusion. Emile Borel (1871-1956) was a mathematician who helped to elaborate Einstein's theory of relativity; Rosny might have met him via his wife, who wrote novels under the name Camille Marbo.

He perceived a young woman whose eyes were both mocking and pathetic.

"It's not me that I'm looking at!" he said, distractedly.

"Oh, right!" she said, laughing. "It's your father?"

"The phenomenon's persistent."

"I believe you! Is it worth the price of a little drink, this phenomenon?"

Meyral started laughing. "I'll buy you a little drink, if you care to look attentively into this mirror and tell me what you see."

She looked at him in alarm. *He's crazy!* Knowing that one has to humor the whims of madmen, she obeyed meekly. "All right—I'm thirsty!"

"Pay careful attention."

She did so, willingly.

"What do you see?"

"My face, of course!"

"Nothing odd?"

The girl opened and closed her eyes several times. "There are little lines of some sort, which aren't usual."

"Well," said Meyral, with a smile, "that's the phenomenon—and here's the drink." He handed her an effigy of Leopold II.

There was some excitement on the terraces—the squawking of many people. At the corner of the Rue Soufflot, policemen were breaking up a fight.

Mankind's in a bad mood!

The young man arrived at Gérard Langre's home just as 9 p.m. was chiming at Saint-Jacques-de-Haut-Pas. The physicist came to open his door himself. He was an excitable and careworn old man whose head was inclined to the right; he had so much exceedingly white hair that he was nicknamed the Lighthouse. "My maid's in bed," he said. She's suffering from a crisis of faith and horrible presentiments."

"Why do you have such a gloomy servant?"

"Gaiety gets on my nerves."

Langre led a disconnected life. His difficulties with the universities had led to a needy youth. Full of genius, endowed with the stubbornness and skill of great experimenters, he was embittered by the sight of being overtaken by the men that his discoveries and publications had inspired. He worked with such rudimentary apparatus and such restricted materials that he only obtained any results by virtue of the miracle of his obstinacy, his vigilance and his professional acumen. A lofty vision made up for the wretchedness of his laboratories.

His worst setback, which ate away at his soul, was the matter of rotary diamagnetism. He had been carrying out the experiments that were to elevate diamagnetism to the rank of guiding principles when he had taken Antonin Laurys into his laboratory. Laurys, an admirable assimilator, was known for three or four minor discoveries of a parasitic order. In collaborative work the young scientist could render immense services, but he lacked the vision that pierced the clouds. Left to himself, he would have carried out tasks of completion or clarification, especially "variations." He charmed Langre by means of his eloquent understanding and eulogies, of which the poor man, worn out by fatigue and overwhelmed by injustice, was in dire need. One morning, gripped by a fervor of confidence, Langre told the story of his miseries and showed him the wretched apparatus with which he was investigating rotatory diamagnetism. He had obtained two results that were both characteristic and abominable.

Contrary to his habit, Laurys did not seem to understand very well. His eulogies missed the point; his admiration was lavished on tangential issues. Three months later, he informed the Académie des Science of an important discovery, which was none other than Langre's discovery, but incontestable, surrounded by the guarantees conferred by experiments carried out with excellent apparatus and choice materials.

Thunderstruck, then feverish, and mad with indignation, Langre had protested vehemently. The other, having made a modest and deferential reply, had distributed anonymous notes that referred to claims anterior to Langre's, and the latter's disagreements with the university. As it diverged, the quarrel became obscured. Gérard came to be seen as a chagrined individual prone to illusion and accustomed to make reckless accusations. By way of defenders he had two or three obscure young

men to whom the major journals were closed, but he lost the greatest discovery of his life as one loses an inheritance. He never got over it.

Having grown old, deprived of honors, possessed of the kind of shaky renown that attracts a few acrimonious rivals and a few solitary enthusiasts, poor, harassed and ill, he roared at seeing Laurys glutted with appointments, plastered with decorations and saturated with a glory that promised to be immortal. The defeated man did, however, have Georges Meyral, and to have such a disciple filled him with pride. “I’m glad you came,” he said, after a pause. “My day had been full of sinister obsessions and awful hypochondria.” He shook Meyral’s hand with both of his own; his eyes were blinking, staring, hollow and lamentable. “I’m so tired and so alone!” he stammered, with a kind of shame. “At times, at dusk, I feel that wind of imbecility of which Baudelaire spoke passing over my brow.”²

Meyral looked at him with concern. “I too haven’t been my normal self,” he replied. “It’s as if I’d drunk too much coffee. My maid seems particularly excitable—she’s talking to herself. To cap it all the crowds seemed rather ill-tempered this evening.” He saw *Le Temps* lying on a table and picked it up. “Excuse me, old friend!”

Unfolding the ample newspaper, he searched through the columns. “Here you are—human agitation is increasing: suicides, madness, murder. It was already detectable yesterday.”

Interested, Gérard leaned over the newspaper. There was a brief pregnant silence. “You’re not speaking lightly,” the old man said. “What do you think?”

“I think something unusual is happening in this part of the planet! Have you looked at yourself in a mirror?”

“In a mirror!” said Langre, surprised. “This morning, perhaps, to comb my hair.”

“You didn’t notice anything?”

“Nothing. I don’t pay much attention to myself, though.”

Meyral picked up one of the two oil-lamps that was lighting the room and carried it to a mirror. “Look.”

Langre studied his reflection with the precise attention of an experimenter. “Damn it!” he muttered. “There are zones...”

“Aren’t there? *There’s something wrong with light*. Since when, I don’t know. It was only just now, when I was dressing to go out, that I noticed it...”

“Have you made any useful observations?”

“I’ve limited myself to verifying the phenomenon—I even checked it out on the way, in front of Revelle’s clothing store.”

The two men meditated, with the vague and almost dazed air of scientists absorbed in conjecture.

“If light is *ill*,” Langre finally said, “we need to know what it’s caught!” He went to a table where a variety of optical equipment was visible: prisms, lenses, plates of glass, quartz, tourmaline and Icelandic spar, Nicol prisms,³ spectrosopes, mirrors and polariscopes.

Langre and Meyral each took a plate of glass, in order to verify whether refracted light confirmed the anomaly presented by reflected light. Nothing was evident at first; it took a few moments for Gérard, and then Georges, to notice a certain nebulosity about the edges of images. They made up piles of plates; the nebulosity became more obvious, the contours of the image becoming delicately iridescent.

“A small anomaly,” Langre uttered. “One has to be looking for it, since the refractory milieu of the eyes don’t alert us to it.”

Meyral stuck a black thread to one of the plates. Having orientated the edges in various ways, he remarked: “A double refraction is perceptible, but the extraordinary index scarcely differs from the ordinary one—and as there’s no trace of an axis, I presume that each ray conforms to Descartes’ law.”⁴

² Actually, what Baudelaire referred to having sensed, in his diary (on January 23, 1862, while slowly dying), was “le vent de l’aile de l’imbecillité” [the wind of the wing of imbecility], but later quoters of the phrase, including Emile Goudeau and Catulle Mendès, often shortened it in the same fashion as Langre.

³ The Nicol prism, invented by William Nicol (1770-1851)—which consists of two precise fractions of a crystal of Icelandic spar, glued together with Canada balsam—was the first device commonly used to polarize light.

⁴ The law known in France as Descartes’ law, popularized by the great philosopher’s *Discourse on Method* (1637) was first discovered in 984 by Ibn Sahl and had been rediscovered at least twice before Descartes’ publication; outside France it is generally known as Snell’s law, after Willebrord Snellius, who had published it

“No axis!” Langre muttered. “That’s absurd, my boy!” He lowered his eyebrows in irritation.

“There’s nothing to permit the assumption of an axis. Whatever orientation I try, the images remain immutable.”

“Then it’s necessary to presume a double refraction in an isotropic milieu? That’s insane.”

“Yes, provisionally, it’s insane,” Meyral agreed.

Gérard put down the pile of glass sheets, bad-temperedly. His eyes, still keen, were reminiscent of a raptor’s. Eventually, having verified the distance of the images several times over with the aid of micrometric projections, he moaned: “That’s crazy! Both rays follow Descartes’ law.”

He reached angrily for a plate of Icelandic spar and placed it on a pamphlet. An immense consternation contracted his features; he raised his hands toward the ceiling. “There are *four* images.”

“Four images!”

They stood there open-mouthed, in a silence that mingled curiosity, bewilderment and anguish.

Gérard was the first to speak. “Our astonishment is stupid! The second experiment is the demonstration of a logical extrapolation. Since the glass yields two images, the spar must necessarily yield four.”

“All the present images must appear in duplicate to us,” Georges noted. “Undoubtedly, the difference in the refractive indexes is too small to register on the retina.”

“There’s also our annoying power of accommodation!” the other complained. So saying, he directed a cluster of parallel rays of light at a flint-glass prism, while Georges intercepted the spectrum on a screen.

“The encroachment is visible. The red overlaps the orange, the yellow intrudes on the green. Everything’s happening as if one were imperfectly superimposing two near-identical spectra.”

Meanwhile, Meyral had moved over to a polarization apparatus; he directed a beam of red light into it.

“There’s no need to ask you the result!” the old man exclaimed. “You haven’t obtained its extinction.”

“That’s correct.”

“Ergo, the light is definitely duplicated over the whole extent of the spectrum—and *it’s not a phenomenon of refraction!*”

“No,” Georges agreed, pensively, “it’s not a phenomenon of refraction. Each ray seems to have an independent existence, refracting and polarizing in almost exactly the same manner as its twin ray. There’s a very slight inequality at the point of departure—which is to say, in the normal indices of refraction—but, thus far, we haven’t observed any other dissimilarity. It’s a disconcerting mystery.”

“It’s a terrifying mystery—an intolerable negation of all our experience, and I can’t even glimpse the shadow of an explanation. All things considered, the problem is this: given a ray of light, let’s suppose that it can duplicate itself without any intervening refraction or reflection, and without undergoing any polarization. We have a complete aberration.”

“Let’s take note of the fact, though,” Meyral suggested, timidly, “that the overall intensity of the light seems to have decreased. Thus, the light is duplicated, but weakened. The duplication, in consequence, could have taken place at the expense of a part of the available luminous energy.”

“And how can that be explained?” exclaimed Gérard, aggressively.

“It can’t,” the young man conceded. “At least it tends to save the principle of conservation.”

“In this instance, I don’t care about the principle of conservation! It’s more of a hindrance. I prefer the idea of an external energetic intervention, responsible for the malady of light. At least I’d have some hope of capturing the perturbatory energy in the semicircle, whereas, if it’s a diminution...”

“Why should a diminution be undetectable? We might find some residue! And a diminution isn’t simply an inversion of an exterior intervention.”

“Bah! Any hypothesis seems puerile. Experimentally, we’ve scarcely brushed the surface of the problem. What’s happening is so significant that I’m ashamed of having quibbled. Let’s get to work!”

“Let’s get to work!” Georges agreed, with an excitement equal to the old man’s.

They were going to the large table in order to resume their experiments when a shrill ringing sound was heard in the corridor.

in 1621. It states that the ratio of the sines of the angle of refraction and the angle of refraction is equal to the ratio of the velocities of light in the two media through which a refracted ray is passing.

“The telephone! At this hour! What primate can have anything to say to me?” Langre headed for the apparatus, with a resentful expression. “Hello? Who’s there?”

The receiver emitted a distressed voice that made the physicist blanch. “It’s me...Sabine. Come quickly. It’s a dangerous attack of neurasthenia. He’s almost insane!”

He did not waste any time demanding explanations. “You have to get out, get a cab and have yourself brought here.”

“That’s impossible. He’s locked me in with the children. You’re the only one who can do anything. He won’t listen to anyone but you...”

“All right—I’m on my way!” Langre dropped the telephone receiver and raced into his laboratory. “My daughter needs my help,” he announced. “That wretch Pierre has gone mad! Wait here for me.”

“I’d rather go with you. You might need help.”

Langre did not accept immediately. As his emotion increased, his anxiety abruptly became intolerable; he was almost dizzy—but it did not last. “Yes, come,” he said. “He regards you as something of a friend. Between the two of us, we’ll calm him down.” Pensively, he added: “He’s not insane, though?”

“He might be—*tonight*.”

While the automobile carried them away, Langre thought about the disastrous marriage that aggravated his melancholia. He had always disapproved of his daughter’s choice, and judged it incomprehensible. Why had she preferred that taciturn hypochondriac to so many others? Pierre Vérannes was graceless, with a headstrong character and a brutal temper, and his intelligence was scarcely above average.

“There’s no accounting for taste!” sighed the father.

It was not a matter of unaccountable taste. Nothing about the straightforward Sabine fitted in with the qualities or the faults of Vérannes. She did not like his looks. In fact, *she had not chosen him*. He was the one who had wanted her, with a savage forcefulness and intolerable stubbornness. In order to win her, he had been able to suppress his rude impatience, tame his frenzies and hide his brutality. He had only displayed his melancholy. Humble and somber, he appeared to be a great human drama, bearing an infinite amount of anxiety, sacrifice, and the appearance of wanting to die that bowls women over.

The brevity of his conversations, and their fearful and furtive appearance, far from working to his disadvantage, had been helpful to him; they permitted an extreme density of emotion, hid the awkwardness, the gaps and the linkage of souls, excused incomplete sentences and gave a subtle or mysterious meaning to the play of his expression. Sabine’s youth and the vicissitudes of her existence also worked in his favor. By virtue of her father’s ravaged life, she knew the story of unjust suffering and the legend of misunderstood greatness only too well. The man’s features, his tone of voice, his gestures, his breathless manner and his ardent pallor of jealousy corresponded strangely to that legend. Sabine had shivered at the thought that she might treat Pierre as society had treated Langre. Her compassionate soul had yielded to the drama.

The illusion was total, for she loved Vérannes. She did not love him as she might have loved a more well-balanced man, better suited to her nature, but she did love him. Social destiny is as restricted as it is complex. Those who are made for one another brush past one another in the street, at the theatre and on social occasions, but, close as they may be, are separated by incommensurable distances—or, rather, separated by subtle isolating factors. In consequence, choices are falsified. An obscure fortune determines them, in which our own will is negligible. Sabine had yielded to Vérannes because the momentary combination of encounters and coincidences had decided it.

Afterwards, she paid the price. Trapped, jealously ill-treated, asphyxiated by anxiety, she lived the corrosive existence of women surrounded by suspicion. Because her husband loved her, she became a little tremulous creature, who was safe neither by day nor by night, neither among others, nor in the petty desert of the hearth, neither during caresses, nor at work. In the vast and intimate worlds alike, there was nothing that was not dangerous. A word or silence, a gesture or something read, a star or the light of a lamp—anything might excite the wild beast. Some days, every minute suggested peace, serenity and trust: she had not left the house; she had not seen anyone; no footstep had sounded in the garden; the red sunset was decaying delightfully into black night...but all the same,

the suspicion was born, like a little flame at the tip of a blade of grass; it increased, it took possession of Pierre's soul, filled him with odious and sinister impacts...

Two children had come along; that had not been able to cure the somber man. Although he was not very perspicacious, outside the things he knew—his microscopes and his electrical coils—Langre eventually realized that his daughter was unhappy. When she saw that he knew, she hid it with less courage. Intermittently, he intervened. Vérannes was afraid of the old man, of whose worth he had a vague idea and whose bitter eloquence fascinated him.