# Honor and Dishonor

On a warm April night in 1910, Marie dropped in at the Borels, who were having an informal dinner with the Perrins. Instead of the severe black dress she had worn since Pierre's death she now wore a fashionable white gown with a single pink rose pinned to her waist. She seemed transformed; the hard scowl replaced by a subtle relaxation. "What happened to her?" Jean Perrin asked Marguerite Borel the next morning.

Although she professed to have no "social life" and her daughter Eve later wrote that almost no one knew her intimately, Marie did have a small coterie of loyal friends consisting mostly of those who understood her work: There were the dedicated André Debierne and Jean Perrin, an expert in cathode rays, the disintegration of radium, and the composition of heat and light. Jean's wife, Henriette, like Marie's sister Bronya, was a calming presence and addressed Marie with the intimate *tu*. Then there were the Borels: Émile, who had been named dean of the École Normale Supérieure, and Mar-

guerite, the daughter of Paul Appell, dean of the School of Sciences at the Sorbonne. Hertha Ayrton, who was a well-known scientist and pioneer in England's women's rights movement, also was a close friend. Although Hertha lived in London, distance did not impede their friendship. Both were outsiders: Marie, Polish; Hertha, Jewish. The author George Eliot (Mary Ann Evans, who chose to write under a male pseudonym) had helped subsidize Hertha's education and had based the character of Mirah, the talented Jewish outcast in *Daniel Deronda*, on her. All of these friends were to be involved in what was soon to be called the "Great Scandal."

What had happened was Paul Langevin. Pierre's former student had long been a dear friend of the Curies and he was Pierre's chosen successor at the EPCI. Five years younger than Marie, he was a tall man with military bearing, penetrating eyes, a severe brush haircut, and a fashionable handlebar mustache. Langevin was both a physicist and a brilliant mathematician. In 1906, Langevin had reached the conclusion that $E = mc^2$ (energy equals mass times the speed of light squared), only to find that a fellow scientist named Einstein had already published this discovery.

Marie Curie wrote to Henriette Perrin that she "greatly appreciated [Langevin's] wonderful intelligence." He helped her prepare her course lectures at the Sorbonne and refined her presentation. She found him a sympathetic friend who was soon asking her for advice on what he termed his "disastrous mistake of a marriage" to Jeanne Desfosses, the daughter of a working-class ceramicist, who he felt held him back from great discoveries through her violent nature and constant demands for money. Langevin wrote that he was drawn to Marie "as to a light . . . and I began to seek from her a little

of the tenderness which I missed at home." Jeanne Desfosses Langevin welcomed Marie into their household, where Marie met the Langevins' four children. In the spring of 1910, Jeanne complained to Marie about Paul's cruelty toward her and Marie chastised him. In return, he showed Marie a half-healed gash where Jeanne had broken a bottle over his head.

Most of what we know of the Curie-Langevin relationship comes from friends' accounts, and most significantly from letters Marie wrote to Paul which a detective in his wife's employ purloined from the desk at the small apartment near the Sorbonne that Langevin had rented. By July of 1910, these letters suggest that Marie and Paul had become lovers. Here was a friend, soul mate, and potential partner in science who might replace Pierre. It would be a second chance for Marie to repeat the best days she had known. With this fervent wish she wrote him,

> It would be so good to gain the freedom to see each other as much as our various occupations permit, to work together, to walk or to travel together, when conditions lend themselves. There are very deep affinities between us which only need a favorable life situation to develop. . . . The instinct which led us to each other was very powerful. . . . What couldn't come out of this feeling? . . . I believe that we could derive everything from it: good work in common, a good solid friendship, courage for life and even beautiful children of love in the most beautiful meaning of the word.

Although she had tolerated her husband's past infidelities, Jeanne Langevin, upon first suspecting his relationship with

the famous Madame Curie, flew into a rage threatening to kill
Marie. Perrin momentarily calmed Jeanne, but she and her
sister waited in a dark street near Marie's apartment. As Marie
walked by, Jeanne accosted her and ordered her to leave
France immediately or die. Afraid to return to her house,
Marie fled to the Perrins. Jean Perrin noted, "This illustrious
woman had been reduced to wandering like a beast being
tracked." Paul Langevin advised Marie that his wife was
entirely capable of murder and advised her to leave France.
She refused. Finally, it was decided that temporarily the two
would no longer see each other. But when Langevin and Curie
left Paris for the International Congress of Radiology and Elec-
tricity, Jeanne Langevin told her sister that the trip was only a
subterfuge to hide their affair. She renewed her threats against
Marie and threatened to expose them. When Marie arrived at
the conference, Rutherford was the first to notice her condi-
tion. He wrote, "Madame Curie looked very worn and tired
and much older than her age. She works much too hard for
her health. Altogether she is a very pathetic figure." Stefan
Meyer, who had developed his own radium standard, was
more cynical and told Rutherford that the very visible attacks
of nerves and exhaustion that caused her to leave committee
meetings only occurred when the discussion displeased her.

After the conference Marie and Paul returned to Paris, and
then she joined her children in l'Arcouëst, on the northern
coast of Brittany, a preferred summer gathering place for sci-
entists and professors (so much so it was nicknamed "Fort
Science"). The Borels and Perrins were in residence. Mar-
guerite Borel had become Marie's close friend and confidante.
One night Marie grabbed Marguerite's hands and poured out
her fear that though she would walk through fire for Paul

Langevin he might yield to Jeanne's pressure, desert science for a more lucrative profession, or sink into despair. "You and I are tough. . . . He is weak." In spite of this, just as she had with Casimir Zorawski, she deluded herself that they would find a way to be together.

Marie avowed her love for Paul and dramatized the fact that she was risking her reputation for his sake and might even commit suicide if things did not work out: "Think of that, my Paul, when you feel too invaded by fear of wronging your children; they will never risk as much as my poor little girls, who could become orphans between one day and the next if we don't arrive at a stable solution." In what can only be interpreted as a fit of jealousy, Marie cautioned Langevin that if he resumed sexual relations with his wife and if she had another child they would both be "judged severely by all those, alas already numerous, who know. If that should happen it would mean a definite separation between us. . . . I can risk my life and my position for you, but I could not accept this dishonor. . . . If your wife understands this, she would use this method right away."

This was followed by several letters to Paul, instructing him, in a mixture of pragmatic cruelty and passion that demonstrated her insensitivity, on how he might rid himself of his wife. "Don't let yourself be touched by a crisis of crying and tears. Think of the saying about the crocodile who cries because he has not eaten his prey, the tears of your wife are of this kind." She pleads with Langevin, "When I know that you are with her, my nights are atrocious. I can't sleep, I manage with great difficulty to sleep two or three hours; I wake up with a sensation of fever and I can't work. Do what you can and be done with it. . . . We can't go on living in our current

state." Marie, who had to be cajoled into marrying the placid Pierre, was now aflame. A letter ended, "My Paul, I embrace you with all my tenderness. . . . I will try to return to work even though it is difficult, when the nervous system is so strongly stirred up."

Langevin, however, seems to have been ambivalent. Once before he had separated from his tempestuous wife only to beg her to return. Langevin did not leave his wife nor did he stop seeing Marie. The usually quiet André Debierne had a loud argument with Paul Langevin, blaming him for Marie's increasing bad health and emotional outbursts. She seemed distracted at work and paid little attention to her daughters.

The situation was made worse by a series of disappointments that struck Marie one after another: At the urging of friends and perhaps to make Langevin proud, she announced her candidacy for a Chair in Physics at the Academy of Sciences, the most powerful scientific body in France. Members read their papers, met for symposia, and gave large grants for scientific study. The other applicants for this chair were weak, save for Édouard Branly, an inventor who was instrumental in helping Marconi develop the wireless telegraph.

For this elite male organization, Marie Curie's action came as a bombshell that resulted in negative comment not only from men but from women who found her a threat to their femininity. "Science is useless to women," wrote the influential writer Julia Daudet, and Madame Marthe Régnier, the famous actress, wrote in *Le Figaro*, "One must not try to make woman the equal of man." The right-wing tabloid newspapers loosed a barrage of criticism, bringing up Marie's Polish origins and antiwar statements. It was a harbinger of what was to come.

On Monday, January 24, 1911, members of the Academy of Sciences gathered for a vote. President Armand Gautier announced that everyone was welcome to enter the chamber except women. On a second ballot Édouard Branly received thirty votes, Marie Curie twenty-eight. Her loss engendered sympathetic letters from many scientists, but the fact remained that Madame Curie, France's most famous scientist and Nobel Prize winner, could not present her own papers at the academy nor did she ever try to do so, writing instead for scientific journals such as *Comptes rendus*.

By the spring of 1911, Marie and Paul, unable to separate, were once again secretly meeting in Langevin's rented Paris apartment, but Marie was worried that Jeanne was having her husband followed and even that his eldest son might be spying on them. It was at Easter that the intimate letters stored in a desk drawer disappeared. A week later Jeanne Langevin's brother-in-law paid a visit to Madame Curie and told her that these letters were now in Madame Langevin's possession and she was prepared to make them public. Paul Langevin, in a rage over the stolen letters, left home for two weeks but returned. On July 26, after another fight with his wife, Paul left again, and Jeanne filed charges of abandonment.

Marie, worn down and frightened, sent Irène and Eve to visit the Dluskis' in Poland. At the end of the summer she joined them, then left for Brussels and the 1911 Solvay Conference. These conferences, which attracted the greatest scientific minds, were underwritten by Ernest Solvay, an affluent Brussels chemist and philanthropist who had developed a new process for manufacturing sodium carbonate. Once again Paul Langevin was there, as were Jean Perrin, Albert Einstein, H. A. Lorentz, Max Planck, and Ernest Rutherford among

*The Solvay Conference, 1911. Marie Curie and twenty-three male scientists. Poincaré on Curie's left, Perrin on her right. Standing: Rutherford behind Curie; Einstein and Langevin, far right.*

others. In a thrilling moment while at the conference, Madame Curie received a telegram from the Nobel committee announcing that she was the sole winner of a second Nobel Prize, this time in chemistry. In the official letter that followed, she was commended for "producing sufficiently pure samples of polonium and radium to establish their atomic weight, facts confirmed by other scientists, and for her feat of producing radium as pure metal." Almost simultaneously a second telegram informed her that Jeanne Langevin had released her letters to the press. Marie left abruptly but not before hastily writing a note to Rutherford saying that she appreciated that he had appointed her to create the radium standard, and was touched by all the kind attention he had shown her during the conference. She

explained that she had hoped to shake his hand before leaving but was ill and couldn't stay.

Marie returned to France and to venomous publicity. The vindictive Boltwood declared, "She is exactly what I always thought she was, a detestable idiot!" Marie Curie's house was surrounded by people who threw stones at her windows. She fled with her children to the Borels. The press printed her explicit instructions to Paul Langevin on how to get rid of his wife and accused her of being a home wrecker, a dissolute woman, a Polish temptress, a Jew.

The right-wing tabloid press of the day had helped bring Marie Curie fame, and put the Nobel Prize, which had been



*How dare Madame Curie try to enter the all-male Academy of Sciences? Prejudice against her was building and would soon explode.*

little noticed in the field of science, on the map. Now not only did the press topple an idol, but in so doing it catered to both factions of a divided public. For half a century, after France's humiliating defeat in the Franco-Prussian War, followed by the brutal extermination of the Paris Commune, there had been political discord in France. The sole issue on which the majority agreed was a desire for revenge against the foreign invasion and the dishonor which France had endured. Anti-Semitism, chauvinism, and xenophobia became the keynotes of the powerful right. Gabriel Lippmann, who refused to condemn Madame Curie, was called "the Jew of color photography," and Jean Perrin, who defended her, was branded "a fanatic Dreyfusard." (In a burst of anti-Semitism in 1894, this same right-wing press had hastened the conviction of the Jewish captain Alfred Dreyfus, falsely accused of being a spy.)

Irène was at school when a friend pointed to a headline about the affair in *L'Oeuvre*. She read the story and burst into tears. The ever-faithful Debierne arrived and took her to the Borels. In the Borels' guest room the frightened Marie awaited her children. Eve arrived and told Marguerite Borel, "Mé is sad, a little sick," and then from what must have been her own desire, "Mé needs cuddling." The stoic Irène stayed close to her adored mother, who huddled in a corner and, in a rare gesture of affection, stroked Irène's hair. The Perrins arrived and volunteered to take Irène to their home. She refused insisting, "I can't leave Mé." Finally she was persuaded to leave. Although all attention was focused on Marie, it was as she had predicted, her daughters too were suffering.

Paul Appell, who with Debierne had delivered Pierre's corpse to Marie, turned on her as did many former friends. He arranged for a group of professors at the Sorbonne to

demand that Madame Curie leave France. When Appell heard that his own daughter had taken Marie to live with her, he called her to his apartment. Marguerite Borel arrived to find her father in a rage. "Why mix in this affair which doesn't concern you?" he demanded. He announced that the next afternoon he was planning to see Madame Curie and demand that she leave the country. He had arranged a chair for her in Poland. "Her situation is impossible in Paris. . . . I can't hold back the sea which is drowning her."

By her own account, Marguerite, who never in her life had dared oppose her father, stood before him trembling. Then she drew herself up and answered, "If you yield to this idiotic nationalistic movement, if you insist that Madame Curie leave France . . . I swear that I will never see you again in my entire life." Appell, who had been putting on his shoes, hurled one across the room. Beneath his anger was the fear that his daughter would be "swept away" by this scandal, but he gave in and agreed to postpone his decision.

Marguerite observed that none of this would be happening if Madame Curie were a man. Indeed no one had asked Paul Langevin to leave the country or condemned him. It was well known that Albert Einstein had sired an illegitimate daughter whom he might have put up for adoption, but in any case she was never seen again. In 1911 every day, barring weekends, an average of thirty-nine declarations of adultery were recorded in Parisian courts. Twenty-four births in every hundred were illegitimate. Marie's sin above all was that she was not just a mistress but an emancipated woman when such women were regarded by both sexes as a threat. With the abortion rate at an all time high, newspapers had formed a coalition to eliminate advertisements for midwives offering

"discreet services." And worse, here were letters that showed a passionate woman: A respectable woman was supposed to endure sex, not relish it. For men the pleasures of sex were to be found outside the marriage bed. The press continued their attack like vultures feeding on carrion. Bronya and Casimir Dluski rushed to Marie's side and Jacques Curie defended her. The whole affair had by now taken on an *opéra bouffe* tone. The right-wing journalist Gustave Téry wrote that Langevin was "a boor and a coward." Langevin challenged him to a duel. Duels were illegal but frequent. After elaborate preparations Téry refused to fire his pistol, saying that he did not wish to deprive France of one of its greatest minds. Langevin too never raised his pistol. "I am not an assassin," he said. That ended that.

Madame Langevin, having succeeded in wounding Marie more than she had hoped, finally signed a separation agreement that did not mention her. Three years thereafter the Langevins reconciled and Paul took another mistress, an anonymous secretary. Several years later, after having an illegitimate child with one of his former students, he asked Marie to find her a position in her laboratory, and she did.

# "She Is Very Obstinate"

Paul Langevin weathered the storm. Marie Curie did not. Shortly after the scandal broke upon this fragile woman, a member of the Nobel Committee wrote her on behalf of the committee asking her to refrain from coming to Sweden to accept her prize. He cited her published love letters and "the ridiculous duel of M. Langevin" and added in a stinging rebuke, "If the Academy had believed the letters . . . might be authentic it would not, in all probability, have given you the Prize. . . ."

This judgment added immensely to her pain, but she wrote back addressing an issue that provokes controversy even now:

> You suggest to me . . . that the Academy of Stockholm, if it had been forewarned, would probably have decided not to give me the Prize, unless I could publicly explain the attacks of which I have been the object. . . . I must therefore act according to my convictions. . . . The action that you advise would appear to be a grave error on my part. In fact the

Prize has been awarded for discovery of Radium and Polonium. I believe that there is no connection between my scientific work and the facts of private life. . . . I cannot accept the idea in principle that the appreciation of the value of scientific work should be influenced by libel and slander concerning private life. I am convinced that this opinion is shared by many people.

A seemingly harder, prouder, and more aggressive Madame Curie attended the Nobel ceremony. She was accompanied by her sister Bronya and fourteen-year-old Irène. King Gustaf bestowed the prize and no one spoke of "personal matters." In Madame Curie's acceptance speech she complimented other scientists who worked in the field of radioactivity but firmly established her own credentials. "The history of the discovery and isolation of this substance furnished proof of my hypothesis according to which radioactivity is an atomic property of matter and can provide a method for finding new elements." Taking full credit for her accomplishments, she reminded the committee that "isolating radium as a pure salt was undertaken by me alone." When she had finished, there could be no doubt of who had made these great contributions to science.

Marie then returned to Paris. Nineteen days later she was rushed to the hospital with what was said to be a kidney ailment. Some doctors diagnosed old lesions pressing on her kidney. Others thought that perhaps she suffered from asymptomatic tuberculosis. What was not said was that she had experienced a total nervous breakdown and had fallen into the deepest, darkest depression of her life, more enduring than all the episodes that had come before. Later she told

her daughter Eve that this time she wanted to kill herself and indeed some of her letters indicate that she planned to commit suicide. She refused to eat and her weight dropped from 123 pounds to 103. From the hospital she was sent by ambulance to be cared for by the Sisters of the Family of Saint Marie, which dealt with both medical and psychiatric ailments. In February she underwent a kidney operation. She was convinced that she was about to die and instructed Debierne and Georges Gouy how to dispose of her precious radium.

While Marie lay in a perpetually darkened bedroom, Ernest Rutherford transformed the entire concept of the atom. In a landmark experiment he aimed alpha particles at a piece of gold foil and observed that a few stray particles bounced back from the foil. This was, in Rutherford's words, "almost as incredible as if you fired a 15-inch shell at a piece of tissue paper and it came back at you." J. J. Thomson's theory, which was the best any scientist had come up with, held that the interior of the atom consisted only of electrons scattered throughout as in a "plum pudding." But if that were true, then the alpha particles traveling at great speed would have moved right through. Rutherford postulated that the atom consisted largely of empty space, but with a dense central core, which he named the "nucleus." When an alpha particle struck the nucleus, it bounced back.

Shortly before her collapse, Marie had decided to leave the house in Sceaux, which had become a tourist attraction, and in her absence her daughters moved to a new apartment on the Île St. Louis in Paris in the care of a Polish governess. The apartment was barely furnished. They did not see their mother again for almost a year, when she visited briefly with them at a house in Brunay which she had rented under the