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the Exchange

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Madame Curie: a biography

Eve Curie. 2001. Madame Curie: a biography. (Translated by Vincent Sheean.) Da Capo Press (reprint edition). xi + 419 p. (ISBN 0-306-810387)

Reviewed by May Huang (MayHuang1@aol.com)

[**Editor's note:** *Science has somehow acquired the public image of being a passionless, purely intellectual pursuit, divorced from the ordinary and extraordinary emotions and situations of "normal" life. Sometimes even scientific communicators buy into this stereotype. But every now and then, we come across a story that reminds us how false this stereotype can be. May Huang's book review provides a wonderful example. Know of any similar stories? Please share them!*—Geoff]

"But love is like ambition: a decree of death cannot kill it." This is the heart of the biography of Marie Curie, in which her daughter, Eve, brings her remarkable mother back to life. Manya Sklodowska, a beautiful woman of extraordinary genius, refused to be shackled by her cruel fate and eventually triumphed over poverty, oppression, discrimination, and loneliness. She became Madame Curie, a successful wife and mother who twice won the Nobel Prize. This book confirms my belief that love can work miracles: Marie's love of family, her love of culture and nature, and her love of science and humanity had transformed the timid student into the great woman Albert Einstein aptly described as "of all celebrated beings, the only one whom fame has not corrupted".

Childhood

In 1867, Manya Sklodovska was born in Warsaw, Poland, the youngest of five children in a loving family. "It was a cruel fate to be a Pole, a Russian subject... everything had been done to enforce the obedience of a Poland that refused to die... to kill the soul of the people". At the age of eight, Manya lost her eldest sister Zosia, and one year later, her mother also died. Little Manya suddenly felt old. She learned that fate was "cruel for the race, cruel for the individual". But she was not willing to let fate dictate the course of her life.

Contents

Youth

At age fifteen, Manya graduated from secondary school with a gold medal for academic achievement and earned a year's vacation in the countryside, where she lived with her uncle. At one of her uncle's parties, her indomitable spirit was clear: she "used up her shoes in dancing in one night". After her time away, she returned to Warsaw, and learned that her older sister, Bronya, dreamed of studying in Paris. Their father, Professor Sklodowski, could not afford to send his daughter. Instead, Manya devised a bold plan: She would brave the scorn caused by the social prejudices of the era and work as a governess to support Bronya's education.

At the tender age of seventeen, Manya left for Szczuki to work for the rich Z family, abandoning her own dream to study in Paris. When the eldest son, Casimir, came home for the holidays, he soon fell in love with Manya and planned to marry her. Manya was willing, but unfortunately, his parents objected. "One does not marry a governess!" Casimir, being of weak character, obeyed his parents and left for Warsaw.

"...her love of culture and nature, and her love of science and humanity had transformed the timid student into the great woman Albert Einstein aptly described as 'of all celebrated beings, the only one whom fame has not corrupted.' "

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Editorial: The Times (and Helvetica) they are a'changing

by Geoff Hart
(geoff-h@mtl.feric.ca)

Most of you already know that STC was hit fairly hard by the dotcom meltdown and economic slowdown of the past couple years. Membership is down significantly, and Head Office has been looking for a means of reducing costs wherever possible. One option they recommended was moving all SIG newsletters to an online format rather than continuing to print and mail the newsletters.

I'm a big fan of printed material, since I already spend far too much time staring at a computer screen, but since STC has the option of imposing decisions upon us and generally doesn't exercise this power, I felt it was only fair to follow their example. Rather than deciding how to proceed based on my feeling that everyone shared my preferences and would refuse to accept an online newsletter, I chose to poll SIG members. The results of the poll surprised me: more than 300 respondents were in favor of distributing the newsletter in PDF format versus only 20 who insisted on a printed version. (Incidentally, that's a response rate of more than 50%, which is an excellent response rate for a poll.)

So it looks like we'll be going online for future issues. At the same time, I don't want to alienate SIG members who aren't comfortable with a purely online solution. Fortunately, Peter Herbst, STC's point man for SIGs, accepted my recommendation that we continue to publish a printed version of the newsletter for those who cannot use or would prefer not to receive an online version of the newsletter. This is one of those rare and pleasant situations in which everyone wins, even though it will mean a bit more work for me each issue, and I hope everyone will be happy with the results.

I plan to post the current and future issues online on our Web site (currently being developed by our Webmaster, Alane) in two formats: a standard HTML page designed to be easily read online, and a downloadable PDF file formatted for print that will also be used to generate printed copies for those who still want them. (Me, for instance.) All SIG members with an e-mail address on file with STC will receive a notification that the newsletter is now available, and can go to the Web site to choose whichever version suits them best. Please let me know if this approach fails to meet your needs so I can look for a solution. Compliments are also welcome!

Please note: If you receive only the e-mail notification despite having requested a printed version, my apologies. I sorted the responses to the poll manually, and it's certainly possible that I missed one or two "print please" responses. I'll be happy to put you on the print mailing list as soon as I receive your request.

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"Madame Curie..." (continued from page 1)

"Unhappy in love, disappointed in her intellectual dream and materially very hard up", Manya thought of suicide, but there was her family to consider. Instead, she swallowed her wounded pride and stayed on as governess, never expressing any bitterness to her family. She sent them only love, advice, and money. Finally, Professor Sklodowski earned a better-paid position that would let him support his children and bring his daughter home again. In 1891, Manya's diligence was rewarded; her father sent her to the Sorbonne in Paris to study science. At the university, she changed her first name to French and became "Marie".

Romance and marriage

Living in a cheap garret, starving on meager diet, and freezing in the bitter winter, Marie's passion for science never wavered. She had ruled out love and marriage in her life, for she had been deeply humiliated in her first romance. She paid no attention to young men, despite their attentions. In fact, her lady companion had to use an umbrella to shield the beautiful Marie from ardent admirers on campus.

Unknowingly, Pierre Curie had been saving himself for Marie, a woman just "made for him". Pierre was a French genius working as a physicist. In his early youth, he had written in his diary that "women of genius are rare". All through the years, he shunned what he considered "insignificant" girls and dedicated body and soul to his scientific research—until 1894, when the miracle happened. At the time, Marie was looking for laboratory space in which to conduct her research in magnetism. A Polish couple introduced her to Pierre Curie in the hope that he could help. Pierre was instantly attracted to this amazing girl—her genius, courage, and nobility. After a few meetings, Pierre took Marie home to meet his parents, who loved and respected this girl in spite of her poverty. Pierre proposed marriage, but Marie was perplexed. What about her plans to go back to Poland? Pierre offered to give up everything to follow her. Instead of going back to Poland, Marie followed her heart, and they were married in 1895, barely one year after they met. "Marie always succeeded in her undertakings. It was thus in her marriage."

Fame

For her doctoral thesis, Marie studied the strange emissions from uranium that had first been reported by Henri Becquerel. She coined the word "radioactivity" to describe this mysterious phenomenon. Pierre followed Marie into her research, and together, they discovered two new radioactive elements: radium and polonium, the latter named after Marie's beloved Poland. In 1902, Marie prepared a sample of pure radium. She would forever remember the night of magic when she sat with Pierre in the dark and watched the luminous tube of radium—*their* radium!

"For her doctoral thesis, Marie studied the strange emissions from uranium that had first been reported by Henri Becquerel. She coined the word 'radioactivity' to describe this mysterious phenomenon."

The Curies believed that their discovery should be shared with the whole world. They did not seek patents so they could amass great wealth; instead, they shared the protocol for the synthesis of radium with other scientists, and even gave them free samples of the precious radium that cost so much time and labor to produce.

In 1903, they received the Nobel Prize in Physics along with Henri Bequerel for their work. Marie was the first woman to win the Nobel Prize, and became instantly famous. But fame had not affected Marie. Fusing "into one single fervor her love for science and her love for a man", Marie continued to work closely together with Pierre.

Marie was also "a wife and mother, most tender". But in 1906, tragedy struck. While crossing the street, Pierre was killed by a horse-drawn carriage. Alone and grief-stricken, Marie took on the responsibility of earning a living so she could continue raising her two children, Irene and Eve.

Marie succeeded Pierre as Professor at the Sorbonne, the first time that a position in

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"Madame Curie..." (continued from page 3)

"This was no small reward: at the time, that much radium was valued at $100 000. Even so, Marie gave the personal gift to her laboratory to help fund further research."

French higher education had been given to a woman. In January 1911, Marie missed being elected to the French Academy of Science by only one vote. The more conservative voices in the Academy led a campaign against her, claiming that "women cannot be part of the Institute of France". But despite this opposition, Sweden awarded the December 1911 Nobel Prize in Chemistry to Marie, who thus became the first person to receive the Nobel Prize twice. In July 1914, France belatedly acknowledged the genius of their adopted citizen and established the "Institute of Radium, Pavilion Curie".

Mission completed

In August 1914, Germany attacked France. During the war, Marie created "radiological cars", nicknamed "little Curies", that would move between hospitals to let surgeons examine wounds by means of radiographs (what we now call x-rays). Wartime radiology carried over into peace, but Marie's mission remained the same: to save lives. On May 20, 1921, President Harding of the United States presented Marie with a gram of radium in recognition of her efforts. This was no small reward: at the time, that much radium was valued at $100 000. Even so, Marie gave the personal gift to her laboratory to help fund further research. On February 7, 1922, the French Academy of Science finally broke with custom to elect Marie to the Academy, and she became the first woman member, in recognition of her discovery of radium and development of a new medical treatment using the substance: Curietherapy.

Tragically, Marie became ill as a result of her long exposure to radiation. On July 4, 1934, her heart gave one last beat, her hand still holding the hand of her daughter Eve. Marie was survived by her two daughters: Irene, who also won the Nobel Prize with her husband Fred Joliot, and Eve, who became an accomplished pianist and author.

Hans Christian Andersen, noted fabulist, once remarked that "life itself is the most wonderful fairy tale". Reading about the life of "Madame Curie" reminded me that life can indeed be a fairy tale of love, beauty, and happiness when we take control of our destiny and strive to overcome adversity. **Ω**

Editorial (continued from page 2)

Speaking of the newsletter, I discovered during the poll that several long-time SIG members have never received copies and weren't even aware that one was being published. If you're one of these people, you probably won't be reading this unless someone passed along a copy. A plea to readers: If you know a member who doesn't seem to be aware of the newsletter, please ask them to ask Head Office to update their contact information. And please direct them to our Web site so they can obtain copies of back issues.

I'll be posting older issues online as time permits, but I've only been editing the newsletter for going on three years. If you have electronic copies of older newsletters, please send them along; I'll try to get them up on the Web site over the next few months. **Ω**

"Occam's 'razor', annunciated by William of Occam (1285–1349), suggests that the simplest explanation for a phenomenon should be preferred. This philosophy has become a basic tenet of science, and the classical scientific method of hypothesis and deduction has encouraged reductionism and simplification as the basis for understanding. However, a literal translation of Occam's razor is that plurality should not be posited without necessity*. In other words, the 'razor' has* two edges*: as simple as possible but as complex as necessary. One of the basic problems in debating stewardship and other environmental issues in forestry arises from oversimplification and overgeneralization. Unless we recognize and understand nature's spatial and temporal diversity, we will be unable to respect nature in our forest management."—J.P. (Hamish) Kimmins,* Emulation of natural forest disturbance: what does this mean?

"Human subtlety will never devise an invention more beautiful, more simple or more direct than does Nature, because in her inventions, nothing is lacking and nothing is superfluous."—Leonardo da Vinci, painter, engineer, musician, and scientist (1452–1519)

Letter to the Editor

Dear Geoff:

Just read your editorial in *the Exchange*. You echo a lot of my sentiments, especially those surrounding the loss of life. No scientific exploration in recorded history has been free of failures that resulted in loss of life. Are we so naive that we believe Columbus returned home with all of his ships and all of his men? Did Magellan? Did Cook? Did the Chinese when they mounted their massive fleet exercise to explore the eastern rim of the Pacific a few centuries before Columbus? Did the Arctic and Antarctic explorers?

Years ago, Werner von Braun told a group in Huntsville, Alabama, that the unending string of NASA successes made him very nervous for two reasons. First, he was sure failure would occur when least expected. Second, he believed scientists learn more from failures than from successes.

The first worry was that failures would occur after we had assumed vehicles were safe for human occupancy. That worry has been realized three times in the space program. The second worry was that he was not pushing the envelope to its logical limit. He cited a Navy rocket program (name I do not remember at the moment) that took place in the late '50s and early '60s in which there was never a successful launch. He claimed the field of rocketry learned more from those failures than they were learning from NASA successes.

"No scientific exploration in recorded history has been free of failures that resulted in loss of life."

As you so rightly stated, we have been trained by the mass media to express our shock over the loss and then go on to whatever the media decree to be the next "big story". For those in the trenches, the problem must be solved and the solution made clear to both the scientific community and the politicians who hold the purse as well as to the public. Failures and losses must be viewed as contributions to the advancement of science. When the mourning is over we must remember the courage of the explorers and the contributions they made.

— Dan Wise, STC Fellow

Job opening: Managing Editor, *Geotimes*

Managing Editor sought for monthly earth science newsmagazine. This position oversees day-to-day editorial and production process. Management and production tasks include oversight of small team of in-house staff writers, including performance evaluation and hiring; keeping the magazine on schedule and on budget; and serving as principal liaison with in-house designer, business/marketing departments, and printer. Editorial tasks include soliciting and editing content from volunteer scientists; assigning stories to in-house staff writers and freelancers; copyediting all content; coordinating print magazine and Web site content; soliciting occasional contract work; writing content on as-needed basis.

The ideal candidate will have strong interest or background in science, preferably earth science, as well as strong written and verbal communications skills with significant experience in editing and science writing or news reporting. Organizational and interpersonal skills are a must—the person should be a thorough editor with the ability to be both diplomatic and firm. The person should be flexible and creative under pressure. Salary is commensurate with experience and background.

Geotimes is a 47-year-old magazine published by the American Geological Institute, a not-for-profit federation of 40 geoscience societies based in Alexandria, Virginia. In the last four years, *Geotimes* has undergone a major design and content change, adding newsstand distribution and significant Web presence. It provides readers with a broad look at the full

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spectrum of the earth sciences, and also addresses key policy issues that affect both earth scientists and the general public, including energy and other resources, natural hazards, climate, and the environment.

The Managing Editor will play a key role in continuing the magazine's growth and improvement. This position is ideal for a creative person who wants to produce a science magazine that fills a unique niche with a strong reputation and loyal readership.

"Most scientific discoveries have ripple effects that the scientist responsible for the discovery never anticipated."

Review of applications will begin on April 21st. The position will remain open until filled. Send cover letter with salary requirements, resume and three work samples to Managing Editor Search, Geotimes, 4220 King Street, Alexandria VA 22302-1502. E-mail to jobs@agiweb.org.

The American Geological Institute is an equal opportunity employer. **Ω**

Science sometimes has unintended consequences

By Geoff Hart (geoff-h@mtl.feric.ca)
[Source: *New Scientist*, www.newscientist.com/news/news.jsp?id=ns99992972]

We're all familiar with the notion of "unintended consequences", since most scientific discoveries have ripple effects that the scientist responsible for the discovery never anticipated. Sometimes the consequences are disastrous, as in the case of the environmental impacts of DDT, memorably chronicled in Rachel Carson's book *Silent Spring*. But sometimes the consequences are quite remarkable and beneficial.

For example, men around the world aren't the only ones benefiting from Viagra. Oddly enough, many species of animals are every bit as excited about this new anti-impotence drug. For

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Style guidelines for submitting journal manuscripts

by Geoff Hart

"Just as no two editors agree on every detail of editorial style and no two writers will take the same approach to describing a concept, so it is that journals tend to have their own idiosyncratic stylistic quirks."

Just as no two editors agree on every detail of editorial style and no two writers will take the same approach to describing a concept, so it is that journals tend to have their own idiosyncratic stylistic quirks. Although a superbly written manuscript about exciting, well-designed research will always be published—eventually—and a journal's copyeditors will help authors to follow house style, following the journal guidelines greatly reduces the barriers to publication. Some journals even explicitly state that they'll return manuscripts unread if they don't meet the journal's formatting and other submission guidelines. Been there, done that.

One tremendous tool offered by the Internet is the ability to find guidelines to authors on a publisher's Web site. For example, check out the guidelines to authors published by Elsevier (http://authors.elsevier.com/) and the National Research Council of Canada (http://www.nrc.ca/cgi-bin/cisti/journals/rp/rp2_jour_e) for guidelines from two major publishers.

Where you can't find a specific journal's style guidelines, it's generally a good idea to follow a good subject-specific style guide. Some of these are also available online, such as the "Uniform requirements for manuscripts submitted to biomedical journals" (http://www.cma.ca/cma/common/displayPage.do?pageId=/staticContent/HTML/N0/l2/publications/mwc/uniform.htm).

Do you have a favorite online style guide? Share it with us! That provides a neat intro to let me formally introduce you to Alane Alchorn (alchorn1@llnl.gov), who has volunteered to begin getting our SIG's Web site up and running. If you come across other useful online references, please contact Alane with the information. **Ω**

Job opening: Senior Medical Writer

A client in Utah is seeking a Senior Medical Writer. Here is more information:

Position criteria

- Assists departments in the preparation and writing of documents required for regulatory submissions
- Writes SOP documents for clinical trials
- Creates patient educational materials in conjunction with medical, regulatory, marketing and sales departments
- Produces clinical study reports in accordance with appropriate guidelines
- Writes summary documents to support NDA and European submissions
- Assists in the overall reviewing, editing and formatting of the second annual update of the Investigator Drug Brochure
- Drafts and coordinates the preparation of manuscripts
- Writes white papers for products
- Generates publication plans for product launch in conjunction with medical, regulatory, marketing and sales departments
- Coordinates with internal and external resources, including discovery, pre-clinical and clinical groups
- Edits all documents for grammar, spelling, usage, consistency in style, format, etc.
- Assists all departments in the preparation of documents when necessary
- Works with the librarian to confirm correct second update reference for a given product

Job qualifications

Bachelor's Degree with 5-10 years experience in technical/medical writing in the pharmaceutical industry required

Contact information

If interested, please send your resume along with salary requirement, relocation considerations (if any) and work authorization to: Khristine A., Senior Recruiter, Work Wonders Staffing LLC (workwonders@cox.net) **Ω**

"Unintended consequences..." (continued from page 6)

the reason behind this unusual consequence, you need only remember that traditional remedies for impotence often required sacrificing animals—many of which now belong to endangered species—to obtain body parts believed to cure impotence or restore desire. For example, various species of seal have been slain simply to collect the animal's penis, with the rest of the animal discarded. Antler moss on Alaskan reindeer is harvested for similar reasons.

Frank von Hippel (University of Alaska) and his brother William (University of New South Wales) recently investigated the trade in three Alaskan species, and were surprised by the results: worldwide demand for certain animal body parts used in impotence cures has dropped by more than 70% since 1998, when Viagra was introduced. Viagra is cheaper to obtain than many animal products (even though prices for these products have fallen by as much as 85% since Viagra's introduction), and is both safer and more effective. Although tough economic times in some regions of the World, particularly Asia, may be partially responsible for this decline, similar declines have been observed in regions with flourishing economies.

"Worldwide demand for certain animal body parts used in impotence cures has dropped by more than 70% since 1998, when Viagra was introduced."

Von Hippel suggests that wildlife conservation agencies may be able to enhance their efforts by providing free supplies of Viagra to locals in regions such as Africa and Asia. An interesting hypothesis to be tested, and one can only wonder about the unintended consequences. **Ω**

Join us on STC's Scientific Communication SIG mailing list!

STC runs an Internet-based e-mail discussion group for the Science SIG. It's a quiet, friendly place to turn for help if you've got questions concerning scientific communication. If you'd like to join, point your Web browser to http://lists.stc.org/cgi-bin/lyris.pl?enter=stcscsig-L

There's no cost to join, and you can expect a very low volume of mail. Of course, the more people join, the more traffic there'll be, so please join. It's a great way to make the SIG work for you.

Two other mailing lists of interest to Science SIG members:

Copyediting-L: discussions of editing in all its various forms. To subscribe, send the message "subscribe copyediting-L Your name" (with no quotes, and with your actual name instead of "Your name") to Listserv@listserv.indiana.edu

Techwr-L: discussions of the tools and travails of the technical writer. To subscribe, send the message "subscribe techwr-L Your name" (with no quotes, and with your actual name instead of "Your name") to Lyris@lists.raycomm.com

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