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特藏

# 寂静<sub>的</sub> Silent春天 Spring

〔美〕蕾切尔·卡逊 著

吴国盛 评点



科学出版社

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## Silent Spring

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科学出版社  
北 京

图字: 01-2007-2154

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### 图书在版编目(CIP)数据

寂静的春天 = Silent Spring: 英文/(美)卡逊(Carson, R.)著; 吴国盛  
评点. —北京: 科学出版社, 2007

(20世纪科普经典特藏)

ISBN 978-7-03-019654-5

I. 寂… II. ①卡… ②吴… III. 环境保护 - 普及读物 - 英文 IV. X-49

中国版本图书馆CIP数据核字(2007)第126541号

责任编辑: 胡升华 郝建华 / 责任校对: 桂伟利

责任印制: 钱玉芬 / 封面设计: 黄华斌

科学出版社 出版

北京东黄城根北街16号

邮政编码: 100717

<http://www.sciencep.com>

双青印刷厂印刷

科学出版社发行 各地新华书店经销

\*

2007年8月第 一 版 开本: B5 (720 × 1000)

2007年8月第一次印刷 印张: 20

印数: 1—5 000 字数: 474 000

定价: 32.00 元

(如有印装质量问题, 我社负责调换〈双青〉)

The sedge is wither'd from the lake,  
And no birds sing.

KEATS

\* \* \*

I am pessimistic about the human race because it is too ingenious for its own good. Our approach to nature is to beat it into submission. We would stand a better chance of survival if we accommodated ourselves to this planet and viewed it appreciatively instead of skeptically and dictatorially.

E. B. WHITE

这里的申明与书末长长的文献来源目录，大概不会引起中国读者的注意，然而，这里反映的是作者一贯立论谨慎的风格——力图做到言之有据、无懈可击。读者从这些细节里还可以感受到当时作者所受到的来自化学工业界的压力——他们在书未出版之前已经扬言要控告她。

## AUTHOR'S NOTE

I HAVE NOT WISHED to burden the text with footnotes but I realize that many of my readers will wish to pursue some of the subjects discussed. I have therefore included a list of my principal sources of information, arranged by chapter and page, in an appendix which will be found at the back of the book.

R. C.

## 序

20 世纪在科学发展史上是一个辉煌的世纪，以物理学和生物学的创新性成果为标志的科学成就，极大地改变了世界的面貌，改变了人类的认知水平、生产方式和生活方式。20 世纪也是科学史上的一个英雄世纪，一大批别具一格的科学大师风云际会，相继登场，使科学的舞台展现出前所未有的绚丽风采。20 世纪发生了两次世界大战，二战催生的原子弹，使社会公众了解了科学的巨大威力，也促使人类认真地审视科学，了解到科学必须要与人类的良知，与人文精神结合在一起，只有合理地利用，才能造福于人类，才能有利于和平，有利于人类社会的可持续发展。进入 20 世纪 80 年代，人类更进一步认识到必须携起手来保护生态，控制环境污染，探索可持续发展的道路。可持续发展理念的形成，是 20 世纪阶级社会发展观进步的一个重大的事件。

回顾 20 世纪科学走过的道路，从突飞猛进的科学创造，到科学与人文伦理的深度撞击，形成与人文精神交融并进的局面，最终在人类文明史上留下了不同寻常的篇章。

20 世纪诞生的科学和思想大师所取得的非凡的科学成就、创造的充足科学和思想养分，孕育了一批优秀的科普作品，为公众提供了丰富的精神食粮。人们可以跟着爱因斯坦、薛定谔、伽莫夫、沃森、温伯格、霍金等等科学大师的生花妙笔去领略科学创造的历程、登攀一个个科学顶峰的征程和科学高峰的神奇景观；可以跟着卡逊在寂静的春天里思考知更鸟的命运；可以跟着萨根去观察宇宙和生命……。今天这些科学大

师和思想大师大部分都已离开了我们，但那些优秀科普作品是他们留给后代的不朽的精神财富。

20 世纪已经过去，21 世纪已经肯定是一个全球化、知识化的世纪，也是科技国际化、网络化的一个时代。可持续发展依然是人类唯一的发展道路，自然科学、社会科学、人文精神将交叉融合，世界的文化环境会发生很大的变化，东西方文化将会在激荡过程中进一步融合升华，创造出具有国际化，又有民族特色的新文化。在未来 15 年，中国要基本完成向一个创新型国家过渡。建立创新体系、创新机制配套的基础是要大幅度提高国民的文化教育水平和科学素质，把我国庞大的人口负担真正转化为无可比拟的创新人力资源。

在中国这样一个大国传播普及科技知识、科学精神是一个宏大的系统工程，需要政府组织倡导和社会各界的积极努力。中国科学院也承担着光荣而艰巨的任务，我们有义务整合全院资源努力把科普工作做大、做好，为国家和社会发挥更大的作用。科学出版社是科普图书出版的一支战略方面军，应该大有作为。《20 世纪科普经典特藏》把原汁原味的经典科普大餐奉献给新时代读者，辅之以中文点评是一个很好的尝试。希望这些经典著作能给读者以启发，开拓读者的科学视野，更希望这些经典著作能起到示范的作用，推进我们自己的原创科普和科学文化作品的创作和出版。

姚育祥  
2006 年 6 月 17 日

## 点 评 者 序

克林顿的副总统戈尔在为卡逊的《寂静的春天》(1994年版)写的序言中说,“作为一位民选政府官员,给《寂静的春天》作序有一种自卑的感觉,因为它是一座丰碑,它为思想的力量比政治家的力量更强大提供了无可辩驳的证据。”今日评点这部巨著,也有一种自卑的感觉:卡逊的文字是如此的细腻,说理是如此的透彻,论证是如此的绵密,以至于任何评点文字都有画蛇添足之感。然而,为了让这部惊世醒世之作能够再一次走向中国读者,为了使它纳入《20世纪科普经典特藏》而不破坏这套丛书的形式格式,我还是勉强完成了评点工作。我愿意在此申明,读者完全可以不必理会我的点评文字,而直面卡逊的原文中包含着的“深切的感受、全面的研究和雄辩的论证”;点评栏的空白处,则可供读者写下自己的读后感想。

《寂静的春天》的中译本曾经于1979年由科学出版社作为科普著作出版,但那个时候,环境污染和环境保护对中国人而言似乎还是一个遥远的事情,因此这本书所应有的绿色冲击力并未显示出来。1997年,我在主编《绿色经典文库》(吉林人民出版社出版)时,将《寂静的春天》(由原译者)重新校订、联系版权,纳入第一批推出。但遗憾的是,10年来,绿色经典本《寂静的春天》前后重印了5次,总印数只有2万册。这个印数显示了,本书在中国所起的启蒙作用并未达到它应该达到的程度,而在1962年的美国,3个月就售出了50万册,在美国社会引起了巨大的轰动。今日中国,环境问题比那时的美国严重得多,但公众的环境意识和环保热情远远没有激发起来。这就是为什么在10年后,我还要大力支持出版这个原文评点本的原因。

读者眼下读到的这个英文版是米夫林公司2002年出版的40周年纪念本,由卡逊传记作家琳达·利尔(Linda Lear)作序(她的卡逊传记作品《自然的见证人》



已译成中文由光明日报出版社 1999 年出版)，著名的哈佛生物学家威尔逊 (E. O. Wilson) 写跋，正文保持不变，连每章开头的插图都与原书初版保持一样。

蕾切尔·卡逊 1907 年 5 月 27 日生于美国宾州位于匹兹堡附近的泉溪镇 (Springdale)，并在这里度过了她的童年时代。她从小热爱文学写作，立志成为一名作家。1925~1929 年在宾州女子学院 (PCW) 学习时对生物学产生了兴趣，1929~1932 年在约翰·霍布金斯大学学习海洋生物学并取得硕士学位。1936 年 8 月，她成为美国渔业局的科学家。1939 年，渔业局与农业生物调查局合并成为美国鱼类与野生生物调查署 (the Fish and Wildlife Service, FWS)，卡逊一直在这个政府部门工作，直到 1952 年主动辞职成为自由作家。1941 年，卡逊出版了自己的第一部著作《海风之下》(Under the Sea-Wind)，但销路一般。1951 年 7 月，她的第二本著作《我们周围的海》(The Sea Around Us) 出版，旋即取得巨大成功，使卡逊一夜成名，也使她有了经济实力从而辞去政府公职，专门从事她所钟爱的写作事业。1958 年，一位朋友的来信引起了她对杀虫剂问题的关注，并开始收集资料，撰写一部环境污染方面的作品。1960 年春天，她被发现患有乳腺癌。此后，她忍受着一系列病痛的折磨，最终完成了《寂静的春天》的写作。1962 年 6 月，该书在著名的知识分子杂志《纽约客》(The New Yorker) 上连载，引起了强烈的反响。当年 9 月，《寂静的春天》正式出版。整个秋季，它一直都在《纽约时报》畅销书排行榜上名列第一。化学工业巨头联合起来攻击卡逊，并扬言起诉她，但她赢得了公众和部分科学家的支持。1963 年 4 月，CBS 电视台播出了题为“蕾切尔·卡逊的《寂静的春天》”的专题节目，对卡逊的思想做了更大范围的传播。同年底，卡逊入选美国艺术与科学学院 (American Academy of Arts and Sciences) 院士。1964 年 4 月 14 日，经过长期放疗的卡逊因冠心病突发于华盛顿郊外的银泉镇 (Silver Spring) 去世，终年 57 岁。1980 年，她被追授美国总统自由勋章。

卡逊在《寂静的春天》一书中以女性作家特有的生动笔触，详尽细致地讲述了以 DDT 为代表的杀虫剂

的广泛使用，给我们的环境所造成的巨大的、难以逆转的危害。正是这个最终指向人类自身的潜在而又深远的威胁，让公众突然意识到环境问题十分严重，从而开启了群众性的现代环境保护运动。不仅如此，卡逊还尖锐的指出了，环境问题的深层根源在于人类对于自然的傲慢和无知，因此，她呼吁人们要重新端正对自然的态度，重新思考人类社会的发展道路问题。

今日中国，一方面是持续的经济增长，另一方面则是环境的持续恶化。环境污染带来的问题早就不是潜在问题而是触目惊心的现实。全世界十大严重污染城市（太原、米兰、北京、乌鲁木齐、墨西哥城、兰州、重庆、济南、石家庄、德黑兰）中，中国占7个。近三分之二的城市空气达不到我们自己制定的（较低的）国家二级标准。河流湖泊全面污染，已经危及日常用水。由于环境污染，癌症患者急剧增多，且有明显低龄化趋势。癌症村如雨后春笋般在中国的大地上涌现，成为与经济起飞奇迹相伴随的另一大奇迹。与如此恶劣的环境恶化相比，中国社会各阶层的环境保护意识都远远没有跟上。多数人希望通过科学和技术的发展来解决这些问题，而没有意识到这些问题恰恰根源于我们现代性的存在方式。环境问题的彻底解决，要求一个从观念、制度到生产生活方式的彻底改变，而第一步，是对问题本身有充分的意识。

45年前出版的这本书对美国人而言或许有些过时，对中国人来说却显得是一篇委婉的时事报告文学。环境是属于全体人民的，但归根结底是属于青年人的。愿青年读者，通过阅读本书优美的英文，不仅提高了英文水平，而且感受到作者苦心孤诣的生命讴歌和未来忧思，从而反省现代人的存在方式，肩负起拯救人类未来的伟大责任。

吴国盛

2007年6月23日

于京郊博雅西园

## Acknowledgments

**I**N A LETTER written in January 1958, Olga Owens Huckins told me of her own bitter experience of a small world made lifeless, and so brought my attention sharply back to a problem with which I had long been concerned. I then realized I must write this book.

During the years since then I have received help and encouragement from so many people that it is not possible to name them all here. Those who have freely shared with me the fruits of many years' experience and study represent a wide variety of government agencies in this and other countries, many universities and research institutions, and many professions. To all of them I express my deepest thanks for time and thought so generously given.

In addition my special gratitude goes to those who took time to read portions of the manuscript and to offer comment and criticism based on their own expert knowledge. Although the final responsibility for the accuracy and validity, of the text is mine, I could not have completed the book without the generous help of these specialists: L. G. Bartholomew, M. D., of the Mayo Clinic, John J. Bieseke of the University of Texas, A. W. A. Brown of the University of Western Ontario, Morton S. Biskind, M. D., of Westport, Connecticut, C. J. Briejèr of the Plant Protection Service in Holland, Clarence Cottam of the Rob and Bessie Welder Wildlife Foundation, George Crile, Jr., M. D., of the Cleveland Clinic, Frank Egler of Norfolk, Connecticut. Malcolm M. Hargraves, M. D., of the Mayo Clinic, W. C. Hueper, M. D., of the National Cancer Institute, C. J. Kerswill of the Fisheries Research Board of Canada, Olaus Murie of the Wilderness Society, A. D. Pickett of the Canada Department of Agriculture, Thomas G. Scott of the Illinois Natural History Survey, Charence Tarzwell of

the Taft Sanitary Engineering Center, and George J. Wallace of Michigan State University.

Every writer of a book based on many diverse facts owes much to the skill and helpfulness of librarians. I owe such a debt to many, but especially to Ida K. Johnston of the Department of the Interior Library and to Thelma Robinson of the Library of the National Institutes of Health.

As my editor, Paul Brooks has given steadfast encouragement over the years and has cheerfully accommodated his plans to postponements and delays. For this, and for his skilled editorial judgment, I am everlastingly grateful.

I have had capable and devoted assistance in the enormous task of library research from Dorothy Algire, Jeanne Davis, and Bette Haney Duff. And I could not possibly have completed the task, under circumstances sometimes difficult, except for the faithful help of my housekeeper, Ida Sprow.

Finally, I must acknowledge our vast indebtedness to a host of people, many of them unknown to me personally, who have nevertheless made the writing of this book seem worthwhile. These are the people who first spoke out against the reckless and irresponsible poisoning of the world that man shares with all other creatures, and who are even now fighting the thousands of small battles that in the end will bring victory for sanity and common sense in our accommodation to the world that surrounds us.

RACHEL CARSON

《寂静的春天》的力量来自千百万民众的支持。

# Introduction

by Linda Lear

## 前言

**H**EADLINES IN THE *New York Times* in July 1962 captured the national sentiment: “*Silent Spring* is now noisy summer.” In the few months between the *New Yorker’s* serialization of *Silent Spring* in June and its publication in book form that September, Rachel Carson’s alarm touched off a national debate on the use of chemical pesticides, the responsibility, of science, and the limits of technological progress. When Carson died barely eighteen months later in the spring of 1964, at the age of fifty-six, she had set in motion a course of events that would result in a ban on the domestic production of DDT and the creation of a grass-roots movement demanding protection of the environment through state and federal regulation. Carson’s writing initiated a transformation in the relationship between humans and the natural world and stirred an awakening of public environmental consciousness.

It is hard to remember the cultural climate that greeted *Silent Spring* and to understand the fury that was launched against its quietly determined author. Carson’s thesis that we were subjecting ourselves to slow poisoning by the misuse of chemical pesticides that polluted the environment may seem like common currency now, but in 1962 *Silent Spring* contained the kernel of social revolution. Carson wrote at a time of new affluence and intense social conformity. The cold war, with its climate of suspicion and intolerance, was at its zenith. The chemical industry, one of the chief beneficiaries of postwar technology, was also one of the chief authors of the nation’s prosperity. DDT enabled the conquest of insect pests in agriculture and of ancient insectborne

环境运动最终指向的是科学的社会责任问题、技术进步的限度问题、人与自然的关系问题。

在一个征服和控制的  
时代，作为征服和  
控制的科学便成了  
时代的真神。

卡逊是女性，卡逊的  
专业生物学在那个  
时代不是强势学科，  
她为大众这个弱势  
群体而不是科学家  
群体写作，这一切使  
《寂静的春天》的出  
版增添了悲壮的色彩。

她之热爱自然来自  
幼年时母亲的教导。

disease just as surely as the atomic bomb destroyed America's military enemies and dramatically altered the balance of power between humans and nature. The public endowed chemists, at work in their starched white coats in remote laboratories, with almost divine wisdom. The results of their labors were gilded with the presumption of beneficence. In postwar America, science was god, and science was male.

Carson was an outsider who had never been part of the scientific establishment, first because she was a woman but also because her chosen field, biology, was held in low esteem in the nuclear age. Her career path was nontraditional; she had no academic affiliation, no institutional voice. She deliberately wrote for the public rather than for a narrow scientific audience. For anyone else, such independence would have been an enormous detriment. But by the time *Silent Spring* was published, Carson's outsider status had become a distinct advantage. As the science establishment would discover, it was impossible to dismiss her.

Rachel Carson first discovered nature in the company of her mother, a devotee of the nature study movement. She wandered the banks of the Allegheny River in the pristine village of Springdale, Pennsylvania, just north of Pittsburgh, observing the wildlife and plants around her and particularly curious about the habits of birds.

Her childhood, though isolated by poverty and family turmoil, was not lonely. She loved to read and displayed an obvious talent for writing, publishing her first story in a children's literary magazine at the age of ten. By the time she entered Pennsylvania College for Women (now Chatham College), she had read widely in the English Romantic tradition and had articulated a personal sense of mission, her "vision splendid." A dynamic female zoology professor expanded her intellectual horizons by urging her to take the daring step of majoring in biology rather than English. In doing so, Carson discovered that

science not only engaged her mind but gave her “something to write about.” She decided to pursue a career in science, aware that in the 1930s there were few opportunities for women.

Scholarships allowed her to study at Woods Hole Biological Laboratory, where she fell in love with the sea, and at Johns Hopkins University, where she was isolated, one of a handful of women in marine biology. She had no mentors and no money to continue in graduate school after completing an M.A. in zoology in 1932. Along the way she worked as a laboratory assistant in the school of public health, where she was lucky enough to receive some training in experimental genetics. As employment opportunities in science dwindled, she began writing articles about the natural history of Chesapeake Bay for the *Baltimore Sun*. Although these were years of financial and emotional struggle, Carson realized that she did not have to choose between science and writing, that she had the talent to do both.

既受过严格的科学训练，又具有非凡的文学写作才能，是卡逊取得成功的重要原因。

From childhood on, Carson was interested in the long history of the earth, in its patterns and rhythms, its ancient seas, its evolving life forms. She was an ecologist—fascinated by intersections and connections but always aware of the whole—before that perspective was accorded scholarly legitimacy. A fossil shell she found while digging in the hills above the Allegheny as a little girl prompted questions about the creatures of the oceans that had once covered the area. At Johns Hopkins, an experiment with changes in the salinity of water in an eel tank prompted her to study the life cycle of those ancient fish that migrate from continental rivers to the Sargasso Sea. The desire to understand the sea from a nonhuman perspective led to her first book, *Under the Sea-Wind*, which featured a common sea bird, the sanderling, whose life cycle, driven by ancestral instincts, the rhythms of the tides, and the search for food, involves an arduous journey from Patagonia to the Arctic Circle. From the outset Carson acknowledged her “kinship with other

《寂静的春天》的作者年幼的时候即已目睹了美丽家园被工业巨头肆无忌惮地破坏，幼小的心灵已经对现代技术文明产生了疑问。

forms of life” and always wrote to impress that relationship on her readers.

Carson was confronted with the problem of environmental pollution at a formative period in her life. During her adolescence the second wave of the industrial revolution was turning the Pittsburgh area into the iron and steel capital of the Western world. The little town of Springdale, sandwiched between two huge coal-fired electric plants, was transformed into a grimy wasteland, its air fouled by chemical emissions, its river polluted by industrial waste. Carson could not wait to escape. She observed that the captains of industry took no notice of the defilement of her hometown and no responsibility for it. The experience made her forever suspicious of promises of “better living through chemistry” and of claims that technology would create a progressively brighter future.

In 1936 Carson landed a job as a part-time writer of radio scripts on ocean life for the federal Bureau of Fisheries in Baltimore. By night she wrote freelance articles for the *Sun* describing the pollution of the oyster beds of the Chesapeake by industrial runoff; she urged changes in oyster seeding and dredging practices and political regulation of the effluents pouring into the bay. She signed her articles “R. L. Carson,” hoping that readers would assume that the writer was male and thus take her science seriously.

A year later Carson became a junior aquatic biologist for the Bureau of Fisheries, one of only two professional women there, and began a slow but steady advance through the ranks of the agency, which became the U.S. Fish and Wildlife Service in 1939. Her literary talents were quickly recognized, and she was assigned to edit other scientists’ field reports, a task she turned into an opportunity to broaden her scientific knowledge, deepen her connection with nature, and observe the making of science policy. By 1949 Carson was editor in chief of all the agency’s publications, writing her own distinguished series on the new U.S. wildlife refuge system and



participating in interagency conferences on the latest developments in science and technology.

Her government responsibilities slowed the pace of her own writing. It took her ten years to synthesize the latest research on oceanography, but her perseverance paid off. She became an overnight literary celebrity when *The Sea Around Us* was first serialized in *The New Yorker* in 1951. The book won many awards, including the National Book Award for nonfiction, and Carson was elected to the American Academy of Arts and Letters. She was lauded not only for her scientific expertise and synthesis of wide-ranging material but also for her lyrical, poetic voice. *The Sea Around Us* and its best-selling successor, *The Edge of the Sea*, made Rachel Carson the foremost science writer in America. She understood that there was a deep need for writers who could report on and interpret the natural world. Readers around the world found comfort in her clear explanations of complex science, her description of the creation of the seas, and her obvious love of the wonders of nature. Hers was a trusted voice in a world riddled by uncertainty.

Whenever she spoke in public, however, she took notice of ominous new trends. "Intoxicated with a sense of his own power," she wrote, "[mankind] seems to be going farther and farther into more experiments for the destruction of himself and his world." Technology, she feared, was moving on a faster trajectory than mankind's sense of moral responsibility. In 1945 she tried to interest *Reader's Digest* in the alarming evidence of environmental damage from the widespread use of the new synthetic chemical DDT and other long-lasting agricultural pesticides. By 1957 Carson believed that these chemicals were potentially harmful to the long-term health of the whole biota. The pollution of the environment by the profligate use of toxic chemicals was the ultimate act of human hubris, a product of ignorance and greed that she felt compelled to bear witness against. She insisted that

《我们周围的海》使  
卡逊获得了巨大的  
声誉，使她跻身于著  
名作家的行列。