Scientists need to respond. The development of climate models that estimate the distance to the waterfall with greater accuracy will contribute considerably to a more constructive debate about how and when we should get out of the water.

BOOKS: PHARMACOLOGY

The Pill in Context

Londa Schiebinger

Hailed as a panacea for the world's burgeoning population woes when it was released some 40 years ago, the contraceptive pill has now been taken by some 200 million women. An estimated 70 million women will take their "pill" today. In *Sexual Chemistry*, Lara Marks, a historian of medicine at London's Imperial College, places the history of the pill in a rich context that considers sexual customs, religious attitudes, and government support for family planning—all of which have influenced the fate of this 1/4-inch-in-diameter cultural artifact. As Marks points out, the pill revolutionized contraception: it could be taken conveniently by mouth, it could be taken at any time of day so as not to disrupt the spontaneity of the sexual act, and it could be taken without the knowledge of the male partner.

Sexual Chemistry
A History of the Contraceptive Pill
by Lara V. Marks
Yale University Press, New Haven, CT, 2001. 384 pp. $29.95, £20. ISBN 0-300-08943-0.

Much has been written about the pill. One fresh aspect of Marks's account is her discussion of how innovations in packaging eased usage. Despite its many advantages, the pill was still fairly complicated to take. A woman had to remember to take one each day, starting and stopping the cycle of pills in relation to her own menstrual cycle. David Wagner, who designed the special "Dialpak" (a circular design that became widely copied and used by the mid-1960s), did so as a result of arguments he had had with his wife about whether she had remembered to take her pill. According to Marks, this pharmaceutical packaging was the first deliberately designed to aid patient memory. The pill was also one of the first prescription drugs, after isoproterenol inhalators, to be marketed with package inserts warning of its health risks, which included thrombosis and severe allergic reactions.

One of Marks's purposes in writing this book is to challenge the notion that the pill was primarily a U.S. innovation. Much like Nelly Oudshoorn's *Beyond the Natural Body* (Routledge, London, 1994), *Sexual Chemistry* focuses on the contributions made by the European sex hormone industry in the 1930s and by scientists who, fleeing fascism, found asylum in the Americas. Marks also wishes to draw attention away from the canonical "fathers" of the pill—Gregory Pincus, Carl Djerassi, and John Rock. She highlights the contributions of Margaret Sanger, feminist advocate of birth control, and Katherine McCormick, the second woman to graduate from the Massachusetts Institute of Technology. Heiress to a magnificent fortune, McCormick provided two million dollars for research and development of female oral contraceptives beginning in the 1950s, when such research was still prohibited by the Comstock laws in many parts of the United States and the pharmaceutical companies were reluctant to enter the field because they feared public controversy and a Catholic backlash.

Pictorial instruction. Posters like this were distributed to teach Malaysian women how to use the pill.

There are, however, other unsung heroes and heroines who do not show up here. Marks endeavors to develop an international framework for understanding the origins of the pill, but she does not discuss some Latin American perspectives on the history. In these accounts, the American organic chemist Russell Marker, while traveling in a remote part of Oaxaca in 1949, "discovered" the yam barbasco (*Dioscorea mexicana*) when he observed his Mexican guide making tea from its root. Barbasco provided a cheap source of the steroidal hormones needed to jump-start the production of a widely marketable contraceptive pill. Its discovery was the key that allowed Marker to break the European monopoly on hormone production; unlike the research findings of the European companies, the Mexicans' traditional knowledge was not protected by patents. According to his own typewritten account (housed in the Pennsylvania State University archives), Marker had gone to Mexico in the 1940s because he had read about cabeza de negro in a botany book. This wild Mexican yam seemed a possible ample source of sapogenins, which offered an alternative to cholesterol as the raw material from which progesterone could be synthesized.

By starting her account in the early 20th century, Marks has also left out the rich history of fertility control practiced by women throughout Latin America. Naturalists traveling in the area from the 16th through the 19th centuries—among them, Maria Sibylla Merian, Sir Hans Sloane, and Alexander von Humboldt—expressed surprise that indigenous and African slave women used both abortifacients and contraceptives. These women successfully employed various roots, flowers, and seeds to control their childbearing. In her story, Marks overlooks the fact that Latin American women may have provided clues to an abundant and cheap source of diosgenin, the sapogenin that was used in the development of the first marketable pill—and did so in an era when progesterone was prohibitively priced at $1000 per gram.

Marks provides much information on the economics of the birth control pill. Not surprisingly, pill use is highest where public assistance or private insurance support is greatest. Although British women have had free contraception since 1974, many U.S. women still bear these costs. That the pill must be purchased on a regular basis goes a long way toward explaining why so many women in developing countries continue to use intrauterine devices and sterilization.

Some people continue to believe that science is "value-free," and that research results are about truth, nature, and knowledge. Marks's *Sexual Chemistry* tells a tale of competition among firms, of political suppression and religious objections, of problems with protocols for human testing, and of controversy over cancer risks—all of which begin to overshadow what we might think of as technical questions about human fertility and its control in the development of the pill. Without McCormick's money, a birth control pill might not have become "one of the most important landmarks" in the 20th century; at the same time, McCormick insisted on a female pill, seeing as essential women's ability to determine their own reproductive destiny. What might become the determining factor allowing men to share in this right and duty in the 21st century?

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