BOOK REVIEW/

AN AFFINITY FOR CHEMISTRY

by Louis Lasagna

The Pill, Pygmy Chimps, and Degas' Horse: The Autobiography of Carl Djerassi, by Carl Djerassi, Basic Books, 1992, 319 pp., illustrated. \$25.00.

It's difficult to think of a scientist more interesting than Carl Djerassi. He has been an ingenious synthetic chemist, a successful business entrepreneur, a published poet and novelist, and founder of a successful artists' colony. His autobiography, which one could have guessed would be both instructive and entertaining, does not disappoint.

On a personal level, the book deals candidly with Djerassi's emotional pain as well as with his success. His parents' divorce, his own marriages and separations, the suicide of his daughter—all are laid out with little held back. (He even recounts his one hallucinogenic experience with mescaline.)

But most scientist readers—or at least those who don't know Djerassi personally—will be drawn to the chapters dealing with the author's adventures in chemical discovery, for which Djerassi received the National Medal of Science and the National Medal of Technology.

Djerassi's scientific love affair with steroids is documented in full. The story of Syntex's successful search for a new and more productive synthesis of cortisone from plant raw material never fails to enchant, perhaps especially because it took place in Mexico, before the company's move to California, where it has been one of the world's premier pharmaceutical companies. The winning of this competition by a Mexican company whose research group boasted of no one over thirty-four years of age was described this way in *Harper's Magazine*: "The new ways of producing cortisone came as the climax to an unrestrained, dramatic race involving a dozen of the largest American drug houses, several leading foreign pharmaceutical manufacturers, three governments, and more research personnel than have worked on any medical problem since penicillin."

In the early 1950s, Mexico was a scientifically lonely place where journals arrived only after long delay. "Long distance telephone conversations between Mexico City and Cambridge, Massachusetts," writes Djerassi, "with static, crackling, and sudden total silences, resembled radiotelephone communication in the Himalayas."

The author will also go down in history as a key figure on the Syntex team that in 1951 accomplished the first synthesis of a steroid oral contraceptive. This was the culmination of a deliberate search for a synthesizable substance that would mimic the biological action of the sex hormone progesterone when administered orally. Progesterone itself might well have become a marketable "nature's contraceptive" were it not so weakly active when taken by mouth.

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The scientific achievement of this goal has been marred by the opposition of certain groups to any form of contraception, by accusations of moral perfidy because the early chemical testing of "The Pill" was undertaken in developing countries, by feminist groups who consider oral contraceptives a sexist approach, and by exaggerated publicity surrounding the Pill's rare thromboembolic complications.

Djerassi has for many years criticized the paucity of research being carried out on new approaches to birth control, and he eloquently addresses this sorry state of affairs in several chapters. He points out that in the late 1960s, 13 major pharmaceutical companies were active in contraceptive research and development. By the early 1980s, only four companies could be considered to have any sort of commitment to the field, and a 1988 survey of research priorities of the international pharmaceutical industry failed to find fertility control research among the top 35 priority topics. Djerassi considers "the single biggest bottleneck . . . [to be] the lack of a satisfactory test [nonhuman] animal . . . for evaluating contraceptive efficiency and safety," and discusses the unfortunate emphasis by the Food and Drug Administration, until 1988, on the use of the beagle, a misleading species for predicting safety problems resulting from the use of the Pill. "What the world needs is a . . . contraceptive supermarket," argues the author, to meet the needs of sexually active people everywhere.

Less well known, but equally fascinating, is the history of Zicon, a company built by Djerassi that sought out (and marketed) new biological approaches to pest control. The story is told in a chapter entitled "How Do You Get a Cockroach to Take the Pill?" Zicon was the first company dedicated solely to developing new approaches to insect control, and the work done at Zicon was innovative and successfully applied. Unfortunately, despite sales that exceeded \$100,000,000 a year, the large Swiss company that acquired Zicon also acquired a large traditional pesticide company in Chicago, and Zicon's days were numbered. Djerassi's National Medal of Technology was garnered as a result of the Zicon work but, as Djerassi wryly puts it, "if the measure of success is an independent corporate existence, we didn't make it. If fleas and cockroaches could gloat, they probably would."

Djerassi's introduction to his autobiography ends: "I want to make a point that is particularly relevant in these days of scientific illiteracy and anti-intellectualism: scientists are not necessarily narrow specialists, communicating in an incomprehensible language and dealing in the cloistered ambience of their laboratories with subjects far removed from everyday concerns. They can be as widely curious, and as self-centeredly imperfect, as scholars and thinkers in any intellectual endeavor and, at the same time, involve themselves with burning social issues."

Read this book.