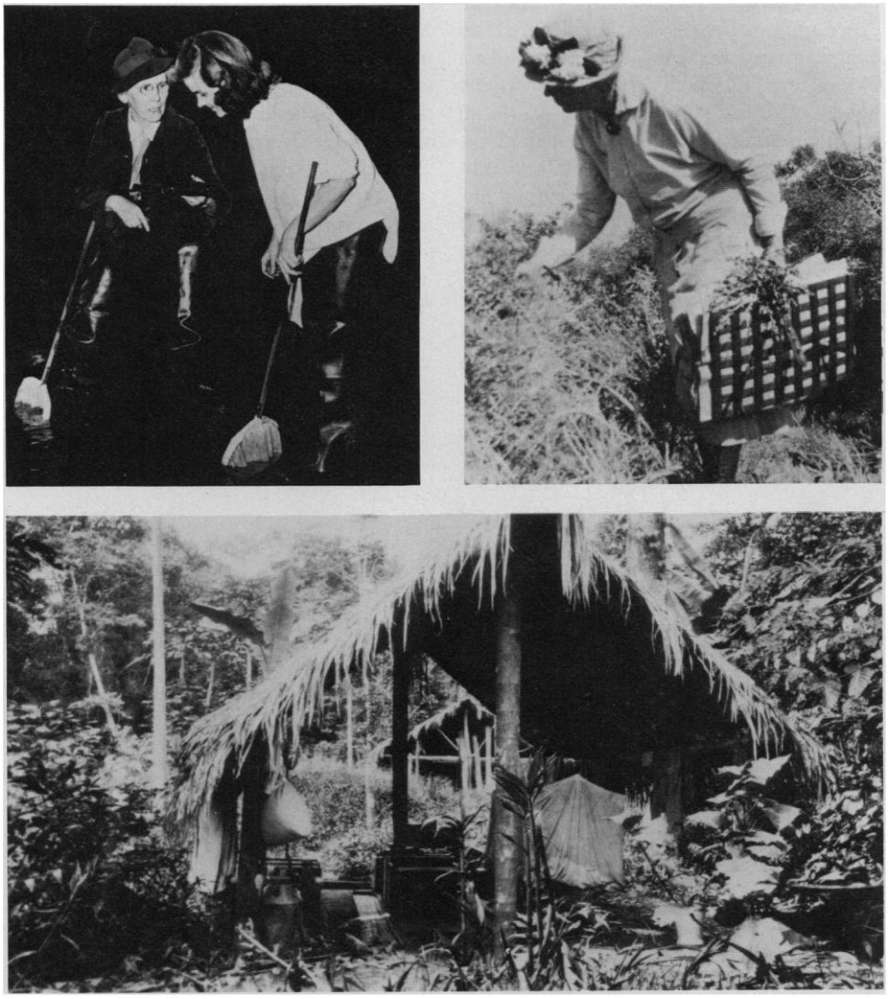
Scientific Adventuresses

Women in the Field. America's Pioneering Women Naturalists. MARCIA MYERS BONTA. Texas A&M University Press, College Station, TX, 1991. xx, 3200 pp., illus. $29.50; paper, $13.95.

The lives and thoughts of American women field naturalists as researched and presented by Marcia Myers Bonta make a readable and thought-provoking book. The book includes 18th-century "pioneers," early "naturalists" such as Mary Treat, an experimenter with carnivorous plants and a correspondent of Darwin's, and botanists, entomologists, ornithologists, and ecologists up to Rachel Carson in the 20th century. Women archeologists and geologists are not included. Some women about whom little is known or whose archives are not open, notably E. Lucy Braun, are briefly mentioned at the beginning of each section. Twenty-five women receive short biographies of 5 to 10 pages. Some of these women, particularly those of the 19th and early 20th centuries, led fascinating independent lives. They explored and collected far from home, often alone, in pursuit of plants and birds and, in many cases, of real science—all this in spite of society's expectations regarding roles for women and the scarcity of professional positions open to them.

Several of the women, both single and married, traveled extensively on their own. Three California women botanists, Kate Brandegee, Alice Eastwood, and the amazing Ynes Mexia, made extensive solo collecting trips. Brandegee often collected alone in the high Sierra. At age 64 in 1908, she wrote to her husband at home, ". . .may be gone two weeks. I have had considerable hardship in botanizing [but] I am unusually strong and well." Brandegee, born in 1844, was widowed early and subsequently earned a medical degree at Berkeley. Patients were few. Her medical botany and further study led in 1883 to a paid position as curator of botany at the California Academy of Sciences. Unlike some of the field naturalists portrayed in this book, she and also her successor as curator, Alice Eastwood, wrote many papers and made important contributions to systematic botany. Eastwood served as botanical guide to both Alfred Russel Wallace and John Muir. She almost singlehandedly saved all the valuable type specimens of plants at the Academy from the fire following the 1906 earthquake—a tale retold by Bonta.

Mexia, after a rather stormy life as widow and businesswoman in Mexico City and a later divorce, began botanical studies at Berkeley in 1921 when over 50. From 1925 she collected plants all over Mexico. In 1928 she went to Alaska, where, by packtrain and backpacking with dogs, she collected 6100 plants in unexplored terrain. Her greatest adventures, however, were in Brazil and Peru, expecially "three thousand miles up the Amazon." No major museum expedition this, just Mexia and her guides. At 68 she was still collecting in the wilds of "magnificent" Mexico, "bedeviled by mosquitoes, ticks and sand flies." Mexia was first and foremost a collector; her tens of thousands of specimens, many of them representing previously undiscovered species, went to Asa Gray, William Setchell, and other professional taxonomists, who named them. Some, like *Eugenia mexiae*, were named for her. Plants and insects, even birds and a Triassic reptile, bear the names of many of these women who first discovered them, though some of these names have since sunk "into the dread valley of synonomy," as entomologist Annie Trumbull Slosson lamented.



Top left, "Ann Haven Morgan with student Eileen B. Hines dredging for stream creatures." **Top right**, "Alice Eastwood collecting 'her' grass, *Festuca eastwoodae*." **Bottom**, "Ynez Mexia's thatched hut in Amazonia, Peru, where she lived for three months." [Photographs from *Women in the Field*; courtesy California Academy of Sciences, University and Jepson Herbaria of the University of California at Berkeley, and Mount Holyoke College Library/Archives]

Slosson, born in 1838, was among the lesser-known 19th-century field naturalists. She resembled others of these women in her disregard both of difficult terrain and conditions and of the usual roles and appearance of women, "tramping over hill and plain in rough . . . costume, butterfly net in hand, poison bottle hanging at my leather belt." Like many other contemporary field women, she wrote both for professional journals and for popular magazines. She also sold her specimens to help subsidize her travels. Collecting was actually a full-time profession in the 19th century, but an entirely male one.

The author herself provides little overall discussion, but her book makes it possible to address several questions of current interest to historians of women in science. For example, how did these women support their collecting and serious field research? A few, notably Annie Alexander, were independently wealthy. Alexander inherited a Hawaiian sugar fortune. With it she both financed and took part in many widespread expeditions, collecting both fossil and extant animals for Berkeley museums. Kate Brandegee, Elizabeth Britton, Margaret Nice, and Anna Comstock, all of whom made important professional contributions, were largely supported by their husbands. Others supported themselves by natural history writing, probably the most potentially lucrative profession open to women in the 19th century; a few made small fortunes from their books. More scraped by. Ornithologist Cordelia Stanwood was too poor to "give away" her scientific bird studies to professional journals but had to sell them "wherever she could get a pittance," that is, to popular bird magazines. Stanwood herself wrote that "scientific bird work is intensely interesting, but unless one has a salaried position, it is not remunerative"—and took to raising chickens. None of the five women ornithologists discussed in the book had a salaried position. All five knew each other, at least by mail, and maintained a supportive network. Some of the single women were college professors, usually at women's colleges, or worked in government laboratories. Several of the later women who did find professional positions, Rachel Carson for example, had to support their mothers and other relatives.

How did their personal lives interact with their work? The great majority of Bonta's "women in the field" were single, unhappily married, or widowed. Even among the several with exceptionally happy and companionable marriages, only Margaret Nice had children. Quite a few, both married and single, found inventive ways to avoid cooking and other domestic work. Another common factor was a late start; they first undertook serious fieldwork in their mid-30s, 40s, or, in Mexia's case, 50s. Many went on collecting in their 80s, and professional botanists Alice Eastwood and Agnes Chase even into their 90s.

Neither scientists nor historians of science will be completely happy with this book. The author is sometimes negative toward science, or at least toward laboratory science. Rachel Carson chose a zoology major, "condemning herself to almost unremitting laboratory courses" and later pursued her master's degree "mostly in the laboratory, writing a painstaking study of "The Development of the Pronephros [in] the catfish." Although Carson was a talented and successful writer, it is clear, even in this account, that she enjoyed and valued her scientific discoveries.

The author is herself a writer, not a scientist, and finds all the activities of these women of interest. Nature writing for both children and adults was a serious pursuit for several; this area deserves further study. Nevertheless, it seems important to differentiate those women whose scientific achievements were truly important. For example, Margaret Nice's work on song sparrow behavior was quoted extensively by David Lack in his own early behavioral studies as essentially the only previous scientific bird study worthy of comparison. Some of the other women in this book are better known as scientists than as field collectors, but it is hard to use the word "professional" for 19th-century naturalists of either sex. With respect to educational credentials, the 25 major characters portrayed in this book ranged from being largely self-taught to having Ph.D.'s in biology. Almost all published, but again the range of types of publications was very wide. Relatively few held paid positions in their fields. A surprising number were elected to professional societies, but only a very few held offices in them.

Bonta has used secondary sources where available, but they are sometimes used quite uncritically, for example in the case of Brandegee, and recent sources are sometimes omitted. Britton, Sherman, and Nice are all treated in some depth in *Uneasy Careers and Intimate Lives: Women in Science, 1789–1979* (P. Abir-Am and D. Outram, Eds., Rutgers University Press, 1987) and Eastman in Michael Smith's *Pacific Visions* (Yale University Press, 1988). Much specific information and many direct quotations are included in the book without references. Only a list of sources, both primary and secondary, is given for each chapter. Yet this is not primarily a book for a popular audience. It contains more serious scholarship gleaned from these women's archives. Particularly where the secondary sources are few, much new information from letters and other archival materials enriches the book and makes it both interesting reading and worthy of inclusion with other recent, more scholarly work on women in science.

"Rachel Carson and Robert W. Hines looking for snapping shrimp in a sponge along the Missouri and Ohio Key, Florida." [From *Women in the Field*; photograph by Rex Gary Schmidt, courtesy U.S. Fish and Wildlife Service]

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