

The Viking in the Wheat Field: A Scientist's Struggle to Preserve the World's Harvest

By Susan Dworkin, 2009, Walker & Company, NY, hard cover, \$26.00, 229 pages, ISBN 0-8027-1740-3

This is a story of passion, the unfolding drama of one scientist's dedication to his work and his personal contributions to feeding the hungry of the world. Danish plant breeder Bent Skovmand drew early encouragement from two major role models in his field, first from plant pathologist E.C. Stakeman at University of Minnesota and later from Norman Borlaug at the International Center for Maize and Wheat Improvement (CIMMYT) in Mexico. From these giants in science, Skovmand developed his own unswerving quest to improving cereal yields that would help farmers, especially in the developing world, and through them to feed people. This was a lifelong dedication that ended too soon with his early death, and the biography serves as a lasting tribute to Skovmand's work. The book is also an impressive model of what an astute and thorough biographer can do in telling a thrilling story of an ambitious and committed scientist.

More than a chronicle of his several professional positions in the international arena of crop improvement, this superb story by Susan Dworkin delves into Skovmand's family history, his early work on the farm, and his studies at University of Minnesota. There is vivid description of his series of unlikely moves from Denmark to the U.S. to Mexico to Turkey, back to Mexico and then to Sweden, as well as an untold number of trips collecting germplasm and working with cereal scientists around the world. The biography is a story of a scientist, but also a description of a personal journey through successes and defeats, the challenges of zealous dedication, and the exacting toll of travel and life style of international research on relationships, families, and health. Having worked in a similar international center (CIAT) for seven years, I can personally attest to the validity of the biographer's observations of people and families.

Ms. Dworkin describes the arrival of Bent Skovmand in CIMMYT as a post-doctoral researcher where Skovmand quickly fell under the influence of Borlaug and colleague Glenn Anderson. He worked on Triticale, one of few human-made cereals, that is a hybrid of wheat and rye. He later moved into other responsibilities with the wheat breeding program. The complex history of wheat improvement provided here gives the reader a rich background within which

we can place the breeder's contributions. His dedication to practical results and open access to the world's germplasm was formed in part by an experience in a Danish folk high school, where he added broader experience to his personal farm background and participated in what could be called the democratization of Danish farming.

Shortly after his divorce and new marriage with a colleague in Mexico, Skovmand moved to Turkey, the center of origin of wheat, to work with the national breeding program and continue to take dangerous collecting missions in the field. A nice historical section on the importance of collection of germplasm and the pioneering work of the Russian explorer Vavilov provides a foundation for Skovmand's return to Mexico to head up the gene bank for wheat and other cereals. Here he innovated with the concept of prebreeding, or crossing and selection of wheat collections to make them more immediately useful to plant breeders around the globe. An exciting barley collecting trip to Tibet describes both the adventure of plant exploration and the overwhelming political influence on science, as the accessions meticulously collected and catalogued in the field somehow disappeared into the Chinese bureaucracy, never to be seen again.

An outstanding trait that was continuously displayed by Bent Skovmand was an ability and willingness to accept new technologies. In the fields of biochemistry, genomics, and information technology, he was quick to seize on the capabilities of colleagues and to encourage them to seek immediate and practical applications of their sometimes theoretical work. In spite of the dedicated work and long hours, the budget for germplasm preservation rapidly declined along with Skovmand's health. Years of long hours, neglect of his own health, and personal habits took a physical toll on this scientist's ability to carry out his work. Due to budget constraints, he was fired from CIMMYT, but immediately began a new career as head of the Nordic Gene Bank with an office in Alnarp, Sweden. This last endeavor was to lead to his active endorsement and hard work to establish the "doomsday bank" on Svalbard, Norway, where the world's genetic treasures could be kept safely for an indefinite time. Along with the work in wheat, this may be his greatest legacy to science and to the future of our species.

While Bent Skovmand's passion and dedication to others through his work with cereals and germplasm is clearly described throughout this well-written book, one cannot ignore the passion of the biographer. In an important epilogue to the Skovmand legend, Susan Dworkin provides editorial comments on the

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importance of germplasm and of planning for the future. Writing as a parent and grandparent, she implores her readers to take the Skovmand story to heart and makes a strong political appeal for us all to continue his work by lobbying for more support to save the world's important genetic legacy. She appeals to the non-farm public to learn more about food and where it comes from, and why we must preserve the biodiversity that has evolved for millennia. This book is a wonderfully well-written biography about an important figure in the development of new crop varieties. It is also a valuable history of cereal breeding, carefully researched and documented, and should be required reading for students in plant breeding as well as other agricultural sciences. The book is a must read for those who consider working in the international research and development arena.

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The Academic Portfolio: A Practical Guide to Documenting Teaching, Research, and Service

By Peter Seldin and J. Elizabeth Miller, 2008, Jossey-Bass, San Francisco, CA, paperback, 384 pages, ISBN: 978-0-470-25699-2

This comprehensive book focuses squarely on academic portfolios, which may prove to be the most innovative and promising faculty evaluation and development technique in years. The authors identify key issues, red flag warnings, and benchmarks for success, describing the what, why, and how of developing academic portfolios. The book includes an extensively tested step-by-step approach to creating portfolios and lists 21 possible portfolio items covering teaching, research/scholarship, and service from which faculty can choose the ones most relevant to them.

The thrust of this book is unique:

- It provides time-tested strategies and proven advice for getting started with portfolios.
- It includes a research-based rubric grounded in input from 200 faculty members and department chairs from across disciplines and institutions.
- It examines specific guiding questions to consider when preparing every subsection of the portfolio.
- It presents 18 portfolio models from 16 different academic disciplines.

Designed for faculty members, department chairs, deans, and members of promotion and tenure committees, all of whom are essential partners in developing successful academic portfolio programs, the book will also be useful to graduate students, especially those planning careers as faculty members.

NACTA Journal Editor

Crop Rotations in Organic Farming: A Planning Manual

Editors Charles Mohler and Sue Ellen Johnson, 2009, Natural Resource, Agriculture, and Engineering Service, NRAES-177, Cooperative Extension, Ithaca, NY, paperback, 156 pages, \$24.00, ISBN 978-1-933395-21-0

While there are numerous books that include research results and recommendations on crop rotations for organic farming and horticultural crop production, there are few that are completely dedicated to the practical details of rotation design. In *Crop Rotations in Organic Farming*, editors Charles Mohler at Cornell and Sue Ellen Johnson from the New England Small Farm Institute bring university research and farmer experience together into a practical volume that will prove useful to students and farmers alike.

Based on a three-day intensive retreat with 12 experienced organic farmers, two of the chapters describe how rotations contribute to soil health, pest management, soil tilth, and robust diversity in the soil microbial community. These enhancements through rotation can lead to reduced production costs, diversity in the field environment as well as the product mix, and both biological and economic resilience. The farmers also provided details on their specific rotations with four- and five-year sequences of vegetable crops. There are two examples of three- and five-year rotations of field crops. All of these are proven models that have given good results in the field.

One useful component of the book that emerged from the retreat was a series of figures and charts that describe the sequence of decision making on the farm, starting with the goals of the farmer and family and moving through logical steps of assessing available labor and facilities, plus exploring markets, toward the sequencing of crops and decisions on how to bring the pieces together. The farmers emphasize the importance of scouting out markets for organic vegetables and grains before planning the field implementation steps, since it is essential to have a good handle on the marketing and economic dimensions before making needed investments in organic rotations.

In a key chapter on the important processes in crop rotation, several researchers explore the details and mechanisms of how and why rotations work well in the field. These include the restorative power of grass and legume sod crops and the all-valuable cover crops that can be planted between cash crops. Ways that rotations of non-similar species interrupt weed, insect, and pathogen reproductive cycles are described, along with emphasis on sequences of legumes with cereals, summer with winter crops, and perennials with annuals. Although there is a science foundation to the chapter in each section, the lan-

guage is accessible and explanations clear for those with minimal science background.

A number of specific examples of rotations and how to plan them for the long term provide practical guidance to a person with limited experience in organic farming and horticulture. Examples of work tables for planning what species to include, what areas of each to plant, planting and harvest dates make this a useful “cookbook” with several “menus” for how to proceed with the all-important preparations for a profitable and environmentally sound organic system.

Special attention is given to the conversion process, a three-year period in the U.S. to move from conventional to organic production. New to many readers will be the chapter on different types of intercropping, where two or more species can overlap in their growth cycles or be planted together in the same field. The combinations of crops that are most compatible are listed in a table. Of particular value to farmers and students of agriculture in the Northeast

U.S. are the appendix tables of crop characteristics, problems that can occur with some crop sequences as well as rotations that promote success, sources of inoculums for common pathogens, crop pathogens that are most frequently found, characteristics of common weeds in this region, and a useful list of references.

For researchers seeking a technical treatment of any of these characteristics and mechanisms of rotations, there is much greater depth in the primary literature. For the student or farmer who wants a single source of practical information on how and why rotations should be developed, this is an ideal resource to have on the shelf. The book is practical, easily understood, and based on solid research as well as farmer experience. It can be highly recommended for an introductory course in agronomy, and especially for the study of organic farming.

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