

Preface

Publication of a book dealing only with a plant without any direct commercial interest is a task requiring some additional explanation. Given that *Beta maritima* is believed to be the common ancestor of all cultivated beets, the collection in a single publication of the countless references concerning the species is useful for biologists, agronomists, and researchers who have the task of preserving, studying, and utilizing the wild gene pool. Indeed, *B. maritima* is necessary to ensure a sustainable future for the beet crops. This very important reason is the easiest but not fully satisfactory to explain a book dedicated to any single plant species. Among other reasons, increasing attention must be paid to wild germplasm for useful traits. Indeed, genetic resistances are a crucial argument, due to the urgent need to minimize both production costs and the use of chemicals especially for sugar beet. The crop is considered among the top ten of the world in economic importance, growing on about 5.2 Mha in 38 countries, and supplying around 20% of the 167 Mt sugar produced annually, with sugar cane (*Saccharum officinarum* L.) supplying most of the remainder.

In compiling the book, particular attention was paid to the history of the use, recognition, and knowledge of *B. maritima*. This was done because little has been collectively recorded and also for the reason that science evolves on the foundations of the past. This interpretation of the flow, distillation, and accumulation of knowledge that lead forward is another task of the book. The information was collected from literature dealing in medical and food plants in general, and, to a lesser extent, with cultivated beets. This part required reading publications written in different languages over almost two millennia. The search allowed information to be found that was mostly unknown even to insiders. This knowledge should be useful for people exclusively interested in beet crops and biotechnology.

Recently, scientific papers related to *B. maritima* have been written, based on the developments and applications of molecular biology. Several doctoral theses concerning particular aspects of the species have been written as well. In fact, sea beet germplasm currently is used as a model for gene flow experiments, owing to the frequent coexistence of different and interfertile genotypes belonging to the genus *Beta*. Being a littoral species distributed in populations more extended in length than in width, *B. maritima* fits very well to research concerning genetics of populations,

natural breeding systems, colonization, speciation, etc. In these fields of research, *B. maritima* is surely one of the more studied plants. Modern breeding techniques have moved largely to the greenhouse and laboratory. This movement has resulted in researchers having less and less contact with their crop and its background. A further task of the book is to try to provide them an updated, comprehensive summary on everything that involves the species.

The future of *B. maritima* germplasm is covered in detail. DNA of sea beet has been studied, and this line of research is developing very rapidly. Recent papers have been briefly summarized; the reader can find a comprehensive list of references and additional information sources at the end of the book. Listed are the researchers and organizations presently involved in *B. maritima*. Useful Web sites are listed as well.

Writing of this book would not have been possible, or at least the documentation would have been less, without the opportunity to read on-line part of the literature. Old, often fragile books, surviving in few specimens or conserved in libraries on the other side of the world, were easily examined in PDF format and without copyright infringement. Through the Internet, these scanned books have reached one of the goals always advocated by their respective editors, namely to reach the greatest number of readers possible. Books, journals, proceedings, reports, etc. coming out from their shelves, perhaps after years of hibernation, are acquiring a second and much more dynamic life, along with a potential diffusion that they never had. Something similar began with the invention of printing. The traditional system of bibliographic research has retained its importance not only for the large amount of not digitized books (and therefore named “analogic” by some), but also for old collections of scientific journals no longer in print, such as the “Österreichische-Ungarische Zeitung für Zuckerindustrie und Landwirtschaft,” where important articles on sea beet were published at the end of 1800s. Part of this rare literature was found in the library of the former “Stazione Sperimentale di Bieticoltura” (now CRA—Centro per le Colture Industriali) at Rome, Italy. Notwithstanding the large quantity of references, the authors apologize to the reader and research community for possible omissions.

Rome, Italy
Fort Collins, CO, USA
Salinas, CA, USA

Enrico Biancardi
Leonard W. Panella
Robert T. Lewellen

Beta maritima

The Origin of Beets

Biancardi, E.; Panella, L.W.; Lewellen, R.T.

2012, XVIII, 294 p., Hardcover

ISBN: 978-1-4614-0841-3