

## Preface

In October 2001, the Institute of Plant Genetics and Crop Plant Research (IPK) in Gatersleben, Germany, organised an international scientific symposium commemorating the centenary of RUDOLF MANSFELD, who was born on January 17, 1901. The symposium, entitled “Rudolf Mansfeld and Plant Genetic Resources”, and dedicated to his life’s work and scientific legacy was co-organised by the Genetic Resources Section of the Gesellschaft für Pflanzenzüchtung (GPZ, Society for Plant Breeding), and the Gemeinschaft zur Förderung der Kulturpflanzenforschung in Gatersleben e.V. (Society for the Advancement of Cultivated Plant Research).

Professor RUDOLF MANSFELD worked in Gatersleben between 1946 and 1960, and was the former head of the Department of “Systematik und Sortiment” (Systematics and World Collection of Cultivated Plants) of the former Institute of Cultivated Plant Research. He was a plant taxonomist from the famous Berlin school of ADOLF ENGLER, and he developed principles for the classification of cultivated plants. With this pioneering work, and with his “Provisional list of agricultural and horticultural species of cultivated plants” (MANSFELD 1959), he laid the foundations for many of IPK’s current research activities. In 2001, the third edition of this inventory and the first one in English, with information on 6,100 plant species, was published as “Mansfeld’s Encyclopedia” in six volumes (HANELT and INSTITUTE OF PLANT GENETICS AND CROP PLANT RESEARCH 2001), and the “Mansfeld Database”, an Internet database developed from the Encyclopedia, was released to the public (<http://mansfeld.ipk-gatersleben.de/mansfeld/>). MANSFELD also created the scientific basis for the establishment and preservation of extensive collections of cultivated plants, referred to as genebanks today. As a complement to the living (primarily seed) collections, he created reference collections of herbarium specimens, seed and spike samples, which are indispensable today for documentation and comparison purposes as well as for identity checks of the genebank material (e.g., after multiple regeneration cycles) and for scientific investigations. During the last years of his life, he started to evaluate the collections in cooperation with other research institutions and breeders, mainly with respect to resistance characteristics aligned to breeders’ interests. This evaluation process was continued later by his successors on a large scale. For more information about RUDOLF MANSFELD’s scientific work, see also the contributions by P. HANELT and K. HAMMER here, and the list of MANSFELD’s publications (DANERT 1962), which can also be found on the MANSFELD website.

The commemorative symposium took place in Gatersleben on 8 and 9 October 2001, and in English. The programme included 22 invited lectures and 31 poster presentations. Among the 85 participants, 57 came from Germany (including 17 from IPK), 20 from ten European countries, as well as eight from non-European countries, among them scholarship holders of the long-term training course on plant genetic resources organised at IPK by the German Foundation for International Development (DSE).

The Symposium was structured in five sections:

### **Welcome and introduction**

A. GRANER, head of the Genebank Department, welcomed the participants and outlined the present structure of this Department and its fields of work. P. HANELT (Gatersleben) gave personal recollections of MANSFELD, as a highly-esteemed, constructively-critical scientist, but also a modest and humorous person who liked personal conversation. K. HAMMER (Witzenhausen, Germany) highlighted MANSFELD's characteristic contributions to research into cultivated plants, e.g., the evaluation of the collections documented in a series of 29 publications on resistance studies of the Gatersleben barley and wheat collections, which was aimed at supporting plant breeding. The influence of MANSFELD in shaping plant genetic resources research was illustrated by presentations from four speakers. A contribution from J. HAWKES (Birmingham, UK, read out by R.N. LESTER) recalled memories and personal encounters with N.I. VAVILOV and O. FRANKEL; K. PISTRICK (Gatersleben) reported on the present "Mansfeld's Encyclopedia" from a personal perspective, and H. KNÜPFER outlined the national and international context of the "Mansfeld Database". J. ENGELS (IPGRI, Rome, Italy) concluded this section with the presentation of a "Compendium on Plant Genetic Resources" planned by the International Plant Genetic Resources Institute.

### **Taxonomy of cultivated plants**

J. OCHSMANN (Gatersleben) explained how the "International Code of Botanical Nomenclature" is necessarily more or less rigid and obligatory for wild species and higher taxa, while taxonomy of cultivated plants is not only expected to meet scientific hierarchical and evolutionary principles, but also to be "user-friendly" for non-taxonomists growing domesticated cultivars, and it should take more account of genetics, ethnology and geography. The present "International Code of Nomenclature for Cultivated Plants" is not always appropriate for classifying germplasm collections. Theoretical and practical problems resulting from this were discussed by C. JEFFREY and T. SMEKALOVA (both St. Petersburg, Russia), exemplified by cases from the Compositae, Cucurbitaceae (JEFFREY) and Leguminosae (SMEKALOVA). An interesting picture of the obviously multiple domestication centres of *Phaseolus vulgaris* in Central and South America was sketched by B. PICKERSGILL (Reading, U.K.) on the basis of the geographical distribution of DNA markers.

### **Ethnobotany of plant genetic resources**

This section was devoted to the co-evolution of people and plants. A. SZABÓ T. (Veszprém, Hungary) pursued the development of cultivated plants in connection with the migration to southeastern Europe of Magyar peoples from East and Middle

Asia. M. CHAUVET (Montpellier, France) gave an introduction to his “Inventory of Food Plants in France”, a book planned to describe about 770 plant species with regard to their botany, history and use. W. PODYMA (Radzików, Poland) reported on exploration and collection of landraces in the Carpathians in southeast Poland, where up to two-thirds of the formerly existing diversity has been lost in this region due to economic changes between 1978 and 1995. Growing interest in biodiversity and consciousness of cultural identity were illustrated by TH. GLADIS (Witzenhausen/Bonn, Germany), who showed the wealth of cultivars of crop species grown in small gardens around Bonn by immigrants from the Ukraine, Turkey and elsewhere.

### **Diversity of cultivated plants induced by cultivation and utilisation**

D. ZOHARY (Jerusalem, Israel) presented examples of the consequences of selection on the same species for different plant uses, such as seed vs. vegetative organs, or fruits vs. roots, which lead to very complex domestication syndromes. R. VON BOTHMER (Alnarp, Sweden) demonstrated similar effects in barley, and E. POTOKINA (Gatersleben) for genebank collections of *Vicia sativa*. Based on the example of African vegetable *Solanum* species, R.N. LESTER (Birmingham, UK) explained the amazing diversity of forms, which have evolved among the domesticated types during only a few thousand years, by the loss of gene functions from the wild ancestors.

### **Other topics**

In literature and paintings of the Middle Ages, allusions to the gardens of ordinary people and their plants are very rare; this is because the common, everyday things were just not worth mentioning, as A.C. ZEVEN (Wageningen, The Netherlands) explained on the basis of contemporary paintings. Only the plant breeders of modern times have dedicated themselves purposefully to this subject. L. FRESE (Braunschweig, Germany) reported on the utilisation of the tertiary genepool in beet breeding, followed by H. SCHULZ (Quedlinburg, Germany) on the use of bioactive substances in foods, cosmetics and pharmaceutical products. A. GRANER (Gatersleben) explained the use of molecular-genetic methods for the utilisation of plant genetic resources in breeding.

The conference was concluded by H. BOINTNER (Göllersdorf, Austria), the winner of the “Rudolf Mansfeld Award” for the best master’s thesis in the area of cultivated plant research, lecturing on “Breeding progress in spring barley, with special consideration of yield components”.

Of the 31 poster presentations, 28 are represented in these proceedings by at least their abstracts, in alphabetical order of their first authors. Likewise, 21 of the 23 lectures are reprinted, mostly as full papers, grouped in sections as in the programme of the symposium.

H. KNÜPFER (Gatersleben, chairman), A. GRANER (Gatersleben), K. HAMMER (Witzenhausen), J. OCHSMANN (Gatersleben) and G. RÖBBELEN (GPZ, Göttingen) formed the scientific preparation committee. In addition, the local organising committee was complemented by N. BIERMANN, with technical support by Mrs G. SCHÜTZE (both Gatersleben).

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H. KNÜPFER (Gatersleben), G. RÖBBELEN (Göttingen), J. OCHSMANN (Gatersleben)

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