

**BOOKREVIEWS**

**B. Jonsell (ed.): FLORA NORDICA. GENERAL VOLUME;** *The Bergius Foundation The Royal Swedish Academy of Sciences, Stockholm, 2004, 9 + 274 pp. Price SEK 320.-, ISBN 91-7190-042-X*

Traditional floras are often divided into a brief general part and a detailed taxonomic or floristic part. The book under review may be seen as a consolidated introduction to the taxonomic volumes of which two have already been published (see the review of the second volume in *Folia Geobotanica* 38/3 2003, p. 352). The information provided in this book, however, is much more comprehensive than is usual in other floras of this kind. Therefore, it will certainly serve as a useful handbook not only for botanists, but also for other biologists, environmentalists and those who are interested in the northern nature. Both the title and graphics of the volume indicate that it is a part of the Flora Nordica series. The lack of a number indicates a certain independence that the other volumes do not have.

The volume contains six thematic units. All of them of course focus on the northern countries: Denmark, Finland, Iceland, Norway, Sweden, Faroe Islands and the Arctic Islands. The first unit describes the history of science of the Nordic flora from the first published works, followed by the period of Linnaeus (to whom a separate chapter is devoted) until the present days. The chapter on the history of botanical studies is focused on the published floras, mapping activities, taxonomy studies and plant geography within the studied area. There is an extensive bibliography of different sources such as floras, checklists, atlases and herbaria sorted by territories (Standard Literature).

The second unit devoted to Nordic environment and vegetation contains information on climate, geology and vegetation of important ecosystems of the north. The last part within this second unit (Regionality) stresses peculiarities of the different vegetation zones within different countries. The vegetation is described sufficiently through an annotated list of species. However, the names of plant communities as known from the Central-European phytosociological literature are missing.

Editors did not omit the effect of human activities on vegetation and its development and historical aspects (third unit). The unit is structured according to habitats. Both the positive and negative influence of man on vegetation are mentioned. For example, such a specific habitat as regularly mowed roadsides form a separate part stressing its importance as a refugium for many species. A considerable amount of text reflects the importance of non-native species introductions and how they affect the local flora.

The plant protection section is divided by country. Differences in the form of the parts are explained as a result of different threats and conservation strategies in each country. However, in all cases protection of species prevails over the protection of habitats.

Nordic flora is relatively young and thus has few endemic vascular plants. There are only two endemic species of non-hybrid origin that can be determined easily. One of them (*Puccinellia finmarchica*) had not been described in the time of publishing the book. A long tradition of research of agamospermic species and genera exists in the Nordic countries. Thirteen of agamospermic groups also contain endemic taxa from the north, some of them even in large numbers. From the area covered by the Flora, more than 5000 mostly apomictic taxa of the genus *Hieracium* and about 1000 species of the genus *Taraxacum* have been described. Basic data on endemic species are summarized in a table that shows their distribution within countries. However, representatives of the *Ranunculus auricomus* agg., *Hieracium* and *Taraxacum* taxa are not listed.

The last section provides information on the methodology used in the taxonomic volumes of Flora Nordica with parts based on taxonomic concepts, distribution, maps, habitats, etc. Although Flora Nordica does not contain a key to determination to the families, it provides valuable information on species status in individual provinces. At the end of the book the reader will find an extensive vocabulary of English ecological and morphological terms translated into all six languages of the area covered by the Flora with a brief English explanation. Cross references for selected entries are very useful for understanding. Some of the terms are explained using instructive schemes and drawings.

The reviewed book is very useful both because of its form and content. It provides important basic information not only for readers of Flora Nordica, but also for all those who are interested in the nature of the North.

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**J.T. Mickel & A.R. Smith: THE PTERIDOPHYTES OF MEXICO;** *The New York Botanical Garden Press, 2004, 1054 pp. Price USD 125.-, ISBN 0-89327-458-5*

The greatest diversity of pteridophytes is found in the tropics, and possibly the subtropics. Besides some countries in the tropics, Mexico belongs to the areas with great pteridophyte diversity (TRYON 1986). The extent of this book that includes the comprehensive description of the flora of ferns and fern allies of Mexico is admirable.

After the publication of the "Flowering plants of the neotropics" (SMITH et al. 2004) this book completes in more detail our knowledge on the group of non-flowering plants for the northern part of the neotropics. This book fills the gap in the fern flora between the two great common floras – Flora of North America (FNA Ed. Comm. 1993) and Flora Mesoamericana (DAVIDSE et al. 1995) published in the last decades. This flora is useful beyond the boundaries of Mexico because so many taxa occur in adjacent areas as well as in more distant lands.

The book's introduction summarizes the exceptionality of pteridophytes flora of Mexico, which includes one of the most diverse and latitudinally most extensive pteridofloras of the world. A recapitulation of the published fern floras of the world is included. The short introduction to the environmental conditions of the study area and history of pteridological studies in Mexico is given on the next pages. The chapter phylogeographical connections discusses the distribution of geographically important species in Mexico and adjacent areas.

The authors recognize 1024 taxa in 124 genera. The endemic species comprise ca. 18% (185 species) of the pteridophyte flora of Mexico. Classification of genera into 29 families accepts the informal classification of CRABBE et al. (1975). The genera of pteridophyte divisions (*Lycopodiophyta*, *Equisetophyta*, *Polypodiophyta*) are arranged together (!) alphabetically. In spite of not clear phylogenetic relationships among the families and genera, the missing inclusion of the genera in the current family in the special part of the book is inconvenient, because readers must usually look up to the preliminary part.

The special part of the book is easy to survey and the keys for determination of genera and species are dichotomous and easy to use. Only the suitable overview glossary of the single morphological terms is missing. All species are provided with a short but apposite description, survey of selected specimens examined (a total of 42 public herbarium collections examined), short survey of environmental conditions, summary of world distribution and valuable taxonomical notes are added at the end of the taxa description. The dot maps of distribution in the region were created for most taxa. Synonyms of some genera and species are unfortunately incomplete. Only widely used names are often itemized. Various publications that often cannot be ordinarily afforded in other parts of the world are cited for the additional or complete synonymy. Notes on hybridization are lacking in both special and introductory parts.

Most taxa are pictured in the final part of the book (327 pages of pictures!) and many important specific characters are explained by appropriate and detailed line drawings. High quality illustrations are important aspect of the publication.

The important task of this book consists of describing 40 new taxa and publishing 10 new combinations particularly of the genera *Asplenium*, *Elaphoglossum*, *Cheilanthes* and *Selaginella*. The latin diagnoses of the new taxa are mostly quite formal.

The text includes a small number of mistakes e.g. in the final index (p. 1050) *Polypodium sororium* is considered as accepted name (specific epithet without italics) but in the special part (p. 488) this name is considered as a synonym for the *Polypodium dulce*.

This book was awarded as one of the best of nine significant works in botanical or horticultural literature of the year 2005 by The Council on Botanical and Horticultural Libraries, Inc. (CBHL) (<http://www.cbhl.net/litaward/final.htm>).

This book brings an excellent compilation of pteridophyte flora of Mexico and will be essential for all botanists interested in ferns and fern allies. It is the first modern and comprehensive Flora of ferns and fern allies for the northern part of the neotropics to be published.

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**A. Jentsch: DISTURBANCE DRIVEN VEGETATION DYNAMICS. Concepts from biogeography to community ecology, and experimental evidence from dry acidic grasslands in central Europe; Dissertationes Botanicae, Band 384, J. Cramer, Berlin, Stuttgart, 2004, 218 pp. Price EUR 50.-, ISBN 3-443-64297-7**

Theory of disturbances at the level of plant communities offers plant ecologists a lot of interesting questions concerning vegetation dynamics, succession and biodiversity. The importance of disturbance and regeneration in vegetation has been generalized into the “mosaic-cycle” concept of ecosystems (REMMERT 1991). In this view, vegetation is a mosaic of patches at different stages of a temporal cycle of aging, destruction and rejuvenation.

Even though thesis presented is embraced on a large scale the individual chapters are hierarchically and logically structured. The first part of the thesis focuses on the theoretical concept of disturbance ecology including definitions, scaling and methodology. The author gives a review of disturbances and emphasizes the influence of traditional land use on habitat fragmentation. The second part describes vegetation ecology of dry acidic grasslands in general, and using several experiments verifies proposed research hypotheses. As VAN DER MAAREL (2005) argues, grasslands are especially suited for the study of patch dynamics because the gaps are small, can be easily manipulated and the appearance and disappearance of plant units (seedlings), can be accurately followed.

Theoretical survey of disturbance types and regimes is supplemented with a series of experiments: the influence of individual natural (by ants and rabbits) and artificial disturbances (topsoil removal, topsoil turnover and compaction) on species composition, species turnover, nutrient availability and soil seed bank composition were studied in dry acidic grasslands during 1998–2000. Jentsch compares spatio-temporal patterns of ant and rabbit disturbances and discuss their influence on vegetation heterogeneity and patchiness.

Natural disturbances by ants and rabbits were very abundant in the studied area. Disturbed patches were frequent, of small spatial scale, small magnitude and short duration (in terms of months). They covered 1–15% of the grassland area dominated by *Corynephorus canescens*. Both ants and rabbits disturbances have large effects on plant assemblages and ants can be also considered as key-stone species for vegetation dynamics.

Moreover, the influence of mechanical disturbances (topsoil removal, soil turnover and compaction) on nutrient availability, namely on nitrogen increase was studied. In summary, experimental soil disturbances caused a short discrete pulse in nitrate and ammonia, but no significant effect on soil water content or pH was detected.

The soil seed bank plays the essential role in recolonization dynamics after disturbance. Analysis of seed bank composition, seed density and a series of burial experiments were carried out. Bare substrate is, in general, occupied very quickly, especially by cryptogams. Mosses, however, such as *Polytrichum piliferum* have shown to inhibit germination of forbs and grasses, which is generally attributed to allelopathy. It is shown that the regeneration potential of dry acid grasslands is very limited. Similarity in composition of soil seed bank and established vegetation was poor in all successional stages in the study area. None of the successional stages exhibited high proportion of species with a long-term persistent seed bank. Neither pioneer species, nor endangered plants were present in reasonable amounts in the soil seed bank.

Special attention was dedicated to variation in species richness among different successional stages. It is a bit surprising that species establishing initially after disturbance do not determine the long-term successional processes of the patch. The results show, that disturbance has only short-term effects, largest within the first two

years of the experiment (in agreement with management experiments in dry acidic heathlands, SEDLÁKOVÁ 2003).

The author truly admits that all disturbance intensities tested were probably below the threshold for changing species diversity at the most productive site. As the most important factor for driving vegetation dynamics in dry acidic grasslands seems to be soil nitrogen together with disturbance regime. Eventually, Jentsch tries to find generality in studies of disturbance and ecosystem dynamics, implications for nature conservation and sketches further research perspectives of disturbance ecology.

The publication is appended with 55 figures (photos, graphs) – some of them could be of better quality – and 20 tables in the text.

I can recommend this book to plant ecologists dealing with the spatio-temporal heterogeneity of vegetation, as much as to nature conservationists and to all, who work in applied vegetation science.

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**E. Jablonka & M.J. Lamb: EVOLUTION IN FOUR DIMENSIONS. GENETIC, EPIGENETIC, BEHAVIORAL AND SYMBOLIC VARIATION IN THE HISTORY OF LIFE; *The MIT Press, Series – Braford Books, Cambridge, Massachusetts, 2005, 462 pp. Price GBP 22.95, ISBN 0-262-10107-6***

The book focuses on general concepts of modern evolutionary biology, with a special emphasis on heredity. The neo-Darwinian theory of evolution is principally based on the synthesis of genetics and ecology, in which the central role is played by genes as the particular basis of heredity, i.e., the way of transmitting information to the next generations. This fundamental view was challenged even in the pre-Darwinian times. The first who suggested an alternative approach was J.B. Lamarck, and his ancient ideas have been referred to in plenty of papers and books as an example of wrong thinking. Anyway, it is not easy and usual to be cited for almost 200 years because of generating wrong ideas. Lamarck's story thus indicates that the problem is not simple, and many authors have attempted to look for functioning alternatives of genetic inheritance. An up-to-date example of such efforts is the present book.

Eva Jablonka and Marion Lamb argue that there is more to heredity than genes, and that some hereditary variations are nonrandom in origin and some acquired information is inherited, and that evolutionary change can result from instruction as well as from selection. These statements are based mainly on new data and new ideas originating from the fields of molecular, developmental and behavioral biology. It is concluded that cells can also transmit information through epigenetic inheritance independent of DNA, and therefore, all organisms have at least two systems of heredity. The third hereditary system is conceived as the ability of many animals to transmit information to others by behavioral means. The fourth system is specific for humans as symbol-based inheritance. Genetic, epigenetic, behavioral and symbolic inheritance thus provides variation on which natural selection can act. The authors strongly express their opinion that adopting a four-dimensional perspective enables the construction of a far richer and more sophisticated theory of evolution.

Within this framework, the book is divided into three parts. The first part is devoted to the genetic dimension of heredity and evolution, and it is introduced by a synopsis of the dynamic history of Darwin's theory. Subsequently, the changing way biologists see the relations between genes and characters follows. The second part deals with other dimensions of inheritance, and some very disparate types of heredity are described. It is concluded that cultural evolution cannot be explained in purely neo-Darwinian terms. An overall synthesis of the topic is proposed in the third part of the book, attempting to integrate all the interacting dimensions. The

summary of ideas presented is put into a wider perspective by considering some of the philosophical implications, as well as some political and ethical issues.

The book's basic concepts seem apparently heretical, and it is sure that many readers will not agree with all the individual conclusions and generalisations. However, the challenge offered is not to Darwin's theory of evolution through natural selection, but to the prevalent gene-based unidimensional version of it. It is obvious that further discussion will concentrate mainly on the extent of the general evolutionary role and importance of hereditary systems other than genetic. In this view, the book can be recommended both to professional scientists and all the students interested in biological ideas and the current ways of thinking about biology. Readers can also be attracted by the fresh and unconventional writing style.

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**R.S. Singh & M.K. Uyenoyama (eds.): THE EVOLUTION OF POPULATION BIOLOGY;** *Cambridge University Press, Cambridge, 2004, xxvi + 460 pp. Price GBP 80.-, USD 120.-, ISBN 0-521-81437-5 hardback*

The extraordinary intellectual contributions of Richard C. Lewontin in integrated population and evolutionary biology and other areas of natural and social sciences have been honoured in a series of three volumes published by the Cambridge University Press. This book is the third of the series, and it provides a carefully selected collection of articles dealing with various aspects of population biology. The topics of the articles include the historical foundations and perspectives of population biology, the mapping between genotype and phenotype in respect to new genetic and bioinformatic advances, the relationships between phenotypes and fitness within the natural context of evolutionary change, evolutionary case studies detailing adaptation to environmental challenges, and applied population biology in relation to food, disease and health.

This rough overview of the main topics of individual contributions indicates the extremely diversified contents of the volume. In fact, the volume includes 22 individual contributions written by altogether 38 authors. Well-known biologists have contributed to this prestigious volume dedicated to R.C. Lewontin. Among the authors, we can find the names of R.C. Lewontin, R. Levins, L.L. Cavalli-Sforza, B. Charlesworth, J. Gillespie, D.L. Hartl, P.W. Hedrick, W.B. Provine, W.B. Watt, and others.

Individual contributions are written as essays or reviews rather than as original papers focused on particular case studies. The highly diversified topics are interconnected by an idea of the central role of population biology in various aspects of population genetics and population ecology. It can hardly be expected that any reader will be interested in virtually all the contributions, however, graduate students and researchers should find fields of their interest within the articles included in the collection.

The conceptual framework of population biology outlined by Richard C. Lewontin is properly acknowledged in the present volume that brings rich evidence that Lewontin's vision of integrated population biology has significantly enriched and deepened its component fields. In this sense, the volume may represent an important milestone on the long way to major synthesis in our understanding of evolutionary population biology.

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## SHORT REVIEWS

**Nicholas J. Gotelli & Aaron M. Ellison: A Primer of Ecological Statistics;** *Sinauer Associates, Inc. Publishers, Sunderland, Massachusetts USA, 2004, 510 pp. Price GBP 25.99, ISBN 0-87893-269-0.* – There are no doubts how important the right usage of various statistical methods for scientists, managers and students is. People can start with statistics in different ways and this book is one of them. Authors in the reviewed book offer us a friendly written guide to reach the goal of correctly used statistics. The book will help us cross barriers along the whole ecological experiment, from setting right hypothesis to analysing and interpreting the data. The book is divided into three main parts. The title of the first one, “Fundamentals of probability and statistical thinking,” speaks for itself. I only want to add that authors included not only the classical parametric methods, but they also present methods based on randomizations and methods within the framework of Bayesian analysis. This approach offers less obvious but important insight into statistics. The second part of the book deals with planning experiments – what kinds of experiments can we meet, how to set up a design that will answer our questions or which will suit our hypothesis. The last part guides us through four basic types of data analyses: regression, ANOVA, contingency tables and multivariate statistics. Many figures, schemes, graphs and tables with examples help to catch the explained topic and the theory behind. Authors added plenty of footnotes, which improve the understanding of the text, gave their additional comments to the current problem and introduced the famous names connected to the mathematic, ecology and statistics. I think that there is almost nothing to be censured. I only find lacking at least a short note on generalized linear models, which could be mentioned in the glossary or in the beginning, within the list of possible approaches to data analysis. At the end of the book, there is an appendix covering the matrix algebra, a rich glossary of terms and a long list of references, which can be used as a source for further study of the selected topic. The language used by authors and their approach to the analysis of data makes the book friendly for a wide range of readers. This book can be recommended not only for students but also as a source of inspiration for teachers, scientists or others, who are interested in data management and their interpretation. (JPe)

**D. Hill, M. Fasham, G. Tucker, M. Shewry & P. Shaw (eds.): Handbook of Biodiversity Methods. Survey, Evaluation and Monitoring.** *Cambridge University Press, Cambridge, 2005, 588 pp. Price GBP 80.-, USD 140.-, ISBN 0-521-82368-4.* – What is biodiversity? How can it be measured? What diverse approaches can we use to describe habitats or sites? Are we able to compare different sites in terms that are understandable for a wide group of users? Because human activity affects natural resources and since public awareness of nature has risen we have been facing these questions. There is a need to have manuals that could help different groups of users to make decisions based on qualified knowledge. The reviewed book summarizes methods that can be used by students, researchers, managers, decision makers and practitioners in nature conservation. The book contains three main parts; the first one, “Planning”, covers the general introduction to preparation and management of surveys and monitoring, and the second and third part focus on methods for surveying habitats and species. In the introductory part the reader will find a short but informative overview of basic statistics methods and sampling designs with the pros and cons of the different strategies. A substantial part of the first section is devoted to biodiversity evaluation, its principles and legislative instruments. Although the book is written with respect to conditions in the UK, the basic rules of evaluation standards are similar for many countries and even with the differences, the book can at least be inspiring reading. The general part is followed by the special sections devoted to habitats and species surveys and data collection. The text is structured according to terrestrial and freshwater habitat types and species groups. For each habitat type or species group, a general introduction and description of attributes that affect the choice of available methods is given. In the descriptions of different methods the authors stress possible problems, suggest recommended equipment and software, and if available, sources of data and contacts. Again, the book is focused mainly on UK readers and habitats and species groups that occur there, but the information provided on methodology and locally based examples can serve as guidelines. I appreciate that the authors did not forget to stress the importance of external expertise and consultations if necessary. If you are from the UK or another EU country, this book provides you with a nice overview of legislation and standards for biodiversity research. If you are from outside this region, do not worry, because the value of the book will still be high for you. (JPe)

**P. Kovář (ed.): Natural Recovery of Human-Made Deposits in Landscape. Biotic Interactions and Ore/Ash-Slag Artificial Ecosystems;** *Academia, Praha, 2004, 358 pp. Price CZK 390.-, ISBN 80-200-1279-6.* – Can we find any better place to study primary succession and performance of various organisms under extreme environmental conditions than abandoned sedimentation basins, mines, landfill sites or toxic deposits from heavy industry? As it is shown in the reviewed book, these habitats can play a nice role for studies of succession and natural restoration. I do not want to discuss pros and cons of human directed restoration comparing to spontaneous succession at these sites, but the understanding of the processes behind it is needed for both attempts to restoration. In the book you will find twenty-seven papers focusing on processes during development of soils at abandoned ore deposits, on ecology, biology and interactions of mycorrhiza, algae, fungi, plants and insects. Papers reflect the diversity at different scales, the diversity of species, genotypes, life strategies and their performance. The two last papers from P. Kovář summarize the collected works in this volume and joined them with the general questions of restoration and succession ecology as well as the role that the studied extreme habitats play in the landscape. The connection of papers from various research fields gives opportunity to see the studied ecosystem from a different perspective and distance, focusing on diversity of species, processes in ecosystems or on combination of the two last approaches. The extra value of the book is given by editor's detailed knowledge of these extreme ecosystems and his research in the area running since 1970's. The set of papers allows the reader make the thorough-going opinion and see the studied habitat in broader context. Having this book in hands, you will never look only at the paper from your subject but also at some others where you can catch ideas and get background from different branches of science. (JPe)

**G. Tcherkez: Flowers. Evolution of the Floral Architecture of Angiosperms;** *Science Publishers, Inc. Enfield, 2004, 194 pp. Price USD 78.-, ISBN 1-57808-311-7.* – The fascinating world of flowers, the amazing variety of colours, shapes, forms and different interactions with many kinds of pollinators is rewarding and thought-provoking research area. The reviewed book is an English translation from the French original published in 2002 that offers this text to a wider group of readers. Although the book seems to be thin, it contains plenty of information and terms accompanied with schemes and figures almost on every page. The author provides the reader an introduction into morphology and terminology of angiosperm flower organs and he links acquired knowledge with the gene control and evolutionary processes. He shows the variability of morphological patterns on many examples of species and case studies. Although the morphological part can be familiar for some people, it is worthwhile to go through it – it will make it easier to read the core part of the book. Nevertheless, the value of this book does not lie in the descriptive part of floral morphology, but in the connection of the morphological variation with the evolutionary processes (chapter 3) and pollination systems (chapter 4). In the last chapter the author offers the reader some of the theoretical approaches to determine selection, fitness or pollen dispersal. The book is accessible for advanced readers as well as for beginners such as students who can use this book as a primer of flower morphology with the genetic and evolutionary background and as a source of references for more detailed study. If you are interested in flower and reproduction biology you should have this book directly on your bookshelf or have it at least in your institute/university library. (JPe)

**Thomas J. DeWitt & Samuel M. Scheiner (eds.): Phenotypic Plasticity. Functional and Conceptual Approaches;** *Oxford University Press, New York, 2004, 247 pp. Price GBP 37.90, ISBN 0-19-513896-1.* – What is the role of genotype and its plasticity in the relationship between environment and individual performance? In the reviewed book, the editors bring a broad overview across this research field with a focus on functional background. The book consists of thirteen chapters from twenty-one authors, covering the introduction in the topic, historical background and a view on plasticity from evolutionary and behavioural perspective. Chapters cover both plant and animal examples and although the latter is represented more, it does not mean that the book is less valuable for plant ecologists. The reader will also find chapters devoted to the theoretical point of view on phenotypic plasticity and modelling of its evolution as well as the relationship to speciation. A really long list of references at the end of the book, common for all chapters, covers almost forty pages of records. The last chapter written by editors encloses the book and highlights empty niches with suggestions for future directions of research. This book brings a comprehensive and present summary of phenotypic plasticity that will be good for those who are already close to this field as well for those who want to start. (JPe)

**S. Gavrillets: *Fitness Landscapes and the Origin of Species*; Princeton University Press, Princeton, & Oxford, 2004, 476 pp. Price GBP 26.95, ISBN 0-691-11758-6.** – The series Monographs in Population Biology continues in its 41st volume with the title focused on dynamics of speciation. The landscape in the title has nothing to do with real geographic landscape – the phrase “fitness landscapes” is used as an analogy for a description of the relationship between fitness and genetic structure of populations. On first sight, readers can be frightened by the welcome list of mathematical symbols in the beginning or by the floods of equations, tables and schemes when browsing through the book. Although, this book is focused on researchers and students with interest in speciation and it seems to be more theoretical than biologists are used to, the text is written with respect for a wider groups of readers. The structure of the book is straightforward ranging from the needed background and used concepts to more complex problems. The author provides a unique review and synthesizes state of the art in the studied field of theoretical approaches to study speciation and fitness landscapes. With this book you can easily reach information that is scattered across many sources. The reader will find three main parts in the book given to the fitness landscape, the Bateson-Dobzhansky-Muller model and models linked to the speciation. In the last chapter of the book, Gavrillets joins and summarizes the analytical methods and throws a spotlight on some other still opened questions in theoretical biology. In spite of the fact that the book targets theoretical biologists, the author did a good job in writing it in an accessible way also for the others. Especially the last part of the book represents a nice link between the theoretical and more applied branch of science. (JPe)

**Peter H. Raven, Ray F. Evert & Susan E. Eichhorn: *Biology of Plants*; W.H. Freeman and Company Publishers, New York, 2005, 686 pp. Price GBP 43.99, ISBN 0-7167-1007-2.** – What is the link between van Gogh and plant biology? Since 2005, it is – beside sunflowers or fields in Auvre – the new, updated and revised seventh edition of a plant biology textbook covered with a van Gogh painting. Both painting and book are impressive, each from a different point of view. The book’s authors open the doors to the secret life of plants and guide readers in detail through individual topics. The book covers a plant biology course from cell biology, energy and resource flows, underlying physiological mechanisms to the development and morphology of plants. Of course, the genetic and phylogenetic issues are not overlooked and are present throughout book. The large section based on diversity of life forms in the plant world is accompanied by groups of bacteria and fungi. Two chapters focusing on ecology and biomes that were present in previous editions were removed and are now available on the publisher’s web. Deciding what should be included in a book is always hard and the authors/editors have to cope with the trade-off between the amount of topics, their depth and the unity of the book. Unfortunately I cannot compare the previous editions with the reviewed one, but the structure of the book and texts clearly show that the book has evolved into a comprehensive and handy textbook. In the beginning of each chapter, so-called “checkpoints” highlight the main ideas within the studied area; at the end readers will find a summary and “control” questions. The book is full of schemes, drawings, photos and tables that aid in understanding the text and familiarize the reader with the studied topic. Although the previous sentence sounds cliché, it is not. Selected figures of high quality with up-to-date sources that reflect the latest research knowledge increase the value of the reviewed book. Besides the list of references used, lists of recommended literature sorted by individual chapters are given for further study. Of course the reader will find a rich glossary of terms. For those who want to use this book as a guideline for teaching, plenty of materials are available with the book such as electronic resources containing images, tests, prepared overheads and lab manuals. This book will be useful for teachers of general plant biology and graduate students as well as for plant biologists and ecologists. Teachers whose courses are based on different textbooks should at least review it. For people from the opposite side of the barricade, students, this book will be a good source for learning. (JPe)