

Annual report of the Geobotanical Institute ETH (2001)

P. J. EDWARDS, E. AESCHBACH, S. REBSTEIN & S. GÜSEWELL

Geobotanisches Institut ETH, Zürichbergstrasse 38, 8044 Zürich, Switzerland;

peter.edwards@geobot.unmw.ethz.ch

1 Introduction

The institute's research activity in the year 2001 was as busy and as diverse as always, with several new projects within the country and abroad (e.g. in Tanzania and on the Seychelles). Essential repairs were made to the greenhouse at Zürichbergstrasse. Fortunately, the greenhouse and the experimental garden at Höggerberg can still be used by the institute, although there were plans from ETH to construct a building on this location. Our facilities at Höggerberg, organised and maintained by M. Fotsch, are intensively used every summer by diploma and Ph.D. students for their growth experiments, and we hope that they will remain available at least for a few more years.

Teaching involved the usual programme of courses in ecology, evolution and systematics for students from both ETH and university, including students of biology, environmental sciences, geography, forestry, agriculture and engineering. The development of modern interactive electronic teaching media is currently strongly promoted by ETH. Several institute members are engaged in such projects, partly in collaboration with other universities as part of the large project "Virtual Campus Schweiz".

The institute continued to be actively involved in various planning developments. In view of the move of the Department of Environmental Sciences into the former chemistry building (intended for 2005), more detailed plans for the allocation of space and infrastructure were made. The "Projekt Umweltsysteme" was initiated by ETH to develop proposals for the re-organisation of the departments of Earth Sciences, Forestry,

Environmental Sciences and Agriculture and Food Science (previously called "GrünerBereich"). The report of the "Projekt Umweltsysteme" recommends a collaboration of the departments in a new centre for Environmental Sciences and Natural Resources. In addition it recommends that the departments of Forestry and of Environmental Sciences should merge. An other recommendation is already being realised: the replacement of the current diploma courses by a programme of bachelor and master courses. At present the structure and contents of the bachelor studies are being specified, and the new teaching system might start as early as 2003. For the Geobotanical Institute these developments may be an opportunity to organise its teaching more efficiently, as most basic courses will be common to all disciplines within the centre.

Several excursions were organised by institute members. In June Prof. A. Gigon and his group presented their long-term experiments (set up in 1977) on the conservation of species-rich meadows in Merishausen to members of the department of Environmental Sciences. They also offered the same excursion to the members of the Swiss Botanical Society. In September, Olivier Mermod organised a very successful institute excursion to the Wallis.

2 Staff of the Institute

2.1 FOUNDATION BOARD

President

Prof. Dr. Hannes FLÜHLER

Vicepresident

Martin RÜBEL-FUCHS

Secretary

Patrick OCHSNER

Other members of the board

Daniel HUBER-DUMUID

Dr. Alexander RÜBEL

Prof. Dr. Franz SCHMITHÜSEN

Prof. Dr. Peter STAMP

2.2 STAFF

Director

Prof. Dr. Peter J. EDWARDS

Scientific members of staff

Dr. Cyrus ABIVARDI

Dr. Matthias BALTISBERGER

Martin BRATTELER

Dr. Manuela DI GIULIO

Dr. Hansjörg DIETZ

Dr. Silke DIETZ

Prof. Dr. Andreas GIGON

Dr. Sabine GÜSEWELL

Prof. Dr. Egon HORAK

Dr. Angelika HILBECK

Dr. Christiane JACQUAT

Dr. Barbara KÖHLER

PD Dr. Adrian LEUCHTMANN

Dr. Dieter RAMSEIER

Dr. Peter RYSER

Bettina SCHERZ VRACKO

Dr. Ewald WEBER

Dr. Alexander WIDMER

External lecturers

Dr. Hans-Ulrich FREY

Dr. René GILGEN

Dr. Iris GÖDICKEMEIER

Dr. Frank GRAF

Dr. Bertil KRÜSI

Dr. Fredy LEUTERT

Dr. Andreas PAPRITZ

Dr. Martin SCHÜTZ

Dr. Gian-Reto WALTHER

PD Dr. Otto WILDI

Doctoral students

Franziska ANDRES

Markus BICHSEL

Astrid BJÖRNSEN-GURUNG

Martin BRATTELER

Holger BUSCHMANN

Roland COCHARD

Tim DIEKÖTTER

Kirsten EDELKRAUT

Regine FANKHAUSER

Daniel FREY

René FÜCHTER

Hannes GAMPER

Gabi JAKOBS

Peter JEWELL

Bettina KAHLERT

Sophie KARREBERG

Christoph KÜFFER

Stephan KUSKE

Matthias MEIER

Marco MORETTI

Priska MÜLLER

Kaspar PFLUGSHAUP

Angelika RAIMANN

Jörg SCHMIDT

Eva SCHUMACHER

Andrea SCHWAB

Matthias SUTER

Anna TREYDTE

Georg VON ARX

Doris ZUBER

Diploma students 2001

Michael ANDEREGG
Christine BIBER
Verena DOPPLER
Patricia EGLI
Jean-David GERBER
Annina GERET
Claude THEATO
Georg VON ARX
Frank WIEDERKEHR
Manuel WINTELER
Serge ZAUGG

Diploma students 2002

Christian BOHR
Simone BERNER
Daniela CSENSICS
Stephanie HALSDORF
Silvia HAUG
Pauline HÉRITIER
Therese KOHLER
Calogero L'ABATE
Cyrill MEUWLY
Roman MYLONAS
Isabella SEDIVY
Sibylle STÖCKLI
Nora ZUBERBÜHLER

Librarians

Lilo KÖNIG
Regula LANGENAUER

Gardener

Martin FOTSCH

Computing system administrators

Karsten ROHWEDER
Hans-Heini VOGEL

Laboratory assistants

Marilyn GASCHEN
Susanne GRAF
Rose TRACHSLER

Managing Editor Perspectives

*Dr. Karl FLEISCHMANN

Secretaries

Erika AESCHBACH
Catherine BUCHER
Stefanie REBSTEIN
Katharina RENTSCH

Technical assistants

Markus HOFBAUER
Almut HORAK
Roland KOCH
Annemarie TANNER

Site and building manager

René GRAF

Scientific visitors

Prof. Dr. Frank KLÖTZLI, Geobotanisches
Institut ETHZ (1.1.–31.12.00)
Prof. Dr. Elias LANDOLT, Geobotanisches
Institut ETHZ (1.1.–31.12.00)
Prof. Radja Pandit, India (3.5–8.5.01)
Alexandra Fraser, University of Kansas (1.1.–
30.8.01)
Pille Urbas, Tartu University (1.8.-31.8.01)
Orsolya Dálnoki, Eötvös Loránd Universität
Budapest (April-September 2001)
Maurice Paulissen, Utrecht University (8.5.–
10.5.01)

2.3 STAFF CHANGES IN 2001

Prof. Dr. Barbara Roy, who has worked at the
Institute since 1996, left in May 2001 to take a
position as professor at Oregon State University.
However, she provisionally kept her status as
ETH professor and may possibly return to Zurich
in the future. Prof. Roy has contributed
enormously to the development of ecological
research at the Institute, especially by introducing
experimental approaches to the investigation of

evolutionary mechanisms in plants and by using modern molecular methods to investigate ecological questions. Her modern and demanding courses in evolutionary biology, taught jointly with the Institute of Experimental Ecology, have added a new direction to the Institute's teaching programme.

The position of Prof. Roy was taken over by Dr. Florian Schiestl who joined the institute in October 2001. He has previously worked at the University of Vienna and at the Australian National University. His main research interest are interactions between plants and pollinators, particularly through olfactory signals, and their evolutionary implications.

In December 2001 Dr. Peter Ryser left the Institute, where he had worked since 1983 as diploma student, doctoral student, assistant and finally senior assistant. His research has focused on the role of plant traits (especially tissue density) for plant growth and turnover, and he has greatly contributed to the development of experimental facilities as well as of teaching in plant ecology. Dr. Ryser has been appointed as assistant professor at the Laurentian University (Sudbury, Canada), where he will continue his research in the field of plant ecophysiology.

3 Research

3.1 OVERVIEW

The research of the Geobotanical Institute is focused on four main directions: plant ecology, plant evolution and systematics, mycology, and archaeobotany; the current research topics of the research groups are listed below.

3.2 RESEARCH FIELDS

SECTION PLANT ECOLOGY

Group 1: Community and Ecosystem Ecology
(Prof. Dr. P.J. Edwards, Dr. C. Abivardi, Dr. H. Dietz, Dr. P. Ryser, Dr. S. Güsewell, Dr. E. Weber)

- Ecosystem processes: nutrient budgets,

- herbivory and other biotic interactions
- Ecosystems on a landscape level and GIS
- Agroecology
- Physiological and ecological characters of plants; plasticity in response to light and nutrients
- Herb-chronology and its application to population ecology
- Ecology of invasive plants

Group 2: Plant Ecology and Conservation Biology

(Prof. Dr. A. Gigon, Dr. D. Ramseier)

- Ecological stability: concepts and case studies
- Competition, positive biotic interactions, and coexistence of plants
- Assessment of biodiversity
- Management for nature conservation

SECTION EVOLUTION AND SYSTEMATICS

Plant Systematics and Evolution

(Dr. M. Baltisberger, Prof. Dr. E. Landolt, Dr. F. Schiesl, Dr. A. Widmer)

- Speciation and population genetics in *Draba*, *Ranunculus*, *Ophrys* and *Viscum*
- Microevolution and genetic adaptation in a changing environment
- Plant–pollinator interactions
- Taxonomic revision of the Lemnaceae
- Survey of the flora of Zürich

SECTION MYCOLOGY

(Prof. E. Horak, PD Dr. A. Leuchtman)

- Plants and fungi (ectomycorrhiza, saprophytes) in various habitats of the northern and southern hemisphere
- Monographic revision of several genera of the Agaricales (*Crepidotus*, *Galerina*) and Boletales (Boletellus)
- Evolution and ecology of symbiotic interactions between grasses and endophytes
- Dispersal and infection strategies of the endophyte *Epichloë*

SECTION ARCHAEOBOTANY

(Dr. C. Jacquat, Dr. O. Mermod)

- Diversity and evolution of agricultural and adventitious plants
- Agricultural systems and human influence on the natural vegetation of Switzerland from the Neolithic period to the Middle Age
- Transition from nomadic to resident life in Jordan (Petra)

3.3 NEW RESEARCH PROJECTS 2001

(Title. Source of funding; Research assistant(s); project leader)

- Correlative and experimental analysis of anatomy and ecology of the development of annual rings in the roots of Dicotyledonous perennial herbes. NSF; G. von Arx; H. Dietz & F. Schweingruber.
- Genetic architecture of traits associated with habitat adaptation in *Silene vulgaris* (Caryophyllaceae). ETHZ; M. Bratteler; A. Widmer, M. Baltisberger & P.J. Edwards
- Ecosystem changes within a former savanna rangeland in Tanzania. NSF; A. Treydte, R. Cochard; P.J. Edwards & E. Weber.

4 List of publications 1999

4.1 PERSPECTIVES IN PLANT ECOLOGY, EVOLUTION AND SYSTEMATICS, 4 (2001)

The fourth volume of the journal *Perspectives in Plant Ecology, Evolution and Systematics* appeared in two issues with a total length of 164 pages. The aims and scope of the journal are given under <http://www.urbanfischer.de/journals/ppees>

Issue 1/01

- Inderjit & Weiner, J. Plant allelochemical interference or soil chemical ecology? 3–12.
- Brunner, I. Ectomycorrhizas: their role in forest ecosystems under the impact of acidifying pollutants. 13–27.
- Jorgensen, T.H. & Olesen, J.M. Adaptive radiation of island plants: evidence from *Aeonium* (Crassulaceae) of the Canary Islands. 29–42.
- Hilbeck, A. Implications of transgenic, insecticidal plants for insect and plant biodiversity. 43–61.

Issue 2/01

- Heil, M. Induced systemic resistance (ISR) against pathogens – a promising field for ecological research. 65–79.
- Parker, T.V. Conceptual problems and scale limitations of defining ecological communities: a critique of the CI concept (Community of Individuals). 80–96.
- Hacke U.G. & Sperry J.S. Functional and ecological xylem anatomy. 97–115.
- Piepenbring, M. *Cintractielladiplasiae* – a second species of *Cintractiella* (Ustilaginales) with sori in adventitious spikelets on Hypolytraea (Caperaceae). 116–120.

4.2 BULLETIN OF THE GEBOTANICAL INSTITUTE ETH, 67 (2001)

Articles

- Walther, G.-R. & Grundmann, A. Trends of vegetation change in colline and submontane climax forests in Switzerland. 3–12.
- Keddy, P., Fraser, L.H. & Keogh, T.A. Responses of 21 wetland species to shortages of light, nitrogen and phosphorus. 13–25.
- Risch, A.C., Krüsi, B.O., Schütz, M. & Grämiger, H. Spatially specific simulation of the long-term development of a subalpine pasture in the Swiss National Park. 27–40.
- Edelkraut, K. & Güsewell, S. Effects of light and nutrient supply on the growth and competitive ability of five *Carex* species. 41–55.
- Bollens, U. & Ramseier, D. Shifts in abundance of fen-meadow species along a nutrient gradient in a field experiment. 57–71.

Research Projects

- Jakobs, G., Weber, E., Meyer, G.A. & Edwards, P.J. Life-history and genetic variation of native vs. introduced populations of the perennial *Solidago gigantea* Ait. (Asteraceae). 73–78.
- Schmidt, J.E.U. & Hilbeck, A. Ecology of transgenic crop plants expressing insecticidal Bt-endotoxins – effects on trophic interactions and biodiversity of insect pollinators, non-target. Herbivores and natural enemies. 79–87.
- Meier, M.S. & Hilbeck, A. Transgene flow from crops to wild plants, consequences for associated insects and implications for hybrid

fitness. 89–95.

Dietz, H. & Schweingruber, F. Development of growth rings in roots of dictyledonous perennial herbs: experimental analysis of ecological factors. 97–105.

4.3 FURTHER PUBLICATIONS

A Publications in refereed journals or books

- Bernasconi Ockroy, M.L., Turlings, T.C.J., Edwards, P.J., Fritsche-Hoballah, M.E., Ambrosetti, L., Bassetti, P. & Dorn, D. (2001) Response of natural populations of predators and parasitoids to artificially induced volatile emissions in maize plants (*Zea mays* L.). *Agricultural and Forest Entomology*, **3**, 201–209.
- Berry, N.R., Jewell, P.L., Sutter, F., Edwards, P.J. & Kreuzer, M. (2001) Effect of concentrate on nitrogen turnover and excretion of P, K, Na, Ca and Mg in lactating cows rotationally grazed at high altitude. *Livestock Production Science*, **71**, 261–275.
- Bodensteiner, Ph., Agerer, R., Desjardin, D.E. & Horak, E. (2001) A new species of *Calathella* from Bali. *Mycologia*, **93**, 1010–1013.
- Bollens, U., Güsewell, S. & Klötzli, F. (2001) Vegetation change in two Swiss fens affected by eutrophication and desiccation. *Botanica Helvetica*, **111**, 139–155.
- Brem, D. & Leuchtman, A. (2001) *Epichloë* grass endophytes increase herbivore resistance in the woodland grass *Brachypodium sylvaticum*. *Oecologia*, **126**, 522–530.
- Buschmann, H. (2001) Bemerkungen zum Vorkommen der Gelbbauchunke *Bombina variegata variegata* (Linnaeus, 1758) im Schaumburger Land, Niedersachsen, Deutschland. *Herpetozoa*, **14**, 21–30.
- Cozzolino, S., Aceto, S., Caputo, P., Widmer, A. & Dafni, A. (2001) Speciation processes in Eastern Mediterranean *Orchis* s.l. species: molecular evidence and the role of pollination biology. *Israel Journal of Plant Science*, **49**, 91–103.
- Craven, K.D., Hsiau, P.T.W., Leuchtman, A., Hollin, W., & Schardl, C. L. (2001) Multigene phylogeny of *Epichloë* species, fungal symbionts of grasses. *Annals of the Missouri Botanical Garden*, **88**, 14–34.
- Crawford, D.J., Landolt, E., Les, D.H. & Kimball, R.T. (2001) Allozyme studies in Lemnaceae: variation and relationships in *Lemna* sections *Alatae* and *Biformes*. *Taxon*, **50**, 987–999.
- Craven, K.D., Blankenship, J.D., Leuchtman, A., Hignight, K. & Schardl, C.L. (2001) Hybrid fungal endophytes symbiotic with the grass *Lolium pratense*. *Sydowia*, **53**, 44–73.
- Desjardin, D.E., Retnovati, A. & Horak, E. (2000) Agaricales of Indonesia. 2. A preliminary monograph of *Marasmius* from Java and Bali. *Sydowia*, **52**, 92–194.
- Di Giulio, M., Meister, E. & Edwards, P.J. (2001) Enhancing insect diversity in agricultural grasslands: the roles of management and landscape structure. *Journal of Applied Ecology*, **38**, 310–319.
- Edwards, P.J. & Hilbeck, A. (2001) Biodiversity of agroecosystems: past, present and uncertain future. *Crop Science: Progress and Prospects* (eds. Nösberger, J., Geiger, H.H. & Struik, P.C.), pp. 213–229. CABI Publishing.
- Fattorini, M. (2001) Establishment of transplants on machine-graded ski runs above timberline in the Swiss Alps. *Restoration Ecology*, **9**, 119–126.
- Gurnell, A.M., Petts, G.E., Hannah, D.M., Smith, B.P.G., Edwards, P.J., Kollmann, J., Ward, J.V. & Tockner, K. (2001) Riparian vegetation and island formation along the gravel-bed Fiume Tagliamento, Italy. *Earth Surface Processes and Landforms*, **26**, 31–62.
- Kirchner, J. W. & Roy, B.A. (2001) Evolutionary implications of host-pathogen specificity: The fitness consequences of host life history traits. *Evolutionary Ecology*, **14**, 665–692.
- Köhler, B., Ryser, P., Güsewell, S. & Gigon, A. (2001) Nutrient availability and limitation in traditionally mown and in abandoned limestone grasslands: a bioassay experiment. *Plant and Soil*, **230**, 323–332.
- Kollmann, J. & Pflughaupt K. (2001) Flower and fruit characteristics in small and isolated populations of a fleshy-fruited shrub. *Plant Biology*, **3**, 62–71.
- Kollmann, J. & Grubb, P.J. (2001) Biological

- flora of central Europe: *Cornus sanguinea* L. *Flora*, **196**, 161–179.
- Kollmann, J. & Bassin S. (2001) Effects of management on seed predation in wildflower strips in northern Switzerland. *Agriculture Ecosystems & Environment*, **83**, 285–296.
- Meijer, G., & Leuchtman, A. (2001) Fungal genotype controls mutualism and sex in *Brachypodium sylvaticum* infected by *Epichloë sylvatica*. *Acta Biologica Hungarica*, **52**, 249–263.
- Moreno, G., Heykoop, M. & Horak, E. (2001) A new muscicolous *Omphalina* with globose basidiospores from Spain. *Mycotaxon*, **27**, 365–370.
- Palfner, G. & Horak, E. (2001) *Gautieria napire* sp.n., a new hypogeous species from *Nothofagus* forest in southern Central Chile. *Sydowia*, **53**, 1240–1251.
- Pellegrino, G., Cafasso, D., Widmer, A., Soliva, M., Musacchio, A. & Cozzolino, S. (2001) Isolation and characterization of microsatellite loci from the orchid *Serapias vomeracea* (Orchidaceae) and cross-priming to other *Serapias* species. *Molecular Ecology Notes*, **1**, 279–280.
- Pellegrino, G., Cafasso, D., Musacchio, A., Widmer, A. & Cozzolino, S. (2001) Characterization of a minisatellite repeat locus in the chloroplast genome of *Orchis palustris* (Orchidaceae). *Current Genetics*, **39**, 394–398.
- Roy, B.A., Kirchner, J.W., Christian, C. & Rose, L. (2001) High disease incidence and apparent tolerance in a North American Great Basin plant community. *Evolutionary Ecology*, **14**, 421–438.
- Roy, B.A. (2001) Patterns of association between crucifers and their flower mimic pathogens: Host shifts are more common than coevolution or cospeciation. *Evolution*, **55**, 41–53.
- Ryser, P. & Wahl, S. (2001) Interspecific variation in RGR and the underlying traits among 24 grass species grown in full daylight. *Plant Biology*, **3**, 426–436.
- Soliva, M., Kocyan, A. & Widmer, A. (2001) Molecular phylogenetics of the sexually deceptive orchid genus *Ophrys* (Orchidaceae) based on nuclear and chloroplast DNA sequences. *Molecular Phylogenetics and Evolution*, **20**, 78–88.
- Utelli, A.B., & Roy, B.A. (2001) Causes and consequences of floral damage in *Aconitum lycoctonum* at high and low elevations in Switzerland. *Oecologia*, **127**, 266–273.
- Verbeke, A., Horak, E. & Desjardin, D.E. (2001) Agaricales from Indonesia. 3. New records of the genus *Lactarius* (Basidiomycota, Russulales) from Java. *Sydowia*, **53**, 261–289.
- Wäckers, F.L., Zuber, D., Wunderlin, R. & Keller, F. (2001) The effect of herbivory on temporal and spatial dynamics of foliar nectar production in cotton and castor. *Annals of Botany*, **87**, 365–370.
- Wagner, H.H. & Edwards, P.J. (2001) Quantifying habitat specificity to assess the contribution of a patch to species richness at a landscape scale. *Landscape Ecology*, **16**, 121–131.
- Ward, J.V., Tockner, K., Edwards, P.J., Kollmann, J., Gurnell, A.M., Petts, G. E., Bretschko, G. & Rossaro, B. (2000) Potential role of island dynamics in river ecosystems. *Verhandlungen der Internationalen Vereinigung für Limnologie*, **27**, 2582–2585.
- Weber, E. (2001) Current and potential ranges of three exotic goldenrods (*Solidago*) in Europe. *Conservation Biology*, **15**, 122–128.
- Widmer, A. & Lexer, C. (2001) Glacial refugia: sanctuaries for allelic richness, but not for gene diversity. *Trends in Ecology and Evolution*, **16**, 267–269.

B Publications in other scientific journals, book chapters and books

- Abivardi, C. (2001) *Iranian Entomology — An Introduction, Volume 1: Faunal Studies*. Springer Verlag, Heidelberg.
- Abivardi, C. (2001) *Iranian Entomology — An Introduction, Volume 2: Applied Entomology*. Springer Verlag, Heidelberg.
- Baltisberger, M. & Utelli, A.B. (2001) Chromosome numbers. *IOPB Newsletter*, **33**, 22–23.
- Brem, D. & Leuchtman, A. (2001) Influence of endophyte genotype on competitive abilities of *Brachypodium sylvaticum*. *The grassland conference 2000. Proceedings of the 4th international Neotyphodium/grass interactions*

- symposium* (eds. Paul, V.H. & Dapprich, P.D.). pp 543–546. Universität-Gesamthochschule Paderborn, Soest, Germany.
- Brunner, A.-C., Gigon, A. & Gut, D. (2001) Erhaltung und Förderung attraktiver Zwiebelpflanzen in Rebbergen der Nordschweiz. *Schweizerische Zeitung für Obst und Weinbau*, **5**, 102–105.
- Desjardin, D.E. & Horak, E. (2000) An update on the Agaricales of the Indonesian project. *Inoculum*, **51**, 26.
- Edwards, P.J., Frey, D. & Baltisberger, M. (2001) Genetic diversity in invasive populations of *Erigeron annuus*—The functional importance of biodiversity. *Verhandlungen der Gesellschaft für Ökologie*, **31**, 325.
- Eggenschwiler, L. & Jacot, K. (2001) Einfluss von Saadmischung und Schnitt auf die Vegetation in Brachen. *Agrarforschung*, **8**, 306–311.
- Gigon, A. & Langenauer, R. (2001) Blaue Listen der erfolgreich geförderten bedrohten Arten - ein neues, ermutigendes Naturschutzinstrument. *Handbuch Naturschutz und Landschaftspflege*, 5. Erg. (eds. Konold, W., Böcker, R., Hampicke, U.), p. 17. Ecomed, Landsberg, Deutschland.
- Jacquat, C. (2001) Histoires de pommes. L'archéologie en 83 trouvailles. (Hommage collectif à Daniel Paunier), pp. 102–103. Musée romain de Lausanne-Vidy et InFolio Sàrl, Gollion.
- Jacquat, C. (2001) Pflanzliche Makroreste aus Herdstelle 2402 (Bereich II). In: Wartau – Ur- und frühgeschichtliche Siedlungen und Brandopferplatz im Alpenrheintal (Kanton St. Gallen, Schweiz). I. Frühmittelalter und römische Epoque. Universitätsforschungen zur prähistorischen Archäologie, **75**, 34.
- Kollmann, J. & Keller, M. (2001) Bedeutung der Herkunft von Saatgut für ökologische Ausgleichsflächen - das Fallbeispiel Buntbrachen. *Kieler Notizen zur Pflanzenkunde in Schleswig-Holstein und Hamburg*, **29**, 65–67
- Landolt, E. (2001) Die Stadt als Lebensraum. *Bulletin der ETH Zürich*, **281**, 62–64.
- Landolt, E. (2001) *Flora der Stadt Zürich (1984–1998)*. Birkhäuser, Basel.
- Landolt, E. (2001) Lemnaceae. *Flora of Thailand* (eds. Santisuk Th. & Larsen K.).
- Landolt, E. (2001) Orchideen-Wiesen in Wollishofen (Zürich) – ein erstaunliches Relikt aus dem Anfang des 20. Jahrhunderts. *Vierteljahresschrift der Naturforschenden Gesellschaft in Zürich*, **146**, 41–51.
- Leuchtman, A., & Bultman, T.L. (2001) *Epichloë* grass endophytes and their interaction with a symbiotic fly. *The grassland conference 2000. Proceedings of the 4th international Neotyphodium/grass interactions symposium* (eds. Paul, V.H. & Dapprich, P.D.), pp. 103–107. Universität-Gesamthochschule Paderborn, Soest, Germany.
- Walther, G.-R., Burga, C.A. & Edwards, P.J. (2001) *Fingerprints of Climate Change: Adapted Behaviour and Shifting Species Ranges*. Kluwer, Dordrecht.
- Weber, E. & Gut, D. (2001) A risk assessment protocol for potentially invasive plant species in central Europe. *Bundesamt für Naturschutz-Skripten*, **32**, 99–100.