

Biology

Year – Book 2001

Faculty of Science

Masaryk University Brno

Masaryk University Brno, Czech Republic, 2001

Section Biology

The Section Biology includes the departments and other units of the Faculty involved in the teaching of and research on the various aspects of biology. The Section's top management consists of the Head of the Section and the Section Council. Members of the Section Council are the Heads of the individual departments or other independent units of the Section. The Head of the Section (one of the Section's professors or associate professors) is appointed by the Dean based on a proposal of the Section Council. Heads of Sections are part of the Faculty's management. The Head appoints his deputies and persons responsible for the individual fields of study within the Section's courses of study (called study programmes).

MANAGEMENT OF THE SECTION BIOLOGY

Head of Section:

Jaromír Vaňhara (Prof., RNDr., CSc.)

Deputy Head for Education Issues:

Božena Koubková (RNDr., Ph.D.)

Deputy Head for Organisational Issues:

Jiří Schlaghamerský (Dipl.-Biol., Ph.D.)

Responsible Person for the Study Programmes:

Jan Šmarda (Assoc. Prof., RNDr., CSc.)

Secretary:

Věra Slezáková

For the **Members of the Section Council** see below under the individual departments.

Biodiversity Research Group

RESEARCH ACTIVITIES

In 2001, the research project Temporal and Spatial Biodiversity Dynamics in Ecosystems of Central Europe (CEZ: MSM 143100010; running from 1999 to 2003) has given rise to the establishment of a temporal organization unit of the Section Biology, i.e. the Biodiversity Research Group. This unit includes staff of three biological departments of the Faculty of Science, MU, involved in the project. The group is structured into 6 research teams according to their specialized fields of study (see below) and has had 34 employees in 2001. Several dozens of students working on their master's and doctoral theses are also working within the project scheme. The unit is financially autonomous to a large extent. Research reports are produced annually. A complete listing of all activities is accessible through its Internet home page <http://elanor.sci.muni.cz/zoolecol/biodivst/>. The individual departments with their fields of study support the projects' broad scope. Activities covered by this scheme are also linked to further projects looking at biodiversity from various points of view. Although the focus is on biodiversity research within the Czech Republic, co-operation with domestic and foreign research institutions contributes to our knowledge also on a European scale.

MANAGEMENT OF THE BIODIVERSITY RESEARCH GROUP

Head:

Jaromír Vaňhara (Prof., RNDr., CSc.) – see Invertebrates Research Team

Vicehead:

Milan Chytrý (Assoc. Prof., RNDr., Ph.D.) – see Vegetation Science Research Team

Secretary:

Věra Slezáková – see Invertebrates Research Team

STRUCTURE OF PERSONNEL (given separately for each research team)

Plant Biosystematics Research Team

Head:

Petr Bureš (RNDr., Ph.D.)

Associate Professor:

Vladimír Řehořek (RNDr., CSc.)

Assistant Professors:

Jiří Danihelka (Ing., Ph.D.)

Vít Grulich (RNDr., CSc.)

Research Assistant:

Lucie Horová (Mgr.)

Olga Rotreklová (Mgr.)

Ph.D. Students:

Full time

Sierra Dawn Stoneberg Holt (Mgr.)

Petr Šmarda (Mgr.)

Part time

Kateřina Kočí (Mgr.)

Vegetation Science Research Team

Head:

Milan Chytrý (Assoc. Prof., RNDr., Ph.D.)

Professor:

Jiří Vicherek (RNDr., CSc.) Professor Emeritus

Associate Professor:

Jiří Unar (RNDr., CSc.)

Assistant Professors:

Jiří Danihelka (Ing., Ph.D.)

Vít Grulich (RNDr., CSc.)

Lubomír Tichý (Mgr., Ph.D.)

Ph.D. Students:

Full time

Michal Hájek (Mgr.)

Petra Hájková (Mgr.)

Viera Horáková (Mgr.)

Ilona Kuželová (Mgr.)

Zdenka Otýpková (Mgr.)

Jan Roleček (Mgr.)

Kateřina Šumberová (Mgr.)

Part time

Martin Kočí (Mgr.)

Zdeňka Lososová (RNDr.)

Iva Sedláková (Mgr.)

Invertebrates Research Team

Department of Zoology and Ecology

Head:

Jaromír Vaňhara (Prof., RNDr., CSc.)

Professor:

Rudolf Rozkošný (RNDr., D.Sc.)

Assistant Professor:

Jiří Schlaghamerský (Dipl.-Biol., Ph.D.)

Research Assistants:

Stano Pekár (Mgr., Ph.D.)

Jiří Rozehnal (RNDr.)

Technician:

Věra Slezáková

Ph.D. Students:

Full time

Jana Horská (Mgr.)

Petr Mückstein (Mgr.)

Part time

Hana Hiršová (Mgr.)

Jiří Hřebíček (Mgr.)

Department of Comparative Animal Physiology and General Zoology

Vladimír Ptáček (Assoc. Prof., RNDr., CSc.)

Hydrobiology Research Team

Head:

Jan Helešic (Assoc. Prof., RNDr., Ph.D.)

Professor:

František Kubiček (RNDr., CSc.), Professor Emeritus

Associate Professors:

Věra Opravilová (RNDr., CSc.)

Edmund Sedlák (RNDr., CSc.)

Assistant Professors:

Ondřej Komárek (RNDr., Ph.D.)

Světlana Zahrádková (RNDr., Ph.D.)

Research Assistant:

Jana Schenková (RNDr.)

Ph.D. Students:

Full time

Michal Horský (RNDr.)

Petr Komzák (RNDr.)

Jiří Kopecký (RNDr.)

Marie Omesová (Mgr.)

Part time

Jan Špaček (Mgr.)

Small Mammals Research Team

Head:

Zdeněk Řehák (Assistant Prof., RNDr., Ph.D.)

Professor:

Jiří Gaisler (RNDr., D.Sc.), Professor Emeritus

Ph.D. Students:

Full time

Ivo Baroň (Mgr.)

Tomáš Bartonička (Mgr.)

Hana Berková (Mgr.)

Katerina Janečková (Mgr.)

Eva Jánová (Mgr.)

Klára Petřelková (Mgr.)

Martin Pokorný (Mgr.)

Monika Šugerková (Mgr.)

Part time

Martin Gajdošík (Mgr.)

Vertebrate Parasites Research Team

Department of Zoology and Ecology, Parasitology Unit

Head:

Milan Gelnar (Assoc. Prof., RNDr., CSc.)

Assistant Professors:

Božena Koubková (RNDr., Ph.D.)

Iveta Matějusková (Mgr., Ph.D.)

Ph.D. Students:

Full time

Radim Blažek (Mgr.)

Jiří Jarkovský (Mgr.)

Markéta Ondračková (Mgr.)

Eva Ottová (Mgr.)

Eva Řehulková (Mgr.)

Andrea Šimková (RNDr., Ph.D.)

Tomáš Zurawski (Mgr.)

Part time

Iveta Hodová (Mgr.)

Irma Hricová (Mgr.)
Dušan Kadlec (RNDr.)
Department of Comparative Animal Physiology and General Zoology
Head:
Vladimír Ptáček (Assoc. Prof., RNDr., CSc.)

Professor:

Jan Knoz, (RNDr., CSc.)

Assistant Professors:

Omar Šerý (Mgr., Ph.D.)

Alena Žáková (RNDr., Ph.D.)

Technicians:

Renata Hladilová

Hana Kulová

As the Biodiversity Research Group is entirely formed by staff of the Section's permanent organizational units, all further details are given under these individual departments, i.e. the Dept. of Botany, the Dept. of Zoology and Ecology, and the Dept. of Comparative Animal Physiology and General Zoology.

Centre of Biostatistics and Analyses

TEACHING AND RESEARCH ACTIVITIES

The Centre of Biostatistics and Analyses (CBA) was established in November 2001 by the decision of the Academic Senate of the Faculty of Medicine. Being an inter-faculty organization unit associated with the Faculty of Medicine as well as with the Faculty of Science, the Centre has also the position of a permanent Department within the Section Biology of the Faculty of Science. The CBA has the following mission:

- (1) To provide training in the field of applied data analysis and IT applications for biological and clinical fields of research within both Faculties.
- (2) To carry out research on the application of mathematical and statistical methods and information technologies in biological and clinical fields of research (particularly in risk assessment, applied stochastic modelling, multivariate analyses of biological data, predictive medicine, evidence-based medicine, data mining, software development for research).
- (3) To provide a full scale portfolio of services expected from informatics from the point of view of the biological and clinical fields of research (for instance: data analysis, software development and data processing in databases, clinical registration, computer graphics, and Internet services).

The CBA shall be involved in student training at all levels (undergraduate, graduate, life-long learning). Research objectives shall be funded by successfully applying for research grants either directly, according to the established procedures of both Faculties, or in co-operation with grantees at Masaryk University or any other academic institution in the Czech Republic or abroad. Research in the fields of biology, chemistry and medicine continuously requires new methods of processing existing data, the detection of new links between parameters, multivariate modelling of relationships, and the assessment of predictors. Undergraduate and graduate students and researchers of both Faculties have thus gained a service centre offering support in biostatistics and software related issues and capable of direct involvement in biological or clinical studies.

STRUCTURE OF PERSONNEL

Head:

Ladislav Dušek (Mgr., Dr.)

Assistant Professors:

Michal Beránek (RNDr.)

Jan Mužík (Mgr.)

Research Assistants:

Jana Koptíková (Mgr., Ph.D.)

Petr Pavliš (Mgr.)

Jan Polach (RNDr.)

Technician:

Ivo Šnábl

Czech Collection of Microorganisms

TEACHING AND RESEARCH ACTIVITIES

The Czech Collection of Microorganisms (CCM) is a public collection of living cultures of bacteria (c. 3000 strains) and fungi (c. 700 strains). Its main function is to collect, maintain, preserve and distribute authentic cultures of microorganisms relevant to applied microbiology, biotechnology, education and general scientific interest. The principal method used for preservation of strains in the CCM is freeze-drying. A more efficient method of conservation, i.e. in artificial straws submerged in liquid nitrogen, has been introduced for bacterial and fungal cultures. All information concerning strains, their preservation and distribution is unified under a computer programme called MINE, which is compatible with programmes used in the major culture collections in Europe.

The CCM is a member of the World Federation for Culture Collections (WFCC), of the European Culture Collections' Organisation (ECCO) and of the Federation of Czechoslovak Collections of Microorganisms (FCCM). CCM is a recognized International Depository Authority (IDA) for deposits of bacteria, yeasts and filamentous fungi for patent purposes under the Budapest Treaty. Bacteria and fungi for patenting on the national level are also accepted. CCM also offers professional services for clients such as the distribution of cultures, the identification of bacteria and filamentous fungi, safe deposits of cultures owned by the clients, conservation of microbial cultures by freeze-drying, isolation of microorganisms from samples of various materials, etc. All these services are provided for a fee. Short or long-term contract research is conducted.

Staff has no teaching duties. Nevertheless, I. Sedláček continues to give lectures on systematic bacteriology at the Dept. of Microbiology. He also acts as a consultant for the Ph.D. theses of two students. D. Novotný continues to be the consultant for three diploma theses of students of the Dept. of Microbiology. He gives lectures on mycology at the Depts. of Botany and Microbiology and he gives lectures on microscopic fungi for students of the Industrial School for Chemistry. Work on four diploma theses is carried out at the CCM under the supervision of I. Sedláček.

The scientific research at the CCM focuses predominantly on the taxonomy and diagnostics of microorganisms. The bacteriological part concerns studies of relatedness and genetic diversity of G- rods and G+ cocci by ribotyping and whole-cell protein profiles analysis, species diversity of bacteria in some caves of the Moravian Karst, in clean waters and on living bats and llamas. The suitability of commercial diagnostic kits is tested on strains of clinically important bacteria. CCM collaborates on the development of an automated identification system. Our mycological research team continued studies on the taxonomy of aquatic hyphomycete (cultures isolated in Canadian streams), and the mycoflora (especially endophytes) of trees and beetles was studied.

STRUCTURE OF PERSONNEL

Head:

Ivo Sedláček (RNDr., CSc.)

Curators:

Ludmila Marvanová (RNDr., CSc.) – fungi

Zdena Páčová (RNDr.) – bacteria

Researchers:

Pavel Benda (RNDr.) – part time

David Novotný (Mgr.)

Hana Štegenerová (MVDr.)

Vlastimil Štětina (RNDr.)

Pavel Švec (Mgr., Ph.D.)

Technicians:

Hana Dubnová

Františka Labíková – part time

Ivana Machová (Ing.)

Anna Šulistová

Petra Šulistová (Bc.)

Secretary

Edita Kremláčková (Bc.)

PROJECT GRANTS RECEIVED

Ministry of Industry and Trade of the Czech Republic

FD-K-026 (Project of the KONSORCIA programme): Inorganic construction materials resistant to biocorrosion (co-investigators: I. Sedláček and H. Štegenerová).

National Agency of Agriculture Research

Project EP 9058: Foodborne pathogens of the genus *Bacillus* in milk (co-investigator: Z. Páčová).

Project 1382: Probiotics in milk products and their influence on food quality and human health (co-investigators: I. Sedláček and P. Švec).

OTHER INTERNATIONAL CONTACTS AND CO-OPERATION OF STAFF

I. Sedláček: Member of "The Task Force on Biological Resource Centres", OECD – Working Party on Biotechnology, Paris, February 12 – 15, 2001 – final meeting.

I. Sedláček and P. Švec: Cooperation on the project Identification of Foodborne Pathogens from the Genus *Bacillus* in Raw Cow's Milk and Milk Products by Molecular Methods (principal investigators: Dr. M. Vyletěllová, VÚCHS, Rapotín, Czech Republic, and Dr. K. Torkar, Univ. of Ljubljana, Slovenia).

OTHER PROFESSIONAL ACTIVITIES

L. Marvanová: member of the editorial board of the journal Czech Mycology.

D. Novotný: webmaster of the www pages of the Federation of Culture Collections of Microorganisms (FCCM) and of the Czech Scientific Society of Mycology (ČVSM); organizes annual mycological meetings of students and young mycologists from the Czech Republic.

Department of Anthropology

TEACHING AND RESEARCH ACTIVITIES

Research at the Department of Anthropology is oriented towards the study and exploration of processes connected with the evolution of mankind. In accordance with the specialisation of the Department's personnel, adjunct lecturers and external collaborators, most attention is given to the variability and adaptability of human biological (physical), behavioural, and socio-cultural structures of the past and partly also of the present. In the study of ancient populations, ranging from prehistoric to historic times, special emphasis is given to all the above-mentioned aspects. In relevant contexts, attention is paid to the development, verification/falsification and application of new methods and techniques for the analysis of human skeletal remains (identification of sex, age, nutrition deficiencies, pathological and traumatic lesions etc.), including experimental methods (e.g. in traseology) and their application in anthropology, and including the (meta) methodological approaches.

In 2001, the Department prepared and commenced the implementation of the following interdisciplinary projects:

- 1) Anthropology of ethnics in Central Europe in the period from the 1st to the 12th century in co-operation with the Institute of Archaeology, AS CR, Brno. The project focuses mostly on the migration of people and early Slavonic settlements.
- 2) Anthropology and Archaeology of the Battlefield Slavkov/Austerlitz 1805 (Anthropologie et archéologie d'un champ de bataille Slavkov/Austerlitz 1805) in co-operation with the Laboratory of Anthropology, Univ. Bordeaux I., France.
- 3) Cultural anthropology of love and sex: their literature, art, biology, psychology - from antiquity to present time in co-operation with Czech scientists (Charles Univ., National Museum, and Oriental Institute in Prague) and Czech artists.
- 4) Anthropological research of the Slavonic settlement Pohansko (South Moravia); in co-operation with the Department of Archaeology, Fac. of Arts, MU.

Another research project that was prepared and started at the Department in 2001 was the anthropological research on the members of the princely Dietrichstein family from Mikulov na Moravě (continuous research of the family members buried in the Mikulov family tomb).

The department continued working in close co-operation with the Faculty of Medicine, Faculty of Arts and the School of Social Studies on the implementation of the new undergraduate programme that was started in 1994.

Ph.D. theses focused on the study of the Lombards in Central Europe (M. Svenssonová); the use wear analysis of mobile art - study of technology and function (Enlene, Pavlov, Dolní Věstonice, Pekárna) (M. Gonyševová); assessment of the age at death using skeletons (M. Vystrčilová), analysis of the settlement Pavlov I (Z. Bartošíková); burial rite of wartime (M. Bohunová); The life and death of Professor MUDr. et PhDr. Vojtěch Suk in the context of the development of Czech and international anthropology (R. Pilařová), funeral rite in the region of Central Europe in the time of the 16th - 18th century (M. Králíková), funeral rite and physical character of the Central European population during high and late Middle Ages (M. Živný), fingerprints and palmprints on ceramics: an anthropological view (M. Králík), anthropology of music (R. Bortel), the epigenetic traits and the relationship in Early Medieval burial – ground in Žatec-Chelčický Square (J. Hlavová), application of macroscopical versus microscopical methods of determination of age at death and sex at cremated bones: the analysis of skeletal remains of the Germanic population from the Roman period in Moravia (J. Nováček) and social aspects of human stature (I. Šámalová).

External teaching:

- Lectures and practical courses in anatomy, morphology and anthropology for students of the Fac. of Fine Arts, Brno Univ. of Technology: Depts. of Painting, Sculpture, Drawing and Graphic Art, Conceptual Tendencies, Videart-Multimedia-Performance, Graphic Design and Industrial Design (teacher: V. Novotný).
- The lectures Prolegomena of Post-Modern Science (Teacher: V. Novotný) and Panorama of Physical and Socio-cultural Anthropology for the Department of Environmental Studies, School of Social Studies, MU (teachers: J. Malina, V. Novotný, J. Unger, and E. Drozdová).

STRUCTURE OF PERSONNEL

Head:

Jaroslav Malina (Prof., PhD., DrSc.)

Associate Professors:

Vladimír Novotný (Assoc. Prof., MUDr., CSc.)

Josef Unger (Assoc. Prof., PhD., CSc.)

Assistant Professor:

Eva Drozdová (RNDr., Ph.D.)

Research Assistants:

Miroslav Králík (Mgr.)

Jiří Svoboda (Assoc. Prof., PhD., DrSc.)

Vladimír Šedivý (RNDr., CSc.)

Michaela Vystrčilová (Mgr.)

Adjunct Lecturers:

Luboš Bělka (Assoc. Prof., PhD., CSc.), Dept. for the Study of Religions, Fac. of Arts, MU.

Marie Pardyová (Ph.D., CSc.), Dept. of Classical Studies, Fac. of Arts, MU.

Jiří Pavelka (Assoc. Prof., PhD., CSc.), Dept. of Media Studies and Journalism, School of Social Studies, MU.

Jiří Pernes (PhDr., CSc.), Inst. of History, AS CR, Brno.

Zdeňka Tarabová (RNDr.) – MU.

Secretary:

Dana Zelenáková

Ph.D. Students:

Full time

Zita Bartošíková (Mgr.)

Roman Bortel (Mgr.)

Martina Bohunová (Mgr.)
Martina Gonyševová (Mgr.)
Jana Hlavová (Mgr.)
Michaela Králíková (Mgr.)
Miroslav Králík (Mgr.)
Jan Nováček (Mgr.)
Radka Pilařová (Mgr.)
Iveta Šámalová (Mgr.)
Michaela Vystrčilová (Mgr.)
Michal Živný (Mgr.)
Part time
Marta Dočkalová (Mgr.)
Lenka Jarošová (Mgr.)
Markéta Svenssonová (Mgr.)

THESES DEFENDED IN THE ACADEMIC YEAR 2000/2001

Diploma theses:

Bortel, R.: Anthropological Analysis of the Burial Ground Uherské Hradiště – Sady (10th – 13th century) (supervisor: E. Drozdová).
Jamborová, L.: Changes of the Bone Relief of the Pelvic Bone Gluteal Region (supervisor: V. Novotný).
Hlavová, J.: Anthropological Analysis of the Bone Material from the Dominican Monastery in Opava (supervisor: E. Drozdová).
Nováček, J.: Burial Rituals of the Germanic Population of the Roman Period (A. D. 0 – 400) in Moravia (supervisor: J. Unger)

PROJECT GRANTS RECEIVED

Grant Agency of the Czech Republic

404/99/0427: The region north of the Danube in the period between the decline of the Western Roman Empire and the arrival of the Slavs. New views of the archaeological and anthropological research (J. Malina, J. Tejral). 1999 – 2001.

Grant Agency of the Ministry of Education, Youth and Sports of the Czech Republic

608/2001: Estimation of age at death from the skeleton using histological methods (M. Vystrčilová, V. Novotný) 2001.

INVITED LECTURES AND RESEARCH STAYS OF STAFF ABROAD

Unger, J.: Mediaeval Anthropology. Dept. of Archaeology, Georg-August-Universität Göttingen, Germany, June 29 – July 5, 2001, Sept. 24 –29, 2001.

STUDENTS STUDYING ABROAD

Gonyševová, M. (Mgr.): doctoral study split between MU and the Muséum National d'Histoire Naturelle – Inst. de Paléontologie Humaine - Musée de l'Homme – Laboratoire de Préhistoire, France.

Dvořák, M., Salvét, V.: six months study stay (Socrates/Erasmus) at the Dept. of Anthropology, Univ. di Firenze, Italy.

Klempererová, H. – ten months study stay (Socrates/Erasmus) at the Dept. of Anthropology, Faculdade de Ciências e Tecnologia da Univ. de Coimbra, Portugal.

Kurková L., Rezáková, O. – six months study stay (Socrates/Erasmus) at the Dept. of Anthropology, Facultad de Ciencias Biológicas, Univ. de Complutense de Madrid, Spain.

GUESTS

Mgr. S. Bodoriková, Dept. of Anthropology, Comenius Univ., Bratislava, Slovakia.

Mgr. Robert Dąbrowski, Dept. of Anthropology, Adam Mickiewicz Univ., Poznań, Poland.

Assoc. Prof. PhDr. M. Slivka, CSc., Dept. of Archaeology, Comenius Univ., Bratislava, Slovakia.

OTHER INTERNATIONAL CONTACTS AND CO-OPERATION OF STAFF

Consorzio di Ricerca DIGAMMA-Univ. di Bari, Italy: Shape analysis in sexing the human skeleton. (V. Novotný, E. Vacca)

Laboratory of Anthropological Reconstruction, Russian Academy of Sciences, Moscow, Russia: Anthropological face reconstruction from the skull. (V. Novotný, E. Drozdová, E. V. Veselovskaja)

Natural History Museum London, UK: Sexual dimorphism in the "Coffin Collection-Spitalfield". (V. Novotný, T. Molleson)

Univ. Rostock, Fachbereich Landeskultur und Umweltschutz, Germany: Project "Soil erosion on archaeological monuments in urban and suburban areas" (J. Unger).

Univ. Bordeaux I, Laboratoire d'Anthropologie du Passé, UMR 5809-CNRS, France:

1. Anthropology and Archaeology of the Battlefield Slavkov/Austerlitz 1805 (V. Novotný, J. Unger, J. Brůžek, E. Crubézy, P. Murail)
2. Sexual dimorphism of the human pelvis, parturition scars, paleodemography (V. Novotný, J. Brůžek)

OTHER PROFESSIONAL ACTIVITIES

J. Malina: Editor-in-chief of the University Newspaper (Univerzitní noviny); director of the editorial board and editor-in-chief of "Personality Series", "Heureka Series", "Scientia Series", "Scintilla Series", "Miscellanea Series" and "Belletr Series"; member of the review board of the journal "Forum Scientiae"; member of the MU Chancello's Board for Visual Arts; president of the Universitas Masarykiana Foundation; director of the Karel Engliš Prize Awarding Board; director of the Universitas Masarykiana Foundation Prize Awarding Board.

V. Novotný: "Membre associé" of the Laboratoire d'Anthropologie des Populations du Passé, Univ. Bordeaux I. and UMR 5809-CNRS, Talence, France; member of the Academic Senate, Brno Univ. of Technology; member of the Academic Senate, Fac. of Fine Arts, Brno Univ. of Technology; member of the Scientific Council for Anthropology, MU; member of the Editorial Board of Anthropologie (Brno) and member of the Board of International Collaborators of Variability and Evolution (Poznań); department coordinator for the Socrates/Erasmus Programme; member of the following scientific societies: Czech Anthropological Society, Czech Anatomical Society, Czech Medical Society of J.E.Purkyně, European Anthropological Association, International Association for Craniofacial Identification. .

J. Unger: Vice-president of the Universitas Masarykiana Foundation; member of the "Arbeitsgemeinschaft für Mittelalterarchäologie"(Wien), of the "Arbeitskreis für genetische Siedlungsforschung in Mitteleuropa" (Bonn), and of the "Wartburg Gesellschaft" (Eisenach); member of the editorial boards of the following journals: Archeologické rozhledy, Vlastivědný věstník moravský, Jižní Morava, Castellologica Bohemica).

Department of Botany

TEACHING AND RESEARCH ACTIVITIES

The Department provides the basic courses for the teacher-training programmes in Biology and for the bachelor's study programme in Biology. Special courses are provided within the master's study programme in Plant Systematics and Ecology and the doctoral studies in Botany. The basic courses include Lower Plant Systematics, Higher Plant Systematics, Plant Morphology, and Scientific Presentation in Botany, Ecology, Plant Ecology, and Didactics of Biology. Special courses cover Plant Taxonomy, Phytogeography, Vegetation of the Czech Republic, Flora of the Czech Republic, Palaeoecology, Methods in Vegetation Science, Methods in Phytosociology, Methods in Floristic Survey, Vegetation of Europe, Biomes of the World, Biological Conservation of Plants, Applied Ecology, Dendrology, Cultivated Plants, Ornamental Garden Plants, Ornamental Indoor Plants, Identification Courses (vascular plants, bryophytes, lichens, fungi, algae), Mycology, Phytopathology, Botanical Literature, Overview of Plant Systematics, and Selected Issues in Botany. The Department also provides field courses in Botany. The 2001 field excursion of the Department took place in eastern Poland and involved 40 participants (staff and students). A book on the history of the Department, covering the whole period from its establishment in 1921 till 2001 has been published (Vacek and Bureš 2001).

The research activities of the Department focus on plant systematics and vegetation ecology, particularly with reference to Central Europe and the Czech Republic, but also outside of this geographical area. The principal fields are the following:

(1) Systematics of vascular plants: Current research focuses mainly on the treatment of selected genera of the Czech flora for the monograph Flora of the Czech Republic. Two specialized facilities are operating within the Department, i.e. the Caryological Laboratory and the Laboratory of Molecular Taxonomy of Plants. An important source of plant material for taxonomic studies is the Herbarium of the Dept. of Botany (BRNU) which contains ca. 560,000 plant specimens.

(2) Phytogeography: This field mainly includes the research into vascular plant distribution in the Czech Republic and adjacent territories. Special attention is devoted to some parts in Moravia such as the Podyjí National Park, the Pálava Biosphere Reserve and the Bílé Karpaty Mts. Besides descriptive phytogeographical studies, special attention is paid to the study of relationships between landscape structure and vascular plant diversity.

(3) Vegetation science: Current research focuses on the vegetation survey of the Czech Republic, which is linked to the international project European Vegetation Survey. As a part of this project, new methods are being developed for vegetation classification using large databases. The Department manages the Czech National Phytosociological Database, which contains ca. 50,000 electronic relevés. In addition, regional vegetation studies with inventories of vegetation types and vegetation mapping are conducted, particularly in different parts of Moravia.

The projects in all the above mentioned fields are supported by grants from various sources. Traditionally, the bulk of funding comes from the Grant Agency of the Czech Republic. These projects involve staff, doctoral and master's students, and outside collaborators.

STRUCTURE OF PERSONNEL

Head:

Milan Chytrý (Assoc. Prof., RNDr., Ph.D.)

Professor:

Jiří Vicherek (RNDr., CSc.) – part time, Professor Emeritus

Associate Professors:

Marie Dvořáková (RNDr., CSc.)

Vladimír Řehořek (RNDr., CSc.) – part time

Jiří Unar (RNDr., CSc.)

Assistant Professors:

Petr Bureš (RNDr., Ph.D.)

Jiří Danihelka (Ing., Ph.D.) – part time

Vít Grulich (RNDr., CSc.)

Petr Hrouda (Mgr., Ph.D.)

Lubomír Tichý (Mgr., Ph.D.)

Research Assistants:

Michal Hájek (Mgr.)

Lucie Horová (Mgr.)

Katrin Karimová (Bc.) (since September)

Marie Rafajová (Mgr.)

Olga Rotreklová (Mgr.)

Technicians:

Stanislav Blecha

Marie Holčáková

Librarian:

Iva Kuběnová

Secretary:

Eliška Karasová

Adjunct Lecturers:

Jana Jakrlová (Ing., CSc.)

Svatava Kubešová (Mgr.)

Tomáš Kučera (Mgr., Dr.)

Jan Nedělník (RNDr., CSc.)

Kamil Rybniček (Assoc. Prof., RNDr., CSc.)

Ph.D. Students:

Full time

Petra Hájková (Mgr.)
Viera Horáková (Mgr.)
Kateřina Kočí-Ehrenbergerová (Mgr.)
Ilona Kuželová (Mgr.)
Zdenka Otýpková (Mgr.)
Jan Roleček (Mgr.)
Sierra Dawn Stoneberg Holt (Mgr.)
Petr Šmarda (Mgr.)
Kateřina Šumberová (Mgr.)
Jana Tkačíková (Mgr.)

Part time

Šárka Cimalová (Mgr.)
Rodan Geriš (Mgr.)
Michal Hájek (Mgr.)
Martin Kočí (Mgr.)
Svatava Kubešová (Mgr.)
Zdeňka Lososová (RNDr.)
Radomír Řepka (Ing.)
Iva Sedláková (Mgr.)
Tomáš Vymyslický (Mgr.)
Magda Zdražilková (Mgr.)

FOREIGN STUDENTS AT THE DEPARTMENT

Mihai Constantinescu, Babes-Bolyai Univ. Cluj, Romania
Sierra Dawn Stoneberg Holt, USA

THESES DEFENDED IN THE ACADEMIC YEAR 2000/2001

Diploma theses:

Derková, M.: Wetland vegetation of the Vsetínské vrchy hills (supervisor: M. Chytrý).
Dvořáková, H.: Downy mildews and smuts in the city of Brno (supervisors: V. Řehořek, J. Müller).
Ernestová, J.: Floristic study of the south-western surroundings of the city of Jindřichův Hradec (supervisor: J. Unar).
Karkanová, V.: Floristic study of the south-eastern surroundings of the town of Boskovice (supervisor: P. Bureš).
Koprivová, P.: Distribution of rusts in the surroundings of the town of Tišnov – a mycofloristic study (supervisors: V. Řehořek, J. Müller).
Kučerová, E.: Floristic study of the south-western surroundings of the city of Brno (supervisor: J. Unar).
Nejedlá, Š.: Floristic study of the north-eastern surroundings of the village of Havlíčkova Borová (supervisor: P. Bureš).
Pokorná, P.: Distribution of *Iris pseudacorus* L. and *Iris sibirica* L. in the Czech Republic (supervisor: V. Grulich).
Ruprechtová, L.: Flora of the city of Hradec Králové and its surroundings from the allergological point of view (supervisor: J. Unar).
Stoneberg Holt, S. D.: A comparison of Central European and North American populations of *Poa pratensis* agg. (supervisor: P. Bureš).
Šmarda, P.: Central European taxa of the genus *Festuca* L. ser. *Psammophilae* M. Pawlus (supervisor: V. Grulich).
Veselá, L.: Floristic study of the north-western surroundings of the town of Žďár nad Sázavou (supervisor: P. Bureš).
Vymyslický, T.: Invasive plant species and their communities in the South Moravian river floodplains (supervisor: M. Chytrý).

PROJECT GRANTS RECEIVED

Grant Agency of the Czech Republic

206/01/1115: Flora of the Czech Republic – Vol. 8/1 (B. Slavík).

The Flora is planned as an 8-volume monograph, with the first six volumes already published in 1988–2000; vol. 7 has been prepared for publication. This grant (2001–2003) was awarded for the preparation of volume 8 (part 1). The project is being co-ordinated by the Inst. of Botany, AS CR, Průhonice. M. Dvořáková is the Department's local co-ordinator with V. Grulich and P. Bureš as local collaborators. The texts on the following genera of *Juncaginaceae*, *Asphodelaceae*, *Iridaceae*, and *Cyperaceae* have been prepared at the Department: *Triglochin*, *Anthericum*, *Iris*, *Carex*, *Eleocharis*, *Schoenoplectus*, *Schoenus*, *Scirpoides*, *Scirpus*, and *Trichophorum*.

206/99/1523: Parameterization of the phytosociological system using large data sets (M. Chytrý).

This project includes the creation and management of the Czech National Phytosociological Database, the development of new methods and software for phytosociological classification using large data sets, parameterization of syntaxa using environmental variables, and demonstration projects such as the formalized classification of the subalpine tall-forb vegetation of the Czech Republic or the analysis of diagnostic species of Central European spruce forests. The project team includes M. Chytrý, L. Tichý, M. Rafajová, M. Kočí, and V. Grulich from the Department, and T. Kučera from the Inst. of Botany, AS CR, Třeboň.

206/99/1240: Sloping springs and spring fens of the Moravian-Slovakian flysh borderland – flora, vegetation, habitats, Upper Holocene development (K. Rybníček).

This project is directed at studying the vegetation and flora (including algal flora and bryoflora) of the remaining spring and spring fen ecosystems in the westernmost flysh areas of the West Carpathians. The data obtained will be used in several ways, especially in assessing the importance of specific taxa and plant communities as indicators. Palaeoecological data will provide information about the origin and development of spring ecosystems during the Upper Holocene, which represents a necessary historical background for the above mentioned studies. The project is being co-ordinated by the Inst. of Botany, AS CR, Brno. V. Řehořek is the local co-ordinator, with M. Hájek and P. Hájková as local collaborators.

206/01/P115: Vascular plants of the Pálava UNESCO Biosphere Reserve (J. Danihelka).

In the scope of this project, the distribution mapping of vascular plants of the extended Pálava UNESCO Biosphere Reserve shall be completed. A checklist compiled from literature and, if necessary, herbarium studies will complement the survey of the recent flora. Changes in vascular plant flora from the time of the first botanical surveys of the region to the present will be evaluated; endangered, phytogeographically important and synanthropic species will be treated in a more detailed way. For the purpose of information exchange in the world-wide network of Biosphere Reserves, the results will be stored in the MABFlora database.

Ministry of Education, Youth and Sports of the Czech Republic

MSM 143100010: Spatial and temporal biodiversity dynamics in ecosystems of Central Europe (J. Vaňhara).

Research teams from the Dept. of Zoology and Ecology, the Dept. of Comparative Animal Physiology and General Zoology, and the Dept. of Botany participate in this project (see chapter on the Biodiversity Research Group). Within the Dept. of Botany there are two research teams: the Plant Biosystematics Research Team (P. Bureš, J. Danihelka, O. Rotreklová, and V. Řehořek) conducts research including the applications of DNA analyses in plant systematics while the Vegetation Science Research Team (M. Chytrý, V. Grulich, L. Tichý, and J. Unar) focuses on the formalized classification of vegetation.

FRVŠ 612/2001: Study of weed vegetation in the Carpathian region of East Moravia (Z. Otýpková).

The project focused on the area of the Hostýnsko-vsetínské vrchy Hills, where arable land has been cultivated in a traditional way until today, which implies that the weed communities should be well preserved in this region. Based on a large set of relevés, a survey of the weed communities in the study area was done. Data were included in the Czech National Phytosociological Database and community classification created using the Juice programme.

PROGRAMME KONTAKT 29/166: Diversity of xerothermic vegetation along the Pannonian-Carpathian phytogeographical boundary (M. Hájek).

The project is focused on the collection and summarization of phytosociological, floristic, and geographic data along the Pannonian-Carpathian boundary in the White Carpathians Mts. The GIS and database standards used on the Czech and Slovak sides of this mountain range were united. The Bošácká valley in Slovakia was selected as a model area. All available fine-scale geographical, environmental, vegetational, and phenological data were transformed into GIS-formats and prepared for final analysis.

Ministry of Environment: Agency for Nature Conservation and Landscape Protection of the Czech Republic

VaV 610/10/00: Influence of economic management on biodiversity in protected areas: Monitoring changes in plant communities caused by economic management in the National Nature Reserve Děvín (Pálava Biosphere Reserve, South Moravia) (J. Danihelka).

The research focused on (1) vegetation development of dry grasslands, using data from permanent plots; (2) vegetation mapping; (3) comparison of recent and former spatial distribution of major vegetation types, using a sequence of aerial photographs from 1938–1995.

CONFERENCES (SYMPOSIA, SEMINARS) ORGANIZED BY DEPARTMENT MEMBERS

Advanced course "Analysis of Phytosociological Databases and Formalized Vegetation Classification", Brno, January 29–February 2, 2001: M. Chytrý, L. Tichý, and V. Horáková organized and lectured at the course.

Planta Europea – Third European Conference on the Conservation of Wild Plants, Průhonice, June 23–28, 2001: J. Danihelka, V. Grulich, and V. Řehořek were members of the organising committee; J. Danihelka organized the pre-conference tour to South Moravia on June 19–23, 2001.

Floristic Summer School of the Czech Botanical Society, České Budějovice, June 30– July 7, 2001: V. Grulich was member of the Organizing Committee.

The First Workshop on Information Technologies Application to Problems of Biodiversity and Dynamics of Ecosystems in North Euroasia (WITA'2001), Novosibirsk, Russia, July 9–14, 2001: M. Chytrý was member of the Organizing Committee

Workshop "Vegetation Classification and Phytogeography of Circumboreal Coniferous Forests" in 44th IAVS Symposium, July 29–Aug. 4, 2001, Freising-Weihenstephan, Germany: M. Chytrý was the workshop convenor.

Seminar "Floodplain from the Multidisciplinary Point of View IV", Brno, Oct.10, 2001: V. Řehořek was the organizer.

Seminar on the Juice programme, Brno, Nov. 28, 2001: L. Tichý was the organizer.

Seminar "Sloping Springs of the Moravian-Slovakian Borderland", Brno, Dec. 13, 2001: M. Hájek was one of the organizers.

INVITED LECTURES AND RESEARCH STAYS OF STAFF ABROAD

Chytrý, M. & Tichý, L.: Analysis of phytosociological databases and formalized vegetation classification (advanced course), Comenius Univ., Bratislava, Slovakia, March 27–28, 2001.

Chytrý, M. & Tichý, L.: Analysis of phytosociological databases and formalized vegetation classification (advanced course), Inst. of Ecology and Botany, Hungarian Academy of Sciences, Vácrátót, Hungary, Oct. 17–18, 2001.

Chytrý, M. & Tichý, L.: 10th International Workshop "European Vegetation Survey", Roma, Italy, March 29–April 2, 2001.

Chytrý, M.: SynBioSys Workshop, Alterra, Wageningen, The Netherlands, Oct. 10–13, 2001.

Chytrý, M.: Workshop WITA'2001, Novosibirsk, and subsequent field excursion to the Altai Mts., Russia, July 9–20, 2001.

Horáková, V.: study stay (scholarship) at the Inst. of Geobotany, Albert-Ludwigs-Universität in Freiburg, Germany (Prof. U. Deil), Oct. 3 – Dec. 31, 2001.

Otýpková, Z.: study stay (scholarship) at University College Dublin, Ireland (Prof. G. Doyle), Oct. 31–Dec. 19, 2001.

OTHER INTERNATIONAL CONTACTS AND CO-OPERATION OF STAFF

University of Jena, Germany (Jochen Müller), research on the genus *Festuca*, with a working stay at the Dept. of Botany on April 5–7, 2001, which also included J. Müller's lecture "Systematics of *Baccharis* (Compositae) in Bolivia" (K. Ehrenbergerová-Kočí, P. Šmarda).

University of Cluj, Romania (Mihai Constantinescu), study of computer-assisted methods of vegetation analysis, Dec. 10–21, 2001 (M. Chytrý).

Inst. of Botany, Slovak Academy of Sciences, Bratislava, Slovakia (Dr. M. Valachovič, Dr. I. Jarolímek), phytosociological studies of Central European vegetation (M. Chytrý, M. Hájek, P. Hájková)

Dept. of Phytology, Technical Univ., Zvolen, Slovakia (R. Hrivnák, Dr. K. Ujházy), phytosociological studies of Central European vegetation (M. Chytrý, M. Hájek, P. Hájková)

Dept. of Vegetation Ecology, Inst. of Plant Physiology, Univ. of Vienna (A. Exner, W. Willner), phytosociological study of Central European spruce forests (M. Chytrý)

USDA Forest Service, Kootenai National Forest, Montana, USA (T. Spribille), organization of the workshop on boreal forests as a part of the IAVS Symposium in Freising, Germany, and editing the proceedings of the workshop (M. Chytrý)

Central Siberian Botanical Garden, Novosibirsk, Russia (Dr. N. Ermakov), organization of a workshop on information technologies in Novosibirsk, phytogeographical excursion to the Altai Mts. (M. Chytrý)

Inst. of Ecology and Botany, Hungarian Academy of Sciences, Vácrátót, Hungary (Z. Botta-Dukát, T. Rédei), development of statistical fidelity measures, teaching the advanced course "Analysis of phytosociological databases and formalized vegetation classification" (M. Chytrý, L. Tichý)

Dept. of Ecosozology and Physiotactics, Comenius Univ., Bratislava, Slovakia (J. Zlinská), teaching the advanced course "Analysis of phytosociological databases and formalized vegetation classification" (M. Chytrý, L. Tichý)

Alterra Green World Research, Wageningen, The Netherlands (Dr. S. Hennekens, Dr. J. Schaminée), preparing the SynBioSys Europe project (M. Chytrý)

Inst. of Botany, Slovak Academy of Sciences, Bratislava, Slovakia (Dr. M. Valachovič, Dr. I. Jarolímek), project "Plant Communities of Slovakia" (M. Hájek, P. Hájková)

OTHER PROFESSIONAL ACTIVITIES

P. Bureš: Member of the Committee of the South Moravian Branch of the Czech Botanical Society; member of the Advisory Boards of the Protected Landscape Areas Žďárské vrchy Mts. and Železné hory Mts.; member of the Senate of the Faculty of Science, MU.

M. Chytrý: National representative of the Czech Republic in the IAVS Working Group for European Vegetation Survey; member of the Steering Committee of the SynBioSys Europe project; member of the Scientific Council of the Inst. of Botany, AS CR, Průhonice; member of the Council for Doctoral Study in Botany, MU; member of the Council for Doctoral Study in Botany, Univ. of South Bohemia, České Budějovice; member of the Council for Doctoral Study in Botany, Palacký Univ., Olomouc; member of the Main Committee of the Czech Botanical Society; member of the Committee of the South Moravian Branch of the Czech Botanical Society; editor of the journal *Folia Geobotanica* (Praha); member of the editorial board of the journals *Preslia* (Praha) and *Itinera Geobotanica* (León).

J. Danihelka: member of the editorial board of the journal *Příroda* (Praha).

M. Dvořáková: Member of the editorial board of the *Flora of the Czech Republic*; member of the Council for Doctoral Study in Botany, MU.

V. Grulich: Member of the Council for Doctoral Study in Botany, MU; chairman of the Floristic Section of the Czech Botanical Society; member of the Main Committee of the Czech Botanical Society; member of the Committee of the South Moravian Branch of the Czech Botanical Society; member of the editorial board of the journal *Preslia* (Praha), member of the specialized committee of the Grant Agency of the Czech Republic

V. Řehořek: President of the Czech Botanical Society; member of the Committee of the South Moravian Branch of the Czech Botanical Society; member of the Scientific Council of the Inst. of Botany, AS CR, Průhonice; member of the Council for Doctoral Study in Botany, MU.

J. Unar: Treasurer of the Natural History Club, Brno; member of the council for Doctoral Study in Biology, MU; chairman of the Council for Doctoral Study in Botany, MU; member of the Council for Doctoral Study in Ecology, MU.

J. Vicherek: Member of the National Committee for Awarding Scientific Degrees to Doctors of Biological Sciences in Botany; member of the National Committee for Awarding Scientific Degrees to Doctors of Biological Sciences in Ecology; member of the Scientific Council of the Museum of Olomouc.

Department of Comparative Animal Physiology and General Zoology

TEACHING AND RESEARCH ACTIVITIES

The Department is responsible for teaching in the field of general biology, cytology, general zoology, general and comparative physiology of animals and immunology. This applies for students of biology of both the scientific and teacher training study programmes. The department is further responsible for the master's programme in general biology. External specialists also participate in the teaching activities of the department. These specialists come from various institutions including the Academy of Sciences, governmental research institutes, medical institutions and other organizations, in which graduates may find employment.

The research activities of the Laboratory of Animal Physiology focus on metabolic trials and their regulation during development, and on the influence of various factors (nutrition, temperature, injury, etc.) on the mechanisms of adaptation in different species of insects (*Galleria mellonella*, *Bombyx mori*) and mammals (especially the laboratory mouse). A new area of research involves the immune reactions of insects and mammals when exposed to certain external factors. The aim of this research is to establish a theoretical background for the artificial control of metabolic changes occurring as a result of adaptation caused by different patterns of food reception. It is expected that the results will be valuable not only for the theory of comparative physiology itself, but also for practical use, for example in the control of harmful insects, zootechniques, etc.

In the Laboratory of Immunology we work in the area of molecular biology, immunology and general zoology. We study the immune system of all organisms, but focus especially on the study of the infection disease Lyme borreliosis. Arthropods and rodents are investigated for spirochetes and subsequently spirochete structures are identified using PCR and PAGGE methods. We also study some regularities in the transfer of *Borrelia* pathogens in vectors.

The Laboratory of Sense Physiology of Insects studies insect sensitivity to the magnetic field. Currently, behavioural and developmental experiments with the aim to prove insect magnetosensitivity are conducted. These might be complemented by electrophysiological investigations in the future.

The Laboratory of General Zoology is engaged in research on bumblebees regarding their biology, management, laboratory rearing, use for pollination purposes and their relations to food plants. Other bee genera (the honey bee and solitary bees) are partially covered as well. Within the Laboratory, there is a laboratory of electron microscopy.

The mission of the Laboratory of Neurobiology and Molecular Psychiatry is (1) to use the powerful new tools of molecular genetics to understand, improve diagnosis and treatment of psychiatric illness (drug dependence, alcohol dependence, attention deficit hyperactivity disorder, acute pain), and (2) to teach principles of neurobiology and molecular psychiatry to professionals and scientists in molecular physiology and medicine.

STRUCTURE OF PERSONNEL

Head:

Vladimír Šimek (Prof., RNDr., CSc.)

Associate Professor:

Vladimír Ptáček (RNDr., CSc.)

Assistant Professors:

Monika Dušková (RNDr., Ph.D.) part time until September

Arnošt Krška (RNDr., CSc.) until September

Omar Šerý (Mgr., Ph.D.)

Martin Vácha (RNDr., Ph.D.)

Alena Žáková (RNDr., Ph.D.)

Research Assistants:

Jana Benešová (Mgr.) part time

Pavel Hyršl (Mgr.) part time

Marie Chovančíková (Mgr.) part time until April

Helena Soukopová (Mgr.) part time

Jiří Štika (Mgr.) part time

Technicians:

František Butula

Hana Kulová

Eva Halušková

Renata Hladilová

Iveta Jedličková

Milan Vaněk

Secretary:

Jana Fuchsová

Adjunct Lecturers:

Milan Číž (Mgr., Ph.D.), Inst. of Biophysics, AS CR, Brno.

Jiří Halouzka (RNDr., CSc.), Inst. of Vertebrate Biology, AS CR, Brno.

Jiřina Hofmanová (Assoc. Prof., RNDr., CSc.), Inst. of Biophysics, AS CR, Brno.

Alois Kozubík (Assoc. Prof., RNDr., CSc.), Inst. of Biophysics, AS CR, Brno.

Pavel Krieg (RNDr., CSc.), Research Inst. of Beekeeping at Dol, Prostějov Station.

Antonín Lojek (RNDr., CSc.), Inst. of Biophysics, AS CR, Brno.

Richard Petrásek (Prof., RNDr., CSc.), Inst. of Clinical and Experimental Medicine, Prague.

Pavel Racek (RNDr.), Immunological Laboratory, Brno

Oldřich Štěrba (Prof., MVDr., DrSc.), Univ. of Veterinary Medicine and Pharmacology, Brno

Ph.D. Students

Full time

Daniela Hradilová (Mgr.)

Lenka Weiterová (Mgr.)

Zdeněk Andrysík (Mgr.)

Martina Pavelková (Mgr.)

Radim Prokop (Mgr.)

Karel Souček (Mgr.)

Romana Slavičková (Mgr.)

Lucie Gallová (Mgr.)

Eva Janouškovcová (Mgr.)

Kateřina Pejchalová (Mgr.)

Helena Soukopová (Mgr.)

Sylvie Šikutová (Mgr.)

Pavel Hyršl (Mgr.)

Jiří Štika (Mgr.)

Part time

Iva Heimerlová (MVDr.)

Marie Chovančíková (Mgr.)

Jiří Pacherník (Mgr.)

Irena Schopfová (Mgr.)

Gabriela Tauwinklová (Mgr.)

THESES DEFENDED IN THE ACADEMIC YEAR 2000/2001

Diploma theses:

Andrysík, Z.: Changes in proliferation and expression in c-Jun protein as induced by metabolism-inhibitors of arachidonic acid in human immortalized HaCaT keratinocytes (supervisor: A. Kozubík).

Bartošková, H.: The human respiratory system – its development and pathologic changes (supervisor: V. Šimek).

Blažková, A.: The human nutrition and factors affecting it (supervisor: V. Šimek).

Gallová, L.: Reactive nitrogen and oxygen metabolites produced by phagocytes (supervisor: A. Lojek).

Hrobařová, A.: Psychoactive substances and their influence on the central nervous system: stimulancia (supervisor: O. Šerý).

Janouškovcová, E.: Investigation of the protein spectrum of individual spirochete-passages (supervisor: A. Žákovská).

Jůdová, K.: Changes in the mouse immune system in the dependence on nutrition (supervisor: A. Žákovská).

Justinová, L.: Evaluation of the results of three years of monitoring the thick infestation by spirochetes at the locality Brno-Pisárky (supervisor: A. Žákovská).

Kroupová, J.: Mitotic activation and analyses of proliferation activity in mouse primary embryonic fibroblasts (supervisor: M. Macholán).

Mejstříková, K.: The influence of hypoxie and reoxygenation on the functional characters of endothelial cells and professional phagocytes (supervisor: M. Číž).

Pejchalová, K.: The occurrence and identification of spirochetes in hematophagous arthropods (supervisor: A. Žákovská).

Soukopová, H.: Verifying magnetotaxis in the mealworm beetle (*Tenebrion molitor*) (supervisor: M. Vácha).

Smišková, H.: The immune system in insects (supervisor: M. Vácha).

Stehlíková, M.: The monitoring of tick infestation by spirochetes at the locality Brno-Pisárky (supervisor: A. Žákovská).

Šikutová, S.: The ecology of spirochetes in selected groups of arthropods (supervisor: J. Halouzka)

Vavříková, M.: Mineral substances and their importance for man and animals (supervisor: V. Šimek)

Ph.D. thesis:

Kubala L.: The reaction of immune system cells on oxidative stress.

PROJECT GRANTS RECEIVED

Grant Agency of the Ministry of Health of the Czech Republic

NF 5991-3/2000: Genetic study of dependence: detection of the association between candidate gene polymorphisms and alcoholism (O. Šerý; P. Zvolský, Dept. of Psychiatry, Charles Univ., Prague). 2000 – 2002.

NF 6520-5/2001: Clinical and molecular – biological correlates of the ADHD in childhood (O. Šerý; I. Drtílková, Dept. of Psychiatry, Univ. Hospital, Brno). 2001 – 2005.

Grant Agency of the Ministry of Education, Youth and Sports of the Czech Republic

0566/2001: Molecular – physiological methods in the research of drug dependence (O. Šerý, R. Houšková, H. Hříbková). 2001.

567/2001: The effect of intracellular molecules in the function of cytokine TNF alpha (J. Štika, M. Marek, V. Budínský; J. Hofmanová, Inst. of Biophysics, AS CR, Brno). 2001.

568/2001: The effects of high unsaturated fatty acids on the function of cytokine THF-alpha (A. Vaculová).

Grant Agency of the Czech Republic

206/01/1361: Verifying the magnetoreception of the mealworm beetle (M. Vácha).

INVITED LECTURES AND RESEARCH STAYS OF STAFF ABROAD

Žákovská, A.: Study stay at the Dept. of Parasitology, Univ. of Wrocław, Poland and at the Dept. of Animal Physiology, Univ. of A. Mickiewicz, Poznań, Poland.

Ptáček, V.: The specialists' meeting "Beekeepers support the state. Does the State support Beekeepers?" organized by the Slovak Agricultural Chamber and the ADAPT, Bratislava, Nov. 29, 2001.

STUDENTS STUDYING ABROAD

Hyršl, P., Pavelková, M., and Vaculová, A.: students of General Biology in their 5th year, specialisation Animal Physiology. Study stays at the Dept. of Physiology, Fac. of Biology, Complutense Univ. in Madrid (Spain) within the Socrates Programme. March – May 2001.

OTHER INTERNATIONAL CONTACTS AND CO-OPERATION OF STAFF

Univ. of Ottawa, Canada (Prof. Dr. W. Plowright). Collaboration in collecting citations for the bibliography on rearing bumblebees.

Inst. of Pomology, Division of Apiculture, Pulawy, Poland (Dr. M. Bilinski). Consultant on the advantages on rearing bumblebees and solitary bees.

Complutense Univ., Fac. of Biology, Dept. of Animal Physiology (Prof. Monica de la Fuente del Rey and Prof. Maria Luisa Puerta). Co-operation in the study of adaptation of higher animals and immunology, student mobility within the Socrates/Erasmus Programme.

Ptáček, V.: Inst. of Plant Production, Dept. of Genetic Resources, Piešťany, Slovakia (Ing. J. Drobná). Collaboration in solving problems of pollination by bees of plant species collections in enclosures.

OTHER PROFESSIONAL ACTIVITIES

Ptáček, V.: Member of the International Commission for the Plant-Bee Relationship, I.U.B.B.S.; member of the State Examination Councils for Master's Degrees in Biology and Animal Physiology; member of the State Council for Doctoral Studies of Animal Physiology and Developmental Biology, Lecturer of the Czech Union of Beekeepers – Bee biology management and pollination.

Šerý, O.: Member of the Czech Neuropsychopharmacological Society; member of the Society for Biological Psychiatry; member of the Psychiatric Society of the J.E. Purkyně Czech Medical Association; member of the Society of Medical Genetics of the J.E. Purkyně Czech Medical Association.

Šimek V.: Chairman of the Council for Postgraduate Studies in Physiology and Developmental Biology of Animals at the FSc., MU; member of the Committee on the Protection of Animals Against Maltreatment at the Ministry of Education, Youth and Sports of the Czech Republic; member of the Czech Laboratory Animals Science Association (CLASA).

Žákovská, A.: Member of the Czech Medical Society; member of the Czech Immunological Society.

Vácha, M.: Member of the Czech and Slovak Ethological Society.

The Department has participated in the project "Possibility of sericulture development on fallow land excluded from food production" conducted by the Bee Research Inst. at Dol near Prague. Within the testing of silkworms, special attention was given to the rearing of the Bulgarian hybrid, to the application of the juvenoid MANTA and to stress factors (cooling, infections, etc.).

Department of Functional Genomics and Proteomics

The Department consists of two research units, i.e. the Laboratory of Plant Molecular Physiology, and Analysis of Biologically Important Molecular Complexes.

TEACHING AND RESEARCH ACTIVITIES

Laboratory of Plant Molecular Physiology

The Laboratory of Plant Molecular Physiology is a research unit established at the FSc. in the framework of the Programme 250 "Reinforcement of Research at Universities", launched by the Ministry of Education, Youth and Sports of the Czech Republic in 1996. In September 2000, the Laboratory became part of the newly established Department of Functional Genomics and Proteomics.

The Laboratory provides interdisciplinary courses for students in several Master's and Ph.D. programmes, mainly Molecular Biology and Genetics, General Biology, Plant Anatomy and Physiology, Molecular and Cell Biology, Genetics, and Structural Biochemistry. Currently, the courses include "Genomics – a basic course", "Proteomics – a basic course" and "Protein Engineering". Further, the Laboratory provides advisors and facilities to develop research projects for Master's and Ph.D. students of several departments of the Faculty of Science.

Part of the personnel (research assistants) and instrumentation form the basis of the Masaryk University's Central Laboratory of Advanced Methods of Molecular Biology. The major instruments include a facility for oligonucleotide synthesis (Expedite DNA/PNA Synthesis System), automated DNA sequencing and fragment analysis (ABI Prism 310 Genetic Analyzer), perfusion chromatography (BioCAD Chromatography System), Storm phosphorimager, Avanti J30I Beckman high-speed centrifuge, Lambda 40P UV/VIS Spectrometer, and LS 50B Luminescence Spectrometer. The Laboratory participates in the establishing of a new proteomics unit that will operate a high performance, high resolution MALDI-TOF (Bruker Daltonics Reflex IV) and high performance high sensitivity electrospray ion trap (Bruker Daltonics Esquire 2000).

Research activities focus on genome functional analyses aiming to contribute to the understanding of the molecular basis of regulatory processes in plant growth and differentiation. The approaches employed to achieve the aim include the systematic search in genome databases of *Arabidopsis thaliana* and other plant species for genes possessing characteristics of regulatory proteins and proteins involved in key metabolic processes. Subsequently, proteins encoded by the genes are subjected to molecular and structural characterisation that is expected to indicate their biological functions. Detailed analysis of the predicted biological functions includes identification, in public collections, of *Arabidopsis* insertion mutants and characterisation of the knock-out mutant phenotypes. Regulated transgene expression in *Arabidopsis* and tobacco represents a complementary approach to the knock-out mutant analysis of gene function.

Analysis of Biologically Important Molecular Complexes

The Laboratory of Analysis of Biologically Important Molecular Complexes has been established in 1997 as a research unit of the Faculty of Science within the framework of the project of the Ministry of Education "Reinforcement of University Research at Universities". Since September 2000, the laboratory is part of the newly established Dept. of Functional Genomics and Proteomics.

The Laboratory's educational programme for Master's and Ph.D. students focuses on the study of genetic information in its nuclear context. It is provided in form of the lecture course "Structure and Function of Eukaryotic Chromosomes", of the department's seminar, and further via training of diploma students and supervising of Ph.D. students. These training activities are closely linked to the research focus of the Laboratory – the study of functionally important complexes of biomacromolecules, namely those of nucleic acids and proteins, which participate in the formation of genome architecture (telomeres, centomeres, heterochromatin blocks, complexes of nuclear matrix, nucleosomes). Metabolism of genetic material (replication, transcription, recombination) proceeds at these complexes and is, therefore, significantly affected by their properties. This link provides students with a unique opportunity to participate in current research projects in this field.

Our present scientific projects aim at the nucleoprotein complexes, which form indispensable functional elements forming and protecting the ends of linear eukaryotic chromosomes – telomeres. Telomeres are synthesized by a specialized reverse transcriptase, i.e. telomerase. In the absence of telomerase, each round of DNA replication results in shortening of the telomeres due to incomplete replication of the 3' end of the parental strand and, consequently, the number of cell doublings is limited by the functionally critical length of telomeric DNA.

In humans, telomerase activity is restricted to the germ-line, cancer, and possibly cycling stem cells of self-renewing tissues. It has been shown that functioning telomere maintenance is a necessary factor of cellular immortalisation. The ability to bypass senescence by circumventing telomere-based growth limitations is thought to be a critical step in the progression to malignancy. Today's telomere research advanced from a purely descriptive approach to promising applications in medicine. These applications include "passive" ones, among which the use of analysis of telomeres and telomerase for cancer diagnostics is the best known. The "active" applications involve targeted down- or up-regulation of telomere synthesis, either to mortalize immortal cancer cells or to re-juvenate mortal somatic cells and tissues for cellular transplantations. Therefore, our collaborative research with medical institutions is focused on the biomedicine of telomeres.

In plant cells, telomerase activity has been first detected by our group in 1996 and the developmental regulation of telomere lengths and telomerase activity have been studied in model plant systems. It was shown that telomerase activity is present in dividing plant cells and is absent (but inducible) in quiescent cells. The presence of a regulatory mechanism has been demonstrated in plant cells, which control telomerase activity to compensate for replicative loss of telomeric DNA. These observations are consistent with the so-called totipotency of plant cells. Recently, the regulation of plant telomerase by telomere-binding proteins from nuclei of telomerase-negative tissues has been observed. These proteins form salt-stable, sequence specific complexes with the G-rich telomeric strand and reduce its accessibility to telomerase. Complete characterisation of these proteins, as well as search for other telomere-binding proteins is in progress, using combination of biochemical, molecular-genetic, genomic and proteomic approaches. Besides studies on "typical" telomeres, we are interested also in the structure of "alternative" telomeres, which are synthesized by telomerase-independent mechanisms.

STRUCTURE OF PERSONNEL

Head:

Jiří Fajkus (RNDr., CSc.)

Vice-Head:

Břetislav Brzobohatý (RNDr., CSc.)

Associate Professor:

Jaromír Marek (RNDr., Ph.D.)

Research Assistants:

Dana Bastlová (RNDr.)

Ivana Davidová (Mgr.)

Lenka Fajkusová (RNDr., CSc.)

Jana Klánová (RNDr.)

Hana Konečná (RNDr.)

Šárka Koukalová (Mgr.)

Eliška Nejedlá (RNDr., CSc.)

Jan Nejedlík (Mgr.)

Zuzana Petlanová (RNDr.)

Eva Paděrová (Mgr.)

Julie Rotkovská (Ing.)

Postdocs:

Jana Fulnečková (Mgr., Ph.D.)

Alena Kuderová (RNDr., CSc.)

Todor Genkov (Ph.D.)

Matej Lexa, Ing., Ph.D.

Lumír Krejčí (Mgr., Ph.D.)

Kamila Nephochová (Mgr., CSc.)

Eva Sýkorová (Mgr., CSc.)

Jan Zouhar (Mgr., Ph.D.)

Zdráhal Zbyněk (RNDr., CSc.)

Ph.D. Students:

Full time

Petra Borkovcová (Mgr.)

Hana Bubeníčková (Mgr.)

Jitka Faitová (Mgr.)

Guo Jian Chun (M.S.)

Jana Hradilová (Mgr.)

Milan Kuchař (Mgr.)

Zuzana Kunická (Ing.)

Kiran Nagavalli Subbanna (M.S.)

Markéta Pernisová (Mgr.)

Marie Skleníčková (Mgr.)

Lenka Skříšovská (Mgr.)

Michal Slaný (Mgr.)

Přemysl Souček (Mgr.)

Markéta Šámalová (Mgr.)

Part time

Jan Hejátko (Mgr.)

Jitka Vévodová (Mgr.)

Jan Maláska (M.D.)

Technicians:

Renata Bendová

Gabriela Miková

Marcela Novotná

Petra Schrupfová

Secretary:

Marcela Novotná

FOREIGN STUDENTS AT THE LABORATORY

Guo Jian Chun, Ph.D. student, 4th year, China

Kiran Nagavalli Subbanna, Ph.D. student, 4th year, India

THESES DEFENDED IN THE ACADEMIC YEAR 2000/2001

Diploma thesis:

Šmeral, M.: Identification of amino acid residues involved in substrate-enzyme interactions in a β -glucosidase Zm-p60.1. (Diploma thesis in Molecular Biology and Genetics, supervisor: B. Brzobohatý)

Ph.D. theses:

Fulnečková, J.: Nucleoprotein complexes of plant telomeres (Doctoral thesis in Cell. Mol. Biology, supervisor: J. Fajkus).

Sýkorová, E.: Subtelomere – beginning of the chromosome end (Doctoral thesis in Biophysics, supervisor: J. Fajkus)

PROJECT GRANTS RECEIVED

Grant Agency of the Academy of Sciences of the Czech Republic

IAA5004001: Transcription activation system for studying the relationship between cytokinin metabolism and action in *Arabidopsis* and tobacco (principal investigator: B. Brzobohatý; co-principal investigator: A. Kuderová).

C5004111: Characterisation of proteins of telomeric chromatin (principal investigator: J. Fajkus; postdoctoral investigator: T. Kubičárová).

Grant Agency of the Czech Republic

301/99/0045: Telomere dynamics in selected types of solid malignant diseases (principal investigator J. Fajkus).

206/96/K188: Cytokinins and auxins in regulation of plant development (principal investigator: I. Macháčková; co-principal investigator: B. Brzobohatý).

204/99/D024: Function of plant response regulators induced by nitrate in *Arabidopsis thaliana* (principal investigator: M. Lexa; co-principal investigator: B. Brzobohatý).

Leverhulme Trust, UK

F/07476/G: Loss and gain of typical telomere repeats in a major radiation of monocots (principal investigator: A.R. Leitch; co-principal investigator: J. Fajkus).

Ministry of Education of the Czech Republic

MSM14300008: Genomes and their functions (principal investigator: J. Relichová; co-investigators: B. Brzobohatý and J. Fajkus).

MONBUSHO (Jap. Ministry of Education, Science and Culture)

11694196: Joint Research on Differentiation and Growth Specificity of Plant Cells (principal investigator: H. Takahashi; co-principal investigator: J. Fajkus).

Royal Society, UK

rc/jp/jun98: The role of cytokinin metabolism in plant growth and development (UK principal investigator: I. Moore; Czech principal investigator: B. Brzobohatý).

INVITED LECTURES AND RESEARCH STAYS OF STAFF ABROAD

Research Stays:

Brzobohatý, B.: Dept. of Plant Sciences, Univ. of Oxford, Oxford, UK, the Royal Society (grant rc/jp/jun98), UK, 9/2001.

Fajkus, J.: School of Biological Sciences, QMW College, Univ. of London, UK 10/2001

Lexa, M.: Universität Freiburg, Inst. für Biologie II / Botanik, Freiburg, Germany, 9/2001.

Skleničková, M.: Wageningen Univ., Dept. of Genetics, The Netherlands, 10-11/2001

Sýkorová, E.: School of Biological Sciences, QMW College, Univ. of London, UK 10-11/2001

Zouhar, J.: Plant Research Laboratory, Michigan State Univ., East Lansing, Michigan, USA, 2-12/2001

Invited lectures:

Brzobohatý, B.: Tobacco and *Arabidopsis* responses to *ipt* expression during germination and early seedling development – can *Arabidopsis* serve as the (only) model plant for cytokinin research? U.S.A. – Czech Republic Regional Workshop on the Plant Hormone Cytokinin. Praha, June 28–29, 2001.

Brzobohatý, B., Genkov, T., Moore, I., Dubová, J., Nejedlá, E., Malbeck, J., Vágner, M.: Developmental consequences of *ipt* activation in germinating tobacco seedlings. 17th International Conference on Plant Growth Substances, Brno, Czech Republic, July 1–6, 2001

Lexa, M.: Cytokinins, Nitrate, Light and Ethylene: Does the two component system represent a common denominator? U.S.A. – Czech Republic Regional Workshop on the Plant Hormone Cytokinin. Praha, June 28–29, 2001.

Šámalová, M.: Dexametasone inducible system for transgene (e.g. *ipt*) expression in transgenic tobacco plants. U.S.A. – Czech Republic Regional Workshop on the Plant Hormone Cytokinin. Praha, June 28–29, 2001.

Krejčí, L.: Homologous Recombination in Yeast: Dissection of Rad51 mediated complex. Dept. of Cell Biology and Genetics (Prof. J. Hojmakers), Erasmus Univ., Rotterdam.

Krejčí, L.: Homologous recombination in yeast: Dissection of Rad51 mediated complex. Cancer Research Inst. (Dr. J. Brozmanova), Slovak Academy of Sciences, Slovakia

Fulnečková, J., Kubičárová, T., Fajkus, J.: Regulation of telomere maintenance in plants by telomere-binding proteins. 2nd European workshop on Role of Telomeres and Telomerase in Cancer and Ageing. Ladenburg, Germany, Sept. 16–18, 2001 (org. Petra Boukamp).

Kubičárová, T., Sýkorová, E., Fajkus, J.: Chromatin structure of plant telomeres and subtelomeres. Gliwice Science Encounters 2001, Nov. 23–24, 2001 (org. J. Rzeszowska-Wolny).

Sýkorová, E.: Subtelomeres – the beginning of the end of a chromosome. FSc., Comenius Univ. Bratislava, Feb. 9, 2001 (in Slovak).

STUDENTS STUDYING ABROAD

Hejátko, J.: Max-Planck-Institut für Züchtungsforschung, Köln, Germany, 1–12/2001, (DAAD Ph.D. student fellowship).

Horák, J.: Universität Freiburg, Inst. für Biologie II / Botanik, Freiburg, Germany, 9/2001

Skříšovská, L.: Inst. for Molecular Biology and Biophysics, ETH Hönggerberg, Zürich, Switzerland

Šámalová, M.: Dept. of Plant Sciences, Univ. of Oxford, Oxford, UK, 9–12/2001.

Vévodová, J.: Dept. of Molecular Biophysics, Univ. of Lund, Lund, Sweden.

OTHER INTERNATIONAL CONTACTS AND CO-OPERATION OF STAFF

Univ. of Oxford, Dept. of Plant Sciences, UK (Dr. Ian Moore): Regulated transgene expression in plants.

Max-Planck-Institut für Züchtungsforschung, Köln, Germany (Prof. K. Palme): CKII histidine kinase – a cytokinin receptor in *Arabidopsis thaliana*?

Dept. of Molecular Biophysics, Univ. of Lund, Lund, Sweden (Dr. X.-D. Su): Crystal structure of a β -glucosidase Zm-p60.1.

Universität Freiburg, Inst. für Biologie II / Botanik, Freiburg, Germany (Prof. K. Harter): *Arabidopsis* response regulators in modulating light and cytokinin signalling.

Weizmann Inst. of Science, Dept. Struct. Biology, Rehovot, Israel (Prof. E. N. Trifonov): Structural properties of telomeric DNA and chromatin.

Grad. Sch. of Engineering, Osaka Univ. (Prof. Kiichi Fukui): *In situ* analysis of plant chromosomes.

Inst. of Molecular and Cellular Biosciences, the Univ. of Tokyo, Japan (Prof. Hideo Takahashi): Collaboration on characterisation of plant telomerase.

Wageningen Univ., Dept. of Genetics, Netherlands (Prof. Hans de Jong): In situ techniques for studying genome and chromatin structure.

London Univ., School of Biol. Sciences (Dr. Andrew Leitch): Structure of alternative telomeres in plants.

OTHER PROFESSIONAL ACTIVITIES

J. Fajkus: member of the Council for Doctoral Studies in Cellular and Molecular Biology, MU; member of the Appointment Committee, Section Biology, MU; member of the Section Council (Biology), MU; and External Invited Expert of the European Commission for the 5th framework programme “Quality of Life”.

Membership in scientific societies:

American Society for Microbiology (J. Fajkus, L. Krejčí)

American Society for Healthy Ageing (J. Fajkus – scientific advisor),

American Society of Plant Biologists (Hejátko, J., Zouhar, J.)

British Royal Society for Ageing (J. Fajkus)

Danish Society for Biochemistry and Molecular Biology (L. Krejčí)

Federation of European Societies of Plant Physiology (B. Brzobohatý)

Plant Growth Substances Association (B. Brzobohatý)

Society for Experimental Biology (B. Brzobohatý)

Department of Genetics and Molecular Biology

TEACHING AND RESEARCH ACTIVITIES

The Department of Genetics and Molecular Biology provides basic lectures and practical courses for students whose main subject of master's study is General Biology or Systematic Biology. Special lectures and practical courses are provided for students whose main subject of master's study is Molecular Biology and Genetics and for those who study the undergraduate programme Cellular and Molecular Diagnostics. In addition, the Department offers two Ph.D. study programmes, i. e. in Molecular and Cell Biology and in Genetics.

The research work focuses on the following fields:

1. The study of the genomic molecular structure of species of the genus *Staphylococcus*. This study should contribute to molecular taxonomy and classification of this genus. The practical goal is to find out suitable molecular probes for identifying important staphylococcal species. In this respect the research is concentrated especially on the pathogenic species *S. aureus* as well as on other clinically important staphylococci.
2. The genomic molecular structure of staphylococcal viruses is studied as well. These are mainly phages of the International Typing Set and the polyvalent phages used in therapy.
3. In addition to the research on prokaryotic models, the Department conducts research on eukaryotic models as well. One project deals with the suppression of the function of the *v-myb* oncogene in animal cells. The *v-myb* of the avian myeloblastosis virus causes acute monocytic leukemia in chickens and transforms myelomonocytic cells *in vitro*. This project is of clinical interest because it helps to a better understanding of the tumorigenic processes within cells.
4. Another project includes the examination of genotypic variability in response to mutagenic treatment, monitoring and assessing the genotoxic risk presented by pollutants for different organisms, including humans. For the evaluation of genotoxic effects, *Drosophila melanogaster* bioassays were used. In this context, the transgenic *Drosophila* strain, carrying a human gene for important metabolic enzymes, seems to be the most important. Within this study the stability of the transgenes is analysed.
5. Part of the research activities focus on plant genetics using the model plant *Arabidopsis thaliana*. A traditional study of the physiological and genetic control of the flowering time has been complemented by the molecular approach. Genes that affect flowering time have been identified in late flowering natural ecotypes as well as in induced late flowering mutants. The newly revealed genes responsible for the transition from the vegetative to the reproductive stage were inserted into the current regulation pathways scheme. Also new T-DNA insertional mutants were obtained and their genetic and molecular analysis performed. The embryo-lethal mutants of *Arabidopsis thaliana* have been used for the analysis of genes with important functions during plant development. Insertional mutations are localized on the genetic map by means of molecular markers. The stability of the transgenes is studied.
6. The Department's research co-operation with the Department of Medical Genetics of the J. G. Mendel Univ. Hospital, Brno, has provoked interest in cytogenetic investigations of chromosomal instability syndromes using the fluorescence *in situ* hybridization technique (FISH). The goal of this research is to develop new methods for the rapid detection of both structural and numerical aberrations in human cells. Our study has focused especially on the identification of trisomy of the chromosomes 13, 18, 21, and XY in uncultured amniocytes, DiGeorge syndrome (del 22q11), Prader-Willi/Angelman syndrome (del 15q11-q13) in lymphocytes, t (9;22) detection in bone marrow, and oncogene amplification (N-myc, C-myc) in solid tumour cells. At present, the research in our Laboratory of Molecular Cytogenetics deals with the application of new molecular cytogenetic methods (CGH, M-FISH) in the detection of chromosomal abnormalities in solid tumours.
7. The Department further co-operates with the Dept. of Anthropology, FSc., MU. In future we would like to isolate DNA from historic and prehistoric bones and hairs. Isolated DNA shall be used for PCR in sex determination, relative determination, or in assessing the forensic applicability of some loci for the identification of main ethnic groups.

STRUCTURE OF PERSONNEL

Head:

Jiří Doškař (Assoc. Prof., RNDr., CSc.)

Professors:

Jiřina Relichová (RNDr., CSc.)

Stanislav Rosypal (RNDr., D.Sc.) – Professor Emeritus

Associate Professor:

Jan Šmarda (RNDr., CSc.)

Assistant Professors:

Karel Chroust (RNDr., Ing., Dr.)

Petr Kuglík (RNDr., CSc.)

Pavel Lízal (RNDr., Ph.D.) (since July 1, 2001)

Roman Pantůček (RNDr., Ph.D.)

Vladislava Růžičková (RNDr., CSc.)

Jana Řepková (RNDr., CSc.)

Research Assistant:

Jana Kailarová (RNDr., CSc.)

Technicians:

Kateřina Káňová

Pavel Lízal (Mgr.) – part time (until June 30, 2001)

Helena Machová

Secretary:

Miloslava Konopásková

Adjunct Lecturers:

Jiří Adamec, Philosophical Seminar, Brno

Milan Bezděk (Assoc. Prof., RNDr., CSc.), Inst. of Biophysics, AS CR, Brno

Věra Bryšová (MUDr.), Dept. of Med. Genetics, J.G. Mendel Univ. Children Hospital, Brno
Miroslav Fojta (RNDr., CSc.), Inst. of Biophysics, AS CR, Brno
Renata Gaillyová (MUDr.), Dept. of Med. Genetics, J.G. Mendel Univ. Children Hospital, Brno
Petr Hořín (Prof., RNDr. et MVDr., CSc.), Univ. of Veterinary and Pharmaceutical Sciences, Brno
Jaroslav Kypr (RNDr., CSc.), Inst. of Biophysics, AS CR, Brno
Alexandra Oltová (RNDr.), Dept. of Med. Genetics, J.G. Mendel Univ. Children Hospital, Brno
Emil Paleček (Prof., RNDr., D.Sc.), Inst. of Biophysics, AS CR, Brno
Jan Paleček (Mgr., Ph.D.), Inst. of Biophysics, AS CR, Brno
Marie Vojtišková (RNDr., CSc.), Dept. of Med. Genetics, J.G. Mendel Univ. Children Hospital, Brno
Boris Vyskot (Assoc. Prof., RNDr., D.Sc.), Inst. of Biophysics, AS CR, Brno

Ph.D. Students:

Genetics

Full time

Petr Beneš (Mgr.)
Roman Hobza (Mgr.)
Eva Jagelská (Ing.)
Petr Králík (Mgr.)
Martina Lengerová (Mgr.)
Pavel Lízal (Mgr.)
Martina Procházková (Mgr.)
Roman Rybář (Mgr.)
Petr Ryšávka (Mgr.)
Olga Rezáčová (Mgr.)
Pavčina Váňová (Mgr.)

Part time

Vladimíra Holubová (Mgr.)
Jan Mužík (Mgr.)
Jitka Žlůvová (Mgr.)

Molecular and Cell Biology

Full time

Jana Amrichová (Ing., Mgr.)
Pavčina Bečvářová (Mgr.)
Marie Brázdová (Mgr.)
Michal Beránek (Mgr.)
Lenka Dubská (Mgr.)
Martin Falk (Mgr.)
Luboš Holý (Mgr.)
Dagmar Jedličková (Mgr.)
Petr Kašpárek (Mgr.)
Sylva Mannerová (Mgr.)
Michal Masařík, (Mgr.)
Eva Muselíková (Mgr.)
Alice Nemajerová (Mgr.)
Stanislav Paša (Mgr.)
Renata Paseková (Mgr.)
Kamila Skalická (Mgr.)
Sabina Ševčíková (Mgr.)
Pavel Švec (Mgr.)
Ivana Vasilenková (Mgr.)
Eva Zahradníčková (Mgr.)

Part time

Jiří Brichta (Mgr.)
Alena Gaňová (Mgr.)
Roman Hrstka (Mgr.)
Pavla Jirsová (Mgr.)
René Kizek (Ing.)
Irena Koutná (Mgr.)
Šárka Pavlová (Mgr.)
Romana Slováčková (Mgr.)
Jiří Štěpán (Mgr.)
Karla Zemanová (Mgr.)

FOREIGN STUDENTS AT THE DEPARTMENT

Dagmar Jedličková (Mgr.), Slovakia

THESES DEFENDED IN THE ACADEMIC YEAR 2000/2001

Diploma theses:

Doleželová, H.: Genetic and molecular analysis of new T-DNA trichome mutations (supervisor: J. Řepková).

Dubská, L.: Apoptosis detection in situ: Advantages and limitations of the TUNEL method (supervisor: I. Míšek).

Fialová, M.: Monitoring of specific chromosomal translocations in acute myeloid leukaemias using RT-PCR (supervisor: J. Šmarda).

Hradilová, J.: Analysis of genomic variability and molecular typing of toxin-positive strains of *Staphylococcus aureus* (supervisor: V. Růžičková).

Králík, P.: Inhibition of the gap junctional intercellular communication induced by ethylene glycol and affecting factors (supervisor: J. Vítek).

Kocmánková, Z.: New insertional mutants selection in *Arabidopsis thaliana* (L.) Heynh. (supervisor: J. Řepková).

Komárková, T.: Genetic mapping of mutations of *Arabidopsis thaliana* (L.) Heynh. (supervisor: J. Řepková).

Kroupová, P.: Mutational analysis of the NF1 gene on the level of DNA (supervisor: B. Ravčuková).

Kyjovská, Z.: Genetic and anatomical analysis of original embryonic-lethal T-DNA mutants in *Arabidopsis thaliana* (L.) Heynh. (supervisor: J. Řepková).

Matějková, P.: Molecular systems of colicin transfer from the outer to the inner bacterial membrane and the wall peptidoglycan (supervisor: J. Šmarda).

Mendel, J.: Genotoxicity tests of natural extracts of blue-green algae and halogenated aliphatic hydrocarbons with *Drosophila melanogaster* (supervisor: K. Chroust).

Müllerová, J.: Sequential variability of genes assumed to cause hypercholesterolemia (supervisor: V. Kuhrová).

Pavlová, M.: Toxicity and genotoxicity of halogenated aliphatic hydrocarbons in *Drosophila melanogaster* (supervisor: K. Chroust).

Pospíšilová, H.: Identification of ovine-specific DNA in meat, bone meal and foodstuffs (supervisor: P. Krčmář).

Radilová, H.: The use of molecular cytogenetic and molecular genetic methods for the diagnosis of Prader-Willi and Angelman syndromes (supervisor: P. Kuglík).

Rosenbergová, K.: The changes in chromatin structure during myeloid differentiation and after irradiation of human leukaemic cells (supervisor: S. Kozubek).

Rybář, R.: Analysis of genomic variability of *Staphylococcus hominis* strains by molecular typing methods (supervisor: R. Pantůček).

Ryšávková, P.: Transgenic plants identification and analysis in *Arabidopsis thaliana* (L.) Heynh. (supervisor: J. Řepková).

Schrumpfová, P.: Correlation of differentiation and v-Myb oncoprotein activity in BM2 cells (supervisor: J. Šmarda).

Skalická, K.: Analysis of mutations in *Drosophila melanogaster* transgene by temperature gradient gel electrophoresis (TGGE) and sequencing (supervisor: K. Chroust).

Souček, P.: Genome mapping of the genus *Silene* L. (supervisor: B. Vyskot).

Šmeral, M.: Identification of aminoacid residues engaged in the Zm-p60.1 β-glucosidase – substrate interaction (supervisor: B. Brzobohatý).

Váňová, P.: The molecular genetic variability of the copper transporting ATPase (ATP7B) in Wilson disease patients (supervisor: L. Kozák).

Veselá, A.: Mutational analysis of the NF1 gene at the RNA level (supervisor: J. Kadlecová).

Vyskočilová, M.: Molecular genetic analysis of the C1 inhibitor gene in patients with hereditary angiooedema (supervisor: T. Freiberger).

Zemanová, E.: Expansion of short DNA fragments by PCR (supervisor: J. Kypr).

Rigorosum (RNDr.) theses:

Janků, L.: Risk factor of thrombosis – point mutation G1691A in the factor V gene and its prevalence in the Czech Republic.

Lízal, P.: The effect of day-length and DNA demethylation on the expression of genes for the late flowering in *Arabidopsis thaliana* (L.) Heynh.

Ph.D. theses:

Beneš, P.: Genetic Risk Factors of Coronary Heart Disease (supervisor: A. Vašků).

Brázdová, M.: Interactions of the tumour suppressor protein p53 with supercoiled DNA: the roles of protein domains and influence of divalent ions (supervisor: E. Paleček).

Koutná, I.: Higher-order chromatin structure of tissue and blood cell nuclei and its relationship to gene expression (supervisor: S. Kozubek).

Lízal, P.: A physiological and genetic analysis of late flowering genes in *Arabidopsis thaliana* (L.) Heynh. (supervisor: J. Relichová).

Štěpán, J.: Preparation of a hybridization probe and PCR primers for molecular identification of *Staphylococcus aureus* (supervisor: J. Doškař).

Švec, P.: Molecular taxonomy of enterococci isolated from surface waters (supervisor: J. Doškař).

Zemanová, K.: Role of retinoic acid and its receptors in myeloid differentiation (supervisor: J. Šmarda).

Žlůvová, J.: DNA methylation dynamics during plant ontogenesis (supervisor: B. Vyskot).

PROJECT GRANTS RECEIVED

Grant Agency of the Czech Republic

301/99/D075: Genome-based diagnostics and typing of coagulase-negative staphylococci from human clinical specimens (principal investigator: R. Pantůček; collaborator: J. Doškař).

301/01/0040: The role of Fos and Jun proteins in retinoic acid-driven monocytic differentiation (principal investigator: J. Šmarda).

Grant Agency of the Ministry of Education, Youth and Sports of the Czech Republic

H0613/2001: Innovation of laboratories for practical training in molecular biology and genetics at the FSc., MU (principal investigator: J. Doškař, J. Relichová, J. Šmarda).

565/2001: Molecular diagnostics of the pathogenic staphylococci in diploma theses (principal investigator: R. Pantůček; collaborators: E. Oráčová, E. Michalová).

MSM 143100008: Genomes and their functions (principal investigator: J. Relichová; collaborators: all members of the Department).

F559/2001: Introduction of new PCR methods into practical courses of molecular biology (principal investigator: V. Růžicková; collaborators: J. Doškař, R. Pantůček).

F560/2001: Innovation of molecular biology practical courses (principal investigator: J. Šmarda).

Grant Agency of the Ministry of Health of the Czech Republic

424/2001: Stratification of long-QT syndrome (principal investigator: B. Semrád; collaborator: K. Chroust).

Grant of the European Commission

COST OC B19.001: Gene diagnostics and therapy of multiform glioblastoma (principal investigator: P. Cejpek; collaborators: J. Relichová, P. Kuglík).

INVITED LECTURES AND RESEARCH STAYS OF STAFF ABROAD

Chroust, K.: The second European – American intensive course in clinical and forensic genetics. Dubrovnik, Croatia, September 3–14, 2001.

STUDENT STUDYING ABROAD

Martina Procházková (Mgr.), Ph.D. study – part time, Labor. Histol.-Embryol., Univ. Bordeaux II, France.

OTHER INTERNATIONAL CONTACTS AND CO-OPERATION OF STAFF

Dept. of Microbial Genetics, Univ. of Tübingen (Prof. Dr. Friedrich Götz): This collaboration regards genetics and molecular biology of staphylococci and their viruses.

Co-operation with the Dept. of Pathology, Stanford Univ. School of Medicine, Stanford, CA (Prof. J. Lipsick).

Co-operation with Prof. Pierre Jurdic, Lyon, France.

Co-operation with the Labor. Histol.-Embryol., Univ. Bordeaux II, France.

Co-operation with Dr. Jean-Marc Bonneville (Laboratoire de Génétique Moléculaire des Plantes, CNRS/Univ. J. Fourier, Grenoble, France) in research activities in the field of insertional mutagenesis in *Arabidopsis thaliana*, in genetic and molecular analysis of mutants.

Close co-operation in teaching activities with the Dept. of Genetics and the Dept. of Molecular Biology of the Comenius Univ. in Bratislava (J. Relichová, S. Rosypal - members of the State Examinaton Commission).

Dept. of Genetics and Microbiology, Univ. of Vienna: student exchange excursion organized by Prof. Dr. E. Heberle-Bors and J. Doškař.

OTHER PROFESSIONAL ACTIVITIES

Doškař, J.: Member of the Committee of the Gregor Mendel Genetical Society; scientific secretary of the Czechoslovak Biological Society in Brno; managing editor of the journal Informační listy (Gregor Mendel Genetical Society); member of the Molecular and Cell Biology Council for Doctoral (Ph.D.) Studies; member of the Genetics Council for Doctoral (Ph.D.) Studies; member of the Microbiology Council for Doctoral (Ph.D.) Studies; member of the Scientific Council of the Biophysical Inst., AS CR, Brno; adviser for work with genetically modified organisms.

Kuglík, P.: Member of the Editorial Board of the journal Scripta (FSc., MU); member of the European Cytogeneticists Association.

Relichová, J.: Vice-dean of the FSc., MU; member of the Scientific Council of the FSc., MU; member of the Scientific Council of the Fac. of Agronomy, Mendel Univ. of Agriculture and Forestry, Brno; member of the Scientific Council of the FSc., Univ. of Ostrava; scientific secretary of the Committee of the Gregor Mendel Genetical Society; chairman of the Genetics Council for Doctoral (Ph.D.) Studies.

Rosypal, S.: Member of the Committee of the Gregor Mendel Genetical Society; chairman of the Molecular and Cell Biology Council for Doctoral (Ph.D.) Studies; member of the Council for Doctoral (Ph.D.) Studies in Molecular and Cell Biology; member of the Genetics Council for Doctoral

(Ph.D.) Studies.

Řepková, J.: Member of the academic board of OSEVA PRO, s.r.o. Praha and VÚP, s.r.o. Troubsko; member of EUCARPIA (European Association for Research on Plant Breeding); member of the Editorial Board of the Czech Journal of Genetics and Plant Breeding.

Šmarda, J.: Responsible person for the study programmes of the Section Biology, FSc., MU; member of the Grant Agency of the Czech Republic.

Department of Genome Research

RESEARCH ACTIVITIES

The Department of Genome Research was established as a temporary organization unit of the Section Biology, working on the grant project of the Ministry of Education, Youth and Sports "Genomes and their functions" (MSM143100008). The Department includes members of the Dept. of Genetics and Molecular Biology, the Dept. of Comparative Animal Physiology and General Zoology, and the Dept. of Physiology and Anatomy of Plants. The genome analysis focuses on model organisms and systems of bacteria, plants and animals including man. The aim of the analysis of genomes of pathogenic bacteria is to improve their diagnostics using molecular approaches in clinical practice. In plants, the research deals with genetic and molecular analyses of genes in *Arabidopsis thaliana* and their function. In animal and human model systems the functions of exogenous genes and signalling pathways regulating processes of tumorigenesis are studied. In humans, the gene diagnostics of different pathological states is performed using methods of molecular cytogenetics.

MANAGEMENT OF THE DEPARTMENT

Head:

Jiřina Relichov (Prof., RNDr., CSc.)

Viceheads:

Jiř Dořkař (Assoc. Prof., RNDr., CSc.)

Jan řmarda (Assoc. Prof., RNDr., CSc.)

Secretary:

Miloslava Konopskov

RESEARCH TEAM

Researchers:

Karel Chroust (RNDr., Ing., Dr.)

Jaroslava Dubov (RNDr., CSc.)

Martina Hjkov (Ing.)

Petr Kařprek (Mgr.)

Petr Kuglk (RNDr., CSc.)

Pavel Lzal (RNDr., Ph.D.)

Roman Pantček (RNDr., Ph.D.)

Vladislava Ržičkov (RNDr., CSc.)

Jana řepkov (RNDr., CSc.)

Omar řery (Mgr., Ph.D.)

Jana Kilerov (RNDr., CSc.)

Zdenka Kyjovsk (Mgr.)

Vladimr řimek (Prof., RNDr., CSc.)

Jana řmardov (RNDr., CSc.)

Alena řakovsk (RNDr., Ph.D.)

Technicians:

Kateřina Knov

Helena Machov

Bořena Trvnčkov

As the Department is entirely formed by staff of the Section's permanent organizational units, all further details about the research, publications, students, etc. are given under these individual Departments.

Department of Microbiology

TEACHING AND RESEARCH ACTIVITIES

The Department provides training in microbiology for the master's study courses of General Biology, Molecular Biology and Genetics, Systematic Biology and Ecology, Biochemistry, Environmental Protection and Toxicology, as well as for teachers training for secondary school teachers of biology and for the Bachelor's study programme Cellular and Molecular Diagnostics. Specialized courses cover subjects such as general microbiology, bacterial taxonomy, physiology of bacteria, physiology of fungi, biology of yeasts, introduction to microfungi, ecology of microorganisms, medical microbiology, viral diseases of vertebrates, microbial zoonoses and sapronoses, industrial microbiology, microbial biotechnology, microbial genetics, molecular biotechnology, technical aspects of biotechnology, quantitative structure–activity relationships, bioremediation, and molecular methods in microbiology. In addition, the Department offers Ph.D. courses in microbiology.

Research of the Department currently focuses on the study of microbial biodegradation of organic pollutants in the biosphere, the application of methods of molecular biology in bacterial diagnostics, and ecophysiology of arthropod-borne pathogenic microorganisms. Particular topics studied include:

- Degradation of nitroaromatic compounds by selected soil bacteria and Gram-positive irregular non-sporulating rods (their isolation, identification, and enzymatic characterization); automatic spectrophotometry for screening and optimization of degradation activity.
- Adsorption of heavy metals to cells of *Yarrowia* and *Pseudomonas*, and their effect on the growth and metabolic or degradation activity of the cells.
- Large-scale cultivation technology for microbial consortium RC-1, used for bioremediation of oil-contaminated soils (in collaboration with EKOHELP v.o.s., Brno).
- Strains of yeasts utilizable for degradation of waste fat (vegetable oil and grease); development of new equipment for continuous degradation of fat in kitchen sewage (in collaboration with BIOREM AG, Switzerland).
- New molecular methods of detection, diagnosis and typing of bacteria in foods.
- Immobilized systems for the use in bacterial molecular diagnostics and biotechnology; biological activity of enzymes and other ligands immobilized on magnetic beads prepared from different natural and synthetic supports.
- Chromatographic methods for purification and separation of bacterial DNA; theory of separation of large biomolecules.
- Mechanisms of electrotransformation of bacteria by plasmid DNA.
- Study of physiological properties and pigment production of *Pseudomonas pictorum*.
- Ability of wood-rotting fungi to decompose the lignocellulose complex, nitrogenous and phenolic compounds.
- Ecophysiology of arthropod-borne viruses and bacteria of vertebrates (in collaboration with the Laboratory of Medical Zoology, Inst. of Vertebrate Biology, AS CR).

STRUCTURE OF PERSONNEL

Head:

Zdeněk Hubálek (Assoc. Prof., RNDr., DrSc.)

Associate Professors:

Miroslav Němec (RNDr., CSc.)

Bohuslav Rittich (Ing., CSc.)

Assistant Professors:

Danuška Horáková (RNDr., CSc.)

Ludmila Kotoučková (Mgr., Dr.)

Alena Španová (RNDr., CSc.)

Secretary:

Miloslava Desová

Technicians:

Hana Syrovátková

Emilie Koudelková

Adjunct Lecturers:

Pavel Alexa (MVDr., CSc.), Veterinary Research Inst., Brno

Božena Jandová (RNDr., CSc.), Dept. of Mycology, Vidia, Brno

David Novotný (Mgr.), Czech Collection of Microorganisms, MU

Vladimír Obdržálek (Assoc. Prof., MUDr., CSc.), Dept. of Microbiology, Fac. of Medicine, MU

Lubomír Scháněl (RNDr., CSc.), Czech Collection of Microorganisms, MU.

Jaroslav Sojka (RNDr.), AQUATIS, Brno.

Augustin Svoboda (Prof., MUDr., CSc.), Dept. of Biology, Fac. of Medicine, MU.

Marie Vojtíšková (RNDr., CSc.), Inst. of Biophysics AS CR.

Miroslav Votava (Assoc. Prof., MUDr., CSc.), Dept. of Microbiology, Fac. of Medicine, MU.

Ph.D. Students:

Full time

Sabina Billová (Mgr.)
Leona Čechová (Mgr.)
Jitka Navrátilová (Mgr.)
Jana Prodělalová (Mgr.)
Ivo Rudolf (Mgr.)
Martin Strouhal (Mgr.)
Altanzaya Yansanjav (Mgr.)

Part time

Eva Durnová (Mgr.)
Libuše Malíková (RNDr.)
Jan Růžička (RNDr.)
Vlastimil Štětina (RNDr.)

THESES DEFENDED IN THE ACADEMIC YEAR 2000/2001

Diploma theses:

- Cmunt, K.: Microorganisms and microbiology – educational CD-ROM for secondary school students (supervisor: L. Kotoučková).
- David, M.: Production of extracellular metabolites in *Pseudomonas pictorum* CCM 284 (supervisor: M. Němec).
- Janda, J.: Gramnegative bacteria in karst water (supervisor: I. Sedláček).
- Možišová, D.: The growth and phosphatase activity of *Pseudomonas pictorum* CCM 284 (supervisor: D. Horáková).
- Navrátilová, J.: The isolation and study of bacteria degrading nitroaromatic compounds (supervisor: L. Kotoučková).
- Prodělalová, J.: The identification of bacteria of the genus *Salmonella* with polymerase chain reaction in the presence of intracellular PCR-inhibitors (supervisor: A. Španová).
- Rudolf, I.: Testing of activity of DNase I immobilized on magnetic carriers during the degradation of various DNA types (supervisor: B. Rittich).
- Vrbatová, M.: Haemolytic interactions of bacteria of the genus *Enterococcus* and optimal conditions for their evaluation (supervisor: M. Votava).

PROJECT GRANTS RECEIVED

Grant Agency of the Czech Republic

- 203/00/1339: Dispersion polymerization of hydrophilic monomers for the preparation of magnetic carriers used in biotechnological applications (principal investigator: D. Horák; co-investigator: B. Rittich). 2000 – 2002.
- 206/00/1204: Ecophysiology of tick-borne borreliae (principal investigator: Z. Hubálek; co-investigator: M. Němec). 2000 – 2002.
- 204/00/P095: Microbial transformation of organic pollutants in mixtures (principal investigator: L. Kotoučková; co-investigator: M. Němec). 2000 – 2002.

Grant Agency of the Ministry of Education, Youth and Sports of the Czech Republic

- FRVŠ 525/2001: Introducing multimedia audio-visual aids in the teaching of biology lecturers (investigator: L. Kotoučková). 2001.
- FRVŠ 557/2001: Immunomagnetic separation of bacterial cells (investigator: B. Rittich). 2001.
- FRVŠ 599/2001: Interaction of metal ions with a DNase immobilized on magnetic carriers (investigator: M. Falk; co-investigator B. Rittich). 2001.

Grant Agency of the National Academy of Agricultural Sciences

- NAZV QD 1377: The development of techniques for rapid evaluation and identification of selected lactic acid bacteria, using the methods of molecular biology (principal investigator: B. Rittich). 2001–2004.

TEMPUS PHARE European Training Foundation

- IB JEP-13292-98: Modern biotechnology courses for public administrators (co-ordinator: K. Demnerová; contractor: M. Němec). Participating institutions: Inst. of Chemical Technology (Prague), MU (Brno), Univ. of South Bohemia (České Budějovice), Ministry of Agriculture of the Czech Republic, Biotrend Civil Association (Prague), Univ. für Bodenkultur (Wien), Ministerio de Medio Ambiente (Madrid), Ministero della Sanita (Roma), Univ. of Albertay (Dundee), Univ. of Sheffield. 1998 – 2 001.

INVITED LECTURES AND RESEARCH STAYS OF STAFF ABROAD

- Hubálek, Z.: West Nile virus ecology in Europe. National Centre for Foreign Animal Diseases, Winnipeg, May 15, 2001.

Hubálek, Z.: Ecology of *Borrelia burgdorferi* sensu lato in Central Europe. National Centre for Foreign Animal Diseases, Winnipeg, May 24, 2001.

AWARDS

Španová, A., Rittich, B., Lenfeld, J., Prodělalová, J., Horák, D., Beneš, M. J.: Application of HEMA-based particles in preparation of samples for PCR identification of *Salmonella* cells in foods. Awarded as the Best Poster of the 4th Croatian Congress of Food Technologists, Biotechnologists and Nutritionists, Opatija, Oct. 3–5, 2001.

OTHER PROFESSIONAL ACTIVITIES

Horáková, D.: Member of the International Society for Environmental Biotechnology.

Hubálek, Z.: Member of the Scientific Board, AS CR; member of the Scientific Board, FSc., MU; member of the Commission for Postgraduate Studies in Microbiology, FSc., MU; member of the Commission for Postgraduate Studies in Diseases of Free-Living Animals, Veterinary and Univ. of Veterinary and Pharmaceutical Sciences, Brno; member of the Commission for Postgraduate Studies in Parasitology, Fac. of Biological Sciences, Univ. of South Bohemia, České Budějovice; Deputy Director of the Inst. of Vertebrate Biology, AS CR, Brno; member of the Editorial Boards of the international journals *Cryobiology* (U.K.) and *Folia Parasitologica* (Czech Republic).

Němec, M.: Chairman of the Commission for Postgraduate Studies in Microbiology, FSc., MU; member of the Commission for Postgraduate Studies in Microbiology, Medical Fac., Palacký Univ., Olomouc; member of the Branch Committee of the University Advancement Fund, Ministry of Education of the Czech Republic; external lecturer in General Microbiology, Chemical Fac., Brno Technical Univ.

Španová, A.: Member of the Scientific Board, Inst. of Biophysic, AS CR Brno; member of the Commission for Postgraduate Studies in Horticulture Production, Fac. of Horticulture, Mendel Univ. of Agriculture and Forestry, Brno.

Department of Plant Physiology and Anatomy

TEACHING AND RESEARCH ACTIVITIES

The Department of Plant Physiology and Anatomy provides lectures and practical courses in Plant Anatomy, Cytology, and Physiology for students of all biological disciplines of the faculty, as well as for students of biochemistry and environmental chemistry. Specialized lectures and courses for advanced students involve, e.g., Plant Ecophysiology, Mineral Nutrition, Production Biology, Physiology of Algae and Cyanophytes, Biotic Relations in Soil, Methods of Plant Explants.

The research activities of the department are reflected by the running projects. Principal areas of research covered by the department in 2000 were the following:

(1) A detailed ecophysiological study of Antarctic lichens (*Usnea* spp., *Umbilicaria* spp.) was conducted in their natural habitats (Admiralty Bay, King George Island, South Shetlands). Diurnal courses of photosynthetic and respiratory activity were compared with simultaneously monitored changes in microclimatic conditions (photosynthetically active radiation flux, temperature, air humidity), and the importance of individual external factors for the diurnal carbon balance of lichens was evaluated. Similar measurements were done with several species of Antarctic mosses. The field measurements were accompanied by laboratory chemical analysis of lichen and moss biomass samples. A ecophysiological study was also conducted on some temperate lichen species (*Lasallia pustulata*, *Hypogymnia physodes*, *Umbilicaria hirsuta*). Here, most attention was paid to the measurements of intrathalinal heterogeneity of photosynthetic activity, and also to the photoinhibition of photosynthesis at low temperatures and at varying hydration of the thallus.

(2) Complex ecophysiological research focused on the explanation of competitive advantage of some invasive grass species (mainly *Calamagrostis epigejos*) and on the prediction of changes in stand structure and function after invasion. In addition to field sampling, experiments with plants grown under controlled conditions helped to a better understanding of relationships between growth rate and seasonal changes in the content of nonstructural storage carbohydrates and storage nitrogenous compounds in various plant compartments.

(3) Experimental work and synthetic evaluation of the importance of arbuscular mycorrhiza for competitive success of some meadow plant species was concluded. Much attention was paid to the orchid mycorrhiza: several extensive experiments with controlled growth of mycorrhizal extraradical mycelium (ERM) viability were conducted. The aim of the experiments was to compare the effect of some fungicides on ERM viability, and also to find out about the survival ability of ERM during the dry summer period (Mediterranean vegetation cycle).

(4) Effects of polycyclic aromatic hydrocarbons (mainly fluoranthene FLT) on the activity of the photosynthetic apparatus in several crop plant species were studied at cellular and subcellular level using chlorophyll fluorescence technique. Striking resistance to FLT was found in plants of *Pisum sativum*. The effect of FLT and its derivatives after photomodification on the germination of seeds of several crops was also studied under controlled conditions.

(5) The regulation of plant morphogenesis mediated by phytohormones and other growth regulators was studied in transgenic tobacco and *Arabidopsis* plants using anatomical, cytochemical and immunohistochemical approaches. Major results included the detection of cytokinin metabolites allocation within plants, and of changes in early development of embryos or seedlings after activation of the *ipt* gene (coding isopentenyltransferase) transcription.

(6) The effect of different concentrations of cadmium (Cd) ions on growth and reproduction processes both in the nucleocytoplasmic and chloroplast compartments of algal cells was assessed. Both microtubules (MTs) and actin filaments (AFs) were immunofluorescently visualized in *Spirogyra* cells. Depending on Cd concentration, the pattern of orientation of both MTs and AFs changed substantially. In *Chlamydomonas geitleri*, cytoskeletal structures and the DNA in chloroplasts were among the targets of the Cd inhibitory effect. A newly developed method of determination of the position of commitment points was proved suitable for the study of toxic effects of heavy metals on the cell cycle.

STRUCTURE OF PERSONNEL

Head:

Jan Gloser (Prof., RNDr., CSc.)

Associate Professors:

Marie Kummerová (RNDr., CSc.)

Vladislav Cepák (RNDr., CSc.)

Miloš Barták (Ing., CSc.)

Assistant Professors:

Jaroslava Dubová (RNDr., CSc.)

Ivana Kousalová (RNDr., CSc.)

Milan Baláz (Mgr., Dr.)

Vít Gloser (Mgr., Dr.)

Research Assistants:

Martina Hájková (Ing.)

Linda Seidlová (Mgr.)

Josef Hájek (Mgr.)

Technicians:

Radmila Brandejsová (Ing.)

Jana Francová

Oldřich Jůza

Eva Kmentová (Mgr.)

Jiří Špaček

Božena Trávníčková

Secretary:
Eliška Karasová
Gardener:
Jana Mokrá
Ph.D. Students:
Full time
Jiří Dušek (Mgr.)
Linda Seidlová (Mgr.)
Josef Hájek (Mgr.)
Markéta Šámalová (Mgr.)
Pavel Příbyl (Mgr.)
Kristýna Látalová (Mgr.)
Peter Váczi
Part time:
Petr Holub

THESES DEFENDED IN THE ACADEMIC YEAR 2000/2001

Diploma thesis:

Drdlová, H.: The effect of different levels of phosphate ions availability on the vesiculo-arbuscular mycorrhiza association (supervisor: Dr. M. Baláž).

PROJECT GRANTS RECEIVED

Grant Agency of the Academy of Sciences of the Czech Republic

IAA 5004001: Transcription activation system for studying the relationship between cytokinin metabolism and action in *Arabidopsis* and tobacco (co-investigator: J. Dubová).

Grant Agency of the Czech Republic

204/99/1235: Effect of heavy metals on algal cytoskeleton (principal investigator: V. Cepák).

206/98/P281: Control of competition between expanding grass *Calamagrostis epigejos* and autochthonous plant species of alluvial meadows by vesicular-arbuscular mycorrhiza (principal investigator: M. Baláž).

206/98/P268: A role of nitrogen storage compounds in control of growth processes of *Calamagrostis epigejos* (principal investigator: V. Gloser).

Grant Agency of the Ministry of Education, Youth and Sports of the Czech Republic

CEZ:J07/98:143100008: Genomes and their functions (co-investigator: J. Dubová).

CEZ:J07/98:143100007: Ecology of Antarctic coastal oasis (principal co-investigator: J. Gloser; co-investigator: M. Barták).

F538/2001: Innovation of the study programme Biotic Relations in the Soil (principal investigator: M. Baláž)

F544/2001: Modern approaches to the teaching on Mineral Nutrients of Plants (principal investigator: V. Gloser).

OTHER INTERNATIONAL CONTACTS AND CO-OPERATION OF STAFF

Prof. I. Nijs, Univ. of Antwerp, Belgium.

Dr. E. Huiskes, Inst. of Biology, Yerseke, The Netherlands.

Prof. M. Kazda, Univ. of Ulm, Germany.

Prof. L. Malek, Univ. of Thunder Bay, Canada.

Dr. Triantafyllos Tafas, Univ. of Athens, Greece.

Assoc. Prof. Alexander Lux, Comenius Univ., Bratislava, Slovak Republic.

Dr. Ibrahim Ortas, Cukurova Univ., Adana, Turkey.

Dr. Peter Jeffries, Univ. of Kent, UK.

Prof. Maria Charzynska, Inst. of Experimental Plant Biology, Warszawa, Poland.

INVITED LECTURES AND RESEARCH STAYS OF STAFF ABROAD

Baláž, M.: *Glomus mosseae*-maize mycorrhizal association grown under different phosphorus supply. Invited lecture, Univ. of Cukurova, Adana, Turkey, June 7, 2001.

Barták, M.: Ecophysiology of lichen photosynthesis under extreme Antarctic environment. Invited lecture, Univ. of Ulm, Germany, May 22, 2001.

Barták, M.: Ecophysiology of lichen photosynthesis in response to light, temperature and hydration. Invited lecture, Univ. of Antwerp, Belgium, Sept. 7, 2001.

Barták, M.: Czech research activities in Maritime Antarctica with a special respect to lichen physiology. Invited lecture, Inst. of Ecology, Yerseke, The Netherlands, Sept. 10, 2001.

Gloser, J.: Field measurements of microclimatic factors, photosynthetic activity and respiration of plants in polar conditions. Invited lecture, Univ. of Antwerp, Belgium, Sept. 7, 2001.

Gloser, J.: Advances in ecophysiological studies done within the ecologically oriented research projects at the MU. Invited lecture, Inst. of Ecology, Yerseke, The Netherlands, Sept. 10, 2001.

OTHER PROFESSIONAL ACTIVITIES

M. Barták: Member of the Council for Postgraduate Studies in Plant Anatomy and Physiology at the FSc., MU (15–22–9); member of the Commission for CSc.(Ph.D.) theses defence at the Mendel Univ. of Agriculture and Forestry, Fac. of Forestry and Wood Technology, Brno.

J. Dubová: Member of the Steering Committee of the Czech Society of Experimental Plant Biology; chairman of the Committee for Plant Cytology, Anatomy and Embryology; member of the Scientific Council of Agritec Ltd., Šumperk; member of the Committee of Plant Embryology at the 10th International Conference on Plant Embryology, Sept. 5–8, 2001, Nitra, Slovak Republic.

J. Gloser: Chairman of the Council for Postgraduate Studies in Plant Physiology at the FSc., MU; member of the Commission for CSc.(Ph.D.) theses defence in the fields of Botany and Plant Physiology at the AS CR; member of the Council for Postgraduate Studies at the Faculty of Biological Sciences, Univ. of South Bohemia, České Budějovice; member of the Council for Postgraduate Studies at the Fac. of Agronomy, Mendel Univ. of Agriculture and Forestry, Brno; member of the National Committee of the SCOPE (UNESCO) Program; Associate Editor of the journal *Biologia Plantarum*; member of the editorial board of the journal *Živa*.

Department of Zoology and Ecology

TEACHING AND RESEARCH ACTIVITIES

The present focus of the department includes animal ecology, systematic zoology, hydrobiology, parasitology, entomology, vertebrate zoology, and ethology. The department provides lectures and courses as a core curriculum for all students of biology including secondary school teacher training. Specialized courses cover the following subjects: special zoology of invertebrates, general and applied hydrobiology, general, special and human parasitology, ecological modelling and production ecology, animal evolutionary biology, population ecology, behavioural ecology, zoogeography, animal taxonomy, general, special and applied entomology, ichthyology, ornithology and mammalogy, genetic methods in zoology, risk analysis and environmental impact assessment. The department organizes also field courses in zoology and animal ecology.

Principal areas of research include studies on the primary and secondary production of running waters, the use of benthic macroinvertebrates for water quality indication and aquatic resource management, the study of fish food, taxonomical and ecological studies of selected insect groups (Ephemeroptera, Plecoptera, Trichoptera, Diptera, Coleoptera), ecology of epigeic and soil invertebrates, and studies in ecology and behaviour of small mammals (bats, rodents, and shrews). Over the last years an extensive research on the invertebrates and vertebrates of the Pálava Biosphere Reserve of UNESCO has been implemented in co-operation with more than 60 external specialists. The Parasitology Research Group is involved in a complex investigation of biodiversity in various types of parasite–host systems, looking at the levels of molecules, organism and community. Currently, the group members are particularly interested in evolutionary and ecological aspects. This involves the application of current phylogenetic knowledge from morphological and molecular analyses, and the investigation of parasite coevolution, host specificity, coexistence, aggregation, distribution, and parasite microhabitat specificity, including the study of ontogenetic development of model parasite species.

STRUCTURE OF PERSONNEL

Head:

Rudolf Rozkošný (Prof., RNDr., D.Sc.)

Professors:

Jiří Gaisler (RNDr., D.Sc.)

František Kubiček (RNDr., CSc.), Professor Emeritus

Jaromír Vaňhara (RNDr., CSc.)

Associate Professors:

Milan Gelnar (RNDr., CSc.)

Jan Helešic (RNDr., Ph.D.)

Věra Opravilová (RNDr., CSc.)

Edmund Sedlák (RNDr., CSc.)

Assistant Professors:

Ondřej Komárek (RNDr., Ph.D.)

Božena Koubková (RNDr., Ph.D.)

Arnošt Krška (RNDr., Ph.D.)

Zdeněk Řehák (RNDr., Ph.D.)

Jiří Schläghamerský (Dipl.-Biol., Ph.D.)

Světlana Zahrádková (RNDr., Ph.D.)

Research Assistants:

Jana Schenková (RNDr.)

Karel Brabec (Mgr., Ph.D.)

Technicians:

Stanislav Němejc

Yvonne Pořízková (RNDr.)

Marcela Růžičková

Věra Slezáková

Josef Tesař

Gabriela Vágnerová (Bc.)

Nora Veselá

Secretary:

Miloslava Kvasničková

Adjunct Lecturers:

Miroslav Čapek (Ing., CSc.), Inst. Vertebrate Biol., AS CR, Brno

Oleg Ditrich (Assoc. Prof., RNDr. CSc.), Inst. Parasitology, AS CR, České Budějovice

Josef K. Fuksa (RNDr., CSc.) – Water Research Inst. T.G.M., Praha

Libor Grubhoffer (Assoc. Prof., RNDr., CSc.), Inst. Parasitology, AS CR, Brno

Marcel Honza (Ing., Ph.D.), Inst. Vertebrate Biol., AS CR, Brno

Petr Horák (Assoc. Prof., RNDr. Ph.D.), FSc., Charles Univ., Prague

Václav Hybša (Assoc. Prof., RNDr. CSc.), Inst. Parasitology, AS CR, České Budějovice

Břetislav Koudela (Assoc. Prof., RNDr., CSc.), Inst. Parasitology, Univ. of Veterinary and Pharmaceutical Sciences, Brno

Jaroslav Kulda (Prof., RNDr., DrSc.), FSc., Charles Univ., Prague

Stanislav Lusk (Ing., CSc.), Inst. Vertebrate Biol., AS CR, Brno

Miloš Macholán (RNDr., CSc.), Inst. Animal Physiol. & Genetics, AS CR, Brno

Blahoslav Maršálek (Ing., CSc.) Inst. Botany, AS CR, Brno

Emil Tkadlec (Assoc. Prof., RNDr., CSc.), FSc., Palacký Univ., Olomouc

Jan Zima (Assoc. Prof., RNDr., D.Sc.), Inst. Vertebrate Biol., AS CR, Brno
Jan Zukal (Mgr., Ph.D.), Inst. Vertebrate Biol., AS CR, Brno

Ph.D. Students:Full time

Miroslava Barančková (Mgr.)
Tomáš Bartonička (Mgr.)
Hana Berková (Mgr.)
Radim Blažek (Mgr.)
Kateřina Feikusová (Mgr.)
Petra Hájková (Mgr.)
Václav Horák (Mgr.)
Michal Horsák (RNDr.)
Jana Horsáková (Mgr.)
Katarína Janečková (Mgr.)
Eva Jánová (Mgr.)
Jiří Jarkovský (Mgr.)
Petr Komzák (RNDr.)
Iveta Matějusková (Mgr., Ph.D.)
Petr Mückstein (Mgr.)
Marie Omesová (Mgr.)
Markéta Ondračková (Mgr.)
Eva Ottová (Mgr.)
Lubomír Pančišin (Mgr.)
Klára Petrželková (Mgr.)
Martin Pokorný (Mgr.)
Jarmila Prokešová (Mgr.)
Martin Reichard (RNDr.)
Eva Řehulková (Mgr.)
Vladislav Stehno (RNDr.)
Monika Šugerková (Mgr.)
Andrea Valigurová (Mgr.)
Pavel Vranka (Mgr.)
Martina Vyskočilová (Mgr.)
Tomáš Zurawski (Mgr.)

Part time

Šárka Bartošová (Mgr.)
Josef Bryja (Mgr., Ph.D.)
Martin Gajdošík (Mgr.)
Irma Hricová (Mgr.)
Jiří Hřebíček (Mgr.)
Josef Chytil (RNDr.)
Dušan Kadlec (RNDr.)
Jiří Kopecký (RNDr.)
Hana Kubátová-Hiršová (Mgr.)
Štěpán Kubík (Ing.)
Markéta Kublákova (Mgr.)
Igor Malenovský (Mgr.)
Aleš Mergl (RNDr.)
Silvie Netolická (Mgr.)
Iva Němečková - Šindlerová (Mgr.)
Václav Prášek (Ing.)
Jana Schenkova (RNDr.)
Alois Staněk (Mgr.)
Mojmír Ševčík (Mgr.)
Jan Špaček (Mgr.)
Daniel Vařecha (Mgr.)
Ivona Velecká (RNDr., Ph.D.)
Mojmír Vlašín (RNDr.)
Robert Vlk (Mgr.)
Zdeněk Vošlajer (Mgr.)
Gabriela Vránová (Ing.)
Eva Wlosoková (Mgr.)

FOREIGN STUDENTS AT THE DEPARTMENT

Andrea Šimková (RNDr.), Comenius Univ., Bratislava, Slovakia

Marcin Popiolek (Dr.), Univ. of Wrocław, Wrocław, Poland

THESES DEFENDED IN THE ACADEMIC YEAR 2000/2001

Diploma theses:

- Berková, H.: Ecology of the bat guild in the Kateřinská cave (supervisor: J. Zukal).
- Burýšková, B.: Flight capacity of young *Circus aeruginosus* and its changes during breeding (supervisor: V. Mrlík).
- Horsák, M.: Contributions to the knowledge of malacofauna of the Czech Republic (supervisor: J. Helešic).
- Horsáková, J.: New data on the development and biology of Central European Sciomyzidae (Diptera) (supervisor R. Rozkošný).
- Hřebíček, J.: Communities of thrips (Thysanoptera) on cereals with special regard to *Limothrips cerealium* (supervisor: J. Vaňhara).
- Jánová, E.: Age determination and age structure in a population of the common vole (supervisor: M. Heroldová).
- Kantorová, J.: Behaviour of captive *Pan troglodytes* with particular respect to their locomotion (supervisor: V. Vančata).
- Kašný, M.: Larval stages of Digenea affected by environmental stress (supervisor: B. Koubková).
- Kment, P.: Communities of corixids in relation to selected abiotic factors (supervisor: J. Vaňhara).
- Malenovský, I.: Communities of leafhoppers (Hemiptera: Auchenorrhyncha) and psilids (Hemiptera: Sternorrhyncha: Psylloidea) on clover and clover-grass fields (supervisor: R. Rozkošný).
- Mückstein, P.: Free living psocids (Psocoptera) in the Žďárské vrchy Protected Landscape Area (supervisor: J. Vaňhara).
- Omesová, M.: Plankton Cladocera and Copepoda in selected pools of the Pálava Biosphere Reserve (supervisor: V. Opravilová).
- Ottová, E.: Effect of pollutants on the life cycles of selected digenean species (supervisor: B. Koubková).
- Prümmerová, M.: Population density of badgers (*Meles meles*) in the southern part of the Moravian Karst (supervisor: M. Homolka).
- Sychra, O.: On the foraging and agonistic behaviour of the woodpeckers *Picoides syriacus* and *P. major* (supervisor: M. Čapek).
- Sychrová, V.: Behaviour of male and female *Circus aeruginosus* in the period of their post-fledgling dependence (supervisor: V. Mrlík).

Rigorosum (RNDr.) theses:

- Komzák, P.: Spatial and temporal diversity of Trichoptera (Insecta) communities in the Chvojnice and Oslava Rivers (supervisor: E. Sedlák).
- Horsák, M.: Contribution to the knowledge of water molluscs of the Czech Republic (supervisor: J. Helešic).
- Velecká, I.: Perspectives in the use of water molluscs for bioindication (supervisor: E. Sedlák).
- Požízková, Y.: Makrozoobenthos of the Říčka River in the Moravian Karst (supervisor: E. Sedlák).
- Němcová, J.: Macrozoobenthos in connection with modified flow and temperature regime (supervisor: S. Zahradková).
- Vojtíšková, D.: The use of meio- and makroinvertebrates as indicators of aquatic habitats influenced by human impact (supervisor: F. Kubíček).

Ph.D. theses:

- Matějusová, I.: Molecular and organismal diversity of monogenean parasites of the genus *Gyrodactylus* Nordman, 1832 (supervisor: M. Gelnar).
- Šimková, A.: Analysis of the genus *Dactylogyrus* (Monogenea): evolutionary-ecological aspects in the parasite-host system (supervisor: M. Gelnar).
- Velecká, I.: Life strategies modifications in model species of water molluscs (supervisor: E. Sedlák).

PROJECT GRANTS RECEIVED

Council of the Government of the Czech Republic

VaV 510/7/99: Predictive models of stream ecosystems (joint applicant: S. Zahradková).

The project shall have the following outputs: (1) complex evaluation system for prediction of anthropogenic and environmental factors influencing the macrozoobenthic fauna of running surface waters, (2) improvement of informational and methodological pre-requisites necessary for the conservation and revitalisation of aquatic ecosystems, and (3) a study of activities preventing pollution and degradation of aquatic components of the environment.

European Commission Research Programme, EU, Brussels

No. EVK1-CT-1999-00027: AQEM – the Development and Testing of an Integrated System for the Ecological Quality of Streams and Rivers

throughout Europe using Benthic Macroinvertebrates (joint applicant: S. Zahradková).

AQEM is a research project under the EU's 5th Framework Programme. The project aim is to lay the scientific foundations for such a method based on benthic macroinvertebrates, develop the method for selected stream types throughout Europe and to start the transfer to applied water management. The project partners have been chosen along one transect from northern to southern Europe (Scandinavia to the Central-Mediterranean) and another transect from the Iberian Peninsula to the Eastern Mediterranean. The method developed will be adapted to the specific conditions of individual stream types in order to allow comparable usage in all EU member states. Databases on European macroinvertebrate taxa used for the assessment system will be generated. The Czech scientific partner – the Dept. of Zoology and Ecology (MU) participates on most of the project work packages (sampling, determination, taxa lists, and evaluation).

Grant Agency of the Academy of Sciences of the Czech Republic

A6093104: Ecological parameters of the stone loach (*Barbatula barbatula*) as determinants of its metazoan parasite communities (B. Koubková). The selected host–parasite system (*Barbatula barbatula* – metazoan parasites) is suitable for parallel examinations of qualitative and quantitative parameters using standard ichthyological and parasitological methods. The parameter ‘dynamics change in fish populations (host)’ will be compared with diversity values of parasite communities at the level of infra- and component communities. The original data obtained will allow to test the preliminary hypothesis on the factors-determinants, and to explain the parasite richness in native Central European freshwater fishes based on the chosen model host–parasite systems, and to come to general, verified conclusions.

Grant Agency of the Czech Republic

206/99/1519: Vertebrates of the extended Pálava Biosphere Reserve of UNESCO (J. Gaisler). The project comprises original research, processing of existing data and evaluation of all information pertinent to the occurrence and distribution of fish, amphibians, reptiles, birds and mammals within the territory of the extended Pálava Biosphere Reserve of UNESCO. The project is being implemented in co-operation with the Inst. of Vertebrate Biology (S. Lusk) and the Management of the Pálava Protected Landscape Area (J. Chytil).

206/99/1522: The impact of hydrological conditions in streams on top bottom and hyporheic biota (J. Helešic). Extreme flows can be considered a classic example of ecological disturbance within the ecosystem of running waters. Under natural conditions, such flows as well as the behaviour of living systems during these situations are quite normal phenomena. Deforestation, landscape changes and intensive land use lead to increased water flows and extremely high discharges. Currently, extreme flows appear quicker than in the past, their intensity and period of lasting are often vary within a wide range. The influence on the biota of streams is high, and has not been evaluated and quantified in our conditions. The research aims are: To verify the validity of basic hypotheses of the general description of running water ecosystems during extreme discharges (patch dynamics concept, flow refuge concept, hyporheic refuge concept), e.g. the knowledge of structure and dynamics of communities, trophic guilds structure and life strategies of benthic taxa. To determine criteria of resistance and resilience of communities and of whole running waters ecosystems influenced by altered discharge regime. To determine the critical time limits of duration of unfavourable conditions, that can be measurably shown on the biocenoses of the river bottom and to assess the rate of system rehabilitation after their disappearance.

206/99/1526: Biosystematic and ecological studies on selected Brachycera (Diptera) (R. Rozkošný). A complex project aimed at the further development of dipterological studies at the Dept. of Zoology and Ecology. The proposed research will focus on the following partial projects: (1) a key to the identification of Central European Muscidae, (2) biosystematic and ecological studies on oriental Stratiomyidae focused on developmental stages associated with bamboo rain forests in Malaysia, (3) Ephydriidae of the Czech Republic, a revisional and coenological study.

206/99/P062: Quantification, diversity and structure of benthic algae communities in rivers investigator: O. Komárek; supervisor: V. Opravilová). The objective of this project is to further develop the methodology for sampling, fixation, identification and quantification of phytobenthic algae for ecological studies. This should result in reaching the same level of evaluation as currently used for phytoplankton. Testing for different communities and types of river biotopes will be necessary. Methodological modifications are necessary on the level of sampling, manipulation with living material, fixation, and sample processing. Image analysis and direct input of data into the computer will support the identification and quantification of algae. This corresponds to the present trends of limnological phycology. The work will result in data on numbers of cells or bio-volume of specific species per metric unit of area or volume.

524/00/0844: Neurobiology, surface architecture and microhabitat segregation of model parasite species during ontogenetic development (M. Gelnar).

Two different biological types of monogenean parasites are studied within this project: oviparous diplozoons and viviparous gyroductylids. Four different scientific approaches of research (neurobiology, molecular ecology, electron microscopy, and microhabitat ecology) will be used to study model parasite–host systems. Scientific purpose and aims of the project are fourfold. One is the basic scientific interest, the second seeks the ultimate goal of controlling or even eradicating pest parasites from their hosts. The third aim is to provide detailed information on the ontogenetic development of model parasite species using several different methodological approaches, and finally the fourth aim is that of training. The project is carried out in collaboration with the Queen’s Univ. of Belfast, Belfast, UK. The facts that the project is a collaborative study of two laboratories with complementary interests and that the approach is multidisciplinary by its nature (parasite biology and ecology, neurobiology, molecular ecology, morphology and ultrastructure) means that the project provides excellent training for the Department’s parasitology students.

524/01/D062: Evolutionary and ecological aspects in parasite–host systems (investigator: A. Šimková; supervisor: M. Gelnar).

The project focuses on evolutionary and ecological relationships using model groups of parasites and hosts, i.e. the Monogenea as gill parasites and freshwater fishes as their host group. The aims of this project will be (1) to apply phylogenetic knowledge from morphological and molecular analyses to test several hypotheses on host–parasite associations from an evolutionary point of view (coevolution, host specificity, morphological adaptation of parasites), (2) to study the ecology of parasite communities at the level of host species or host microhabitat (species competition and coexistence, parasite aggregation, niche size and niche overlapping, evolutionary niche preference in the case of potentially competitive species, niche restriction).

524/01/D063: Morphometric variability of structures of taxonomic importance in model monogenean parasites (investigator: I. Matějsová; supervisor: Gelnar M.).

Monogeneans (Plathelminthes) are fish ectoparasites considered recently as a perspective model in a wide range of biological and ecological studies. The essential precondition for using monogeneans as model organisms or biological indicators is the correct species identification. However, it has been shown that taxonomically important structures of monogeneans show a high degree of variation in size and shape that is linked to several environmental factors, e.g. water temperature. Not only variation of taxonomic structures but also morphological abnormalities of attachment structures are known to be related with environmental stress. The objectives of the project are to study morphological abnormalities, form their typology and assess their potential relationship to environmental contamination. There is also need to confirm the validity of taxonomically important structures and to evaluate the impact of environmental factors on their variability.

Grant Agency of the Ministry of Education, Youth and Sports of the Czech Republic

CEZ: MSM 143100010: Temporal and Spatial Biodiversity Dynamics in Ecosystems of Central Europe (see Biodiversity Research Group).

600/2001: Field experiments in fish ecology and their utilisation in teaching students (principal investigator: M. Reichard; supervisor: P. Jurajda; co-investigator: Z. Řehák).

There is increasing evidence that the downstream drift of young-of-the-year (YOY) cyprinid fishes is widespread and may play an important role in the population and metapopulation dynamics of some species. We used a set of field experiments to test the hypothesis that the drift of cyprinid fishes in lowland rivers is density dependent. We did not confirm density-dependence of the drift. The average proportion of drifting fish was 24 % (S.E.=3,2) of the experimental population. Further aims of the project were to enable master's students to participate in field work and to use the data from experiments for teaching the students during several lectures. The project led to the submission of six papers (two accepted) to international scientific journals and the presentation of one paper at an international conference.

Kontakt – Aktion

No. WTZ 2000/11: Gravel bars – important structure for matter exchange of stream ecosystems (J. Helešic; joint applicant: Dr. Maria Leichtfried, ÖAW Limnologisches Inst., Biologische Station Lunz, Austria).

An important property of natural streams is their self-purification ability, which depends on the bottom structure. Gravel bars in streams are the structure most significant for matter exchange. Two streams in the Hercynian part of the CR and one stream in the Alps are studied. The goal of research is to detect and explain effects of different types of streams (structure of bottom sediments, hydrological regime) on matter exchange and the bottom community.

International Project BARRANDE

Programme No. 2000-023-1: Evolutionary epidemiology of fish parasites (M. Gelnar).

Parasites of fish represent an important group of organisms from both the theoretical and practical point of view. The study of evolutionary epidemiology of selected model parasite–host systems improves our knowledge and experience on how to control parasite diseases of fish reared under the conditions of various types of aquacultures. The project is carried out in collaboration with the Univ. of Perpignan, France. The fact that the project is a collaborative study between two laboratories with complementary interests and the approach is multidisciplinary by its nature (parasite diversity and biology, evolutionary ecology and modelling) means that the project will provide excellent training for the Department's parasitology students. Four postdoctoral projects and five master's theses will be incorporated into the Project during the three years of its duration.

CONFERENCES (SYMPOSIA, SEMINARS) ORGANIZED BY DEPARTMENT STAFF

Macrozoobenthos Determination Course: Simuliidae. Brno, June 25–27, 2001; S. Zahrádková – organizer.

10th Czech and Slovak Helminthological Days, Dolní Věstonice, June 4–7, 2001; B. Koubková – chairperson of the Organising Committee.

4th Workshop and Training Course on Fish Parasites, Biologische Station Illmitz, Neusiedler See, Austria, March 26 – April 6, 2001; M. Gelnar – lecturer and member of the Organising Committee.

6th Central European Workshop on Soil Zoology, České Budějovice, April 23–25, 2001; J. Schlaghamerský – member of the Organising Committee.

INVITED LECTURES AND RESEARCH STAYS OF STAFF ABROAD

Invited lectures

Gelnar M.: What can parasites tell us about environmental stress. 10th Czech and Slovak Helminthological Days, Dolní Věstonice, June 4–7, 2001.

Řehák Z.: Bat research in the Czech Carpathians, Univ. of Ljubljana, Biotechnical Fac., Dept. of Biology and Biology Students' Society, Section for Bat Research and Conservation. May 15, 2001.

Research stays

Gelnar M.: Laboratoire de Biologie Animale, Univ. de Perpignan, France – 2 months.

Helešic J.: Biologische Station ÖAW, Lunz am See, Austria – 2 weeks.

Komárek O.: California Univ., Dept. Environmental Science and Policy, USA – 3 months.

STUDENTS STUDYING ABROAD

Mgr. Jiří Jarkovský, Ph.D. student, Laboratoire de Biologie Animale, Univ. de Perpignan, France; two weeks study of fish parasite evolutionary ecology (contact person: M. Gelnar).

Mgr. Iveta Matějusková, Ph.D. student, Laboratoire de Biologie Animale, Univ. de Perpignan, France; two weeks study of fish parasite evolutionary ecology (contact person: M. Gelnar).

Mgr. Klára Petřelková, Ph.D. student, Dept. of Zoology, Univ. of Aberdeen, U.K.; six-month study of ecology of bats (contact person: Z. Řehák).

RNDr. Andrea Šimková, Ph.D. student, Laboratoire de Biologie Animale, Univ. de Perpignan, France; seven months study stay in fish parasite evolutionary ecology (contact person: M. Gelnar).

Sylvie Tomanová, master's student, CHRS-Ecologie des Hydrosystemes Fluviaux, Univ. Claude Bernard, Lyon I, France; six-month study stay.

Mgr. Tomáš H. Zurawski, Ph.D. student, Medical Biology Centre, The Queen's Univ. of Belfast, Belfast, UK; three months study of parasite neurobiology (contact person: M. Gelnar).

OTHER INTERNATIONAL CONTACTS AND CO-OPERATION OF STAFF

Biologische Station ÖAW, Lunz am See, Austria (Prof. Dr. G. Bretschko, Dr. M. Leichtfried). Research project AKTION-KONTAKT 2000/11, co-operation and one common publication (contact person: J. Helešic).

CHRS-Ecologie des Hydrosystemes Fluviaux, Univ. Claude Bernard, Lyon, France (Dr. B. Statzner). Co-operation in river bottom ecology research (contact person: J. Helešic)

Dept. of Biology, Univ. degli Studi de Milano, Milano, Italy (Dr. P. Galli), preparation of the joint international project INTAS (contact person: M. Gelnar).

Dept. of General Biology, Teachers Training College, Olsztyn, Poland (Dr. E. Dzika), preparation of joint contributions and papers on diversity of fish parasites (contact persons: M. Gelnar, B. Koubková).

Dept. of Microbiology and Parasitology, Univ. of Wrocław, Wrocław, Poland (Dr. M. Popiolek), postdoctoral fellowship (contact person: M. Gelnar).

Dept. of Parasitic Worms, Zoological Inst., Russian Academy of Sciences, St. Petersburg, Russia (Dr. P. Gerasev), preparation of the joint international project INTAS (contact person: M. Gelnar).

Forschungsinstitut Senckenberg, Frankfurt a. M., Germany (Dr. D. Kovac). Research project: Insekten des Bambus als komplexe tropische Lebensgemeinschaft (contact person: R. Rozkošný).

Inst. of Animal Systematics and Evolution, PAS, Krakow, and Univ. of Wrocław, Poland (Prof. B. W. Woloszyn). Research Atlas of Bats of the Carpathians (contact person: Z. Řehák).

Inst. of Biological Sciences, Univ. of Malaya, Kuala Lumpur, Malaysia (Prof. Susan Lim Lee Hong), setting up collaboration on monogeneans of ornamental fishes from South East Asia (contact person: M. Gelnar).

Inst. of Biology and the Southern Seas, National Academy of Sciences of Ukraine, Sevastopol, Ukraine (Dr. Evgenija Dmitrieva), preparing an postdoctoral project on systematics and taxonomy of gyroductylid monogeneans (contact person: M. Gelnar).

Inst. of Parasitology, Slovak Academy of Sciences, Košice, Slovak Republic (Dr. M. Špakulová, Dr. V. Hanzelová), preparing a joint scientific conference and a joint paper (contact persons: B. Koubková, M. Gelnar).

Comenius Univ., Bratislava, Inst. of Zoology (Dr. I. Krmo), co-operation in Plecoptera taxonomy, zoogeography and in work on determination keys (contact person: J. Helešic)

Limnologische Flussstation des Max-Planck-Instituts für Limnologie, Schlit, Germany (Prof. Dr. Peter Zwick). Research project: Süßwasserfauna von Mitteleuropa (contact person: R. Rozkošný).

Naturhistoriska Riksmuseet, Stockholm (Dr. T. Pape). Research Project: Fauna Europaea (Diptera: Stratiomyidae, Sciomyzidae) (contact person: R. Rozkošný).

Smithsonian Institution, Dept. of Entomology, Washington, D.C. (Dr. N. Woodley). Study of Oriental Stratiomyidae (Diptera) (contact person: R. Rozkošný).

SOAEFD Marine Laboratory, Aberdeen, United Kingdom (Dr. Carey O. Cunningham). Visiting professor in molecular parasite taxonomy, four months study stay of Ph.D. student Iveta Matějusková to investigate molecular diversity of monogenean parasites of fish; preparation of joint papers and contributions; preparation of a joint research project in molecular systematics of parasites (contact persons: I. Matějusková, M. Gelnar).

The Queen's Univ. of Belfast, Belfast, United Kingdom (Prof. David W. Halton) – Confocal Laser Scanning Microscopy study of monogenean parasite neurobiology; four months study stay of Ph.D. student T.H. Zurawski in Belfast to learn basic parasite neurobiology methods; joint research on fish parasite neurobiology, external membership of D.W. Halton in the Ph.D. Parasitology Council, MU, preparation of joint contributions and papers (contact persons: T.H. Zurawski, M. Gelnar).

Univ. für Bodenkultur Wien, Inst. für Wasserversorgung, Gewässerökologie und Abfallwirtschaft, Abt. Hydrobiologie, Fischereiwirtschaft und Aquakultur (Prof. O. Moog, Prof. M. Jungwirth) (contact persons: S. Zahradková, J. Helešic).

Univ. van Amsterdam, Zoologisch Museum, Afdeling Entomologie (Dr. H. de Jong). Joint research project: Revision of Oriental Stratiomyidae (contact person: R. Rozkošný).

Univ. of Cambridge, Cambridge, United Kingdom (Prof. B. Grenfell). Collaboration on mathematical modelling of fish parasite epidemiology, preparation of a joint project (contact person: M. Gelnar).

Univ. of East Anglia, Norwich, United Kingdom (Prof. G. C. Kearns). Collaboration on the study of surface topography and scanning electron microscopy of monogenean parasites, preparation of joint contributions and papers (contact person: M. Gelnar).

Univ. of Essen, Germany. EU project AQEM. Subcontractor and co-operator (contact person: S. Zahradková).

Univ. of Jyväskylä, Jyväskylä, Finland (Prof. T. E. Valtonen). Joint student research project to study the diversity of viviparous gyrodactylids in Scandinavia; four months stay of the Ph.D. student R. Blažek; preparation of joint papers (contact person: M. Gelnar).

Univ. of Perpignan, Perpignan, France (Prof. S. Morand., Dr. P. Sasal). Joint research project to analyse the diversity of monogeneans parasiting on cyprinid fish; seven months study stay of Ph.D. student A. Šimková and one month study stay of Ph.D. student I. Matějusová to study parasite evolutionary ecology; preparation of joint papers; both visiting professors in parasite ecology and evolutionary ecology, external membership of S. Morand in the Ph.D. Parasitology Council, MU (contact persons: A. Šimková, M. Gelnar).

Univ. of Vienna, Vienna, Austria (Dr. Robert Konečný). Study of biological diversity of monogeneans parasiting on fish in Austria, preparation of a joint paper and a joint research project (contact person: M. Gelnar).

Univ. of Zululand, Zoology Department, South Africa, (Dr. Kevin Christison), preparation of a postdoctoral fellowship (contact person: M. Gelnar).

OTHER PROFESSIONAL ACTIVITIES

Gaisler, J.: (1) Member of the IUCN Species Survival Commission, Chiroptera Specialist Group, London; (2) Scientific Advisory Board member, Bat Conservation International, Texas, USA; (3) member of the Czech National Committee, International Union of Biological Sciences, Prague; (4) Vice-chairman of the Czech Zoological Society, Prague; (5) Scientific Advisory Board member, Inst. of Landscape Ecology, AS CR, Brno; (6) Editorial Board member, Acta Theriologica, Białowieża, Poland; (7) Editorial Board member, Folia Zoologica, Brno; (8) Editorial Board member, Lynx, Prague; (9) chairman of the Ph.D. Degree Council of Zoology, FSc., MU.

Gelnar, M.: (1) member of the Ph.D. Degree Council in Parasitology, MU; (2) member of the RNDr. Degree Council in Parasitology, MU; (3) member of the Scientific Parasitology Council, Univ. of Veterinary and Pharmaceutical Sciences, Brno; (4) member of the Evaluation Council for Research Projects of the Faculty of Biological Sciences, Univ. of South Bohemia, České Budějovice; (5) member of the Habilitation Degree Council in Parasitology, Faculty of Biological Sciences, Univ. of South Bohemia, České Budějovice; (6) member of the RNDr. Degree Council in Parasitology, Faculty of Biological Sciences, Univ. of South Bohemia, České Budějovice; (7) member of the Scientific Parasitology Council of the Inst. of Parasitology, Czech. AS, České Budějovice; (8) member of the Commission for Agricultural Sciences, National Grant Agency of the Czech Republic; (9) Chairman of the Commission for Physiology and Pathology of Animals, National Grant Agency of the Czech Republic; (10) member of the Commission for Research Projects of the Grant Agency of the Ministry of Education, Youth and Sports; (11) member of Doctor of Science Council of the Inst. of Parasitology, Slovak Academy of Sciences, Košice, Slovak Republic; (12) member of the Doctor of Science Council for Zoology, Hydrobiology and Parasitology, Faculty of Biological Sciences, Univ. of South Bohemia, České Budějovice; (13) member of the international committee organising the International Symposium on Monogenea.

Koubková B.: (1) member of the Co-ordinating Committee of the Helminthological Section of the Czech Society for Parasitology.

Helešic, J.: (1) Chairman of the Ph.D. Degree Council of Hydrobiology, MU, and chairman or member of the examination committees for Mgr., RNDr., Ph.D. degrees, member of Ph.D. Degree Council of Hydrobiology of Charles Univ. in Prague and of the Univ. of South Bohemia, Fac. of Biological Sciences, České Budějovice; (2) Chairman (president) of the Czech Limnological Society; (3) member of the Committee of the Czech Zoological Society; (4) member of the evaluation committee of the Grant Agency of the CR; (5) member of the Scientific Boards of the Podyjí National Park, and the Žďárské Vrchy Protected Landscape Area.

Kubiček, F.: (1) Scientific Advisory Board member, Inst. of Zoology, SAS, Bratislava; (2) member of the Ph.D. Degree Council of Hydrobiology, MU, and chairman of the examination committees for the RNDr. and Ph.D. degrees; (3) member of the Ph.D. Degree Council of Hydrobiology, Palacký Univ., Olomouc.

Oprailová, V.: (1) member of the Committee of the Czech Limnological Society.

Rozkošný, R.: (1) member of the Scientific Council of the FSc., Palacký Univ., Olomouc; (2) member of the Council for International Congresses of Dipterology, Oxford, England; (3) Evaluation Commission of the Czech AS, Prague, (4) member of the Scientific Council of the Inst. of Soil Zoology, AS CR, České Budějovice (5) Editorial Board member, Acta Zoologica Hungarica, Budapest; (6) Editorial Board member, Dipterological Research, St. Petersburg, Russia; (7) Editorial Board member, Entomological Problems, Bratislava, Slovak Rep.; (8) Editorial Board member, Acta Faunistica Entomologica Musei Nationalis Pragae; (9) chairman of the Ph.D. Degree Council of Ecology, FSc., MU.

Řehák, Z.: (1) member of the Commission for General and Ecological Biology of the Grant Agency of the Czech Republic; (2) member of the Committee of the Czech Bat Conservation Trust; (3) Editorial Board member, Acta Chiropterologica, Warszawa, Poland; (4) Editorial Board member, Vespertilio, Prague and Revúca, Czech Republic and Slovakia, (5) member of the Ph.D. Degree Council of Zoology, FSc., MU, (6) member

of the RNDr. Degree Council of Zoology, FSc., MU, (7) member of the Scientific Board of the Regional Museum of Natural History in Nový Jičín.

Sedlák M.: (1) member of the Committee of the Czech Limnological Society (chairman of Brno Branch).

Vaňhara, J.: Editorial Board member, FOLIA Facultatis Scientiarum Naturalium Universitatis Masarykianae Brunensis, Biologia, Czech Republic.

Department members and adjunct lecturers participate in the work of the Ph.D. Degree Council of Zoology (V. Opravilová, R. Rozkošný, Z. Řehák, J. Schlaghamerský, J. Vaňhara, J. Zima), Hydrobiology (F. Kubíček, E. Sedlák, S. Zahradková), Parasitology (M. Gelnar), Ecology (F. Kubíček, J. Vaňhara) and are involved in various domestic and international scientific societies, e.g. as members of the Czech Zoological Society, the International Association of Plecopterologists, USA (J. Helešic), the International Association of Theoretical and Applied Limnology and the Czech Limnological Society (J. Helešic, F. Kubíček, V. Opravilová, E. Sedlák, S. Zahradková), the Czech Parasitological Society (M. Gelnar, B. Koubková), the British Society for Parasitology (M. Gelnar, T. Zurawski), the Czech Ornithological Society (J. Gaisler), the Czech Bat Conservation Trust (J. Gaisler, Z. Řehák), and the Czech Entomological Society (R. Rozkošný, J. Vaňhara).

PUBLICATIONS OF THE SECTION BIOLOGY

1. Baláz, Milan - Vosátka, Miroslav. *A novel inseted membrane technique for studies of mycorrhizal extraradical mycelium (A novel inseted membrane technique for studies of mycorrhizal extraradical mycelium)*. Mycorrhiza, Springer Verlag, 11, 6, p. 291-296. ISSN 0940-6360. 2001.
2. Baláz, Milan. *Glomus mosseae-maize mycorrhizal association grown under different phosphorus supply (Glomus mosseae-maize mycorrhizal association grown under different phosphorus supply)*. In Managing arbuscular mycorrhizal fungi for improving soil quality and plant health in agriculture. Adana (Turkey) : University of Cukurova, 2001., p. 56-56.
3. Baroň, Ivo - Řehák, Zdeněk. *Netopyři Hranické propasti (Bats of the Hranická Chasm)*. In Speleofórum 2001. Praha : Zlatý Kůň ve spolupráci s Českou speleologickou společností, 2001., p. 44-44. ročník 20. ISBN 80-85304-72-4.
4. Barták, Miloš - Hájek, Josef - Gloser, Jan. *Application of fluorometric methods to measurements of lichen photosynthetic responses to changing temperature and thallus hydration. (Application of fluorometric methods to measurements of lichen photosynthetic responses to changing temperature and thallus hydration.)*. In Ecology of Antarctic Coastal Oasis. Brno : Masaryk University, 2001., p. 73-82. ISBN 80-210-2556-5.
5. Barták, Miroslav - Vaňhara, Jaromír. *Diptera in an Industrially Affected Region (North-Western Bohemia, Bilina and Duchcov Environs) II*. Brno : Masaryk University Brno, 2001. 274 pp. Folia Fac.Sci.Nat.Univ.Masaryk.Brun.,Biol.,105. ISBN 80-210-2558-1.
6. Bartáková, Iva - Kummerová, Marie - Mandl, Martin - Pospíšil, Michal. *Phytotoxicity of iron in relation to its solubility conditions and the effect of ionic strength (Phytotoxicity of iron in relation to its solubility conditions and the effect of ionic strength)*. Plant and Soil, Netherlands : Kluwer Academic Publishers, 235, 1, p. 45-51. ISSN 0032-079X. 2001.
7. Beneš, Petr - Kaňková, Kateřina - Mužík, Jan - Groch, Ladislav - Benedík, Jaroslav - Elbl, Lubomír - Izakovičová Hollá, Lydie - Vašků, Anna - Znojil, Vladimír - Vácha, Jiří. *Methylenetetrahydrofolate reductase polymorphism, type II diabetes mellitus, coronary artery disease and essential hypertension in Czech population (Methylenetetrahydrofolate reductase polymorphism, type II diabetes mellitus, coronary artery disease and essential hypertension in Czech population)*. Molecular Genetics and Metabolism, San Diego : Academic Press, 2, 73, p. 188-195. ISSN 1096-7192. 2001.
8. Beneš, Petr - Mužík, Jan - Benedík, Jaroslav - Elbl, Lubomír - Vašků, Anna - Šišková, Lenka - Znojil, Vladimír - Vácha, Jiří. *The C766T low-density lipoprotein receptor related protein polymorphism and coronary artery disease, plasma lipoproteins, and longevity in the Czech population (The C766T low-density lipoprotein receptor related protein polymorphism and coronary artery disease, plasma lipoproteins, and longevity in the Czech population)*. Journal of Molecular Medicine, Německo : Springer, 79, 2/3, p. 116-120. ISSN 0946-2716. 2001.
9. Borkovcová, Petra - Zouhar, Jan - Hejátko, Jan - Brzobohatý, Břetislav. *A Receiver Domain of CKII Sensor Kinase: Expression, Purification and Antibody Production (A Receiver Domain of CKII Sensor Kinase: Expression, Purification and Antibody Production)*. In 17th International Conference on Plant Growth Substances, Brno, Czech Republic, July 1-6, 2001, Abstracts. Brno : Mendel University of Agriculture and Forestry, Brno, 2001., p. 151-151. ISBN 80-7157-518-6.
10. Borkovcová, Petra - Zouhar, Jan - Hejátko, Jan - Brzobohatý, Břetislav. *Expression and Single-Step Purification of the Signal Receiver Domain of CKII, a Putative Cytokinin Receptor from Arabidopsis Thaliana. (Expression and Single-Step Purification of the Signal Receiver Domain of CKII, a Putative Cytokinin Receptor from Arabidopsis Thaliana.)*. In V. Pracovní setkání biochemiků a molekulárních biologů, Sborník příspěvků, Brno 2001. Brno : Masarykova univerzita v Brně, 2001., p. 30-30. ISBN 80-210-2538-7.
11. Bryja, Josef - Tkadlec, Emil - Nesvadbová, Jiřina - Gaisler, Jiří - Zejda, Jan. *Comparison of enumeration and Jolly-Seber estimation of population size in the common vole Microtus arvalis (Comparison of enumeration and Jolly-Seber estimation of population size in the common vole Microtus arvalis)*. Acta Theriologica, Białowieża : Mammal Research Institute, 46, 3, p. 279-285. ISSN 0001-7051. 2001.
12. Brzobohatý, Břetislav - Genkov, Todor Nikolaev - Moore, Ian - Dubová, Jaroslava - Nejedlá, Eliška - Malbeck, Jiří - Vágner, Martin. *Developmental Consequences of ipt Activation in Germinating Tobacco Seedlings (Developmental Consequences of ipt Activation in Germinating Tobacco Seedlings)*. In 17th International Conference on Plant Growth Substances, Brno, Czech Republic, July 1-6, 2001, Abstracts. Brno : Mendel University of Agriculture and Forestry, Brno, 2001., p. 57-57. ISBN 80-7157-518-6.
13. Cartagena, Joyce A. - Sýkorová, Eva - Fajkus, Jiří - Fukui, Kiichi. *In situ localization of short repetitive sequences on extended DNA fibers of Silene latifolia (In situ localization of short repetitive sequences on extended DNA fibers of Silene latifolia)*. In Asian Chromosome Colloquium. Beijing (China) : Asian Chromosome Colloquium, 2001., p. 1-1.
14. Cepák, Vladislav - Rettich, František. *Screening of cyanophytes from mosquito breeding places (mostly rice fields) with emphasis on unicellular species - potential recipients of Bti genes (Screening of cyanophytes from mosquito breeding places (mostly rice fields) with emphasis on unicellular species - potential recipients of Bti genes)*. Algological Studies, Stuttgart : E. Schweizerbart'sche Verlagsbuchhandlung, 138, p. 179-190. ISSN 0342-1120. 2001.
15. Čapková, Lucie - Horváth, Radek - Žákovská, Alena. *Identifikace spirochét se zaměřením na Borrelia burgdorferi v trávicím traktu hematofágních a nehematofágních členovců (Identification of spirochetes focused on B. b. in haematophagous arthropods)*. In X. Tomáškovy dny 2001. Brno : Mikrobiologický ústav LF MU, 2001., p. 20-20. X. Tomáškovy dny 2001.
16. Častulík, Jakub - Marek, Jaromír - Mazal, Ctibor. *Synthesis of spiropyrrrolidines and spiropyrrrolizidines by 1,3-dipolar cycloadditions of azomethine ylides to substituted α -methylene- γ -lactones*. Tetrahedron, Oxford (UK) : Elsevier Science Ltd., 57, 39, p. 8339-8347. ISSN 0040-4020. 2001.
17. Danihelka, Jiří. *Achillea pannonica in the Czech Republic, with taxonomic remarks (Achillea pannonica in the Czech Republic, with taxonomic remarks)*. Preslia, Praha : Česká botanická společnost při AV ČR, 73, 3, p. 213-244. ISSN 0032-7786. 2001.
18. Danihelka, Jiří - Rotreklová, Olga. *Achillea pratensis (Asteraceae) - a recently recognized species of the Czech flora*. Preslia, Praha : Česká botanická společnost při AV ČR, 73, 1, p. 1-27. ISSN 0032-7786. 2001.

19. Danihelka, Jiří. *Achillea setacea in the Czech Republic, with taxonomic remarks (Achillea setacea in the Czech Republic, with taxonomic remarks)*. Preslia, Praha : Česká botanická společnost při AV ČR, 73, 2, p. 97-120. ISSN 0032-7786. 2001.
20. Danihelka, Jiří. *Botanický výzkum a ochrana přírody. Sborník prací z konference České botanické společnosti, konané ve dnech 24.-25. listopadu v Praze. (Botanical research in nature conservation)*. Praha : Agentura ochrany přírody a krajiny ČR, 2001. 151 pp. Příroda 19. ISBN 80-860-86064-57.
21. Danihelka, Jiří - Grulich, Vít. *Botanicky významné lokality v okolí Valtic (Important botanical sites in the surroundings of the town of Valtice (South Moravia))*. In Město Valtice. 1. vyd. [Břeclav] : Pro město Valtice vydalo nakladatelství Moraviapress, 2001., p. 43-59. Knižnice sborníku Jižní Morava, nr. 26. ISBN 80-86181-48-0.
22. Danihelka, Jiří - Rotreklová, Olga. *Chromosome numbers within the Achillea millefolium and the A. distans groups in the Czech Republic and Slovakia*. Folia Geobotanica, Průhonice : Institute of Botany, 36, 2, p. 163-191. ISSN 1211-9520. 2001.
23. Danihelka, Jiří - Šmarda, Petr. *Triglochin maritima na Slanisku u Nesytu (Triglochina maritima in the Slanisko u Nesytu National Nature Reserve)*. Zprávy České botanické společnosti, Praha : Česká botanická společnost, 36, 1, p. 45-47-47. ISSN 1212-5258. 2001.
24. Doškař, Jiří. *Bakterie a jejich viry (Bacteria and their viruses)*. Živa - časopis pro biologickou práci, Praha : Academia, nakladatelství AV ČR, XLIX, 3, p. 101-104. ISSN 0044-4812. 2001.
25. Doškařová, Sylva - Sedláček, Ivo - Pantůček, Roman. *Biochemická a molekulární taxonomie gram pozitivních koků izolovaných z kůže lam (Biochemical and molecular taxonomy of gram-positive cocci isolated from llamas skin)*. In Konference mladých mikrobiologů X. Tomáškovy dny 2001. Brno : Mikrobiologický ústav LF MU a FN u sv. Anny v Brně, 2001., p. 19-19. Sborník souhrnnů přednášek.
26. Doškařová, Sylva - Sedláček, Ivo - Pantůček, Roman. *Nové druhy makrokoků izolované z lam (New species of Marococcus isolated from llamas)*. In 22nd Congress of the Czechoslovak Society for Microbiology - Health and Microorganisms. Košice - Praha : Czechoslovak Society for Microbiology, 2001., p. 148-148. Abstract Book.
27. Dubová, Jaroslava - Hájková, Martina - Nejedlá, Eliška - Genkov, Todor Nikolaev - Brzobohatý, Břetislav. *Anatomical Study of ipt Transgenic Tobacco Embryo and Seedling Meristem Development. (Anatomical Study of ipt Transgenic Tobacco Embryo and Seedling Meristem Development.)*. In From Gametes to Embryos, 10th International Conference on Plant Embryology, Book of Abstracts. Nitra: Institute of Plant Genetics and Biotechnology, Slovak Academy of Sciences, 2001., p. 60-60.
28. Dubová, Jaroslava - Hájková, Martina - Brzobohatý, Břetislav. *Defects of Pollen Development in Transgenic Tobacco*. Scripta Fac. Sci. Nat. Univ. Masaryk. Brun., Biology, Brno : Masaryk University, 27, 1, p. 54-55. ISSN 80-210-2241-8. 2001.
29. Dubová, Jaroslava - Hájková, Martina - Idzikowska, Krystyna - Brzobohatý, Břetislav. *Meristem Development in Transgenic Tobacco Seedlings. (Meristem Development in Transgenic Tobacco Seedlings.)*. In Botany in Time of Molecular Biology, Abstracts of 52nd Congress of Polish Botanical Society. Poznaň : Polish Botanical Society, 2001., p. 10-10. ISBN 83-7177-133-9.
30. Durnová, Eva - Kotoučková, Ludmila. *PŘÍNOS METODY IDENTIFIKACE MIKROORGANISMŮ POMOCÍ PROFILU MASTNÝCH KYSELIN PRO CHARAKTERIZACI GRAMPOZITIVNÍCH NEPRAVIDELNÝCH NESPORULUJÍCÍCH TYČEK. (The contribution of the method of identification of microorganisms by the use of fatty acids profile to characterisation of Gram positive irregular unsporulating rods)*. In Sborník 22. Kongresu Československé společnosti mikrobiologické - Zdravie a mikroorganizmy. Košice - Praha : Československá společnost mikrobiologická, 2001., p. 40-40.
31. Dušek, L. - Žaloudík, J. - Talač, R. - Vagunda, Václav - Hofmanová, Jiřina - Kozubík, A. *Možnosti analýz dat - od naměřeného nádorového markeru ke klinicky využitelnému prediktoru (Possibilities of data analyses - from the measured tumor marker to clinical predictor)*. In Sborník konference Analytická cytometrie I. Brno : BFU AV ČR, 2001., p. 20-21. ISBN 80-238-6833-0.
32. Dvořáková, Dana - Krejčí, Pavel - Mayer, Jiří - Fajkus, Jiří - Hampl, Aleš - Dvořák, Petr. *Changes in the expression of FGFR3 in patients with chronic myeloid leukaemia receiving transplants of allogeneic peripheral blood stem cells*. British Journal of Haematology, Oxford : Blackwell Science Ltd, roč. 113, February, p. 832-835. ISSN 0007-1048. 2001.
33. Fajkus, Jiří - Trifonov, Edward N. *Columnar Packing of Telomeric Nucleosomes*. Biochemical and Biophysical Research Communications, California : Academic Press, roč. 280, 4, p. 961-963. ISSN 0006-291X. 2001.
34. Fajkus, Jiří - Trifonov, Edward N. *Columnar Structure Of Telomeric Chromatin (Columnar Structure Of Telomeric Chromatin)*. In Journal of Biomolecular Structure and Dynamics. New York : Adenine Press, 2001., p. 1017-1018. ISBN 0739-1102.
35. Fajkus, Jiří - Sýkorová, Eva - Trifonov, Edward N. *COLUMNAR STRUCTURE OF TELOMERIC CHROMATIN (COLUMNAR STRUCTURE OF TELOMERIC CHROMATIN)*. In Role of Telomeres and Telomerase in Cancer and Aging. Heidelberg : DKFZ Heidelberg, 2001., p. 3-3.
36. Fajkusová, Lenka - Tvrđíková, Miroslava - Lukáš, Zdeněk - Fajkus, Jiří. *Analysis of dystrophin mRNA in patients with DMD, BMD and XLDC (Analysis of dystrophin mRNA in patients with DMD, BMD and XLDC)*. In European Journal of Human Genetics. Vienna : nature publishing group, 2001., p. 310-310.
37. Fajkusová, Lenka - Lukáš, Zdeněk - Tvrđíková, Miroslava - Kuhrová, Viera - Hájek, Jiří - Fajkus, Jiří. *Novel dystrophin mutations revealed by analysis of dystrophin mRNA: alternative splicing suppresses the phenotypic effect of a nonsense mutation (Novel dystrophin mutations revealed by analysis of dystrophin mRNA: alternative splicing suppresses the phenotypic effect of a nonsense mutation)*. Neuromuscular Disorders, Amsterdam : Elsevier Science, roč. 11, 2, p. 133-138. ISSN 0960-8966. 2001.
38. Fojtová, Miloslava - Fulnečková, Jana - Fajkus, Jiří - Kovařík, Aleš. *REVERSAL OF CADMIUM INDUCED APOPTOSIS IN PLANT CELLS IS ASSOCIATED WITH TELOMERASE INDUCTION AND DNA REPAIR (REVERSAL OF CADMIUM INDUCED APOPTOSIS IN PLANT CELLS IS ASSOCIATED WITH TELOMERASE INDUCTION AND DNA REPAIR)*. In Role of Telomeres and Telomerase in Cancer and Aging. Heidelberg : DKFZ Heidelberg, 2001., p. 1-1.
39. Fojtová, Miloslava - Fulnečková, Jana - Fajkus, Jiří - Kovařík, Aleš. *Reversibility of cadmium-induced apoptosis is associated with increased level of telomerase activity in tobacco TBY-2 cells (Reversibility of cadmium-induced apoptosis is associated with increased level of telomerase activity in tobacco TRY-2 cells)*. In Journal of Biomolecular Structure and Dynamics. New York : Adenine Press 2001. p. 963-

40. Fulnečková, Jana - Kubičárová, Tatiana - Fajkus, Jiří. *REGULATION OF TELOMERE MAINTENANCE IN PLANTS BY TELOMERE-BINDING PROTEINS (REGULATION OF TELOMERE MAINTENANCE IN PLANTS BY TELOMERE-BINDING PROTEINS)*. In Role of Telomeres and Telomerase in Cancer and Aging. Heidelberg : DKFZ Heidelberg, 2001., p. 1-1.
41. Gaisler, Jiří. *A mammal species new to the Czech Republic - Savi's pipistrelle *Hypsugo savii* (A mammal species new to the Czech Republic - Savi's pipistrelle *Hypsugo savii*)*. Folia Zoologica, Brno : Institute of Vertebrate Biology, 50, 3, p. 231-233. ISSN 0139-7893. 2001.
42. Gaisler, Jiří. *Rhinolophus euryale Blasius, 1853 - Mittelmeerhufeisennase (Rhinolophus euryale Blasius, 1853 - Mediterranean horseshoe bat)*. In Fledertiere I - Chiroptera I. Wiebelsheim : Krapp F., AULA Verlag GmbH, 2001., p. 59-74. Handbuch der Säugetiere Europas, Band 4. ISBN 3-89104-638-3.
43. Gaisler, Jiří. *Rhinolophus ferrumequinum (Schreber, 1774) - Große Hufeisennase (Rhinolophus ferrumequinum (Schreber, 1774) - greater horseshoe bat)*. In Fledertiere I - Chiroptera I. Wiebelsheim : Krapp F., AULA-Verlag GmbH, 2001., p. 15-37. Handbuch der Säugetiere Europas, Band 4. ISBN 3-89104-638-3.
44. Gaisler, Jiří. *Rhinolophus mehelyi Matschie, 1901 - Mehely-Hufeisennase (Rhinolophus mehelyi Matschie, 1901 - Mehely's horseshoe bat)*. In Fledertiere I - Chiroptera I. Wiebelsheim : Krapp F., AULA Verlag GmbH, 2001., p. 91-104. Handbuch der Säugetiere Europas, Band 4. ISBN 3-89104-638-3.
45. Gelnar, Milan - Koubková, Božena - Matějusová, Iveta - Ondračková, Markéta - Šimková, Andrea - Špakulová, Marta. *Diversity of monogenean parasites in Central Europe: present status and perspectives (Diversity of monogenean parasites in Central Europe: present status and perspectives)*. In Program and Abstracts, 4th International Symposium on Monogenea. Brisbane, Austrálie : University of Queensland, 2001., p. 110-110.
46. Gelnar, Milan - Hodová, Iveta - Šimková, Andrea - Zurawski, Tomáš. *Changes in microhabitat specificity of *Eudiplozoon nipponicum* (Diplozoidae, Monogenea) in relation to parasite ontogenetic development. (Changes in microhabitat specificity of *Eudiplozoon nipponicum* (Diplozoidae, Monogenea) in relation to parasite ontogenetic development.)*. In 4th International Symposium on Monogenea. Abstract Book. Brisbane, Australie : The University of Queensland, Brisbane, Queensland, Australia, 2001., p. 74-74.
47. Gelnar, Milan - Blažek, Radim - Matějusová, Iveta - Ondračková, Markéta - Šimková, Andrea. *Monogenea - paraziti hospodářsky významných druhů ryb (Monogenean parasites of fishes of economic importance)*. In Ochrana zdraví ryb. Vodňany : Jihočeská Univerzita v Českých Budějovicích, 2001., p. 119-131. Sborník referátů z konference. ISBN 80-85887-41-X.
48. Gelnar, Milan - Koubková, Božena - Hricová, Irma - Dlouhá, Miroslava - Klímová, Martina. *Taxonomy and systematics of the monogenean family Diplozoidae in the light of the recent knowledge. (Taxonomy and systematics of the monogenean family Diplozoidae in the light of the recent knowledge.)*. In Program and Abstracts of 4th International Symposium on Monogenea. Brisbane, Australia : University of Queensland, 2001., p. 109-217.
49. Gelnar, Milan. *What can parasites tell us about environmental stress ? (What can parasites tell us about environmental stress ?)*. Helminthologia, Bratislava, Slovak Republic : Slovak Academic Press, 38, -, p. 184-184. ISSN 0440-6605. 2001.
50. Goltsev, Vasilij - Genkov, Todor Nikolaev - Lexa, Matej - Ivanova, Iordanka. *Effect of benzyladenine, 4-PU-30 and thidiazuron on millisecond delayed and prompt chlorophyll fluorescence of *Dianthus caryophyllus* L. axillary buds cultured in vitro*. Scientia Horticulturae, Amsterdam : Elsevier, 89, 1, p. 41-55. ISSN 0304-4238. 2001.
51. Helešic, Jan - Scheibová, Daniela. *Bioaccumulation of harmful pollutants in running water food webs (Bioaccumulation of harmful pollutants in running water food webs)*. Verh. Internat. Verein. Limnol., Stuttgart, BRD : E.Schweizerbart'sche Verlagsbuchhandlung, 27, 5, p. 3070-3074. ISSN 0368-0770. 2001.
52. Helešic, Jan. *Nonparametric evaluation of environmental parameters determining the occurrence of stonefly larvae (Plecoptera) in streams (Nonparametric evaluation of environmental parameters determining the occurrence of stonefly larvae (Plecoptera) in streams)*. Aquatic Science, Basel, Switzerland : Birkhäuser Publ.Ltd., 63, 4, p. 490-500. ISSN 1015-1621. 2001.
53. Helešic, Jan - Kubiček, František - Losos, Bohumil - Sedlák, Edmund - Zahradková, Světlana. *Vodní bezobratlí a hydrobiologie řeky Dyje v Národním parku Podyjí (Aquatic Invertebrates and Hydrobiology of the Dyje (Thaya) River in National park Podyjí)*. Thayensia, Znojmo : NP Podyjí Znojmo, 2001, 4, 1, p. 43-54. ISSN 1212-3560. 2001.
54. Holíková, Alena - Nejedlá, Petra - Dendis, Miloš - Pejchalová, Kateřina - Žákovská, Alena. *Čtyřleté studium výskytu *Borrelia burgdorferi* v klíštětech na lokalitě Pisárky, Brno (Four-years study of *Borrelia burgdorferi* presence in ticks in locality of Pisárky (Brno, CZ))*. In X. Tomáškovy dny 2001. Brno : Mikrobiologický ústav LF MU, 2001., p. 27-27. X. Tomáškovy dny 2001.
55. Holíková, Alena - Nejedlá, Petra - Dendis, Miloš - Pejchalová, Kateřina - Žákovská, Alena. *4-leté studium výskytu *Borrelia burgdorferi* v klíštětech na parkové lokalitě Pisárky, Brno (Four-year study of the presence of *Borrelia burgdorferi* in *Ixodes ricinus* ticks in park Pisárky, Brno, Czech Republic)*. In VI. česko-slovenský kongres o infekčních chorobách. Mikulov : Společnost infekčního lékařství, 2001., p. 66-156. Sborník abstrakt, 1. ISBN ISSN 1213-5011.
56. Horák, Daniel - Rittich, Bohuslav - Šafař, Jan - Španová, Alena - Lenfeld, Jiří - Beneš, Milan J. *Properties of RNase A immobilized on magnetic poly(2-hydroxyethyl methacrylate) microspheres*. Biotechnology Progress, U.S.A. : Am.Chem. Soc., Washington, 17, 3, p. 447-452. ISSN 8756-7938. 2001.
57. Hrstka, Roman - Růžičková, Vladislava - Pantůček, Roman - Petráš, Petr - Doškař, Jiří. *Genotype variability of TSST-1 positive *Staphylococcus aureus* strains in the Czech Republic*. In V. Pracovní setkání biochemiků a molekulárních biologů. Brno : Masarykova univerzita v Brně, 2001., p. 25-25. Sborník příspěvků. ISBN 80-210-2538-7.
58. Hájek, Josef - Barták, Miloš - Gloser, Jan. *Effects of thallus temperature and hydration on photosynthetic parameters of *Cetraria islandica* from contrasting habitats. (): Effects of thallus temperature and hydration on photosynthetic parameters of *Cetraria islandica* from contrasting habitats.*. Photosynthetica, Praha : Elsevier, 39, 3, p. 427-435. ISSN 0300-3604. 2001.

59. Hájek, Michal. *Prameniště (Springs)*. In Katalog biotopů České republiky. Habitat catalogue of the Czech Republic. Praha : Agentura ochrany přírody a krajiny, 2001., p. 56-63. ISBN 80-86064-55-7.
60. Hájek, Michal - Háberová, Izabela. *Scheuchzeria-Caricetea fuscae (Scheuchzeria-Caricetea fuscae)*. In Rastlinné spoločenstvá Slovenska. Mokradná vegetácia. Plant communities of Slovakia. Wetland vegetation. Bratislava : Veda, 2001., p. 185-274. ISBN 80-224-0688-0.
61. Hájek, Michal - Rybníček, Kamil. *Slatinná a přechodová rašeliniště (Fens and transitional mires)*. In Katalog biotopů České republiky. Habitat catalogue of the Czech Republic. Praha : Agentura ochrany přírody a krajiny, 2001., p. 64-70. ISBN 80-86064-55-7.
62. Hájek, Michal - Rybníček, Kamil. *Vrchoviště (Raised bogs)*. In Katalog biotopů České republiky. Habitat catalogue of the Czech Republic. Praha : Agentura ochrany přírody a krajiny, 2001., p. 71-76. ISBN 80-86064-55-7.
63. Hájková, Petra - Hanáková, Petra - Hájek, Michal. *Několik fytoecologických zápisů rašelinné vegetace z přírodních rezervací Borkovická blata a Kozohlůdky (Several phytosociological relevés of mire vegetation in the Borkovická blata and Kozohlůdky Nature Reserves)*. Sborník Jihočeského muzea v Českých Budějovicích, Přírodní vědy, České Budějovice : Jihočeské muzeum, 41, 1, p. 35-42. ISSN 0139-8172. 2001.
64. Hájková, Petra - Hájek, Michal - Smatanová, Jana. *Nesní mokřadní vegetace Strážovských vrchů (Treeless wetland vegetation in the Strážovské vrchy Mts. (West Carpathians, Slovakia))*. Ochrana Přírody, Banská Bystrica : ŠOPSR, 19, 1, p. 1-30. ISSN 80-88850-28-2. 2001.
65. Hájková, Petra - Hájek, Michal. *Vzácné a zajímavé mechorostry rašelinišť a pramenišť moravskoslovenského pomezí (Rare and interesting bryophytes of mires and springs of Moravian-Slovakian borderland (Western Carpathians))*. Bryonora, Průhonice : Botanický ústav AV ČR, 28, 1, p. 10-14. ISSN 0862-8904. 2001.
66. Chytrý, Milan. *Biotope silně ovlivněné nebo vytvořené člověkem (Habitats strongly influenced or created by man)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 231-233. ISBN 80-86064-55-7.
67. Chytrý, Milan. *Dubohabřiny (Oak-hornbeam forests)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 180-187. ISBN 80-86064-55-7.
68. Chytrý, Milan - Kučera, Tomáš - Kočí, Martin. *Katalog biotopů České republiky (Habitat catalogue of the Czech Republic)*. Praha : Agentura ochrany přírody a krajiny, 2001. 307 pp. ISBN 80-86064-55-7.
69. Chytrý, Milan. *Lesní lemy (Forest fringe vegetation)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 140-143. ISBN 80-86064-55-7.
70. Chytrý, Milan - Sádlo, Jiří. *Nízké xerofilní křoviny (Low xeric scrub)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 169-170. ISBN 80-86064-55-7.
71. Chytrý, Milan. *Nížinná až horská vřesoviště (Lowland to montane heaths)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 157-161. ISBN 80-86064-55-7.
72. Chytrý, Milan. *Phytosociological data give biased estimates of species richness*. Journal of Vegetation Science, Uppsala : Opulus Press, 12, 3, p. 439-444. ISSN 110-9233. 2001.
73. Chytrý, Milan - Sedláková, Iva - Tichý, Lubomír. *Species richness and species turnover in a successional heathland*. Applied Vegetation Science, Uppsala : Opulus Press, 4, 1, p. 89-96. ISSN 1402-2001. 2001.
74. Chytrý, Milan. *Suché trávníky (Dry grasslands)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 129-140. ISBN 80-86064-55-7.
75. Chytrý, Milan. *Sutové lesy (Ravine forests)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 188-190. ISBN 80-86064-55-7.
76. Chytrý, Milan. *Teplomilné doubravy (Thermophilous oak forests)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 198-206. ISBN 80-86064-55-7.
77. Janoušková, Eva - Žáková, Alena - Dendis, Miloš. *Identifikace Ag struktur patogenních spirochet Borrelia burgdorferi a změny proteinového složení jednotlivých pasáží metodou SDS - gradient PAGE (Identification of Ag struktur of B. b. and their protein composition with SDS - gradient PAGE method)*. In X. Tomáškovy dny 2001. Brno : Mikrobiologický ústav LF MU, 2001., p. 11-12. X. Tomáškovy dny 2001.
78. Janoušková, Eva - Žáková, Alena - Dendis, Miloš. *Identifikace 33 izolátů spirochet a určení patogenní Borrelia burgdorferi u vzorků izolovaných z roztočů, klíšťat, komárů a hlodavců (Identification of 33 spirochete isolates and determination of pathogen Borrelia burgdorferi in the samples isolated from the mites, ticks, mosquitos and rodents)*. In Sborník abstrakt. Brno : Společnost infekčního lékařství ČLS JEP, 2001., p. 67-67. VI. česko-slovenský kongres o infekčních chorobách.
79. Jarkovský, Jiří - Komárek, Ondřej - Dvořáková, Pavlína - Gelnar, Milan. *Microhabitat distribution of monogenean parasites of chub (Leuciscus cephalus) under different environmental conditions. (Microhabitat distribution of monogenean parasites of chub (Leuciscus cephalus) under different environmental conditions.)*. In Program and Abstract, 4th International Symposium on Monogenea. Brisbane, Australia : University of Queensland, 2001., p. 54-54.
80. Jian Chun, Guo - Brzobohatý, Břetislav. *A Novel System for Regulated Expression of Isopentenyl Transferase Gene, ipt, in Arabidopsis Thaliana. (A Novel System for Regulated Expression of Isopentenyl Transferase Gene, ipt, in Arabidopsis Thaliana.)*. In V. Pracovní setkání biochemiků a molekulárních biologů, Sborník příspěvků, Brno 2001. Brno : Masarykova univerzita v Brně, 2001., p. 28-36. ISBN 80-210-2538-7.
81. Jian Chun, Guo - Brzobohatý, Břetislav. *Regulated Expression of Isopentenyl Transferase in Arabidopsis: System Development. (Regulated Expression of Isopentenyl Transferase in Arabidopsis: System Development.)*. In 17th International Conference on Plant Growth Substances, Brno, Czech Republic, July 1-6, 2001, Abstracts. Brno : Mendel University of Agriculture and Forestry, Brno, 2001., p. 88-88. ISBN 80-7157-518-6.

82. Jurajda, Michal - Kaňková, Kateřina - Mužík, Jan - Unzeitig, Vít - Drábková, Marie - Izakovičová Hollá, Lydie - Vácha, Jiří. *Lack of an Association of a Single Nucleotide Polymorphism in the Promoter of the Matrix Metalloproteinase-1 Gene in Czech Women with Pregnancy-Induced Hypertension. (Lack of an Association of a Single Nucleotide Polymorphism in the Promoter of the Matrix Metalloproteinase-1 Gene in Czech Women with Pregnancy-Induced Hypertension.)*. Gynecologic and Obstetric Investigation, Basel : S. Karger AG, 52, 2, p. 124-127. ISSN 0378-7346. 2001.
83. Kašparovský, Tomáš - Barták, Miloš - Hájek, Josef - Mikeš, Vladimír. *Vliv metabolitů václavky na obrannou reakci rostlin (Effect of metabolites from Armillaria on the defence reaction of plants)*. In Sborník abstrakt 22. kongresu CSSM. 2001. vyd. Košice : CSSM, 2001., p. 198-198. Sborník abstrakt.
84. Kašpárek, Petr - Doškař, Jiří - Pantůček, Roman. *Analýza genomu stafylokokového bakteriofága 812 (Genome analysis of staphylococcal bacteriophage 812)*. In Konference mladých mikrobiologů X. Tomáškovy dny 2001. Brno : Mikrobiologický ústav LF MU a FN u sv. Anny v Brně, 2001., p. 15-15. Sborník souhrnů přednášek.
85. Kašpárek, Petr - Pantůček, Roman - Rosypal, Stanislav - Doškař, Jiří. *Analýza mutací stafylokokového bakteriofága 812 vedoucích ke změně rozmezí hostitele (Analysis of host-range mutations of staphylococcal bacteriophage 812)*. In 22nd Congress of the Czechoslovak Society for Microbiology - Health and Microorganisms. Košice - Praha : Czechoslovak Society for Microbiology, 2001., p. 197-197. Abstract Book.
86. Kašpárek, Petr - Doškař, Jiří - Pantůček, Roman. *Molekulární základ změny rozmezí hostitele stafylokokového bakteriofága 812 (Molecular basis of the host-range mutations in polyvalent staphylococcal phage 812)*. In V. Pracovní setkání biochemiků a molekulárních biologů. Brno : Masarykova univerzita v Brně, 2001., p. 41-42. Sborník příspěvků. ISBN 80-210-2538-7.
87. Kaňková, Kateřina - Mužík, Jan - Karásková, Jana - Beránek, Michal - Hájek, Dobroslav - Znojil, Vladimír - Vlková, Eva - Vácha, Jiří. *Duration of NIDDM and the TNF α Nco1 genotype as predictive factors in proliferative diabetic retinopathy (Duration of NIDDM and the TNF α Nco1 genotype as predictive factors in proliferative diabetic retinopathy)*. Ophthalmologica, Switzerland : KARGER, 4, 215, p. 294-298. ISSN 0030-3755. 2001.
88. Kaňková, Kateřina - Záhejský, Jiří - Márová, Ivana - Mužík, Jan - Kuhrová, Viera - Blažková, Michaela - Znojil, Vladimír - Beránek, Michal - Vácha, Jiří. *Polymorphisms in the RAGE gene influence susceptibility to diabetes-associated microvascular dermatoses in NIDDM (Polymorphisms in the RAGE gene influence susceptibility to diabetes-associated microvascular dermatoses in NIDDM)*. Journal of Diabetes and its Complications, USA : Elsevier Science, 4, 15, p. 185-192. ISSN 1056-8727. 2001.
89. Kaňková, Kateřina - Márová, Ivana - Záhejský, Jiří - Mužík, Jan - Stejskalová, Andrea - Znojil, Vladimír - Vácha, Jiří. *Polymorphisms 1704G/T and 2184A/G in the RAGE gene are associated with antioxidant status (Polymorphisms 1704G/T and 2184A/G in the RAGE gene are associated with antioxidant status)*. Metabolism: Clinical and Experimental, USA : W. B. Saunders Company, 50, 10, p. 1152-1160. ISSN 0026-0495. 2001.
90. Klimeš, Leoš - Dančák, Martin - Hájek, Michal - Jongepierová, Ivana - Kučera, Tomáš. *Scale-dependent biases in species counts in a grassland (Scale-dependent biases in species counts in a grassland)*. Journal of Vegetation Science, Uppsala : Opulus Press, 12, 4, p. 699-704. ISSN 110-9233. 2001.
91. Kolbek, Jiří - Chytrý, Milan. *Suché bory (Dry pine forests)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 213-218. ISBN 80-86064-55-7.
92. Kolář, Milan - Vágnerová, Iva - Pantůček, Roman - Čermák, P. *Impact of rational antibiotic usage on occurrence of vancomycin-resistant enterococci in hematological patients (Impact of rational antibiotic usage on occurrence of vancomycin-resistant enterococci in hematological patients)*. Clinical Microbiology and Infection, Oxford : Blackwell Science, 7, Suppl 1, p. 91-91. ISSN 1469-0691. 2001. 11th ECCMID Abstracts.
93. Komárek, Ondřej - Komárek, Jiří. *Two Year Phytobenthos Investigation of Petrified Forest Creek at Maritime Antarctic King George Island - Preliminary study*. In Folia Facultatis Scientiarum Naturalium Universitatis Masarykianae Brunensis. BRNO, CZECH REPUBLIC : Masaryk University Brno, Czech Republic, 2001., p. 103-110. Ecology of the Antarctic Coastal Oasis. Geogr. 25. ISBN 80-210-2556-5.
94. Konečná, Hana - Brzobohatý, Břetislav. *Navrhování sekvencí oligonukleotidů (Designing Oligonucleotide Sequences)*. In V. Pracovní setkání biochemiků a molekulárních biologů. Sborník příspěvků. Brno 2001. Brno : Masarykova univerzita v Brně, 2001., p. 13-13. ISBN 80-210-2538-7.
95. Konečná, Hana - Brzobohatý, Břetislav. *Navrhování sekvencí oligonukleotidů v molekulární biologii (Oligonucleotide Design in Molecular Biology)*. Bulletin ČSBMB, 2001, 1, p. 39-39. ISSN 1211-2526. 2001.
96. Kotoučková, Ludmila - Neča, Jiří - Němec, Miroslav. *Bakteriální degradace nitroguajakolů a jejich směsí s dalšími nitroaromáty (Bacterial degradation of nitroguaiacols and their mixtures with other nitroaromates)*. In Sborník 22. Kongresu Československé společnosti mikrobiologické - Zdravie a mikroorganizmy. Košice - Praha : Československá společnost mikrobiologická, 2001., p. 53-53.
97. Kotoučková, Ludmila - Neča, Jiří - Němec, Miroslav. *Biodegradace směsí nitrofenolů a příbuzných látek (Biodegradation of mixtures of nitrophenols and related compounds)*. In Biodegradace V. 1. vydání. Praha : Vydavatelství VŠCHT Praha, 2001., p. 133-133. 010307. ISBN 80-7080-419-X.
98. Kotoučková, Ludmila - Cmunt, Kamil - Novotný, David - Němec, Miroslav. *Mikroorganismy a mikrobiologie - CD-ROM (Microorganisms and microbiology - CD-ROM)*. In Sborník 22. Kongresu Československé společnosti mikrobiologické - Zdravie a mikroorganizmy. Košice - Praha : Československá společnost mikrobiologická, 2001., p. 211-211.
99. Kotoučková, Ludmila - Němec, Miroslav - Neča, Jiří - Navrátilová, Jitka - Sedláček, Ivo. *4-Nitroguaiacol as product and substrate of bacterial metabolism (4-Nitroguaiacol as product and substrate of bacterial metabolism)*. In V. Pracovní setkání biochemiků a molekulárních biologů. 1. vydání. Brno : Masarykova univerzita v Brně, 2001., p. 23-23. ISBN 80-210-2538-7.
100. Koubková, Božena - Matějsová, Iveta - Kráčmar, Stanislav - Gelnar, Milan. *Morphological abnormalities of the opisthaptor of Paradiplozoon homoion (Monogenea, Diplozoidae)*. In Program & Abstracts, 4th International Symposium on Monogenea. Brisbane, Australia : University of Queensland, 2001., p. 112-112. abstract.

- 101 Kovac, Damir - Rozkošný, Rudolf. *Sudostasiatische Waffenfliegen aus der Gattung Ptecticus (South-eastern soldier flies of the genus Ptecticus)*. Natur und Museum, Frankfurt a.M. : Senckenberg.Naturforschende Gesellschaft, 131, 3, p. 75-85. ISSN 0028-1301. 2001.
- 102 Krejčí, Lumír - Damborský, Jiří - Thomsen, B. - Duno, M. - Bendixen, C. *Molecular dissection of interactions between Rad51 and members of the recombination-repair group (olecular dissection of interactions between Rad51 and members of the recombination-repair group)*. Molecular and Cellular Biology, 21, 3, p. 966-976. 2001.
- 103 Kráčmar, Stanislav - Matějusová, Iveta - Koubková, Božena - Gelnar, Milan - Minařík, B. *Akumulace kadmia a olova ve vybraných orgánech ouklejky pruhované (Alburnoides bipunctatus Bloch, 1782) (Accumulation of cadmium and lead in some organs of fish species Alburnoides bipunctatus)*. In IV. Kábrtovy dietetické dny. Brno : Veterinární a farmaceutická univerzita Brno, 2001., p. 56-59. IV. Kábrtovy dny. ISBN 80-7305-44-0.
- 104 Kráčmar, Stanislav - Matějusová, Iveta - Koubková, Božena - Mazourková, Martina. *Akumulace rizikových prvků (Ni, Cr, Cu) ve vybraných orgánech ouklejky pruhované (Alburnoides bipunctatus) z řeky Vlárý (Accumulation of risk elements (Ni, Cr, Cu) in some organs of fish species Alburnoides bipunctatus)*. In The tenth scientific symposium with international participation on ecology in selected agglomerations of Jelšava-Lubeník and Central Spiš. Košice, Slovenská Republika : Slovenská banická spoločnosť ZS VTS, ZO pri Ústave geotechniky SAV Košice, 2001., p. 162-165. Proceedings of Conference. ISBN 8088985-51-X.
- 105 Kubičárová, Tatiana. *Further characterization of telomeric chromatin (Further characterization of telomeric chromatin)*. In Aktuální témata z buněčné a molekulární biologie. Olomouc : Univerzita Palackého v Olomouci, 2001., p. 16-16. ISBN 80-244-0327-7.
- 106 Kučera, Tomáš - Chytrý, Milan. *Bučiny (Beech forests)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 190-198. ISBN 80-86064-55-7.
- 107 Kučerová, Andrea - Kučera, Tomáš - Hájek, Michal - Rybníček, Kamil. *Rašelinné lesy (Bog forests)*. In Katalog biotopů České republiky. Habitat catalogue of the Czech Republic. Praha : Agentura ochrany přírody a krajiny, 2001., p. 223-230. ISBN 80-86064-55-7.
- 108 Kyjovská, Zdeňka - Jungmannová, Barbara - Řepková, Jana. *Cytological analysis of embryonic lethal T-DNA mutations in Arabidopsis thaliana (Cytological analysis of embryonic lethal T-DNA mutations in Arabidopsis thaliana)*. In Scripta Facultatis Scientiarum Naturalium Universitatis Masarykianae Brunensis, Biology. Brno : Masarykova univerzita v Brně, 2001., p. 62-63. 1. edition, vol. 27. ISBN 80-210-2590-5.
- 109 Lexa, Matej - Horák, Jakub - Rotkovská, Julie Olegivna - Brzobohatý, Břetislav. *Insertional Mutants in Arabidopsis Response Regulator Genes (Insertional Mutants in Arabidopsis Response Regulator Genes.)*. In 17th International Conference on Plant Growth Substances, Brno, Czech Republic, July 1-6, 2001, Abstracts. Brno : Mendel University of Agriculture and Forestry, Brno, 2001., p. 148-148. ISBN 80-7157-518-6.
- 110 Lexa, Matej - Genkov, Todor Nikolaev - Brzobohatý, Břetislav. *Nitrate Reductase Activity in ipt-Expressing Tobacco. (Nitrate Reductase Activity in ipt-Expressing Tobacco.)*. In 17th International Conference on Plant Growth Substances, Brno, Czech Republic, July 1-6, 2001, Abstracts. Brno : Mendel University of Agriculture and Forestry, Brno, 2001., p. 189-189. ISBN 80-7157-518-6.
- 111 Lexa, Matej - Horák, Jakub - Brzobohatý, Břetislav. *Virtual PCR*. Bioinformatics, Oxford : Oxford University Press, 17, 2, p. 192-193. ISSN 1367-4803. 2001.
- 112 Lizal, Pavel - Relichová, Jiřina. *The effect of day length, vernalization and DNA demethylation on the flowering time in Arabidopsis thaliana*. PHYSIOLOGIA PLANTARUM, Copenhagen : Munksgaard, 113, 1, p. 121-127. ISSN 0031-9317. 2001.
- 113 Machala, Miroslav - Dušek, Ladislav - Hilscherová, Klára - Kubínová, Renata - Jurajda, Petr - Neča, Jiří - Ulrich, Robert - Gelnar, Milan - Studničková, Z. - Holoubek, Ivan. *Determination and multivariate statistical analysis of biochemical responses to environmental contaminants in feral freshwater fish Leuciscus cephalus (Determination and multivariate statistical analysis of biochemical responses to environmental contaminants in feral freshwater fish Leuciscus cephalus)*. Environmental Toxicology and Chemistry, Pensacola, FL, USA : SETAC, 20, 5, p. 1141-1148. ISSN 0730-7268. 2001.
- 114 Maloň, M. - Rolčík, J. - Doležal, K. - Marek, Jaromír - Trávníček, Z. *Bio-active Cu(II), Pd(II) and Pt(II) complexes of 6-benzylaminopurine derivatives (Bio-active Cu(II), Pd(II) and Pt(II) complexes of 6-benzylaminopurine derivatives)*. In JOURNAL OF INORGANIC BIOCHEMISTRY. NEW YORK : ELSEVIER SCIENCE INC, 2001., p. 326-326. 86:(1). ISBN ISSN-0162-0134.
- 115 Maloň, M. - Trávníček, Z. - Maryško, M. - Zbořil, R. - Mašláň, M. - Marek, Jaromír - Doležal, K. - Rolčík, J. - Kryštof, V. - Strnad, M. *Metal complexes as anticancer agents 2. Iron(III) and copper(II) bio-active complexes with N-6-benzylaminopurine derivatives (Metal complexes as anticancer agents 2. Iron(III) and copper(II) bio-active complexes with N-6-benzylaminopurine derivatives)*. Inorganica Chimica Acta, Oxford, UK : Elsevier Science, 323, 1-2, p. 119-129. ISSN 0020-1693. 2001.
- 116 Maloň, M. - Marek, Jaromír - Trávníček, Z. *Structural studies of 6-benzylaminopurine derivatives; growth hormones with anti-tumor activity (Structural studies of 6-benzylaminopurine derivatives; growth hormones with anti-tumor activity)*. In Struktura 2001, Kolokvium Krystalografické společnosti. Praha : CSCA, 2001., p. 61-62. Materials Structure, vol 8, no 1a, 2001. ISBN ISSN=1211-5894.
- 117 Maláška, Jan - Fišerová, Anežka - Kunická, Zuzana - Skleničková, Marie - Kovářová, Lenka - Bourková, Ludmila - Musilová, Romana - Hájek, Roman - Fajkus, Jiří. *HODNOCENÍ TELOMERÁZOVÉ AKTIVITY A DÉLKY TELOMER U MNOHOČETNÉHO MYELOMU (Evaluation of telomerase activity and telomere length in multiple myeloma)*. In XV. OLOMOUCKÉ HEMATOLOGICKÉ DNY S MEZINÁRODNÍ ÚČASTÍ. Olomouc : Univerzita Palackého v Olomouci, 2001., p. 173-173.
- 118 Marek, Jaromír. *Proteinová krystalografie v postgenomické éře (Protein crystallography in the postgenomic era)*. In Struktura 2001, Kolokvium Krystalografické společnosti. Praha : CSCA, 2001., p. 20-20. Materials Structure, vol 8, no 1a, 2001. ISBN ISSN=1211-5894.
- 119 Matějusová, Iveta - Koubková, Božena - D'Amelio, Stefano - Cunningham, Carey. *Genetic characterization of diplozoid monogenenans (Diplozoidae)*. In Program & Abstracts 4th International Symposium on Monogenea. Brisbane, Australia : University of Queensland, 2001., p. 95-95. abstract.
- 120 Matějusová, Iveta - Koubková, Božena - D'Amelio, Stefano - Cunningham, Carey O. *Genetic characterization of six species of diplozoids (Monogenea Diplozoidae) (Genetic characterization of six species of dinlozoids (Monogenea Dinlozoidae))*. Parasitology United Kingdom

- 121 Matějusková, Iveta - Gelnar, Milan - McBeath, Alastair J. A. - Collins, Catherine M. - Cunningham, Carey O. *Molecular markers for gyrodactylids (Gyrodactylidae: Monogenea) from five fish families (Teleostei) (Molecular markers for gyrodactylids (Gyrodactylidae: Monogenea) from five fish families (Teleostei))*. International Journal for Parasitology, Australie : Elsevier Science, 31, 4, p. 738-745. ISSN 0020-7519. 2001.
- 122 Matějusková, Iveta - Verneau, Olivier - Gelnar, Milan - Cunningham, Carey. *Phylogenetic relationships among gyrodactylids (Gyrodactylidae): A reflection of subgenera and morphology of opisthaptor (Phylogenetic relationships among gyrodactylids (Gyrodactylidae): A reflection of subgenera and morphology of opisthaptor)*. In Program and Abstracts, 4th International Symposium on Monogenea. Brisbane, Austrálie : University of Queensland, Brisbane, Austrálie, 2001., p. 38-38.
- 123 Mohamed, Walid Fathalla - Čajan, Michal - Pazdera, Pavel - Marek, Jaromír. *One-Pot Quinazolin-4-ylidenethiourea Synthesis via N-(2-Cyanophenyl)benzimidoyl isothiocyanate (One-Pot Quinazolin-4-ylidenethiourea Synthesis via N-(2-Cyanophenyl)benzimidoyl isothiocyanate)*. Molecules, Basel : MDPI, 6, 2, p. 584-597. ISSN 1420-3049. 2001.
- 124 Mohamed, Walid Fathalla - Čajan, Michal - Pazdera, Pavel - Marek, Jaromír. *One-Pot Quinazolin-4-yl-thiourea Synthesis via N-(2-Cyanophenyl)benzimidoyl isothiocyanate (One-Pot Quinazolin-4-yl-thiourea Synthesis via N-(2-Cyano-phenyl)benzimidoyl isothiocyanate)*. Molecules, Basel : MDPI, 6, 2, p. 588-602. ISSN 1420-3049. 2001.
- 125 Mohamed, Walid Fathalla - Čajan, Michal - Marek, Jaromír - Pazdera, Pavel. *The Intramolecular Cycloaddition Reaction of N'-Alkyl-N3-[[2-cyanophenyl]imino](phenyl)methyl]thioureas (The Intramolecular Cycloaddition Reaction of N'-Alkyl-N3-[[2-cyanophenyl]imino](phenyl)methyl]thioureas)*. In Sborník příspěvků 53. zjazd Chemických společností. 1. vyd. Banká Bystrica : FPV Univerzita Mateja Bela v Banskej Bystrici, 2001., p. 231-232. 1. ISBN 80-89029-22-1.
- 126 Mohamed, Walid Fathalla - Čajan, Michal - Marek, Jaromír - Pazdera, Pavel. *The Reactivity Study on N3,N3-(3-Oxapentan-1,5-diyl)-N1-(2-phenyl-3,4-dihydroquinazolin-4-yliden)thiourea (The Reactivity Study on N3,N3-(3-Oxapentan-1,5-diyl)-N1-(2-phenyl-3,4-dihydroquinazolin-4-yliden)thiourea)*. In Proceedings of ECSOC-5, The Fifth International Electronic Conference on Synthetic Organic Chemistry, <http://www.mdpi.org/ecsoc-5.htm>. 1. vyd. Basel : MDPI, Basel, Switzerland, 2001., p. [a0049]-0. ISBN 3-906980-06-5. - URL
- 127 Mohamed, Walid Fathalla - Marek, Jaromír - Pazdera, Pavel. *The Reactivity Study on N3,N3-(3-Oxapentan-1,5-diyl)-N1-(2-phenyl-3,4-dihydroquinazolin-4-yliden)thiourea. Part 2: Reaction with Phenacyl Bromides and Chloroacetic Acid Derivatives (The Reactivity Study on N3,N3-(3-Oxapentan-1,5-diyl)-N1-(2-phenyl-3,4-dihydroquinazolin-4-yliden)thiourea. Part 2: Reaction with Phenacyl Bromides and Chloroacetic Acid Derivatives)*. In Proceedings of ECSOC-5, The Fifth International Electronic Conference on Synthetic Organic Chemistry, <http://www.mdpi.org/ecsoc-5.htm>. 1. vyd. Basel : MDPI, Basel, Switzerland, 2001., p. [a0048]-0. ISBN 3-906980-06-5. - URL
- 128 Navrátilová, Jitka - Kotoučková, Ludmila - Němec, Miroslav - Sedláček, Ivo - Durnová, Eva. *Degradation of 4-nitrocatechol and other nitroaromatic compounds by Rhodococcus opacus J3 (Degradation of 4-nitrocatechol and other nitroaromatic compounds by Rhodococcus opacus J3)*. In V. Pracovní setkání biochemiků a molekulárních biologů. 1. vydání. Brno : Masarykova univerzita v Brně, 2001., p. 23-23. ISBN 80-210-2538-7.
- 129 Necas, Marek - Foreman, Mark R. St J. - Marek, Jaromír - Woollins, John Derek - Novosad, Josef. *New mixed-donor unsymmetrical P-N-P ligands and their palladium(II) complexes (New mixed-donor unsymmetrical P-N-P ligands and their palladium(II) complexes)*. New Journal of Chemistry, Cambridge : Royal Soc Chemistry, 25, 10, p. 1256-1263. ISSN 1144-0546. 2001.
- 130 Neuhäuslová, Zdenka - Moravec, Jaroslav - Chytrý, Milan - Ložek, Vojen - Rybníček, Kamil - Rybníčková, Eliška - Husová, Miroslava - Grulich, Vít - Jeník, Jan - Sádlo, Jiří - Jirásek, Jaroslav - Kolbek, Jiří - Wild, Jan. *Potential natural vegetation of the Czech Republic (Potential natural vegetation of the Czech Republic)*. Braun-Blanquetia, Camerino : Universita Camerino, 30, 1, p. 1-80. ISSN 0393 5434. 2001.
- 131 Olejníček, Jiří - Barták, Miroslav - Mocek, Bohuslav - Vaňhara, Jaromír. *Faunistic records: Dolichopodidae*. Dipterologica bohemoslovaca Vol. 10. Acta Univ. Carol., Biologica, Praha : UK Praha, 45, 1-2, p. 189-190. ISSN 0001-7124. 2001.
- 132 Ondračková, Markéta - Matějusková, Iveta - Šimková, Andrea - Jurajda, Pavel. *Monogenean parasites of 0+ juvenile fish in a floodplain oxbow (Monogenean parasites of 0+ juvenile fish in a floodplain oxbow)*. In Program and Abstracts, 4th International Symposium on Monogenea. Brisbane, Austrálie : University of Queensland, 2001., p. 111-111.
- 133 Oráčová, Eva - Kvardová, Veronika - Pantůček, Roman - Doškař, Jiří. *Detekce profágů v kmenech Staphylococcus aureus pomocí druhově specifických sond (Prophage detection in strains of Staphylococcus aureus by phage species-specific probes)*. In 22nd Congress of the Czechoslovak Society for Microbiology - Health and Microorganisms. Košice - Praha : Czechoslovak Society for Microbiology, 2001., p. 262-262. Abstract Book.
- 134 Paleček, Emil - Fojta, Miroslav - Jelen, František - Brázdová, Marie - Trnková, Libuše. *Electrochemistry of nucleic acids and proteins. Sensors for DNA hybridization and DNA damage. (Electrochemistry of nucleic acids and proteins. Sensors for DNA hybridization and DNA damage.)*. In 2nd Croatian symposium on electrochemistry, Proceedings. Primosten : Croatian Society of Chemical Engineers, 2001., p. 1-7.
- 135 Pantůček, Roman - Rybář, Roman - Petráš, Petr - Sedláček, Ivo - Růžičková, Vladislava - Doškař, Jiří. *Charakterizace variability genomu kmenů nového multirezistentního poddruhu Staphylococcus hominis subsp. novobiosepticus v České republice (Characterization of genomic variability of new multiresistant subspecies Staphylococcus hominis subsp. novobiosepticus in Czech Republic)*. In V. Pracovní setkání biochemiků a molekulárních biologů. Brno : Masarykova univerzita v Brně, 2001., p. 40-40. Sborník příspěvků. ISBN 80-210-2538-7.
- 136 Pantůček, Roman - Petráš, Petr - Růžičková, Vladislava - Rybář, Roman - Doškař, Jiří. *Variabilita genomu kmenů multirezistentního poddruhu Staphylococcus hominis subsp. novobiosepticus v České republice (Genomic variability of multiresistant subspecies Staphylococcus hominis subsp. novobiosepticus strains in the Czech Republic)*. In 22nd Congress of the Czechoslovak Society for Microbiology - Health and Microorganisms. Košice - Praha : Czechoslovak Society for Microbiology, 2001., p. 266-266. Abstract Book.
- 137 Pavlová, Martina - Mendel, Jan - Chroust, Karel. *Sledování genotoxické aktivity volatilních halogenovaných alifatických uhlovodíků (Detection of genotoxic activity of volatile halogenated aliphatic hydrocarbones)*. In V. Pracovní setkání biochemiků a molekulárních biologů. Brno : Masarykova univerzita v Brně, 2001., p. 55-55. Sborník příspěvků. ISBN 80-210-2538-7.

- 138 Pejchalová, Kateřina - Šikutová, Silvie - Halouzka, Jiří - Žáková, Alena. *Sledování výskytu spirochet v hematofágních členovcích čeledi Culicidae, Simuliidae, Tabanidae a Ixodidae použitím metod DFM a PCR a jejich následná identifikace. (Monitoring of the spirochete prevalence in hematophagous arthropods of the families: Culicidae, Simuliidae, Tabanidae and Ixodidae with DFM and PCR method and their identification.)*. In Sborník abstrakt. Brno : Společnost infekčního lékařství ČLS JEP, 2001., p. 68-68. VI. česko-slovenský kongres o infekčních chorobách.
- 139 Petráš, Petr - Růžičková, Vladislava. *Zjištění kompletní sekvence genomu methicilin-rezistentního a vankomycin-rezistentního kmene Staphylococcus aureus (Estimating of the whole genome sequence of methicillin-resistant and vancomycin-resistant Staphylococcus aureus)*. Zprávy Centra epidemiologie a mikrobiologie, Praha : Státní zdravotní ústav, 10, 5, p. 180-181. ISSN 1211-7358. 2001.
- 140 Prodělalová, Jana - Španová, Alena. *Vnitrobuněčné inhibitory PCR v baktériích Salmonella typhimurium (Intracellular PCR inhibitors in bacteria Salmonella typhimurium)*. In V. Pracovní setkání biochemiků a molekulárních biologů. 2001. vyd. Brno : Masarykova univerzita v Brně, 2001., p. 39-39. Sborník příspěvků. ISBN 80-210-2538-7.
- 141 Ptáček, Vladimír - Rotrekl, Jiří. *Landscape pollination management of Rhophitoides canus Ev. (Hymenoptera, Apoidea, Halictidae) in seed production of alfalfa (Medicago sativa L.)*. Acta Horticulturae, Mosónymagyaróvár, Hungary : ICPBR, ISHS, 2001, 561, p. 153-157. ISSN 0567-7572. 2001. (Also on the videorecord, Czech commentary.)
- 142 Ptáček, Vladimír. *Some biological aspects of bumble bee (Bombus, Hymenoptera) management*. Acta Horticulturae, Magyaróvár, Hungary : ICPBR, ISHS, 2001, 561, p. 279-286. ISSN 0567-7572. 2001.
- 143 Pyšek, Petr - Tichý, Lubomír. *Rostlinné invaze (Plant invasions)*. Brno : Rezekvítek, 2001. 40 pp. ISBN 80-902954-4-4.
- 144 Rittich, Bohuslav - Španová, Alena - Ohlshenny, Yuriy - Rudolf, Ivo - Horák, Daniel - Lenfeld, Jiří - Beneš, Milan J. *Influence of metal ions on activity and stability of DNase I immobilized on hydrophilic particles*. In The 4th Croatian Congress of Food Technologists, Biotechnologists and Nutritionists. 2001. vyd. Zagreb, Croatia : Faculty of Food Technology and Biotechnology, University of Zagreb, Croatia, 2001., p. 63-64. Central European Meeting, CD-ROM.
- 145 Rittich, Bohuslav - Španová, Alena - Rudolf, Ivo - Ohlshenny, Yuri - Horák, Daniel - Lenfeld, Jiří - Beneš, Milan J. *Properties of nucleases immobilized on hydrophilic polymer particles*. In Separation in the BioSciences SBS 2001. 2001. vyd. Praha : Czech Chemical Society, 2001., p. 129-129. 2nd International Symposium. ISBN 80-7080-437-8.
- 146 Rittich, Bohuslav - Španová, Alena - Rudolf, Ivo - Horák, Daniel - Lenfeld, Jiří - Beneš, Milan J. *The influence of metal ions on the activity of immobilized nucleases*. In Life Sciences 2001. 2001. vyd. Vienna : Österreichische Gesellschaft für Biochemie und Molekular Biologie, 2001., p. 56-56. Joint Annual Meeting.
- 147 Rosypal, Stanislav - Doškař, Jiří - Pantůček, Roman - Kailarová, Jana - Relichová, Jiřina - Růžičková, Vladislava - Šmarda, Jan - Šmarda, Jan - Štěpán, Jiří. *TERMINOLOGIE MOLEKULÁRNÍ BIOLOGIE (Terminology of molecular biology)*. První vydání. Brno : Vydavatel Prof. RNDr. Stanislav Rosypal, DrSc. Vodova 80, 612 00 Brno, 2001. 300 pp. České odborné termíny, definice a anglické ekvival. ISBN 80-902562-3-6. - URL
- 148 Rozkošný, Rudolf - Hauser, Martin. *Additional records of Ptecticus Loew from Sri Lanka, with a new species and a new name (Diptera: Stratiomyidae) (Additional records of Ptecticus Loew from Sri Lanka, with a new species and a new name (Diptera: Stratiomyidae))*. Studia dipterologica, Halle (Saale) : Dr. A. Stark, 8, 1, p. 217-222. ISSN 0945-3954. 2001.
- 149 Rozkošný, Rudolf - De Jong, Herman. *Identity of the Oriental and Australasian species of Ptecticus Loew described by J.C.H. de Meijere (Diptera, Stratiomyidae) (Identity of the Oriental and Australasian species of Ptecticus Loew described by J.C.H. de Meijere (Diptera, Stratiomyidae))*. Tijdschrift voor Entomologie, Amsterdam : Nederlandse Entomologische Vereniging, 144, 1, p. 55-71. ISSN 0040-7496. 2001.
- 150 Rozkošný, Rudolf - Kovac, Damir. *New male, larva and puparium of Odontomyia pulcherrima Brunetti (Insecta: Diptera: Stratiomyidae) from the Oriental Region. (New male, larva and puparium of Odontomyia pulcherrima Brunetti (Insecta: Diptera: Stratiomyidae) from the Oriental Region.)*. The Raffles Bulletin of Zoology, Singapore : National University, 49, 1, p. 101-109. ISSN 0217-244/5. 2001.
- 151 Rozkošný, Rudolf - Barták, Miroslav. *Phaeomyiidae (Phaeomyiidae)*. In Barták, Miroslav - Vaňhara, Jaromír. Diptera in an Industrially Affected Region (North-Western Bohemia, Bílina and Duchcov Environs), II. 1. vyd. Brno : Masarykova Univerzita, 2001., p. 319-321. Folia Fac. Sci. Nat. Univ. Masaryk. Brun., Biol., 105. ISBN 80-210-2558-1.
- 152 Rozkošný, Rudolf - Barták, Miroslav. *Sciomyzidae (Sciomyzidae)*. In Barták, Miroslav - Vaňhara, Jaromír. Diptera in an Industrially Affected Region (North-Western Bohemia, Bílina and Duchcov Environs), II. 1. vyd. Brno : Masarykova Univerzita, 2001., p. 323-329. Folia Fac. Sci. Nat. Univ. Masaryk. Brun., Biol., 105. ISBN 80-210-2558-1.
- 153 Rozkošný, Rudolf - Barták, Miroslav. *Stratiomyidae, Sciomyzidae (Stratiomyidae, Sciomyzidae)*. In Chvála, Milan. Dipterologica bohemoslovaca, 10. 1. vyd. Praha : Univerzita Karlova, 2001., p. 187-189. Acta Univ. Carol., Biol., 45. ISBN 0001-7124.
- 154 Rudolf, Ivo - Rittich, Bohuslav. *Vlastnosti DNázy I imobilizované na magnetických nosičích (Properties of DNase I immobilized on magnetic carriers)*. In V. Pracovní setkání biochemiků a molekulárních biologů. 2001. vyd. Brno : Masarykova univerzita v Brně, 2001., p. 60-60. Sborník příspěvků. ISBN 80-210-2538-7.
- 155 Růžičková, Vladislava - Hradilová, Jana - Pantůček, Roman - Petráš, Petr - Sedláček, Ivo - Doškař, Jiří - Rosypal, Stanislav. *Genomová typizace exfoliatin-pozitivních kmenů Staphylococcus aureus (Genomic typing of exfoliatin-positive Staphylococcus aureus strains)*. In 22nd Congress of the Czechoslovak Society for Microbiology - Health and Microorganisms. Košice - Praha : Czechoslovak Society for Microbiology, 2001., p. 284-284. Abstract Book.
- 156 Růžičková, Vladislava - Hradilová, Jana - Pantůček, Roman - Petráš, Petr - Doškař, Jiří. *Makrorestrikční analýza genomu a výskyt profágů u exfoliatin-pozitivních kmenů Staphylococcus aureus (Macrorestriction analysis of genome and occurrence prophages in exfoliatin-positive Staphylococcus aureus strains)*. In V. Pracovní setkání biochemiků a molekulárních biologů. Brno : Masarykova univerzita v Brně, 2001., p. 41-41. Sborník příspěvků. ISBN 80-210-2538-7.

- 157 Řehulková, Eva - Gelnar, Milan. *Ancyrocephalid monogeneans of the genus Thylacicleidus Wheeler and Klasen, 1987 from two species of Tetraodon (Tetraodontiformes: Tetraodontidae): a comparative study. (Ancyrocephalid monogeneans of the genus Thylacicleidus Wheeler and Klasen, 1987 from two species of Tetraodon (Tetraodontiformes: Tetraodontidae): a comparative study.)*. Helminthologia, Košice, Slovak republic : Parasitological Institute SAS, 38, 3, p. 174-175. ISSN 0440-6605. 2001.
- 158 Řehulková, Eva - Gelnar, Milan. *SEM study on morphology and surface topography of Macrogyrodactylus polypteri Malmberg, 1957 from the skin and fins of Calamoichthys calabaricus. (SEM study on morphology and surface topography of Macrogyrodactylus polypteri Malmberg, 1957 from the skin and fins of Calamoichthys calabaricus.)*. In Program and Abstracts 4th International Symposium on Monogenea. Brisbane, Australia : University of Queensland, 2001., p. 113-113.
- 159 Řehulková, Eva - Gelnar, Milan. *Usage of image analysis in morphology study of the Thylacicleidus genus (Monogenea: Ancyrocephalidae) from two species of Tetraodon (Teleostei: Tetraodontiformes). (Usage of image analysis in morphology study of the Thylacicleidus genus (Monogenea: Ancyrocephalidae) from two species of Tetraodon (Teleostei: Tetraodontiformes).)*. In Program and Abstract, 4 th International Symposium on Monogenea. Brisbane, Australia : University of Queensland, 2001., p. 94-94.
- 160 Řehák, Zdeněk - Baroň, Ivo. *Detecting of flight activity of Lesser horseshoe bats, Rhinolophus hipposideros, at a cave entrance over a year (Detecting of flight activity of Lesser horseshoe bats, Rhinolophus hipposideros, at a cave entrance over a year)*. Nietoperze, Wrocław : The Agreement for Bat Conservation, 2, 2, p. 202-209. ISSN 1640-2677. 2001.
- 161 Řehák, Zdeněk. *Letouni (Chiroptera) (Bats (Chiroptera))*. In Příroda Valašska. 1st. Vsetín : Český svaz ochránců přírody ZO 76/06 Orchidea, 2001., p. 251-254. ISBN 80-238-7892-1.
- 162 Řehák, Zdeněk. *The proposal of a modification of bat-detecting in the field (The proposal of a modification of bat-detecting in the field)*. Nietoperze, Wrocław : The Agreement for Bat Conservation, 2, 2, p. 209-212. ISSN 1640-2677. 2001.
- 163 Řepková, Jana - Lízal, Pavel - Ryšávka, Petr - Kyjovská, Zdeňka - Doleželová, Heda. *Gene localization by means of T-DNA tagging in Arabidopsis thaliana (Gene localization by means of T-DNA tagging in Arabidopsis thaliana)*. In 4th International Symposium in the Series Recent Advances in Plant Biotechnology. Book of Abstracts. Třeboň, Czech Republic : Institut of Plant Molecular Biology, Academy of Science of the Czech Republic, České Bdějovice, 2001., p. 97-97. 1. edition.
- 164 Řepková, Jana - Relichová, Jiřina. *Genetika rostlin (Plant Genetics)*. 1. vyd. Brno : Masarykova univerzita Brno, 2001. 269 pp. 3489/Př-12/01-17/30. ISBN 80-210-2736-3.
- 165 Schenková, Jana - Komárek, Ondřej - Zahrádková, Světlana. *Oligochaeta of the Morava and Odra River basins (Czech Republic): species distribution and community composition (Oligochaeta of the Morava and Odra River basins (Czech Republic): species distribution and community composition)*. Hydrobiologia, Netherlands : Kluwer Academic Publishers, 2001, 463, p. 235-239. ISSN 0018-8158. 2001.
- 166 Schenková, Jana - Komárek, Ondřej - Zahrádková, Světlana. *The plausibility of using Oligochaeta to evaluate running waters in the Czech Republic (The plausibility of using Oligochaeta to evaluate running waters in the Czech Republic)*. Scripta Fac. Sci. Nat. Univ. Masaryk. Brun., Biology, Brno : Masaryk University., Brno : Masaryk University Printer, 2001, 27, p. 173-187. ISSN 80-210-2786-X. 2001.
- 167 Schlaghamerský, Jiří. *Dead Wood in Floodplain Forests - Biodiversity Multiplier or Forest Pest Breeding-Ground? (Dead Wood in Floodplain Forests - Biodiversity Multiplier or Forest Pest Breeding-Ground?)*. In Proceedings of the International Conference Management of Floodplain Forests in Southern Moravia, Židlochovice, May 13-16, 2000. Brno : Mendel University of Agriculture and Forestry, 2001., p. 207-216. ISBN 80-7157-491-0.
- 168 Skalická, Kamila - Chroust, Karel. *Sledování stability transgenů u Drosophila melanogaster pomocí teplotní gradientové gelové elektroforézy a sekvencování (Stability of transgene in Drosophila melanogaster studiyng by temperature gradient gel electrophoresis and sequencing)*. In V. Pracovní setkání biochemiků a molekulárních biologů. Brno : Masarykova univerzita v Brně, 2001., p. 55-56. Sborník příspěvků. ISBN 80-210-2538-7.
- 169 Skleničková, Marie - Krejčí, Kateřina - Maláská, Jan - Fajkus, Jiří. *In Situ Analysis of Telomeres in Haematological Malignancies (In Situ Analysis of Telomeres in Haematological Malignancies)*. In European Journal of Human Genetics. Vienna : nature publishing group, 2001., p. 135-136.
- 170 Sádlo, Jiří - Chytrý, Milan. *Trávníky písčín a mělkých půd (Sand and shallow soil grasslands)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 143-150. ISBN 80-86064-55-7.
- 171 Sýkorová, Eva - Fajkus, Jiří - Mikako, Ito - Fukui, Kiichi. *Transition between two forms of heterochromatin at plant subtelomeres*. Chromosome Research, Dordrecht : Kluwer Academic Publishers, roč. 9, January, p. 309-323. ISSN 0967-3849. 2001.
- 172 Šerý, Omar - Znojil, Vladimír - Popov, Petr - Šimek, Vladimír - Mikeš, Vladimír - Zvolský, Petr. *Alkoholizmus a angiotensinkonvertáza - předběžné výsledky asociační studie (Alcoholism and angiotensin converting enzyme - preliminary results of the association study)*. Psychiatrie, Praha : TIGIS, 5, Suppl. 1, p. 32-32. ISSN 1211-7579. 2001.
- 173 Šerý, Omar - Znojil, Vladimír - Popov, Petr - Šimek, Vladimír - Mikeš, Vladimír - Zvolský, Petr. *Alkoholizmus a angiotensinkonvertáza - předběžné výsledky asociační studie (Alcoholism and ACE - preliminary results of the association study)*. Psychiatrie, Praha : TIGIS, 5, Suppl. 1, p. 32-32. ISSN 1211-7579. 2001.
- 174 Šerý, Omar - Mikeš, Vladimír - Kašparovská, Jitka - Hladilová, Renáta - Šimek, Vladimír - Znojil, Vladimír - Glásllová, Kateřina - Profous, Jiří - Zvolský, Petr. *Alkoholizmus a dopaminový receptor D2 - předběžné výsledky asociační studie (Alcoholism and DRD2 receptor - preliminary results of the association study)*. Psychiatrie, Praha : TIGIS, 5, Suppl. 1, p. 32-32. ISSN 1211-7579. 2001.
- 175 Šerý, Omar - Mikeš, Vladimír - Kašparovská, Jitka - Hladilová, Renáta - Šimek, Vladimír - Znojil, Vladimír - Glásllová, Kateřina - Profous, Jiří - Zvolský, Petr. *Alkoholizmus a dopaminový receptor D2 - předběžné výsledky asociační studie (Alcoholism and DRD2 - preliminary results of the association study)*. Psychiatrie, Praha : TIGIS, 5, Suppl. 1, p. 32-32. ISSN 1211-7579. 2001.
- 176 Šerý, Omar - Hladilová, Renáta - Hříbková, Hana - Hloušková, Renáta - Novotný, Miroslav - Zvolský, Petr. *Alkoholizmus a interleukin 6 (Alcoholism and IL-6)*. Psychiatrie, Praha : TIGIS, 5, Suppl. 2, p. 132-133. ISSN 1211-7579. 2001.

- 177 Šerý, Omar - Zvolský, Petr. *Genetika alkoholismu I: Rodinné a adopční studie a studie dvojčat (Genetics of Alcoholism: Familiar, Adoption and Twin Studies)*. Česká a slovenská psychiatrie, Praha : ČLS J.E. Purkyně, 97, 7, p. 332-335. ISSN 1212-0383. 2001.
- 178 Šerý, Omar - Kovář, Vratislav - Zvolský, Petr - Pelcák, Stanislav - Navrátil, Marek. *Ovlivňuje počítač lidský mozek II? (Does the computer influences the human brain II?)*. Psychiatrie, Praha : TIGIS, 5, Suppl. 2, p. 131-131. ISSN 1211-7579. 2001.
- 179 Šerý, Omar - Hladilová, Renáta - Kašparovská, Jitka - Mikeš, Vladimír - Šimek, Vladimír - Novotný, Miroslav - Vojtová, Veronika - Zvolský, Petr. *Ovlivňuje polymorfismus TaqI A DRD2 dispozice k alkoholizmu? (Does the TaqI A DRD2 polymorphism affect the disposition to the alcoholism?)*. In V. Pracovní setkání biochemiků a molekulárních biologů. První vydání. Brno : Masarykova Univerzita, 2001., p. 20-20. 1. ISBN 80-210-2538-7.
- 180 Šerý, Omar. *Patologické hráčství (Pathological Gambling)*. Psychiatrie pro praxi, Konice : Solen, 2, 4, p. 161-164. ISSN 1213-0508. 2001.
- 181 Šerý, Omar. *The Association Study of DRD2, ACE and AGT Gene Polymorphisms and Metamphetamine Dependence (The Association Study of DRD2, ACE and AGT Gene Polymorphisms and Metamphetamine Dependence)*. Physiological Research, Czech Republic : Academy of Sciences of the Czech Rep., 50, 1, p. 43-50. ISSN 0862-8408. 2001.
- 182 Šerý, Omar - Novotný, Miroslav - Kašparovská, Jitka - Popov, Petr - Toufarová, Jana - Hornová, Lucie - Zvolský, Petr. *Vztah TaqI A polymorfizmu genu pro DRD2 k alkoholizmu: podvod 20. století? (The relationship between the TaqI A polymorphism of the DRD2 gene and alcoholism: deceit of the XX. century?)*. Psychiatrie, Praha : TIGIS, 5, Suppl. 2, p. 130-131. ISSN 1211-7579. 2001.
- 183 Ševčíková, Sabina - Souček, Karel - Šmarda, Jan. *Odlisné účinky virové a buněčné formy proteinu Jun na monoblasty transformované onkogenem v-myb (Differential effects of the viral and cellular forms of the Jun protein on monoblasts transformed by the v-myb oncogene)*. In V. pracovní setkání biochemiků a molekulárních biologů. Brno : Masarykova univerzita, 2001., p. 10-10. ISBN 80-210-2538-7.
- 184 Ševčíková, Sabina - Zahradníčková, Eva - Souček, Karel - Šmarda, Jan. *v-Jun and v-Fos proteins induce dedifferentiation of v-myb-transformed monoblasts (v-Jun and v-Fos proteins induce dedifferentiation of v-myb-transformed monoblasts)*. In The Seventeenth Annual Meeting on Oncogene. Frederick, Maryland, USA : Foundation for Advanced Cancer Studies, Inc., 2001., p. 171-171.
- 185 Ševčíková, Sabina - Souček, Karel - Bryja, Vítězslav - Šmarda, Jan. *Vliv proteinů Jun na růst a diferenciaci monoblastů transformovaných onkogenem v-myb (The effects of Jun proteins on growth and differentiation of v-myb-transformed monoblasts)*. In XVI. Biologické dny. Olomouc : Československá biologická společnost, 2001., p. 75-75. ISBN 80-244-0327-7.
- 186 Šikutová, Silvie - Pejchalová, Kateřina - Halouzka, Jiří - Žákovská, Alena. *Borrelia burgdorferi, an agent of Lyme borreliosis, in ticks and haematophagous insects (Borrelia burgdorferi, an agent of Lyme borreliosis, in ticks and haematophagous insects)*. In International conference on Lyme borreliosis. Brussel : Rily group, Ottignies, Belgium, 2001., p. 3-3. Lyme borreliosis research.
- 187 Šikutová, Silvie - Pejchalová, Kateřina - Halouzka, Jiří - Žákovská, Alena. *Monitorování přítomnosti spirochét v hematofágních členovcích se zaměřením na Borrelia burgdorferi použitím metod DFM a PCR (Monitoring of the presence of spirochetes in haematophagous arthropods focused on B. b. with DFM and PCR methods)*. In X. Tomáškovy dny 2001. Brno : Mikrobiologický ústav LF MU, 2001., p. 16-16. X. Tomáškovy dny 2001.
- 188 Šimková, Andrea - Gelnar, Milan - Morand, Serge. *Aggregation of congeneric parasites (Monogenea: Dactylogyrus) among gill microhabitats within one host species (Rutilus rutilus L.). (Aggregation of congeneric parasites (Monogenea: Dactylogyrus) among gill microhabitats within one host species (Rutilus rutilus L.))*. Parasitology, United Kingdom : Cambridge University Press, 123, 10, p. 1-9. ISSN 0-521-57637-7. 2001.
- 189 Šimková, Andrea - Gelnar, Milan - Morand, Serge. *Coexistence of congeneric monogenean species: morphological similarity, niche separation and reinforcement of reproductive barriers. (Coexistence of congeneric monogenean species: morphological similarity, niche separation and reinforcement of reproductive barriers.)*. In Program and Abstracts 4th International Symposium on Monogenea. Brisbane, Australia : University of Queensland, 2001., p. 73-73.
- 190 Šimková, Andrea - Desdevises, Yves - Gelnar, Milan - Morand, Serge. *Morphometric correlates of host specificity in Dactylogyrus species (Monogenea) parasites of European Cyprinid fish (Morphometric correlates of host specificity in Dactylogyrus species (Monogenea) parasites of European Cyprinid fish)*. Parasitology, United Kingdom : Cambridge University Press, 123, -, p. 169-177. ISSN 0-521-57637-7. 2001.
- 191 Šimková, Andrea - Gelnar, Milan - Morand, Serge. *Order and disorder in ectoparasite communities: the case of congeneric gill monogeneans (Dactylogyrus spp.). (Order and disorder in ectoparasite communities: the case of congeneric gill monogeneans (Dactylogyrus spp.))*. International Journal for Parasitology, Australia : Elsevier, 31, -, p. 1205-1210. ISSN 0020-7519. 2001.
- 192 Šimková, Andrea - Sasal, Pierre - Kadlec, Dušan - Gelnar, Milan. *Water temperature influencing dactylogyrid species communities in roach, Rutilus rutilus, in the Czech Republic (Water temperature influencing dactylogyrid species communities in roach, Rutilus rutilus, in the Czech Republic)*. Journal of Helminthology, United Kingdom : Cambridge University Press, 76, -, p. 1-12. ISSN -. 2001.
- 193 Šmarda, Jan - Fialová, Markéta - Šmarda, Jan. *Cytotoxic effects of colicins E1 and E3 on v-myb-transformed monoblasts (Cytotoxic effects of colicins E1 and E3 on v-myb-transformed monoblasts)*. Folia Biologica, Praha : Akademie Věd České Republiky, 2001, 47, p. 11-13. ISSN 0015-5500. 2001.
- 194 Šmarda, Jan. *Onkogen v-myb a možnosti jeho suprese (v-myb oncogene and its suppression)*. Scripta medica, Brno : Masarykova Univerzita, 74, 2, p. 125-125. ISSN 1211-3395. 2001.
- 195 Šmardová, Jana - Šmarda, Jan. *Mechanismy přestavby chromatinu (Mechanisms of chromatin remodeling)*. Biologické listy, Praha : Ústav molekulární genetiky AV ČR, 66, 4, p. 283-302. ISSN 0366-486. 2001.
- 196 Šoltés, Rudolf - Hájek, Michal - Valachovič, Milan. *Oxycocco-Sphagnetea (Oxycocco-Sphagnetea)*. In Rastlinné spoločenstvá Slovenska. Mokradná vegetácia. Plant communities of Slovakia. Wetland vegetation. Bratislava : Veda, 2001., p. 275-296. ISBN 80-224-0688-0.
- 197 Španová, Alena - Rittich, Bohuslav - Lenfeld, Jiří - Proďelalová, Jana - Horák, Daniel - Beneš, Milan J. *Application of HEMA-based particles in preparation of samples for PCR identification of Salmonella cells in foods*. In The 4th Croatian Congress of Food Technologists

Biotechnologists and Nutritionists. 2001. vyd. Zagreb, Croatia : Faculty of Food Technology and Biotechnology, University of Zagreb, Croatia, 2001., p. 67-68. Central European Meeting, CD -ROM.

- 198 Španová, Alena - Rittich, Bohuslav. *Identifikace patogenů potravinového řetězce v přítomnosti inhibitorů PCR (Identification of food chain pathogens in the presence of PCR inhibitors)*. In V. Pracovní setkání biochemiků a molekulárních biologů. 2001. vyd. Brno : Masarykova univerzita v Brně, 2001., p. 21-21. Sborník příspěvků. ISBN 80-210-25378-7.
- 199 Španová, Alena - Rittich, Bohuslav - Karpíšková, Renata - Čechová, Leona - Škapová, Denisa. *PCR identification of Salmonella cells in food and stool samples after immunomagnetic separation*. Bioseparation, Nizozemsko : Kluwer Academic Publishers, 9, 6, p. 379-384. ISSN 0923-179X. 2001.
- 200 Španová, Alena - Rittich, Bohuslav - Prodělalová, Jana - Horák, Daniel - Lendfeld, Jiří - Beneš, Milan J. *The limitation of PCR in identification of Salmonella cells in foods*. In Life Sciences 2001. 2001. vyd. Vienna : Osterreichische Gessellschaft fur Biochemie und Molekularbiologie, 2001., p. 57-57. Joint Annual Meeting.
- 201 Španová, Alena - Rittich, Bohuslav - Prodělalová, Jana - Horák, Daniel - Lenfeld, Jiří - Beneš, Milan J. *Use of enzymes and proteins immobilized on magnetic polymer particles in bacterial molecular diagnostics*. In Separation in the BioSciences SBS2001. 2001. vyd. Praha : Czech Chemical Society, 2001., p. 130-130. 2nd International Symposium. ISBN 80-7080-437-8.
- 202 Štika, Jiří - Hofmanová, Jiřina - Šimek, Vladimír. *Lipoxygenase metabolites are negative regulators of differentiation induced by tumor necrosis factor-alpha (Lipoxygenase metabolites are negative regulators of differentiation induced by tumor necrosis factor-alpha)*. In 2nd International Scientific Conference. Lvov : Univesity of Lviv, ukraine, 2001., p. 68-68.
- 203 Štěpán, Jiří - Pantůček, Roman - Růžičková, Vladislava - Rosypal, Stanislav - Hájek, Václav - Doškař, Jiří. *Identification of Staphylococcus aureus based on PCR amplification of species specific genomic 826 bp sequence derived from a common 44-kb SmaI restriction fragment*. Molecular and Cellular Probes, London : Academic Press LTD., 15, 5, p. 249-257. ISSN 0890-8508. 2001.
- 204 Šumberová, Kateřina - Chytrý, Milan - Sádlo, Jiří. *Rákosiny a vegetace vysokých ostřic (Reed and tall-sedge beds)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 26-37. ISBN 80-86064-55-7.
- 205 Šumberová, Kateřina - Chytrý, Milan. *Vegetace jednoletých vlhkomilných bylin (Vegetation of annual hygrophilous herbs)*. In Chytrý M., Kučera T., Kočí M. (eds.) Katalog biotopů České republiky. Praha : Agentura ochrany přírody a krajiny ČR, 2001., p. 38-44. ISBN 80-86064-55-7.
- 206 Švec, Pavel - Luc, Devriese - Sedláček, Ivo - Margo, Baele - Marc, Vancanneyt - Freddy, Haesebrouck - Jean, Swings - Doškař, Jiří. *Enterococcus haemoperoxidus sp. nov. and Enterococcus moraviensis sp. nov., isolated from water*. International Journal of Systematic and Evolutionary Microbiology, Reading, United Kingdom : Society for General Microbiology, 51, 4, p. 1567-1574. ISSN 1466-5026. 2001.
- 207 Švec, Pavel - Sedláček, Ivo - Pantůček, Roman - Devriese, Luc - Doškař, Jiří. *Evaluation of ribotyping for characterization and identification of Enterococcus haemoperoxidus and Enterococcus moraviensis strains*. FEMS Microbiology Letters, Amsterdam, Netherlands : Elsevier Science B. V., 203, 1, p. 23-27. ISSN 0378-1097. 2001.
- 208 Tichý, Lubomír - Řepka, Radomír - Šmiták, Jindřich. *Ohrožené rostliny města Brna. III. díl. (Threatened plants of the city of Brno. III. part.)*. 1. vyd. Brno : Rezekvítek, Magistrát města Brna, 2001. 86 pp. ISBN 80-902954-7-9.
- 209 Toman, Jiří - Fajkusová, Lenka - Lukáš, Zdeněk - Vohánka, Stanislav - Hude, Pavel - Špinarová, Lenka - Vytopil, Michal. *Mutace dystrofínového genu u X-vázané dilatační kardiomyopatie a u svalových dystrofií. (Dystrophin gene mutation in X-bound dilative cardiomyopathies and by muscle dystrophies)*. In Sborník abstrakt. Staré Splavy : Česká kardiologická společnost, 2001., p. 50-50. Sborník abstrakt ECHODNY 2001.
- 210 Trávníček, Z. - Maloň, M. - Šindelář, Z. - Doležal, K. - Rolčík, J. - Kryštof, V. - Strnad, M. - Marek, Jaromír. *Preparation, physicochemical properties and biological activity of copper(II) complexes with 6-(2-chlorobenzylamino)purine (HL1) or 6-(3-chlorobenzylamino)purine (HL2). The single-crystal X-ray structure of [Cu(H+L2)(2)Cl-3]Cl-2H(2)O (Preparation, physicochemical properties and biological activity of copper(II) complexes with 6-(2-chlorobenzylamino)purine (HL1) or 6-(3-chlorobenzylamino)purine (HL2). The single-crystal X-ray structure of [Cu(H+L2)(2)Cl-3]Cl-2H(2)O)*. Journal of Inorganic Biochemistry, New York, USA : Elsevier, 84, 1-2, p. 23-32. ISSN 0162-0134. 2001.
- 211 Vondráček, Jan - Štika, Jiří - Souček, Karel - Minksová, Kateřina - Bláha, Luděk - Hofmanová, Jiřina - Kozubík, Alois. *Inhibitors of arachidonic acid metabolism potentiate tumour necrosis factor-alpha-induced apoptosis in HL-60 cells*. European Journal of Pharmacology, Amsterdam : Elsevier Science B.V., 424, 1, p. 1-11. ISSN 0014-2999. 2001.
- 212 Vostal, Karel - Žáková, Alena. *The study of antiborrelial antibodies in 110 sera from students on various antigens of Borrelia burgdorferi s.l. (The study of antiborrelial antibodies in 110 sera from students on various antigens of Borrelia burgdorferi s.l.)*. In International conference on Lyme borreliosis. Brussel : Rily group, Ottignies, Belgium, 2001., p. 4-4. Lyme borreliosis research I.
- 213 Vyletěllová, Marcela - Hanuš, Oto - Páčová, Zdenka - Roubal, Petr - Kopunecz, Pavel. *Frequency of Bacillus bacteria in raw cows milk and its relation to other hygienic parameters*. Czech J. Anim. Sci., 2001, 46, p. 260-267. 2001.
- 214 Váňa, M. - Holoubek, I. - Pacl, A. - Pekárek, J. - Smrčková, V. - Machálek, P. - Helešic, Jan - Šeda, Zdeněk - Adamec, V. - Janouch, M. - Honzák, J. - Ansorgová, Alena - Kohoutek, Jiří - Holoubková, Irena - Shatalov, V. - Dutchak, Sergej - Fottová, D. - Hruška, J. - Hofman, Jakub - Anděl, Petr. *Quality of the natural environment in the Czech Republic at the regional level. Results of the Košetice Observatory (Quality of the natural environment in the Czech Republic at the regional level. Results of the Košetice Observatory)*. Praha : ČHMÚ Praha, 2001. 189 pp. ISBN 80-85813-88-2.
- 215 Vévodová, Jitka - Marek, Jaromír - Zouhar, Jan - Brzobohatý, Břetislav - Su, X.-D. *Purification, Crystallization and Preliminary X-ray Analysis of a Maize Cytokinin-glucoside-specific b-Glucosidase. (Purification, Crystallization and Preliminary X-ray Analysis of a Maize Cytokinin-glucoside-specific b-Glucosidase.)*. Acta Crystallogr., Sect.D, Dánsko, D57, 1, p. 140-142. ISSN 0907-4449. 2001.
- 216 Vítová, Lenka - Malbeck, Jiří - Vaňková, Radomíra - Brzobohatý, Břetislav - Macháček, Ivana. *Cytokinin Occurrence in Chloroplasts. (Cytokinin Occurrence in Chloroplasts)*. In 17th International Conference on Plant Growth Substances. Brno, Czech Republic. July 1-6 2001

Abstracts. Brno : Mendel University of Agriculture and Forestry, Brno, 2001., p. 143-143. ISBN 80-7157-518-6.

- 217 Zahradníčková, Eva - Ševčíková, Sabina - Souček, Karel - Šmarda, Jan. *The effects of Fos proteins on myeloid differentiation (The effects of Fos proteins on myeloid differentiation)*. In V. Pracovní setkání biochemiků a molekulárních biologů. Brno : Masarykova univerzita, 2001., p. 26-26. ISBN 80-210-2538-7.
- 218 Zahradníčková, Eva - Ševčíková, Sabina - Souček, Karel - Šmarda, Jan. *Vliv proteinů Fos na růst a diferenciaci monoblastů transformovaných onkogenem v-myb (The effects of Fos proteins on growth and differentiation of v-myb-transformed monoblasts)*. In XVI. Biologické dny. Olomouc : Československá biologická společnost, 2001., p. 76-76. ISBN 80-244-0327-7.
- 219 Zahrádková, Světlana - Soldán, Tomáš - Kokeš, Jiří. *A prediction model of running waters ecosystem in the Czech Republic based on mayfly taxocoenes of undisturbed rhithral streams (A prediction model of running waters ecosystem in the Czech Republic based on mayfly taxocoenes of undisturbed rhithral streams)*. In Trends in research in Ephemeroptera and Plecoptera. Dordrecht : Plecoptera Kluwer Academics/Plenum Publishers, 2001., p. 171-485. ISBN 0-306-4654.
- 220 Zouhar, Jan - Vévodová, Jitka - Marek, Jaromír - Damborský, Jiří - Su, X.-D. - Brzobohatý, Břetislav. *Insights into the Functional Architecture of the Catalytic Center of a Maize Beta-Glucosidase Zm-p60.1 (Insights into the Functional Architecture of the Catalytic Center of a Maize Beta-Glucosidase Zm-p60.1)*. Plant Physiology, USA : American Society of Plant Physiologists, 127, 3, p. 973-985. ISSN 0032-0889. 2001.
- 221 Zurawski, Tomáš - Mousley, A. - Mair, G. - Brennan, G. - Maule, A. - Gelnar, Milan - Halton, D. *Immunomicroscopic studies on the neuromusculature of the diplozoid monogenean, Eudiplozoon nipponicum, during fusion and maturation. (Immunomicroscopic studies on the neuromusculature of the diplozoid monogenean, Eudiplozoon nipponicum, during fusion and maturation.)*. In 4th International Symposium on Monogenea. Abstract Book. 2001. vyd. Brisbane, Australie. : The University of Queensland, Brisbane, Queensland, Australia., 2001., p. 75-75.
- 222 Zurawski, Tomáš - Mousley, A. - Mair, G.R. - Brennan, G.P. - Maule, A.G. - Gelnar, Milan - Halton, D.W. *Immunomicroscopical observation on the nervous system of adult Eudiplozoon nipponicum (Monogenea: Diplozoidae) (Immunomicroscopical observation on the nervous system of adult Eudiplozoon nipponicum (Monogenea: Diplozoidae))*. International Journal for Parasitology, Australia : Elsevier, 31, -, p. 783-792. ISSN 0020-7519. 2001.
- 223 Zurawski, Tomáš - Mousley, A. - Mair, G. - Brennan, A. - Maule, A. - Gelnar, Milan - Halton, D. *Immunomicroscopical studies of the neuromuscular system of the monogenean, Eudiplozoon nipponicum. (Immunomicroscopical studies of the neuromuscular system of the monogenean, Eudiplozoon nipponicum.)*. In Abstract of Spring Meeting of the British Society for Parasitology, British Society for Parasitology. 2001. vyd. Keele, U.K. : University of Keele, Keele, U.K., 2001., p. 19-19.
- 224 Žáková, Alena - Halouzka, Jiří - Nečasová, Marcela - Šerý, Omar. *Studium pozitivitu na přítomnost patogenní Borrelia burgdorferi u divokých zvířat - jako hostitelů nebo přenašečů Lymeské borreliózy (Presence of the pathogen spirochetes Borrelia burgdorferi in wild-living animals - studium of the positivity this hosts and vectors of Lyme disease)*. In 17. Pečenkovy epidemiologické dny. XXX : XXX, 2001., p. 19-20. 17. Pečenkovy epidemiologické dny.

Abbreviations

The following abbreviations have been used:

AS CR – Academy of Sciences of the Czech Republic

Dept. – Department

FSc. – Faculty of Science

Fac. – Faculty

Inst. – Institute (or equivalents in other languages)

MU – Masaryk University, Brno

Univ. – University (or equivalents in other languages)