
Pander Society Newsletter



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INTRODUCTORY REMARKS

After six very rewarding years, this is the last Pander Society Newsletter to be presented by the current team. This makes it, perhaps, fitting for us to begin our annual introduction by looking back to see how the Society has fared over this interval. The answer is, we have certainly all been very active. The period started with a bang (pun too bad to be intended) in 1998 with a Pander Society meeting in Columbus, Ohio, with the themes 'Conodont evidence for impacts and extinctions' and 'Hot topics in conodont biochronology'. The same year, ECOS VII was held in Italy, continuing the very successful pattern of these events. Annual Pander Society meetings have continued in North America in each succeeding year, supplemented by AUSCOS-2 in Orange, Australia, in 2000, and ECOS VIII in France and Spain in 2002. Once again, many thanks to the organisers of all of these meetings, and to the participants in all official and unofficial Pander Society gatherings, for keeping the flame of conodontology alive into a new millennium. We eagerly look forward to a continuing programme of events, perhaps most expectantly to the first ICOS, to be held in Britain in 2006.

One change to the Society since 1998 is that we have gone electronic. The first electronic newsletter was produced in 1999, and in August 1998 the Society launched con-nexus, the e-mail discussion group dedicated to conodonts. These developments seem to have been positively received by the membership, although we would perhaps like to see more discussions aired on con-nexus. Any controversial thoughts, anyone? In any event, the improved communications have helped us to bring news rapidly to everyone interested in conodonts, including momentous events such as 80th birthdays.

The last six years have also seen the award of three Pander Society medals, to Ray Ethington, Stig Bergström and Klaus Muller, bringing the roll of honour of medallists to 13. The medal is the means by which members of the Society can express their gratitude to leaders in the discipline who have influenced both the careers of their followers and the direction of the science. The three most recent recipients certainly continue the line of pioneers and inspirational medallists who have graced the history of conodont research.

To move from the past to the present and the future. This year's meeting in Brock, Ontario, proved a particularly good one, not least because of the role in it of the incoming Chief Panderer, Peter von Bitter (see below). We look forward to the new injection of enthusiasm that Peter will undoubtedly bring to the Society, and wish him well in his period of office.

Finally, the Chief Panderer received two notifications (on very pretty postcards) of less formal Pander Society meetings in 2003, both from Mike Orchard and colleagues, and both from Japan: these reinforce the Society's tradition in regarding every get-together of a group of conodont workers to talk about conodonts as a meeting of the Pander Society. We are certain that the new Chief will be equally delighted to learn of such meetings as they take place in the future.

So, it's farewell from us. Thanks, everyone, for a great time.

Dick Aldridge
Chief Panderer

Mark Purnell
Webmaster

Alison Thomas
Newsletter Secretary

NEW CHIEF PANDERER

Dick Aldridge writes: In January 2004, I recognised that, having entered my sixth year as President of the Pander Society ('Chief Panderer'), it was really past my time to hand over to a successor. There is no stipulated length of service in this office, but we have tried to make five years more-or-less the norm, in order to share the honour and the chore. Following traditional procedure, I asked three active members of the Society, Phil Donoghue, Catherine Girard and Jeff Over, to act as a nomination committee, and asked anyone who wished to make a nomination or to contribute thoughts or comments about the succession to contact them.

I am pleased to record that this committee of three wise people conscientiously completed their consultations and deliberations and duly put forward the name of Peter von Bitter of the Royal Ontario Museum as proposed successor. I'm delighted to say that Peter has indicated his willingness to accept the nomination. This proposal was formally considered at the full meeting of the Pander Society, during the GAC/MAC meeting in Brock.

As my predecessor, Ray Ethington, wrote in his last Newsletter, it's easy to descend into maudlin banality at these times, so I'll just give my thanks to the nomination committee for their efficiency, and my very best wishes to Peter, and to conodonts, for the duration of his tenure.

PEOPLE

We would like to record our congratulations to **Dr. Tamara A. Moskalenko**, who celebrated her 80th birthday on 9 February 2004 (see photograph). Dr Moskalenko is one of the leading conodont researchers in Russia, and has studied Ordovician conodonts from Siberia for more than 40 years. 29 January 2004 also saw the 70th birthday of **Dr. Evgeny A. Yolkina**.

As the newsletter was being compiled, we heard that **Alan Higgins**, one of the foremost British conodont workers of the last century, had died. Many conodont specialists will remember Alan for his friendly and



Tamara Moskalenko (centre) celebrating her 80th birthday with her laboratory technician, Mrs Tatyana Pekhletsckaya (left), and Nadya Izokh (right). Photo provided by Nadya Izokh via John Repetski.

unassuming, but authoritative contributions to meetings and social events, and for his important publications on Carboniferous and other conodonts. We anticipate that a full appreciation of Alan's contributions to conodont research will be published in the next Newsletter.

TRIBUTE AND APOLOGY

Mussa H. Gagiev (1947-1999)

We apologise that, due to a misunderstanding, we neglected to record the passing of Mussa Gagiev in 1999. Igor Bardashev has provided the following summary of his career:

Mussa H. Gagiev was born in 1947, and as his first appointment, for about 10 years, he was engaged as a geological researcher in the Geological Production Corporation, "Sevvostokgeologiya". From 1976, he studied conodonts from the Middle Palaeozoic of North-East Asia in the North-East Complex Research Institute of the Far East branch of the Russian Academy of Science. Mussa authored more than 70 scientific works. In 1982 he defended his candidate dissertation (PhD) on the topic "Conodonts of Upper Famennian and Tournaisian deposits of a North-East part of Omolon massif", and in 1992 presented a dissertation for the degree of doctor of geology and mineralogy on the theme "Conodonts and stratigraphy of Middle Palaeozoic of North-East Asia". He was a remarkable man and an excellent specialist.

HISTORY OF CONODONT RESEARCH

Simon Knell, of the Department of Museum Studies at the University of Leicester, is currently working on a history of conodont studies and conodont workers, to be completed, he hopes, in time for the 150th anniversary of Pander's monograph. Simon is a historian of geology with a particular interest in fossils in their social and intellectual contexts and has published widely on the subject. He intends to trace the development of conodont studies from their birth (a topic, he realises, that has also been reflected upon many times by conodont workers), giving special attention to research groups, methods, problems and so on. The book also has a broader agenda as a high resolution study aimed at understanding how science shapes its objects (a subject close to his museum studies interests) and how a scientific community evolves (which will also be of interest to historians and philosophers of science). He hopes to have completed the book in outline from published sources by the end of June 2004, and will then be looking at archives and hopes to talk to various conodont workers. Simon says he can map out the big intellectual stories from published work, but is just as interested in the more social aspects of science which don't appear in the scientific papers such as the lives of 1930s well-loggers in mid-continent USA, and of teachers and supervisors who shaped communities of workers, and so on. He hopes to give further details of the book's content in the next Pander Society Newsletter. He would be delighted to receive suggestions and can be contacted at sjk8@leicester.ac.uk. He will also be at this year's IGC in Florence.

NEW IGCP PROJECT

Peter Konigshöf has provided the following outline of IGCP Project 499: 'Devonian land-sea interaction: evolution of ecosystems and climate'

The Devonian was a critical period with respect to the diversification of early terrestrial ecosystems. The geotectonic setting was characterized by the switch from the post-Caledonian to the pre-Variscan situation. Plant life on land evolved from tiny tracheophytes to trees of considerable size in combination with a global increase in terrestrial biomass, and vertebrates started to conquer the land. Extensive shallow marine areas and continental lowlands with a wide range of different habitats existed which are preserved in a large number of basins all around the world. Climate change finally led from greenhouse to icehouse conditions towards the end of the Devonian. Both, rapid evolution of terrestrial ecosystems and climate change had a pronounced influence on sedimentation and biodiversity not only in the terrestrial but also in the marine realm ("Devonian Change"). A major goal of the proposed project will be to focus on controls and interactions of the respective facies parameters in different paleogeographic settings in order to refine the global picture by international co-operation in a number of case studies. Geoscientific co-operation will include a variety of disciplines, such as sedimentology, paleontology, stratigraphy, paleoclimatology, paleogeography, geochemistry, paleoceanography, and structural geology.

The rapid evolution of early life on land and its interaction with sedimentary processes, climate, and paleogeography, both on land and in marine settings, will be covered by studies in different terrestrial and marine facies. Increasing colonization of the land by plants in combination with soil-forming processes and changing runoff led to major changes of sediment input into the marine system. On the other hand, sediment input and climate are major controls for carbonate production and reef development. The study of responses and interactions thus needs detailed characterization of facies and high-resolution correlation which can only be provided by a refined stratigraphy including biostratigraphy, lithostratigraphy, chronostratigraphy, etc. Characterization of facies and correlation of stratigraphic units is especially difficult in marine-terrestrial transitions and will be an important focus of the project. Resolution of sea-level changes will be enhanced by recognition and exact correlation of their effects which may be hidden just in these transitions. On the background of the global geotectonic situation (paleogeography s.l.), this will be an important prerequisite for a better discrimination of eustatic, climatic, and biotic controls, both on regional and global scale.

The focus of the project concerns the interrelated evolution of terrestrial and marine paleoecosystems with respect to biotic and abiotic factors in space and time. Studies will include individual paleoecosystems and their components as well as their paleobiogeographic distribution. Biotic and abiotic factors of paleoecosystems are controlled by both, earthbound and extraterrestrial triggers causing either cyclicity and/or distinct events. Thus in turn, such studies may give a clue to underlying causes of global changes. The project will include sedimentologic and climatic controls of reef development and distribution as well as diversity, and paleoecology of reef building organisms throughout the

Devonian, because the Middle to Late Devonian was a peak in reef development with reefs spreading into latitudes as high as 45-60 degrees. On the other hand, accommodation space for Early Devonian reefs was greatly reduced due to major input of sediment from the continents in combination with sea-level lowstand(s). A marked decline in reef development towards the end of the Devonian was probably caused by climatic deterioration.

The integrative kind of research which is needed for the success of the proposed project can only be carried out by a worldwide network of research groups representing different disciplines. Such a network can now be based on core groups successfully participating in the recently terminated IGCP 421. Furthermore, the project will extend the results of the former IGCP 328. It will actively interlink with the existing IGCP 491, which is mainly centered around vertebrate research. But, the proposed project will concentrate on the correlation and interaction of different ecosystems in a more general way. Special attention will be paid to coupling effects between the terrestrial and marine realm. Co-operation is also intended with the proposed IGCP "The Rheic Ocean: its origin, evolution and correlatives". Furthermore, an active network is represented by the members of the "Subcommission on Devonian Stratigraphy" (SDS). These existing networks will be integrated and thus providing the necessary base for an improved understanding of the Devonian period. A number of the respective colleagues and working groups have already agreed to contribute to the proposed project (see letters of support).

For supporting the network and communication among the participants there will be a website provided which will be hosted at the Senckenberg Research Institute and Natural History Museum. It will include links to participating groups/institutions and other relevant sites such as funding agencies.

For further information see website: (<http://www.senckenberg.de/igcp-499/>).

Colleagues interested in participation should contact the organizers in Frankfurt:

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PUBLICATIONS

1. Svend Stouge reports: The thematic issue with papers from the seventh meeting of the Working Group on the Ordovician Geology of Baltoscandia (WOGOGO) and held in Copenhagen, Denmark 2001 is now published (see reference list).

2. We can also announce the availability of the proceedings of the Second Australian Conodont Symposium (AUSCOS II) which have been published by Senckenberg Natl. History Society, Frankfurt:

Contributions to the Second Australian conodont Symposium (AUSCOS II) held in conjunction with Palaeontology DownUnder - 2000 in Orange, Australia, 3-7 July 2000. Volume dedicated to the memory of Willy Ziegler. Eds: Ruth Mawson; John A. Talent 2004 (2003). 490 pages, 98 figures, 30 tables, 91 plates, 30x21cm (Courier Forschungsinstitut Senckenberg, Band 245) ISBN 3-510-61362-7 paperback, EUR 119.80

This volume should be available through bookstores, or failing that, directly from order@schweizerbart.de

The homepage of this publication is at:

<http://www.schweizerbart.de/pubs/books/sng/cfs-courie-190324500-desc.html>

PANDER SOCIETY MEETING REPORTS

PANDER SOCIETY MEETING 2004, ST. CATHERINES, ONTARIO

A Pander Society Symposium was held in conjunction with the Geological Association of Canada/ Mineralogical Association of Canada meetings at Brock University, St. Catharines, Ontario, May 12-14, 2004. The symposium, entitled *The A, B, C's of Conodonts (Autecology, Biostratigraphy and Conodont Palaeobiology)* is

listed on the conference website: www.stcatharines2004.ca

In association with this, Jeff Over and Mark Kleffner organised an informal one day Pander Society Field Trip on Saturday 15 May, visiting the classic Silurian and Devonian conodont localities of western New York.

We anticipate a more detailed report in the next issue of the Newsletter

FUTURE MEETINGS

GEOLOGIC PROBLEM SOLVING WITH MICROFOSSILS

This meeting, which will be held at Rice University, Houston, Texas, 6-11 March 2005, aims to draw together a diverse array of geoscientists to showcase the problem-solving power of microfossils in a variety of geological settings. A call for abstracts is being made via the website from 1 April to 14 October 2004. Registration begins 6 September 2004, via the website. For further details visit the conference website at <http://www.sepm.org/microfossils2005.htm> or contact

garry.jones@unocal.com. The Pander Society is a co-sponsor of this meeting.

MICROVERTEBRATE GROUP OF THE MICROPALAEONTOLOGICAL SOCIETY – ANNUAL PRE-CHRISTMAS MEETING, DECEMBER 15-16, 2004

What has become the traditional winter meeting of Panderer's based in the British Isles and Northern Europe will take place immediately before the Annual

Meeting of the Palaeontological Association, this year in Lille, France. The details of the field excursion and the venue for talks are yet to be finalized, but a visit to Carboniferous and/or Devonian localities in the area looks likely. For more details contact the Secretary, Henning Blom (hb269@cam.ac.uk) or the Chairman, Paul Smith (m.p.smith@bham.ac.uk), nearer the time.

NORTH AMERICAN PANDER SOCIETY MEETING

The date and venue for the 2005 North American Pander Society Meeting are yet to be decided. Keep your eye on con-nexus.

ICOS 2006 – THE FIRST INTERNATIONAL CONODONT SYMPOSIUM

Continuing the successful series of meetings held under the ECOS banner, ICOS 2006 will take place at the

University of Leicester, UK, in the second half of July 2006. If you want to plan ahead, block out July 17-31 in your diary. These dates are provisional, but the scientific sessions will be held sometime during the week commencing July 17, to be followed by a 5 or 6 day excursion focusing on “Iapetus - from shore to shore” led by Howard Armstrong and Paul Smith. A pre-meeting excursion is also a possibility.

We are currently seeking suggestions for workshops and symposia, so if there is anything you think would make a good subject for a day or half day of talks, please contact one of the organizers (Phil Donoghue phil.donoghue@bristol.ac.uk or Mark Purnell map2@le.ac.uk).

More details, as and when they become available, will be announced on con-nexus and on the conodont.net website.

SUMMARY OF TOPICS MENTIONED IN RESEARCH REPORTS

A. Cambrian. Aldridge, Dong, Donoghue, Lehnert, Nakrem, Obut, Podolak, Repetski, Sandberg.

B. Ordovician. Albanesi, Armstrong, Barnes, Bauer, Dong, Donoghue, Ethington, Ferretti, Furey-Greig, Hall, Izokh, Lehnert, Leslie, Lofgren, Luppold, Mannik, Mawson, McCracken, Metzger, Molloy, Nicoll, Norby, Nowlan, Obut, Percival, Podolak, Repetski, Sandberg, Sarmiento, Stouge, Sweet, Tarabukin, Viira, Wickstrom, Witzke, Zhang.

C. Silurian. Albanesi, Aldridge, Bardashev, Barnes, Barrick, Cole, Corradini, Donoghue, Fordham, Furey-Greig, Gönçüoğlu, Jeppsson, D. Jones, Kleffner, Lehnert, Mannik, Mathieson, Mawson, McCracken, Metzger, Miller, Molloy, Nakrem, Norby, Nowlan, Parkes, Purnell, Sandberg, Sanz-López, Sarmiento, Simpson, Snigireva, Tarabukin, Viira, Wickstrom, Zhang.

D. Devonian. Abassi, Bardashev, Barrick, Boncheva, Bultynck, Capkinoglu, Corradini, Donoghue, Fordham, Gholamalian, Girard, Gönçüoğlu, Gouwy, Hairapetian, Izokh, Klapper, Mathieson, Matyja, Mawson, McCracken, Metzger, Miller, Morrow, Over, Perri, Piecha, Purnell, Sandberg, Sedghi, Slavik, Snigireva, Spalletta, Sumner, Tarabukin, Uyeno, Yazdi, Yolkin, Zhuravlev.

E. Carboniferous. Abassi, Bardasheva, Barrick, Boncheva, Brown, Corradini, Fordham, Gönçüoğlu, Hairapetian, Heckel, Johnston, G. Jones, Krumhardt, Lambert, Luppold, Mawson, Mendez, Merrill, Metcalfe,

Morrow, Nakrem, Nemyrovska, Norby, Perri, Piecha, Rexroad, Sandberg, Sanz-Lopez, Scmazzon, Spalletta, Swift, Tarabukin, Witzke, Yazdi, Zhuravlev.

F. Permian. Aldridge, Klets, Koike, Kozur, Lambert, Luppold, Metcalfe, Nakrem, Nicoll, Perri, Pieracacos, Shen, Swift, Yao, Yazdi, Zhuravlev.

G. Triassic. Aldridge, Budurov, Buryi, Hirsch, Ishida, Kiliç, Klets, Koike, Kolar-Jukovsek, Kozur, Luppold, Marquez-Aliaga, Mastandrea, Metcalfe, Nicoll, Orchard, Perri, Petrunova, Plasencia-Camps, Purnell, Rigo, Swift, Yao, Yazdi, Zhang.

H. Jurassic. Kozur.

I. Palaeobiology. Aldridge, Barnes, Buryi, Dong, Donoghue, Plasencia-Camps, Purnell, Szaniawski, Zhuravlev.

J. CAI. Königshof, Mastandrea, Mawson, Metcalfe, Perri, Pondrelli, Repetski, Sanz-Lopez, Tarabukin, Zhuravlev.

K. Geochemistry. Armstrong, Barnes, Girard, Lehnert, Morrow, Nowlan, Scmazzon.

L. Morphometrics. Girard, D. Jones, Purnell.

RESEARCH REPORTS

Mohammad Abassi. I am actively working on Devonian and Carboniferous conodonts from the Aghdarband area (northeast Iran) and the Makoo area (northwest Iran), under the supervision of Dr Ashouri.

Guillermo L. Albanesi. I am working on diverse projects dealing with Lower Paleozoic conodont faunas from the Argentine Precordillera, Famatina System, and NW Argentine basins. We continue assembling an integrated biostratigraphic chart for the Ordovician and Silurian Systems of Argentina. Other projects involve the participation of colleagues from different universities in Argentina, Spain, USA, and Canada, who are devoted to related topics on the historical geology of the Lower Paleozoic. This year we will submit to the Subcommittee on Ordovician Stratigraphy (IUGS) the final proposal for a global stratotype for the base of the Middle Ordovician Series in the Argentine Precordillera. During the past year I have been heavily involved in the organization of the '9th International Symposium on the Ordovician System, International Graptolite Conference, and Field Meeting of the International Subcommittee on Silurian Stratigraphy' and related field trips that were held in San Juan, Argentina, August 18-21 2003 (proceedings and field trip guides at: <http://www.unt.edu.ar/fcsnat/insugeo>). In December 2003, together with Gladys Ortega, I presented a post-graduate course on conodont-graptolite paleobiology and geological applications at the National University of Cordoba, Argentina (<http://www.efn.unc.edu.ar/escuelas/4to/dcg>). I continue editing "Ordovician News", the annual newsletter of the Subcommittee on Ordovician Stratigraphy (<http://seis.natsci.csulb.edu/ISOS>).

Dick Aldridge. Administration has again dominated my agenda, and I also spent a lot of 2003 writing my part of a multi-author book on the Cambrian Chegjiang biota. However, I look forward to getting back to proper conodont research during a sabbatical year in 2004/05 and to fulfilling some of my obligations to co-authors. During 2003, progress on the multi-collaborative project on the Permian-Triassic conodont turnover (with Lai Xulong, Mark Purnell, Mike Orchard and Andrew Swift) involved a memorable visit to the Meishan section. Cladistic studies of conodont relationships inched forward, mostly through the efforts of Phil Donoghue and Mark Purnell, although I made some progress on an investigation of interrelationships between Silurian ozarkodinids.

Howard A. Armstrong. I'm actively working on Ordovician conodonts from the islands of the Iapetus Ocean, with a view to testing palaeogeographical hypotheses. Work continues on the Upper Ordovician glaciation in Southern Jordan, particularly focussing on insolation forcing of deglaciation. Papers recently submitted to *Geology* and *Palaeo* cubed. Work has just started on stable carbon isotope analysis of Upper Ordovician biomarkers with Geoff Abbott at Newcastle University.

Igor A. Bardashev. I am actively working on Silurian and Devonian conodonts from Central Asia.

Nina P. Bardasheva. I am working on Carboniferous conodonts from Central Asia.

Chris Barnes. I am completing extensive field-based Lower Paleozoic conodont studies in the Canadian Cordillera, with a series of papers with Leanne Pyle recently published or in press. They involve four detailed platform to basin transects that have been sampled in the southern, central and northern Rocky

Mountains. Work with Shunxin Zhang is using my extensive conodont database to relate conodont biostratigraphy, biofacies and biogeography to the pattern of eustasy and tectonism that affected northern Laurentia in the early Paleozoic. Several joint papers have appeared recently with others in press/preparation that deal with conodont taxonomy, evolution, paleoecology, cladistic analyses and the response of the conodont communities to eustatic change. The geochemistry of conodonts is being pursued further in collaboration with Julie Trotter (Australian National University). Other work completed or nearing completion includes: Ashgill-Wenlock conodonts from the Canadian Arctic with David Jowett, and Ashgill conodonts from the Whitland section, South Wales with Annalisa Ferretti.

James E. Barrick. My work continues on a variety of projects on Silurian-Devonian and Pennsylvanian conodonts.

Jeff Bauer. This past summer, I revisited outcrops of the McLish Formation, southern Oklahoma, in order to sample an interval of reworked(?) conodonts. The samples are being processed and picked by several local high school students who are participating in a university sponsored outreach program.

Iliana A. Boncheva. I am working on Devonian and Carboniferous conodont biostratigraphy and correlation between Bulgarian and Turkish fossil material.

Camomilia A. Bright I am currently on hiatus from active conodont studies. I am interested in Pennsylvanian chemostratigraphy, and I look forward to future work extracting oceanographic information from conodonts. I am currently completing a Ph.D. focusing on determining Holocene climate variability in the Mediterranean using foraminiferal assemblages, oxygen isotopes analysis of foraminifera, and sedimentary analysis.

Lewis M. Brown. Carl Rexroad and I, along with a number of undergraduate geology majors at Lake Superior State University, are continuing our Pennsylvanian efforts, primarily in the Illinois Basin but we also have active projects in eastern Kansas, south-central New Mexico, and western Kentucky.

Kiril Y. Budurov. My research is concentrated on better definition of Middle Triassic stages and substages and their boundaries based on conodonts. Now I work on a complete investigation of the Triassic conodonts in Bulgaria that I will publish as a monograph. I work together with Lyudmila Petrunova and Ali Murat Kilic from Sivas University, Turkey.

Pierre Bultynck. My research on Emsian conodonts from the Anti Atlas (Morocco) and Frasnian conodonts from the Tafilalt and the Mader (Morocco) continues. In collaboration with O.H.Walliser and K.Weddige, I study conodonts from the Eifelian-Givetian boundary interval from the GSSP for the base of the Givetian. In collaboration with K.Narkiewicz, I have started a study of recognition of the *subterminus* Fauna in western and central Europe.

Galina I. Buryi. My research on Triassic conodonts from Primorye (far east of Russia) and probable new skeletal elements of euconodonts continues.

Senol Capkinoglu. My research on Devonian conodonts from the Istanbul zone of the Pontides continues.

David L. Clark. No new conodont news to report, but I continue interest in what my conodont colleagues are doing.

Damian Cole. I continue to work on conodonts from the numerous Late Silurian limestone occurrences between Michelago and Taralga in eastern New South Wales.

Carlo Corradini. My researches in the Carnic Alps and in Sardinia continue. In the Carnic Alps I'm investigating the Silurian to Lower Devonian *Orthoceras* limestone facies (with M. Pondrelli, P. Serventi and L. Simonetto): one paper on the Monte Cocco area is published, and a few others on the Monte Zermula area are almost completed. In Sardinia I'm working on a couple of new Lower-Middle Devonian sections; a paper on Famennian conodonts from the Clymeniae limestone near Villasalto is in press, as well as one on the uppermost Devonian and lowermost Carboniferous fauna from Monte Taccu (with C. Spalletta and S. Barca).

Dong Xi-ping. I continue to study Cambrian through Lower Ordovician (Tremadocian) conodonts from Hunan, Anhui, Zhejiang, South China and Liaoning, Shandong, North China, and Xinjiang, Northwest China. Since 2000, I have been working with Phil Donoghue on the histology and comparative histology of proto-, para- and the earliest euconodonts from China. A number of manuscripts are in press, in good shape or in preparation, although none of them have yet appeared. I have been collaborating with John Repetski and Stig Bergstrom on the taxonomy and biostratigraphy of the Cambrian through Lowermost Ordovician conodonts from western Hunan. We have manuscripts in preparation. John also joins Phil and me in the study of histology.

Phil Donoghue. I am now firmly ensconced in the University of Bristol and am mainly interested at present in resolving the interrelationships of conodonts and their kin using cladistics, as well as the histology of Cambrian euconodonts, paraconodonts, the eu-para transition (with Xiping Dong), and the homology of conodont hard and soft tissues. I am also working on apparatus composition and architecture of Cambrian, Ordovician, Silurian and Devonian conodonts on the basis of bedding plane assemblages and fused clusters (with Xiping Dong, Hubert Szaniawski, Steve Leslie, Rosie Dhanda, Paul Smith).

Raymond L. Ethington. As time permitted, I continued to work on a catalog of the University of Missouri conodont collection and organizing personal collections from Lower and Middle Ordovician rocks in western United States.

Annalisa Ferretti. My work on Late Ordovician conodont faunas from several European sections is continuing. A paper with E. Serpagli on Early Ordovician conodonts from Montagne Noire will soon be published.

Barry Fordham. I'm now finding some spare time to continue with my Geological Survey collections of Silurian - Carboniferous conodonts from Queensland

Terry Furey-Greig. I continue to work part-time on previously neglected, Late Ordovician-Early Silurian occurrences (autochthonous and allochthonous) in easternmost Australia with Ruth Mawson, Andrew Simpson, John Talent (all on conodonts), and with Masaki Umeda (Kyoto - radiolarians) who is providing matrix-ages for such occurrences.

Hossein Gholamalian. I continue my work on Late Devonian conodonts of Central Iran, especially on shallow water faunas and the Frasnian/Famennian

boundary. The discovery of some forms resembling the *Polygnathus communis* group (or its origins) in the Late Frasnian beds of Central Iran is one of my important results.

Catherine Girard. My research interests focus on the use of morphometric methods for quantifying evolutionary patterns on the genus *Palmatolepis* across the Late Devonian anoxic events (Kellwasser, annulata and Hangenberg). I also use geochemistry on biological phosphates in order to constrain the palaeoenvironments for the same period.

Yakut Göncüoğlu. My studies on the Paleozoic successions on the Northern and Southern Turkey continue, in collaboration with G.N. Sarmiento (Madrid) and I. Boncheva (Sofia). With Bulgarian colleagues from BAS, I have started a new project on the Paleozoic of NW Turkey that also includes conodont biostratigraphic work in Silurian to Lower Carboniferous successions in Northern Turkey.

Sofie Gouwy. I am currently working on correlations of Upper Frasnian sections of the Ardenne (Belgium) based on a combination of conodonts and bentonites. I am writing my PhD thesis on conodont based graphic correlation of Middle Devonian and Frasnian sections of the Ardenne (Belgium), to be defended this year.

Vachik Hairapetian. I am working on Late Devonian and Early Carboniferous conodonts and fish microremains from central and northern Iran. In August, M. Ginter (Warsaw University) and I visited Upper Devonian sections in Armenia with A. Grigoryan (Geological Museum in Yerevan). We examined the Noravank section in the eastern part of the region, and the Sevakavan and Khor Virap sections in the west. These are classic Transcaucasus sections. Some bulk samples were collected and processing is underway.

Jack C. Hall. This has been another busy year but unfortunately not with conodont research. In March of 2003, the Environmental Studies Program at UNCW became a department and I am the Chair. No, I don't know what I was thinking when I said "yes" to the job. Therefore, I am now out of the Earth Sciences Department and starting a whole new venture. It has been a lot of fun but also a lot of work getting everything set up! Hopefully I will be able to return to the Ordovician in the near future. I do miss fieldwork and pickin' and grinnin'. This fall I received the Distinguished University Science Educator in North Carolina Award from the North Carolina Science Teachers Association. It was very nice and very unexpected. All in all, it has been an exciting year, maybe next year it will return to normal and I can get back to work! We can only hope.

Phil Heckel. My studies that involve Pennsylvanian conodonts in Midcontinent North America continue at various paces. Because the Moscovian-Kasimovian Stage boundary [currently not far below the Desmoinesian-Missourian boundary] and the Kasimovian-Gzhelian Stage boundary [currently not far above the Missourian-Virgilian boundary] will likely be selected on the basis of conodont lineages, I and my colleagues are focusing effort on establishing useful conodont zones for North America and on lineages that might be useful in selecting or correlating these boundaries between Eurasia and North America.

Francis Hirsch. I continue my research on Triassic conodonts in collaboration with K. Ishida (Tokushima University). We had a special 'Pander Society Meeting' from November 8 -14 on the occasion of Mike Orchard's visit in Japan. Starting with a field excursion, visiting the outcrops at Taho (Ehime Prefecture), Sambosan (Kochi

Prefecture), Hisaidani and Konose (Tokushima Prefecture), all localities within the Jurassic Accretionary complex of the Southern Chichibu Belt, we then spent 2 days at Tokushima University, discussing issues of Triassic multi-element taxonomy.

Keisuke Ishida. I am working on Carboniferous to Triassic conodonts from the accretionary terranes in Japan and Thailand. I have started working on Permian and Triassic material from limestone pebbles, for provenance analysis. I am also interested in Upper Triassic material from the pelagic succession straddling the T/J boundary. From Nov. 9 to 13, 2003, a Triassic conodont meeting with field excursion was held in Shikoku, SW Japan, involving Michael Orchard, Francis Hirsch and myself.

Nadezhda G. Izokh. My main interest now is the Upper Devonian conodonts of West Siberia. I published during the past year: (1) descriptions of Lower-Middle Ordovician conodonts from Transbaikalia, (2) a conodont list from the Middle Ordovician of Tuva (with N.V.Sennikov), (3) an illustrated list of the Lower Devonian conodonts from Mongolia (with Mongolian, Chinese and German colleagues) and (4) the first identified list of early Famennian conodonts from North-Western Taimyr (with E.A.Yolkin).

Lennart Jeppsson. My researches on Silurian high resolution stratigraphy, events and the conodonts themselves have, during 2003, resulted in two major papers (hopefully not only regarding the number of printed pages) about the mid-Homerian Mulde Event (Calner & J. 2003 and J. & Calner 2003). The former includes a new mid-Homerian conodont zonation. The latter describes i.a. the pattern of conodont extinctions during the event. The combination of high resolution biozonation and sequence stratigraphy permits rejection of sea level changes as the cause of the event; such changes were only another effect of the event. Two papers have been submitted during 2003, the first about bias in extraction of conodonts (and other fossils). The second is a joint paper about an extremely shallow section through the Mulde Event (conodonts provide the stratigraphy). I have also worked on a revision of the conodont zonation of the interval that includes the *P. siluricus* Zone to the *O. snajdri* Zone. The interval spans the Lau Event, hence a high resolution zonation is needed and possible. Three zones and five subzones can be identified. New definitions of the boundaries are provided in order to remove known ambiguities. Joint manuscripts in preparation include high resolution correlation within this interval. Work on the *O. s. rhenana* Zone, dividing it into subzones, is also close to being finished.

David I. Johnston. Charles Henderson and I have submitted our paper on conodonts from the Early Mississippian Bakken Formation of Western Canada for review. I also did some biostratigraphic service work on conodonts from both the surface and subsurface of Western Canada.

David Jones. I am now in the second year of my PhD research, analysing *Ozarkodina excavata* elements from the Silurian, using morphometric methods. I am currently acquiring data that I will later use to characterise the species quantitatively and examine the ontogenetic and evolutionary patterns it displays, and the processes behind them.

Gareth Ll. Jones. I continue to work with Dinantian conodonts from Ireland. My commercial biostratigraphic work practically disappeared this year due to the downturn in zinc prices and therefore Carboniferous exploration in Ireland. Here's hoping for a better 2004!

Ali Murat Kiliç. I have finished my PhD thesis (Taxonomic and Ecologic Researches on the Triassic Conodonts of Kocaeli Peninsula, NW Turkey) with a small but very important fauna. I'm now preparing some papers from this work. We are also planning some projects, and a book, and some more papers. So, this year will be very busy for me.

Gilbert Klapper. Work continues on the projects I listed in the 2003 Pander Society Newsletter, with present concentration on a taxonomic study of the Frasnian-lower Famennian conodont succession in the Canning Basin, Western Australia. Eight digital plates for this study are nearly completed. The paper with Tom Uyeno, D. K. Armstrong, and Peter Telford, on the Frasnian-lower Famennian conodont sequence in the Onakawana B core, Moose River Basin, northern Ontario, will be published in the March 2004 Journal of Paleontology.

Mark Kleffner. I continue to work on a variety of Silurian projects with a number of colleagues, and I am hoping to complete at least one of them before the end of this year.

Tatyana Vasilievna Klets. My research on Permian and Triassic conodonts from northeast Asia continues.

Toshio Koike. I am going to complete two manuscripts about some Triassic *Neospathodus* reconstructed from the Tahoe Formation in southwest Japan and a natural assemblage of *Ellisonia* cf. *triassica* from the P/T boundary in central Japan.

Tea Kolar-Jurkovsek. I am continuing to work on Triassic biostratigraphy of Slovenia and Croatia.

Peter Königshof. Research on conodonts is related to (1) conodont colour alteration in Paleozoic sediments and (2) microboring organisms in conodonts. During the last year I started a cooperative project with Iliana Boncheva from Sofia on thermal maturation patterns in Paleozoic sediments in northeastern Bulgaria. CAI data have been investigated from 10 bore holes and the first results will be presented during the 5th International Symposium on Eastern Mediterranean Geology (Thessaloniki, Greece) in April 2004. I will continue the work on microborings in conodonts in comparison to microborings in other substrates, because the first results, which will be published in *Geobios* (vol. 37/4, 2004) are very promising.

Heinz W. Kozur. My research continues on Cambrian to Triassic and earliest Liassic conodonts from Hungary, Greece, Croatia, Turkey, Iran, Pakistan and North America; mainly biostratigraphic work in the Permian and Triassic, but also taxonomic work and conodont palaeoecology and palaeobiogeography. Radiolarian studies as well as new stable isotope investigation by Palfy *et al.* confirmed the earliest Liassic age of the youngest conodont fauna with *Neohindeodella detrei*.

Andrea Krumhardt. I continue to work on conodonts from the Carboniferous Lisburne Group for a variety of researchers. Quaternary/modern pollen and bone collagen studies are also ongoing. Looks like I will do anything for money!

Lance L. Lambert. I am continuing various long-term Carboniferous and Permian projects, including: Moscovian chronostratigraphic boundary studies with the respective task groups; Midcontinent Pennsylvanian and phylogenetic studies with J. Barrick, D. Boardman, P. Heckel, and others; Early Permian biostratigraphy of the Sierra Diablo with S. Ruppel and others; and Guadalupian studies with B. Wardlaw, M. Nestell, B. Glenister, and others.

Oliver Lehnert. At the moment I am mainly focussing on conodonts, associated faunas and several other aspects like hydrothermal vent communities from the Cambro-Ordovician of the Barrandian area together with Petr Kraft and Olda Fatka (Charles Univ. Prague). The stratigraphic work in the Silurian there is combined with isotopic studies (Jiri Kriz, Jiri Fryda, and Stepan Manda; Czech Geol. Surv.). With Michel Vanguet and Pierre Breuer (Univ. Liege) Early Ordovician conodonts from greywackes in the Salm Group of Belgium will be described. I haven't stopped working on Cambro-Ordovician conodonts and associated microfossils from "forgotten dolomites" of the southwestern Great Basin. There are also other older projects and unfinished manuscripts with some of our friends, which hopefully will be submitted this year. The papers with Godfrey Nowlan and Sandy McCracken on allochthonous conodont faunas from Cambrian-Devonian sections as well as with Carmen Lee and Godfrey on allochthonous faunas from carbonate pebbles in the Tertiary of Ellesmere Island (Canadian Arctic) will hopefully be published early this year. I am still looking for microfossils associated to conodonts together with colleagues and friends from different countries. The project with Werner Buggisch and Michael Joachimski (Univ. Erlangen) has been delayed for a little while due to the prolongation of my Humboldt fellowship in Prague and my struggle to survive on grants. However, together we are starting to work on oxygen isotopes from conodont phosphate combined with C-isotope studies from several levels in the Early Palaeozoic and from locations in different palaeolatitudes.

Stephen A. Leslie. I am continuing research on Middle and Upper Ordovician conodont biostratigraphy, sequence stratigraphy, and event stratigraphy along the southern margin of the Ozark dome. In particular, I am looking at the Everton, St. Peter, Joachim, Kimmswick, Fernvale, and Cason formations. Work on the Joachim has benefited from collaboration with Oliver Lehnert on the new species of *Cahabagnathus* present. I have just begun a project looking at the conodonts from the Womble Shale and Big Fork Chert in Oklahoma in connection with Dan Goldman's recent graptolite biostratigraphy of this interval. Also in Oklahoma, I am looking at the Sylvan Shale for conodonts in collaboration with Mats Eriksson and Claes Bergman, who are working with the scolecodonts. Stig Bergstrom and I have begun work on Branson & Mehl's classical Ozora, Missouri locality where they described many new species from Maquoketa-Thebes contact interval. Much of my attention this past year has been on projects other than Ordovician conodonts. Among other projects, I am working with Loren Babcock on exceptionally preserved faunas from the Cambrian of Nevada and Jurassic lake sediments in Antarctica.

Anita Löfgren. I am currently working on a number of smaller projects, with numerous co-workers, concerning Ordovician conodonts in Sweden and I am also contributing to a combined sedimentological and conodont biostratigraphical study with Viive Viira in Estonia. I also continue my stratigraphical and taxonomic studies, now well into the Middle Ordovician. Since my teaching duties will end after 2004, it is uncertain how long after that I shall be allowed to keep my working facilities at the University, but I certainly intend to go on working with conodonts in one way or another for many years yet.

Friedrich W. Luppold. My activities on Devonian conodonts of the Okertal region (Harz-Mountains) are going on together with Peter Buchholz. A paper about conodonts, ostracods and foraminifers (Carboniferous to Triassic) of the Surat Thani region (Peninsular Thailand)

is in print. Another paper about Ordovician conodonts from the southern Harz-Mountains is in progress with Endres Trapp.

Peep Männik. I continue to work on the evolution, ecology and taxonomy of Ordovician and Silurian conodonts from Baltic, Arctic regions and Siberia, and on conodont-based high-resolution stratigraphy. Joint studies of evolution and high-resolution stratigraphy of the Early Palaeozoic sedimentary basins in northern Baltica, Siberia and Laurentia palaeocontinents (with colleagues from Lund, Vilnius, St. Petersburg, Syktyvkar, Ukhta, Ekaterinburg, Novosibirsk, Lubbock and Milwaukee) are going on.

Ana Márquez-Aliaga. I am working on conodonts from the Middle Triassic of Spain with my Ph.D. student Pablo Plasencia, with the help of Dr. Nacho Valenzuela-Rios.

Adelaide Mastandrea. My main research on Carnian/Rhaetian conodont biostratigraphy from Calabria and Basilicata sequences continues. Special attention is focused on stratigraphic sections at the Carnian/Norian boundary. Recently, I am also involved in a project dealing with Kubler Index (KI) and CAI.

David Mathieson. I am continuing investigation of conodont faunas from shallow-water carbonate intervals in the predominantly clastic Late Silurian-Early Devonian (pre-Emsian) sequences on the eastern flank of the Darling Basin of western New South Wales.

Hanna Matyja. My work on Middle Devonian conodont biostratigraphy from the carbonate-siliciclastic successions of north-western Poland still continues.

Ruth Mawson. I continue working on various Late Ordovician to Early Carboniferous conodont faunas from eastern Australia and northernmost Pakistan and India with Andrew Simpson, Peter Molloy, Terry Furey-Greig, John Talent and others. Recent projects have included a study of conodonts for dating a diverse crinoid fauna from southeastern Iran (with Gary Webster et al.) published early this year, and papers in press on Tournaisian conodonts from the Chitral and Tirah regions of northwestern Pakistan with, respectively, Maurizio Gaetani *et al.* (Milano) and Fazl-i-Rabbi Khan *et al.* (Peshawar). Submitted is a manuscript (with Alex Taube and John Talent) aligning, by conodont data, the mineralised volcanic stratigraphy of the Dee Range of central Queensland with the stratigraphy in the vicinity of the giant Mount Morgan gold-copper mine. Other foci include the Late Silurian Lau Event (with Lennart Jeppsson *et al.*), CAI vs. illite crystallinity patterns for eastern Australia and northernmost Pakistan (with Covadonga Brime and John Talent), conodont biofacies in relation to carbonate mud-mounds of the Buchan Group of eastern Victoria, and documentation of conodont faunas from the Early Devonian Baton Group of New Zealand.

Sandy (A.D.) McCracken. I continue to work on Middle to Upper Ordovician, Silurian, and Devonian conodonts from various locations in Canada. Much of my time is now assigned to outreach and paleontological databases.

Carlos A. Méndez. I am working on Carboniferous (upper Mississippian and Pennsylvanian) conodonts in the Cantabrian Mountains (North Spain). I just joined a joint project on the biostratigraphy of the Bashkirian-Moscovian boundary in the same area. Work with the Task Group to establish a GSSP close to the Moscovian-Kasimovian boundary continues.

Glen Merrill. I continue work with several colleagues on topics such as the genus *Gondolella* (with P.H. von Bitter), and various Pennsylvanian topics in Texas (with John

Mosley), and New Mexico (with Lew Brown, Carl Rexroad, and Bob Grayson), but my major emphasis remains stratigraphy/biostratigraphy in southeastern Ohio.

Ian Metcalfe. My work on conodont biostratigraphy (including intercalibration with isotope geochronology for timescales), palaeobiogeography and CAIs in China and Southeast Asia continues. This currently focuses on conodonts from the Permian-Triassic boundary level in China (with Bob Nicoll) and on Carboniferous, Permian and Triassic material from Malaysia.

Ronald Metzger. I am nearing completion of a project on Silurian conodonts collected in eastern Iowa and as a collaborator on a project involving Ordovician conodonts of Iowa. Future work will involve multielement taxonomy of Givetian conodonts collected in Iowa.

C. Giles Miller. My work on conodonts this year has mainly been in the lab. I have almost finished processing and picking material from the Welsh Borderland (Ludfordian-Gorstian stratotype section at Sunnyhill) and some Devonian samples from the Urals collected in 2002. I collected some more Silurian material from Estonia in a post symposium field trip in September and also published a web page including images of the NHM conodont collections. This can be found at <http://www.nhm.ac.uk/palaeontology/micro/collections/conodont/index.html>

Peter Molloy. I am continuing work on the Ireviken Event (earliest Wenlock) in the Orange district, especially at Boree Creek, New South Wales. Concurrently I am working with Ruth Mawson, Andrew Simpson, Terry Furey-Greig and John Talent on various Late Ordovician-Early Silurian carbonate sequences in eastern Australia.

Jared R. Morrow. Current interests are Late Devonian conodont-based event stratigraphy, extinctions, biofacies, paleoecology, and sequence stratigraphy. In collaboration with Charles Sandberg and Anita Harris, I am studying the conodont-based evidence for the distal and offshore effects of the mid-Frasnian Alamo Impact Event, Nevada, including documentation of conodonts ejected by the impact. I recently contributed specimens for a collaborative study with Michael Joachimski, who is examining mid-Late Devonian and mid-Carboniferous ocean paleotemperatures using oxygen isotopes from conodont phosphate.

Hans Arne Nakrem. My research on Carboniferous and Permian conodonts, including a joint project with Jan Audun Rasmussen (Copenhagen) and Andrew Swift (Leicester) is still in progress, and some new material from Svalbard was collected during field work this summer. Together with Callum J. Hetherington (post doc., Oslo) I have finished a pilot study on Upper Silurian conodonts associated with bentonites and very shallow carbonates. Few conodonts were found, but a paper on chemical analysis of bentonites and some conodont biostratigraphy will be submitted autumn 2003. A pilot study of late Cambrian paraconodonts from Oslo was started this summer, and typical Baltic Cambrian conodonts were found. This study progresses alongside a study of agnostid trilobites from the same horizons.

Tamara Nemyrovska. My research on the Late Carboniferous conodonts of Donbas continues. Last year I was also working on the Late Visean/Early Serpukhovian conodonts of Spain (Palencia). Abundant conodonts from the deep water section at Triollo were described, and paleoecological implications and

biostratigraphy of the conodonts were provided. The paper was submitted to *Scripta Geologica*.

Bob Nicoll. I am working on Permian-Triassic boundary conodonts from sections in China and Permian conodonts from Western Australia. In addition I am trying to clean up some of my collections of Ordovician material. A paper on *Erraticodon* has been submitted.

Rodney D. Norby. All aspects of my research on Mississippian and Silurian conodonts proceed slowly. Mark Kleffner, Don Mikulic, Joanne Kluessendorf and I are still trying to work up a paper on the Waukesha conodonts from Wisconsin. I am also working with Don and Joanne on determining the detailed biostratigraphy for northeastern Illinois from cores and quarry sampling. Work on the Mississippian this year has been limited to verifying biostratigraphic information near some quarry sites. Still working on an unfinished publication with Peter von Bitter and Bob Stamm. Some new plans are in the works for a small paper on Ordovician conodonts. Most of my micropaleontological work has been spent in curating type and figured specimens.

Godfrey S. Nowlan. I am working very little on conodonts at the moment because I am running a geoscience outreach program in northern Canada. A small amount was done this year on: 1, Conodont biostratigraphy and biofacies related to neodymium and carbon isotope signatures and Samarium/Neodymium ratios (with Chris Holmden and Kerrie Fanton, University of Saskatchewan and Fran Haidl, Saskatchewan Geological Survey) with the objective of tracking sea level on the North American craton during the Middle to Late Ordovician. The work has been extended to a new subsurface section in Saskatchewan; 2, Ordovician-Silurian rocky shoreline section on Hudson Bay near Churchill, Manitoba (with Bob Elias and Graham Young). This study involves detailed biostratigraphy as an aid to mapping the rocky shoreline. 3, Examination of samples submitted to the lab.

Olga T. Obut. I continue to investigate Cambrian-Ordovician conodonts from SW Siberia, identifying key index-species for the Late Cambrian and Lower Ordovician of the Altai-Sayan Folded Area.

Mike Orchard. My primary focus is on Triassic Conodonts (multielement taxonomy, biochronology, biogeography, paleoenvironments) and Triassic Time (Triassic Subcommittee; IGCP467). Also late Paleozoic-Triassic biostratigraphy and paleogeography of Cordilleran terranes.

Jeffrey Over. I continue to work on Upper Devonian conodonts in the eastern United States and have recently started collaborative work with Jed Day and Mike Whalen to investigate conodonts from carbonate dominated strata on the Alberta Platform. I have started to look at the strata across the Eifelian-Givetian boundary, using conodonts to locate the boundary horizon(?) in the clastic-dominated strata of New York.

Ross Parkes. I am in the mopping-up phase of my PhD on conodont biostratigraphy and sedimentary facies of the Quidong Group (Late Silurian) of southeastern New South Wales.

Ian Percival. 2003 has seen a lot of my collaborative research of recent years into Ordovician conodonts from New South Wales finally appear in print. In particular, I presented the first record of Early Ordovician (*Oepikodus evae* Zone) conodonts preserved in deep-water chert from the central Lachlan Orogen of NSW, at the 9th International Symposium on the Ordovician System, held at San Juan, Argentina in August. Other cherts of Darriwilian (late Mid Ordovician) age in central and

southern NSW are yielding many well-preserved conodonts, and I am hopeful of documenting these in colour in a paper currently in preparation. My colleague Yongyi Zhen (Australian Museum) and I are gradually piecing together a conodont zonation for both shallow- and deep-water facies of the NSW Ordovician, a task we hope to finalise next year.

Maria Cristina Perri. My research is still focused on Devonian-Early Carboniferous and Permian-Triassic conodont faunas. A paper (with Enzo Farabegoli, Gilbert Klapper, Claudia Spalletta and Anita Andrew) on conodont faunas across the Frasnian-Famennian boundary integrated by a detailed sedimentological analysis and isotopic data, in a section from the Carnic Alps, is in progress. The study on the thermal evolution of Palaeozoic-Triassic sequences of the Carnic Alps utilising Kubler Index (KI) and CAI (with Covadonga Brime, Monica Pondrelli, Claudia Spalletta and Corrado Venturini) is nearly completed. Preliminary results have been published. A paper (with Enzo Farabegoli) on conodont faunas across the Permian-Triassic in the Southern Alps and another (with Peter Molloy and John Talent) on Earliest Triassic conodonts from Chitral, northernmost Pakistan are in press.

Lyudmila V. Petrunova. My research is concentrated on taxonomy, evolution and biostratigraphy of Triassic conodonts from Bulgaria. I work with Kiril Budurov.

Matthias Piecha. I am working on Devonian and Carboniferous conodonts from the Rhenish Massif. I continue investigations on low temperature (CAI 1-2) Middle and Late Devonian conodonts from the Pafthrath Syncline (Bergisches Land, West Germany). I also continue investigations on conodont biofacies and hiatuses around the Frasnian/Famennian boundary on the Rhenish shelf of northwestern Germany, especially on boreholes in the region of Aachen.

Nick Pieracacos. I completed and successfully defended my dissertation titled: "Depositional Environments and Conodont Biofacies of the Council Grove Group (Early Permian) in the Hugoton Embayment, Southwestern Kansas and Oklahoma Panhandle" at Baylor University (Dec. 2001). Glen K. Merrill, a member of the dissertation committee, was instrumental in helping me finish.

Pablo Plasencia-Camps. I am still working on my Master's Thesis on Triassic conodonts from Spain. Ana Marquez-Aliaga and Nacho Valenzuela-Rios are my research directors, with additional supervision from Francis Hirsch. I am a biologist and intend to study biological aspects of conodonts, with a special interest in Triassic genus *Pseudofurnishius* and also Triassic fishes.

Wilf Podolak. I am a retired geologist and teacher from Canada. Prior to my retirement I worked for the Geological Survey of Canada, Terrain Sciences Division and the Toronto Board of Education. I am currently working on Palaeozoic conodonts in southern Ontario. Presently I'm creating a catalog/inventory (?) of elements within the following stratigraphy: Cambro-Ordovician, Basal Group, Jacobsville Formation, Mount Simon Formation, Shadow Lake Formation, Ordovician Simcoe Group, Gull River Formation, Bobcaygeon Formation, Verulam Formation, Lindsay Formation, Nottawasaga Group, Whitby Formation, Georgian Bay formation, Queenston Formation.

Monica Pondrelli. I am continuing metamorphic zonation analyses by means of CAI in the Carnic Alps.

Mark Purnell. Natural assemblages and their palaeobiological and taxonomic implications have once again been keeping me busy, based on material from the Ordovician, Silurian, Devonian and Carboniferous (including collaborations with John Repetski, Peter von

Bitter, and Mark Williams (BAS)). Phylogenetic analyses of complex conodonts (with Dick Aldridge, Phil Donoghue, and Zhang Shunxin) and Permo-Triassic conodonts (with Dick, Lai Xulong, Andrew Swift and Mike Orchard) are also moving forward. I am working closely with David Jones on developing morphometric approaches to analysis of conodont elements. Other projects include tooth microwear in sticklebacks and other fishes, and some Chinese Cambrian things. The volume based on the symposium on Bias and Completeness at ECOSVIII that Phil Donoghue and I have edited will be out before the next Newsletter as a volume of Special Papers in Palaeontology.

John E Repetski. Most of my projects are continuing: CAI maps from subsurface samples from the central Appalachian basin for energy-related projects; age-dating support for mapping in Appalachian metamorphic and anchizone rocks; southern Midcontinent Lower and Middle Ordovician biostratigraphic studies; Cambrian and Ordovician systematic, CAI, and biostratigraphic studies from these and various other places. Numerous other projects, on aspects of Cambrian and Ordovician conodonts, some other phosphatic problematica, various biostratigraphic problems from many places, as well as some systematics, continue. Most of these latter efforts are collaborative with fellow Panderers and other good colleagues. This winter will be extra busy, with the spring joint meeting of the Northeast and Southeast sections of Geological Society of America (25-27 March, plus field trips) being held less than 10 miles from Reston.

Carl B. Rexroad. Primary emphasis remains focused on the Pennsylvanian of the Illinois Basin with Lew Brown and associated students, but we are expanding to other geographic areas and are continuing work with Tim Lyons. I am making good progress on the study of some upper Mississippian conodonts from West Virginia with Mitch Blake and Jack Beuthin, and work continues on this interval in Illinois with Joe Devera. I formally retired July 1 of this year. Full support in all but salary continues from the Indiana Geological Survey.

Manuel Rigo. I'm a PhD student at Padua University. I am actively working on Upper Triassic conodonts (Ladinian/Carnian boundary to Triassic/Jurassic boundary) from Lagonegro Basin (Basilicata, Southern Italy) and Southern Alps.

Charles A. Sandberg. My primary interests are Middle to Late Devonian and Mississippian conodont event stratigraphy, extinctions, biofacies, paleoecology, paleobiogeography, and taxonomy. In collaboration with Jared Morrow and Anita Harris, I am preparing a paper on conodont evidence for the location, depth, and size of the Late Devonian Alamo Impact Crater, Nevada, based on ejected latest Cambrian to Silurian conodonts that fell into lapilli beds redeposited within the breccia. For a geologic map with Barney Poole, I am completing a study of conodonts from the Devonian to Mississippian platform-to-basin transitional sequence in the southern Hot Creek Range, Nevada. With Duncan Keppie and Barney Poole, I am preparing a paper on latest Pennsylvanian to Early-Middle Permian conodonts from a formation previously dated as Devonian in Puebla, southern Mexico. For a paper on the classic Anseremme section, southern Belgium, with J.-G. Casier and others, I am writing a section on late Famennian conodont faunas and zonation.

Javier Sanz-López. My research on the CAI of conodonts from the Pyrenees and Cantabrian Mountains continues slowly. I hope to develop some studies of Carboniferous rocks of the border of the Central-Iberian Zone. I have submitted papers about Silurian conodonts and on

upper Visean conodonts and the mid-Carboniferous boundary in the North of Spain.

Graciela N. Sarmiento. I continue working on several projects involving Ordovician and Silurian conodonts with a number of colleagues.

Ana Karina Scomazon. I am doing my Ph.D. on Pennsylvanian conodonts from Amazonas Basin, Brazil. I am working on the biostratigraphy and palaeoecology of *Idiognathodus*, *Neognathodus*, *Diplognathodus*, *Streptognathodus*, *Idiognathoides*, *Rhachistognathus* and *Adetognathus*. I have also done some $^{87}\text{Sr}/^{86}\text{Sr}$ and $^{143}\text{Nd}/^{144}\text{Nd}$ isotopic analyses on conodonts from Amazonas Basin as an attempt to obtain preliminary results to correlate these data with the Phanerozoic seawater strontium isotopic curve.

Babak Sedghi. I have worked on the Devonian in central Iran (Padeha Fm., Sibzar Fm. and Bahram Fm.), in the south of Kashan. I have studied some *Icriodus* specimens from the Padeha Formation. Previously, I worked on the Khush-Yeilagh Formation (Padeha and Sibzar Members); the Padeha Member in Khush-Yeilagh is Givetian, and I think that the Padeha in Kashan, according to the *Icriodus* species, is also Late middle Devonian (Givetian).

Shen Shuzhong. My research is mainly on Permian conodonts from southern Tibet.

Andrew Simpson. A quiet year on the conodont front in 2003. A number of manuscripts are in the pipeline with various MUCEP and other collaborators. Work continues on late Silurian correlations between Gotland and the Jack Formation in northern Queensland.

Ladislav Slavik. I am continuing my research on Lower Devonian conodonts from the Barrandian area (Czech Republic). Together with Nacho Valenzuela-Rios, we have started a cooperation dealing with correlation of Lower Devonian conodont faunas from the Spanish Central Pyrenees and the Barrandian area.

Maria Snigireva. I continue to work with Devonian and Silurian Conodonts.

Claudia Spalletta. I am still working on Upper Devonian to Lower Carboniferous conodonts from the Carnic Alps (Southern Alps, Italy) with special attention given to stratigraphic sections at the Frasnian/Famennian boundary. I am also continuing studies on Famennian conodonts from the Montagne Noire.

Dale Sparling. Still interested but retired and inactive.

Svend Stouge. My research will continue on issues concerning Ordovician conodonts from Greenland, China, Canada and the Baltoscandia areas. Specifically, this year I will concentrate on finding levels that can be applied as markers for the base of the Middle Ordovician Series from eastern Canada, Baltoscandia and South China.

Matthew Sumner. I am working on Devonian conodonts from the Olentangy Shale in central Ohio as an undergraduate thesis.

Walter C. Sweet. I plug along organizing all the data I've been using in graphic correlation into a form that might someday be of use to others. Two manuscripts await publication (as they have for several years past!)--perhaps this year!

Andrew Swift. Interest is being maintained in all things conodont, particularly those from the Carboniferous, Permian and Triassic.

Hubert Szaniawski. I am still working on the relationship and biology of proto- para- and euconodonts.

John Talent. I am continuing work on various Late Ordovician-Early Carboniferous conodont faunas, mainly from eastern Australia, with principal foci being CAI vs. illite crystallinity patterns for eastern Australia and northernmost Pakistan (with Covadonga Brime and Ruth Mawson), conodont data bearing on the timing of the Benambran Orogeny (Early Silurian) in eastern Australia (with Andrew Simpson et al.), Silurian-Early Carboniferous transgression-regression events in eastern Australia (with Ruth Mawson), and comparison of the Late Silurian Lau Event between Gotland and sections in the Broken River region of northeastern Australia (with Lennart Jeppsson et al.).

Vladimir P. Tarabukin. I am working on Ordovician, Silurian, Devonian and Lower Carboniferous conodonts. I still investigate the biostratigraphy and biofacies of the Ordovician of Yakutia (N-E Asia). Together with A.N.Reimers and I.V.Nefedova I am also busy with conodonts from xenoliths in kimberlite pipes and from the Ordovician on the Nakyn Region (Siberian Platform). I'm continuing CAI studies in Ordovician-Carboniferous rocks in some areas of N-E Asia.

Tom Uyeno. My collaborative study with Jack Wendte on late Middle-early Late Devonian conodonts of subsurface central Alberta continues, albeit with some major interruptions.

Viive Viira. I am completing manuscripts on Tremadocian - Arenigian conodonts (Pakri Cape section with Anita Lofgren) and Early Caradoc conodonts (Kohtla oil shale section with Dick Aldridge and Stephanie Barrett). My research on Late Wenlock conodonts from Estonia continues slowly.

Peter von Bitter. 1) Continuing work with Mark Purnell on the remarkable Silurian natural assemblages from Hepworth, Ontario, Canada. A paper on evaluating bias in conodont element recovery, using material from this locality, is in press. Another, on *Ozarkodina excavata* apparatuses is in preparation, as is a paper on natural assemblages of *Ctenognathodus* sp.

2) Glen Merrill and I continue to restudy the types of Pennsylvanian *Gondolella* spp., with one paper submitted for publication.

3) Much effort in last year has been spent working with Peter Giles and John Utting, both of the Geological Survey of Canada, on the age of the Mississippian (Visean) Windsor and Codroy Groups of Atlantic Canada, using conodonts, foraminifera, and palynomorphs. The results of this collaboration were presented at the ICC-P at Utrecht in 2003, where a manuscript has been submitted.

Linda M. Wickström. In August 2003 I moved from Birmingham, UK back to Sweden since I was offered a job at the Swedish Geological Survey in Uppsala. My new job involves mapping the lower Palaeozoic rocks in Jamtland (central Sweden) and I will also be working with the collections of geological data such as fossils, rock cores and minerals deposited at the Swedish Geological Survey. My interest in conodonts remains strong. At the moment I am writing up my PhD thesis concerning the application of cladistic analysis to Lower Palaeozoic conodonts. I have finished a cladistic analysis of the lower Palaeozoic genus *Oulodus* and have also finished some work on functional morphology of the Silurian genus *Kockellella*.

Brian Witzke. I've been picking samples on and off this past year to constrain Mississippian stratigraphy in northern Iowa ("Keokuk" unit above the Gilmore City Fm) as well as a bit of Ordovician (including new St. Peter Sandstone samples from southeast South Dakota). The final editing of my summary of St. Peter conodonts

was completed a while back, awaiting publication. My 6-year stint as Managing Editor of the Journal of Paleontology ended November 2003, but the editorial office of the journal will continue in Iowa City. My thanks go out to the many Panderers who contributed so many outstanding papers on conodont paleontology to the JP over these years.

Yao Jianxin. I continue to work in late Palaeozoic and Triassic conodonts and biostratigraphy from South China, Tibet and Japan.

Mehdi Yazdi. I and my post-graduate students are working on Devonian to Permian sequences in Iran. Dr. Gholamalain (now Dr.) completed his thesis on the F/F Boundary based on conodont biostratigraphy in Tabas and Chahrieseh (Central Iran); his conclusions will be published in *Acta Palaeontologica Polonica*. Mrs. Bagheri who was working on the Permian of Isfahan, could not find good conodont elements, but she directed her thesis to the macrofauna such as gastropods and goniatites, with the help of Prof. Yuri D Zakharov. Mrs. Rafie, who was working on the Permian/Triassic Boundary in Abadeh and Shahreza (with Prof. Ahmadzadeh Heravi and me), found the boundary (based on *Clarkina* elements). Dr. Karimi Bavandpour, who is working with Prof. Wendt (Germany), sent me nearly 110 samples from the Khoshyelagh section (Early to Middle Devonian) for a cooperative conodont project; one of my MSc students, Mrs. Khodaverdy, has started working on them. Mr. Maleki is working on the Middle Devonian of

Isfahan (Zefreh). Finally, two of my PhD students (Mr. Hosseni-Neghad and Miss Habibi) will start their theses on Famennian biostratigraphy based on conodonts, brachiopods and goniatites in Eastern Albourz (Shahrud, Kelariz and Semnan).

Evgeny A. Yolkin. The first identified list of lower Famennian conodonts was published in a paper on the Late Devonian paleogeography of West Siberia (see N.G.Izokh). I intend to study the Siberian Devonian conodonts as well as conodont associations from the stratotype section for the lower boundary of the Emsian in cooperation with N.G.Izokh and German colleagues.

Zhang Shunxin. My research is still focused on Ordovician and Silurian conodont paleoecology and reconstruction of sea level history based on the community changes. Currently, my active projects include work on the Appalachians, Cordillera, and Arctic. I have another small project on Late Triassic conodonts from northwest America, which continues very slowly.

Andrey V. Zhuravlev. I am working on Upper Devonian and Lower Carboniferous conodonts from the north of the Russian Platform, Urals, and Northeast Russia; Upper Permian conodonts from the Russian Platform, Trans-Caucasus and Far East of Russia. The main fields of interest are conodont histology, functional morphology, biostratigraphy, palaeobiogeography, and CAI.

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