
Pander Society Newsletter



DEPARTMENT OF GEOLOGY

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INTRODUCTORY REMARKS

Welcome to the 1999 edition of the Pander Society Newsletter! This is the first Newsletter to be distributed electronically, although we are still sending hard copies to those who do not have access to the network or who request a printed version. We hope this will mark a transition to exclusively electronic distribution; this will cut costs dramatically and will also allow us to update the Newsletter on a regular basis. If members of the conodont community have any comments to make on this, the Chief Panderer would be pleased to hear from them.

At the outset, I am delighted to have the opportunity to thank my predecessor, Ray Ethington, for all the work he has put in as Chief Panderer over the last few years. He has not only maintained the Newsletter (and I now know exactly how much effort this takes!), but he has overseen the organisation of a whole string of very successful Pander Society meetings all over the globe. The fact that conodont research continues to flourish so spectacularly is in no small part due to the very efficient communication between workers that the Pander Society facilitates. So, Ray, thanks very much indeed - you are a hard act to follow, and (to mix my clichés) I hope I will manage to go some way towards filling your shoes.

Dick Aldridge
Chief Panderer

PANDER SOCIETY MEDAL - AWARD

It is most appropriate to be able to follow the preceding comments by an announcement of the award of a Pander Society Medal in 1998. The recipient was, of course, Ray Ethington, who was presented with the medal during the Pander Society Dinner at the meeting in Columbus, Ohio, on Friday 20 March 1998. In making the presentation, Dave Clark delivered a glowing statement, of which a slightly edited version is given below:

Tonight it is my pleasure to present a small, oval object to Ray Ethington. However, the story of why Ray receives this unique object needs to be told. It all began at the Geological Society of America meeting in Denver in 1961. While Ray and I had been friends in graduate school, we hadn't worked on anything together, and following graduate work Ray had gone to Arizona State and I had gone first to SMU and then later to BYU. My work in the Great Basin convinced me that this area could be one of the best places in North America to prove the utility of what was at that time a developing conodont biostratigraphy. I thought that together, Ray and I might make a contribution to Cambrian-Triassic conodont studies. He agreed to joint work, and I sent in a proposal to the NSF for support. A wise program manager funded the proposal, in spite of one reviewer's negative comments, and this was the first in 25 years of continual NSF support for Great Basin conodont research.

And it worked out, at least, in part. During the 3 summers of 1962-1964, Ray and I worked on Ordovician to Triassic sections in Nevada, Utah and Idaho and published almost a dozen papers that suggested the

potential for Great Basin Paleozoic and Triassic conodont biostratigraphy. However, at the conclusion of the first award period, we decided to divide the Great Basin section. Ray was going to work on the Ordovician, while I was to work on the rest of the Paleozoic and Triassic. Why this strange division?

The story of tonight's award and of the division of labor (and stratigraphy) that occurred more than 30 years ago is directly related to three years of field work with Ray. 30 years ago there was limited motel space in places like Eureka and Lund, Nevada, and Garrison, Utah, so we shared motel rooms, at least where there was a motel. Now, there are two problems in sharing a motel room with Ray. For one thing, he reads every night to about 2 a.m. regardless of the amount of mountain climbing that we had done that day or were to do the next day. But, even more traumatic for an excessive-compulsive such as me, Ray was a bit of a cheapskate and insisted on placing his \$1.95 wind-up pocket watch on the table between our beds each night. And what was wrong with that? A 1960s \$1.95 wind-up pocket watch made a tick-tock noise that was only slightly less noisy than the kettle drums in a non-cannon version of the 1812 overture - bang-bang-bang-bang. But unlike the 1812 overture that only takes a few minutes to complete, Ray's \$1.95 watch kept it up, shakin the table all night.

Desperate to get undisturbed sleep, but not wanting to offend Ray, I began a campaign of trickery. When he was showering, I would hide the watch, either in our truck, or in a suitcase in the closet - but he invariably found it before reading (with the light on) most of the night, carefully placing it on the night stand between our beds. Another trick was to ask him what time it was when we were high on the side of a mountain, hoping he would drop it when it took it from his pocket. If that didn't work I would borrow the watch and accidentally hit it with my hammer while taking samples. But Ray was never suspicious and always thought these kind of loses were accidents, and simply went into a drugstore at the next chance, and bought a new pocket watch. And each new watch seemed to make a noise even louder than the previous one.

This continued for 3 years - me breaking or losing Ray's watch and Ray simply replacing the watch each time an "accident" happened. Ray could not be convinced to buy a quiet, more expensive wrist watch or even a better grade pocket watch, and he never suspected my trickery. Finally, because he was deeply involved in the Ordovician phase of our work, I decided that the only way I would ever sleep well again was to move up section to the Permo-Triassic, not a part of the section that attracted Ray. Thus, we went our separate ways in the mid 60's, and I began sleeping peacefully during the field season again.

Ray's award tonight is based on his stubbornness. Not only did he continue to work and make a significant contribution to Ordovician conodont biostratigraphy, but his watch drove me up section to the Permo-Triassic where my students and I were able to make a modest contribution, as well. In recognition of this total contribution to conodont research, it is my pleasure to present Ray with the Ethington Watch Award (EWA), not just a precise replica of the pocket watches from the

1960s, but, in fact, one of the actual watches that I stole while trying to get a peaceful night's rest.

But seriously, if distinction in research and service to the profession are the standards by which we award the Pander Medal, Ray Ethington is eligible on both counts. Ray was raised on an Iowa farm, where, at an early age he learned the fine art of slopping hogs. This training served him well in his studies at Iowa State and the University of Iowa, but was particularly helpful not only when he was in the army during the Korean War, but in his handling of students at two universities. His dissertation study of the Galena Formation 30 years ago was good enough that no one since has challenged his conclusions, and then he moved down section to the Lower and Middle Ordovician of the Great Basin. Most importantly, he was the person principally responsible for monographing the famous Lower-Middle Ordovician Ibx section that became the basis for additional work on a number of associated invertebrate groups, all of which eventually led to the proposal that the Ibxian Series replace the "Canadian" as the North American Lower Ordovician standard. Along the way he trained a number of students who succeeded in their own conodont studies, and also found time to teach micropaleontology and conodonts to students at Arizona State and the University of Missouri. At Missouri he not only taught conodonts to generations of students, but he curated the valuable Branson & Mehl collections and also served as chairman of the department.

On the extra-university professional level, he served as an editor of the *Journal of Paleontology* for 5 years, enough to kill normal folks. He also served as special publications editor, and later was elected President of the prestigious Society of Economic Paleontologists and Mineralogists (SEPM), now known as the Society for Sedimentary Geology. Currently, he serves as President of the SEPM Foundation. He has served as Chief Panderer since 1991, with all that involves, and has provided our profession with a newsletter and an index of published papers, certainly one of the more useful things that our Society does.

In addition, he is a genuinely nice guy whose favorite ethnic food is oatmeal and diet-coke. Very important is the fact that he is a person who has an active life of service to the community outside of his productive professional life. On behalf of the Pander Society, it is my pleasure to present the Pander Medal to Raymond L. Ethington, our 11th Pander medalist, a superb person and a superb student of conodonts.

PANDER SOCIETY MEDAL - PROCEDURES

The Pander Society Medal is awarded at irregular intervals to scientists who have made a fundamental and outstanding contribution to conodont research. Service to the conodont community may also be taken into account.

The normal procedure is for an individual or individuals from among the membership of the Pander Society to prepare a nomination document (usually relatively brief) outlining the contributions that the proposed recipient has made to conodont studies. This is sent to the Chief Panderer, who refers it to the medal committee (currently Willi Ziegler, Wang Cheng-yuan and Godfrey Nowlan) who review the application independently. If the nominee receives the support of the committee, the Chief Panderer contacts Walt Sweet, who presently has charge of the dies from which the medal is prepared, and asks that a medal be provided for presentation at an appropriate occasion.

The roll of honour of Pander Society medallists currently stands as follows:

**John Huddle
Sam Ellison
Walt Sweet
Anita Harris
Carl Rexroad
Ray Ethington**

**William Furnish
Heinz Beckmann
Willi Ziegler
Maurits Lindström
Gil Klapper**

ANOTHER MEDALLIST

Claudia Spalletta writes: At the opening of the scientific session of ECOS VII held in Bologna and Modena (Italy) on June 24-26, 1998, the Italian Conodont Working Group was very pleased to honour Professor Renata Olivieri (University of Modena), giving her a gold medal as acknowledgement of her work on the conodonts of Sardinia. Renata Olivieri retired last year after a life dedicated to the study of conodonts. During her career she produced the first papers on the Late Devonian conodont stratigraphy of Sardinia, as well as other important papers on conodont taxonomy. The Italian conodont workers are grateful to Renata for her work and were pleased to have the opportunity to thank her in front of an international audience, as she deserved the public praise that during her academic career she always avoided, being a very reserved person. Thanks Renata, we wish you a long, golden retirement.

CON-NEXUS

In August 1998 the Pander Society sponsored the launch of an international e-mail discussion group dedicated to conodonts and all conodont-related matters. As well as providing a forum for discussion between conodont workers, con-nexus is used to circulate Pander Society information rapidly to conodont specialists. Anyone wishing to subscribe to con-nexus should simply send the message: subscribe con-nexus xxxx@xxxx.xx.xx (where xxxx@xxxx.xx.xx is your e-mail address) to listserv@le.ac.uk.

PANDER SOCIETY MEETINGS 1998

The Pander Meeting at the North-Central GSA Sectional Meeting 19-20 March

Mark Kleffner reports: The joint Pander Society/North-Central Section of the Geological Society of America-sponsored symposium on "Hot Topics in

Conodont Biochronology," held on The Ohio State University campus in Columbus, Ohio, March 19, 1998, was one of the best-attended conodont sessions held in conjunction with a GSA meeting in recent memory. The symposium marked the 29th anniversary of the original 1969 "Symposium on Conodont Biostratigraphy," also jointly sponsored by the Pander Society and North-Central Section of GSA and held on The Ohio State University campus. Walter Sweet, one of the co-organizers of the original meeting, took some time off from his busy retirement schedule to organize the 1998 symposium, and all of the rest of the Pander meeting, except for the session organized by Charlie Sandberg on "Conodont Evidence for Impacts and Extinctions". A total of 19 papers were presented in the "Hot Topics" symposium, by conodont workers from the United States, Canada, England, Germany, and Poland. Several presentations offered refinements of different portions of the conodont biostratigraphy originally presented during the 1969 symposium and published in GSA Memoir 127. Other papers used conodont biostratigraphy to solve local to regional stratigraphic, biogeographic, and paleogeographic problems. The only negative to the entire symposium was that the room became rather stuffy and hot, particularly during the late morning and afternoon. However, this was largely the result of it being filled to capacity for nearly all of the presentations, something Pander sessions at GSA meetings haven't been in recent years.

Walt Sweet also organized a closing dinner party at the Tapatio restaurant that was so well attended that restaurant employees had to squeeze additional chairs into the prearranged table setup to accommodate all of us. I think everyone had a great time at dinner, where we not only ate truly good food (including free appetizers, thanks to Walt's generosity), but also enjoyed good company and conversation, officially introduced Dick Aldridge as the new Chief Panderer, and honored the past Chief Panderer, Ray Ethington, by presenting him with the Pander Medal, in recognition for all of his contributions to the field of conodonts (see above).

Charlie Sandberg adds: A Pander Society Symposium, "Conodont Evidence for Impacts and Extinctions," was held on March 20, 1998 at the North-Central section meeting of the Geological Society of America in Columbus, Ohio. Convened by Charlie Sandberg and Jared Morrow, the symposium evoked considerable local and national media publicity. The keynote address by Hans-Peter Schönlaub stressed the importance of conodonts in dating impacts and extinctions during much of the time that life existed on Earth and the scarcity of impact craters that are currently recognized and well dated. Highlighted among the 11 other presentations were the revelation of a meteor bombardment across North America and Europe during the Middle Ordovician and the discovery of the great depth of the crater created by the Alamo Impact in Nevada in the early Late Devonian.

Discussing Ordovician mass extinctions, Chris Barnes discounted evidence of related major bolide impacts as causes. On the other hand, speaking on behalf of senior author Maurits Lindström, John Repetski announced discovery of seven impact craters of Middle Ordovician age in Sweden, Estonia, Ontario, and Oklahoma. Conodonts were critical in dating not only the rocks hit by the impacts, but also the post-impact fillings of the

craters by marine sediments. Dick Aldridge related Silurian faunal turnovers to oceanic episodicity following the end Ordovician mass extinction and found no evidence for impact-driven extinctions.

The next five talks dealt with Late Devonian events. Charlie Sandberg presented new conodont evidence for the large size of the crater produced by the early Frasnian Alamo Impact, north of Las Vegas, Nevada. Jared Morrow provided conodont evidence for the geologic and biologic events across the late Frasnian mass extinction interval, recorded in rocks 3 million years younger than the Alamo Impact in North America and Germany. Jeff Over presented conodont evidence for dating ash falls that occurred at the same time in New York. Werner Buggisch discounted impacts as the cause of the Late Devonian mass extinction on the basis of stable carbon isotope studies. Willi Ziegler discussed evidence for a later, end Devonian mass extinction following a sharp fall of sea level and a long episode of Southern Hemisphere glaciation, possibly triggered by Late Devonian impacts.

Rounding out the session, Rich Lane discussed Carboniferous conodont evolution and extinction events, Bruce Wardlaw treated conodont evolutionary changes across the Permian-Triassic boundary and Mike Orchard concluded by considering the demise of conodonts at the end of the Triassic, which has been related to a major impact event. However, he showed that, at least in western North America, conodonts disappeared not with a bang but with a whimper.

ECOS VII Pre-symposium field trip to Sardinia 18-22 June

Karen Cochrane reports: 29 conodont workers from 10 countries attended this trip, together with a variety of accompanying persons, bringing the total to 34. By 1 a.m. on the 19th everyone was safely installed in the hotel, fed, watered, and in some cases wondering when (or if) lost luggage was going to arrive. By 8.30 next morning everybody was ready, with their newly acquired ECOS VII rucksacks (and ECOS VII T-shirts in the case of a luggageless Anita Harris), for a day in the field.

The first locality, in the Upper Ordovician of Cea Brabetsza, near San Basilio, was some way up a small track, so the coach was abandoned in favour of minibuses, lest the conodont workers should have to walk too far in the Sardinian sunshine. After a detailed explanation of the geology and conodonts by Annalisa Ferretti, Enrico Serpagli, Francesco Leone and Alfredo Loi (with occasional translation by Gian Luigi Pillola), the roadside outcrop was sampled by those with a penchant for rocks of this age, whilst others caught up with old friends or sought to make new ones.

The next location, in Silurian rocks 500m east of Silius Village, was reached by a walk through fields using a path that had been generously cleared by the farmer and two helpers. Sample bags and hammers at the ready, we listened as Enrico, Carlo Corradini and Annalisa described the geology and conodonts with the aid of some finely crafted posters. More samples were taken, and yet more sunblock was applied as the sun rose further into the cloudless sky.

Staying in the Silurian Ockerkalk, the third locality featured nodular limestone with loboliths. The enthusiastic reached the level of the loboliths in the roadcut, while others discussed the outcrop closer to the base

of the section. By this time stomachs were beginning to rumble and we were all looking forward to a spot of lunch. So, after a short drive we walked to a small farmhouse, where we were greeted by the (soon to become familiar) smell of barbecued sucking pig. Inside the farmhouse, plates of food were repeatedly distributed, accompanied by ample wine and water. The third course comprised the barbecued suckling pig - the vegetarians among the party found this a trifle difficult to cope with, and even for the omnivorous Dick Aldridge, the meal proved too tough for his dental apparatus. After the meal and a thankyou to the Major of the local town, we walked back to the bus, slightly slower than we had left it, and set off for the last locality of the day.

A slight leap up the stratigraphic column took us to the Upper Devonian (Famennian) near Villasalto village where two sections were examined. Carlo and Gian Luigi provided us with yet another superb explanation of the geology before we embarked on possibly the most strenuous walk of the day, which actually involved a slight incline, and a scramble up an earthy slope through some fairly dense vegetation. More samples were taken, and people marvelled at the climbing expertise of the younger Repetski (Rocco, age 12) as he scaled to some nerve shattering heights. Then, as the sun slid a little lower towards the horizon, we congratulated the Italian organising team for a wonderful first day whilst sitting on the terrace of a lovely bar, sipping the drinks kindly bought for us by the Major of Villasalto. After showers and a brief rest back at the hotel in Senorbì, and for the Chief Panderer a visit to the dentist, we were treated to an al fresco meal and some traditional dancing, courtesy of the Majors of two nearby villages.

Day two began in the Cambrian Cabitza Formation of southwest Sardinia, where the conodont faunas have been completely remineralised and are apparently a fetching shade of green, due to diagenetic preservation in clinochlore. The type-section of the Iglesias Group (Lower Cambrian - Tremadoc) was next, although no conodonts have been recovered from this outcrop. The trilobites were also hiding, so the party inspected the sedimentary features of the section before making their way back to the coach.

Near Fluminimaggiore small, but very attractive, exposures of *Orthoceras* Limestone (Wenlock-Ludlow) were examined next. Everyone was impressed by the macrofossils (nautiloids, graptolites and bivalves) and, once again, by the quality of the posters used in the description of the outcrop. As the sun rose, and more people were found lurking in shady places under trees, thoughts of a light lunch spurred us away from the outcrop and back to the bus. A repast of gargantuan proportions was once again laid out in front of us, accompanied by plenty of wine and water. The fresh fruit for dessert eased our calorie-consciences somewhat, and the small, but caffeine-rich, coffee finally made our passage back out into the field possible. No trips to the dentist were organised for later on.

The day's last geological stop was a Lower Devonian section near Fluminimaggiore. The 14m outcrop of limestones and mudstones contains an abundant conodont fauna, together with a variety of other macrofossils from the *delta* Zone of the Mason Porcus Formation. As per usual, samples were enthusiastically collected before our return to the bus, where Gian Luigi

and Alfredo provided us with some impromptu water flinging entertainment in a horse trough.

It is not possible to visit Sardinia and concentrate solely on geological aspects, so a deviation into archaeology concluded the day. The location was a Nuraghe settlement dating back to between the XIII and IX centuries BC, and consisting of a large central cone-shaped tower, surrounded by, and connected to, five smaller towers around which a town was built. A guide took us round, and allowed us time for questions at the end. A pertinent question was posed by Barry Fordham, on the subject of symbolic statues and the relevance of the number of breasts these possess. The answer is, for those of you who are interested, that most female statues have two breasts, but some represent an androgynous condition and only have one.

Dinner that evening yet again proved to be more of a banquet than a simple meal. We were finally ejected from the restaurant at 2am, after many enjoyable conversations concerning conodonts, and pretty much everything else.

The third day took us back to SW Sardinia. The first stop was in the Upper Ordovician of Cannamenda, where two trenches exposed the Punta S Argiola Member of the Domusnovas Formation. The richest Ordovician conodont fauna in Sardinia is to be found here, but only, to quote the guidebook, in the thin fossiliferous horizon (4-4.5cm) [which] has no lateral continuity and is poorly exposed in the form of small sparse pieces in the field. Its only redeeming feature is that it is a distinctive colour pink. Much limestone was collected, in order to maximise the chance of finding that a small part of the sample was from the pink fossiliferous level.

We returned to the Devonian at the next locality. Of all the outcrops we visited, this was the most original, in that it appeared to be a loose block set in the hedge between two fields. Nevertheless, conodonts have been collected from here, and are important because they represent the only Middle and Late Devonian faunas collected in the SW part of Sardinia. The flora was also investigated here, and Alfredo explained that some of the thistle-type vegetation wasn't thistles, but was a variety of wild artichoke. It was still quite prickly, though.

The third locality took us back to the Silurian *Orthoceras* Limestone, before we slipped into the Cambrian Gonessa Formation for a spot to eat. The venue for our meal was a restaurant next to an enormous cave, and lunch held few surprises with the usual ample cold meat, anti-pasta and sucking pig courses. An added bonus, however, was our first sampling of the famous Italian ice-cream. Absolutely mouth-watering. Enough of this, I can feel the calories piling back on!

After lunch part of the group decided that the cave could not be left without being explored, and so wandered into the entrance to see some amazing cave structures. We were finally rounded up, and herded back to the coach. Some Cambrian material was also collected from the roadside before we left for the afternoon's fieldwork. The last part of the day was spent travelling around some of the spectacular coast of SW Sardinia, providing the opportunity for Glen Merrill to take yet more photos of the Repetski entourage asleep for future nostalgia sessions. The Sardinian Unconformity, described by Cocozza as the most beautiful unconformity in the World, and to this day known to

Italians as La Discordanza, was the last place to be visited. Upper Cambrian laminated shales of the Cabizta Formation are overlain by boulder-bearing conglomerates of the Ordovician Monte Argentu Formation, and the unconformity is definitely as attractive as any I have seen.

The return to Senorbì heralded yet another huge meal. The main course fish had interesting crushing dentition, some of which was dissected and brought home by Phil Donoghue. The after dinner entertainment arrived in the form of a joke telling session chaired and dominated by Rocco Repetski, with encouragement from Dick Aldridge and Andrew Simpson, an apparent continuation of some festivities at lunch time.

Our last day began with a visit to some Ordovician localities, and some of the steepest walks of the week; not necessarily a bad thing after all the eating. The outcrops at Umbrarutta yield the best preserved Ordovician faunas found in Sardinia, so the last samples of the week were collected, and we finished the geological part of the field trip. We then headed for the western coast, and to the archaeological ruins of Tharros, which was to be the last official locality to be visited in Sardinia (apart from a quick snack for lunch of course). A guide showed us round the different parts of the city, and we grabbed a last chance to do some geology by studying the basaltic blocks used in its construction. After leaving Tharros, Peep Männik managed a quick foray towards the sea, where he went paddling without removing his shoes. Some souvenir buying was accomplished by others, before we made our way back to the bus and towards the last lunchtime extravaganza of the field trip.

The seafood meal was fantastic once again and the wine flowed freely. Dick Aldridge gave a speech of thanks to the Italian organising committee aided and abetted by Norman Savage's helpful suggestions. We all heartily agreed that the trip had been an enormous success, and raised our glasses to the people who had been involved in its organisation. We then left for the airport, at first without Repetski Junior who came hurtling out of the restaurant when he heard the sound of the coach pulling away. A full complement of people was finally reached, and we set off for our journey to the ECOS conference proper.

ECOS VII The Main Meeting Bologna-Modena 24-26 June

To begin with some statistics: the number of registered participants was 120, representing 25 nationalities; there were 40 oral presentations and 47 posters. The weather was very hot and humid, but, as far as could be discerned, all the delegates enjoyed the meeting immensely. The opening scientific sessions, held in the world's oldest University at Bologna, followed welcoming speeches from the Congress President (Enrico Serpagli), the President of the Italian Palaeontological Society and the Acting Head of the Geology Department. Following an opening talk about conodont affinities (again) from the Chief Panderer, there was a special presentation of a medal to Emeritus Professor Renata Olivieri (see above). The morning session continued with talks on evolution, palaeobiology and geochemistry and concluded with a business meeting of the Pander Society. After lunch, time was reserved for a poster session and for a nostalgia session

featuring pictures of conodont specialists through the ages (and through their ages!).

In the later afternoon of the first day and through the second day, a series of sessions covered Cambrian to Carboniferous conodonts, interspersed with a set of talks given under the IGCP421 banner. The whole conference then transferred by coach to Modena for the final day of the scientific programme. Again, the structure was stratigraphical, with the early talks lingering in the Ordovician and the Triassic being reached by mid-afternoon. To come full cycle, the presentations ended as they began with a set on conodont palaeobiology, this time with functional morphology to the fore.

The oral and poster presentations were complemented by small workshops, informal gatherings of conodont workers and purchases of conference T-shirts. In addition, of course, we were treated to a social programme that featured the best of Italian food and hospitality (and dancing), culminating in a phenomenal alfresco Pander Society Dinner as guests of the ceramic tile company Atlas Concorde. The ECOS meetings have, from the outset, been exemplary in their organisation, atmosphere and scientific stimulation and ECOS VII more than upheld that tradition. We are all extremely grateful to the whole team of organisers for their splendid efforts and we all now look forward with eager anticipation to ECOS VIII!

Abstracts of all the conodont papers submitted to ECOS VII can be found in the bibliography. A full report of the meeting (by Andrew Simpson) is available in the British Micropalaeontological Society Newsletter (http://www.nhm.ac.uk/hosted_sites/bms), and there are also reports in *Geochronique* (by Catherine Girard and Marie-France Perret) and in *Nachrichten Deutsche Geologische Gesellschaft* (by Dieter Stoppel).

ECOS VII Post-symposium field trip to the Southern Alps 27 June - 2 July

Report by Cristina Perri, Claudia Spalletta and Dick Aldridge: This 5 day excursion was led by a whole team of experts from the Universities of Milano, Modena and Pisa, and managed admirably to maintain the incredibly high standards of geology, scenery, food and social events set by the pre-Symposium trip. 38 participants traversed the Southern Alps from east to west, beginning in the Carnic Alps, famous for their mostly unmetamorphosed Palaeozoic successions, and progressing toward the Dolomites and Lombardian Prealps.

On the first day of the trip, the party visited the Triassic Aupa section where the Ladinian/Carnian boundary is exposed. Heavy rains subsequently forced us to leave the mountains early and prevented examination of the only Ordovician section included in the excursion schedule (to the disappointment of the Chief Panderer, who wanted to collect some nice *Noixodontus*). The weather improved in the afternoon, however, and made it possible for us to visit an Upper Devonian - Lower Carboniferous section in the Monte Croce Carnico Pass area. As well as the collection of samples, the section stimulated a vigorous discussion about the phylogenetic lineage of *Gnathodus praebilineatus*.

The second day was devoted to the examination of some Middle to Upper Devonian sections in the Pramasio area, central Carnic Alps, including one very

well exposed Frasnian/Famennian boundary section. On the third day, we took jeeps up to the Marinelli Hut, at over 2000 m, but unfortunately our views were inhibited by a swirling mist. From the hut we visited one section displaying the Tournaisian/Visean boundary (and some pockets of snow) and then left the Carnic area for the Dolomites. There, we examined Lower and Middle Triassic sequences, including the Dont locality, which is famous for being the first site in the Southern Alps from which Middle Triassic ammonoids were described, in the last century.

The entire fourth day was spent in the Dolomites, where the participants were perhaps as much enchanted by the world-famous mountain scenery as by the Ladinian sections visited near the Gardena and Sella passes. At the Bulla section, where the Permian/Triassic boundary is well exposed, an interesting discussion developed on the boundary itself and on the evolutionary trends shown by the topmost Permian to lowermost Triassic conodonts.

The last day, graced by glorious sunshine, was devoted to the Lombardian Prealps with a final stop to visit the Bagolino Anisian/Ladinian succession. After a final large and delicious lunch and a heartfelt vote of thanks to the organisers and guest leaders, the party began the drive back to Modena and Bologna, carrying fond memories of the tremendous hospitality and of the splendid traditional Italian regional cooking and entertainment.

A final note: Cristina Perri still has some copies available of the superb guide-books to the two ECOS VII fieldtrips. The price of each is a very modest Italian Lire 35,000. Requests for copies should be addressed to Cristina (mail or e-mail, see membership list), to whom payment should also be made.

FUTURE MEETINGS

Pander Society 1999 Meeting

The Pander Society will meet in association with the XIV International Congress on Carboniferous and Permian at the University of Calgary, Calgary, Alberta, Canada, that will be held August 17-21, 1999. The first two days of the conference will be devoted to papers on all aspects of the Carboniferous and Permian and if you are interested in this stratigraphic interval you will probably want to attend the whole meeting. However, the Pander Society meeting itself will start on Thursday 19 August with the Second Huddle Workshop and be followed by two days of oral sessions on conodonts (20-21 August 1999). A core conference will also be held on August 19th; Panderers may split their time between the Huddle Workshop and the core conference if they wish. In addition, simultaneous sessions on other aspects of Carboniferous and Permian geology will be held on August 20 and 21. The Canadian Paleontology Conference (an annual event for Canadian paleontologists) will be held on 21 August 1999 as well.

Huddle Workshop II

The first Huddle Workshop (also known as the Huddle Huddle) was held in March 1993 at the University of Missouri at Columbia. The workshop series was named in memory of John Huddle, the first Chief of the Pander Society. It was a hands-on examination of type material and bulk collections of conodonts from the Cambro-Ordovician boundary interval. We would like to revive this series at the 1999 Pander Society meeting in Calgary by making available Canadian type conodonts and other collections to registrants for examination and also by inviting registrants who would like to show collections demonstrating new species, new apparatus reconstructions, or any other aspect of conodonts. We would ask potential registrants to do two things:

1. Provide a list of Canadian types or representative collections that they would particularly like to see at the Workshop. Obviously there are logistical problems in

transporting type material from Ottawa to Calgary, so a sense of what people would particularly like to see would be helpful. We will make every effort to fulfill requests.

2. Provide a brief description (maximum 200 words) of the material they are bringing to the workshop. We will in turn provide this information to Workshop participants. Please e-mail this information to Godfrey Nowlan (gnowlan@nrcan.gc.ca). In this way, we will be able to send out a "list of attractions" for participants in the workshop.

Please send your requests and submissions as soon as possible, but no later than 30 April 1999.

Pander Society Oral Sessions

The general Pander Society sessions are being organized by Godfrey Nowlan and Sandy McCracken (Geological Survey of Canada) and there will be a special session on Permo-Carboniferous conodonts organized by Charles Henderson and Mei Shilong. Please send all abstracts to the organizers of the Permo-Carboniferous Congress. Instructions for preparation of the abstracts is given at the web site for the Congress (see below). The abstract deadline for the meeting is March 31, 1999. For more details on the overall meeting please check the web page at www.geo.ucalgary.ca/iccp or e-mail Charles Henderson, Chairman for XIV ICCP at henderson@geo.ucalgary.ca

Field Trips

A number of field trips to Carboniferous and Permian sections in Canada and the United States are to be held in conjunction with this meeting. One pre-meeting field excursion (Trip 8, August 12-15) will be a Pander Society sponsored trip to Middle and Upper Pennsylvanian Cyclothem Successions in the Midcontinent Basin, USA. Short trips to see the Cambrian Burgess Shale and the Royal Tyrrell Museum of Palaeontology are also available (see web site for details on all of these trips).

Registration

Registration for the Pander meeting is set at \$250 Canadian (about US\$165); a banquet on Friday August 20, 1999, is included in this registration. Registration for the full Congress is CAN\$400 (about US\$264).

AUSCOS 2 July 2000

AUSCOS 2 will form part of a set of interlinked palaeontological events to be held in Sydney in July 2000, under the auspices of the Pander Society, the International Palaeontological Association, the Australasian Association of Palaeontologists, the Macquarie University Centre for Ecostratigraphy and Palaeobiology and IGCP Projects 410 and 421.

Five interlocking events — 3 conferences, 2 IGCP meetings and associated excursions have been programmed to follow on from the Australian Geological Congress (3-7 July, 2000, University of Technology, Sydney). The conferences and meetings are:

1. Australasian Palaeontological Convention-2000 (APC-2000) — including a celebration honouring Professor Barry W. Webby.
2. The Third International Symposium on the Silurian System (Sir Frederick McCoy Silurian Symposium).
3. The Second Australasian Conodont Symposium (AUSCOS-2).
4. IGCP 410 Meeting (The Great Ordovician biodiversity event: implications for global correlation and resources).
5. IGCP 421 Meeting (North Gondwana mid-Palaeozoic bioevent/biogeography in relation to crustal dynamics).

The venue will be at Orange, NSW, 260 km west of Sydney, in the heart of the most instructive Ordovician, Silurian and Early Devonian sequences in eastern Australia. Orange is serviced daily from Sydney by regular air services (4 per day).

1. Excursion package 1 (3 days and 2 nights)

Saturday 8 July: 8am Travel to Yass via Bungonia: Bungonia Group and the Silurian of the Yass Synclinorium; night: Yass.

Sunday 9 July: Travel to Wellington: Silurian (Llandoverly-Wenlock): Quarry Creek, Borenore (graptolites/conodonts/corals); night: Wellington.

Monday 10 July: 8am Wellington to Orange: Late Silurian-Early Devonian – Wellington, Eurimbla and Nubrigyn (autochthonous and allochthonous sequences; channel deposits, carbonate fans, intermittent platform exposure and grand-scale platform-margin collapse); night: Orange. Evening: Registration for APC-2000/AUSCOS-2/McCoy Silurian Symposium/ IGCP Meetings.

2. Conference package (5 days and 6 nights)

Tuesday 11 July: First day of papers – parallel sessions: APC-2000 - general themes; AUSCOS-2 - Cambrian, Ordovician and Silurian conodonts.

Wednesday 12 July: Second day of papers – parallel sessions: APC-2000 - general themes; AUSCOS-2 - Silurian, Devonian and younger conodonts.

Thursday 13 July: Excursion interlude: Three alternatives will be offered:

1. Day trip to Cliefden and Bowen Park; Late Ordovician shelly faunas/conodonts.

2. Day trip to Wellington. Pliocene-Holocene biodiversity: Wellington Caves/phosphate mine/caves vertebrate fauna; Western Plains Zoo (Dubbo); Lake Burrendong Arboretum.

3. Wineries of the central western New South Wales.

Friday 14 July: Third day of papers – parallel sessions: APC-2000 (Mesozoic and Cainozoic papers); Sir Frederick McCoy Symposium papers. Evening: Conference Dinner.

Saturday 15 July: Papers for APC-2000/AUSCOS-2/McCoy Symposium continued and Meetings of IGCP410 and IGCP421.

3. Excursion package 2 (5 days and 5 nights)

Sunday 16 July: Travel by road to Tamworth via Scone, Timor and Nundle: examination of Timor and "Crawney" limestones, (shelly faunas, conodonts; autochthonous and allochthonous sequences); night: Nemingha (near Tamworth).

Monday 17 July: Cambrian-Devonian of the Tamworth Belt: Woolomin, Loomberah, Tamworth Hospital Quarry (shelly faunas, conodonts, mainly allochthonous sequences); night: Nemingha (near Tamworth).

Tuesday 18 July: Autochthonous Early and Middle Devonian limestones at Sulcor, Attunga and Yarramanbully (shelly faunas, conodonts; autochthonous and allochthonous sequences); Travel to Goondiwindi (via Moree Artesian Spa Baths); night: Goondiwindi Possibility: Depart Tamworth for other destinations (own arrangements).

Wednesday 19 July: Travel to Biloela. Mid-Palaeozoics at Monto (briefly) en route; night: Biloela.

Thursday 20 July: Travel to Gladstone: Devonian-Early Carboniferous of Mount Morgan-Rockhampton-Raglan area (Mount Etna, Horrigan Creek, Mt Holly (conodonts, corals; autochthonous vs allochthonous stratigraphy); dinner at Raglan Hotel; night at Gladstone.

4. Excursion package 3 (5 days and 4 nights)

Friday 21 July: Depart Gladstone 11am for Heron Island by catamaran for Sir Frederick McCoy Symposium Carbonate/Build-up Workshop — focussed on carbonate sedimentation and reef-structuring organisms. Convenor: John Jell.

Saturday 22 July to Monday 24 July: three full days on Heron Island.

Tuesday 25 July: Depart Heron Island at 1.30pm to arrive Gladstone at 3.30pm. Flights back to Brisbane / Sydney / Cairns around 4pm or 6pm. Participants to make their own airline bookings.

Further details, costs and registration instructions available from John Talent or on:

<http://www.es.mq.edu.au/MUCEP/auscos/auscos.htm>
To receive second circular (late 1999), please register as soon as possible — before October, 1999.

Note also that details of the IGCP 421 meeting in Peshawar in September 1999 are available on the MUCEP web pages at:

<http://www.es.mq.edu.au/MUCEP/igcp421/meetings/peshawar1.htm>

ECOS VIII Spain and France 2002

The next ECOS meeting, ECOS VIII, will be organised by the University of Toulouse (France) and the University of

Oviedo (Spain), together with colleagues from other Spanish and French collaborating universities. A probable date for the meeting is during June or July (before 15th) 2002. The scientific meeting will take place at the University of Toulouse. A preliminary field-trip plan has been prepared and will be discussed during the next few months.

North American Palaeontological Convention (NAPC) Summer 2001

The precise dates of this meeting are yet to be decided. The Host Sponsor is the Museum of Paleontology, University of California, Berkeley, and the CoSponsors are all Association of North American Paleontological Societies (ANAPS), which now includes Pander Society representation. The Host Sponsor and ANAPS are currently accepting suggestions for theme sessions in which all paleontologists can participate. A session restricted to conodont biostratigraphy, for example, would not be appropriate, but one on paleobiology, extinction, or even the nature of the conodont animal, that paleontologists outside of conodont workers could contribute to would be. An NAPC website that will carry updated details about the conference is scheduled to go on line early in 1999.

Send your theme session suggestions either to Jere Lipps (jlipps@ucmp1.berkeley.edu) at the Department of Integrative Biology & Museum of Paleontology, University of California, Berkeley, CA 94720 USA, or to Steve Leslie (saleslie@ualr.edu), Pander Society ANAPS representative, at the Department of Earth Sciences, University of Arkansas at Little Rock, Little Rock, AR 72204 USA.

A POEM

Dong Xiping has sent a poem originally published in the informal "Journal" of the Department of Geology, Peking University in 1986 (In Chinese) and translated

into English in July, 1998. Xiping provides two caveats: 'First, not covering the important Paleobiology of conodonts, because when I wrote it, I had no idea about it. Second, there is no rhyme after translation.' He suggested that we might revise or rewrite it before putting it in the Newsletter, but we think it is best included in its unedited form.

For Conodonts

You are not like the dinosaur
Tirelessly showing off his gigantic frame;
Nor are you like ginkgo
Annually making up herself with ancestral green.
You are just yourself
 three times in acid water
 three in hot,
 and three in clean
 till can be no cleaner

You are recorded,
Not only because you posture like swords and spears,
 and appear in five colors,
nor because you are son of the mother rock,
 Brother of the eternal fossils.
 It is your undaunted sprit
 in face of continual disasters,
And your gallop through your courses.

Who says you are strange and obscure,
 that you content your loneliness.
By the river Rhine you have your unique roll
And your biography spread through the world.

The elite of the fossil family.
You linger in my mind,
like the star on a summer night.
How can you tear apart from my memory,
like a dream on a spring day.

SUMMARY OF TOPICS MENTIONED IN RESEARCH REPORTS

A. Cambrian. Abaimova, Albanesi, Bagnoli, Bergström, Clark, Cochrane, Dong, Lehnert, J. Miller, Nicoll, Nowlan, Pyle, Repetski, Serpagli, Smith, Viira

B. Ordovician. Abaimova, Albanesi, Aldridge, Armstrong, Bagnoli, Barnes, Barrett, Bauer, Behnken, Chen, Clark, Cochrane, Dong, Dresbach, Dubinina, Ethington, Ferretti, Freedman, Furey-Craig, Gagiev, Hall, Hanks, Harris, Ivanov, Johnston, Jones, Krueger, Leatham, Lehnert, Leslie, Löfgren, Lommen, MacKenzie, Männik, Mawson, McCracken, G. Miller, J. Miller, Murray, Nasedkina, Nicoll, Nowlan, Percival, Poole, Pyle, Repetski, Sansom, Sarmiento, Serpagli, Shaw, Simpson, Smith, Stewart, Stouge, Sweet, Talent, Viira, Yolkin, Zhang J-h, Zhen

C. Silurian. Aldridge, Bardashev, Barnes, Barrett, Benfrika, Bikbaev, Cockle, Corradini, Dubinina, Fordham, Furey-Craig, Gagiev, Hall, Harris, Ivanov,

Jeppsson, Klapper, Kleffner, Kuglitsch, Männik, McCracken, Metzger, G. Miller, Murphy, Norby, Nowlan, Over, Parkes, Poole, Pyle, Sansom, Sarmiento, Serpagli, Simpson, Snigireva, Talent, Valenzuela Rios, Viira, Yolkin, Zhang S-x

D. Devonian. Alekseev, Bardashev, Basden, Belka, Bender, Benfrika, Bikbaev, Boncheva, J. O. Brown, Bultynck, Capkinoglu, Corradini, Day, Dreesen, Drygant, Dzik, Fordham, Gagiev, Girard, Groessens, Harris, Ignatiev, Irwin, Ivanov, Johnston, Kalvoda, Kharitonova, Kirchgasser, Klapper, Königshof, Kononova, Krumhardt, Kuzmin, LaMaskin, Leatham, Mawson, McCracken, Metcalfe, Metzger, Morrow, Murphy, M. Narkiewicz, Nasedkina, Norby, Over, Perri, Piecha, Poole, Rogers, Ruppel, Sandberg, Sanz-López, Savoy, Serpagli, Snigireva, Spalletta, Sparling, Stoppel, Stritzke, Szulczewski, Talent, Uyeno, Valenzuela Rios,

Weddige, Woroncowa-Marcinowska, Yazdi, Yolkin, Zhuravlev, Ziegler

E. Carboniferous. Alekseev, Appelt, Bardasheva, Barskov, Belka, Bender, Boncheva, Bowden, L. M. Brown, Chen, Ding, Fordham, Gagiev, Groessens, Harris, Henderson, Ignatiev, Jones, Kalvoda, Lambert, Leatham, Luppold, Mawson, Méndez, Merrill, Metcalfe, M. Narkiewicz, Norby, Orchard, Over, Park, Perret, Perri, Piecha, Poole, Purnell, Rexroad, Reimers, Sandberg, Savoy, Scmazzon, Skompski, Somerville, Spalletta, Stoppel, Sudar, Talent, von Bitter, Woroncowa-Marcinowska, Yazdi, Yolkin, Zhuravlev, Ziegler

F. Permian. Barskov, Chen, Clark, Ding, Henderson, Kerner, Klets, Kozur, Lambert, Mei, Metcalfe, Nakrem, Nicoll, Nicora, Orchard, Reimers, Sudar, Wardlaw, Xia, Yao, Yazdi, Zhuravlev

G. Triassic. Ali, Budurov, Henderson, Hirsch, Ishida, Khan, Kilic, Klets, Kolar-Jurkovsek, Kovacs, Kozur, Leatham, Luppold, Marquez-Aliaga, Mastandrea, Mei,

Metcalfe, Nakrem, K. Narkiewicz, Nicoll, Nicora, Onder, Orchard, Paull, Perri, Petrounova, Pevny, Plasencia-Camps, Ramovs, Sansom, Sudar, Swift, Valenzuela Rios, Wardlaw, Xia, Yao, Zhang S-x

H. Palaeobiology. Aldridge, Buryi, Donoghue, Krejsa, Leatham, Plasencia-Camps, Purnell, Sansom

I. CAI. Gagiev, Königshof, K. Narkiewicz, M. Narkiewicz, Pondrelli, Sanz-López, Skompski

J. Geochemistry. Armstrong, Barnes, Belka, Day, Harris, Leslie, Ruppel, Trotter

RESEARCH REPORTS

Galina P. Abaimova. I am actively working on Cambrian and Ordovician conodonts from the northern part of the Siberian Platform.

Guillermo L. Albanesi. I am actively working on Ordovician conodonts (mainly taxonomy, biostratigraphy and paleoenvironmental aspects) from diverse Argentine basins. During 1999 I will be working at the Centre for Earth and Ocean Research, University of Victoria, Canada, directed by Chris Barnes. Here, I will focus my interest on a new project on conodonts from the Cambrian-Ordovician boundary interval in the Volcancito Formation, Famatina Range (Western Argentina).

Dick Aldridge. When I find time for research, conodont palaeobiology still dominates my interests. A large review paper on conodont affinities with Phil Donoghue and Peter Forey is near completion and will be submitted to *Biological Reviews*. Many Panderers will also be aware of the manuscript on the orientation and locational notation of conodont elements that has been produced in collaboration with Mark Purnell and Phil; following comments from a number of conodont workers, a revised version of this paper has been submitted for publication. Papers that appeared in 1998 included a short discussion on chitinozoan affinity (with Sarah Gabbott and Hannes Theron), based on clusters and cocoons of chitinozoans found in the Upper Ordovician Soom Shale of South Africa; conodonts get more than a passing mention in this contribution. Some additional work has also been done on manuscripts on prioniodinid relationships (with Zhang Shunxin and others) and on Chinese Silurian conodonts (with Wang Cheng-yuan).

Alexander S. Alekseev. I am continuing to study Devonian and Carboniferous conodonts from the Russian Platform and the Urals. The main topic as in previous years is taxonomic revision of Moscovian-Gzhelian conodonts from the Moscow Basin and comparison with conodonts from the Midcontinent Pennsylvanian for intercontinental correlation.

Amjad Ali. I am doing a PhD on mid-Palaeozoic and Triassic conodonts from the margins of the Peshawar Basin in northwest Pakistan.

Joanna Appelt. I am working on my Ph.D. project on the conodont biostratigraphy and sedimentology of the Lower Carboniferous in southern Poland. I am also investigating the Sr isotope record of the Upper Tournaisian and Lower Viséan with the aim of checking the SIS method.

Howard A. Armstrong. I am actively working on mid-Ordovician conodonts from limestone clasts in Lower ORS conglomerates in Scotland. Work on REE geochemistry of Lower Palaeozoic cherts is now in press in the *Journal of the Geological Society, London*. Projects continue on biotic recovery, non-linear dynamics in the biosphere and the palaeobiology of deep water conodonts. New projects on mid-Arenig conodonts from the cherts of the Southern Uplands (funded by the British Geological Survey) and the geochemistry of single conodont elements by ICP-MS have been initiated this year.

Gabriella Bagnoli. I am working on Upper Cambrian to Middle Ordovician conodonts from Oeland (Sweden)

and western Newfoundland (Canada), and on Upper Ordovician conodonts from the Carnic Alps (Italy).

Igor A Bardashev. During 1998 I have continued actively working on the Silurian and Devonian conodont biostratigraphy of Middle Asia. In July I visited Willi Ziegler to continue joint work on a monograph of Frasnian conodonts from the Shishkat section. In October-November I was in Macquarie University with John Talent and Ruth Mawson working on the Pragian of Shishkat.

Nina P Bardasheva. I'm continuing work on Carboniferous conodonts and stratigraphy of Middle Asia.

Chris Barnes. I continue to expand field-based Lower Paleozoic conodont studies in the Canadian Cordillera. Detailed platform to basin transects have been sampled in the southern, central and northern Rocky Mountains (with Lee McKenzie McAnally and Leanne Pyle as Ph.D. students). The central Rockies transect was initiated in 1998 and another field season is planned for 1999. Jianqin Chen continues Ph.D. work in Ordovician conodonts from North and South China. Shunxin Zhang recently completed a PDF project on early Llandovery conodonts from Anticosti Island, Quebec, with three taxonomic papers submitted on the abundant faunas. Guillermo Albanesi arrives in January 1999 for a two year PDF, primarily continuing work in Ordovician conodonts from Argentina. David Jowett (M.Sc. student) completed field work in a project to study the Llandovery to lower Ludlow conodont fauna of the Cape Phillips Formation (slope facies), Arctic Islands. Work completed, nearing completion or in process includes: Ashgill conodonts (Whitland section, South Wales with Annalisa Ferretti; Bowan Park Group, N.S.W., Australia in press, Geobios, with Yong-yi Zheng and Barry Webby), Nd isotope work (with Cindy Wright and Stein Jacobsen, one paper in press, one in preparation), modelling the Ashgill glaciation (paper submitted to *Paleoceanography* with Pascale Poussart and Andrew Weaver), Ordovician conodonts of Tarim Basin, China (two papers in preparation with Zhixin Zhao), strontium isotopes curve for the Ordovician and Silurian (published in *Geochimica Cosmochimica Acta*, 1998, Qing *et al.*), evolutionary study of *Paroistodus originalis* - *P. horridus* transition (with G. Albanesi, submitted), Arenig conodonts from the Cow Head Group, Newfoundland (with David Johnston, two part issue in press in *Geologica et Paleontologica*).

Stephanie Barrett. I am currently working on prioniodontid apparatuses. Using well preserved collections from Estonia and Russia, I am concentrating on the apparatuses, the histology of the elements and evidence of functional morphology. If any clusters of prioniodontid elements have been recently discovered, or if any assemblages have come to light, I would be exceptionally interested, as this would obviously be pivotal information for my research.

James E. Barrick. My research continues on problems in Silurian-Devonian and Pennsylvanian conodont biostratigraphy. Gil Klapper and I hope to finish research on the conodonts from the Late Silurian

Henryhouse Formation (Oklahoma) during the upcoming year. The description of Pennsylvanian conodont faunas from the Honaker Trail section in the Paradox Basin (Utah) with Scott Ritter is nearly finished. I will be a co-leader with Phil Heckel and Darwin Boardman of a field trip to examine Midcontinent Pennsylvanian cyclothems and conodont biostratigraphy, held in conjunction with the XIV International Congress on the Carboniferous and Permian to be held in Calgary in August, 1999.

Igor S. Barskov. Research on Carboniferous - Permian conodonts continues.

Alison Basden. Attempts to tie ichthyolith biostratigraphy to conodont chronology continue. A manuscript has been submitted on the ichthyolith succession in the Tyers-Boola area (early Pragian to earliest Emsian) - for which the conodont biostratigraphy was published a few years ago by Talent & Mawson.

Jeff Bauer. I am continuing my study on Joins and Oil Creek (Whiterockian) conodonts. A manuscript should be finished by the middle of 1999.

Fred H. Behnken. I am currently working, as consulting time permits, on Lower Ordovician conodonts from the subsurface of the Southwestern United States (Texas, Permian Basin, Ellenburger Group).

Zdzislaw Belka. I am working on Devonian and Carboniferous conodonts from the Algerian and Moroccan Sahara, Germany, Poland, Spain and Iran. Current projects include (1) high-resolution correlation of the Devonian ammonoid and conodont successions in Morocco; (2) geochemistry of Devonian conodont elements in the epicontinental seas of the southwestern margin of Baltica; (3) conodont- and ammonoid-based graphic correlation of the Visean in Europe.

Peter Bender. I am actively working on Devonian and Carboniferous conodonts from the Rheinisches Schiefergebirge.

El Mostafa Benfrika. I am working on Silurian and Devonian conodonts from Moroccan Meseta.

Stig M. Bergström. During the past year I have been working on a variety of projects but most of these have not involved conodonts. Conodont activities include presentations of papers in Madrid, Bologna, Toronto, and Nanjing; fieldwork in USA, Sweden and the Ordos Basin of north-central China; completion of papers with Oliver Lehnert, Wang Zhi-hao and Stan Finney *et al.*; and work with Dong Xiping on Cambrian paraconodonts and protoconodonts from China.

Alexander Z. Bikbaev. I am studying Silurian and Devonian conodonts of the Urals, involving stratigraphy, paleontology, taxonomy, together with lithology and facies.

Iliana A. Boncheva. I am working on Paleozoic (Devonian and Carboniferous) conodonts from deep

boreholes in North Bulgaria and I've submitted three papers on conodonts for publication.

Alistair Bowden. I am continuing my Masters research into the late Viséan - early Namurian conodont faunas of the Northumberland Trough, northern England. The eventual aim is to compare the biostratigraphy with the sequence stratigraphy to try to understand the influence of sea level change on the diversity and abundance of the faunas.

James O. Brown. I am still working on my PhD at City University of New York (Brooklyn College). A major distraction has been an unusual pyritic fauna (see Brown *et al.* 1998) from the basalmost Lower Tully Member which so far has yielded scant conodonts. However, I would appreciate hearing from anyone familiar with Ctenostomata (Bryozoans) of the Devonian.

Lewis M. Brown. Together with Carl Rexroad, I am continuing work on Desmoinesian conodonts of the Illinois Basin, Kansas, Oklahoma, New Mexico, and Spain. We are working with Carlos Mendez in Spain and Glen Merrill in New Mexico. Undergraduates at Lake Superior State University are active on all projects.

Kiril J. Budurov. I am continuing to work on Triassic conodonts.

Pierre Bultynck. I am actively working on Middle Devonian and Frasnian conodonts from Belgium and on Emsian-Frasnian conodonts from Southern Morocco.

Galina I. Buryi. I am actively working on morphological features of the euconodont animals, indicating that they belong to the independent group Euconodontophylea.

Senol Capkinoglu. I am actively working on Devonian conodonts from the Istanbul region, NW Turkey.

Stephen Carey. My conodont activities are in abeyance for the present, with research interests having shifted to the landscape evolution of southeastern Australia.

Chen Qinbao. I am actively working on Ordovician, Carboniferous and Permian conodonts from China.

David L. Clark. I have a student working on Permian samples that we obtained from Svalbard a number of years ago. Also, I am working on Cambrian-Ordovician conodonts and other microvertebrates in Wisconsin.

Karen Cochrane. I am currently working on the palaeobiology of Cambrian proto-, para- and euconodonts from all over the world. I am particularly interested in the histology and apparatus composition of these early forms, and the relevance this may have to early vertebrate evolution. I am also interested in other phosphatic microproblematica from the Cambrian and Earliest Ordovician. In 1998 I spent four weeks in the USA visiting John Repetski at the USGS, and Ray Ethington and Jim Miller in Missouri.

Peter Cockle. A paper is in press on the Silurian (late Llandovery - Pridoli) conodonts from the Boree Creek area of east-central New South Wales.

Simon Conway Morris. I maintain my interest in conodonts.

Carlo Corradini. I'm working on Silurian and Devonian sections of Sardinia, including a revision of the *Kockelella* Group from top Homeric to mid Ludfordian and its evolution. A second paper on an uppermost Llandovery to Pridoli conodont zonation, mainly based on Sardinian material, will be published next year. A biostratigraphical study of the Devonian succession of southeastern Sardinia is in progress.

Jed Day. I am actively working on late Givetian-early Famennian conodont and brachiopod faunas from western Alberta and the southern NWT of Canada. Work in Alberta is in conjunction with Michael Whalen and Andy Krumhardt (Univ. Alaska-Fairbanks) and Gil Klapper. In 1997 and 1998 we completed sampling of sections through platform-to-basin transition and basinal facies in and around the detached Miette and Ancient Wall carbonate platforms. These new data should greatly improve resolution of correlations of late Givetian-early Famennian sequence packages making up the main architectural units of the buildups. Results of our work in the surface Alberta Rockies will be integrated with results of comparable ongoing work by Tom Uyeno and Jack Wendte (Geological Survey of Canada-Calgary) on the Frasnian rocks of the Alberta subsurface to develop a comprehensive depositional history of the late Givetian and Frasnian of the Western Canadian Sedimentary Basin. These and other data from other North American Devonian successions should allow for the integration of brachiopod and conodont range data for eventual development of a regional North American composite standard for graphic correlation. Together with Brooks Elwood and Rex Crick (both at University of Texas-Austin) work began to develop high resolution magnetic susceptibility profiles for the Eifelian-Frasnian subtropical carbonate in the Iowa Basin. We did detailed sampling through the Eifelian-early Givetian Otis Formation in core and surface sections in southeastern Iowa for comparison with comparable records available from pelagic sections from North Africa (Eifelian-Givetian GSSP) and Europe. Magneto sampling was also completed across the Givetian-Frasnian, and Frasnian-Famennian boundaries.

Detailed sampling of brachiopods and conodonts was also completed from cores and surface sections of late Givetian-Frasnian carbonate shelf strata in southeastern Iowa for development of high-resolution stable carbon and oxygen isotopic records from neritic sections using brachiopod calcites and conodont apatite. This work is being done with Michael Joachimski and his Ph.D. student Robert VanGeldern of the University of Erlangen. In core section, continuous sampling every 20 cm was achieved through 44 meters of middle shelf facies of the Cedar Valley Group (Middle *varcus* through Frasnian Montagne Noire Zone 4 of Klapper, 1989). These geochemical data should provide detailed carbon and oxygen isotopic profiles through the interval of

Devonian T-R cycles Iia-1 to IId to characterize major sequence boundaries and packages as well as a number of significant Devonian bioevents.

Ding Hui. I am continuing to work on Carboniferous-Permian conodonts from North China and recently have embarked with my student on a taxonomic revision of Early Permian (Sakmarian) *Sweetognathus* in the southern part of the North China Platform.

Dong Xiping. I continue to study Cambrian conodonts from Hunan, South China, and Lower Ordovician conodonts from Liaohe Basin, Northeast China.

Philip C. J. Donoghue. I have just completed my post-doc fellowship at the University of Birmingham and returned to Leicester University to continue research on conodont palaeobiology, albeit without a salary! During the past year the component contents of my PhD thesis have either been published or have been accepted for publication. I am currently (with Peter Forey [NHM] and Dick Aldridge) putting the finishing touches to a manuscript which addresses the affinity of conodonts through cladistic analysis of the Chordata. Meanwhile, my cladistic analysis of conodont interrelationships continues, along with work on conodont hard tissue histology, growth and function of the feeding apparatus, as well as interests in the palaeobiology and histology of other lower vertebrates.

Roland J. M. Dreesen. I am no longer actively involved in conodont research, although I still have some projects going on in collaboration with Charles Sandberg and Willi Ziegler on Late Devonian biostratigraphy, carbonate microfacies and paleoecology. Some consulting work has been done for M.Streel (Liège, Belgium) in optimizing correlation of conodont and spore zonations in the Upper Devonian.

Russell I. Dresbach. I finished my dissertation, "Early Ordovician Conodonts and Biostratigraphy of the Arbuckle Group in Oklahoma" and received my Ph.D. from the University of Missouri in May.

Daniel Drygant. I am preparing a monograph on Devonian (Lochkovian-Famennian) conodonts from western Ukraine (genera *Icriodus*, *Polygnathus*, *Palmatolepis*).

Svetlana V. Dubinina. I am actively working on Early Ordovician -Early Silurian conodonts from cherts of the South Urals and on Late Cambrian - Ordovician conodonts from different facies of Kazakhstan and the Russian Platform.

Michiel Duser. I work on regional geology of northern Belgium (Carboniferous to Cretaceous) including stratigraphy and sedimentary geology.

Jerzy Dzik. I hope to complete a manuscript on Frasnian conodont apparatuses in the near future.

Ray Ethington. Work continues on Lower and lower Middle Ordovician conodonts of central and western United States. In particular work is in progress on faunas

from the Manitou Formation in Colorado and the Au Train Formation of the Upper Peninsula of Michigan. John Repetski and I are restudying the faunas from the Upper Mississippi Valley described by Furnish in 1938; a late summer trip provided an abundance of material from the Blue Earth Siltstone in the vicinity of Mankato, Minnesota, including many forms not reported by Furnish. Manuscripts (in association with others) will be submitted shortly that will provide a monographic treatment of *Clavohamulus* Furnish and a new generic name for *Reutterodus borealis* Repetski. Work on the Ibexian/Whiterockian faunas of the Great Basin continues.

Annalisa Ferretti. In association with the organization of ECOS VII, a global revision of the Late Ordovician of Sardinia (with E. Serpagli) and a preliminary study on a new Upper Ordovician section from the Italian Carnic Alps (with G. Bagnoli and E. Serpagli) have been carried out. A Late Cambrian conodont fauna from SW Sardinia was also investigated for the same purpose (with E. Serpagli). Results of a joint study (with C. Barnes and E. Serpagli) on a Late Ordovician conodont assemblage from south Wales, mostly concerning evolution within the *Amorphognathus* lineage, were summarized at the Scientific Session of ECOS VII and will be published next year. Finally, a report on a Late Ordovician conodont assemblage from Bohemia, with the description of a particular extraction technique suitable for argillaceous-calcareous mixed sediments, was published in the ECOS VI Congress Volume.

Barry Fordham. I am working on mid-Paleozoic time scales and conodont biostratigraphy of the Silurian to Lower Carboniferous of the Yarrol Province (central Queensland, Australia).

Kim Freedman. I am currently doing a little work on Upper Ordovician bedding plane assemblages of the prioniodontid *Promissum pulchrum*.

Terry Furey-Grieg. Work continues on Late Ordovician-Silurian conodont faunas from debris flows and olistoliths in and adjacent to the Tamworth belt of north-eastern New South Wales. Two manuscripts on these faunas have been submitted for publication in the past year.

Mussa H. Gagiev. I am actively working on conodonts, stratigraphy, bio-events and CAI of Ordovician, Silurian, Devonian and Carboniferous rocks of Northeastern Asia.

Susana García-López. I am working on conodonts from the Silurian to the lower Carboniferous, mainly focusing on biostratigraphy and biofacies topics. I continue actively working on projects dealing with CAI research in the Cantabrian Zone and Pyrenees (NW and NE of Spain), too. I expect to be busy in the future beginning to prepare ECOS VIII and learning the English language.

Ismet Gedik. I am actively working on Lower Palaeozoic conodonts from the Taurid Belt.

Catherine Girard. I am working on Upper Devonian conodonts from Montagne Noire and continuing the

study of size and shape of Frasnian/Famennian conodonts.

Yakut Goncuoglu I am actively working on Palaeozoic conodonts from the Istanbul-Zonguldak and Tauride tectonic units in Turkey.

Eric Groessens. I am still working on Upper Devonian-Lower Carboniferous conodonts from Belgium.

Jack C. Hall. I continue to work slowly on problems associated with the Ordovician-Silurian boundary in the central Appalachians. I am also finishing some work on bacteria associated with Upper Ordovician conodonts. This past year I was appointed Director of the Environmental Studies Program at UNCW. As those of you who have administrative positions out there know (and I am learning), you don't have much time for research (or anything else!).

Doug Hanks. With Pete Lommen, I am interested in the conodonts and scolecodonts of the Ordovician Decorah Shale of the St. Paul brickyards area, Minnesota.

Anita Harris. I am working on the conodont biostratigraphy and paleogeography of Ordovician through Middle Pennsylvanian rocks in chiefly Nevada, Mexico, Alaska, and Maine. Studies using Nd values in conodonts to fingerprint the paleogeographic affinities of central Alaskan terranes begins in 1999 in conjunction with D.C. Bradley, J.A. Dumoulin, and R. Ayuso, USGS. I am a co-author of a USGS Prof. Paper that has recently been accepted for publication on the Migration of the Acadian orogen and foreland basin across the northern Appalachians. Thus I continue my activities in North America from "Sea to shining sea." I now spend 5-6 months of the year in my southern Florida home.

Charles M. Henderson. My research continues on upper Paleozoic to Middle Triassic of western and arctic Canada. Current projects include (1) Tournaisian coprolitic/disrupted conodont assemblages in core; (2) Lower Carboniferous (Visean) of the southern Canadian Rocky Mountains; (3) Upper Carboniferous and Permian in the subsurface of west-central Alberta and east-central British Columbia; (4) Asselian and Sakmarian conodont distribution in the Canadian Arctic; (5) Artinskian conodonts of western and arctic Canada; (6) conodont faunal changes at the Permian-Triassic boundary in western and arctic Canada; (7) sequence biostratigraphy of the Lower Triassic Montney Formation in the subsurface of the Western Canada Sedimentary Basin; and (8) sequence biostratigraphy of the Middle Triassic Toad and Liard formations, northeastern British Columbia. I am also spending considerable time organizing the XIV International Congress on Carboniferous and Permian which will be held at the University of Calgary in August, 1999; the Pander Society meets in association with this meeting on August 19-21, 1999.

Hans-Georg Herbig. At the moment, no specific conodont related studies are in progress. Main interests are still stratigraphy, carbonate facies and sea level history of Late Devonian and Carboniferous strata in central Europe and Spain.

Francis Hirsch. I am actively working on the phylogeny of Triassic conodonts.

Dmitrii A. Ignatiev. I am participating in the elaboration of the stratigraphic base for detailed geological mapping of the Devonian - Carboniferous of the Southern Urals, Magnitogorsk region. I am especially interested in correlations based on conodont associations in different facies.

Hisayoshi Igo. I am still working on conodonts from Southeastern Asia and Japan.

Steve E.B. Irwin. I continue to work with Late Devonian conodont biostratigraphy/taxonomy.

Keisuke Ishida. I am working on Triassic conodonts from pelagic chert-limestone sequences in the Chichibu Super Belt, SW Japan, with respect to radiolarian biostratigraphy and the Triassic-Jurassic boundary.

Yukio Isozaki. I am currently working on the Permo-Triassic boundary sequences in Japan, using conodont and radiolarian biostratigraphy. The other topic I am involved in is the oldest (3.5 billion years old) fossil bacteria from Australia.

Kirill S. Ivanov. I am studying the conodont stratigraphy of Ordovician, Silurian and Devonian volcano-sedimentary rocks and other units of the Urals, Kazakhstan, and Tian-Shan, and also working on methods of searching for and separating conodonts from cherts and jaspers.

Lennart Jeppsson. I continue to work on a new Silurian conodont zonation and to use conodonts for studying detailed changes through Silurian events. A paper with R. Anehus on density separation of conodonts and heavier particles will appear in *Alcheringa* in early 1999, and another with R. Anehus and D. Fredholm on acetic acid buffering will probably be published in July in *Journal of Paleontology*. The third in the trilogy on Silurian Episodes and Events (with Dick Aldridge) is near completion, as are manuscripts on the mid-Homerian Mulde Event (with M. Calner) and on revisions of the Gotland sequence resulting from the application of the subzones of the *O. s. rhenana* Zone.

David I. Johnston. Brian Chatterton and I have submitted our manuscript on the taxonomy of Famennian (Late Devonian) conodonts from the Palliser Formation and Wabamun Group, Alberta and British Columbia, Canada. A manuscript on their paleoecology is in preparation. Chris Barnes and I have also made the final submission of the first of two papers on Early to Middle Ordovician (Arenig) conodonts from the Cow Head Group of western Newfoundland, Canada. This paper discusses their biostratigraphy and paleoecology. The second paper will document their taxonomy.

Gareth Ll. Jones. I continue to work biostratigraphically using conodonts, ichthyoliths, foraminifers, algæ, etc. for clients exploring for minerals in the Irish Carboniferous and minerals and oil elsewhere. I am continuing to

research on Dinantian conodonts and also on some Irish Ordovician conodonts.

Jiri. Kalvoda. I continue to study Devonian and Lower Carboniferous conodonts. I am now involved especially in the study of the Tournaisian-Visean boundary interval and in conodont biofacies in Famennian and Tournaisian calciturbidites (with PhD student A. Malovana).

Meghan Kennedy. I am just entering the field as an interested student, so have no focused research interests yet.

Dale A. Kerner. My current research involves conodont and ammonoid biostratigraphy and sequence stratigraphy of the Aktasty section (Lower Permian) exposed in the Pre-Uralian Foredeep of northern Kazakhstan.

Fazl-i-rabbi Khan. I am working on mid-Palaeozoic and Triassic conodonts from various localities in northwest Pakistan (Peshawar Basin and Chitral).

Elena Kharitonova. I am working on Upper Devonian conodonts from the northwestern part of the Russian Platform.

Ali Murat Kilic. My PhD research in Triassic conodonts from the Kocaeli Peninsula continues.

William Kirchgasser. Gil Klapper and I are working on a manuscript on the Frasnian (Upper Devonian) conodont sequence in New York State. My research on the North Evans Limestone (conodont-bed) conodonts continues.

Gilbert Klapper. I am continuing research on Upper Devonian, Frasnian conodonts from the Montagne Noire, the Canning Basin, and elsewhere. A manuscript with Thomas Becker was recently completed, entitled: "Comparison of Frasnian (Upper Devonian) conodont zonations" and submitted for the ECOS VII volume. Manuscripts with Tom Uyeno (Ontario Upper Devonian), Bill Kirchgasser (New York Frasnian), and Jim Barrick (Henryhouse, upper Silurian) are in preparation.

Mark Kleffner. I am completing the latest revision of a conodont- and graptolite-based Silurian chronostratigraphy (with James Barrick) and preparing a manuscript based on it that I hope will be ready to submit for publication early in 1999. I am also attempting to use conodont distribution in the Appalachian Basin to extend sequence recognition from the foreland portion of that basin in New York into Ohio and Tennessee. I plan on resuming work on a project I began nearly ten years ago, on the nature of the Lockport/Salina contact in the midwestern basins and arches region. Potentially promising sections with boundary strata in Ohio previously not known to me will be sampled during the spring of 1999. Finally, on a smaller scale, I hope to complete a project on the nature of the Brassfield or lower Noland/Dayton and Dayton/Estill contacts in southern Ohio.

Tatyana V. Klets. My interest in Permian and Triassic conodonts of Northeast Asia continues.

Curtis R. Klug. Despite very limited facilities after moving to southwestern Florida, I am still trying to pursue my interests in Devonian conodonts and miospores. I am currently wrapping up a paper on the conodonts and miospores of the Wisconsin Devonian to be published in early 1999. The combined examination of the conodonts and miospores presents a more detailed picture than either of the two biotic groups taken individually. As a consequence, a rather different interpretation is suggested for the biostratigraphic relationships and depositional history of the westernmost deposits of the Michigan Basin.

Tea Kolar-Jurkovsek. I am continuing work on Triassic conodonts from Slovenia.

Peter Königshof. I am continuing research on CAI in Germany and in the Montagne Noire. A new project deals with microboring organisms in conodonts. Other current activities include biostratigraphy and facies of Middle to Upper Devonian reef-influenced carbonates in the Rhenish Basin.

Lyudmila I. Kononova. I am continuing to study Middle and Upper Devonian (mainly Frasnian) conodonts from the Russian Platform and the Urals. The description of Frasnian conodonts from the central part of the Moscow Syncline reference section is near completion.

Sandor Kovacs. This year I have not been very active on conodonts; some work has been done on the Ladinian/Carnian boundary, in collaboration with Italian colleagues, and on conodont metamorphism (with Milan Sudar).

Heinz W. Kozur. I am actively working on Cambrian to Triassic conodonts of Turkey; Permian and Lower Triassic conodonts of Iran, Sicily, Greenland; Taxonomy, biostratigraphy and paleogeography.

Richard J Krejsa. In collaboration with Dr. Tom Diekwisch, Baylor College of Dentistry, I am currently involved in the preparation of two joint-authored manuscripts on the development and bio-mineralisation of hagfish teeth. I presented an oral paper entitled "Concerning Basal Bodies and Conodont Growth: A Biological Opinion" at ECOS VII, and a lecture entitled "Hagfish Teeth and Conodonts" in the 90th Anniversary Lecture Series "Developmental, Molecular, and Evolutionary Biology of Dental Tissues" sponsored by the Baylor College of Dentistry, Dallas, Texas, 16 November 1998. I will present a Lecture entitled "Skin, scales and Conodont Tales" at the Quarterly meeting of the Central Coast Biological Society, Avila Beach, California, 4 February 1999.

Diane M. Krueger. I am working hard to complete my dissertation on Middle and Upper Ordovician conodonts from the Ouachita Mountains of Arkansas and Oklahoma. I should defend in spring of 1999!

Andrea Krumhardt. I am currently working full time on Quaternary and Holocene lake sediments (known as overburden or kitty litter to most of you) from various localities in Alaska as well as Mongolia and the Pacific northwest states. I still am trying, however, to reduce the pile of conodont samples collected in 1997 and 1998 with Mike Whalen (UAF) and Jed Day from Late Devonian sequences in the Jasper area of the Canadian Rockies.

Jeff Kuglitsch. My current research includes conodont biostratigraphy of the Silurian subsurface Michigan Basin and conodont biostratigraphy and strontium isotope stratigraphy of adjacent Silurian outcrops in Wisconsin and Upper Michigan. I am also examining the relationship between Silurian ostracode and conodont faunas in the same region.

Mira T. Kurka. I am currently working with my colleague Dr. Paula J. Noble (radiolarians) solving a variety of geological problems in the Paleozoic of the Great Basin, USA.

Alexei Kuzmin. I continue to work on Upper Devonian conodonts.

Todd A. LaMaskin. As my current hobby, I am working on further refinement of conodont biostratigraphy of the Frasnian-Famennian Guillemette Formation of Eastern Nevada, USA, and correlation to the Devonian Global Sea-level Curve. Professionally, I am a geologist with Dames & Moore in Richmond, VA.

Lance L. Lambert. I am actively working on various Carboniferous and Permian conodont projects, trying to clear the extended backlog from several years back.

W. Britt Leatham. I am continuing biostratigraphic investigations of conodont faunas of the middle Ordovician through middle Devonian, Mississippian, and lower Triassic of the western USA, focusing primarily on localities in California and Nevada. Additionally, I am still dabbling in ecological interpretation of element morphology and apparatus composition.

Oliver Lehnert. For the next two years I will be working on Ordovician conodont biostratigraphy in the Pogonip Group and the Eureka Quartzite in Southern Nevada and Eastern California and I hope a study of conodonts from the Ely Springs Dolomite in this region will follow. The conodonts should help me to check the sequence stratigraphy in these „forgotten dolomites“ of the southern Great Basin. However, I am not giving up interest in studying Cambro-Ordovician faunas from South America and recently I started looking at some material from glacial erratic boulders of Northern Germany.

Stephen A. Leslie. I am busy finishing a manuscript detailing the taxonomy of Mohawkian (Ordovician) conodonts from eastern North America and Northwestern Europe. I spent much of 1998 collecting and processing samples from Joachim Dolomite in north-central Arkansas. I have recently begun describing this fauna and the biofacies relationships in the Joachim. My study of the Ordovician of northern Arkansas will

expand in 1999 to begin a detailed analysis of all Middle and Upper Ordovician rocks preserved in this area with a goal using conodont graphic correlation and sequence stratigraphy to investigate the tectonic history of the southern margin of the Ozark Dome. I also am continuing my work with Chris Holmden investigating stable isotope and REE geochemistry of conodonts.

Anita Löfgren. I am continuing work on lower and lower Middle Ordovician conodonts, mainly Baltoscandic faunas. Currently I am working on stratigraphy and correlations in the upper Arenig. Some taxonomic papers (on "*Scolopodus peselephantis*", on *Semiacontiodus cornuformis* and on *Cornuodus longibasis*) resulting from this are being published. Together with Ray Ethington and John Repetski I have just finished a paper on "*Oneotodus variabilis*", and I am working on another paper with Tania Tolmacheva on *Paracordylodus gracilis*. Another very interesting project is continued work on the Mäekalda section in Estonia with Viive Viira.

Pete Lommen. With Doug Hanks, I am interested in the conodonts and scolecodonts of the Ordovician Decorah Shale of the St. Paul brickyards area, Minnesota.

F.W. Luppold. I am actively working on Upper Carboniferous conodonts in the Carnic Alps and Upper Muschelkalk conodonts in Germany, in collaboration with colleagues from Italy and Germany. A paper on Triassic (Muschelkalk-Keuper) conodonts and palynology of some boreholes in Saarland is in preparation.

Peter MacKenzie. I am currently a Vice President-Geophysics of a small independent oil and gas exploration company and am trying to find the time to tighten up previous work on the *Amorphognathus superbus* - *A. ordovicicus* Zone of the Cincinnati.

Peep Männik. I am actively working on the evolution, ecology and taxonomy of Ordovician and Silurian conodonts from the Baltic, Arctic regions and Siberia, and on conodont-based high-resolution stratigraphy. Joint studies of the distribution of conodonts and graptolites in the Baltic are going on with Dr. D. Loydell (Portsmouth, U.K). From the beginning of 1998 I am acting as a co-leader of the IGCP Project 406 "Circum-Arctic Lower and Middle Palaeozoic Vertebrate Palaeontology and Biostratigraphy".

Ana Marquez-Aliaga. I am actively working on Triassic conodonts from Spain.

Todd L. Marsh. I am currently working on Mohawkian conodonts from central New York State in the Mohawk and Black River Valleys. Conodonts are being used to integrate the carbonate facies to the shale facies in the foreland basin.

Adelaide Mastandrea. I am actively working on Ladinian and Carnian conodonts from the Dolomites (Northern Italy) with special regard to the Ladinian/Carnian boundary. I am also investigating conodont faunas of the Norian-Rhaetian from Calabria (Southern Italy).

Ruth Mawson. I have been attacking, with John Talent, a slew of conodont faunas ranging in age from Ordovician to Early Carboniferous (Tournaisian). A manuscript with John has been submitted for publication on the mid-Tournaisian conodont faunas from low in the Ruxton and Teddy Mountain formations and their ramifications as regards Early Carboniferous transgression events in north-eastern Australia. A review (with John Talent) of correlations within the Devonian of eastern Australia is in press. Nearing completion are manuscripts (with John Talent) on the mid-Devonian faunas of the Mount Morgan area (with Alex Taube and Barry Fordham as well) and the Early Devonian faunas of the Rockhampton-Raglan region - both in central Queensland, and the late Pragian-Emsian conodont faunas of the Taemas-Wee Jasper area of southeastern Australia. With John and Andrew Simpson I am organising next year's Second Australasian Conodont Symposium (AUSCOS-2) in Orange, New South Wales.

Alexander (Sandy) McCracken. A GSC Bulletin manuscript on the Ordovician paleontology (conodonts, macrofossils, ostracodes, graptolites) and stratigraphy of Baffin and Akpatok islands, Arctic Canada, has been submitted (with T.E. Bolton, B.V. Sanford, M.J. Copeland, J. Riva, and others). I am presently studying Silurian-Devonian conodont samples from the eastern Arctic Islands. My Devonian work is mainly from western Canada (eastern British Columbia, western Alberta, southern Yukon and Northwest Territories) with some samples from Ontario.

Selam Meço. I am working on Palaeozoic and Triassic conodonts from Albania.

Mei Shi-Long. I am actively working on Permian conodonts in cooperation with Bruce Wardlaw, Walter Sweet and Charles Henderson; and Permian sequence stratigraphy and GIS with Charles Henderson. I am going to work with Charles in Calgary for one year from March 1999 to March 2000 on Permian and lower Triassic conodonts, sequence stratigraphy and GIS.

Carlos A. Méndez. I am investigating Upper Carboniferous conodonts in the Cantabrian Mountains (north Spain) together with a related project on the biostratigraphy of Upper Moscovian-Lower Kasimovian. A joint project on Pennsylvanian conodonts with Carl Rexroad and Lewis Brown is making progress.

Glen Merrill. I continue to work with Peter von Bitter on *Diplognathodus coloradoensis* and with Carl Rexroad and Lew Brown and their students and colleagues on several Illinois Basin Pennsylvanian projects. With both of them and Kurt Johnston a project is about to commence on the Upper Mississippian-Lower Pennsylvanian of West Texas and New Mexico. Several distinct projects are underway on the Pennsylvanian of the Appalachians, some alone and some with students. I am working with a student on the mid-Carboniferous boundary in central Texas.

Ian Metcalfe. I am currently working on Permo-Triassic boundary conodonts from South China in conjunction with isotope geochronology, and Permian conodonts of

Australia (with Bob Nicoll). A paper on Devonian and Carboniferous conodonts from the Kanthan Limestone of Malaysia is under preparation and work continues on Permo-Triassic conodonts of Malaysia and other parts of SE Asia.

Ron Metzger. I am planning on completing a manuscript on Silurian conodonts of Iowa in collaboration with Brian Witzke. Then I hope to get back to working on multielement reconstructions of Devonian conodonts from the State Quarry Limestone of Iowa.

Giles Miller. My conodont activities this year have involved a joint project with Dr Tiitu Marss (Tallinn Technical University, Estonia). We have put together a paper on Pridoli (Silurian) conodonts, thelodonts and acanthodians from the Much Wenlock area of the Welsh Borderland, UK. I travelled to Tallinn last summer to finish the paper, also looking at the collections of Viive Viira and collecting from the Ordovician of the Pakri Peninsula. Our paper has been submitted to Palaeontology, a poster exhibited at the Pal. Ass. Meeting and an abstract published.

Jim Miller. I am working on several projects involving Upper Cambrian and Lower Ordovician conodonts. Work continues on faunas from the Ibox area of Utah, and in particular with several colleagues, including Ray Ethington, on relating conodont, trilobite, and brachiopod faunas to a detailed sequence stratigraphic framework. I also work with several colleagues on Upper Cambrian-Lower Ordovician stratigraphy and conodont faunas of western Colorado. These strata are mixed siliciclastic-dolomite facies in an extension of the North American craton called the Transcontinental Arch. I am also working on similar facies of this age in cratonic areas of Michigan (with Ray Ethington), Wisconsin, Minnesota, and from drill cores in Iowa. Dolomites, sandy dolomites, and dolomite-cemented sandstones are producing surprisingly good conodont faunas with excellent preservation, so that it is possible to recognize biostratigraphic units established in limestone facies such as in Utah, Texas, and Oklahoma. Along with Oliver Lehnert, John Repetski, Ray Ethington and Walt Sweet I am revising the taxonomy of *Clavohamulus* and some related taxa.

Jared R. Morrow. I am continuing my work with Charles Sandberg and others on Late Devonian conodont-based event stratigraphy in the Great Basin region, western US, including new data regarding the dimensions of the Alamo impact structure and extent of its related deposits. Also, I have begun a cooperative study with geochemists examining the demise of late Frasnian (mid-Late Devonian) stromatoporiid-coral carbonate build-up communities in central Nevada.

Mike Murphy. I am still working on the conodonts of the Silurian-Devonian boundary interval in the Barrandian with Nacho Valenzuela and Peter Carls, on integrating the biostratigraphy of the conodonts and corals of Nevada with Alan Pedder, and on trying to improve the taxonomy and biostratigraphy of the Lower Devonian conodonts of central Nevada.

Suzanne Murray. I am currently working on Ordovician conodonts from deep marine cherts of the Lachlan Fold Belt, Australia.

Hans Arne Nakrem. I am still working on Triassic and Permian material from Svalbard, and also some core material from the Barents Shelf. Office duties slow down the progress, but results are to be published!

Katarzyna Narkiewicz. I continue biostratigraphic and CAI studies of the subsurface Middle Devonian in the Lublin area (SE Poland). I have submitted (with J. Grabowski and P. Poprawa) a short paper on paleomagnetism and thermal history (based on CAI) of the Triassic in the Tatra Mts. (Inner Carpathians). I am also about to complete a paper on Middle Triassic conodont biostratigraphy in several well sections in the Polish Lowlands.

Marek Narkiewicz. I am working on Middle to Upper Devonian stratigraphy, co-operating with conodont students in order to constrain the age of the transgressive horizons within the carbonate platforms of southern Poland (Radom-Lublin area, Carpathian substratum). I have edited a volume on the basin analysis of the Polish Lowlands (to appear January 1999) including several papers on Devonian to Carboniferous sequence stratigraphy (using i.a. conodont data) as well as papers on regional patterns of thermal maturity based i.a. on CAI distribution.

Victoriya A Nasedkina. I am actively working on Devonian and Ordovician conodonts of the Urals; stratigraphy, paleontology, taxonomy, and facies.

Robert S. Nicoll. I am working on Permian and Triassic conodont faunas from Western Australia, Timor and the P-T boundary section at Meishan, China. Permian samples from the Bowen Basin in eastern Australia have been collected and are not expected to produce conodonts, but one may hope. Some late Cambrian-Early Ordovician samples from western New South Wales should also be collected early in 1999.

Alda Nicora. I am actively working on Anisian/Ladinian conodont biostratigraphy of sequences from Lombardy and the Dolomites (North Italy) and on Permo-Triassic conodont biostratigraphy of successions from the Dolomites.

Rod Norby. I am still working on the 'Lochriea' apparatus with Peter von Bitter, on the Silurian of Illinois and southeastern Wisconsin with Mark Kleffner, Don Mikulic and Joanne Kluessendorf, on the Devonian of eastern Illinois with Curt Klug and Zak Lasemi and on the mid-Mississippian of western Illinois with Zak Lasemi.

Godfrey S. Nowlan. I am currently working on: (1) Cambrian and Early Ordovician conodonts from the subsurface of the Western Canada Sedimentary Basin and the Williston Basin. (2) As part of the work of the IUGS Cambrian - Ordovician Boundary Working Group, of which I am Secretary, I have completed a manuscript (with Bob Nicoll, Jim Miller, John Repetski and Ray

Ethington) on the genus *Iapetognathus* and its ancestor; this is to be published in early 1999 by Brigham Young University Geology Studies. (3) Ordovician and Silurian stratigraphy and conodont biostratigraphy of the Williston Basin. (4) Lower Palaeozoic conodonts from the Appalachian region of Canada. (5) Ordovician and Silurian conodont biostratigraphy of the eastern Arctic Islands, Canada in support of a major project on eastern Ellesmere Island. (6) Ordovician conodonts and graptolites from the Glenogle Formation, Rocky Mountains, Canada (with Brian Norford and Henry Williams). (7) A project on Lower and Middle Ordovician palaeontology of the Anticosti Basin is also near completion.

Fuat Onder. I am investigating Triassic conodont faunas from autochthonous sequences (rocks locally are low-grade metamorphosed limestones containing conodonts) in Western Turkey. I also supervise Ali Murat Kilic in his PhD on Turkish Triassic conodonts from Kocaeli.

Mike Orchard. I continue to be preoccupied with Triassic conodont biochronology and multielement taxonomy. Natural assemblages of *Neogondolella* have moved to the front of the to-do list, whilst systemic/stadial boundary studies push hard. A second front is being maintained on Late Paleozoic (Carb-Perm) conodont biostratigraphy of the 'exotic' Cache Creek Group, and Cordilleran terranes in general.

Gladys Ortega. I am continuing my studies on Ordovician-Silurian graptolite faunas from Argentina (Precordillera, Famatina and Northwestern basins). My interest is particularly focused on the taxonomy and biostratigraphy of associated graptolites and conodonts.

Jeffrey Over. I am working on Silurian, Upper Devonian, and lower Carboniferous conodonts in North America. Focus is on studies across the Frasnian-Famennian boundary in the Antrim, Chattanooga, New Albany, Ohio shales and strata in New York State and Pennsylvania. This includes biostratigraphic control on Upper Devonian ash beds and recognition of disconformities within the black shale facies. Ovetures are also being made to study Silurian-Devonian strata in Malaysia.

Susan Owen. I'm still employed as a forest hydrologist for the Mark Twain NF in Missouri.

Soo-In Park. I am actively working on Middle Carboniferous conodonts from the Taebaek and Youngwol areas, Kangwondo, South Korea.

Ross Parkes. Wrestling continues with the interesting shallow-water Silurian conodont biostratigraphy of the Quidong area in south-eastern Australia.

Rachel Paull. I am still working on conodonts from Lower Triassic rocks of the western USA, but at a slower pace due to retirement and a move to Colorado.

Pei Fang. I am taking part in compiling the Geological Map of Henan Province (1:500 000) and the accompanying Explanatory Book.

Ian Percival. I am relatively new to conodont research, but have become involved over the past 3 years in studying Cambrian to Devonian microfossils (particularly conodonts) as palaeontologist in the Geological Survey of New South Wales. My primary interests are in the biostratigraphic utility of these faunas, to support the regional mapping programs of the Survey, being conducted in the Lachlan Fold Belt in central NSW (Ordovician-Devonian), and the Koonenberry Belt (Cambrian-Early Ordovician) in the far west of the State. Current conodont studies involve collaborative work with Yongyi Zhen, Barry Webby (Macquarie Uni) and Bob Nicoll on Ordovician rhipidognathids.

Marie-France Perret. I am continuing to work with T. Nemirovska and M. Weyant on a revision of *Lochreia*, including consideration of its first occurrence and evolution. I am always working on Carboniferous conodonts of the Pyrenees and, also, I begin to think about the organization of ECOS VIII in France and Spain!

Maria Cristina Perri. I am focusing research on conodont biostratigraphy of Devonian to Carboniferous and of Lower and Middle Triassic from the Southern Alps. As Secretary General of the ECOS VII, I thank all the participants in the Symposium at Bologna and Modena on June 24-26, 1998 and those who attended the field excursions.

Lyudmila V. Petrounova. I am working with Kiril Budurov on Triassic conodont taxonomy and biostratigraphy in Bulgaria.

Josef Pevny. I am actively working on Middle and Upper Triassic ichthyoliths, dermal denticles and fish teeth from the Slovak Karst, on Anisian to Norian conodonts from pelagic facies and at the boundary with platform facies in central Slovakia.

Matthias Piecha. I am working on Devonian and Carboniferous conodonts from the Rhenish Massif, especially at the Frasnian/Famennian boundary in the shelf area of the Bergisches Land (conodont biofacies and hiatuses). In addition I am working on Middle/Late Devonian conodonts from the Bergish Gladbach Paffrath Syncline.

Pablo Plasencia-Camps. I've just started a 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'm a biologist and intend to study biological aspects of conodonts.

Monica Pondrelli. I am investigating CAI of the Upper Ordovician through Early Carboniferous succession of the Carnic Alps (Austria and Italy).

Forrest G. (Barney) Poole. I am actively working on Upper Ordovician-Upper Mississippian carbonate-shelf stratigraphy in Sonora, Mexico, with Ricardo Amaya-Martinez, William Page and Anita Harris, utilizing conodont ages determined by Harris. Also, I am actively working on Devonian and Mississippian stratigraphy

and sedimentation in the Antler foreland basin of Nevada with Charles Sandberg, utilizing conodont faunas and zonation determined by him.

Mark Purnell. My palaeobiological work on conodont functional morphology, apparatus architecture, and homology continues but now sits within a research framework focused on feeding and diversity of fossil jawless vertebrates (conodonts, of course, being the most diverse group of fossil jawless vertebrates!) I am also working with various collaborators on projects including apparatus architecture of prioniodontids and prioniodinids, and multielement taxonomy of Lower Carboniferous faunas.

Leanne Pyle. I am working on Lower Palaeozoic stratigraphy, conodont biostratigraphy and conodont paleoecology of Upper Cambrian to Silurian platform to basin facies, Northern British Columbia, under the supervision of Dr. C.R. Barnes.

Anton Ramovs. I am studying Middle Triassic conodonts from Slovenia.

Alexey N. Reimers. I am still active in studies of uppermost Carboniferous and Lower Permian conodonts from the Russian Platform and South Urals.

John Repetski. I am working on several Cambrian and Ordovician projects, involving biostratigraphic, CAI, biogeographic, and systematic aspects. Most of these are with various colleagues. The Midcontinent work continues, as does Alaska, Great Basin, and Mexico work; and a new energy project has me back into the Cambro-Ordovician of the south-central Appalachians. Work continues on Ordovician apparatuses, non-conodont phosphatic microfossils, and trying to get conodont dates from eastern North American metamorphosed terranes.

Carl B. Rexroad. I continue work with Lew Brown and other colleagues on Desmoinesian (Upper Carboniferous) conodonts, including palaeoecology related to depositional interpretations. Most of the work is in the Midcontinent U.S.A. but some is with Carlos Mendez on material from Spain. With Joe Devera I am also studying some upper Mississippian conodonts from the Illinois Basin, U.S.A.

Frederick S. Rogers. In a joint project with Tom Uyeno and Jack Wendte of the Geological Survey of Canada (Calgary), I am currently working on Dundee Formation and Hamilton Group (Middle Devonian) conodont biostratigraphy of southwestern Ontario, Canada.

Stephen C. Ruppel. At present I'm trying to finish writing up the results of strontium isotope studies of Devonian conodonts. This work, done in collaboration with Gil Klapper and Jim Barrick, has resulted in a $^{87}\text{Sr}/^{86}\text{Sr}$ secular curve for the entire Devonian.

Charles A. Sandberg. My current interests are Middle to Late Devonian and Mississippian conodont event stratigraphy, extinctions, biofacies, paleoecology, paleobiogeography, and taxonomy. I am currently working under a USGS Bradley Scholar grant and, in

collaboration with Jared Morrow and Willi Ziegler, am concentrating on conodont evidence for the Alamo Impact Event, Kellwasser Events, and other Late Devonian Events across the United States and Western Europe. Together with Barney Poole, I am studying conodonts of the Early Mississippian Joana shelf margin in Nevada. Most recently, I have begun preparation of a series of revised range charts of key late Middle Devonian through Late Devonian conodont species in collaboration with Willi Ziegler, Roland Dreesen, and Jared Morrow.

Ivan J. Sansom. Currently working on a number of conodont related projects, in between lots of Lower Palaeozoic fish work, including: taxonomy, palaeobiology and palaeoecology of shallow water middle Ordovician conodonts associated with fish faunas in Colorado and Wyoming (with Paul Smith); biostratigraphy of conodont and fish-bearing units from the Lower Silurian of China (with Nian-zhong Wang, Beijing, Dick Aldridge and others); palaeobiology of coniform euconodonts; and I've just finished a manuscript on Late Triassic conodonts from Chile.

Javier Sanz-López. I am working mainly on a CAI project including the Cantabrian Zone and Pyrenees in North Spain. In addition I am collaborating on mapping in the central Pyrenees, covering the upper Ordovician to lower Carboniferous. A little of my time is dedicated to the Lochkovian in the northernmost Central-Iberian Zone and I hope to begin the ECOS VIII field trip organisation.

Graciela N. Sarmiento. I am actively working on Ordovician and Silurian conodonts from the Iberian Peninsula, Morocco and Turkey.

Lauret E. Savoy. I am still working on the sedimentology, paleoecology, and paleogeographic setting of Devonian-Mississippian marine strata in the southern Canadian Rocky Mountains.

Ana Karina Scomazzon. I'm studying for an MSc on Carboniferous (Pennsylvanian) conodonts from the Amazonas Basin, Brazil, reviewing conodont knowledge, biostratigraphy and palaeoecology.

Enrico Serpagli. Organization of ECOS VII gave me the opportunity to revise, together with members of my team, the Upper Cambrian, Upper Ordovician, Silurian and Lower Devonian sections exposed in Sardinia and in the Italian Carnic Alps. The revision of the *Kockelella* Group from top Homerian to mid Ludfordian and its evolution, and a second paper on a top Llandovery-Pridoli conodont zonation will be published next year.

Tom Shaw. I am working on Lower and Middle Ordovician conodonts from the Illinois Basin.

Andrew Simpson. I have recently completed a paper on Early Silurian faunas from the Broken River area, north Queensland, and a review paper on the Silurian of Australia (with John Talent & Ruth Mawson). I continue work on abundant Late Ordovician faunas from the Carriers Well Formation in north Queensland and have undertaken some preliminary work on other Ordovician

faunas from Queensland. I am finalising a project on calibrating the type coral collections of Professor Dorothy Hill at the University of Queensland with middle Palaeozoic conodont zones and hope to complete this task before the axe falls. Redundancy looms large at the work place and I'm keen to hear of any conodontiferous opportunities elsewhere. I continue an active interest in IGCP421.

Stanislav Skompski. I am still working on Carboniferous conodonts from Poland: their taxonomy, stratigraphical significance and CAI.

Terry Sloan. I am in the final stages of PhD studies (submission imminent) supervised by Ruth Mawson and John Talent involving an automated system of computer-based shape analysis of conodont Pa element outlines for taxonomic purposes.

M. Paul Smith. I am currently working (with Karen Cochrane and Ivan Sansom) on the Cambrian origin and Early Ordovician radiation of conodonts. Work also continues on Ordovician conodonts from East Greenland and the development of the Iapetus passive margin.

Maria Snigireva. I am actively working on Silurian and Devonian conodonts of the Urals, stratigraphy, palaeontology, taxonomy, and lithology and facies.

Anne Somerville. I am nearing completion of my PhD project, working on Upper Visean (Lower Carboniferous) conodont biostratigraphy and biofacies of several sites in Ireland.

Claudia Spalletta. I am still actively working on Early Devonian to Late Carboniferous conodonts from the Carnic Alps (Southern Alps, Italy) together with M. Cristina Perri. As participants on the ECOS VII Southern Alps field excursion may remember, we have a lot of sections in that area requiring more refinement.

Dale Sparling. I have submitted a paper to the *Journal of Paleontology* on conodonts from the Middle *varcus* Subzone in north-central Ohio and Givetian correlation problems.

Ian Stewart. After a period of inactivity I have recommenced unravelling the numerous bedding plane assemblages I have recovered from throughout the Ordovician of south-eastern Australia. Assemblages include: *O. evae*, *Protoprioniodus*, *Paracordylodus*, *Periodon*, *Pygodus*, a ?new platform genus and several coniform taxa.

Dieter Stoppel. I retired in March 1998 but will complete a description of the results of boreholes drilled in the Devonian and Carboniferous in the northeastern part of the Rheinisches Schiefergebirge (Westphalia) where the stratigraphy has been established by means of conodonts. As editor, I hope that I can finish next year the volume "Lower Carboniferous" of the series "Stratigraphy in Germany". This volume, which contains a chapter on the conodonts of the Lower Carboniferous in Germany, will be published in the "Courier" of the Senckenberg society.

Svend Stouge. I am working on conodonts from Baltoscandia (partly with Gabriella Bagnoli), S. China, Canada and Greenland.

Rüdiger Stritzke. I am interested in the Middle and Upper Devonian in the eastern Rhenohercynic area.

Milan N. Sudar. I have continued working on taxonomy, biostratigraphy and paleogeography of Triassic and Paleozoic conodonts of Serbia. I have started studies with M.Stojanovic (Australia) and V.Pajic on the Late Carboniferous and Early Permian conodonts and foraminifers of Northwestern Serbia. Unfortunately, the previously announced research with a Master's student on conodonts and radiolarians in the Triassic of Western Serbia has been postponed.

Walter C. Sweet. I continue to work with latest Ordovician conodonts from three localities in central Nevada. Conodonts are associated in these rocks with graptolites indicative of the *pacificus*, *extraordinarius*, and *persculptus* zones and this makes the study of importance for latest Ordovician biostratigraphy. Preparation of a manuscript for the ECOS volume was interrupted by sudden sale of house and need for immediate move to new, somewhat smaller quarters. So interested parties will have to be satisfied with the ECOS abstract until a more comprehensive volume that includes all our results from central Nevada is complete.

Andrew Swift. 1998 saw little in the way of novel research, but a few new sites for Rhaetian conodonts were discovered in Britain, including in my 'home' town of Leicester. I still retain a camp follower's interest in all things conodont, however, particularly anything from the Carboniferous to Triassic interval. 1999 should see the publication of a small review of Rhaetian conodonts from Britain.

Michal Szulczewski. I am continuing my study of Upper Devonian conodonts and applying them to correlation within syndepositional block-faulted stratigraphic successions in the Holy Cross Mountains, Poland. I am also working on Middle Devonian (Eifelian) icriodid faunas from these mountains.

John Talent. I have been heavily involved with "North Gondwana mid-Palaeozoic" IGCP 421 activities. A well-attended, superbly organised and thus highly successful meeting of this project took place in Esfahan (Iran) in December 1998 with principal focus in the field on the conodont-bearing Devonian-Carboniferous sequences in the Sotori Range and at Chariseh, and less conodontiferous sections in the vicinity of Kerman. Meetings in April and September 1999 will be in Errachidia (Morocco) and Peshawar (Pakistan), both with excursions in which implications of conodont data are prominent. A manuscript - connected with the latter - on Early Ordovician and Devonian (Emsian and Givetian-early Famennian) conodont data from the Karakorum and Hindu Kush in northernmost Pakistan (with Ruth Mawson) has been completed and submitted for publication. Manuscripts are in press on correlations for the Silurian of the Indian Subcontinent and adjacent regions (with O.N. Bahargava), on correlations through

the Silurian of Australia and New Guinea (with Ruth Mawson and Andrew Simpson), and a long one on conodont data from Silurian and Early Devonian debris flows, megabreccias and autochthonous carbonate intervals within and around the Hill End Trough (with Ruth Mawson).

Julie A. Trotter. I am researching the Sr isotopic compositions of conodonts and their suitability for defining the Sr isotope seawater evolution curve. This work is in collaboration with R S Nicoll, M J Korsch (CSIRO) and D J Whitford (CSIRO)

Tom T. Uyeno. I am continuing a joint study on the Beaverhill Lake Group (late Givetian to early Frasnian, Devonian) of subsurface southern Alberta. The project is in collaboration with Jack Wendte (GSC Calgary), who is conducting a detailed study of the physical stratigraphy. To date 90 wells have been studied, of which 46 have been sampled for conodonts. I was joined by Fred Rogers for 7 months in a joint study of the Middle Devonian conodont sequence from a 3-metre diameter shaft in southwestern Ontario.

Jose Ignacio Valenzuela Rios. I am collaborating with Mike Murphy and Peter Carls aiming at the establishment of international correlation of the marine Early Devonian. We are working on sections in Spain (Pyrenees, Guadarrama, Celtiberian), Central Nevada and Bohemia. Last summer Peter and I started a collaboration with Brooks Ellwood (Texas) on Magneto Susceptibility of Lower Devonian rocks from the Iberian Chains and the Pyrenees. Peter and I also keep working on palaeogeographic interpretation of southwestern Europe during the Lower Devonian. Our results challenge modern plate-tectonics movements invoking opening and closing of oceans during Early Devonian times. We are now mainly focussed on the P/E boundary, the *kitabicus* boundary and subdivision of the Emsian; all these topics, are directly related to SDS current activities and to IGCP 421 "North Gondwana Mid-Paleozoic Bioevent/Biogeography patterns in relation to crustal dynamics". A paper comparing lithostratigraphic and faunal (mainly brachiopods and conodonts) successions in Ibero-Armorica will come out this year in *Revista de la Sociedad Espanola de Paleontologia*.

Peter and Mike and I keep picking residues from several Upper Silurian-Lochkovian Bohemian sections that were sampled over the last two years. One of our goals is to learn more about the family Spathognathodontidae during this time-span. Additionally I collaborate with Spanish and Bulgarian colleagues on Middle Triassic biostratigraphic studies (including conodonts) of the Western Tethys Realm.

Viive Viira. I am continuing to work with conodont projects of different ages: late Silurian, early and middle Ordovician, late Cambrian.

Peter von Bitter. I am intermittently working on Carboniferous conodonts from Atlantic Canada, Illinois, U.S.A. and the Canadian Arctic.

Bruce Wardlaw. I am working on extensive collections throughout the Permian. Collaboration with graduate

students from Boise State University and University of Idaho, Dale Kerner and Tamra Schiappa, has yielded definitive conodont faunas from the Lower Permian of the southern Urals. I have finished a monograph with Merlynd Nestell and Darwin Boardman on the Upper Carboniferous and Lower Permian of the Midcontinent. I spent a lot of time correcting the figures to a long awaited compendium on the Guadalupian of the Southwest which is due to be published in March by the Smithsonian Press. Mei Shilong, Lance Lambert, and I have made some breakthroughs on the detailed conodont succession in the upper Guadalupian and lower Lopingian to define the Middle-Upper Permian boundary. Mei and I continue to work on the evolution of the uppermost Permian and lowermost Triassic conodont faunas. Finally, Mei and I have revised the conodont succession in the Permian and now have added the lowermost Triassic from the Salt Range in Pakistan.

Karsten Weddige. I am working on Lower Devonian conodont apparatuses on bedding-planes and on conodont function, as well as on Lower and Middle Devonian conodont stratigraphy of central Europe and Morocco.

Tatiana Woroncowa-Marcinowska [formerly T. Vorontzova]. I am actively working on Lower Carboniferous conodonts and continue my interest in Devonian ones.

Xia Feng-sheng. I am actively working on Permian-Triassic conodonts from Tibet in China.

Yao Jianxin. I am actively working on Permian and Triassic conodonts from China.

Mehdi Yazdi. I have papers in press on Late Devonian bioevents (*Historical Biology*) and on Late Devonian - Carboniferous conodonts from Eastern Iran (*Revista Italiana di Paleontologia e Stratigrafia*). A project on the Carboniferous-Permian boundary in central Iran is ongoing, and conodont species related to the Gondolellidae have been recovered from the Tabas area. I was principal organiser of the IGCP 421 Eshafan meeting programme (5-20 December 1998), including the excursions; several papers and posters on conodonts were presented by delegates. A. Adhaimian and M. Mannani (two of my MSc students) completed their projects on the conodont biostratigraphy of the Devonian sequences in the Soh area (NW of Eshafan) and the Abadeh area (South of Eshafan). V. Hairapetian has begun his project on the conodont biostratigraphy of the Devonian sequences in the Dalmeh area (Garigoon Mountains, NE of Ardekan) which are associated with igneous rocks.

Yevgeny A. Yolkin. I continue to work in cooperation with Nadya Izokh on Ordovician to Lower Carboniferous conodonts of West Siberia. Most attention has been paid to late Llandovery associations from the Gorny Altai and Tuva as well as to Emsian polygnathids

from Salair and Central Asia. The Llandovery faunas are related to fine event correlations and paleogeographical reconstructions within the Altai-Sayan Folded Area. Evolutionary rates of Emsian polygnathids and dechenellids (trilobites) have been examined as a possible approach to finding an acceptable decision for a substage division of the Emsian Stage that could be three-fold (preferably) or two-fold. New conodont samples have been collected from the Lower Carboniferous of Kuznetsk Basin and the Ordovician of Western Sayan, providing Tournaisian-Visean conodonts as well as an association from the Llanvirn/Llandeilo boundary beds (*serra* Zone).

Zhang Jianhua. I am actively working on Ordovician conodonts from China and Sweden.

Zhang Shunxin. I worked with Chris Barnes on Early Silurian conodonts from Anticosti Island, Quebec, Canada in the University of Victoria from Oct. 1997 to Oct. 1998. Now I am working with George Stanley (a coral worker) on the Late Triassic conodonts from the American Cordillera (Alaska) and Canadian Cordillera (Yukon) in the University of Montana.

Zhen Yonyi. I am working on the Early and Middle Ordovician conodonts of New South Wales with I. Percival and B. Webby.

Andrey V. Zhuravlev. I have finished work on the Upper Devonian (Lower Frasnian) conodonts of the north-west part of the East European Platform. Now I am working on Lower Carboniferous and Lower Permian conodonts from the Urals. I have dealt with conodont biostratigraphy, ecology, morphology, and evolution.

Willi Ziegler. I have continued the study of Devonian and Lower Carboniferous conodonts, covering various topics such as high resolution biochronology of conodonts in context with radiometric indicators of the ages of conodont zones, phylogenetic relationships of several genera, biofacies of conodonts and significance in biostratigraphy. Close contacts with the International Subcommittee on Devonian Stratigraphy have been retained in regard to conodont-based subdivision of the Late Devonian into stages; these studies have been conducted with Charlie Sandberg. A major range chart (compiled with Sandberg and Dreesen) of the important stratigraphic species from the Givetian to Lower Carboniferous is in preparation, based on data in Charlie's computer bank. I have started a cooperative project (with colleagues at the Senckenberg Institute) with Maria Snigireva on the Devonian in the Middle Urals. Conodont samples were collected in August 1998 and are being processed. Work with German Devonian specialists continues on the relationship of German classic Upper Devonian Stages with the conodont zonation, which touches on the discussion of substages for the Lower Devonian. Work on Conodont Catalogue vol.6 proceeds slowly.

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