Kenneth L. Taylor

ISSN 1028–1533

INTERNATIONAL COMMISSION ON THE HISTORY

OF GEOLOGICAL SCIENCES

INHIGEO

NEWSLETTER No. 40 for 2007

Issued in 2008

INHIGEO is

A Commission of the International Union of Geological Sciences

&

An Affiliate of the International Union of the History and Philosophy of Sciences

Compiled and edited by Kennard B. Bork
INHIGEO Secretary-General

Edited in Granville, Ohio, USA
Printed in Sydney, Australia

CONTENTS

INHIGEO Newsletter No. 40
(April 2008; regarding events of 2007)

THE INHIGEO BOARD
April 2008

President
Professor Philippe R. TAQUET (France)
Laboratoire de Paléontologie
8, Rue Buffon
Paris 75005, FRANCE
Phone: 33-1-4079-3039
Fax: 33-1-4079-3580
E-mail: taquet@cimrs1.mnhn.fr

Secretary-General
Professor Kennard B. BORK (USA)
Dept. of Geology and Geography
Denison University
Granville, OH 43023, USA
Phone: 1-740-587-6486
Fax: 1-740-587-6774
E-mail: bork@denison.edu

Past-President
Professor Manuel C.S. PINTO (Portugal)
Department of Geosciences
University of Aveiro
3810 Aveiro, PORTUGAL
Tel.: 351 2 34 370 744
E-mail: mspinto@csip.ua.pt

Vice-President Europe
Dr. Martina KÖLBL-EBERT (Germany)
Jura-Museum Burgstrasse 19
D-85072 Eichstätt GERMANY
Tel.: 49 (0) 8421 2956
E-mail: koelbl-ebert@jura-museum.de

Vice-President North America
Professor Kenneth L. TAYLOR (USA)
Department of the History of Science
University of Oklahoma
601 Elm Street, Room 622
Norman, OK 73019, USA
Tel.: 1-405-325-5416
Fax: 1-405-325-2363
Email: ktaylor@ou.edu

Vice-President Latin America
Mr. Gerardo J. SOTO (Costa Rica)
Apartado 360-2350
San Francisco de Dos Rios
San José, COSTA RICA
Tel.: 506-280-0128
E-mail: katomirodriguez@yahoo.com

Vice-President Asia
Professor Hakuyu OKADA (Japan)
4-8-36-601 Yoshizuka
Hakata-ku
Fukuoka 812-0041, JAPAN
Tel.: 81 92 623 8161
E-mail: hokada@bb.mbn.or.jp

Vice-President Australasia and Oceania
Professor David OLDROYD (Australia)
28 Cassandra Avenue
St. Ives, Sydney NSW 2075, AUSTRALIA
Tel.: 61 2 9449 5559
E-mail: doldroyd@optushome.com.au

President's Message
(April 2008)

Dear Members and Friends,

The INHIGEO meeting was held during the summer of 2007 in the lovely small city of Eichstätt, Germany, where we had very successful discussions on 'The Historical Relationship of Geology and Religion.' Martina Kölbl-Ebert, with her German colleagues, perfectly organized this meeting and also the field excursions before, during, and after the sessions. We enjoyed a monastic week inside the Bishop's Seminary, a place very well adapted for fascinating lectures devoted to the Flood and to the floods.

The field trips were so nice, with the Swabian Volcano, with the thermal hot bath of Beuren, and with the Holzmaden Liassic locality and its Hauf Museum full of splendid and complete skeletons of Ichthyosaurs and marine crocodiles. Places we saw, such as the Teckberg and the Schopfloch, were

visited before us—by the young student Georges Cuvier during the spring of 1788. The visit to the Solnhofen lithographic limestone quarries was a must for our excursions, allowing us to see the famous places where the different *Archaeopteryx* specimens were collected. Last but not least, the hiking trip around and inside the spectacular structure of the Ries-Crater of Nördlingen and the Steinheim Basin—and their initial interpretation as volcanic edifices and currently as meteorite-impact structures—was a good example for the history of geological research.

The year 2007 was also the Bicentenary of the Geological Society of London. Many members of INHIGEO were participants in this great historical event. From the 9th to the 11th of November, Martin Rudwick and Hugh Torrens organized a wonderful field trip to the Isle of Wight, following in the steps of Thomas Webster. We hiked on the top of the cliffs near the Needles, or along the seashore, during two splendid sunny days. Back in London, the excellent meeting devoted to a 'Talk with the Founding Fathers' was prepared by Cherry Lewis, and took place inside the Geological Society's Burlington House. The unveiling of the Founding Father's plaque was done by Richard Fortey, the President of the Geological Society, where the original Freemason's Tavern was opened in 1775 and where the first meeting of the Geological Society was held in 1807. This place is today the New Connaught Room. A bicentenary dinner, in period costume, was hosted by the master of ceremonies, Richard Moody. On the last day, the Geological Society dinner, involving 600 participants, took place inside the great hall of the Natural History Museum, under the surprised and amused look of Richard Owen and Charles Darwin.

I must confess, as the unfortunate French president of the INHIGEO, that 1807, the year of the foundation of the Geological Society, was also the year of the continental blockade of Great Britain by Napoléon. It was probably the reason why, as if in remembrance of this event, my Eurostar train was arriving from Paris to Waterloo station in London, why my hotel in Ventnor (Isle of Wight) was the Wellington Hotel, and why Admiral Nelson himself, in costume, was dining at my table during the bicentenary dinner!

But 2008 is another year. And I give to all of you greetings for a rendez-vous this summer in Oslo, for the International Geological Congress.

Philippe Taquet, Paris

Secretary-General's Report (April 2008)

Philippe Taquet and I will be bidding our INHIGEO colleagues a fond farewell this August 2008, when our four-year terms as President and Secretary-General expire. It has been a genuine pleasure for me to work with so many of you over the last four years. The occasion of this last newsletter under my editorship is therefore a good time to thank all who have contributed so much to the success of our INHIGEO endeavors since the wonderful meetings and field excursion in Italy, back in 2004.

Once again we were fortunate in 2007 to have yet another superb annual meeting. All members really do need to applaud the hard work and impressive results generated by our hosts for our meetings in Italy (2004), the Czech Republic (2005), the Baltic States (2006), and Germany (2007). Martina Kölbl-Ebert and her staff, with exemplary help from husband Martin (yes, Martin and Martina), provided an exceptionally well organized and executed set of technical sessions, field trips, and housing arrangements. You are invited to read Mike Johnston's wonderful account, in this newsletter, of our time in Eichstätt. Whether you attended the meeting or had to miss it, Mike paints a fine portrait of all elements of the INHIGEO–2007 meeting. And for those interested in the specific work of our annual Business Meeting, you are welcome to scan the Minutes recorded below (with large thanks to my wife, Kay, for taking excellent notes during the course of the discussions).

It is difficult to believe that another International Geological Congress (IGC) is upon us. Our annual meeting for 2008 will be held in association with the 33rd IGC, to be held in Oslo, Norway. As of this writing we do not have all of the details written in stone, but there should be a strong set of papers concerning the history of geology and an enjoyable and informative pre-Congress boat trip around the Oslo Fjord, looking at key outcrops in the history of our understanding of metamorphic rocks.

This year of 2008 was also another episode in our biennial election cycle. We had twenty-two candidates, from nine countries, nominated. Also nominated were two candidates for Honorary Senior

Membership and a complete slate of officers for the coming 2008–2012 period. Thanks are extended to all of you who cast your ballots. The return was very good and the candidates should be gratified by the positive responses.

For those far-sighted persons looking beyond 2008, it is pleasant to report that our INHIGEO schedule of meetings is now well set, right through the 34th IGC, to be held in Brisbane, Australia, in 2012. Our Canadian colleagues have generated an excellent program and field-excursion itinerary for August 2009. The primary dual topics of the symposia will be (a) the development of the petroleum industry and (b) the quest for exceptional fossil sites (Lagerstätten). The mid-meeting trip heads into Calgary for a tour of the famous Glenbow Museum, followed by a walking overview of the building stones in the imposing city on the plains. An attractive post-conference field trip (15–19 August 2009) includes stops at Dinosaur Provincial Park, the Royal Tyrrell Museum, Banff and Lake Louise, and Yoho National Park, site of the amazing Burgess Shale fossil beds. It promises to be another exceptional opportunity for INHIGEO members. Things continue to be exciting in 2010 and 2011. Our Spanish colleagues have created a fine meeting for 2010, centered on the theme of 'The History of Mineral Resources.' Our centers of operation will be Madrid and Almadén, Spain, and a strong set of field excursions have already been planned. In 2011 we will be hosted by our Japanese friends, as we head to Toyohashi, Japan, to consider such topics as the history of tectonics, geology and myth, and geoscience in literature. Extremely interesting field trips have been arranged for before, during, and after the technical sessions. Their content will range from tectonics, to Japanese history, to examples of how geology intersects with Japanese culture and religion. Details about future meetings will be forthcoming as the dates approach.

The Commission's productivity has remained high in 2007 and 2008. We all realize that it can take time from when talks are given at a major meeting until the papers stemming from the presentation are actually published. It is therefore gratifying, for all involved, to report that the valuable papers first presented back in 2003, at the Dublin meeting of INHIGEO, are now available in an impressive book, *Four Centuries of Geological Travel*. Patrick Wyse Jackson edited the book and it was published as Special Publication 287 (2007) of the Geological Society of London. Papers focused on the history of geophysics, originally presented at the INHIGEO–2005 meeting in Prague, made their appearance in *Centaurus* (Volume 48, issue 4, October 2006), and in Volume 26, number 2 (2007) of *Earth Sciences History*. The Geological Society of London is currently producing, as Special Publications, books featuring papers first presented at the INHIGEO–2006 meeting in Vilnius, Lithuania, and the INHIGEO–2007 meeting in Eichtstätt, Germany. The Vilnius volume, edited by INHIGEO members Rodney Grapes, David Oldroyd, and Algimantas Grigelis, concerns *Contributions to the History of Geomorphology and Quaternary Geology*. The book featuring material from the Eichtstätt symposium considers *The Historical Relationship of Geology and Geology* and is being edited by our Commission colleagues Martina Kölbl-Ebert and Bernhard Fritscher.

Our work is made possible by important support from a variety of institutions, and it is fitting to offer public thanks to them. Our financial base is built upon annual grants provided by the International Union of Geological Sciences (IUGS). We also are aided by funds supplied by the International Union of the History and Philosophy of Science, Division of History of Science and Technology (IUHST/DHST). Production of our newsletter and underpinning of our annual meetings could not proceed without that much-appreciated help. For four years, Denison University has been generous in providing me with an office, computer, e-mail, and a valuable variety of services. The University of New South Wales, David Oldroyd's host institution, has generously mailed out our newsletters after they are produced by our Australian printer. And large thanks to David for receiving the Granville-edited text of our newsletter, sent on CDs, and shepherding the printing and mailing processes to completion.

This is my last compilation and editing of the INHIGEO Newsletter. I would like to take this opportunity to thank all of you who have contributed to the richness of our shared document over the last four years. Furthermore, it is a delight to thank all of you with whom I have interacted, at meetings, through e-mailing, and as we worked to create our newsletter. The camaraderie within the Commission is striking and the membership is to be commended for its combination of professionalism and friendship.

Kennard B. Bork, Granville, Ohio

Minutes of the INHIGEO Business Meeting 2007
Bishop's Seminary / 'Collegium Willibaldinum'
Eichstätt, Bavaria, GERMANY
Tues., 31 July 2007

Present: Filomena Amador (Portugal); Carol Bacon (New Zealand); Zoya Bessudnova (Russia); Kennard Bork (USA); David Branagan (Australia); Ana Carneiro (Portugal); Alena Cejchanova (Czech Republic); Bernhard Fritscher (Germany); Gaston Godard (France); Algimantas Grigelis (Lithuania); Gottfried Hofbauer (Germany); Bernhad Hubmann (Austria); Mike Johnston (New Zealand); George Khomizuri (Russia); Marianne Klemun (Austria); Martina Kölbl-Ebert (Germany); Toshio Kutsukake (Japan); Cherry Lewis (UK); Cornelia Lüdecke (Germany); Kerry Magruder (USA); Irena Malakhova (Russia); Wolf Mayer (Australia); Sally Newcomb (USA); David Oldroyd (Australia); Manuel S. Pinto (Portugal); Octavio Puche-Riart (Spain); Martin Rudwick (UK); Claudia Schweizer (Austria); Klaus Talheim (Germany); Philippe Taquet (France); Ken Taylor (USA); Hugh Torrens (UK); Susan Turner (Australia); Ezio Vaccari (Italy); Gian Battista Vai (Italy); Frederik van Veen (Netherlands); Michiko Yajima (Japan);

Attending: Katherine Bork (USA; serving as meeting secretary); Andrea Candela (Italy); Francesco Gerali (Italy); Kathleen Histon (Italy); Francesco Luzzini (Italy); Luis Mazadiego-Martínez (Spain); Robert Newcomb (USA); John Norris (USA); Steve Rowland (USA); Peter Schimkar(Germany); Kersten Schulte (Germany); Shirley Torrens (UK)

Presiding: President Philippe Taquet (France) and Secretary-General Kennard Bork (USA)

President Taquet opened the meeting (around 5:00 p.m.) by acknowledging and thanking: (a) Prof. Algimantas Grigelis (Lithuania) for his fine organization of the 2006 INHIGEO meeting in the Baltic States; (b) Ken Bork (USA) for his work as Secretary-General during the past year; and (c) Martina Kölbl-Ebert (Germany) for her superb efforts in overseeing the INHIGEO 2007 meeting in Bavaria, Germany.

1) *Regrets/Apologies* from those not able to attend:
   • Max Banks (Australia); Barry Cooper (Australia); Greg Good (USA); Rodney Grapes (New Zealand); Martin Guntau (Germany); Bernard Joyce (Australia); Simon Knell (UK); Hakuyu Okada (Japan); Stefano Marabini (Italy); Ursula Marvin (USA); Alan Mason (New Zealand); Simon Nathan (New Zealand); Michael Roberts (UK); Gerardo Soto (Costa Rica); Bruce Waterhouse (New Zealand); Davis Young (USA); Jiuchen Zhang (China)
2) *Arrangement of the Agenda* (requests from the floor for modification):
   • No requests were voiced.
3) *Minutes of the Previous Meeting:* Vilnius, Lithuania (July 2006):
   • Ken Bork noted that the full minutes could be found on pages 5 through 8 of *INHIGEO Newsletter No. 39* (for 2006). Copies were available, if details were needed.
   • David Branagan moved that the minutes by accepted. The affirmative vote was unanimous.
4) *Discussion / Matters arising:*
   • David Oldroyd (Australia) reported that the book *Geological Travellers*, featuring papers from the 2003 INHIGEO meeting in Dublin, Ireland, had been removed from the inactive Pober Publishing Co. and was soon to be available through the Geological Society (London).
   • He also noted that many, but not all, papers from the Vilnius 2006 INHIGEO meeting had been submitted and were being actively edited at this time. The topic is the history of geomorphology and Quaternary geology.
5) *President's Report:*
   • Philippe Taquet commented that the exchanges of views within the INHIGEO Board had been productive in 2006–'07, and that the current dynamic status of INHIGEO, with its excellent annual meetings and publication productivity, seemed to be highly positive. He further reported that the French Academy of Sciences has decided to have a History of Science section. Alas, he

also stated that he would not stand for re-election in 2008.

6) *Secretary-General's Report:*

• Kennard B. Bork gave the following overview...

a) Details concerning 2006 topics are in *Newsletter 39* (produced in April of 2007).

• Input from members concerning the *Newsletter* is always welcomed.

• Reaction to the decision to cut back on references within country reports has been favorable.

• A discussion ensued on the merits of (1) hardcopy versus (2) electronic production:

* There is value in having a rapid and "free" distribution (electronic)
* Electronic modes (.pdf) can often be more imaginative in format
* But there is a human tendency NOT to read electronic files
* Having a hardcopy available is valuable for repeated reference and enjoyment
* Not everyone has access to electronic modes (or at least not on all occasions)
* Libraries tend not to retain electronic media (or not treat them optimally)
* IN SUM: continue with hardcopies; investigate electronic options

b) Status of Prague (2005) publication plans

(1) *Earth Sciences History:* Patrick Wyse Jackson reports that most of the articles have been received and have gone out to reviewers. Patrick hopes for publication of most of the papers late in 2007. Those articles not in hand within the next few weeks will probably by dropped from the issue.

(2) *Centaurus:* The October 2006 number (Vol. 46, Issue 4) contained papers by Marianne Klemun, Rodney Grapes, Ken Taylor, and Kerry Magruder. Hanne Andersen (Denmark) served as *Centaurus* editor.

c) Status of the Vilnius (2006) publication on the History of Geomorphology and Quaternary Geology (Geological Society of London)

• David Oldroyd, one of the co-editors of the volume, reported that most papers have been submitted, though some authors have been tardy.

• Algimantas Grigelis noted that the Bork and Grigelis summary of the Baltic States 2006 meeting has appeared in *Episodes* (March 2007). Making INHIGEO more visible is a worthy goal for all of the Commissions members.

d) The BUDGET situation is quite positive this year, thanks to (1) maximum support from IUGS and IUHPS/DHST and (2) the continued mailing privileges granted to our *Newsletter* by the University of New South Wales.

• Ken Bork read portions of the generous letter sent on 2 February 2007 by IUGS Secretary-General Peter Bobrowsky, commending INHIGEO on its accomplishments in recent years and its positive contributions within IUGS.

e) FUTURE MEETING SITES are rather nicely set:

(1) 2008 = Oslo, NORWAY (in conjunction with the 33rd International Geological Congress (IGC);

(2) 2009 = Calgary, CANADA (proposal to be presented here today);

(3) 2010 = Madrid, SPAIN (proposal for today);

(4) 2011 = either JAPAN or RUSSIA (outlines to be presented today; to be voted upon in Oct./Nov. '07);

(5) 2012 = Brisbane, AUSTRALIA (in conjunction with the 34th IGC)

f) An ELECTION YEAR is coming up (2008). Secretary-General Ken Bork will invite nominations, probably in late October 2007. CVs will then be collected, edited, and sent out to all members. We are interested in welcoming younger members and colleagues from under-represented countries (Scandinavia being a case in point).

7) *Discussion / Matters arising:*

• Algimantas Grigelis reported that 2008 is to be an International Year of the Planet; Ken Bork noted that the topic was on the agenda for later today, but applauded the fact that Prof. Grigelis brought the matter to the group's attention.

- Gian Battista Vai reported on the sessions run by the Geological Society of America's History of Geology Division during GSA's 2006 meeting in Philadelphia. The topic was "From the Scientific Revolution to the Enlightenment," and a major focus was the work of Nicolas Steno.
- David Oldroyd cautioned that, regarding the Budget, that IUGS was letting us retain our allotted funding for 2007, but that our request for the next year might possibly be scaled back (due to no need for expensive mailing of the *Newsletter*).
- Manuel Pinto reported that his work editing a book concerning the geology of Africa was proceeding, thanks to the contributions of several authors (Mohr; Lewis; *et al.*), but some authors were not responding in a timely manner.

8) *IUGS Topics:*

a) Several INHIGEO contributions are well set, and planning is progressing...

(1) Our symposium on "The History of Exploration in Polar Regions" is being overseen by Cornelia Lüdecke; Conny gave a brief report of progress to date.

(2) David Oldroyd and Jens Morten Hansen will convene a symposium on "General Contributions to the History of Geosciences."

(3) A third INHIGEO symposium, again convened by Hansen and Oldroyd, will focus on "450 Years of Geological Reasoning and Scientific Sustainability."

(4) As yet we do NOT have a Field Excursion program firmly in place. Philippe Taquet noted that Jacques Touret may be willing to be involved. Gian Battista Vai counseled that we need to clear plans with the IGC administrators. Ken Bork will contact Jens Morten Hansen and other potential field-trip leaders.

(5) IGC '08 historical Symposia not directly under the purview of INHIGEO include sessions on "Myth and Geology," organized by Luigi Piccardi, and "Axel Fredrik Cronstedt: History of Mineralogy and Mineral Collecting," organized by Jörgen Langhof *et al.*

b) Attempts have been made by the Secretary-General to update the INHIGEO website, under the aegis of IUGS and webmaster John Aaron, but Dr. Aaron has been indisposed and the IUGS Secretariat was closed for the month of July 2007. Efforts will continue...

c) IUGS *Bulletin 22* (Summer 2007) includes a notice about new Commissions on "Climate Change," "Extinction," and "GeoHazards."

d) The year 2008 will be part of "The Year of the Planet" -- as noted in #7 above.

9) *Future Meetings of INHIGEO:*

a) A proposal from the Canadian delegation, for a 2009 meeting in Calgary and Western CANADA, was posted on the bulletin board and was presented by Ken Bork, on behalf of the Canadians, who could not attend our meeting in Eichstätt. The general theme is to be "Fossils and Fuel."

* The proposal was accepted by the voting members present.

b) The Spanish delegation (Octavio Puche Riart and Luis Mazadiego-Martínez) gave a nicely illustrated proposal concerning a potential meeting in SPAIN, for 2010. The theme will be "History of Mineral Resources."

* The proposal was accepted by the voting members present.

c) Preliminary proposals for the 2011 INHIGEO meeting were presented by representatives from JAPAN (Toshio Kutsukake and Michiko Yajima) and RUSSIA (Irena Malakhova).

* More detailed summaries will be distributed in October, to the entire INHIGEO membership, and electronic voting will take place.

d) Brisbane, AUSTRALIA will be the site of our 2012 INHIGEO meetings. Brief discussion ensued concerning the 34th IGC. David Branagan promised perfect weather for the Congress -- but admitted that Australia might be out of water by 2012!

e) An IUGS meeting will be held in Hungary in 2010, and David Oldroyd mentioned that it might be good to have a bit of INHIGEO representation at that meeting. Indeed, we should have someone there to maintain our connections and obtain our grant.

10) *New Business / Business without notice:*

a) Ken Bork reported on the existence of an active *Geoheritage* journal and the efforts of Bill Wimbledon to generate interest in ProGEO and its attempts to preserve and 'advertise' important geoheritage sites.

b) Ezio Vaccari and Francesco Gerali presented helpful commentaries on the initiative, begun by Nicoletta Morello, to develop an INHIGEO "Virtual Library." The nature and function of the proposed system is outlined in Gerali's commentary in the Abstract Volume (p. 16) for our meeting in Eichstätt.

c) Irena Malakhova gave an illustrated introduction to a similar endeavor being undertaken by the Russian Academy of Sciences, using their super-computer. The plan would be to incorporate materials from around the world, above and beyond INHIGEO.

d) Ken Bork introduced an invitation from Prof. Czarniecki (Poland) to include an historic overview of the birth and early evolution of INHIGEO in a future *Newsletter*. Reaction from the members was highly positive.

e) The significant but 'messy' issue of NON-active members was raised by David Oldroyd. The topic engendered considerable discussion by the members present.

* The issue was not, of course, resolved in our brief consideration, but it was agreed that a Committee of INHIGEO should be established to take a closer and more formal look at the matter.

f) Steve Rowland (USA, non-member of INHIGEO but active participant in the Eichstätt meeting and Chair of the History of Geology Division of the Geological Society of America, GSA) invited INHIGEO members to take part in the October 2008 meeting of GSA, to be held in Houston, Texas, and featuring a program on "Geology and Religion."

g) Sue Turner reported that a volume on "Women in Geology," including papers presented at the Geological Society of London's 2005 symposium on that theme, will soon be available.

h) Cherry Lewis commented that it might be good to have a single e-mail address for the communication use of INHIGEO members. Discussion ensued. The point was made that many members quite specifically did NOT want to receive numerous e-mails.

* Kerry Magruder agreed to pursue the potential of developing a voluntary list-serve that could link the entire history-of-geology community. Stay tuned...

11) *A warm Vote of thanks was extended to our hosts in Germany.*

• On behalf of all attending, President Taquet publicly thanked Martina Kölbl-Ebert and all involved in making our meeting in Eichstätt such a pleasurable and productive session.

• The meeting adjourned at 6:45 p.m.

Kennard B. Bork, Granville, Ohio

INHIGEO Business Meeting
Oslo, Norway
Thursday, 7 August 2008
Provisional AGENDA

1. Regrets/Apologies from those not able to attend
2. Arrangement of the Agenda (requests for modification)
3. Minutes of the Previous Meeting: Eichstätt, Germany (2007)
   (* See above, this *Newsletter*)
4. Discussion / Matters arising
5. President's Report
6. Discussion / Matters arising
7. Secretary-General's Report
8. Discussion / Matters arising
9. IUGS Topics
10. Future Meetings of the Commission
11. Finalization of 2008 ballot; Declaration of election results
12. Recognition of Honorary Senior Members
13. New Business / Business without notice
12. Vote of thanks for our hosts in Norway, 2008

CONFERENCE REPORTS

The International Commission on the History of Geological Sciences (INHIGEO) Symposium on the 'Historical Relationship between Geology and Religion': Held at Eichstätt, Germany, with fieldtrips to the Swabian Alb and Ries Crater 28 July to 5 August 2007

The 32nd INHIGEO Symposium was held between 28 July and 5 August 2007 in Eichstätt, astride the Altmühl River, a tributary of the Danube, in northeast Bavaria, Germany. (Figure 1) This part of Bavaria, which is less than 100 km north of Munich, is celebrated for many things, not least its beer and its diverse Jurassic fossils. Amongst the latter, the most famous is what is popularly known as one of the great "missing links" in paleontology, the feathered *Archaeopteryx* with its reptilian teeth. Equally renowned is the lithographic limestone from Solnhofen that was used to produce the early illustrations of *Archaeopteryx* along with countless maps and figures in publications well known to historians of geology. It was fitting, and no coincidence, that the symposium theme was "The Historical Relationship of Geology and Religion." The meeting attracted 68 participants, and 14 accompanying persons, from many countries.

Figure 1: Eichstätt town-center
(Figure 1-5 photographs are by Ken Bork)

The symposium was hosted by the Jura-Museum in Eichstätt, the *Arbeitskreis Geschichte der Geowissenschaften der DGG* and the Bishop's Seminary *Eichstätt – Collegium Willibaldinum*. The planning and subsequent co-ordination of the symposium were superbly implemented by the Director of the Jura-Museum and INHIGEO Vice President, Martina Kölbl-Ebert, who was ably supported by her husband Martin, members of the DGG and staff at the museum. Due to the skills of Martina and her team, the symposium proceeded smoothly without any drama, at least to the knowledge of the participants. As with many INHIGEO meetings, there were both formal papers, complemented by posters, along with field trips. In all there were three fieldtrips into the beautiful German countryside, with its delightful villages and towns: a one-day intra-meeting trip and the others, of two days each, which preceded and followed the formal part of the meeting.

Pre-meeting Fieldtrip

The first fieldtrip, running from 28 to 29 July, was led by Martina Kölbl-Ebert and examined the so called "Swabian Volcano" and the limestone karst in Mesozoic rocks of the Swabian Alb, approximately 125 km west-southwest of Eichstätt. The limestone, of Late Jurassic age, is almost flat lying and overlies sandstone and siltstone of Middle and Lower Jurassic age. Intruding the Mesozoic rocks are numerous small semi-cylindrical breccia bodies, now identified as diatremes associated with Miocene Maar-type volcanism. The Mesozoic rocks form a gently elevated plateau into which the Rhine's tributaries have become entrenched. Except where diatremes are present, the plateau lacks permanent water as rain percolates into an extensive karst system within the limestone. Despite this, the plateau surface has numerous fossil stream-channels that are interpreted as having been cut by glacial melt water when the karst was sealed by permafrost. A somewhat similar, albeit restricted, situation exists today where diatremes penetrate the limestone. The impermeable breccia impedes drainage, resulting in the ponding of water. Such ponds were important for both the human

utilization of the limestone plateau by providing water for man and beast. This was clearly demonstrated at the first stop at Donnstetten-Hüle where a village pond is still preserved, though thankfully not now tapped as a source of domestic water. At nearby Schopfloch, a swamp that has developed on a diatreme was sufficiently extensive to support former peat mining and INHIGEO president Professor Philippe Taquet gave an impromptu account of a young George Cuvier's (1769–1832) assessment of the deposits in 1788. Lake beds deposited in the Randecker Maar on the northern escarpment of the plateau proved to be a convenient stop for a picnic, during which Martina explained in greater detail the formation of the diatremes. Below the escarpment conical hills, the largest of which is the Limburg, rising from the foreland, had all the appearance of being small volcanoes but are in fact partly eroded diatremes. A post-prandial stroll along the overhanging limestone escarpment at Breitenstein provided spectacular views over Kirchheim/Teck and the far away Neckar valley, which drains westward into the Rhine. Descending to the foreland the internal structure of a diatreme and its relationship to the surrounding sediments was clearly seen in the disused Bader limestone quarry near Neuffen.

Leaving the diatremes behind, the bus headed towards Beuren, with a brief stop to examine the earthworks of a fortified 200 BC settlement at Heidengraben ("heathen-works"). The earthworks encompass approximately 17 km^2 so as to make Heidengraben one of the largest Celtic settlements in Central Europe. To cap the day off, participants plunged into the thermal pools at Beuren. Trial and error quickly determined which pool temperature participants were comfortable with. Once thought to be the last gasp of the Swabian Volcano, subsurface investigations have shown that while there is a geothermal anomaly close to the surface, temperatures actually diminish with depth and are about normal in the metamorphic basement rocks underlying the Mesozoic sediments. The elevated temperatures, and resulting warm water, are now thought to be due to exothermic reactions within organic-rich Lower Jurassic sediments or "oil shale." The trip 'overnighted' in the quiet village of Dettingen-Teck where many participants joined the locals to sample the local cuisine and beer in the Gasthoff Rößle.

The final day of the pre-meeting field trip complemented the first and commenced with an early-morning stop in a small excavation in the core of a diatreme at Hohenbol in the shadow of the imposing castle of Teck. While a few fossils had been noted at some of the previous stops, the Urwelmuseum Hauff in Holzmaden displayed magnificent fossils from the Jurassic siltstones as well as graphically showing the local geology, including the relationship of the diatremes to the Mesozoic rocks. As well as ammonites and other fossils, the pride of the collection was an almost complete plesiosaur; but arguably the most outstanding fossils were seen on a 12 m long tree trunk liberally encrusted in a mass of huge and almost perfectly-preserved crinoids. (Figure 2) Opposite, and in opposition to, the Urweltmuseum Hauff, is an abandoned quarry that has been turned into a 'working museum', where visitors can (for a small fee) search for fossils in the quarry floor. Whole families were observed hard at work prizing the horizontal layers apart looking for the remains of Jurassic life. And some finds were being made!

Figure 2: Crinoids attached to a huge log of Jurassic age, in the Holzmaden Formation, at the Urweltmuseum Hauff. Ken Bork serves as scale.

Possibly because it was a Sunday, a pre-lunch visit was to the Protestant St. Peter's Church in Weilheim-Teck. This late Gothic church, completed in 1489 on the ruins of an 11th-century basilica, has unusually retained its original Catholic artwork and other paraphernalia because of a most unusual ecumenical administration: until secularisation, this church was administered by the Catholic Abbey St. Peter in the Black Forest.

The final stop on the trip eastward to Eichstätt was to the delightful village of Blaubeuren beside the Blautopf, a deep blue pool where water resurges from the karst at the foot of the limestone escarpment. The loveliness of the village was not diminished by a heavy shower that necessitated taking shelter beneath medieval porches and ancient trees. But the shower was short lived and proved to be the only rain experienced for the week of the meeting.

32nd INHIGEO Meeting

The 32nd INHIGEO Meeting opened on 30 July in the opulent Hall of Mirrors in the Residential Palace of Eichstätt (*Landratsamt*) and participants were welcomed by Martina Kölbl-Ebert who also read greetings from the President of the DGG, Dr. Stackebrandt, and from the Rector of the Bishop's Seminary, Dr. Joseph Gehr. The president of INHIGEO, Professor Taquet, then greeted participants and acknowledged the work put in by Martina and her team in organizing the meeting and the field trips. (Figure 3) He then went on to highlight the importance of Eichstätt and this part of Bavaria because of the discovery of *Archaeopteryx* and other fossils in the Solnhofen Limestone. Martina then gave an introductory lecture on the setting and background to the Bishop's Seminary natural-history collection. Following morning tea in the Palace, delegates split into two groups and were guided around central Eichstätt visiting prominent buildings and one of the university's libraries. Most of the buildings are of Baroque style, constructed following the town's destruction during the Thirty Years War in the early 17th century.

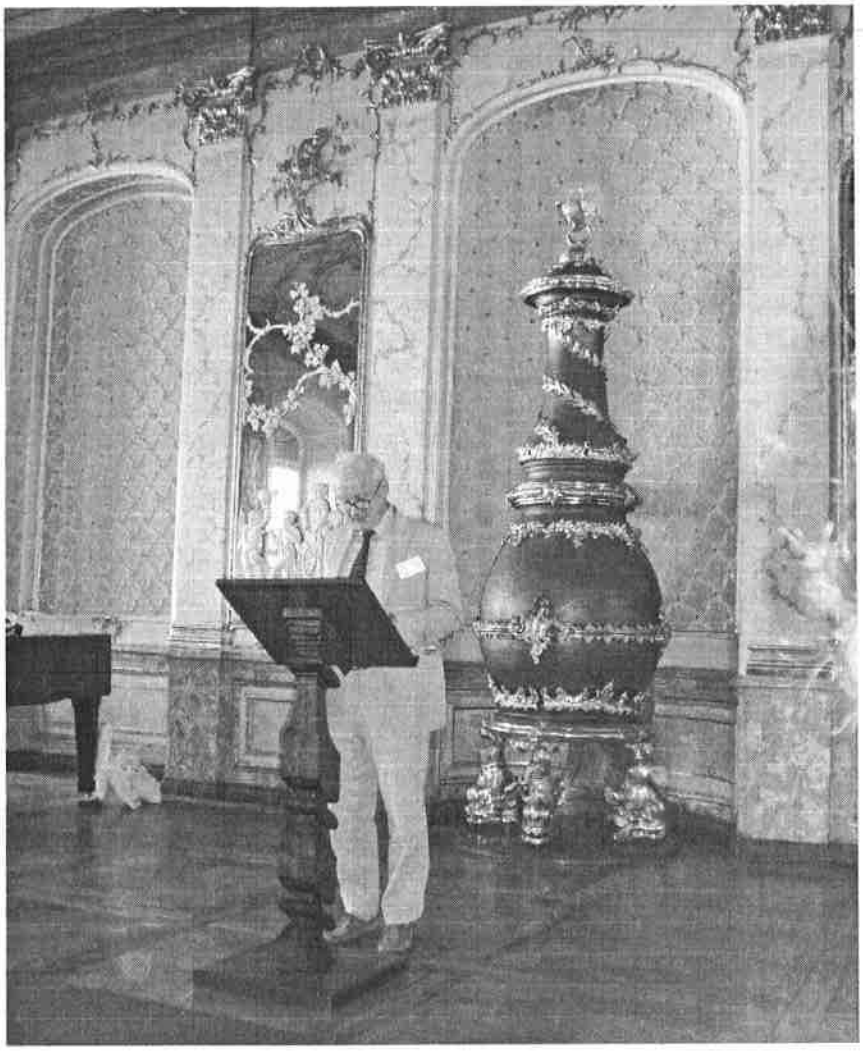


Figure 3: President Philippe Taquet opens the INHIGEO meetings in Eichstätt's Hall of Mirrors.

In the afternoon, the meeting relocated to a room in the Bishop's Seminary for the presentation of papers. An adjacent corridor provided an ideal display area for posters and for informal discussions. The conference theme was reinforced in the first, keynote address with the topic "Geology and the Qur'an." This provoked much subsequent discussion as to quite 'how literally' the paper should be received. The full list of papers and posters presented during the meeting were:

Papers

Geology and Religion in Eichstätt:

Martina Kölbl-Ebert – History and religious motivation of the Bishop's Seminary Natural History Collection in Eichstätt. (Introductory Presentation)

The first group of papers offered some non-Christian views of the relationship between geology and religion. These papers allowed the recognition of what is specifically Western and Christian in the perception of the other authors:

Syed E. Hasan – Geology and the Qur'an (Keynote Lecture)

Michiko Yajima – Religion and Earth Sciences in Japan.

Paolo Barbaro – Religious Interpretations and Cultural Landscape: Approaches and Engineering of Nature in Japan.

Toshio Kutsukake – Kuhkai (774–835 A.D.): Founder of the *Shingon* Sect of Esoteric Buddhism, as a geologist and Miner.

George Khomizuri – Religion and Geological Ideas in Antiquity.

The second group of papers progressed from European pre-scientific approaches to geological phenomena, through the Enlightenment, and on to the establishment of geology as a science:

Klaus Thalheim – A Naturally Formed "Silver Cross" from the Property of Electress Sophie of Saxony.

Agustín Udías – Jesuits' Studies of Earthquakes and Seismological Stations.

Kerry V. Magruder – Biblical Idiom and Global Depictions in Theories of the Earth.

Francesco Luzzini – Flood conceptions in Vallisneri's thought.

Andrea Candela – The Deluge and the Extinct Volcano of the Central Alps.

Frederik R. van Veen – Steno, Rumphius and Silberschlag, Geology between Genesis and the Enlightenment.

Claudia Schweizer – Religion and Geology: Opponents or Teamworkers? The import of Religious Backgrounds to Geological World Views.

Manuel S. Pinto & Filomena Amador – Discussing the Age of the Earth in 1779 in Portugal – Religion and Geology.

Kennard B. Bork – Natural Theology in the Eighteenth Century, as Exemplified in the Writings of Élie Bertand (1713–1779), a Swiss Naturalist and Protestant pastor.

Cherry Lewis – The British Prime Minister and the Apothecary Surgeon: Searching for a Theory of the Earth.

The third group dealt with the question of what happens to geology, when the process of separating religion and science is inhibited by institutionalising or instrumentalising geology for religious or quasi-religious purposes:

Jiuchen Zhang & David Oldroyd – Red and Expert: The Development of Chinese Glaciology during the Mao Tse-tung Period (1958–1976). (Keynote Lecture)

Irena G. Malakhova – State, Church and Geoscience in Russia (18th–19th cc.).

Stephen O. Moshier, David E. Maas & Jeffrey K. Greenberg – From the Beginning: Faith and Geology at Evangelical Wheaton College.

Cornelia Lüdecke – Moravian Contributions to the Investigation of the Arctic Climate.

Marianne Rolshoven – Benedictine Monks as Mineralogists and Collectors: The Example of the Disentis Abbey and St. Peter's, Salzburg.

Gerhard Lehrberger – Inventory and Documentation of an Authentic Rock Collection of Johann Wolfgang von Goethe in the Teplá Monastery in the Czech Republic.

Having dealt with the above themes, the next group of papers reviewed the relationship between geology and religion in a secular society and where the two either quietly ignores the other's different worldly views or they more vigorously clash:

Hugh S. Torrens – Religion Thwarts a Scientific Career? The case of the Darwinian James Buckman (1814–1884). (Keynote Lecture)

Martin Rudwick – Biblical Flood and "Geological deluge": The Amicable Dissociation of Geology and Genesis.

Philippe Taquet – Cuvier's Attitude towards Creation and the Biblical Flood.

Marianne Klemum – A Heated Public Debate between Conservative Catholics and liberal Academics in Vienna after 1848: Franz Unger's Theory of Evolution and the History of Earth.

Davis A. Young (read by Stephen Moshier): The Reception of Geology in the Dutch Reformed Tradition: The Case of Herman Bavinck (1854–1921).

Gian Battista Vai – Catholic Liberalism and the Early Development of Geoscience: The Cases of Aldrovandi, Steno, Marsili, and others (16th to 18th century).

David Oldroyd – An Atheist's View of the Relationship between (History of) Geology and Religion.

Bernhard Fritscher – Uni-formi-tarianism: Free-church Movements and Geological Practice in 19th century Britain.

Kenneth L. Taylor – Reflections on Providentialism and Naturalism in Late Eighteenth-Century Geology.

The meeting then proceeded to assess Creationism and its motives from the late 19th century to the present:

Stephen M. Rowland – The Evolving Relationship between Geology and Religion in Nineteenth-Century America as Revealed through the Writings of Mark Twain.
Ezio Vaccari – Geology and Genesis in 19th and 20th century Italy.
Sally Newcomb – Radioactive Dating and Debunkers.
David Williams & Dee Edwards – Retreat from Rationalism: The Rise of 'Creation Science' in some English Schools.
Richard Peters – Theodicic Creationism.
Wolfgang Jacoby – Creation through Evolution.
Martin Ostermann – "God has Created the Cosmos from Nothing into Being" (Keynote Lecture)
The meeting theme was completed by papers that provided biographical case studies of clerics working as geologists and of geologists reflecting their religious views:
Filomena Amador & Manuel Serrano Pinto – The Portuguese Jesuit Preacher António Vieira (1608–1697) and the Problems of Mine Exploitation in South America.
David Branagan – Geology and Religion: A Study of some Australian Geological Clerics, mainly from the Nineteenth Century.
Wolf Mayer – Geological Observations by the Reverend C. P. N. Wilton in New South Wales (1828–1834), and his Views on the Link between Religion and Science.
Ana Carneiro & Teresa Salomé Mota – Geology and Religion in Portugal: three peculiar case-studies.
Günter Viohl – Franz X. Mayr: The Spiritual Father of the Jura-Museum.
G. F. Anastasenko & S. V. Krivovichev – Archbishop Nil and his Mineralogical Collection in St. Petersburg University.
Martina Kölbl-Ebert – Pater Damian Kreichgauer SVD (1859–1940) – his ideas about a Mobile Earth, Polar Wander and the Creation.
Francesco Gerali – Giovanni Capellini: An Italian geologist in the 19th century.
Susan Turner – Dinosaurs and Lost Dreams: Correspondence between Heber A. Longman and Friedrich von Huene.
Eugen & Ilse Seibold – Hermann Abich and Heinrich Barth: Trust in God on Dangerous Expeditions.
The last session of the meeting dealt with miscellaneous themes:
Jan T. Kozák & Alena Čejchanová – Proto-Geological Map dated 1806 by Stanislaw Staszic and its Role in the Early 19th Century Process of Modern Geological Map Contexture.
Algimantis Grigelis – Fine Minerals in Church Art: The Vilnius Cathedral Treasury.
Zoya A. Bessudnova – The History of the Solnhofen Collection of the Vernadsky State Geological Museum of the Russian Academy of Sciences.

Posters
While many of the posters had a religious theme their content was considerably broader and gave added depth to the meeting:
Daniela Angetter, Tillfried Cernajsek & Johannaes Seidl – Ami Boué's Geological Map of South-Bavaria: A further Addendum Concerning the Acknowledgement of Boué's Estate at the Geological Survey of Austria.
Francesco Gerali – The INHIGEO Virtual Library.
Gaston Godard – In 1632, Peiresc Attributed to Elephants the Fossil Mastodons of Utica (Tunisia), Previously Ascribed to Giants by Saint Augustine.
Bernhard Hubmann, J. Seidl & J. Strehlau – The Controversy between Rudolf Falb (1838–1903) and Rudolf Hoernes (1850–1912) about the Origin of Earthquakes.
Wolfgang R. Jacoby – Age of the Earth – Before Radiometric Dating.
Luis Felipe Mazadiego, Octavio Puche, Paz Kindelán & Ana M^{a} Hervás – Water in Andean Cosmogony: Myths, Geology and Engineering.
John A. Norris – The Generation of Metallic Minerals in the Mining Sermons of Johann Mathesius.
Octavio Puche Riart, L. F. Mazadiego Martinez & M. Ayarzguena Sanz – Spain: Evolution and Religion. Century XIX.

Dorothea Schäfer-Weiss & Jens Versemann – 'Religious Contentio': Interpretations of Seismic Activities in the Context of Natural Philosophy and/or Religion in Classical Literature.

Klaus Thalheim & Gerhard Lehrberger – Benedictine Father Franz Uebelacker and his Precious Book on the Carlsbad Carbonate Sinter from 1781.

Igor Túnyi, P. Guba, L.E. Roth & M. Timko – Electric Discharges in the Protoplanetary Nebula as a Source of Impulse Magnetic Fields to Promote Dust Aggregation.

Augustin Udias – Jesuits' Studies of Earthquakes and Seismological Stations.

Jens Versemann & Dorothea Schäfer-Weiss – Source-material for Seismic Activities in Ancient Times, Exemplified in Detail for 1st century A.D.

On the evening of the first day of papers a welcoming party was hosted by the Jura-Museum in the imposing Castle Willibaldsburg, standing prominently above a meander of the entrenched Altmühl River. The formerly heavily fortified castle not only makes an impressive backdrop to Eichstätt but is also a fitting repository for the wealth of material that the museum exhibits, prominent amongst which is a specimen of *Archaeopteryx*. In between admiring the exhibits, participants were treated to a representative sample of local food and beverages with music for dancing provided by a small but enthusiastic Bavarian husband-and-wife band. The following evening a number of participants sat in the beautiful Gothic Cathedral and listened to a recital by the organ-master Christian Heiß who superbly played a selection of works by Staden, Bach, Vierne and Widor. To round off the evenings of good fellowship, the INHIGEO dinner took place on Thursday in the convivial surroundings of the Krone, one of many restaurants in the centre of Eichstätt. After dinner, attendees were treated to the INHIGEO President sharing his premonitions, which had come to him in mysterious circumstances, of how he was going to cope with climate warming and a rising sea level in "I had a dream . . . " (See Prof. Taquet's remarks in this newsletter.)

Intra-meeting Fieldtrip

The presentation of papers was interspersed with INHIGEO's formal business meeting on the afternoon of Tuesday, 31 August 2007 (see separate report in this *Newsletter*) and, on the following day, the intra-meeting field trip. The purpose of the trip was to acquaint participants with the Solnhofen Limestone in quarries, museums and workshops as well as its use in lithography. (Figure 4) Like the others, the fieldtrip was led by Martina and by its end participants were well aware of the various characteristics of the limestone, ranging from rock that splits into thin layers and is used for tiles, as seen at the first stop in the Adelkofer Quarry in Wintershof-West, to massive blocks of so-called Jura-Marble used in the construction industry. One of the undoubted highlights of the day was at the Bürgermeister-Müller Museum in Solnhofen where the procedure for the complex, and still poorly understood (at least by the attendees), method of lithographic printing was demonstrated. In addition, the museum had on display a magnificent collection of fossils recovered from the limestone, including *Archaeopteryx*. Earlier in the day an equally impressive fossil collection had been admired at the Museum Bergér, a private museum run by the Bergér family as a by-product, so to speak, of their large quarry and processing works. In the workshop, participants were able to match their prowess against some of the skilled workers who, with remarkable speed, shaped with hand tools the limestone into roofing and floor tiles. Despite the undoubted ability of many INHIGEO members in the use of a geological hammer, it proved to be a 'no contest' and none were deemed worthy of employment by the Bergér family. The final stop for the day was at the huge Langenaltheimer Haardt quarry where the first *Archaeopteryx*, now housed in the Natural History Museum in London, was discovered in 1861. Despite the extensive exploitation of the limestone, most quarries are hidden from the roads. Instead the most obvious evidence of quarrying is the small hills of waste rock that rise above the limestone plateau. These are deliberately left as they provide important refuges for the indigenous flora and fauna.

Figure 4: Historic site of preparation of Solnhofen Limestone products.

Post-meeting Fieldtrip

The post meeting fieldtrip, on 4 and 5 August, took place in brilliant weather. Here the emphasis changed, with the limestone and its fossils being relegated to a secondary role. Instead the trip concentrated on two related impact craters to the west of Eichstätt at Steinheim and Nördlingen. These two craters, dated as being formed c. 16 Ma (Miocene) years ago, were not, until relatively recently, recognized for what they are. Instead they had been interpreted as volcanic in origin. On the first day the fieldtrip crossed the Ries Crater, 50 km from Eichstätt, to the smaller Steinheim Crater. (Figure 5) This latter crater, of approximately 3.5-km diameter, has an almost perfectly preserved rim arising from the formerly flat-bedded limestone. A small valley cut in the west of the rim at Burgstall by a stream flowing out of the crater provided an excellent exposure of the breccia overlying the limestone. Further proof of the cause of the crater was soon forthcoming, for a short climb onto the rim revealed fragments of spectacularly radially fractured limestone with deformed fossils. Lunch on the rim allowed a view of the almost complete saucer shape of the crater to be assimilated with, in its centre, the Klosterberg central mountain. It was here that the extraterrestrial body, calculated at no more than 80 m in diameter, impacted with such force that the rocks were compressed down into the underlying crystalline basement rocks before being almost instantaneously rebounding to higher than their original position as the energy of the impact was dissipated.

Figure 5: Our Leader, Dr Martina Kölbl-Ebert, explaining impact events in the Steinheim area.

Following lunch, the origin of the crater was reinforced by a visit to Meteorkratermuseum in the village of Sontheim on the floor of the crater following which participants climbed to the crest of the Klosterberg. While the metamorphic basement rocks were not brought to the surface in the recoil of the impact, the Middle Jurassic siltstone below the limestone forming the rim was. Following impact, freshwater sediments accumulated in a lake that filled the crater. On the margins of the Klosterberg is algal limestone which contains aragonite, formerly interpreted as indicative of volcanic origin. While a sedimentary origin for the aragonite was accepted by the INHIGEO geologists, there was some debate as to whether all of the limestone could have accumulated in the time the lake was in existence. However, there was no disputing the age of the sediments for nearby sandy sediments contain abundant minute gastropods of Miocene age. The gastropods are reported as exhibiting evolutionary trends with time and Darwin referred to this as empirical evidence in support of his theory of evolution, though as originally presented by Franz Hilgendorf the evidence was not really convincing; Darwin thought that the locality was in Switzerland! From the Steinheim Crater the field trip proceeded to Nördlingen, situated within the fertile Ries Crater. As a foretaste of what was in store on the last day of the fieldtrip, a stop was made at a quarry at Altenbürg (thank heavens for quarries), on the rim of the 25-km diameter Ries Crater. The quarry exposes a large allochthonous block of limestone that has been transported by the explosion towards the crater rim. The collapse of the hot fire ball of exploded asteroid and country rock brought the limestone into contact with grey 'suevite,' a brecciated rock that was formerly interpreted as a tuff filled volcanic conduit in the limestone. Suevite is now recognized as superheated fragments of rock that were blasted into the atmosphere at the time of impact and, on falling back to earth, became welded into a rock superficially resembling an ignimbrite. Most participants on the fieldtrip acknowledged that it was the first time they had encountered such a rock or even its name. Further examples of suevite, used as a building stone, were observed in the evening when participants marveled at the awe-inspiring late-Mediaeval buildings within the remarkable walled town of Nördlingen.

The next day started with a visit to yet another limestone quarry, this time at Ziswingen, to examine fractured and faulted limestone on the rim of the Ries Crater. Despite the disruption caused by gravitational

collapse of the wall of the crater, fossils are still preserved and one enterprising young boy, who quickly appraised the marketing opportunities a bus load of visitors presented, was selling local ammonites on the quarry floor. By this time the *Rieskratermuseum* in Nördlingen had opened its doors and participants were guided by its director, Dr. Michael Schieber, through its displays, which graphically portray the events that occurred around the Early-Middle Miocene boundary. The main body that impacted at Ries is estimated to have been 1 km across and slammed into planet Earth at over 20 km/second. A small moonlet accompanying this bolide impacted at Steinheim. The total energy released was equivalent to 2,500 Hiroshima atomic bombs and much of the resulting fireball fell to earth as suevite. However, some debris was spread further a field and participants to the INHIGEO 2005 meeting in the Czech Republic recalled a visit to the museum Vysočing with its huge moldavite collection. The collection is representative of a shower of glass that fell on the Třebíč area following the impact at Ries.

The Ries crater differs from the one at Steinheim not only in size but also in that in its centre crystalline basement rocks, which are normally beneath the Mesozoic cover rocks, have been brought to the surface as part of a recoil phenomenon. After a leisurely lunch under the shade of trees surrounding the historic buildings of the Fürstenkeller restaurant in Wallerstein, just to the north of Nördlingen, the crystalline basement rocks were examined in the nearby Wengenhausen Quarry. These rocks would normally be 500 m below the surface and in a considerably more pristine state than those exposed in what is termed the crystalline ring of the Ries Crater. Overlying the basement rocks is a thin layer of suevite, showing that the rocks had popped to the surface before the matter descending from the fireball had reached the surface. Overlying the suevite are lake sediments. In another quarry, at Aumühle, colored breccia (*bunte brekzie*), which traveled radially and horizontally from the impact centre, is exposed and is composed dominantly of Mesozoic rocks. In the overlying suevite, degassing structures are present, confirming the high temperatures generated. It was easy to appreciate how these structures were previously attributed to volcanic action. Near the northeast margin of the crater, at Büschelberg, algal reefs that accumulated in the flooded crater are exposed in a soccer ground. The final stop, to bring us back to the importance of the Jurassic limestone, was at Gundelsheim, halfway between the crater rim and Eichstätt, where large blocks of what is locally called 'Jura Marble' are extracted and sawn into slabs for floor tiles, window-sills, and façade covers. Despite its name, fossils abounded including aptychi (the food-grinding plates) of ammonites. It was a satisfied, and well-informed, group of participants that returned to Eichstätt in the evening.

Figure 6: Martina Kölbl-Ebert pointing the way back to Eichstätt (Photograph by Mike Johnston)

The INHIGEO meeting and associated fieldtrips were competently organized and run, with well-produced tour guides and abstracts. Accommodation was good, with a range of prices to suit all budgets and all within easy walking distance of the meeting venue in the Bishop's Seminary. Papers covered a variety of topics and, with few exceptions, were well presented. While there was valuable input from various quarry owners and museum directors, almost the entire field trip commentaries were provided by Martina Kölbl-Ebert. The meeting venue and the field trips gave a good balance between geology, history, architecture, scenery and culture, including Bavarian cuisine; and we were well received by all we met. In all, the meeting was a great credit to Martina (who at no time appeared the least stressed or ever uninformed on any topic) and the organizing committee. This was formally acknowledged on the afternoon of Friday 3 August when, at the conclusion of the presentation of papers, President Taquet thanked Martina and the organizing team, including her husband Martin, for the tremendous effort that had been expended to ensure that the meeting was such a success. This was endorsed by members with a standing ovation.

Mike Johnston, Nelson, New Zealand

The President's Nightmare
As Recounted in Eichstätt 2007

Ladies and Gentlemen
Dear Members of the INHIGEO
Dear Friends

I have a strange story to tell you this evening. A story which happened to me during last night, when I was sleeping in my quiet, silent, religious, monastic bedroom inside the Bishop's Seminary.

I was sleeping. All was very quiet. I could just hear far away someone snoring like this—rrrrrooooww—but the noise was a low sound. And I was unable to know if it was the noise of the snore of a man or a woman, of an historian of geology or of a seminarist.

At midnight, I heard the bell strike twelve. And suddenly, there was a blue light in my room. I opened my eyes and I saw a very old man, with a long, white beard entering my room. I stood up and said embarassed: "My God… Gruss Gott… Nom de Dieu!" And the very old man said to me: "Are you the stupid President of this small heretic sect of these geopoets called the INHIGEO group?" I said "Yes. I must confess…" (It was the first time in my life that I confessed something to a very old man with a white and long beard). "OK," said the old man, "if you are the INHIGEO President, you must go outside urgently. A Flood is just arriving. Eichstätt will be under the water in a few hours. You have to save the INHIGEO members from extinction."

Well! I knew some members like David Oldroyd or Hugh Torrens were very bad swimmers. I had to do something.

"You must go to for some boats in order to save all the members," ordered the very old man. I put my clothes on in a hurry; I rushed out of my bedroom. I took my passport—in case I wouldn't survive—to have documents to enter Paradise. Because I had visas on my passport: a visa for Bhutan, so if I went to the Buddhist Paradise, I could reincarnate as a dinosaur with the help of my Bhutanese visa; I had a visa for Algeria, so to see Allah and the thousands of virgins inside the Muslim Paradise, my Algerian visa could be useful; and I also had my baptism certificate, and it could help if I had to enter to the Christian Paradise.

I got down as quickly as possible. Went down seventy-five steps, turned right, turned left, turned right again, turned left twice, ran, not this door—it is for the toilets—and finally I opened a door with a black key, a second door with a green key, a third door with the two keys. And suddenly, I was on the plaza in front of the Bishop's Seminary. The place was full of water, with all the INHIGEO members as refugees, crying, above the level of the water; They were perched all together on the small fountain in the middle of the plaza.

Wouah! As President I must save this herd of geohistorians! What could I do?

I saw Irena Malakhova. She was calling me, "Help! Help! Philippe! You must call, with your cell phone, the President of Russia. A man called Sankt Vladimir. His way of life is not very orthodox but he can help us by pumping the water with the Russian oil companies, Gazprom, etc." So I called Vladimir.

"Vladimir? Da, da! Can you help us to pump the water? Spassiva." "Da, Da," answered Vladimir, but he said to me "You must put 5 million dollars in a Swiss bank account in Geneva." So I said to Vladimir, "Nyet, nyet! I am sorry because my Secretary-General and treasuruer, Ken Bork, has put INHIGEO's money into a Lichtenstein bank account."

I saw Martina Kölbl-Ebert. She was calling me, "Help! Help! Philippe! You must call an angel. Our German chancellor is an angel you see; for that reason she is called Angela. So I called Angela. "Angela! What can you do for us. There is a transgression in Eichstätt. The last one was 140 million years ago. The new one is just now." But Angela was in Poland playing poker with two Polish twins.

I saw Hugh Torrens on the fountain. He was asking all ladies to embark in small boats, singing with them. "Plus près de toi mon Dieu, plus près de toi." Hugh told me to call Holy Elisabeth in London and that in the same time I had to close my eyes and to pray for the British Empire, which floated eternally. But it was the Derby of Epson, with the horse races, and it was impossible to have a contact with Holy Elisabeth.

I saw Kenneth Taylor, Kerry Magruder and Stephern Rowland on the fountain. The first two were praying, the third was reading Mark Twain's books. And I said to them, "OK, could you call Holy George, the President of your country. Maybe he can do something." "Oh yes," they said to me, "he can make a war in 6 days against the Flood. But the Army is actually very busy, so you have to wait and call again next year."

I saw Santo Gian Battista Vaï on the fountain and I said to him, "Mama mia, avanti popolo, e l'Acqua alta come a Venezia! Necessita de parlare con el Papa. El Papa e molto gentile." But the Pope told me—in German of course—"Va bene. No problem with helping you. You can go directly to Purgatory, but before that you must come to Rome for a pilgrimage." "But," I said, "that is impossible, because we are in the middle of the Flood." So the Pope couldn't do anything for us.

And David Branagan was just jumping in a boat with a geological map of the Canary Islands in his hands, and he said to me, "I will try to find the Humboldt Current in order to go home directly to Australia using first the Gulf Stream." "OK, good luck, David."

And I saw David Oldroyd. He was very happy, dancing with red clothes, two small horns on his forehead. He had a tail and hooves on his feet. He was singing "I am the Devil. The End is near. I am waiting for you!"

So the only solution was to call Holy Nicholas, the French President. Santa Klaus Nicholas. He could do anything, in any place, at any time. I called him by phone. "Mr. President, all the INHIGEO members are under a Flood. Something has to be done." He said to me, "Pas de problèmes. I am sending my wife Holy Caecilia to see Mollah Mohammed Khadafi. You see, Libya is a great dry country; we can try to put all the water in the desert and in exchange we can get oil."

That was a good solution. But just as I was saying OK, I fell down from my bed on the ground. And I realizedd suddenly that I was a dreaming and that it was a nightmare.

It was a miracle. I was still alive. The INHIGEO members were not punished for their wrong ideas, or for their bad attitude. They were safe in Eichstätt. And this evening in the Krone Restaurant, just looking at their faces, you could see that they were just now in Paradise.

Philippe Taquet, Paris

(* Editor's Note: It should be pointed out, to those who do not know him personally, that our President is a world-class expert on dinosaurs and a celebrated administrator of the *Muséum national d'histoire naturelle* in Paris. He is also a full member of the prestigious *Académie des sciences* (Paris). Other attributes include an amazing wit and sense of humor. . .)

National and Trans-national Agendas in Antarctic Research Since the 1950s
Report of the 3rd Workshop of the SCAR Action Group on the History of Antarctic Research
25–26 October 2007
Byrd Polar Research Center, Columbus, Ohio, USA

The 3rd Workshop of the Action Group of the Scientific Committee on Antarctic Research, focused on the history of research in Antarctica, was organized by Cornelia Lüdecke with the local help of Raimund E. Goerler, Assistant Director of the Byrd Polar Research Center (Columbus, Ohio, USA), and his team. Workshop sessions were held on 25 and 26 October 2007. This year's workshop discussed 'National and Trans-national Agendas in Antarctic Research from the 1950s and Beyond.' About twenty participants attended from Australia, Chile Germany, Great Britain, Sweden, and the USA.

After the welcome speeches and a review of the work of the history of the Action Group, which was founded in 2004, the first session started with Peder Roberts (Department of History, Stanford University, USA), who asked the question "What has all of this got to do with Science?" He then presented a commentary on 'Rhetoric of scientific devotion in the planning of the International Geophysical Year (IGY, 1957–1958).' His answer showed that on the surface everything functioned as an emblem of international cooperation in scientific endeavor. However, people have to ask how and why the IGY came to possess that symbolic value, and to consider it as an integral part of a broader political picture.

Jason Kendall Moore (Centro de Estodios Hemisféricos y Polares, Viña del Mar, Chile) then gave a paper on 'Playing Dice: Toward a scientific explanation of U.S. leadership in the formation of the Antarctic Treaty of 1959.' Moore focused on the inconsistency of American leadership, with a number of other factors, that nearly led to the treaty's non-ratification, and which exposed the non-commitment of U.S. official to their own policy.

In the second session, Rip Bulkeley (Exeter College, Oxford, UK) analyzed 'The role of Antarctic diplomacy in the origins and conduct of the IGY.' He noted that France became the first and still the only country with an Antarctic claim to install a permanent station outside of "its" sector, 46 years after the signing of the Treaty.

After the lunch break, enjoyed outside in the sunshine, Jorge Berguño (Chilean Antarctic Institute, Santiago, Chile) explained 'The search of an organizational framework for Antarctic research (1948–1985).' The course of the IGY demonstrated that binding undertakings and concerted action in scientific programs could be achieved without transferring all the authority to a single scientific body. In 1958, the International Council of Scientific Unions established the Special (later Scientific) Committee on Antarctic Research (SCAR). In 1985, SCAR was fully incorporated as a permanent observer in the mainstream of the Antarctic Treaty System (ATS).

In this context, M. Consuelo León Wöppe (Universidad Marítima, Chile) presented an interpretive analysis of 'The state of Chilean science before and during the International Geophysical Year.'—before the Chilean emphasis shifted to the role of political and scientific elites in shaping public opinion.

Cornelia Lüdecke (University of Hamburg, Hamburg, Germany) referred to a country that did not actively take part with polar expeditions in what is today called the 3rd International Polar Year, as she spoke about 'The International Polar Year (1957–1958) as reflected in German media.' The time of the Cold War was characterized by the use of military terms to describe interests in Antarctica. This was clearly visible in the analyses of western German newspapers, and even in popular books on Antarctic research of the 1950s.

Ann M. Dozier (University of Rochester, Rochester, New York, USA) gave a lively report on her investigation of 'Getting the Science Done: perspectives from McMurdo,' during three austral summers between 2002 and 2005. She observed how organizational bureaucracy and the scientists' professional autonomy created inherent tensions, and how these were exacerbated by the uncertainties of conducting science in a polar environment.

The first day finished with a workshop dinner and a pleasant after-dinner speech by Tim H. Baughman (University of Central Oklahoma, USA) on 'Amundsen, Cook, and the *Belgica*, the first international scientific and multi-national expedition to the Antarctic.'

The third session, on the next day, started with Jason David (The Ohio State University, Columbus, Ohio, USA), who dealt with 'The development of biology as a discipline in Antarctica.' He discussed the

growth of biology in the amount of research undertaken, particularly on the Antarctic continent, and its connection to larger trends in both the history of biology and the context of Antarctic science.

Adrian Howkins (University of Texas, Austin, Texas, USA) talked about 'British Antarctic science, 1944–1959,' which first was increased on the Antarctic Peninsula before it cooperated with international research efforts. Finally, Britain sought to harness the scientific goodwill generated by the IGY to bring about political change in Antarctica, leading to the Antarctic Treaty of 1959.

Then John C. Behrendt (University of Colorado, Boulder, Colorado, USA), a veteran of IGY, reminded us of the 'First (1957–1958) Geophysical Investigation of the Filchner-Ronne Ice Shelf (FRIS).' He discussed the results including the determination of maximum ice thickness (1,300 meters) of the southern-most area of the FRIS, which was in significant contrast to re-measurement of this area in the 1990s, when only 1,100 meters were found, suggesting significant melting during the interval.

In a paper on 'The shaping of a European effort in paleoclimatology,' Aant Elzinga (University of Göteborg, Göteborg, Sweden) focused on the discussion of the European Antarctic Project (EAP), abandoned in 1975, and the multi-national European Project for Ice Coring in Antarctica (EPICA), which started up in 1995.

After lunch break in the Polar Institute's library, the fourth session included a paper by Irina Gan (University of Tasmania, Australia) on 'To the Great Unknown: Soviet IGY Antarctic Expeditions of 1955–1958.' The setbacks and obstacles encountered by the 2nd Russian Antarctic Expedition in particular almost resulted in failure of the whole Soviet IGY commitment. Nevertheless, obstacles were overcome and plans finally concluded successfully.

The last paper was given by Lisbeth Lewander (University of Göteborg, Göteborg, Sweden) on 'Swedish polar politics, 1955–1970,' when Cold War developments in the Far North were severe concerns, which had an impact on Swedish undertakings in polar areas. Archive studies showed that occasionally decision makers were hesitant about what course of action to take, such as in the case of the political status of Antarctica in the 1950s.

After the workshop, participants left for home with very good memories of interesting discussions and exchanges on various aspects of the history of polar research surrounding the IGY. The Proceedings of the 3rd SCAR workshop on history of Antarctic research will be published in the electronic series of the Byrd Polar Research Center, as part of the Digital Repository of the Knowledge Bank of The Ohio State University.

The next presentations of the SCAR History AG will be in session 5.7 on 'Polar History and Institutionalization of Polar Research—The International Polar Years,' during the SCAR/IASC Open Science Conference in St. Petersburg, Russia, 8–11 July 2008.

The 3rd SCAR workshop was supported by the Scientific Committee on Antarctic Research, Cambridge, UK; the Byrd Polar Research Center and the Friends of the Byrd Polar Research Center, Columbus, Ohio, USA; the Frederick A. Cook Society (USA); Schimank-Stifung, Hamburg (Germany); and Deutsches Zentrum für Luft und Raumfahrt, Oberpfaffenhofen (Germany).

Cornelia Lüdecke, Munich

ARTICLE

On a remarkable eighteenth-century topographic and geological model in Coimbra (Portugal): The ceramic model of the Buarcos coal mine in its early exploitation stages

Miguel C. F. Telles Antunes
Universidade Nova de Lisoba
ip241333@ip.pt

Ceramics are important elements among the collections of the *Museu Maynense* of the Academia das Ciências de Lisboa. In Portugal, the eighteenth century is marked by experiments in order to improve the ceramics industry. Some advances resulted in the production, by Bartholomeu da Costa, of the first Portuguese porcelains. This procedure required prospecting for raw materials such as kaolinite-rich clays, as well as the use of kilns able to reach higher temperatures than those attained before. Such procedures required coal because they could be non-profitable if only expensive charcoal was available. Use of fossil coal therefore became necessary. Hence the beginning of exploitation of coal mines in Portugal, even if difficulties arose in the market, owing to lobbies related to importers of British coal.

In 1772, Domingos Vandelli became a Professor in Coimbra University. He developed experiments in ceramics to produce quite refined earthenware, albeit not as expensive as porcelains. Vandelli resorted to coal from the nearby mine of Buarcos, near Cabo Mondego. Coal had been discovered there shortly after the beginning of King José I's reign in 1750. Vandelli's earthenware is represented in the Academy's Museum. Associates and I recently rediscovered a particularly interesting glazed ceramic inkstand produced in Coimbra in 1776. It shows a pair of nearly same-sized round holes for the ink container and the reservoir for the fine drying sand, plus five smaller, sub-quadrangular holes for feather pens.

The form of the object is irregular, wider than long, hollow, light creamy-colored but with dark brown drawings and legends. (See Figures 1 through 3.) Glaze covers the legends and drawings. A small fracture in its lower border shows a light grey paste with tiny brilliant points, probably from muscovite. The legends (Table 1) and dimensions (Table 2) are as follows.

Table 1: Legends

Surfaces	**Legends ***
Upper surface between the 2 major holes	Coimbra 1776
Anterior (referring to pits 1 and 2)	Poço 1 Poço 2
Left lateral	Mina de Carvaõ
Internal (date underlined twice)	1776 ====

(* Poço = Pit; Mina = Mine; de = of; Carvaõ [early spelling of *carvão*] = Coal).

Table 2: Dimensions

Item	**Measurements (mm)**
Maximum width	175.9
Maximum length	144.7
Maximum height	62.5
Diameters at right angles to the large holes	36.0 x 36.0 (left)| 36.5 x 35.0 (right

The general form of the ceramic piece is a topographic model of the Cape Mondego area, site of the Buarcos coal mine. The mine was close to the sea and north of the Buarcos hamlet. The western surface (*Mina de Carvaõ* legend) shows a prominent cliff cut by intensive marine erosion. The unknown ceramist has modelled the Upper Jurassic sedimentary beds. Through differential erosion, prominent, carbonate rocks alternate with indented clayey and coal-bearing strata. Darker painting underlines the coal seams. The model seems in agreement with

reports that refer to six coal seams, but only the first, main seam (nearly 1 meter in thickness) was regularly exploited. The other ones were too thin, although the second and occasionally the third one were exploited too.

The posterior surface shows a vertical pit leading obliquely towards a longer gallery along the coal seams. This gallery continues into another pit that connects it to still another gallery parallel to the main one. Both galleries are oriented according to the strike and dip of the beds.

The 1776 date concerns the earlier exploitation. Owing to good exposure, the first works were carried out near the waterfront, where a first pit was excavated. Galleries were opened inland and then extended under the sea floor, where coal seemed plentiful and of better quality. The miners could actually hear the roar of the waves on the ceiling above them. Between 1798 and 1800 the waves cut into the sea floor and hence through the ceiling of the galleries, flooding them (by sheer chance, it happened on a Sunday and therefore no lives were lost). Even the coastal area was dangerous because of storms. As a tragic example, more than 60 soldiers from the British expedition led by Sir John Moore drowned when the troops disembarked nearby on 24 or 25 August 1808. This perilous position had been acknowledged before. As the model shows, mining works were being carried on in areas away from the sea.

The ceramic model of the Buarcos coal mine is the first-known three-dimensional representation of a geological and mining structure, as far as Portugal is concerned. It was produced in Coimbra in 1776, most probably under Domingos Vandelli's direction. The three-dimensional modelling of the mine was thus not a new idea when, in 1786, Francisco António Rapozo produced wax models of the same geological setting.

The improvement of the ceramics industry in Coimbra and the use of the Buarcos coal are thus evidenced by the inkstand which Domingos Vandelli may have offered to the Real Academia das Sciencias. His motive may have been for publicity purposes. This is a further sign of the significant improvement of science, technology and economy in Portugal during the late eighteenth century.

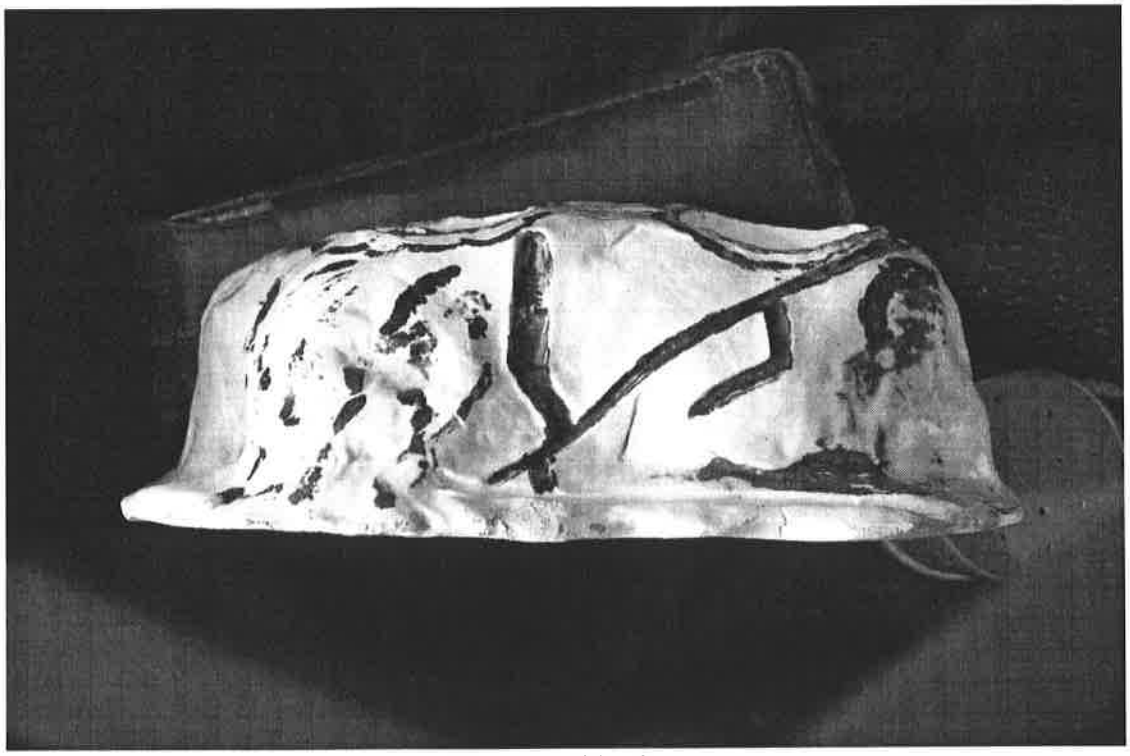


Figure 1: Side view

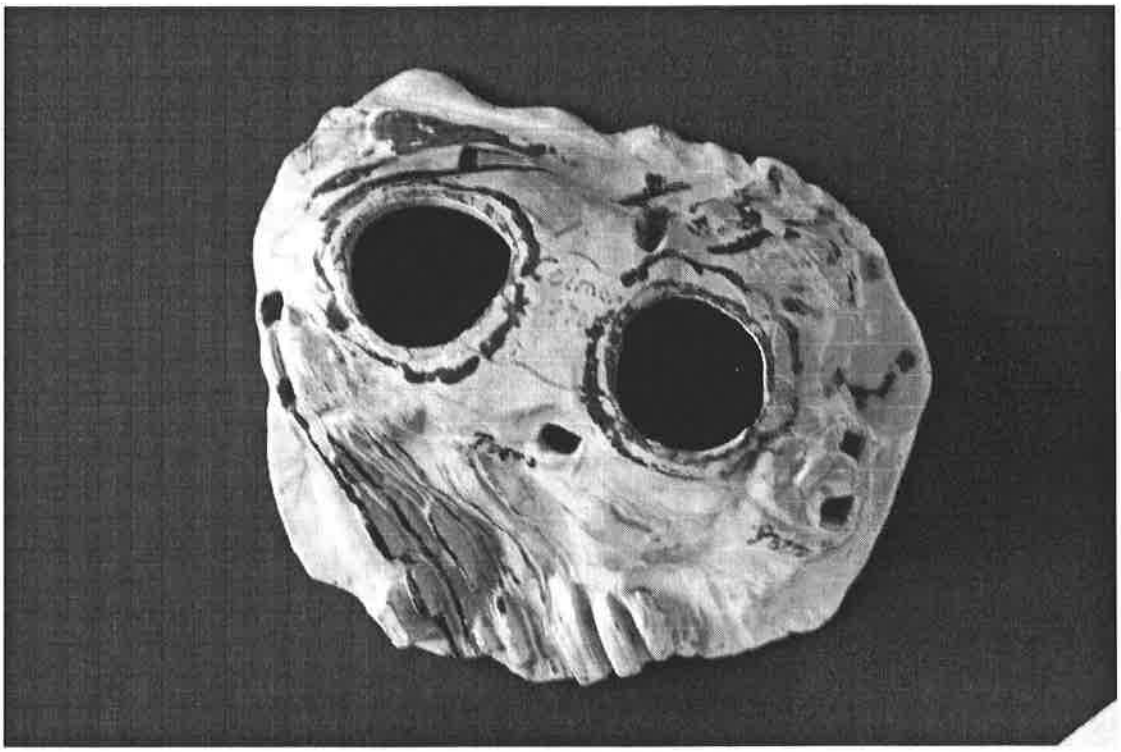


Figure 2: Top view

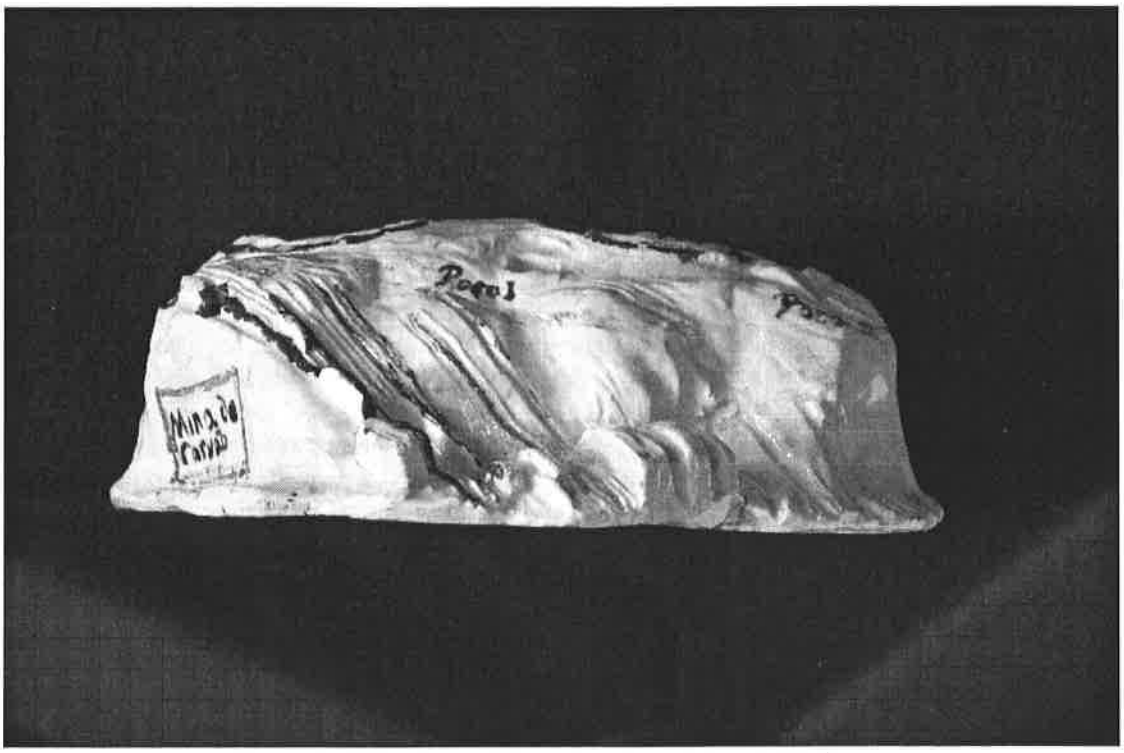


Figure 3: Side view, with coal beds and 'legends' shown

AWARDS

Sarton Medal 2007
History of Science Society
Washington, D.C., 3 November 2007
to
Martin J. S. Rudwick

Citation by James Secord, University of Cambridge

The Sarton Medal is the highest award of the History of Science Society, given annually in recognition of a lifetime of scholarly achievement. It is a personal pleasure and a great honor to introduce Martin Rudwick as the Sarton medalist for 2007.

Martin Rudwick achieved pre-eminence in history of science after a distinguished early career in palaeontology. Educated at Trinity College Cambridge, he graduated with first class honors in the Natural Sciences Tripos and wrote his dissertation on brachiopods, a group now nearly extinct but of vital importance in the fossil record. An interest in reconstructing the functional evolution of these unusual organisms led to a fascination with the history and philosophy of science, and he eventually moved to that department in Cambridge, the first of a series of distinguished posts held in the United Kingdom, the Netherlands, Israel, France, and the United States. In 1998 he returned to England, having retired from the University of California at San Diego as professor emeritus of history, and he is affiliated once again with the Department of History and Philosophy of Science at Cambridge. There can be no question that Martin has been the most influential historian of the earth sciences in the past fifty years. He has received the History of Geology award of the Geological Society of America (1987), the Friedman Medal of the Geological Society of London (1988), and the Founder's Medal of the Society for the History of Natural History (1988).

Like many readers, I first encountered Martin's work through *The Meaning of Fossils* (Macdonald and American Elsevier, 1972), which was based on his celebrated undergraduate lectures at Cambridge. This beautifully written book, which explores the period from the Renaissance to the end of the nineteenth century, set a fresh agenda for a whole generation of historians of science, showing how scientific knowledge could be understood in terms of wider philosophies of nature and changing canons of practice. As John Herschel said of Charles Lyell's *Principles of Geology,* it is 'one of those productions which work a complete revolution in their subject by altering entirely the point of view in which it must henceforward be contemplated.' It certainly transformed my own historical understanding.

In this and many subsequent works, Martin has led the way in demonstrating that classification, order, and display cannot be dismissed as trivial aspects of the making of knowledge, but are important ways of understanding the natural world. His articles (recently collected by Ashgate in two volumes) on Charles Lyell, Charles Darwin, Georges Cuvier and other key figures have been staples of student reading lists, combining analytical insight with readable style. He has been one of the pioneers in promoting study of the visual aspects of science, notably through his widely read essay of 1976 in *History of Science*, and *Scenes from Deep Time* (University of Chicago Press, 1992), which introduced readers to a remarkable array of nineteenth-century depictions of ancient life. He has creatively employed visual modes of exposition throughout his work, using analytical diagrams to sum up complex controversies and forms of social relations.

This interest in visual modes of exposition is characteristic of a broader effort to find new tools for understanding past forms of life. Martin has encouraged historians to engage with the sociology and anthropology of science, and has applied this in innovative ways within his own writings. In 1999 the Society for Social Studies of Science awarded him the Bernal Prize. His best-known book, *The Great Devonian Controversy* (University of Chicago Press, 1985), is a classic of our field, demonstrating that a nuanced account of the past can shed light on the general processes of science. As the late Stephen Jay Gould said, 'After a superficial first glance, most readers of good will and broad knowledge might dismiss [this book] as being too much about too little. They would be making one of the biggest mistakes in their intellectual lives.'

In an era when scholarly research is too often constrained by national and linguistic boundaries, Martin has been ecumenical in his approach. He has taught in three countries and publishes regularly in French as well as English. Through his encouragement of scholars in different countries, he has been instrumental in developing a

cosmopolitan perspective among geologists and historians.

Martin's latest 840–page book, *Bursting the Limits of Time* (University of Chicago Press, 2005) is a major European-wide study of the leading practitioners of natural history in the decades around 1800. Its equally imposing sequel, *Worlds before Adam*, is scheduled for publication in the spring of 2008. These magnificent volumes grew out the 1996 Tarner Lectures, and are notable for their sensitive exploration of figures who had been dismissed in histories of secular progress as religious obscurantists. Together, they make a compelling case that the development of a historical vision of the earth is as significant a transformation in human thought as those associated with relativity physics or Darwinian evolution.

Martin Rudwick has shaped the way we see some of the most widely discussed episodes in history of science, and has consistently set standards for analytical rigor, innovation, and depth of research. His writings have been at the forefront of our field for nearly four decades, and are models of appropriate use of visual arguments and engaging prose. It is in recognition of his remarkable achievement that the History of Science Society has named him as the 2007 Sarton Medalist.

James Secord, Cambridge

Response by Martin J. S. Rudwick

When I heard I'd be receiving the Sarton Medal this evening, I was of course utterly delighted, but also very surprised. I joined the Society exactly one-third of a century ago, and ever since then I've looked up to the successive Sarton medallists with huge admiration, but without any expectation that I'd ever be considered to belong in the same league. However, beyond any personal feelings of that kind, I also didn't think I was qualified for this immensely prestigious award. I had three reasons for thinking so; and as they all have broader implications I think it's worthwhile to explain them, here and now, even if it means keeping you (and me) from our dinner for a few more minutes.

My first reason for surprise was that I'm a European (although for many years the INS did class me as a "resident alien": a foreign body landed from outer space, as it were). Like many of our Society's loyal non-American members, I'd vaguely got the impression that the Sarton was now an honour given to distinguished American scholars. When I checked this against the list on the Society's website, I found that the most recent Sarton medallist not based in the US was Mirko Grmek back in 1991, sixteen years ago. What surprised me more was to see that in the previous sixteen years there had been no fewer than eight Europeans and one Russian. Now it may well be that this dramatic change reflects a real shift in the geographical centre-of-gravity of scholarly excellence in our field; and certainly there can be no doubt about the outstanding calibre of all the recent Sarton medallists. Nonetheless I think there must be a nagging query, whether our Society has found the right balance between its very proper role as the U.S. national body for the history of the sciences, and its equally important historic role—which Sarton himself exemplified long ago—as the world's premier society in our field. Anyway, I think that all our members not based in the U.S. will take heart from seeing that this year's medallist is a European, because it proves beyond doubt that our Society is not in fact paralleling the catastrophic unilateralism of the current occupant of the White House.

My second reason for thinking I wasn't likely to be considered for the Sarton Medal was that I've focussed most of my historical research on the history of the earth sciences. Looking at the list of previous awards confirmed my impression that no previous Sarton medallist has worked primarily in this field. I emphasise this not out of personal pride, but rather to welcome this recognition by the Society that the earth sciences are as valuable as any others, as fruitful material for historical research. Certainly it's a strikingly under-cultivated field, if you measure it against the enormous importance of the earth sciences themselves in the modern world. I think the history of the earth sciences is packed with enticing under-explored research topics, ranging in time from Antiquity to very recent history, and ranging in possible approaches all the way from the most deeply technical to the most subtly cultural, to suit all historiographical tastes. I do think that graduate students who are casting around for a good research topic would be well advised—literally, by their advisers—to look a bit more closely at the earth sciences. So I hope the great personal honour I feel at receiving this Sarton Medal may be matched by a higher profile in future for all of us who work in this strangely neglected field.

My third and last reason for surprise was that I had the impression that Sarton Medals were given for "a lifetime's achievement in the history of science" or some such wording. So I never thought I could possibly qualify, having spent almost two decades of my adult lifetime—not to mention my teenage years—as a scientist.

But since I have been chosen for this award, I'd like to take it as a tacit recognition by our Society that my first incarnation as a palaeontologist was in effect an integral part of my "lifetime of scholarly achievement." I'm pleased to know that my first career has not been treated as a disqualification. But I'd like it to be recognised as a positively desirable qualification for a historian of any of the sciences. It's now exactly forty years since I switched departments at Cambridge, from Geology to History and Philosophy of Science; but I'm still continually reminded how much my ongoing historical work owes to what I did in my first career. I'm convinced there's no substitute for hands-on experience of scientific research, as a training for historical research in the sciences. Nothing else can give one so much of the feel for both the empirical material and the style of discourse of the relevant figures in the past.

Of course I was lucky to get into the history-of-science before the boundary fences of professionalisation became as high and daunting as they now are. But even now, I think there's much to be said, for example, for the scientific internships that we at UCSD introduced as a requirement for our graduate students—including our historians—when we set up our Science Studies Program. I must say I'm worried at the increasing tendency in recent years for historians of the sciences to cosy up to other kinds of historian, at the expense of cultivating good relations with scientists. I know there are strong reasons for doing this, in terms of job opportunities; but to some extent that's surely a self-fulfilling policy. I think it would be worthwhile for some people in our Society to rethink our policies: not to weaken our links with other historians, but to get a better balance between them and our potentially valuable colleagues in the sciences.

Some of these remarks may strike you as biting the hand that's just given me this wonderful and unexpected honour. But my criticisms--if they are taken to be criticisms--are those of a deeply committed historian of the sciences and a loyal member of this Society. I'm immensely grateful to the History of Science Society for its institutional support throughout the years of my second career, and now for the supreme honour of the Sarton Medal.

Martin Rudwick, Cambridge

Mary C. Rabbit History of Geology Award, 2007
Geological Society of America
Kenneth L. Taylor

INHIGEO was well represented at the 2007 Annual Meeting of the Geological Society of America (GSA), held in Denver, Colorado. The highest award of GSA's History of Geology Division was presented to Professor Kenneth L. Taylor (University of Oklahoma), the Commission's Vice President for North America. The Citationist was Kennard B. Bork (Denison University), INHIGEO Secretary-General. The Citation and Response may be seen on the GSA website: http://www.geosociety.org/awards/07speeches/rabbitt.htm

Professor Sengör is Named to the Russian Academy of Sciences

Professor A.M.C. (Celâl) Sengör (INHIGEO member from Turkey and a Keynote Speaker at the INHIGEO 'General Contributions' symposium in Oslo-2008) has been named a foreign member of the Russian Academy of Sciences. This significant election is in recognition of Prof. Sengör's numerous and significant contributions to several disciplines within geology, focused primarily on tectonics but also including the history of geology. Prof. Sengör is also a foreign associate of the National Academy of Sciences (USA) and the American Philosophical Society.

Dr Toshihiro Yamada Wins a Major Award

Dr. Toshihiro Yamada, INHIGEO member from Japan, was awarded a First Prize from the Japanese Society of History of Science. The award, conferred in Kyoto in May 2007, honored the best paper to be published in recent years in the Japanese journal *Kagakushi Kenkyuu* and the international journal *Historia Scientiarum*. The cited paper was entitled 'Stenonian Revolution or Leibnizian Revival?: Constructing Geohistory in the Seventeenth Century.' Dr. Yamada is known to many members of INHIGEO because of his presentations at our meetings and at annual meetings of the Geological Society of America. His 2004 translation of Steno's *Prodromus* into Japanese helped introduce Steno and European visions of geology to a Japanese audience.

OBITUARY

Jan Urban
(24 June 1923–29 June 2007)

Jan Urban was born on 24 June 1923, in Prague. He studied at the Faculty of Law at the Charles University in Prague. After graduation he worked in the town of Chvaletice as a lawyer. Later he was employed at the Institute for ore research at Kutná Hora. Later he attained a new position in the Czech Mining Archives in Kutná Hora, today the Czech Geological Survey—*Geofond*. He was appointed a head of the *Geofond* bureau in 1958 and was active there until his retirement in 1985.

In Kutná Hora, Dr. Urban compiled many special reports and resources for mapping underground mine cavities of the western and southern Bohemia. He studied mainly history of mining in the Jáchymov and Kašperské Hory excavation districts. He was interested in the history and development of the Mid-Bohemian "Kladno" Coal Basin. He studied Czech spa areas and he was awarded the State Prize for his research of the Karlovy Vary (Carlsbad) spa.

Jan Urban obtained the degree of Ph.D. in the history of science and engineering. He was a representative of the Czech Republic in INHIGEO, and was one of the Commission's first members. A number of us will recall his last INHIGEO activities, three years ago, when—at the annual meeting in 2005 in Prague—he guided us during a symposium excursion in the Kutná Hora mining district.

Classical music was his lifelong interest. He spent many years in the philharmonic orchestra of Kolín, where he played violin, violoncello and bass fiddle. He was active in the Public School of Arts in Kutná Hora, where he educated many students and where he concertized in a chamber-music group.

Jan Urban died on 29 June 2007, in Kutná Hora, after a long illness.

Alena Čejchanová, Prague

AN INTERVIEW WITH SILVIA F. DE M. FIGUEIRÔA

Incoming President (2008–2012) of INHIGEO

Silvia F. de M. Figueirôa

* Editor's Note: The following exchange, conducted through the magic of transoceanic e-mail, occurred between the questioner, Ana Carneiro (Portugal), and the respondent, Silvia Figueirôa (Brazil) in late March 2008.

Question 1) When and why were you attracted to the history of the geosciences?

My interest emerged near the time of my graduation from college, with a major in Geology, when I attended a course on Philosophy of Science. Nothing was said about the geosciences, only about Physics and Mathematics, but it was precisely this lack of discussion on geological themes that prompted me to search for the literature available on this topic. It was much less than today, since this happened in 1981.

Q–2) What were your youthful interests, and your educational and career paths?

Since my early youth my interest was Geology, which was awakened by a Geography teacher who taught me for about seven years. As I said before, at the time of my graduation, I had 'discovered' the history and philosophy of science and I had decided to pursue the history of the geosciences. I established contacts with the only group in Brazil working on History of Science, professionally and institutionally, which was based at the University of São Paulo. I then completed a M.Sc. followed by a Ph.D. on the History of Science, in the History Department at the University of São Paulo. At the beginning of my M.Sc. studies, in 1983, I was appointed to the Geological Institute of São Paulo, because of the celebration of its centenary, to be held in 1986. The topic of my Masters dissertation was the history of the Geographic and Geological Commission of São Paulo, the *celula mater* ('mother institution') of the Geological Institute and of seven more institutions.

I worked at the Geological Institute until 1987, organizing historical archives, documents and photos, the oral history archive with interviews of former staff members, a book, various exhibitions, etc. Questions revolving around geological surveys became the research topic of my work carried out in the subsequent years. By the end of my Masters, I was appointed to the Geosciences Institute of Campinas (University of Campinas-UNICAMP), where I have been working since.

Q–3) What are the research topics that interest you most?

In my research, the topics that interest me are wide ranging and involve the history of the geosciences in Brazil, from the end of the eighteenth century until the first decades of the twentieth century. It is a 'lifelong project' so to speak, bringing to light, from an analytical and critical perspective, a 'hidden' history. The risk we must avoid is that of historical chauvinism. On the other hand, it is still a quite widespread idea that former colonial countries, in particular those that belonged to the Iberian Empires, were a desert for science for decades, or even for centuries. This picture is simplistic and false, as has been shown by serious documental investigations.

Personally, my interest is dance, and I was a dancer for some ten years.

Q–4) Which books or papers had the most impact on you? Is there someone who had a marked influence on you intellectually?

The first book I read which had a positive impact on me was *The Making of Geology* by Roy Porter. I ended up writing to the author, who promptly replied saying that he was moving to the History of Medicine, but he had about half a dozen colleagues working on the history of the geosciences. Through him I became acquainted with Hugh Torrens, Gordon Davies, Martin Rudwick, Jim Secord and Nicholaas Rupke. They were all very kind to 'this young Brazilian student eager to learn more.' This was the best possible way to enter the subject I could have ever hoped for! Afterwards, I enthusiastically registered in the Moscow IGC (1984) and my paper was accepted. I was given a grant which covered my travel, and I met for the first time the INHIGEO community. Professor Reijker Hoykaas was then being replaced by Professor Gordon Craig as President, and the Secretary-General, Professor Martin Guntau, by Professor Endre Dudich. From this meeting onwards, Hugh Torrens, Martin Guntau and François Ellenberger became my main intellectual mentors, in addition to being great friends. I owe them a great deal! But the 'INHIGEO family' had and has many other excellent researchers with whom I have always worked well and whom I greatly admire.

Q–5) In Brazil, is history of geology part of the curriculum of geology students or only for those taking a degree in geology teaching? And Q–6) Is the teaching of history of geology widespread in Brazilian Universities?

Due to the special situation of the Geological Institute-UNICAMP, which besides me has as its staff members colleagues such as Maria Margaret Lopes and Pedro Wagner Gonçalves, History of Geology is only compulsory for geology students at UNICAMP. This is exceptional, but it has drawn the attention of other Brazilian universities, and people in charge are beginning to consider the possibility of introducing History of Geology as a complementary course (not compulsory) in Geology Degrees. The Degree in Geology at UNICAMP will complete ten years of existence in 2008.

Q–7) Are archives easily available? What is the situation of geological archives, collections and museums? Are they catalogued and preserved?

More or less: it depends on the region and institution. National and State archives are generally good. Some specific institutions, private and public, keep well-organized and accessible archives. But many others do not take care of their documental collections properly.

Q–8) Is the international literature on the history of geology easily available?

Yes, quite easily! The main Brazilian universities have good libraries and the one of the federal research board (CAPES) provides on-line access to electronic periodicals, many of which concern the history of the sciences. At UNICAMP, given the presence of our group, we have always subscribed to specialized journals and acquired books. In addition, personal exchange with other colleagues has helped to keep our library reasonably updated.

Q–9) What are the main centers of research on the history of geology, in Brazil?

Without being presumptuous, UNICAMP! There is something in Bahia too, thanks to Professor José Carlos Barreto de Santana, and in Minas Gerais (Belo Horizonte) with Professor Friedrich Renger. With the appointment of our former post-graduate students to positions in other universities, geographical diversification has begun, but there are not yet other research centers on the history of the geosciences in addition to ours.

Q–10) Regarding research, is the material culture of geology (collections of fossils, maps, etc.) a common topic of research?

Partly so, with Professor Margaret Lopes, who has focused on the history of Natural History Museums.

Q–11) How intensive has your involvement with INHIGEO been?

In Brazil, INHIGEO has four members: Maria Margaret Lopes, Pedro Wagner Gonçalves, José Carlos Barreto de Santana, and me. I have pioneered the first contacts with INHIGEO, and was elected in 1987. We have participated in events (specific symposia, whether coinciding or not with those of IGC), and in 1993, we organized an INHIGEO meeting, here in Campinas and Ouro Preto. It was an excellent opportunity to bring together, in addition to Brazilian participants, other Latin-American colleagues, from Mexico to Argentina. When IGC-31 took place in Rio de Janeiro, in 2000, David Oldroyd and I organized one of the symposia. In the context of the participation of INHIGEO in IUPHS, Hugh Torrens, Ken Taylor and I organized a symposium within the International Congress of History of Science, held in Liège, Belgium, in July 1997.

An international meeting of INHIGEO minds. Dublin, Ireland, 2003.
Martin Guntau (Germany), Silvia Figueirôa (Brazil), Ezio Vaccari (Italy), Manuel Pinto (Portugal)

Q–12) What are your Presidential thoughts and aspirations for the Commission's future?

INHIGEO completed forty years in 2007, and is now a consolidated and strong institution. My proposals are twofold: 1) To widen, without losing quality and professionalism, the importance of the Commission at the international level, by bringing colleagues from countries not yet represented, and more colleagues from those nations already present. This will have the effect of stimulating the history of the geosciences in order to increasingly consolidate the field, both qualitatively and quantitatively; 2) to widen the dialogue with other fields, such as the history of soil sciences, meteorology, etc., by promoting joint meetings. We develop quality work that needs and deserves to be more widely known by the community of historians of science in general. Following growth and consolidation, we are ripe to move forward in this direction without abandoning our internal dialogue.

FORTHCOMING MEETINGS OF NOTE

(Presented in chronological order of occurrence)

5th International Symposium on 'Mineralogy and Metallurgy in Southwest Europe' León, Spain 19–21 June 2008

The Spanish Society for the Preservation of the Geological and Mining Heritage (SEDPGYM) will be hosting an international symposium that considers questions of interest to many INHIGEO members. The '5th International Symposium on Mineralogy and Metallurgy in Southwest Europe' will meet in León, Spain, on 19–21 June 2008. The sessions will be in homage to Claude Domergue. For more information, contact <v.symposio.mineria@unileon.es>.

ICHO VIII, 'The History of Oceanography in the Mediterranean' Villa Doria d'Angri (Naples, Italy) 26–29 June 2008

The eighth meeting of the International Congress of the History of Oceanography (ICHO VIII) will be held this coming summer in Naples (Italy). While the Congress is open to a wide-range of topics in the history of marine sciences, it would like to direct the attention of scholars to the following topics:

Special Sections:

Prince Albert and Mediterranean Oceanography
The role of the Stazione Zoologica in Marine Science
Marine Stations and Oceanography in the Mediterranean,

Paper Sessions:

Oceanography and Patronage
International Cooperation
Oceanography as a Global Science
Oceanography as an Interdisciplinary Science
Explorations, Expeditions
Development of Measuring Systems
Modeling and Forecasting
Outstanding Individual Scientists
Oceanography in the Time of the ColdWar
Marine Science and the Protection of the Seas
Others

International meetings in the history of oceanography, with the rubric of International Congress of the History of Oceanography, have a storied history from gatherings in Monaco (1966), Edinburgh (1972), Woods Hole (1980), Hamburg (1987), Scripps (1993), Qingdao (1999), and Kaliningrad (2003). The eighth meeting, to be held in Naples, will thus join these previous settings and will further the development of the history of oceanography.

In past meetings, the location of the Congress usually served as the focal point for many presentations.

Since many meetings were held at major oceanographic centers, this orientation often attracted much local support and local interest. These presentations have often been complemented by papers with a broader scope, thus giving rise to the "from the local to the global" character common at many congresses. We anticipate a similar pattern in the Naples meeting, with its location in the Mediterranean but with its influential reach far beyond the confines of the local Sea.

The website of ICHO-VIII, the Eighth International Congress of the History of Oceanography, is now available at: http://riscnw.szn.it/eventi/ichoVIII/. It includes information on the program, logistics (including accommodation), registration fees, and contacts. Eric Mills, at Dalhousie University, Halifax, Nova Scotia (<E.Mills@Dal.ca>) may be contacted for specific questions.

9th Central American Geological Congress
San José, Costa Rica
2–5 July 2008

In conjunction with the International Year of the Planet, the government of Costa Rica is supporting the '9th Central American Geological Congress.' The congress will be held in San José, Costa Rica, in early July 2008. Among the many themes of the congress are: Environmental Geology and Urban Planning; Climate Change and Hydrogeology; History of Geology; Geophysics, Seismology and Volcanology; Geo-tourism and Heritage Sites; Tectonics and Structural Geology; Geoarcheology and Soil Sciences; Mineral Resources; Paleontology, Stratigraphy, and Sedimentology; Geo-legislation; and Medical Geology. For further information, please see: <www.congressogeologicao.com>.

5th International Conference on Geographic Information Systems (ICGIS–2008)
Fatih University, Istanbul, Turkey
2–5 July 2008

Evolution and innovations in GIS will be the topic of the '5th International Conference on Geographic Information Systems,' to be held in Istanbul, Turkey, in early July 2008. It is not clear how much history of science will be discussed, but interested persons may consult: http://icgis2008.fatih.edu.tr; use e-mail (<icgis2008@fatih.edu.tr>); or contact Dr. Ali Demirci, Head of Geography Department, Fatih University, 34500 Istanbul, Turkey (<ademirci@fatih.edu.tr>).

33rd International Geological Congress (IGC)
INHIGEO–2008
Oslo, Norway
6–14 August 2008

As most of you well know, the 33rd International Geological Congress (IGC) is to be held in Oslo, Norway in August 2008. A strong set of papers is now confirmed for our INHIGEO Symposium IEH-01, 'General contributions to history of geoscience,' scheduled for Thursday, 7 August 2008. The annual INHIGEO Business Meeting is set for late afternoon on 7 August 2008, after the last presentation in our symposium. A pre-Congress field excursion, by boat, around the Oslo Fjord, is in the final planning stages. The primary focus of the trip will be to see sites of historic significance in the evolution of our understanding about metamorphic rocks and metamorphism. For details and updates concerning the Congress, see: <http://www.33igc.org>.

Geological Society of America (GSA)
History of Geology Division
Houston, Texas, USA
5–9 October 2008

Topical Session 208, sponsored by the History of Geology Division of the Geological Society of America (GSA), focuses on 'History of the Influence of Religion on Geology and Geology on Religion.' The program was developed independently of the INHIGEO–2007 symposium in Eichstätt, but covers the same general theme. The submission deadline for abstracts is Tuesday, 3 June 2008 (go to <www.geosociety.org> and follow the

instructions). Stephen M. Rowland, University of Nevada-Las Vegas) is the key contact person (<steve.rowland@unlv.edu>).

XXIII International Congress of History of Science and Technology
'Ideas and Instruments in Social Context'
Budapest, Hungary
26–31 July, 2009

Theme: Ideas and Instruments in Social Context

This slogan, conjuring images of both scientific theory and practice, is meant to suggest a broad agenda, not a restrictive one. The organizers welcome a wide range of proposals for papers and sessions, covering any period from antiquity to the present and any place on the face of the globe. Although all presentations should relate to the history of science or technology, they may focus on institutions as well as beliefs, inventions as well as applications, the popular as well as the abstruse. They may explore the historical relations of science and technology with such topics as politics, medicine, religion, gender, education, and the arts—or look at the intersection of the history of science and technology with philosophy and sociology.

Ideas mean, in this respect, all kinds of scientific, technical, philosophical, religious, political and social ideas that influenced, in a given period and in a given area, the development of science and technology. Topics that show the mutual influence of philosophical, religious, political and social ideas and scientific and technical development are highly appreciated. The analysis of ideas that brought into being or changed an instrument or an institution forms also part of the topic.

All kinds of scientific and technical instruments as preserved in museums, descriptions, memories and in art belong to the topic of the congress. The influence of the instruments on the culture of the laboratories and on everyday life in the different periods is also a highly appreciated topic of the congress.

The history of all kinds of "instruments" that helped or hindered the development of science and technology like legislation, international, state or local influence institutions are incorporated into the second part of the topic.

For much of the history of our discipline, two separate and sometimes antagonistic approaches to the history of science have focused on the study of ideas, and on the study of instruments. However, in the past few decades, more and more scholars have striven to integrate both aspects, showing that instruments not only constitute the material culture of science, but also shape and even embody ideas. They are also central in understanding how science operates within societies, is shaped by the milieus as well as the material conditions in which it is produced, and in return contribute to the construction of these societies. The advent of "Big Science" in the twentieth century, closely dependent on highly sophisticated and costly instruments, has forcefully brought forward the importance of their study by historians of science.

Moreover, the Budapest Congress will be the first to be held after our Division's change of name from "Division of History of Science" to "Division of History of Science and Technology" in 2005. In order to explicitly bring out the ways in which science and technology have been interrelated in history and how studies of both fields are complementary, a series of plenary lectures, symposia and special sessions will be devoted to "Science and ideas in social context," with the aim of bringing together historians of science and historians of technology, and to enhance common discussion on objects that are traditionally regarded as pertaining exclusively to one or the other discipline.

First circular: http://www.conferences.hu/ichs09/FirstCircular.htm

Contact address: Prof. Eva Vamos, c/o SCOPE Ltd., Kende u. 13-17., H-1111 Budapest, Hungary. Phone: +36-1-209-6001, 279-6188. Fax: +36-1-386-9378. E-mail: <ichst09@conferences.hu>. The Second Circular, which will be distributed on 30 September 2008, will contain the Preliminary Program. Local contact for INHIGEO-related fields: Miklos Kazmer, Department of Palaeontology, Eotvos University, P.O.Box 120, H-1518 Budapest, Hungary. Phone: +36-2-109-0555 ext. 8628. Fax: +36-1-381-2104. E-mail: <mkazmer@gmail.com>.

INHIGEO Annual Meeting for 2009
'Fossils and Fuel'
Calgary, Alberta, CANADA
9–19 August 2009

The North American Plate will be the site of what should be a superb set of technical sessions and field trips in August 2009. Response to the Canadian proposal, as presented at our meeting in Eichstätt, was highly favorable. Registration and a welcoming reception are scheduled for 9 August 2009. The meetings will occur on 10 through 14 August, and the field excursion through Western Canada will take place on 15 through 19 August 2009. A brief overview is presented in the Secretary-General's report in this newsletter. Those desiring a nicely developed and well illustrated nine-page .pdf file with details may write to me (<bork@denison.edu>) or to Prof. George Pemberton, at the University of Alberta (<george.pemberton@ualberta.ca>).

Von Humboldt's legacy after 150 years
IAGA, Sopron, Hungary
23–30 August 2009

The year 2009 marks the 150th anniversary of the death of Alexander von Humboldt (1769–1859), the renowned German natural philosopher. The event will be celebrated at a special session to be held at the International Association for Geomagnetism and Aeronomy (IAGA) 11th Scientific Assembly, to be held in Sopron, Hungary, from 23–30 August 2009.

This session of invited talks focuses on von Humboldt's contributions to geomagnetism and aeronomy, including his influence on Gauss's studies, his role in the establishment of the Magnetic Union, and work on catalytic function for the birth of solar-terrestrial physics. In addition, speakers will examine broader topics surrounding von Humboldt, such as "generalists versus specialists" in science and the evolution of a scientific reputation over time. Contributed talks will be given in an associated poster session. The *Convener* is Edward W. Cliver, Air Force Research Laboratory, AFRL/VSBXS, 29 Randolph Rd., Hanscom AFB, MA 01731-3010, USA; tel: +1-781-377-3975; fax: +1-781-377-3160; e-mail: edward.cliver@hanscom.af.mil His *Co-convener* is Wilfried Schröder, Geophysical Institute, Germany (<Geomoppel@t-online.de>). More details can be found at the web site: http://www1.iagasopron.hu/index.html

A Century of *Diplodocus* in Bologna
'International Conference on Vertebrate Palaeobiography'
Giovanni Capellini Museum of Geology and Palaeontology
Bologna, Italy
28–29 September 2009

In the autumn of 1909, a complete skeleton of *Diplodocus carnegiei* was put on display in the Giovanni Capellini Museum of Geology and Palaeontology of Bologna. The plaster cast specimen was the gift of Andrew Carnegie. In honor of that occasion, the museum will host an 'International Conference on Vertebrate Palaeobiogeograpy: Tethys, Mesogea, and the Mediterranean Sea' on 28 and 29 September 2009. An exhibit of Italian dinosaurs will be on display from 6 September through 31 December 2009.

For additional information, please see <www.museocapellini.org> or contact Dr. Federico Fanti, Department of Earth and Geoenvironmental Sciences, University of Bologna (Alma Mater Studiorum), Via Zamboni 67, I-40127 Bologna, Italy (<federico.fanti@unibo.it>).

BOOK REVIEWS

A History of the National Geological Survey of China

CAO Xiping, *Early History of the National Geological Survey of China and the Historic House of Bingmasi Yard*, Geological Museum of China, Beijing, 2007.

The National Geological Survey of China (NGSC) was one of the most famous Chinese scientific institutions in the first half of the twentieth century. Several contributions of worldwide significance were made by the earth scientists working at this institution, such as the discovery of *Sinanthropus pekinensis*, and the Yanshan

Movement (approximately corresponding to the Jurasside, or Nevadian, and Laramide Orogenies in North America), proposed by WENG Wenhao in the late 1920s. In 1948, in the first election of academicians of the National Central Academy, there were six geologists among the twenty-eight academicians in the science section (including mathematics, physics, chemistry, and earth science, etc., but not including biology), and four among the six academicians of geology came from the NGSC (see "Summary of the First Election of Academician of National Central Academy," in Secretary Group (ed.), 1981, *Minutes of the Meeting of the Academicians of the National Central Academy [of China]*, p. 1). After 1950, forty-seven people were elected academicians of the Chinese Academy of Sciences (Academia Sinica), and one person as academician of the Chinese Academy of Engineering, among more than one hundred people who had formerly worked for the Survey. The proportion of academicians of this institution was thus high. This showed how great was the influence of the achievements of the NGSC in scientific circles, and how important were the contributions to geology made by people from that body.

Thus, the NGSC made a considerable contribution to the development of geology in China. Indeed, in 1988, HUANG Jiqing, Acting Director of the NGSC, said that it was the earliest official institution in China to achieve a high reputation for scientific research both at home and abroad (see WANG Yangzhi, *History of the National Geological Survey of China*, Petroleum Industry Press, 1996, p. iii). The NGSC's achievements were also recognized by foreign scholars. For example, early in 1924, J. W. Gregory, the eminent professor of geology at Glasgow University, said that the Geological Survey of China "is regarded as most successful" (J. W. Gregory, 'Scientific Renaissance in China,' *Nature*, 1924, *113*, p. 19). Ten years later, C. H. Peaka referred to the Geological Survey of China as an outstanding research institution (C. H. Peaka, 'Some aspects of the introduction of modern science to China,' *ISIS*, 1934, *22*, 173–219). In 1970, when discussing V. K. TING, the first Director of the NGSC, Charlotte Furth said that, in the years before 1949, the Geological Survey was a source of great official pride in China (Charlotte Furth, *Ting Wen-chiang: Science and China's New Culture*, Harvard University Press, Cambridge, 1970, pp. 56–57).

Unfortunately, for well-known reasons, it was not until the reform and open-door policy was adopted in China after the late 1970s that scholars began to study some topics that had seldom been touched for quite a long time. WANG Yangzhi published a short paper about the NGSC at the beginning of the 1980s. But here I mention four books that discussed the NGSC at length.

1) WANG Hongzhen (ed.), 1990, *The Early History of the Geological Enterprise in China*, Peking University Press, Beijing.

In his preface, WANG spoke highly of V. K. TING and ZHANG Hongzhao as the founders of the geological enterprise in China. Among other papers, there was one by LI Chunyu, a former director of the NGSC, entitled 'Former NGSC's contributions to the later development of geosciences after the foundation of P. R. China.' Also of interest was JIA Lanbo's 'The Establishment of the Division of Cenozoic Research, NGSC.'

2) WANG Yangzhi, 1996, *History of the National Geological Survey of China*, Petroleum Industry Press, Beijing.

The author, with the help of HUANG Jiqing, discussed the historical context of the NGSC, its structures, staff, funds, and contributions. It was the first book to discuss systematically the NGSC and its developmental history.

3) CHENG Yuqi and CHEN Mengxiong (eds.), 1996, *The Former Geological Survey of China (1916–1950): An Historical Review and its Achievements,* Geological Press, Beijing.

This is a collection of papers, most of the authors being former workers at the NGSC, such as CHENG Yuqi (ore-deposit geology, petrology) and CHEN Mengxiong (hydrogeology) themselves, JIA Lanbo (Paleoanthropology), LIU Dongsheng (Quaternary geology, environmental geology), etc. The papers provide valuable historical materials.

4) ZHANG Jiuchen, 2003, *Geology and Society in the Republic of China (1916–1950): A Case Study of the National Geological Survey of China*, Shandong Education Press, Jinan.

The author takes the National Geological Survey of China, one of the most representative institutions of the Republic of China, as an example, and describes the mechanism of the development of geology in China, the interaction between science and society, the role of academic 'powers,' and the characteristics and roles of the geological community, etc. The book is written from the perspective of the sociology of science. I was particularly interested in Chapter 5, which analyses the structure, hierarchy, and value preferences of the geological community in China during the period 1916–1950, a topic that few people have discussed before.

As research goes deeper, diverse opinions and arguments will inevitably arise. One of the problems is how to define the date of foundation of the NGSC. At present, a consensus has been reached that it was first named in 1913, but it was not in full operation then because only one person, V. K. TING ("one 'chief,' no 'Indians'"!) was employed up until 1916, when about twenty geologists were appointed to the NGSC after their graduation. For this reason, most people think the date for the NGSC's foundation should be taken to be 1916. LI Xuetong, a scholar from the Chinese Academy of Social Sciences, has a different opinion, however. One of his reasons is that during the early years of the NGSC, TING made a geological survey along the line of the Zhengtai railway, and then travelled to Yunnan, Sichuan, and Guizhou, though geological surveys were not conducted on a larger scale until 1916. Therefore, LI contends that the NGSC was not only named in 1913, but also geological researches began that year. In addition, the organization's basic principles and policies were fixed, according to *Historical Events of Geological Survey* (1922) (see, LI Xuetong, 'Textual Research on the History of the National Geological Survey of China,' *China Historical Materials of Science and Technology*, No. 4, 2003).

No doubt, such arguments will promote further research. People can discuss what the essential factor(s) is (are) for an institution's establishment to be identified, such as historical perspective, the naming of an institution, the role of its first director, the number of its staff, the scale of operations, etc. One trend of research on the NGSC has been to engage in more detailed enquiry—more 'facts.' Another is to examine its social *function*. CAO and some others have been making contributions to this aspect of enquiry.

So I shall now discuss CAO Xiping's *Early History of the National Geological Survey of China and the Historic House of Bingmasi Yard* (special exhibition) (with WANG Hongzhen, CHEN Mengxion, ZHANG Erping, and LI Xuetong as consultants), issued by The Geological Museum of China in 2007. Bingmasi Yard in Beijing was the address of the first substantial 'home' of the NGSC (1921–1935). CAO is the Deputy Director of the present Geological Museum in Beijing and was responsible for organizing an exhibition there in March 2007 on the history of the Survey. The booklet named above was issued as a guide to that exhibition. It discusses mainly some events pertaining to the NGSC during the period between 1921 (when this institution moved to Bingmasi) and 1935, when it moved from Beijing to Nanjing, though Bingmasi remained as the site of the Beijing sub-branch of the NGSC, after it moved successively to other places: Nanjing, Changsha, Beibei in Chongqing (the moves being caused by the turmoil of the war with Japan). Though only a few years, it was during the period 1921–1935 that the NGSC made some important contributions and came to be highly esteemed. CAO and his colleagues rightly focus on the critical period in the development of NGSC in discussing its history.

This booklet is the product of a special exhibition on the Early History of the National Geological Survey of China and its Historic House in Bingmasi Yard. Its characteristics are a product of the nature of this booklet. The text is brief and to the point, with a total of about 10,000 words. The booklet covers six parts: Buildings and Tablet Inscriptions; Historical Context of the Geological Survey of China and its Departments; the Survey's Founders; its Academic Establishment, Organization, and Achievements; the Current Condition of Bingmasi Yard; and Valuable Artefacts on display.

The booklet depicts the historical vicissitudes of the NGSC in concise sentences, and the development is made admirably clear. For example, it tells readers about the current institution, named the Nanjing Institute of Geology and Paleontology, which is the descendant of the Paleontological Section of the NGSC and Institute of Geology of National Central Academy explicitly.

The booklet contains sixty-four pictures, including photos of a few articles of historical interest, such as the compass and magnifying glass of WENG Wenhao (the NGSC's second director), duplicates of Peking Man Skull and pottery from the Neolithic Yangshao Culture, excavated by Johann Gunnar Andersson. The volume has a different style from that the other books mentioned above in its use of images of instrument to illustrate the history of the NGSC.

CAO's booklet is the product of a considerable amount of research, though more detailed research for every aspect of the topic is possible and desirable in the future. (Unfortunately, limited by the nature of this booklet as an exhibition catalogue, it was difficult to take the task further.) However, the significance of the work done by CAO and his colleagues goes beyond the booklet itself. With the support of seven academicians of the Chinese Academy of Sciences (WANG Hongzhen, CHEN Mengxiong, SHEN Qihan, XIE Xuejin, XIAO Xuchang, LI Tingdong, and REN Jishun), and some other scholars, including CAO (through whose efforts a special exhibition on the NGSC in one of halls of the National Geological Museum is now held), the site of the former National Geological Survey of China has been approved by the authority concerned as a protected historic site. "Protection

of the site is the first step," Academician LI Tingdong has said. "People should make full use of the site. In the future, a permanent museum can be established there, to display the historical development of geology in China, even from ancient times" (TANG Wenyu, 'To Save China's Scientific Shrines—Viewpoints of Academicians and Scholars'; see: www.cast.org.cn/n435777/n616445/43035.html 11K 2007-6-20). We earnestly hope that this plan may be realised.

YANG Jing-Yi, Beijing

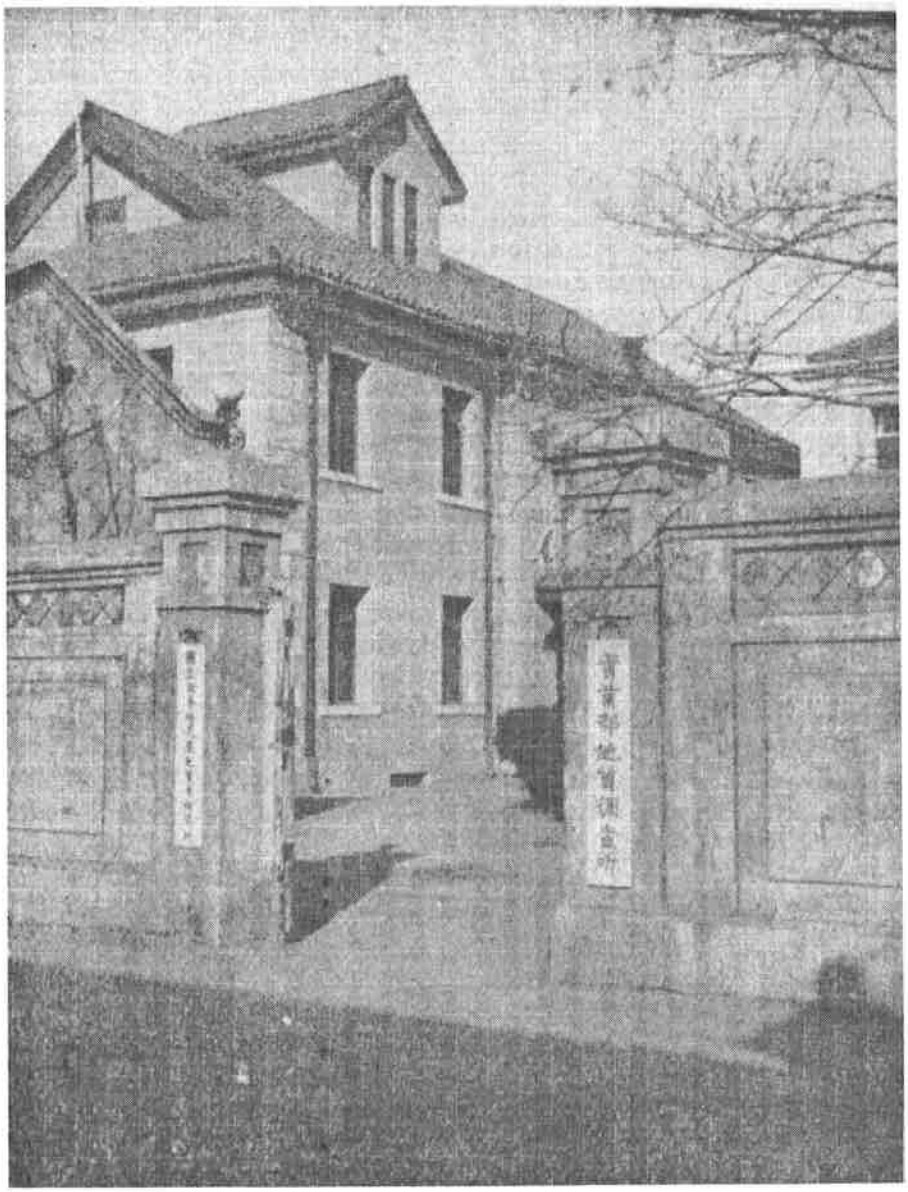


Figure 1: The Entrance Gate of the Former National Geological Survey of China

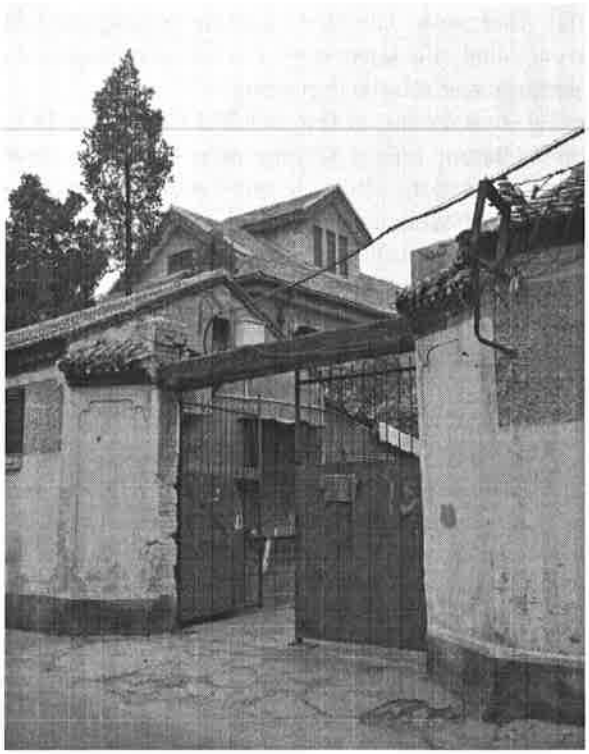


Figure 2: The recent condition of No. 9, Bingmasi (photograph by TANG Wenyu)

Whatever Is Under the Earth...

Herries Davies, Gordon L., *Whatever Is Under the Earth: The Geological Society of London 1807 to 2007,* The Geological Society of London Publishing House, Bath, UK, 356 pp.

The story of the two-hundred-year history of the Geological Society of London is well told in Gordon Herries Davies' inimical prose, including notes about the broader occurrences in history that influenced the Society. Although chronologically organized, there are major themes followed throughout the book. Besides remembrances of the geologists of the society, there are the society's initiation and growth, as well as changing standards for membership; the locations where it has met and their conditions; operating finances; changes over the years for its museum and library; the history and challenges of GSL publication; attitudes toward the membership of women over time; and, of course, changing ideas of what a professional society should be with respect to changes in the science of geology and the world. Herries Davies spent nearly ten years writing this account, with the immense resources of GSL, as well as access to Wallace Pitcher's notes from the latter's initial intention of writing the history. The standard was passed from Pitcher, who before his death recognized what a long endeavor it would be, to Herries Davies, at a meeting in Edinburgh in 1997. Many of us still cherish our bright red brief cases from that meeting, inscribed with the name of an excellent single malt Highland whiskey with which we toasted the outcrop at Glen Tilt, and during which meeting we also went to the classic site of Siccar Point.

In the late eighteenth and early nineteenth centuries, the science that would become geology enjoyed unprecedented popularity. Educated men convened to hear and read mineralogical and field descriptions, and the United Kingdom was no exception. Theories abounded, among them the Neptunist, Plutonist, and Vulcanist theories of rock origin. In the early nineteenth century, thirteen men formed the core of a group calling themselves the Geophilists (p. 13) who stated their aim as the formation of a Geological Society for the communication of ideas. Most were interested in mineralogy, and most had been associated with the short-lived British Mineralogical Society. As has so often been a feature with geologists ever since, the discussions were fueled with good food and good wine. In late Fall of 1807 the Society was formed, although not without dissention. Herries Davies covers the same ground here as did H.B. Woodward's account of the first hundred years of the Society,

commissioned for the Centennial. That work, *The History of the Geological Society of London*, was published in 1907 by the GSL. As would be expected, this latter work has the advantage not only of longer hindsight, but also of one hundred more years of geology and scholarship about it.

Membership steadily grew from the initial few to 1,268 Fellows in 1875 (p. 152). Criteria for membership were not yet settled, some members having only a passing interest in the science, but who enjoyed the social cachet of F.G.S. after their names (and had the ability to pay the dues). Foreign members were added regularly. There had been a few papers given by women, and in 1895 the president suggested that perhaps women might be admitted to hear papers read. Early in the twentieth century, women were accepted in attendance, and in 1919 Margaret Crossfield was the first to become a Fellow. As geology became less of an investigation of earth properties by men of leisure and the academic world, and more engaged in the real worlds of mining, transport, etc., the character of the members changed as well. As expected, admission of these "practical" geologists, as in the time of William Smith, was not without controversy, although when the roles are scrutinized, mining and related technologies were always represented. Later, radiometric measurements and other laboratory specialties added another layer to the sort of expertise represented, while throughout the twentieth century, demands for professional competency increased. Membership fell between the two great wars, but revived as geology itself did after the excitement of plate tectonics. Since 1990, Fellowship has been limited to "experienced graduates in geology and to those non-graduates possessed of long practical association with the science" (p. 310). From its beginning as a rather homogeneous society concerned mainly with mineralogy, paleontology, and stratigraphy, Specialty Groups have proliferated and meetings are held throughout the United Kingdom and sometimes outside. Now there are about 10,000 Fellows (p. 268).

The Society's meeting rooms have migrated to several places in London, and the twin demands for more space and the financial ability to support it have changed over the years. Perhaps sadly, the collection in the Museum was dispersed in 1911. Despite the interest of some items in the collection it had received fewer and fewer visitors, and space was at a premium. However, the Library was growing rapidly. In 1909 alone, donations consisted of 493 books and volumes of periodicals, 316 pamphlets, and 153 sheets of geological maps (p. 202–3), and the Library soon expanded into the Museum space. Because of bombing in World War II, thousands of books and documents were dispersed outside of London. They were returned after the war. Twenty years after World War II, membership and the library were again growing rapidly, while the other Societies with which the Geological Society had shared Burlington House were also growing. After an unprecedented period of fund-raising, expansion and renovation to achieve more modern and functional quarters, including replacement of the hallowed old Meeting Room, were completed. The new space was put into use starting in 1972, at the current address of Burlington House, Piccadilly, London.

As would be expected, governance of the Society has evolved over the two hundred years of its existence. Many great names in British geology have held the office of president. To name a few: George Bellas Greenough; Charles Lyell; Roderick Impey Murchison; Thomas Henry Huxley; Henry Clifton Sorby; Archibald Geikie; Herbert Harold Read; Wallace Spencer Pitcher; to the present and Richard Alan Fortey. From that first group of thirteen members, recent officers need to contend with a group of thousands, including students and foreign members in a bewildering array of specialties who attend an array of meetings. There is still sometimes an apparent separation between the interests of academic as opposed to industry geologists.

The current publications of the Geological Society of London are illustrative of the broad reach of the earth sciences. The story of the evolution of those publications alone is nearly a history of the science, at least in Britain. Initial publications in the early nineteenth century were concerned mainly with mineralogy, stratigraphy and field studies, and paleontology. Even the modest expenses were sometimes a problem for the Society to cover. The venues of publication changed several times until 1989 when the Society began in-house publication from premises located in Bath (p. 293), where it is now located. They are now one of the major publishers of earth science literature in the world and have reciprocal agreements with other societies, so that their publications web site is most useful.

Herries Davies has written a book that is both the history of one nation's growth in the earth sciences, as well as documenting how geology has responded to the growth of knowledge and the number of its practitioners. Along the way he has given us priceless vignettes of the characters, some noble, some not, some difficult, some conciliators, who have made up the fabric of the science.

Sally Newcomb, Silver Spring, MD

Editor's Note: This review will be published in *Earth Sciences History* in 2008. The author, book review editor (Vic Baker), and editor (David Oldroyd), agree to this joint appearance of the review.

A History of Geological Study in Uzbekistan

Lordkipanidze, Lora N., *History of Geological Study of Uzbekistan, in the system of the ancient Asian civilization (from ancient times to the first part of the 19th century),* Proceedings of the Institute of Mineral Resources, Tashkent, edited by GIDROINGEO, 2001, 199 pp. (in Russian).

Uzbekistan is a republic in Central Asia. The country was surrounded in its history by the greatest civilizations of the world, which explains the ambitious goal of the author to put the history of the geological studies of her country in a worldwide context. In fact, Central Asia itself played a leading role in the history of sciences, especially in medieval times, during the Arabic caliphate and the early Turk empires, before the Mongolian invasion. Ideas of great scholars of those eras are collected concerning the structure and origin of the world, various geological phenomena, and physical and chemical properties of minerals used for medicine or as precious stones. The greatest scientists of the time were philosophers and theologians. Most of them were born as ethnic Turks or Uzbeks, used the Arabic language in their scientific works. They were influenced be the high standards of the neighbouring Persian culture. The book is therefore much more than a history of a special scientific discipline. The work of Dr. Lora Lordkipanidze is an invaluable sourcebook of data regarding ancient mining, utilization of metals, irrigation systems, and other geotechnical facilities in the river valleys of Amu-darya and Syr-darya.

In characterising the surrounding cultures, the author considers the geological information contained in the holy books such as the Bible, Koran and Avesta. For a European reader raised in the tradition of the Greek-Latin civilization, the description of then-contemporary Chinese, Indian, Tibetan, or Arabic ideas, considered in the same detail as the Western ones, is especially interesting. The most valuable part of the book is, however, the characterization of the period of the "Islamic Renaissance" during the 9–11th centuries. For a short period of favorable circumstances in the beginning of the 11th century there existed a scientific academy in the city Urgenc. The academy was founded by Mamun, the ruler of the province of Chorezm. The most important members of the scientific society were Beruni and Ibn Sina (known in the west as Avicenna), both of whom were active in many branches of science that we consider today as earth sciences. Like the European medieval scholars, they were strongly influenced by the classical Greek philosophers, especially by Aristotle.

Considering the specific geoscientific activity, Beruni (973–1048) made observations regarding the genesis of clastic rocks, he was the first to recognise the existence of the Alpine-Himalayan mountain system, which extends from the "country of Francs" to the Indian Ocean, and he suggested the existence of islands and possible other continents in the ocean beyond the limits of the known world.

Ibn Sina (980–1037) has been highly esteemed in medieval Europe. His works were translated into Latin very early, and his influence can be demonstrated at several western scholastic philosophers from the 13th century on. He was mentioned and respected by Dante, Michelangelo, and Giordano Bruno. He was a universal thinker, embracing various fields of knowledge from philosophy, astronomy and medicine to literature and music. In particular, his contribution to the development of earth sciences consists especially in considerations of the role of water in the formation of rocks, ores, and landscape forms. He emphasized the importance of clays and made accurate observations on rock-forming processes under arid climate. In his pharmaceutical works he described and characterized several mineral substances, and he created a system of minerals that was accepted for many centuries after him.

From the period after the Mongolian occupation (13th century), two great scientists can be mentioned; both were rulers of Central Asian empires. One is Ulugbek (1394–1449), from the Temurid dynasty. He is best known as an astronomer and a king who supported sciences. He established a famous observatory and school in Samarkand and published astronomical tables of long-lasting importance.

The other monarch who has also been important as a scientist and poet was Babur (1483–1530). He conducted several military expeditions to India and established the empire of Baburides, which lasted for more than three centuries. His principal work is known as Baburname, and it has been translated into every main language of the world. His book includes not only poetic works but also several important observations made during his campaigns to India. From the point of view of geosciences, his contributions are important regarding the physical geography of the mountain ranges crossed, the description of gold and other metallic ore deposits, reports on geological phenomena like earthquakes, and observations on hydro-geological conditions in a humid land like India.

The language of Mrs. Lordkipanidze's book is Russian, which is unfortunately not accessible for most readers who would be interested in the subject. An English translation would be highly desirable. On the other hand, one has to admit that earlier Russian authors, such as S. P. Tolstov and M. E. Masson, contributed much to the recovery of the past of mining and geology in this region.

The book is devoted to the tenth anniversary of the independence of the state of Uzbekistan. It testifies to the growing self-conscience of a seemingly young nation—which is, however, in reality not new at all. On the contrary, it inherited the tradition of one of the most valuable ancient civilisations of the world. This cultural heritage is very well demonstrated in this valuable book.

István Viczián, Budapest

Soil Erosion and Its Impact on the History of Societies

Montgomery, David, R., *DIRT—The Erosion of Civilizations*, University of California Press, Berkeley, 2007, 294 pp.

How did societies treat the earth's 'critical zone' in the past? Not so well, is the short answer. The main thesis of this book is that when human societies adopted agricultural cropping of the land and abused some of the soils needed to feed its growing population, causing the topsoil to erode at a rate several times greater than new soil formation, the specific society or civilization was weakened, followed by instability, and became exposed to other external causes which eventually resulted in its destruction. The author estimates that it takes 800 to 2,000 years (30 to 70 generations) for the lifespan of a civilization but exceptions, as always, are present. Why does the author use the title *"dirt"* (in big letters on the cover and in several chapter headings) instead of soil? By using the term soil, "It would not have much chance to reach a popular audience" according to the author. But dirt is soil and stuff found in places where it is unwanted, like in your living room or on somebody's face. We should never use 'dirt' for soil in nature, not even as metaphor, especially now when it is becoming in short supply. Why not *terra mater* (mother Earth) or the 'the earth's critical zone' using a currently popular term?

Disregarding the unfortunate title, the book contains a compelling environmental history on the use of the earth's skin (soil) in many past civilizations. While it is not the first book treating the topic of Soil and Civilization, following in the footprints of Whitney (1925), Hyams (1952), Dale and Carter (1955), Hillel (1991) [all duly cited in the bibliography], it argues the topic somewhat differently. It is essentially addressed to non-professionals whom scientists have typically not been able to reach. It is well researched, with some 300 references, maps, illustrations and index. Dirt is not listed in the index but soil features are detailed.

Montgomery treats the subject in ten chapters, but not in any chronological way and includes many personal observations from his geomorphological studies. The first two short chapters describe briefly the nature of soils and their properties, beginning with Darwin's worms and their importance in making the soil profile. Dokuchaev is not mentioned and Hilgard's contributions only much later (p. 188–192). In the next seven chapters, of about 20 to 30 pages each, he presents several examples from the past and also recent history of selected societies, starting with the origin of cultivation in the Near East.

The major general thesis is that when topsoil was being lost due to tillage, at a greater rate than new soil formed, excessive soil degradation did not necessarily result in the destruction of the respective civilization but weakened it and prepared the ground for other causes to advance their collapse. Both well and lesser known examples of soil abuse from early Mesopotamia, ancient Greece and Rome, Mesoamerican civilizations, and Eastern Islands domains are well described, including more recent accounts of erosion from North America and East Asia which are documented to illustrate this. The author is not constrained by chronology but moves smoothly from one topical society to another within the same chapter. Good soil management is given attention, but climate change is not listed as the main cause of soil erosion or society demise.

The two chapters (6 and 7) dealing with the North American continent are most detailed and describe well the settlement and colonization, followed by soil degradation and partial abandonment in the south-eastern states and the later westward expansion resulting in the severe Dust Bowl erosion of the 1930s. These are graphically recounted. The soil care efforts of Ed Ruffin, George Washington and Thomas Jefferson, John Wesley Powell, Charles Lyell, Nathan Shaler, Walter Lowdermilk, Hugh Bennett and others are duly listed, culminating in the establishment of the USDA Soil Conservation Service. The author highly values the work and achievements of the Soil Conservation Service (now NRCS) and considers it strongly under-appreciated.

In the next chapter (8th) there is a detailed description of the work and ideas of the soil science co-founder Eugene Hilgard in Mississippi and California and his feud with Milton Whitney, the originator of the US soil survey establishment and it shows that the disregard of a systematic or chronological treatment does not disturb smooth writing. This and other nuggets I find valuable. The American chapters also mention deforestation in the Amazon and its amazing *terra preta* and the devastating erosion in the Soviet Union's Kazakhstan virgin steppe lands when cropping was promoted by Krushchev in the 1950s and 1960s.

There are no references within the text, although the bibliography lists many articles, reports and books, both historic and up-to-date, over a wide range of topics. This indicates that it is well researched and supported additionally by the author's observations—a geomorphologist at Washington State University in Seattle—during travels in many places of the world. Inevitably this kind of story telling leads to sentences and data like "By the mid-1980s roughly half of Australia's agricultural soils were degraded by erosion" (p. 165) and "Half of Turkey is affected by serious topsoil erosion" (p. 165); where do we find the source of such statements? There are not many specific data like this, but such unsupported statements are obviously out of place. The use of both km^2 and acres on the same page (p. 182) ["in China cultivated area of 130 million hectares . . . and 25 million acres crops land lost to erosion from 1950 to 1970"] indicates poor editing.

In the final brief chapter Montgomery turns to the future and suggests that perhaps some kind of organic farming and less tillage and even hydroponics might be the best solution to avoid more soil erosion and future disasters. "We need another agricultural revolution," in his words. While this may sound in accord with some opinions in Europe and America, I strongly doubt this is the right direction when increased productivity is needed to feed the still growing population. Continuous good research of soil resources and improved productivity management applications are still relevant to assist African and Asian developing countries in giving advice how to improve, preserve and sustain the soil resources.

The story of past soil abuse or erosion is perhaps not so glamorous as the recent books of Vaclav Smil or Jared Diamond on partly related topics, but it deserves to be read. Educators and environmental sciences students should read and study this book. There are many interesting pages and sections with historical details which deserve to be better known and passed on.

Dan H. Yaalon, Jerusalem, Israel

Editor's Note: This review has also been published in *Geoderma*, edited by Alfred Hartemink. Both the author and editor agreed to this re-publishing.

A Fine Biography of Hugh Miller

Taylor, Michael A., *Hugh Miller: Stonemason, Geologist, Writer*, National Museums of Scotland Enterprises Ltd, Edinburgh, 2007.

I first heard of Hugh Miller when I was an undergraduate, when the lecturer giving the introductory course in geology, W. B. Harland, mentioned his name one day, along with that of Robert Dick, the 'Baker of Thurso,' as being interesting personages in the early history of geology. It was a 'throw away' remark—though I vaguely remember that it was related to the statement that most geologists were not much good at writing; and Miller was a notable exception whom we should seek to emulate as regards our own writing efforts. Miller's *The Old Red Sandstone* was recommended for our reading. I recall finding an old copy in a bookshop in Salisbury and reading it on a bus on the way home. It was the first 'primary source' in geology that I ever purchased.

To tell the truth, it seemed rather a bore at the time, and Louis Agassiz seemed somehow to be more important than Miller. But I was an earnest, if uninspired, student and I naively hoped that reading *The Old Red* would somehow 'do me good'—though I'm sure it didn't at the time. Since then I have read a fair amount of Miller's work, and have come to the conclusion that he is a bit over-rated as a writer. And perhaps his role in the history of geology is not so very great, as compared with other nineteenth-century amateurs such as Mantell or

Figuier. Be that as it may, I now realise he was certainly important as a collector (like Mary Anning), and for his palaeontological reconstructions, using analogies with modern organisms and mechanical structures or designs. On the other hand, Miller's contributions to stratigraphy were relatively slight, and his attempted reconciliation of 'genesis and geology' was wholly unsuccessful in the long term and was not well received in some quarters in his own day either.

Nevertheless, Miller's career inspires both interest and admiration. He *chose* to move from the middle class (son of a sea captain) to a skilled labourer, when he took up the arduous trade of stonemason. And then he moved back to the middle class as a bank clerk, and then a popular writer and a significant figure in Church (or Kirk) politics, eventually becoming the influential editor of an Edinburgh evangelical newspaper: *The Witness*. Miller married well, to a gifted (middle class) girl, and successfully reared a family—and then he committed suicide (for reasons still unknown, but perhaps due to overwork, but also a seeming kind of paranoia).

Such an unusual career has naturally attracted considerable attention from those interested in Scottish writing and literature, politics, and science. In fact, one could argue that Miller's contributions to 'Scottishness,' to the Victorian ideals of 'self-help' and 'self-improvement,' and to the history of the Free Church of Scotland, were every bit as important as his palaeontological collections and reconstructions for which he is best known to historians of geology. On the other hand, he certainly succeeded in *interesting* people in geology and encouraging people to go out and make collections and be 'at one' with Nature, in keeping with Romantic ideals. In that sense he was a major figure in the history of nineteenth-century geology

Miller's career was, as said, many sided, and it takes someone with equally wide interests and skills to write his biography. For this task Michael Taylor is ideally equipped. He is himself a vertebrate palaeontologist and, working at the National Museums of Scotland, which has underwritten and published this book, he has had direct access to the extensive collection of Miller fossils in that institution's care. More particularly, Taylor is admirably suited to the task of writing a life of Miller, as he is passionately interested in and knowledgeable about Scottish history in its many aspects: literary, folkloric, cultural, sartorial, linguistic, architectural, ecclesiastical, scientific, military, political, educational . . . Also, Taylor has been active in republishing some of Miller's work, and he played an important role in the celebration of the Miller bicentenary, held in his birthplace Cromarty in 2002, and the exhibition on Miller held in Edinburgh that year (from which the book here under discussion is an outcome). Not only that, Taylor himself writes well.

Prior to the appearance of Taylor's book, there was a major Victorian *Life and Letters* of Miller, compiled by Miller's colleague at *The Witness*, Peter Bayne (2 vols, 1871); a scholarly collection of papers on Miller edited by Michael Shortland from Sydney (of all places!) (Oxford University Press, 1996); a substantial volume of papers about various facets of Miller's accomplishments emerging from the 2002 Miller celebrations (edited by Lester Borley and reviewed in the *INHIGEO Newsletter* No. 36); and a book on Miller's wife Lydia (herself a writer) by Sutherland McKenzie (which I have not seen). Now Taylor provides a compact but well-rounded biography, most pleasantly written, and well illustrated with a number of attractive coloured plates.

There have been previous essays about Miller's palaeontological and stratigraphic work (including an item by yours truly in the Shortland volume); but more importantly an excellent essay by Philippe Janvier in the Borley volume. Given Taylor's palaeontological expertise, I should have liked a little more in this vein, with some illustrations of *how* Miller reasoned in his palaeontological reconstructions, with specific examples. But Taylor appears to have been more concerned with the 'poetry' of Miller's descriptions of the Scottish landscape and what he was thinking as he undertook his travels round Scotland and made his observations, rather than the scales and teeth of extinct fishes.

I said above that I have found Miller's prose a bit over-rated. That was because he wrote so much and his books can be a bit tedious at times. But he *could* write in an endearing way, and Taylor quotes some lovely examples. How about the following?

> [A]t sunset in the finer summer evenings, when the clear light threw the shadows of their gigantic cone-like forms [the Torridon Sandstone mountains of the western Highlands] far over the lower tract, and lighted up the lines of their horizontal strata, till they showed like courses of masonry in a pyramid. They seem at such times as if coloured by the geologist, to distinguish them from the base on which they rest as on a common pedestal. The prevailing gneiss of the district reflects a cold bluish hue, here and there speckled with white, where the withered and lichened crags of intermingled quartz-rock jut out from the hillsides from among the heath. The three huge pyramids [Suilven, Cùl Mor, and Cùl Beg], on the

contrary, from the deep red of the stone, seem flaming in purple [*Old Red Sandstone*, Chapter 2, p. 53 of the 'Salisbury edition'].

Purple prose!

Pity, though, that Miller thought that the Torridon Sandstone (Precambrian) and his Old Red Sandstone (Devonian) belonged to the same stratigraphic unit. But a pity also that geological editors will no longer accept such language. (Indeed it was not thought appropriate in scientific journals even in Miller's day.) Might it be nicer if scientific authors offered their findings in rhyming couplets or as sonnets?

David Oldroyd, Sydney

A Pioneer of (Mining) Geology in New Zealand

Mike Johnston, *Mettle & Mines: The Life and Times of Colonial Geologist Edward Heydelbach Davis (1845–1871)*, Nikau Press, Nelson, New Zealand.

It may seem strange to devote a substantial book to a man whose life was tragically short and whose published work in geoscience amounted to no more than nineteen pages in rather obscure publications (though New Zealanders may, I suppose, not take the view that Provincial Government reports, early New Zealand Geological Survey reports, or the *Transactions of the New Zealand Institute* should be deemed 'obscure'). If one is to write a detailed 'life and times' of a nineteenth-century New Zealand geologist of note, why not settle on the 'big names' James Hector, Frederick Hutton, Alexander McKay, or Julius von Haast (assuming that a re-evaluation of him might be in order, to set beside the monumental hagiographic study by his son H. F. von Haast)? Why choose an almost unknown figure, Edward Davis, most of whose work was in some way or other linked to *failed* mining or metallurgical ventures?

Well, three reasons come to mind. The first is pragmatic: Mike Johnston lives in Nelson and knows the geology of the northern part of the South Island particularly well, and has been able to have ready access to documents in Nelson that pertain to Davis. For it was in Nelson Province that Davis did some of his more important work and where he died tragically by drowning, trying to cross a minor river flowing in spate into the Tasman Sea, whereas he had crossed it with ease the previous day.

The second reason is that Johnston's most readable and thoroughly researched book has as much to do with the history of mining ventures in the nineteenth century and more particularly in New Zealand (including Taranaki and the Coromandel Peninsula as well as the Nelson region and the South Island's west coast) as the history of geology *per se*, or Edward Davis. One gets a clear sense of the immense efforts put in by miners in tremendously difficult country, as well as the absurdly sanguine investors who acted on faith and hope rather than well-grounded technical information. Large sums of money were lost all round. I am reminded of Geoffrey Blainey's classic study of the history of mining in Tasmania—*The Peaks of Lyell*—that revealed rather similar goings on in the copper-mining area of that island, in conditions that were geographically and climatically analogous to those in Nelson. (But the troubles there had much to do with journalists who talked up poor-quality ore discoveries so that they might themselves make profits. Johnston mentions nothing similar occurring in New Zealand. Yet very likely it did.)

And the third reason is that Johnston has already written extensively on the history of mining activities in New Zealand; and he is well versed in the country's geology more generally. But he constructs this particular narrative round a biographical theme.

Davis was a son of a mining entrepreneur with business interests in the haematite deposits of southwest Cumbria, UK. Johnston has journeyed there to get a 'sense of place' and gives us a detailed account of that region and its industries in the mid-nineteenth century. I happen to know the district fairly well, so I can assure readers that the account is thorough and reliable. But Davis Sr. chose to make an investment in one of the less fruitful parts of the iron deposits, and thus lost money, to the extent that he withdrew to London to set up business as a mining agent—which operation seems to have been successful and the family remained prosperous, enabling Davis Jr. to study chemistry, and probably metallurgy, mining, geology, mineralogy, and palaeontology at the Royal School of Mines (though the precise details are uncertain; and apparently he did not graduate). Later, Davis became a Fellow of both the Chemical and the Geological Societies.

Apart from overseeing one of his father's pyrite mines in Cumbria, Davis's first career assignment was in Portugal to assess the work of the British-owned Portugal Iron and Coal Company. The company, for which Davis Sr. was secretary, was seeking to develop an iron foundry in that country. Good money was invested but

the venture was a flop, as the ore body being exploited proved to be a dud. It contained too much silica for easy conversion to iron. Davis, it seems, solved that problem, but the ore deposit itself was 'erratic' and insufficient. So the venture failed. That Johnston travelled to Portugal, again to get a 'sense of place,' is fully proven by a photo of him standing before the forlorn remains of the Company's ruined furnace.

Returning to Britain, Edward married a distant relative, Lucy Wright, daughter of a Manchester businessman involved with the cotton trade; and thus of the same 'class.' Shortly thereafter, the newlyweds set off for Colombia to the silver mining town of Mariquita. Edward was employed in assaying the silver ores of the Mariquita Mining Company and prospecting for fresh silver deposits. But the mines were in decline, the young man was taken ill (malaria, Johnston suggests) and the couple returned to England. A second flop. (Prudently, Johnston has not been to dangerous Colombia to follow in Davis's footsteps there.)

Yet Davis Sr. was still looking for mining ventures in which to invest, and heard optimistic reports of the Taranaki iron sands in New Zealand and also gold discoveries in the Coromandel area. So Edward and his young wife were encouraged to try for a new life in the Antipodes, where NZ's salubrious climate might help him recover his health—which it did.

The Taranaki iron sands, with their high titanium content, are notorious for being technically difficult as a source of iron, and commercial success was only achieved well into the second half of the twentieth century (see http://www.techhistory.co.nz/IronSands/Iron1.htm). Davis was associated with the first major venture—of the Pioneer Steel Company. There was certainly no shortage of the ore, but the extraction of iron was a major technical problem. This was not realised at the time, and there was initial enthusiasm in Taranaki. Again, large sums were invested; and lost. Davis was able to offer informed advice, but not to achieve the impossible.

And so to Coromandel. Certainly there was gold there and some miners and investors made good money in what later turned out to be a major mining district. Johnston suggests that Davis went there with a view to reporting to investors, and presumably his father in particular, about investment opportunities in the gold industry, rather than gaining direct employment as an analyst or whatever. Anyway, at Coromandel he did strike it lucky, in that he met up with the Geological Survey Director, James Hector, then checking out the Coromandel goldfield and also looking for a qualified assistant. Though Davis's achievements to date were, so to speak, negative rather than positive, he evidently made a favourable impression on Hector and was offered a junior position in the Survey, filling a vacancy created when the Survey's only other geologist, F. W. Hutton, had resigned to try to make a living out of growing and milling 'flax' (*Phormium tenax*).

The rest of the book is devoted to Davis's accomplishments in the Survey, but also recounts his work in the Coromandel Peninsula prior to his appointment. In his subsequent report, based on his examination of the Coromandel mine workings and his mapping of the Peninsula, he concluded that the mineralisation decreased with depth, and he offered ideas for improvement of the quartz stamping and amalgamation process for extracting gold. Also, in 1870 he published a letter in the Auckland newspapers recommending the establishment of a School of Mines in New Zealand, along the lines of the one at which he had studied in London. This suggestion was eventually adopted and one such School ran at Thames in the Coromandel area from 1886 until 1953. (It is now a museum, but was in a rather shabby condition when I visited it a few years ago.)

The New Zealand Survey was modelled on the British one, where the Director General was somewhat like a spider at the centre of the web of officers, receiving and collating information and overseeing the Survey's publications or museum displays (though the DG did not eat his officers!). He was, in the language of Bruno Latour, a 'centre of calculation.' In Britain, Henry de la Beche started his Survey as a one-man show and initially trained up his assistants. Later, he recruited already qualified staff. In time, he or his nineteenth-century successors (Murchison, Ramsay and Geikie) became full 'centres of calculation.' But as time went on, some opposition developed from university staff, who sometimes thought they had ideas as good as, or better than, the Survey's about aspects of British geology. The situation in New Zealand developed rather similarly, with Hector establishing the Survey (along with the Colonial Museum and Metrological Service amongst many of his scientific contributions), and gradually becoming a more dictatorial central 'spider' as the decades passed (as did Geikie in Britain). And as in Britain, on occasions New Zealand university or Museum 'centres,' such as Haast in Canterbury, challenged Hector's hegemony. As for Davis, he joined the Survey at a time when Hector was taking on trained (or trainable) assistants (but Davis's predecessor Hutton was already capable of independent geological work).

Anyway, when Davis joined the NZ Survey it was concentrating on economic geology while at the same time trying to get an understanding of the general stratigraphy and structure of the country. So he was dispatched to the mountainous country behind Nelson to examine the supposedly economically promising copper and chromium deposits associated with Dun Mountain, a remarkable mountain made largely of olivine, which weathers to a dun colour. It had previously been examined by Hochstetter who named the constituent rock 'dunite.' There was also serpentinite and an associated mineral belt. Optimistic entrepreneurs had raised the capital to construct a horse-drawn railway from Nelson up the mountain to the workings. But Hector had examined the region and the workings and concluded that the prospects of a continuing supply of chromite were small, and in any case the bottom had dropped out of the chromium market. On the other hand, there appeared rocks in Nelson, and which were apparently identical to those in the recently discovered Gympie Goldfield in Queensland. Davis, with his experience in Coromandel, was detailed to survey and evaluate the gold potential of Nelson Province and see if there was in fact any stratigraphic connection between the two and also with Gympie. Besides this, and assessing the now abandoned copper and chromite workings of Dun Mountain, Davis made maps and sections and collected specimens all the while. At Dun Mountain he determined that there was no copper lode, though some copper had been deposited in fractures by groundwater percolating through the serpentinite. So here again he found that the over-sanguine investors had poured money into a project that was doomed to failure. He also showed that there was no geological connection between Nelson and Thames, but some of the Nelson rocks were very similar to samples that the Survey had received from Gympie. (Modern Gondwana correlations tend to support such a connection.)

Things were not much better than at Dun Mountain when Davis examined the gold workings in various places to the northwest of Nelson (near Collingwood), where New Zealand's first major gold rush, albeit short-lived, had taken place. Some alluvial gold had been found and patches of auriferous quartz, but there was no continuous or coherent quartz reef. Johnston gives a thorough account of Davis's movements and studies around the rather poor goldfields, and also details the interesting history of the disputes about the allocation of land claims and prospecting rights that have bedevilled gold rushes in so many parts of the world. These make sad reading, but also interesting history.

And then finally Davis was put to work on a study of what was to become a well-established and major industry in the South Island of New Zealand: the coal deposits of the West Coast region, beside the Buller and Grey Rivers. There were arguments as to the layouts of railways to best transport the rich coal deposits, and there was plenty of stratigraphy and structural geology to do as well as examination of the mine workings. Davis was getting on with this well, acting on spider-Hector's instructions as to where to go and what to look out for. But on 9 February 1871, Davis attempted to ford a creek that looks quite innocuous in a Johnston photograph of it, but which could rise rapidly in wet weather and scour out new channels. And this was what had happened to the creek during the night, which Davis's little group had crossed without incident the previous day. Davis was riding ahead on the 9th, and not being familiar with the local knowledge about river crossings, forded at the same point as on the previous day. His better-informed companion was riding a bit behind and was unable to catch up to tell him to make the crossing out near the surf where the creek's current slackened and where gravel was spread out, giving shallower water. So it was that Davis's horse lost its footing and rolled over and the enthusiastic, gifted, and energetic young man was drowned. Thus was such a promising life cut off before all its promise could be fulfilled.

Davis's wife, waiting for him in Wellington, was naturally stricken with grief. She received a small Government payment but as Davis had only been on the Survey payroll for a relatively short time, it was but little. She soon returned to England, remarried, and had children, but died quite young of tuberculosis.

The foregoing gives only a brief sketch of Johnston's detailed narrative, and does not say much about the details of the early history of mining in New Zealand, though in many ways that is the most important part of the book.

Mettle & Mines is provided with numerous illustrations, but many of them are reproductions of old maps and sketches and, being reproduced at a reduced size, are not at all easy to decipher. Also, the inclusion of a vast number of proper nouns (place names, etc.) makes the narrative difficult to follow at times even though most place names do appear on one or more of the many maps included in the book. But many of these are reproductions of old maps much reduced in size and the names are hard to read. I should have liked more of Johnston's own topographic maps (like his one of the Thames area on p. 118)

That apart, Johnston's writing style is clear and precise and well suited to his topic. He introduces some modern concepts, but to avoid 'whiggery' the parts that do so are mostly separated from the rest of the text in boxed sections. This works quite well. But one also has to consider the audience for the book. Besides place names, there are numerous local stratigraphic names, which will probably mean little to anyone but New Zealand geologists. However, in an attempt to explain stratigraphic names, simplified geological maps and legends are incorporated for each of the areas that Davis visited as well as footnotes that include explanations of the stratigraphy.

But (perhaps) the main interest of the book is not in fact Davis but the account of entrepreneurial prospecting and mining work in the nineteenth century in different parts of the world (where the similarities are in many ways more striking than the differences). Given, then, that the majority of readers are likely to be non-geologist New Zealanders and people from the Nelson district in particular, then I think some kind of glossary for the lithological, mineralogical, petrographic, and stratigraphic names could have been provided with great advantage, with notes attached where matters of special interest are worth mentioning (e.g., for stratigraphic units of particular importance or of a historically controversial nature). There is an appendix that sets out a highly summarised version of the geological timescale, but that isn't really all that useful for reading the book, and in any case most readers will probably be familiar with terms like Triassic or Carboniferous. A simplified stratigraphic column for New Zealand would have been more useful, I suggest.

These caveats not withstanding, I congratulate Johnston on a job well and thoroughly done. I hope his book will sell well.

David Oldroyd, Sydney

A Colleague Considers Raymond Cecil Moore

Merriam, Daniel F., *Raymond Cecil Moore: Legendary Scholar and Scientist; World-class Geologist and Paleontologist*, University of Kansas Department of Geology and Paleontological Institute, Special Publication 5, 2007, 170 pp.

Some people make memorable contributions that have long-lasting and wide impact. Others have memorable personalities and are vividly remembered by an audience of associates. Just a few individuals generate both impacts. Raymond Cecil Moore (1892–1974) was certainly someone who contributed greatly to his disciplines of field geology, stratigraphy, and paleontology, and is also widely celebrated for his singular nature and persona. Ray Moore stories abound among the shrinking number of people who knew him personally, and his professional contributions serve as lasting memorials to his intellect, organizational abilities, and drive.

It is fortunate that one of his Ph.D. students and long-time associates, Daniel Merriam, has captured the multi-tiered nature and productivity of Moore in this small but informative and superbly illustrated book. Readers not familiar with R. C. Moore may be dazzled by his insights and accomplishments and/or amazed or aghast at some of his personal characteristics and statements. As one who received Moore tales second-hand, but from an excellent source (Donald Hattin, stratigrapher at Indiana University and Ph.D. student of Moore's), I am grateful to Dan Merriam for gathering a rich set of illuminating anecdotes to accompany his in-depth analysis of Moore's professional contributions. The book succeeds in painting a personal portrait of Moore while providing an overview of his research productivity, power as a writer and editor, and first-rate ability as an artist.

For some of us, of a certain age, Moore's *Introduction to Historical Geology* (1958, 2nd edition) was a high-impact introduction to the fascinating world of Earth history. Post-plate-tectonics readers may be dismissive of the lack of appreciation for horizontal plate movements and current visions of earth mobility, but in the context of the mid-twentieth century, the text provided a powerful view of the past world. Moore drew many of the striking illustrations included in the text, and the rigor of his organization and the clarity of his language and stratigraphic columns still have devotees.

For those with interests in paleontology, one of the milestones of the twentieth century is the *Treatise on Invertebrate Paleontology*, conceived by Moore in the late 1940s, described by him in a 44-page prospectus to the Paleontology Society Council in 1952, and reaching initial fruition in 1953 with the publication of Raymond Bassler's Volume G (Bryozoa). Moore devoted much of his later life to the *Treatise* and was actively working on editing tasks at the very end of his days. There may well be readers of Merriam's normally measured prose who will lift an eyebrow at his statement that the *Treatise* "rivals and exceeds in scope" the work of Linnaeus, von Humboldt, Buffon, and Diderot, but a little waving of the Kansas flag is probably to be expected...

For a book with just 141 pages of narrative text, the chapter sequence lays out an excellent synopsis of Moore's life, times, and contributions. After a bit of stage setting regarding the early days of the University of Kansas, Merriam provides the reader with an informative chapter on "The Private R. C. Moore," followed by chapters on Moore as "Man," "Scientist," "Administrator," "Professor," "Living Legacy: The *Treatise*," "Artist," and "Moore's Accolades." The final chapter considers "Trail's End and Immortality." Seven appendices are presented, ranging from a discussion of people who influenced R. C. Moore's life to a list of places where he gave major lectures. Appendix 6, on his selected publications, and Appendix 7, on volumes of the *Treatise* through 2007, may have value to a number of readers.

As a student and colleague of R. C. Moore, Merriam is able to provide real insight into his personal and professional interactions, as well as his impressive productivity. It is evident that much time, correspondence, and archival digging were devoted to this bio-sketch. It would be tempting to include a number of "Moore Stories" in this review, but it is probably best simply to counsel buying the book.

Kennard B. Bork, Granville, Ohio

Editor's Note: This review has previously been published in *Earth Sciences History* (vol. 26, no. 2, 2007), edited by Patrick Wyse Jackson and Book Review Editor Vic Baker. The author and editors agreed to this re-publishing.

Myth and Geology

Piccardi, L. and Masse, W. B. (eds), *Myth and Geology,* The Geological Society of London, Special Publications, 273, London, 2007, 350 pp.

I dare say many geologists may wonder why the Geological Society would be publishing a book on such a topic. Surely geology has advanced well beyond the stage of myth! But the field is now quite 'respectable' and the papers in this volume grow from a session held at the International Geological Congress in Florence in 2004. The field of geology and myth was founded virtually single handed by Dorothy Vitaliano in her *Legends of the Earth* (1973) and she gave the keynote address at the Florence meeting. The book that has emerged as an outcome of the meeting, *Myth and Geology*, "aims to make this discipline a recognized research field" (p. vii). It does so in a series of twenty-five detailed papers by a total of forty-five authors. The global scope of the volume is impressive: India, Britain, North America, Japan, the Aegean, Scandinavia, Afghanistan, the 'Holy Land,' Pacific Islands, Africa, South America, Australia and New Zealand, Italy. Perhaps because the original meetings was in Italy, and one of the editors, Luigi Piccardi, hails from Florence, there are several papers relating to Italy and the Mediterranean region, though of course the written records from that part of the ancient world are exceptionally rich.

Vitaliano's short introductory paper gives an account of how she became interested in the relationships between geology and myth, and how she eventually became convinced that geology could account for some of the allegedly supernatural or miraculous events referred to in the Bible—notably the well-known explanation offered by William Ryan and Walter Pitman (*Noah's Flood: The New Scientific Discoveries about the Event that Changed History*, Simon & Schuster, New York, 1998) of the Noachian Flood in terms of the rising of sea levels after the Ice Ages so that waters from the Mediterranean overflowed catastrophically into and filled the basin of the Black Sea.

But this schema has subsequently been challenged (e.g., I. Erdal Kerey, Engin Meriç, Cemal Tunoglu, Gilbert Kelling, Robert Brenner, and Umran Dogan, 'Black Sea–Marmara Sea Quaternary Connections: New Data from the Bosphorus, Istanbul, Turkey,' *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 204, 2004, pp. 277–295) which paper argues from borehole evidence that the mixing of the waters of the Sea of Marmara and the Black Sea was gradual or intermittent rather than catastrophic. This debate shows the kinds of problems that may be encountered when studying the relations between myths and geology, though in that case in point the issue has passed beyond the consideration of myth into 'geology proper.'

Such considerations were strengthened when, on the very day that I started writing this review, I heard a report on the radio that a new hypothesis had been proposed to account for the destruction of Sodom and Gomorrah, as described in Genesis, attributing the event to an asteroid impact in what is now Austria! The suggestion offered in *Myth and Geology*, by Vladimir Trifonov of the Geological Division of the Russian Academy of Sciences, is that this notorious Biblical event was related to Middle Holocene volcanic activity in southwest Syria. This is some considerable distance from the Dead Sea, where Sodom is thought to have been

located. But Trifonov suggests that the memory of an approximately contemporaneous earthquake there became conflated in legend with the volcanic activity in Syria.

A search on the internet (Google + Sodom + Asteroid) quickly turned up numerous articles offering a completely different explanation. There is a circular cuneiform clay tablet (*ca* 700 BC), found near Ninevah (near modern Mosul), with markings on it that have been analysed by computer at Bristol University, and which are said to show the condition of the night sky on 29 June 3123 BC and also appear to show the trajectory (relative to the stars) of an object that could have landed at Köfels (Austria), where there is a well-known landslide previously unaccounted for satisfactorily by geologists (it is said). The Bristol group have suggested that a large asteroid came in at a low angle and clipped a mountain-top so that only fragments arrived at Köfels, with the result that there is no impact crater there. Moreover, the back plume produced by the impact could supposedly have been bent over the Mediterranean and re-entered the atmosphere over the Levant, Sinai and northern Egypt, presumably roasting people alive in that region.

Internet commentators on the report seem to have been highly skeptical of the Bristol hypothesis; and so am I, as I don't, for example, see how records of an event of 3123 BC could have been transmitted with any precision to 700 BC. But that is not my point. Rather I want to say that both (Trifonov's and the Bristol group's) explanations involve the 'fallacy of affirming the consequent' (if A then B; B; therefore A). There can, in principle, always be many hypotheses (A_1, A_2, A_3, etc.) that could account for B. In the case of Trifonov and the Bristol group, we have two quite different explanations proffered to account for the Sodom and Gomorrah event; but there could be many others. (See Alan Bond and Mark Hempsell, *A Sumerian Observation of the Köfels Impact Event*, WritersPrintshop, 2008, if you wish to follow up on this story.) It would appear, therefore, that the field of geomythology can be strewn with traps for the unwary; and I suggest that some of the modern explanations of ancient myths need further scrutiny. Also, the elimination of erroneous hypotheses relating to myths may be difficult, as they can rather easily be 'patched up' by means of *ad hoc* auxiliary hypotheses.

I mention the Sodom and Gomorrah example at some length, because it seems to me that geomythology is inevitably a study that is *susceptible* to the fallacy of affirming the consequent and *ad hoc* justifications (which is not to say that the latter is happening throughout this book). Be that as it may, Piccardi and Masse provide a sophisticated opening discussion in their Special Publication: 'Exploring the Nature of Myth and its Role in Science.' They hold that there can be a two-way traffic between geology and myths. The former can sometimes explain the latter—which can perhaps be useful if it can help to eliminate the preposterous claims of Creationists or biblical literalists. (But it may also cut the other way, with claims being made about the veracity of the Bible on the basis of there being modern scientific explanations of some of the otherwise puzzling, or seemingly miraculous, events that it describes.)

In the other direction, myths can lead to useful modern research, as for example is described by E. Bryant, G. Walsh and D. Abbott in their paper in *Myth and Geolgy* entitled 'Cosmogenic Mega-tsunami in the Australia region: Are they Supported by Aboriginal and Maori legends?' Here it is suggested that, within the mythopoeic memories of peoples in both New Zealand and Australia, a large object struck the ocean to the south of New Zealand (perhaps a comet?), producing a tsunami (as we would say) that hit the southeast seaboard of Australia, leaving significant marks in the Sydney region (where I live!). The idea, derived from legends, has led geologists to examine the coastline and they claim to have found features that can be explained as being the results of a tsunami event. Moreover, a submarine impact crater has been located at an appropriate location and it is suggested that a comet of about 500 metres diameter could have caused the destructive event. On the other side of the continent, a rock drawing in northwest Australia can readily be construed as a comet (though this is not thought to be related to the one that may have wreaked havoc in southeast Australia).

Such ideas have been around in Australia for several years now, led by the work of Ted Bryant, first author of the paper referred to above. However, the idea of a mega-tsunami or tsunamis hitting the Sydney region is not universally accepted, as can be seen by newspaper reports of challenges to Bryant *et al.* by archaeologists at a recent archaeological conference organised by the Australian National University in February 2008 (report by Deborah Smith, 'Researchers Cast Doubt on Mega-tsunami Theory,' *Sydney Morning Herald*, 3 March 2008). And according to this report, the discussion seems likely to develop along lines common in Quaternary and Holocene geology and archaeology: a haggle about datings. But that need not, in itself, be good reason to reject the input of information from mythology into modern science holus-bolus. At the very least, the study of legends can set a worthwhile geological debate in motion.

Somewhat different from the aforementioned two-way traffic found in most of the papers in this collection is Eugenia Shanklin's contribution 'Exploding Lakes in Myth and Reality: An African Case Study.' It discusses certain 'exploding lakes' in Cameroon, thought by scientists to be due to the sudden expulsion of carbon dioxide from lake bottoms when suddenly disturbed. An actual occurrence of such an event occurred in 1986, killing many hundreds of people by asphyxiation. Further, the paper considers how stories about such events have been developed and disseminated among the local people. This investigation has been undertaken by direct ethnographic research, with interviews, etc. Shanklin (from the Department of Sociology and Anthropology at the College of New Jersey) also describes the history of investigations of the topic since the 1920s by ethnographers, historians, administrators and missionaries and she shows how folk-lore and legends can come into being. Thus she offers a somewhat different perspective from the other papers in the collection in that she has been able to talk to some of the people involved in the *creation* of a new item of geo-myth. A remarkable variety of explanations has been proposed to account for the exploding lakes (neutron bombs, strange Europeans carrying a parcel bomb on a motor bike, a deceased *Fon* tribesman who lives in the lake, . . .) and one can see the actual emergence, or crystallisation, of a story that is then handed on and around—in some cases by young people who wittingly knew that they were spreading unfounded rumours or explanations. So if that is the way legends began in the past one needs to be particularly cautious about their interpretation in the present. Something similar may well have happened with the formation of the legend of Sodom and Gomorrah. By the time the stories crystallised out in the Bible (and become part of 'Holy Writ'), they may be far removed from the actual events; and thus it is uncommonly difficult to argue back to the geological events that gave rise to the myth. In the Cameroon case, we have both the emergent myths *and* the scientific descriptions and explanations of these mythic events. If we only had the myths, it might be both difficult and controversial, to know what the transmitted legends or myths refer to, geologically speaking.

This said, there can be no doubt that the editors have assembled a considerable number of well-researched, well presented, and detailed papers on a wide range of topics, which should be of considerable interest to students of Quaternary and Holocene geology. One can also see, for example, the interest of early humans in fossils, as evidenced in the inclusion of echinoids in early burial sites or the decorations in some Mediaeval churches, a topic discussed in exemplary detail by the museum palaeontologist Kenneth McNamara. (On reading his paper, I was reminded of a claim that the floor-stones in a workman's hut at a nineteenth-century mining site in South Australia contained many specimens of Ediacaran fossils, which suggested a special interest in fossils on the part of people who had no notion of their origin. But the story, as I have heard it, has passed through several hands already; and perhaps *it* is a myth!)

I may seem a bit skeptical in what I have written above. But I have no wish to denigrate the efforts of the editors and the authors. I merely recommend caution. Piccardi and Masse emphasize that the worldview of traditional cultures was largely holistic, not analytic; and this must be recognized by those who wish to use mythopoeic evidence to assist geological understanding. Myths are, or have been, transmitted orally. They contain an interweaving of observation and interpretation, and the geologist must endeavour to disentangle the two. If this can be done, items of interest to geological investigators may well be forthcoming. But there can be no algorithm for the separation of observation and interpretation. It may, therefore, be something akin to an art form, and as such it may not appeal to all geologists. But it should be recognized that transmitted myths may have possibly had some role in the past in guarding communities against geohazards. Therefore their study can constitute a possible 'item' in the armoury of those seeking to protect us from natural disasters. For this reason, if no other, I see no objection to the emergence of a new specialty in geoscience. And we see this happening in the present collection, to which the Geological Society has evidently given its blessing. In any case, the emerging field is of great interest in allowing us to make some sense of the seemingly incongruous things written in the Bible and other ancient texts.

David Oldroyd, Sydney

Editor's Note: This review has also appeared in *Episodes*, the IUGS journal. It is reproduced here with the understanding and agreement of the editors and author.

Cycles and Psyche

David Oldroyd, *Earth Cycles: A Historical Perspective*: Greenwood Press (Greenwood Guides to Great Ideas in Science), Westport, Connecticut, 2006, 234 pp.

Cycles in nature have always impressed the human mind. The day-night cycle, the monthly lunar cycle, as well as the annual seasonal cycle are impressed upon us from infancy. Then there is the life cycle of birth-to-death repeated generation after generation. So it is only natural, even inevitable, that people would see repetitive patterns throughout nature, and this indeed has been true for centuries. David Oldroyd has given us a remarkably comprehensive analysis of the history of concepts about many different examples of repetitive patterns in geology ranging from such early ideas as James Hutton's eighteenth-century geostrophic cycle through the nineteenth-century erosional cycle, climatic cycles, repetitive sedimentary deposits, to a grand geochemical cycling within the entire geosphere–biosphere system. He has included more topics under his title *Earth Cycles* than I would have had the courage to attempt, although there is less about the familiar hydrologic and rock cycles than I would have expected. Nonetheless, Oldroyd has treated his many topics thoroughly and clearly, making his book a true *tour de force*!

Fine scholar that he is, Oldroyd begins by enumerating examples of cyclic thinking reflected in the writings of ancient Greek, Roman and Arabic philosophers. Among the more familiar is Ovid who saw that "All [things] could change, but the sum of things remain[ed] unchanged" (p. 15). This was a prophetic anticipation of Charles Lyell's narrow brand of uniformity as reflected by the author's apt title for Chapter 6 'Charles Lyell: An Earth Always Changing but Ever the Same.' This highlights a fundamental issue throughout the history of geology, namely the view of time inherited from the Greeks as endlessly repetitive and without direction versus the contrary Judaeo-Christian view of directionality—the 'time's arrow' metaphor.

Oldroyd finds the first testable, truly scientific theory of earth cycles in Robert Hooke's 1705 theory of alternating erosion and deposition. James Hutton's theory of erosion, deposition, and mountain making almost a century later elaborated Hooke's inference in much greater detail. Linkages among erosion, deposition, and mountain making are themes through several chapters of *Earth Cycles*. Following Hutton's geostrophic cycle, there is discussion of several nineteenth-century theories of mountains based upon the assumption of thermal contraction of the earth through time (e.g., Élie de Beaumont, James Dwight Dana, and Eduard Suess). In the early twentieth century, thermal contraction was deemed inadequate for mountain building, so various alternatives appeared, based mostly upon vertical gravitational adjustments or isostasy (e.g., T. C. Chamberlin). Isostatic theories failed, however, to accommodate the evidence in mountain belts of profound compressional deformation.

Dramatically different from all earlier theories, was Alfred Wegener's 1912 (and later) proposal of continental drift, which for the first time envisioned very large-scale lateral displacements of the earth's crust, explaining mountains as a byproduct. Late in the twentieth century, the theory of plate tectonics subsumed drift and invoked a so-called Wilson cycle of opening and closing of ocean basins by wholesale movements of continents riding upon lithosphere plates.

Oldroyd moves on next to climatic cycles and their possible causes. This discussion focuses primarily upon large-scale and repetitive glaciation. James Croll's prescient theory of cyclic variations of the eccentricity of the earth's orbit proposed in the 1860s was ahead of its time so did not gain acceptance. It was only in the twentieth century that Milutin Milankovitch revived and refined an astronomic theory of climatic cycles, which invoked not only eccentricity of the orbit but also changing tilt and precession of the earth's axis. His theory also languished until post-World War II marine research provided cores of deep sea sediments. Paleotemperature determinations in the 1950s using the oxygen isotope ratios ($^{16}O/^{18}O$) in calcium carbonate shells of planktonic foraminifera buried in different layers within the cores showed several oscillations of ocean temperature during the last 40,000 years or so with dating provided by the carbon isotope method (^{14}C) applied to the same shells. Lo and behold, there was a close correlation with Milankovitch's calculated variations of temperature.

The author then shifts to the stratigraphic record on continents, in which generations of geologists have claimed to discern cyclic patterns. At one extreme are the high-frequency alternating seasonal laminations in Pleistocene glacial lake deposits called varves, which were first recognised by Gerhard De Geer in 1878 as "analogous to the annual growth rings of trees" (p. 138). Of intermediate frequency are millions-of-year alternations of coal seams with marine sediments so characteristic of Carboniferous strata (circa 285–325 million years old). These alternations, called cyclothems, were long ago interpreted as due to vertical global (eustatic) sea level fluctuations. Great swaths of coastal swamplands with lush vegetation were formed during times of low sea

level, but were drowned and buried by marine strata during rising sea level. Dozens of such repetitive packages seemed to correlate with large-scale glaciation on the supercontinent Gondwanaland then located in high southern latitudes. Therefore, the oscillation of sea level due to waxing and waning of ice caps was postulated for the cyclothems by analogy with the better-known waxings and wanings of Pleistocene ice caps during the last two million years or so.

From cyclothems, Oldroyd passes on to still longer-term alternations reflected in the stratigraphic record. These patterns comprise sequence stratigraphy, a concept that originated in 1949 at Northwestern University, but was expanded in scope twenty years later in the petroleum industry, thanks in large part to the perfection of high-resolution seismic profiling. Sequence stratigraphy is based upon the tracing widely of major discontinuities in the stratigraphic record called unconformities. The resulting packages of strata, called sequences, represent tens to hundreds of millions of years, which Oldroyd surprisingly regards as cycles of sorts. It was perhaps inevitable that Peter Vail and his associates at Exxon Inc. invoked glacial eustatic changes of sea level to explain sequences, but other workers objected to such an explanation for sequences formed during long, hot (greenhouse) phases of earth history when no glaciation occurred. Laurence L. Sloss, the founder of sequence stratigraphy, and others believed that tectonic changes in the crust were the principal drivers for most of the sea level changes implied by the sequences. .

In Chapter 12, Oldroyd returns to consider paleo-ocean temperature oscillations during the past 400,000 years, as revealed in the deep-sea cores. Here he discusses the evidence from the geomagnetic time scale, which records reversals of polarity of the earth's magnetic field. This is a non-cyclic phenomenon, which is introduced because it augments the dating of deep sea cores using ^{14}C and biostratigraphy to calibrate more finely the temperature cycles. Such refinement has shown an even stronger correlation of ocean temperature variations with the Milankovitch climatic cycles than was evident in the 1950s. It seems to me that this chapter might better have followed immediately after the introduction to Milankovitch in Chapter 9 rather than being separated from it by some sixty-six pages of very different discussions.

The penultimate chapter deals with geochemical cycling. Oldroyd demonstrates an impressive mastery of challenging literature. Geochemical cycling postulates a complex balancing among the release of various chemical elements by the weathering of rocks on land and their residence in ocean, atmosphere, or biosphere. In the ocean, many of these are used by organisms and/or are deposited in sediments. Some, especially oxygen and carbon dioxide, cycle to and from the atmosphere. The sum total of all of these interactions tends to maintain a dynamic equilibrium of the elements within restricted limits as land has been raised, eroded, drowned, and the biosphere has evolved. Oldroyd points out that this grand geochemical cycling, as envisioned especially by Vladimir Vernadsky, Robert Garrels, and Fred Mackenzie, somewhat mirrors James Lovelock's *Gaia* hypothesis, which posits the entire planet to be "a quasi-living organism" (p. 182).

Oldroyd does not critically analyse the relative merits of the many different claims made for geological cycles. Perhaps that is not the role of the historian, but I feel compelled to offer a few of my own thoughts. The human mind is very good at discerning patterns, but is also adept at imagining or exaggerating patterns. We naturally crave order and regularly recurring patterns are more orderly than random ones. There is danger, however, of imposing order upon nature, which may not really be there. Geologists have had a long love affair with cycles, but they have not been very critical in testing their hypotheses of cyclicity. As generally used in mathematics and science, cycle means a series of events or operations that repeat regularly in the same order and when a cycle is completed, the system has returned to the same configuration as at the beginning of the series of events. Cyclic systems in other sciences have regular timing of repetitions; that is, they show periodic rather than episodic behavior. In geology, however, *cycle* has been used more loosely. Many geological phenomena commonly characterised as cyclic neither return exactly to their original configurations nor are they strictly periodic.

Mere repetitions of strata, such as binary alternations of sandstone and shale, are not *ipso facto* cyclic. These and many other, more complex alternating successions would more properly be described as repetitive rather than cyclic. Nonetheless, longstanding geologic usage has produced an elastic definition of cycle and cyclic requiring neither strict periodicity nor a return to original conditions. Thus, mountain building events, the erosional cycle, and cyclothems are firmly entrenched in geological literature as cyclic phenomena only because they show roughly repeating patterns. Oldroyd's *Earth Cycles* reflects this broader geological usage and his valuable historical account shows how deeply embedded in the human psyche is cyclic thinking about the earth.

He could have provided a more sharply focused and therefore more readable treatment, I believe, had he not given so much space to the discussion of dubiously cyclic phenomena like sequence stratigraphy, the Wilson 'cycle,' and even mountain building.

In conclusion, reconsider that fundamental tension between the ancient view of history as cyclic versus the view that it is directional. Many geological phenomena are repetitive (and some are even cyclic) over geologically modest time spans, but these are superimposed upon longer term, irreversible evolutionary trends in both the inorganic and organic realms. Therefore, a better metaphor than 'time's cycle' or 'time's arrow' is time viewed as a helix with shorter-term repetitive processes oscillating around a long-term directional, evolutionary axis.

Robert H. Dott, Jr, Madison, Wisconsin

Editor's Note: This review also appears in *Metascience*, edited by Professor Steven French (Philosophy, University of Leeds). Both the author and editor agree to the joint publication of this review.

NOTES and QUERIES

(The random order of the Notes is a function of alphabetical order of computer-file names.)

Discovery and Invention: A Historical Encyclopedia of Science, Technology, and Society
An Invitation to Potential Authors

A publishing endeavor of note to members of INHIGEO is the plan to create a major new encyclopedia covering the history of science and technology as those disciplines interact with society. The publisher is M.E. Sharpe (www.mesharpe.com) and the editor is Dr. James Ciment. The expected publication date is early 2010, but the operational due date for articles is at the end of the 2008 year. The book is intended for academic high school and undergraduate libraries as an introduction to the major scientific and engineering achievements in human history. Articles will include the science and engineering involved in the particular topic, but will emphasize the historical components of what led to the discovery or invention, the process of discovery and invention itself, and the legacy of the discovery or invention. The existing list of topics being considered numbers about 375 so far. Those topics may be scanned on the website: www.encyclopediawebsite.com; click on "Discovery and Invention." That site includes information on a list of available articles, compensation and deadline information, guidelines, and sample articles—essentially everything that a prospective author would need to know about the project

Prize (2009) for Young Scholars
The International Union of the History and Philosophy of Science,
Division of History of Science and Technology (IUHPS / DHST)

The International Union of the History and Philosophy of Science, Division of History of Science and Technology (IUHPS / DHST) invites submissions for the first DHST Prize for Young Scholars, to be presented in 2009. The DHST Prize is awarded by IUHPS/DHST every four years to four young historians of science and technology for outstanding doctoral dissertations, completed after July 2004. One prize is awarded in each of the following fields: Western civilization; Islamic civilization; East Asian civilization; South Asian civilization; and Ancient civilizations (not included in the above categories). Each prize consists of a certificate and coverage of travel and accommodation expenditures to the IUHPS / DHST Congress in Budapest in July 2009.

The selection committee is comprised of the DHST President, the DHST Vice-President, the DHST Secretary-General, and distinguished specialists in the specific fields. The competition calendar is as follows: Submission deadline is 31 August 2008; the Prize Committee meets in January 2009; and the Award Ceremony is scheduled for July 2009.

Conditions relating to the competition are that: (1) applicants must have a doctoral degree in the history of science or technology awarded no earlier than July 2004; (2) the entries must be on the history of science or technology in Western civilization, Islamic civilization, East Asian civilization, South Asian civilization, or Antiquity; and (3) any dissertation in a language other than English must be accompanied by a detailed summary in English of no more than 20 pages.

Applications must be made in English and received at the Office of the DHST President no later than 31 August 2008: Prof. Ronald L. Numbers (numbers@wisc.edu), Department of Medical History and Bioethics, 1300 University Avenue, Madison, WI 53706-1532, USA

Notes from David Oldroyd

Earth Sciences History

I have taken up the editorship of *Earth Sciences History*, the journal of the History of Earth Sciences Society (HESS), succeeding Dr Patrick Wyse Jackson from Dublin. Several Members of INHIGEO are on the journal's Editorial Board, and I hope to see further development of co-operation between INHIGEO and HESS, though it has already been quite extensive (for example, issue No. 2, 2007, published papers from INHIGEO's 2005 meeting in Prague).

Members of INHIGEO who are interested in publishing in *Earth Sciences History* are invited to look at HESS's website (www.historyearthscience.org) to view the journal's Guidelines for authors, and then contact me with any ideas or suggestions that they may have. *Earth Sciences History* is published twice a year, in March and September.

Book available gratis

I have a few duplicate copies of my book *The Highlands Controversy: Constructing Geological Knowledge through Fieldwork in Nineteenth-century Britain* (University of Chicago Press, 1990). If any INHIGEO Member is interested in obtaining a copy, please contact me. First come, first served! (esh@historyearthscience.org OR doldroyd@optushome.com.au)

David Oldroyd, Sydney

Publication of the *NEW DICTIONARY OF SCIENTIFIC BIOGRAPHY*

Every historian of science—any science—knows how immensely valuable the original, 18-volume *Dictionary of Scientific Biography* has been since its inception in the 1970s. It has introduced young people to the historical dimension of science. It has directed scholars towards the manuscripts and published primary sources of important scientists. Now, at the close of 2007, an important new step has been taken. The *New Dictionary of Scientific Biography* has not only brought this resource up-to-date with eight more volumes, covering scientists who were omitted or who have died since the original series. It also has added revised articles—'updates'—on scientists who have been significantly re-evaluated. The publisher, Thomson-Gale, has also produced a cumulative, on-line edition, complete with an inclusive and easily searchable index. This *Complete Dictionary of Scientific Biography* is available through many university and other institutional libraries.

All articles were written by acknowledged authorities in their fields. Gregory A. Good served as subject editor for geology and geophysics, and Ken Taylor was a consulting editor for a number of the geoscience updates. Historians of geology and the other earth sciences should find the new volumes especially useful. The list of geoscientists covered in these volumes is extensive, including the following: Airy, G. B.; Aki, Keiti; Alfvén, Hannes; Arduino, Giovanni; Blackett, Patrick; Bretz, J Harlan; Buffon, George-Louis; Carey, Samuel; Chambers, Robert; Cox, Allan; Crosse, Andrew; Cuvier, Georges; Darwin, Charles; Ding Wenjiang; Farey, John; Goethe, Johann; Gold, Thomas; Herschel, John; Hondius, Jodocus; Hospers, Jan; Huang Jiquing; Hutton, James; Jeffreys, Harold; King, Clarence Rivers; Kircher, Athanasius; Krumbein, William; Lavoisier, Antoine-Laurent; Lehmann, Inge; Matuyama Motonori; Maupertuis, Pierre; Milanković, Milutin; Newell, Homer; Powell, John Wesley; Richter, Charles; Ringwood, Alfred E.; Runcorn, S. Keith; Saussure, H.-B. de; Shoemaker, Eugene; Van Allen, James A.; Wadati, Kiyoo; Walker, John; Wegener, Alfred; Whewell, William; and Wilson, J. Tuzo.

Dozens of other geoscientists are included in the new volumes. The international spread of these names and the specialties and time periods represented are all remarkable.

Have some notable scientists been omitted? Of course. Any reference source is necessarily selective. Nevertheless, the *New Dictionary of Scientific Biography* offers a most useful starting point for many projects in history of earth science. If it is not available in your library, put in a request. This is no ordinary dictionary.

Greg Good, Morgantown, West Virginia

Journal *Geoheritage*

Geoheritage, published by Springer Verlag, will be the official journal of a partnership consortium consisting of:

- ProGEO (the European Association for the Conservation of the Geological Heritage) and
- IUGS Commission on Geoscience for Environmental Management (GEM) with

- IUGS Commission on Stratigraphy (ICS) and subcommissions
- INHIGEO (International Commission on History of Geological Sciences)
- International Association of Geomorphologists (IAG)
- International Association of Palaeontologists (IPA)
- AEGS, European Association of Geological Societies
- Geological Society of Africa (GSA)
- Office of World Geoparks, Beijing

Geoheritage will be the first ever peer-reviewed journal dedicated to all aspects of inanimate natural heritage, following rising awareness of these subjects in society, amongst conservationists, geoscientists and a growing public. Geological heritage is here understood in a broad sense, integrating all sub-disciplines such as geomorphological, stratigraphic, paleontological, mineralogical and landscape heritage, amongst others, as well as the places and materials connected with geoscience and its progress. The journal will publish papers on scientifically important geosites, their characterisation and assessment. Key topics for papers also include geosites (at all scales), their science and conservation, interpretation and use, geodiversity, educational links, geotourism and geoparks

The *Geoheritage* journal is an international journal dedicated to promoting heritage conservation, and to discussing all aspects of our global geoheritage, both *in situ* and portable. The journal will invite all contributions on the conservation of sites and materials—use, protection and practical heritage management—as well as its interpretation through education, training and tourism. The journal will publish research papers, review articles and short notes, as well as comments on papers already published in this journal or elsewhere. Occasionally, concise meeting reports and news of interest to the scientific, geo-conservation, environmental, and educational community will be published. As the official journal of the European Association for the Conservation of the Geological Heritage (ProGEO) (and its national groups) and GEM and other partner organisations, *Geoheritage* will regularly publish the proceedings of the partner's international symposia.

The journal addresses geologists, biologists, geographers and landscape architects, environmental geologists, planners and officials dealing with nature conservation, museum workers, archivists and curators, science historians, specialists in town & country (spatial) planning, environmental impacts, geotourism, and secondary teaching, as well as faculty staff, graduate and post-graduate students

Editors are Jose Brilha (University of Minho, Portugal) and William A.P. Wimbledon (Countryside Council for Wales/University of Bristol, United Kingdom). Bill Wimbledon may be contacted at B.Wimbledon@ccw.gov.uk.

The Editorial Board is to be completed, with specialists from all key organisations, disciplines, and continents.

Society for the History of Geophysics and Cosmical Physics

The Society was very active in 2007. Various books have been published dealing with Hans-Jürgen Treder, studies on the International Geophysical Year (IGY), recollections of Wilfried Schröder, and topics in geophysics and meteorology. Society member Holger Filling continues his studies on the star disc of Nebra and other historical issues. Rainer Burghardt, Thomas Schalk, and Karl E. Kunst continue their work on theoretical physics. Other members are studying topics relating to the IGY, the International Year of the Earth, and other noteworthy events. Details concerning the Society may be found under: http://verplant.org/history-geohysics.

Wilfried Schröder, Bremen-Roennebeck

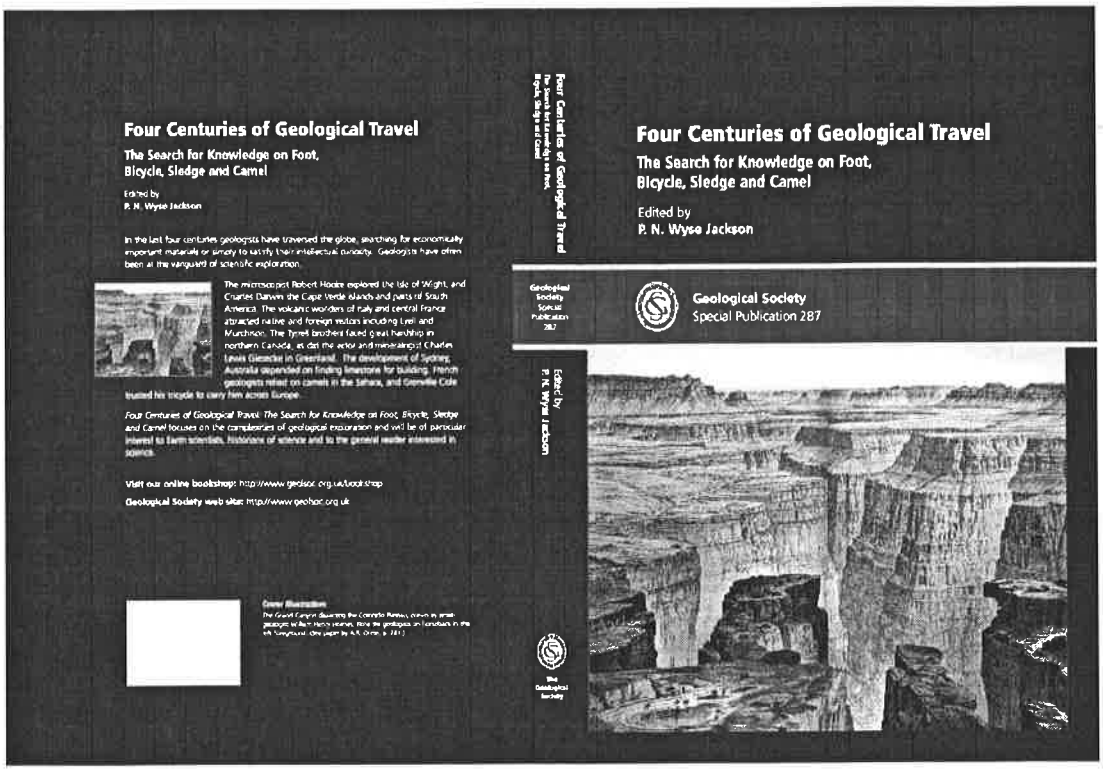
Traveling through Time and Space

An important book, with numerous ties to INHIGEO and a superb set of historical articles, is now available. The book is: *Four Centuries of Geological Travel: The Search for Knowledge on Foot, Bicycle, Sledge and Camel,* Patrick N. Wyse Jackson (editor), Proceedings of the INHIGEO symposium, Dublin July 2003, Geological Society of London, Special Publications, 287, 2007, vi + 415 pp. Copies may be purchased from the Geological Society of London bookstore (http://www.geolsoc.org.uk/bookshop). Price: £90.00 List price; £45.00 Geological Society Fellows price; £72.00 Corporate Affiliates Price; £54.00 Other Societies' price.

Contents

- Global peregrinations: four centuries of geological travel. *Patrick N. Wyse Jackson*
- Sharing Common Ground: Nery Delgado (1835–1908) in Spain in 1878. *Ana Carneiro*

- J.D. Forbes and Naples. *Dennis R. Dean*
- The geological observations of Robert Hooke (1635–1703) on the Isle of Wight. *Ellen Tan Drake*
- Investigating the colonies: native geological travelers in the Portuguese Empire in the late 18th and early 19th centuries. *Silvia F. de M. Figueirôa, Clarete P. da Silva and Ermelinda M. Pataca*
- Geophysical travellers: the magneticians of the Carnegie Institution of Washington. *Gregory A. Good*
- Doing and Knowing: Charles Darwin and other travellers. *Sandra Herbert*
- 19th-century observations of the Dun Mountain Ophiolite Belt, Nelson, New Zealand and trans-Tasman correlations. *Mike Johnston*
- Inscription and fact: 18th-century mineralogical books based on travels in the Habsburg regions, the Carpathian Mountains. *Marianne Klemun*
- The geological travels of Charles Lyell, Charlotte Murchison and Roderick Impey Murchison in France and northern Italy (1828). *Martina Kölbl-Ebert*
- Théodore Andre Monod and the lost *Fer de Dieu* Meteorite of Chinguetti, Mauritania. *Ursula B. Marvin*
- The quest for limestone in colonial New South Wales, 1788–1825. *Wolf Mayer*
- Hermann Abich (1806–1886): "the father of Caucasian Geology" and his travels in the Caucasus and Armenian Highlands. *Eugenij E. Milanovsky*
- Alexander von Humboldt in Russia: the 1829 expedition. *Friedrich Naumann*
- Robert Jameson on the Isle of Arran, 1797–1799: in search of Hutton's 'Theory of the Earth.' *Christopher J. Nicholas and Paul N. Pearson*
- In the footsteps of Thomas Livingstone Mitchell (1792–1855): soldier, surveyor, explorer, geologist, and probably the first person to compile geological maps in Australia. *David Oldroyd*
- Clarence Edward Dutton (1841–1912): Soldier, Polymath, and Aesthete. *Antony R. Orme*
- Charles Darwin's geological observations at Santiago (St. Jago), Cape Verde Islands. *Paul N. Pearson and Christopher J. Nicholas*
- The German geologist Georg Hartung (1821–1891) and the geology of the Azores and Madeira islands. *Manuel S. Pinto and Annette Bouheiry*
- Geological travellers in view of their philosophical and economical intentions: Johann Wolfgang von Goethe (1749–1832) and Caspar Maria Count Sternberg (1761–1838). *Claudia Schweizer*
- Naturalists from Neuchâtel: America and the dispersal of Agassiz's scientific factory. *Robert H. Silliman*
- Two Tyrrells cross the Barren Lands of Canada: 1893. *David A.E. Spalding*
- On camelback: René Chudeau (1864–1921), Conrad Kilian (1898–1950), Albert Felix de Lapparent (1905–1975), and Theodore Monod (1902–2000), four French geological travellers across the Sahara. *Philippe Taquet*
- Geological travellers in Auvergne, 1751–1800. *Kenneth L. Taylor*
- The organized traveler: scientific instructions for geological travels (18th–19th century). *Ezio Vaccari*
- The travels and travails of Sir Charles Lewis Giesecke. *Alfred Whittaker*
- The geological travels of Sir Charles Lyell in Madeira and the Canary Islands, 1853–54. *Leonard G. Wilson*
- Grenville Arthur James Cole (1859–1924) the cycling geologist. *Patrick N. Wyse Jackson*
- Franz Hilgendorf (1839–1904) introducer of evolutionary theory to Japan around 1873. *Michiko Yajima*



History of the Earth Sciences Society (HESS)

The international journal *Earth Sciences History* closed a chapter with the appearance of the second number of volume 26 (2007). Patrick Wyse Jackson of Dublin, who has edited the journal so ably for four years, is retiring his 'green editorial pen.' A new chapter opens as David Oldroyd, of Sydney, Australia, assumes editorial responsibilities.

As then-president Martin Rudwick noted in the pages of this *Newsletter* two years ago, a widespread but erroneous impression persists, that HESS and its journal *Earth Sciences History* are mainly North American affairs. If you share this impression, you are strongly urged to take another look at this fine journal, which as Rudwick observed is "the only established periodical to be devoted specifically to the history of the earth sciences." A glance over recent issues shows how thoroughly international it is. Visit the website: http://www.historyearthscience.org/

The continued health and vitality of *Earth Sciences History* depend on people like us: INHIGEO members who are committed to promotion of the history of the geological sciences. It is particularly recommended that those whose institutional libraries are not current subscribers to *ESH*, make the effort to see that they do. Subscription rates are extremely modest, by any modern standard. Personal membership in HESS (with receipt of *ESH* as its most conspicuous benefit) is now made easier with a payment option through PayPal.

Earth Sciences History

Earth Sciences History, the journal of the History of Earth Sciences Society (HESS), was founded by Gerald M. Friedman in 1982. It is published twice a year, with 300+ pages *per annum*, and contains a wide variety of scholarly articles on the histories of all aspects of the earth and planetary sciences, as well as the histories of meteorology and oceanography. It is the only journal that is wholly devoted to the history of geology and related sciences and it is also interested in geological education, the institutional and social histories of geology, geological museums and collections, environmental history (insofar as that may relate to the geosciences), geological themes in art, the philosophy of the geosciences, etc. Each issue contains articles, book reviews, and a list, compiled by Professor Friedman, of as many as possible of recent publications in the history of the geosciences. All papers are refereed by at least two readers.

Though HESS was first established in the United States, and most of its Members still come from that country, it should be emphasized that it is an international journal. Its Board Members are drawn from round the world, and its articles may refer to any part of the world—and to any period of history (or possibly even prehistory). The first three editors were based in the U.S., but the next one came from Ireland and the present editor is located in Australia, where the journal is currently printed and from where it is distributed. The journal is available in either hard copy or online.

The submission of papers is invited, and new subscribers will be welcome. For further information, please visit <www.historyearthscience.org>.

EDITOR: David R. Oldroyd, University of New South Wales; Postal address: 28 Cassandra Avenue, St Ives, NSW 2075, Australia. (<esh@historyearthscience.org>)

BOOK REVIEW EDITOR: Vic Baker, Department of Hydrology and Water Resources, The University of Arizona, Tucson, AZ 85721, USA (<baker@hwr.arizona.edu>)

ASSOCIATE EDITORS: *American geology; stratigraphy* = Kennard Bork, Denison University, Granville OH 43023, USA (<bork@denison.edu>); *Mineralogy and petrology; petroleum geology* = William Brice, University of Pittsburgh at Johnstown, Johnstown PA 15904, USA (<wbrice+@pitt.edu>); *Mineralogy and geology; history, sociology and philosophy of geoscience; European geology* = Bernhard Fritscher, Munich Center for the History of Science and Technology, Museuminsel 1, D-80306 Munich, Germany (<b.fritscher@lrz.uni-muenchen.de>); *Geophysics* = Gregory Good, University of West Virginia, Morgantown, WV 26506, USA (<ggood@wvu.edu>); *Tectonics* = Homer Le Grand, Monash University, Caulfield East. Victoria 3145, Australia (<homer.legrand@arts.monash. edu.au>); *Paleontology; Latin America* = Maria Margaret Lopes, Universidade Estadual de Campinas, Campinas, Sáo Paulo Brazil (<mmlopes@ige.unicamp.br>); *Oceanography* = Eric Mills, Department of Oceanography, Dalhousie University, Halifax, Nova Scotia B3H 4JI, Canada (<e.mills@dal.ca>); *18th and 19th centuries* = Julie Newell, Southern Polytechnic State University, 1100 South Marietta, Marietta GA 30060–2896, USA (<jnewell@spcu.edu>); *Geomorphology and Quaternary geology* = Antony Orme, University of California, Los Angeles, Los Angeles CA 90095-1524, USA (<orme@geog.ucla.edu>); *History of fieldwork; paleontology* = Irina Podgorny, Carlos Pellegrini 1219, 8vo. B, C1009ABY, Buenos Aires, Argentina (<podgorny@mail.retina.ar>); *Geology in Britain* = James Secord, Cambridge University, Cambridge, CB2 3RH, UK (<jas1010@hermes.cam.ac.uk>); *Vertebrate paleontology, geological education, conservation, Canada* = David Spalding, 1105 Ogden Rd, Pender Island, BC, V0N 2MI, Canada (<david@davidspalding.com>); *18th and 19th centuries; European geology* = Ezio Vaccari, Universita dell'Insubria, 21100 Varese, Italy (<ezio.vaccari@uninsubria.it>); *Invertebrate paleontology; stratigraphy; museums; Ireland* = Patrick Wyse Jackson, Department of Geology, Trinity College, Dublin 2, Ireland (<wysjcknp@tcd.ie>).

To join the History of the Earth Sciences Society and receive *Earth Sciences History* (twice a year) you may: (1) join online at http://historyearthscience.org/store.html; or (2) download the membership application form (*http://www.historyearthscience.org/subscription.html*) and mail the membership form with payment, in US dollars, to: Emma C. Rainforth, HESS Treasurer, Ramapo College of New Jersey, Theoretical and Applied Science, 505 Ramapo Valley Road, Mahwah, NJ 07430, USA.

For Fans of Charles Darwin and/or Léo Laporte

As many of our readers know, Prof. Léo Laporte has deep and wide knowledge of Charles Darwin and his contributions to modern science. Decades ago, Léo developed a Darwinian seminar at Brown University, and he continued to refine the course during his years at the University of California-Santa Cruz. More recently he has offered a course on Darwin at Stanford University's Jasper Ridge Biological Preserve. All of which leads to the point that key elements of Prof. Laporte's insights on Darwin may now be widely accessed at the website http://campus.digication.com/darwin/Home/. On the left of the Home Page, there is a menu of topics under "Discovering Darwin," followed by a series of images under "Evolution of Darwin." Simply click on individual items listed so as to advance through the site.

Research Opportunities and Online Image Galleries
University of Oklahoma, USA

Mellon Travel Fellowships for Research

The University of Oklahoma (located in Norman, near Oklahoma City), offers an endowed Andrew W. Mellon Travel Fellowship program to provide travel expenses and a reasonable per diem to researchers seeking to use the History of Science Collections. The Collections' holdings for research in the history of geology are quite strong, and are supplemented by the substantial geoscience holdings of the L.S. Youngblood Energy Library. Support is available for international scholars in periods ranging from two to eight weeks. Researchers in residence may take advantage of all resources of the University Library system, including the Youngblood Library (Geology) and digital subscriptions. See the University Library online catalog and website, http://libraries.ou.edu, then click on the Locations tab on the left for History of Science Collections. For more information contact the Collections Librarian, Kerry Magruder (<kmagruder@ou.edu>).

Online Image Galleries

The online image galleries of the OU History of Science Collections reached 14,000 images by the end of 2007, including many plates and title pages pertaining to the history of geology. The image galleries offer high resolution, print-quality tiff-format images, and there is no charge for downloading or using them in publications so long as a proper attribution is included. To browse the thumbnail interface go to http://hsci.ou.edu/galleries/ and click on period and author names. Links available on any gallery page will take you to book and portrait displays, a blog noting Images Recently Digitized, and an official image use permission statement. Many new images will be added monthly, including some entire books. For more information or to request images please contact Kerry Magruder (<kmagruder@ou.edu>).

William Smith's Map

Cecil Schneer reports that individuals may acquire a poster reproducing the famous geologic map produced by William Smith. The item is available from: Sue Clark, Secretary, Department of Earth Sciences, James Hall, 56 College Rd., University of New Hampshire, Durham NH 03824 (USA). The charge is US$ 20 for postage and tube; additional posters in the same tube are $5 each.

Cecil further reports that he does not have enough space to put the full 8-1/2' by 6' map on the web for downloading, but that anyone seriously contemplating trying to print the Smith map in its full original size can contact him (<cschneer@comcast.net>) about getting a DVD. Anyone happy with a smaller version than the 36" by 25" of the poster is welcome to download the map from www.unh.edu/esci/wmsmith/html.

Castles in Spain

Our Spanish colleagues in the history of geoscience have been highly productive, and several noteworthy elements of their work should be highlighted. Those having facility in Spanish may want to consult the website of the Museo Nacional de Ciencia Naturales (MNCN), which includes notices of significant to historians of natural history (<www.mncn.csic.es>). The museum's periodical publication is superbly illustrated. A valuable link directly to the history of geology in Spain leads the interested reader to the Boletin de la Comisión de Historia de la Geología de España (http://www.aepect.org/SGE-historia_geologia/documentos-pdf/index.htm). Access to The Spanish Society for the Preservation of the Geological and Mining Heritage (SEDPGYM) can be gained through http://www.sedpgym.org. Recent books of note include: (1) Alicia Masriera, *El Museu Martorell, 125 anys de ciències naturals (1878–2003),* Monografies del Museo de Ciències Naturals, no. 3, 2006, 230 pp.; (2) José Alsina Calvés, *Historia de la Geología. Un introducción*, Editorial Montesinos, Barcelona, 2007, Biblioteca de Divulgación Temática, 230 pp.; (3) Rolf Schroeder and Antonio Perejón (eds.), *Contributions to the geology of Spain in memory of Prof. Franz Lotze*, Zeitschrift der Deutschen Gesellschaft für Geowissenschaften, Stuttgart, *157*, part 4, 2006, 510–732; and (4) *Esphera en común Celeste y Terráquea autor el M. R. P. IOSEPH ZARAGOZA, de la Compañía de Jesús (. . .).* Primera Impresión, año de 1675, Juan Martín del Barrio, Madrid, 256 pp. Reviews (in Spanish) of those four books may be acquired by contacting Leandro Sequeiros (<lsequeiros@probesi.org>).

COUNTRY REPORTS

Australia

David Branagan's book, *T. W. Edgeworth David: A Life,* was one of four books short-listed for the inaugural Prime Minister's History Prize (A$100,000), but it didn't win! Interest in Edgeworth David remains high and presentations on his life and work were given during the year. [N.B. The former Prime Minister, John Howard, took a personal interest in the 'selection process' and found a traditional book on Australian political history more to his taste than a book on an Australian geologist. DRO]

In June (on the wettest and coldest day!) David was awarded an Honorary DSc from the University of Sydney.

Research (in association with David Moore) has been completed on the early nineteenth-century rock collections made around the coast of Australia by Phillip Parker King and Alan Cunningham. The paper will be published in 2008. A study of the 1940s research on geochemical mineral exploration (particularly in Australia) by the Russian/American V. P. Sokoloff (1904–1996) was published, as was earlier research on the authenticity of the mineral *davidite* (named in 1907 by Douglas Mawson for his mentor, Edgeworth David).

The report on the Library of the Royal Society of New South Wales (mentioned in the 2006 report) was published by the Society in 2007.

A paper on the enigmatic Russian 'adventurer,' Captain Eugene de Hautpick, presented at the memorial meeting in November 2006 for former INHIGEO member, Professor Neil Archbold, was completed and accepted for publication by the Royal Society of Victoria and will be published in 2008.

A paper presented at the Vilnius INHIGEO in 2006 discussing the Cainozoic of Australia has been accepted for publication by the Geological Society of London in the forthcoming Special Publication (mentioned below).

A paper was presented on Australian 'clerical geologists' at the Eichstätt meeting of INHIGEO and the paper has been offered for publication in the Proceedings volume.

At the annual meeting of the Australian Mining History Association in September David presented a paper on the 1850s geological survey carried out by Samuel Stutchbury in the New England region of New South Wales. David is working on a biography of Stutchbury, who carried out significant work in the Pacific, Australia, and (from Bristol) on aspects of British mining and palaeontology.

David attended the November meeting in England organised by Cherry Lewis celebrating the bicentenary of the Geological Society of London. He participated in the field trip to the Isle of Wight, ably led by Martin Rudwick, Hugh Torrens and other efficient organisers, and presented a paper on the long-standing Antipodean connections with the Geological Society. Australian rock collections (mainly nineteenth century), most originally in the possession of the Geological Society of London but now held in the Natural History Museum, were briefly examined in anticipation of possible further research work.

In late November David participated in the meeting of the Earth Sciences History Group (Geological Society of Australia) in Melbourne, presenting a paper on Alfred Selwyn's early career (1845–1852) in the Geological Survey of Great Britain. In early December, he was a joint presenter (with R. M. MacLeod) of the Clarke Memorial Lecture (Royal Society of New South Wales) interlinking the work of Archibald Liversidge and Edgeworth David at the University of Sydney, The Royal Society of New South Wales, and other Australian scientific bodies.

An article on the economic geologist Haddon Rymer Forrester King (1905–1990) was published in the *Australian Dictionary of Biography*, while another was completed on the Estonian/Australian geologist, Armin Öpik (1898–1983) for a later *ADB* volume.

Thanks are due to David Oldroyd, Barry Cooper, Wolf Mayer, Rodney Grapes and others for their assistance as referees and editors during the year.

Barry Cooper has completed a joint investigation with Jim Jago (University of South Australia) on the history of the Cambrian in South Australia. This has been published in two papers: 1) 'History of Cambrian investigations in South Australia with particular reference to the biostratigraphy,' *Memoirs of the Association of Australasian Palaeontologists*, *33*, 1–27; 2) 'Early understanding of the Cambrian in South Australia,' *Special Publication, Earth Sciences History Group, Geological Society of Australia*, *1*, 20–25. As part of this investigation, a little known unpublished report on the geology of the South Australia's Flinders Ranges by

Douglas Mawson has been examined and the following paper published on its significance: 'Mawson's earliest (1906) report on the geology of the Flinders Ranges,' *Transactions of the Royal Society of South Australia, 132*, 169–177.

Barry's work on the history of uranium in South Australia is well advanced and given its interest to local uranium explorers a paper has already been presented to two meetings in Adelaide. The following abstract has been published: 'Sedimentary uranium: how it was first discovered in the Frome Embayment,' *Abstracts Geological Society of Australia, 87*, 5–6.

Two manuscripts, one dealing with the early history of uranium in South Australia (1906–1912) and another focusing on the history of sedimentary uranium in the period 1960–1980, are nearing completion. A general paper on the history of uranium in South Australia is being prepared for the INHIGEO meeting in Oslo.

Information on the history of the Adelaide-based consulting company, 'Minoil' Services, which operated throughout Australia in the years 1962 to 1989 and was involved in the Beverley uranium discovery in 1969, has been obtained from retired former Manager, Ross Grasso. This information has been edited and submitted to the newsletter of the Earth Sciences History Specialist Group of the Geological Society of Australia.

As a contribution to the classic paper series in *Episodes*, Barry has also worked with Emeritus Professor W. C. Sweet (Ohio State University) to prepare an assessment of the classic paper by Christian Heinrich Pander, published in 1856, which for seventy years provided an essentially unmodified and definitive introduction to conodonts as a fossil animal group. This will be published in 2008.

Barry and Jim Jago have also ongoing plans to study the career of Robert Bedford (1874–1951), his contribution on Cambrian Archaeocyatha in South Australia and his tortuous relationship with Sir Douglas Mawson.

Tom Darragh continues to work on the diaries of Ludwig Leichhardt, though the work is now in its final stages. In addition to the four diaries he has already translated and reported on last year, he has been revising the transcription of Leichhardt's first Australian diary that was transcribed and translated by George Laube in the 1950s and 1960s. Laube's transcription and translation needed revision with respect to botanical and geological terminology in particular. When this is finished, it is hoped to find a publisher to publish the five diaries, with appropriate editorial notes.

A biography of the Silesian mining engineer William Blandowski, who was the first curator of the Natural History Museum in Melbourne, now Museum Victoria, was finalised for presentation at the Blandowski Symposium held in Mildura in September 2007. The paper will be published in the *Proceedings of the Royal Society of Victoria.*

A short paper on the origins of Robert Brough Smyth, the notorious Secretary for Mines in Victoria, was published in the proceedings of the Earth Science History Group Conference held in Melbourne in December 2007. It turns out his name was Smith. Darragh, T. A., 'Robert Brough Smyth: a mystery solved,' *in* Pierson, R. R. (ed.), *The History of Geology in the Second Half of the Nineteenth Century: The Story in Australia, and in Victoria, from Selwyn and McCoy to Gregory—1853 to 1903,* Earth Sciences History Group Conference, Volume of Short Papers, Special Publication No. 1, Earth Sciences History Group, GSA Inc., Melbourne, Victoria, 2007, pp. 26–29.

Bernard Joyce reports from Melbourne: forty-five registrations were received for the Earth Sciences History Group of the Geological Society of Australia's conference on 'The History of Geology in the Second Half of the Nineteenth Century: The Story in Australia and in Victoria from Selwyn and McCoy to Gregory—1853 to 1903,' which was held from 29 November to 1 December 2007 in the School of Earth Sciences, The University of Melbourne.

Ten papers were presented on the first day, with the Keynote Address being presented in the evening by the distinguished Australian historian Geoffrey Blainey, followed by an excellent dinner at Café Italia nearby in Carlton. During the lunch and coffee breaks, participants were able to inspect a display of volumes from the Earth Sciences' Rare Book Collection, nine maps on loan from the Geological Survey of Victoria's exhibition for its 150th Anniversary in 2003, and a selection of the GSA's 'Australian Geology Hall of Fame' posters.

On the second day, five papers were presented in the morning, and the ESHG Business Meeting was also held. In the afternoon seventeen participants attended the Royal Park field trip, led by Bernie Joyce and Doug McCann.

The 'Deep Leads' field trip to the Creswick area, led by Guy Holdgate on Saturday 1 December, was attended by twenty-eight participants, and began at the Creswick Museum, followed by an inspection of the Berry Deep Lead system. After lunch at the historic mining town of Clunes, the trip concluded with a climb up the Mount Greenock scoria cone led by Bernie Joyce, to revisit Major Mitchell's 1836 panorama of the local volcanoes. Further details of the meeting can be found at http://web.earthsci.unimelb.edu.au/Joyce/eshg.html.

Wolf Mayer contributed a paper to a Geological Society Special Publication, based on his paper given at the INHIGEO meeting at Vilnius in 2006. He also attended the INHIGEO meeting held at Eichstätt in Germany in 2007, and there spoke about the geological work of the Reverend Charles Wilton in New South Wales. The paper based on this talk will appear in another forthcoming volume of the Special Publication series. In December 2007, he attended a colloquium organised by the *Muséum d'histoire naturelle* in Le Havre, France, on the theme: *À la conquête des Terres Australes (1800–1804): de la découverte à la collecte.* The talk he presented there, on the geological work of François Péron in Australia, will be published later this year in a bilingual format as part of the proceedings of that meeting.

David Oldroyd has been working with Rodney Grapes (NZ) and Algimantas Grigelis (Lithuania) on the editing of the papers on the histories of geomorphology and Quaternary geology, presented at the INHIGEO meeting in Vilnius in 2006, for a Geological Society Special Publication. This work is now complete and the volume should appear in 2008. (It includes a paper by DRO on Griffith Taylor's work on the geomorphological problems of the Sydney Basin.) He attended, and greatly enjoyed, the INHIGEO meeting in Eichstätt and contributed a paper and co-authored another one. The conference papers will appear in due course in another Special Publication, edited by Martina Kölbl-Ebert. His long paper, written in conjunction with Jan Kozák, Filomena Amador, Ana Carneiro, and Manuel Pinto, on the history of the study of earthquakes in the century after the Lisbon Earthquake (an outcome of the Prague meeting of INHIGEO), has recently been published in *Earth Sciences History*. The book on *Geological Travellers*, another Special Publication, this one developed from INHIGEO's Dublin conference and edited by Patrick Wyse Jackson, has recently appeared and includes an Oldroyd paper on the geological work of the Australian explorer Thomas Mitchell. And he published articles on James Hutton and Darashaw Nosherwan Wadia in the *New Dictionary of Scientific Biography.* A paper on the work of Reginald Sprigg (discoverer of the Ediacaran fauna), co-authored with Susan Turner, is in press with a University of Chicago Press volume: *The Paleobiological Revolution.*

David has taken up the editorship of *Earth Sciences History* in 2008, and has already been busy for some time with this work. He was also appointed to the editorial board of *Episodes* in 2007. And he has been involved in the preparations for two of the INHIGEO sessions for the 33rd International Geological Congress in Oslo in 2008. He was recently elected an 'Effective Member' of the International Academy of the History of Science (having previously been a 'Corresponding Member').

Besides the chapter with David Oldroyd, **Susan Turner** also co-authored a paper with Professor Patricia Vickers-Rich on the Precambrian fossils found by Sprigg, and work done by Martin Glaessner and Mary Wade in Geological Society Special Publication 286 (Vickers-Rich, P. and Komarower, P. (eds.), *The Rise and Fall of the Ediacaran Biota*). An article, 'Oil on Troubled Waters' also featuring Reg Sprigg and the early history of oil exploration was published in the magazine *GeoExpro* in December (see www.GeoExpro.com).

Sue's paper on Australian women geologists, principally palaeontologists, before the 'modern era' was published in another Geological Society, London Special Publication 281 (Burek, C. and Higgs, E. (eds.), *The Role of Women Geologists' Contributions*), from an excellent but all-too-brief one-day symposium at the Society rooms in November 2005. Two other contributions on women were published, a contribution on Professor Dorothy Hill in the *New Dictionary of Scientific Biography*; and a look at the work and times of Joan Crockford Beattie in *Annals of Bryozoology* 2, edited by Patrick Wyse-Jackson. The latter was the result of several hours of interviews with Joan over the last few years and assistance from Professor June Phillips Ross. Sue continues her work on women as part of her history of the UNESCO: IUGS International Geoscience Programme (IGCP).

Sue was invited to give a keynote address at the 10th Early/Lower Vertebrates Symposium: IGCP 491, at Uppsala, in August 2007 and, with colleagues' support, spoke about *A Special Moment: Great Northern Researchers*, the life and times of palaeontologists Drs. Elga Mark-Kurik and Valentina Karatajute-Talimaa, who were honoured at the symposium. This will be published in the symposium volume (Schultze, H-P. and Turner, S. in *Acta Zoologica*).

In 2007, Sue also began to look at the history of her new 'professional string,' that of geoscientific editing, with offerings on 'Great Editors' in *Offpress*, the Newsletter of the Society of Editors (Queensland); and her articles were chosen for the annual SOCED (Q) award for writing in December. She also made a small contribution to the Geological Society of London Bicentenary by assisting David Branagan with background on Professor Sydney Skertchley FGS, who lived in Queensland late in life.

As others, Sue attended the wonderful INHIGEO-2007 conference at Eichstätt, giving a talk on 'Dinosaurs and Lost Dreams' on the lives and correspondence between Heber A. Longman, former Director of the Queensland Museum and describer of the first Australian dinosaur, among other important finds, and Baron Friedrich Hoyningen-von Huene, twentieth-century dinosaur doyen of *Universität Tübingen*. This work has led to a review of the scientific and religious philosophy of Professor von Huene, which will be published in Martina Kölbl-Ebert's Symposium volume, *The Historical Relationship of Geology and Religion*. Sue's work on the von Huene Family continues and in February she went to Stuttgart to interview Professor Dr. Helmut Hölder, who told her much of the contemporary scene in 1920s–1960s Germany and helped restore some of the missing von Huene religious tracts to the University's von Huene Library. From this work she also hopes to bring to light the work of other 'lost dreams' with the work of von Huene's eldest daughter, Erika, who was one of the few women vertebrate palaeontologists in the pre-1960s era.

David Oldroyd, Sydney

Austria

The presidency of the Working Group for the Study of Austrian History of Earth Sciences changed on 27 February 2007. Johannes Seidl (Archives of the University of Vienna) took over the presidency. He was honored, on 11 December 2007, by the governor of Lower Austria, who presented him with a Silver Medal for his meritorious work concerning the history of Lower Austria.

Austrian participants at the INHIGEO meeting in Eichstätt, Germany (28 July to 5 August 2007) included Tillfried Cernajsek, Bernhard Hubmann, Marianne Klemun, and Claudia Schweizer. In September, the University of Laval (Quebec City, Canada) hosted the 9th International Symposium on "Cultural Heritage in Geosciences, Archaeology, Mining and Metallurgy." The meeting gathered approximately one hundred specialists in these fields of research, from all five continents. In more than fifty presentations, the participants reported about their wide-ranging work in collections, archives and libraries. In a welcoming address during the opening ceremony Reginald Auger gave a short overview, in the name of the organizing committee, about the present and past meetings. His thanks were given not only to the participants for coming, but also to different institutions for financial support. Two excursions and receptions, hosted by Alcoa Canada, completed the program of this symposium. Participants from Austria included Andrea Beyer, Alexander Biedermann, Margarete Hamilton, Christoph Hauser, Liselotte Jontes, Günther Jontes, Franz Pertlik, and Susanne Pertlik.

Publications of the members of the Austrian working group

- Cernajsek, Tillfried, Hubmann, Bernhard, and Seidl, Johannes, 'Austria,' *INHIGEO Newsletter 39*, 2007, 74–77.
- Cernajsek, Tillfried, 'Laudatio für Lieselotte Jontes,' *Res montanarum*, 2007, *40*, 4–10.
- Cernajsek, Tillfried, Liparsky, Piotr, Mauracher, Josef, and Schedl, Albert, 'Das zentrale Bergbaukartenverzeichnis für Österreich - eine Maßnahme zur Erhaltung des kulturellen Erbes in den Bergbau- und Erdwissenschaften,' *Res montanarum*, 2007, *40*, 48–55.
- Cernajsek, Tillfried, and Seidl, Johannes, 'Zwischen Wissenschaft, Politik und Praxis. 100 Jahre Österreichische Geologische Gesellschaft (vormals Geologische Gesellschaft in Wien),' *Austrian Journal of Earth Sciences*, 2007, *100*, 252–274.
- Durand-Delga, Michel, and Seidl, Johannes, 'Eduard Suess (1831–1914) et sa fresque mondiale *La Face de la Terre*, deuxième tentative de Tectonique Globale,' *Géoscience* (Comptes-Rendus, Académie des Sciences, Paris), 2007, *339*, 85–99.
- Flügel, Helmut, 'Ignaz von Born – Andreas Stütz – Constant Prévost: Das erste Kapitel der Geohistorik in Österreich,' *Jahrbuch der Geologischen Bundesanstalt*, 2007, *147*, 491–502.
- Friebe, J. Georg, 'Ansichtssache Erdgeschichte: Geotope im Spiegel von Ansichtskarten des frühen 20. Jahrhunderts,' *in* Thomas Hofmann (Hrsg.), Geotope - Dialog zwischen Stadt und Land. (= *Abh. Geol. Bundesanst., 60 = Schriftenreihe Dt. Ges. Geowiss.*), 2007, *51*, 35–40.

- Hamilton, Margaret, and Pertlik, Franz, 'Die Salzminerale von Hall in Tirol und ihre Charakterisierung durch Rudolf Görgey von Görgö und Toporcz,' *8th International Symposium Cultural Heritage in Geosciences, Mining and Metallurgy. Libraries – Archives – Collections*, Schwaz / Tyrol / Austria, 3-7 October 2005 (= 5th Symposium History of Earth Sciences in Austria) (= *Geo. Alp, Sonderband 1*), 2007, 44–52
- Göd, R., Hammer, Verena M. F., and Pertlik, Franz, 'Zum Geleit. Vom Verein Österreichische Mineralogische Gesellschaft (ÖMG) ausgerichtete Tagungen und Exkursionen,' *Mitteilungen der Österreichischen Mineralogischen Gesellschaft 153*, 13–20.
- Schweizer, Claudia, 'Wissenschaftspolitik im Spiegel geistiger Nachfolge. Zur Korrespondenz von Friedrich Mohs an Franz-Xaver Zippe (1791–1863) aus den Jahren 1825–1839 (aus dessen Nachlass),' Johannes Seidl (edit.), *Berichte der Geologischen Bundesanstalt 71*, 2007.
- Schweizer, Claudia, 'How objective was Scientific Observation in the early nineteenth century? Reflection on Kaspar Sternberg's Exploration in Tyrol,' *8th International Symposium Cultural Heritage in Geosciences, Mining and Metallurgy. Libraries – Archives – Collections*, Schwaz / Tyrol / Austria, 3-7 October 2005 (= 5th Symposium History of Earth Sciences in Austria) (= *Geo. Alp, Sonderband 1*), 2007, 135–144
- Schweizer, Claudia, 'Geological Travellers in the Early 19th Century: JohannWolfgang von Goethe and Kaspar Maria Count Sternberg,' *in* Patrick N. Wyse Jackson (edit.), *Four Centuries of Geological Travel. The Search for Knowledge by Foot, Bicycle, Sledge and Camel*, Geological Society of London, Special Publication 287, 2007, 63–72
- Seidl, Johannes, and Pertlik, Franz, 'Eduard Sueß als akademischer Lehrer. Eine Synopsis der unter seiner Anleitung verfassten Dissertationen,' *Res montanarum. Zeitschrift des Montanhistorischen Vereins Österreich 40*, 2007 (Festschrift für Lieselotte Jontes zur Vollendung des 65. Lebensjahres), 40–47
- Svojtka, Matthias, 'Eindrücke aus der Frühzeit der geologischen Erforschung Ostgaliziens (Ukraine): Leben und erdwissenschaftliches Werk von Rudolf Kner (1810–1869),' *8th International Symposium Cultural Heritage in Geosciences, Mining and Metallurgy. Libraries – Archives – Collections*, Schwaz / Tyrol / Austria, 3-7 October 2005 (= 5th Symposium History of Earth Sciences in Austria) (= *Geo. Alp, Sonderband 1*), 2007, 147–154.
- Svojtka, Matthias, 'Trilobitensammeln im Dienst von Lehre und Forschung. Ein Beitrag zur Geschichte der Paläontologischen Sammlungen an der Universität Wien im späten 19. Jahrhundert,' Mensch – Wissenschaft – Magie (*Mitteilungen der Österreichischen Gesellschaft für Wissenschaftsgeschichte*), 2007, *25*, 161–180.

Johannes Seidl, Vienna

Belarus

Scientific Conferences.

On 14–16 March 2007, Belarusian State University and the Institute of Geochemistry and Geophysics of the Belarusian National Academy of Sciences carried out an International Scientific Conference focused on "Contemporary Problems of Geochemistry, Geology and Search of Mineral Deposits." The meeting was devoted to the 100th anniversary of academician K.I. Lukashev. Nearly 150 specialists from 45 scientific institutions and universities of Belarus, Russia, the Ukraine, Lithuania, Italy and Iran took part in the conference. Konstantin Ignatievich Lukashev (1907–1987) was a Belarusian geologist and geochemist, a doctor of geology and mineralogy, and an Academician who graduated from St. Petersburg University (1931). He was Dean and later Rector of St. Petersburg University, Head of the Department at the Moscow University, Rector of the Belarusian State University, Vice-President of the Belarusian National Academy of Sciences, and Director of the Institute of Geochemistry and Geophysics of the Belarusian National Academy of Sciences. He was the author of scientific works on Quaternary geology and geophysics, as well as soil science and geography. He worked out zonal geochemical classification of residual soil. In 1972 Lukashev was honored as a Belarusian State Prize Winner.

Jubilees.

On 28 June 2007, the Belarusian Geological Society celebrated the 70th birthday of P.Z. Khomich, a leader of Belarusian geology, organizer of the geological survey, and head geologist of the Republican concern "Belgeologia." He graduated from the Geological Survey Faculty of Lvov University, and has worked in Middle Asia and Western Siberia. For 40 years he has worked in Belarus, where he became the organizer of the

exploration of the biggest chalk field in Europe, "Communarsk." The chalk is the basis for cement production. The region also contains the Mikashevichi granite deposits, and Gralevsk dolomite deposits. Khomich organized supplementary exploration of potassium deposits, preliminary prospecting of phosphorites, brown coals, shale oil, and other minerals. P.Z. Khomich is thus an honored geologist of Belarus, a Belarusian State Prize Winner and an honorary explorer of the interior of the Earth of the USSR.

On 28 July 2007, V.G. Makarov, a distinguished specialist in rare and disseminated elements, and a doctor of geology and mineralogy, celebrated his 80th birthday. Born in St. Petersburg, he graduated from the Geological Survey Faculty of Kiev University. He worked in Uzbekistan and Kirgizia, and on the Kola Peninsula in an expedition looking for rare and disseminated elements that were the raw materials for nuclear research works in the USSR. Dr. V.G. Makarov was the first discoverer of titanium deposits in the Ukraine, and head of the Kazbek prospecting expedition. Since 1961 he has organized prospecting expeditions in Belarus aimed at finding rare and dispersed elements in the western part of the USSR. He also organized and led the complex thematic expedition on prospect-evaluation of the Belarusian territory for rare and disseminated elements in paleodeposits. The search was for titanium and zirconium raw materials, which could be promising for industrial applications. An underground leaching method was utilized. Makarov served as an expert for the Ministry of Geology of the USSR on uranium as a raw material. At present he continues consulting on rare and disseminated elements, working with specialists from Belarus, Russia, the Ukraine, Georgia, and Middle Asia.

Memorable dates.

It has been 105 years since the birth of doctor of geology, professor B.A. Fedorovich (1902–1981). Prof. Fedorovich was an outstanding explorer of deserts, a student of academicians V.A. Obruchev and V.I. Vernadsky. Prof. Fedorovich founded and developed a doctrine of deserts, revealed the role of morphological factors in the formation of desert relief, and grounded the classification of eolith relief forms. He was the author of more than 200 published works, among which was the widely known monograph *Dynamics and Regularity of Desert Relief Forming*. Federovich was honored as a USSR State Prize Winner (1952).

It has been 100 years since the birth of a well-known non-organic chemist, A.P. Zefirov (1907–1979). Born in Gomel, he graduated from the Moscow Institute of Non-ferrous Metals and Gold, later worked as the head engineer of the concern "Altayzoloto," served as director of the State Institute of Rare Metals, and was director of the Scientific Research Institute of Chemical Technologies. His main scientific works are on the chemistry and metallurgy of rare and noble metals. A.P. Zefirov was a Lenin Prize Winner, a USSR State Prize Winner, and a Corresponding Member of the Academy of Sciences of the USSR (1968).

It is also 100 years since the birth of doctor of geology and mineralogy, professor F.I. Volfson (1907–1989). Prof. Volfson was born in Mogilev, and graduated from the St. Petersburg Institute of Mines. He made a great contribution to the prospecting and exploration of mineral deposits in Middle Asia, Kazakhstan, Altai, the Caucasus, and Transbaikalia, as well as in Bulgaria and Germany. Prof. Volfson is considered the founder of the Soviet structural-geological school and belongs to the number of founders of the Soviet school of mining geologists. He published about 250 works, among which are a number of study books and monographs on mineral-resource geology that were translated into foreign languages. Volfson was a Lenin Prize Winner (1965).

The journal *Lithosphere* (Minsk, 2007) carried articles by V. Ermolenko about Fedorovich, Zefirov, and Volfson.

Valeri Ermolenko, Minsk

Bolivia

I would like to comment on two outstanding mining activities carried out in the Department of Potosí, Bolivia, which should be of interest regarding the history of geology.

Mining in the Cerro Rico

Thanks to the rise of the price of raw materials, the exploitation of complex sulfurous ores (mostly of zinc, with some silver and lead) has increased. The exploitation capacity has been increased from 3,000 to 4,000 tons of ore per day. This material is processed in one of the forty flotation plants installed along the Ribera River that flows east to west through the city of Potosí. As far as the environment is concerned, the Association of Mills has helped in the building of two dams for the mineral residues and a collection site of processed waters. Thus, the mineral residues circulate independently of sewage and rain water that are stored behind the two dams. A third dam is going to be finished in the near future. These mitigation measures avoid the pollution of the Pilcomayo River. Pollution of this river produced previous complaints from Paraguay, Uruguay, and Argentina.

In 2005, Bolivia exported 160,000 tons of concentrates of zinc (Zn), 11,200 tons of lead (Pb) and 418 tons of silver (Ag). Most of this production comes from the Cerro Rico of Potosí.

San Cristóbal Mining Enterprise

The Andean Silver Corporation, a subsidiary of American Apex Silver Mines Corporation, currently named San Cristóbal Mining, sponsors this mining project. San Cristóbal is one of the largest open pit projects in the world exploiting silver-zinc-lead. It is located in southwestern Bolivia (Department of Potosí).

The proven stock and probable ores reach fifteen thousands tons of silver, 3.6 million tons of zinc and 1.4 million tons of lead. The grade is around 62 grams per ton of silver, 1.67% of zinc and 0.58% of lead. On an annual basis, 435 tons of silver, 132,700 tons of zinc, and 39,500 tons of lead will be produced. At the end of last year, production was started in a staggered manner and, from this year on, production will reach full capacity (40 thousand tons per day). San Cristóbal has enough reserves to operate for around 16 years and would become, on the world market, one of the higher producers of these three metals. The mining started in 2005. Two frontal loaders (CAT 994) and six dump trucks (CAT 785, with a capacity of 150 tons) were employed. A volume of 20 million tons of material has already been turned over. The treatment process is by means of selective flotation and it includes two crushing stages, milling (a SAG mill and two ball mills), classification, conditioning, flotation (16 cells), thickening, filtration, and drying.

A relevant fact is that the company pays for environmental protection. Prior to the start of production a team was in charge of collecting information about the patterns of the streams and rivers. This information will be used during the operational stage and after the mine is closed.

Investment in this significant mining project was about 413 million dollars.

Carlos Serrano, Potosí

Brazil

The rhythm of development of the history of geological sciences in Brazil in 2007 didn't undergo significant changes. In the post-graduation program on "Education and History of Earth Sciences" of the Institute of Geosciences of the State University of Campinas (UNICAMP), one Ph.D. and one Masters degree dissertations on geohistory were accomplished and approved (by Márcia Helena Alvim and Mariana Moraes Sombrio). In addition, a symposium was held in UNICAMP, in September, to celebrate ten years of post-graduate studies on "Education and History of Earth Sciences." About fifteen papers of historical focus were presented, by the permanent teachers, students and former students. Other articles were published, which are cited below.

Figueirôa, Silvia F. de M., 'A propósito dos estudos biográficos na História das Ciências e das Tecnologias,' *Fênix—Revista de História e Estudos Culturais*, 2007, *4* (3), 437–455. (www.revistafenix.pro.br)

Figueirôa, Silvia F. de M., 'Ciência e território no Brasil pós-1870: a experiência dos serviços geológicos,' *in* Ribera Carbó, Eulalia; Mendoza Vargas, Hector; Sunyer Martín, Pere (coords.), *La integración del territorio en una idea de Estado, México y Brasil, 1821-1946*, México: Instituto de Geografía, UNAM: Instituto de Invetigaciones Dr. José María Luis Mora, 2007, 652 pp.

Figueirôa, Silvia F. de M., 'Geological surveys in the tropics: the Brazilian experience (1875–1934),' *Earth Sciences History*, 2007, *26* (1), 151–171.

Figueirôa, Silvia F. de M.; Silva, Clarete P.; Pataca, Ermelinda M., 'Investigating the colonies: native geological travellers in the Portuguese Empire in the late eighteenth and early nineteenth centuries,' *in* Jackson, Patrick W. (ed.), *Four centuries of geological travel: the search for knowledge on foot, bicycle, sledge and camel*, London, Geological Society, Special Publications *287*, 2007, 297–310.

Lopes, Maria Margaret, 'Sobre convenções em torno de argumentos de autoridade,' *Cadernos Pagu,* 2007, *27*, 35–61.

Oliver, Graciela de S.; Figueirôa, Silvia F. de M., 'Ceres, as mulheres e o sertão: Representações sobre o feminino e a agricultura brasileira na primeira metade do século XX,' *Cadernos Pagu,* 2007, *29*, 365–97.

Sousa, Lia G.P.; Lopes, Maria Margaret, 'La trayectoria política-científica de Bertha Júlia Maria Lutz (1894–1976). Contribuciones para los estudios de Género y Ciencias y para la crítica de la construcción de la 'invisibilidad' de las mujeres,' *Congreso Internacional de la Asociación Universitaria de Estudios de las Mujeres (AUDEM),* 2007, *1,* 1–3.

Silvia Figueirôa, Campinas-SP

Canada

Canadian members are looking forward to welcoming INHIGEO in Calgary in 2009. Meanwhile, here is a report on other activities.

Ernst Hamm

In 2007 I published: "Steffens, Ørsted and the Chemical Construction of the Earth," in Robert M. Brain, Robert S. Cohen and Ole Knudsen (eds.), *Hans Christian Ørsted and the Romantic Legacy in Science*, Boston Studies in the Philosophy of Science *241*, Springer, Dordrecht, 2007, 159–175; and "Mennonites, Science and Progress in the Dutch Enlightenment," in *Proceedings of the 2nd International Congress of the European Society for the History of Science*, Cracow (Poland), September 6–9, 2006, online at http://www.2iceshs.cyfronet.pl/proceedings.html.

I also presented a paper, "Insiders, Outsiders and Science in the Dutch Enlightenment," as part of the York University, Science and Technology Studies Seminar Series. In addition to my ongoing work as Book Review Editor of *Isis: An International Review Devoted to the History of Science and Its Cultural Influences*, I served on the Program Committee for the 2008 "Three Societies Meeting," the joint meeting of the British Society for the History of Science, the History of Science Society, and the Canadian Society for the History and Philosophy of Science, to be held at Keble College, Oxford, from 4–6 July 2008.

Gerard V. Middleton

I responded to an invitation from David Oldroyd to prepare a report on the International Geological Congress held in Toronto in 1913. It has been published in *Episodes*, vol. *30*, p.1–12. The General Chair of the Congress was Frank Dawson Adams. At about the same time, I had begun work on an article about Adams' work in petrology and his experimental studies of the physical properties of rocks at high pressures and temperatures. This is in press in a special issue of *The Compass*, the Journal of Earth Sciences, Sigma Gamma Epsilon, edited by Dan Merriam.

Two other historical studies have finally been published: 'Chronology of events in geology in the twentieth century,' in *Northeastern Geology & Environmental Sciences*, *29*, 137–157; *29*, 245–254; and 'Timetable of Geological Studies on the Canadian Shield,' in *Geolog*, *36*, 20–24. I wrote these (and other chronologies, some published, some not) mainly as background for other historical work, but they have been well received by the history of geology community and I would urge other INHIGEO members to consider compiling similar chronologies, and publishing them in suitable newsletters or regional journals.

My studies of stone houses in southern Ontario continue, and I presented a paper on the topic to the 2007 meeting of the Canadian Science and Technology Historical Association in Toronto. This Association publishes *Scientia Canadensis*. I appear to be one of the few geologists who is a member and attends their meeting, but I believe that geologists with broad history of science interests would find the meetings and journal interesting.

George Pemberton

(Note from David Spalding: George is unable to file a report, as he returned to Edmonton from a trip to Siberia and Venezuela—the mind boggles at the logistics—with just enough time to e-mail an apology and depart for Venezuela again.)

David Spalding

My paper on the 1893 Tyrrell-led Geological Survey of Canada expedition across the barren lands of Canada (presented at the 2003 Dublin INHIGEO conference) has at last appeared in *Four Centuries of Geological Travel: The Search for Knowledge on Foot, Bicycle, Sledge and Camel*, a Geological Society Special Publication edited by P.N. Wyse Jackson. With this further background I am now reviewing a new biography of Joseph Tyrrell (Robinson, Heather. *Measuring the Earth*, McClelland & Stewart, Toronto, 2007) for *Earth Sciences History*.

From September to November 2007 I was in residence at Green College, a graduate college at the University of British Columbia (Vancouver), where my wife Andrea was Writer in Residence. There I took advantage of the university libraries and gave a paper in the Principal's Series on 'The Iguanodon's Thumb: A Victorian Dinosaur Mystery.' This was part of an ongoing review of new information that has become available since I published my book *Dinosaur Hunters* in 1993 (Key Porter, Canada, and Prima, U.S.A.). This has been out of print for some years, and I am trying to decide whether (in view of the flood of new research both on dinosaurs and the history of their discovery), it is practicable to bring it up to date in a new edition, without bursting the bounds of a convenient one-volume history of dinosaur research. The preliminary conclusion is that a treatment in the same degree of depth would require expansion into two volumes, which is probably unrealistic in publishing terms. A possible alternative is a new book of lesser scope, focusing on major events and issues only.

I have continued to maintain contact with the management of the Sarjeant Library at the University of Alberta. Improvements in computer access include a brief account of the Sarjeant collection on the University of Alberta Library website to be found at:
http://www.library.ualberta.ca/specialcollections/text_pages/sarjeant/index.cfm

To search the Sarjeant collection in the catalogue, use "Sarjeant History of Science Collection" as a descriptor in the search. Currently, 7,154 entries come up under this heading.

Ceratopsian Symposium

The Royal Tyrrell Museum (Drumheller, Alberta) followed its 2005 Dinosaur Park Symposium with a Ceratopsian Symposium in September 2007. Significant historical content includes Peter Dodson's 'Forty Years in the Vineyards of Paleontology—Personal Reflections of a Ceratophile'; Darren Tanke's 'History of Ceratopsian Collections in Alberta 1888–2007'; and Mark Goodwin and John Horner's paper on 'Historical Collecting Bias and the Fossil Record of Triceratops.' Abstracts of these papers are available in Braman, D.R. (compiler), *Ceratopsian Symposium: Short Papers, Abstracts and Programs*, published by the museum, and Tanke's attached CD-ROM containing a 437-page study of *Ceratopsian Discoveries and Work in Alberta, Canada: Historical Review and Census*.

Sources of Information on History of Earth Sciences in Canada: Geoscience Canada

The Quarterly Journal *Geoscience Canada* is published by the Geological Association of Canada (Canadian INHIGEO member Gerard Middleton was its founding editor). Information about the society and its publications is accessible through its website: http://www.gac.ca/publications/geoscience/index.php

Summaries of issues are available to non-members on the web from volume 24 (1997) onwards. There are frequent articles on historical topics. For instance, the 2007 issues include a review of William E. Logan's 1845 Survey of the Upper Ottawa Valley (edited and introduced by Charles H. Smith and Ian Dyck (published in the Canadian Museum of Civilization, Mercury Series, 2007), and an article on 'Gesner's Museum of Natural History, An Early Canadian Geological Collection' (by Randall F. Miller and Diane N. Buhay).

A collection of biographical and historical articles previously published in the journal before 2003 (as well as some from earlier journals and some previously unpublished) has been gathered in book form in MacQueen, R.W., (editor), *Proud Heritage: People and Progress in Early Canadian Geoscience*, Geological Association of Canada. 217 pp., (2004), which provides the single best source on the history of the earth sciences in Canada.

David Spalding, compiler, Pender Island, British Columbia, Canada

China

The celebration of Academician Yang Zunyi's 100th birthday

Professor Yang Zunyi is a veteran academician of the Chinese Academy of Sciences, and a renowned paleontologist and geologist in China. On 7 October 2007, a grand ceremony was held at the China University of Geosciences (Beijing) to celebrate Academician Yang Zunyi's 100th birthday. People attending this ceremony included: Minister Zhou Ji of the Ministry of Education; Minister Xu Shaoshi of Ministry of Land and Resources; Shao Hong, Vice-president of the Jiu San Society Central Committee; Li Jinghai, Vice-president of China Academy of Science; and other guests. In addition, on 26 October, in Wuhan, the 100th birthday celebration was held in Hongyi Hall of China University of Geoscience. More than 2,000 teachers and students shared the pleasure and blessedness with Professor Yang. Premier Wen Jiabao wrote a holograph of congratulation to him and put a premium on Yang's contribution to Chinese geological research and education.

During his 77-year teaching career, Professor Yang Zunyi was among the greatest stratigraphic paleontologists. He was involved in most fields concerned with geological periods and paleospecies. He is honored as a walking dictionary for paleontology. Yang is not only erudite but also is a model of cultivating morality and educating people. Many of his followers have become recognized authorities. The *Journal of Paleogeography* (Vol. 9, No. 5) has published a special issue to celebrate Academician Yang Zunyi's 100th birthday.

Commemorating the 120th anniversary of the birth of Professor Ding Wenjiang

Professor Ding Wenjiang (V. K. Ting) was one of the founders of modern geological undertakings in China. To commemorate the 120th anniversary of his birth, a special symposium was held, entitled 'Commemorating the 120th anniversary of the birth of Professor Ding Wenjiang—A Symposium on the Study of Persons in Earth

Science in China.' The symposium was part of an annual meeting of the Commission of History of Geology, affiliated with the Geological Society of China. The meeting occurred on 8 December 2007, in the Convention Center of China University of Geosciences in Beijing. People attending this meeting included Academician Chen Mengxiong, Zai Yusheng, and leading members of the Geological Survey Bureau of China. Additionally, many other geoscientists, as well as relatives of Professor Ding, were present at the celebration.

The major contributions presented by the participants were concentrated in the following areas: 1) the social standing of Prof. Ding's family and his life; 2) the academic thinking of Ding and his manner as a great master in geoscience; 3) the opening up of regional geological surveys in China, his efforts in training talented geologists, and his contribution to geoscience education in China; and 4) his high academic attainments and his high social abilities. Professor Wang Hongzhen praised Ding as a great master in Geoscience, a new voice in the political arena, a scientific giant, and a pioneer in the new cultural movement. This appraisal, in fact, nicely summarizes all of the studies relating to Ding Wenjiang.

Symposium on "A Retrospective on the History of Regional Geological Surveys in China"

This symposium was held on 8–9 December 2007 in the China University of Geosciences. The contributions made by participants from different disciplines and organizations included the following topics: 1) A retrospective from ancient preliminary geological studies to the development of modern regional geological surveys, and the advancement and extension of regional geological survey at the present time; 2) the pioneer work done by Chinese geologists and the contributions of foreign geologists in regional geological surveys in China; 3) innovation in theory and methodology and progress in technology and instrumentation; 4) the transition from geological mapping to geological cartography by using modern techniques; 5) the changing mission of regional geological surveys, initially simply aimed at mineral prospecting but evolving to multiple service for society; 6) training of talented people in regional geological surveys and the reformation of the relevant teams and organizations; and 7) the independent development of regional geological surveys in China, leading to international cooperation and academic exchanges.

The symposium had a thorough and deep discussion about the history of regional geological surveys in China. The results of the symposium will further the development of regional geological surveys and will eventually help geological undertakings to flourish in 21st-century China.

The 2008 working plan of the Commission of History of Geology of the Geological Survey of China

The standing committee of the Commission of History of Geology had studied the working plan for 2008. Their thoughts about goals can be summarized as follows. 1) To pursue the academic deliberation surrounding the theme of 'History of Regional Geological Surveys in China,' further expanding the field of deliberation and deepening the content of research. The 33rd IGC will soon be held in Oslo, Norway, and colleagues of the Commission will strengthen the international academic exchange by using this platform. 2) To pursue studies on geological personnel. Not only to study famous geologists of the past, but also to strengthen the study of those famous geoscientists still living. The idea is to probe into their scientific thinking and carry forward their scientific consciousness to a new height. 3) To give best efforts for the compilation of the monograph *History of Geology in China*, and try hard to publish it as early as possible. And, on the basis of contributions in the symposium held this year, 4) to edit and publish Volume 5 of *The Collection of History of Geology* as soon as possible.

ZHAI Yusheng (Beijing) and YOU Zhendong (Beijing)

Costa Rica

Gerardo J. Soto has served as Vice-President for Latin America since 2004. His duties have included frequent communication with regional members of INHIGEO and with the Spanish committee, in the person of Leandro Sequeiros (Granada), as a bridge between the Spanish-speaking communities. During a working visit to Madrid in October 2007, Soto met with INHIGEO Spanish members Isabel Rábano and Carlos Escorza, thereby tightening relations between Spanish and Latin American INHIGEO delegations. Cooperation with the Board in its business has been active throughout 2007.

Soto recently published two papers. One was a chapter in the two-volume book, edited by Bundschuh and Alvarado, on the geology of Central America. The chapter was co-authored with Gregorio Escalante, recently deceased, on the history of geology in Central America (Escalante and Soto, 2007). The other article was co-authored with G.E. Alvarado and focused on the 50-year geological career of G. Escalante, mentioning his

contributions to the history of Geology (Soto and Alvarado, 2006). Soto also published three articles in a local newspaper on subjects related to the geological history and functioning of the Earth, pre-historical and historical volcanic activity, and the International Year of Planet Earth (Soto, 2007 a, b, c). These popularized accounts of Earth Science topics included elements related to history of geology. Another chapter in the above-mentioned book edited by Bundschuh and Alvarado, considered geological tourism and heritage, and touched upon historical matters (Bundschuh *et al.*, 2007).

INHIGEO member Guillermo E. Alvarado has worked as chairman of the scientific committee for the 9th Central American Geological Congress, to be held in San José, Costa Rica, in July 2008. A session dedicated to the history of Geology is planned, under his auspices.

Two books having a Costa Rican focus and related to the history of geology were released during 2007. Costa Rican entomologist Luko Hilje authored a book on *Karl Hoffman: Major Surgeon of the Expeditionary Army*. The book calls attention to the arrival of Hoffman in Costa Rica, who came well-referenced by von Humboldt, and then discusses his geological and volcanological observations, including written works on the Barva and Irazú volcanoes. A prime topic is Hoffman's role as a physician and main surgeon of the Costa Rican military forces that defended Central America from William Walker's invasion in 1856–57. The second book, *Pre-Columbian Spheres of Costa Rica*, was written by Ifigenia Quintanilla. This book contains many high-quality pictures and much archaeological data. It pays special attention to the acquisition of lithic raw materials and the techniques Amerindians used to produce these outstanding works. It makes the point that "In the history of technology, the pre-Columbian spheres represent a fertile field of inquiry. How were these almost perfect forms—some of them monumental in size—produced with only stone tools? What techniques were used and how were they transported over broken terrain without the help of draft animals and wheels? Although to date no workshop for producing spheres has been unearthed, detailed study of more than 200 of these spheres has given us new knowledge concerning their manufacture, placement and possible symbolism."

References

Bundschuh, Jochen, Birkle, Peter, Finch, Richard C., Day, Michael, Romero, Juan, Paniagua, Sergio, Alvarado, Guillermo E., Bhattacharya, Prosun, Tippman, Karola and Chaves, Damaris, 'Geology-related tourism for sustainable development,' *in* Bundschuh, Jochen and Alvarado, Guillermo E. (eds.), *Central America: Geology, Resources and Hazards*, Taylor and Francis, London, 2007, 1015–1098.

Escalante, Gregorio and Soto, Gerardo J., 'History of Geology (Chapter 2),' *in* Bundschuh, Jochen and Alvarado, Guillermo E. (eds.), *Central America: Geology, Resources and Hazards*, Taylor and Francis, London, 2007, 53–74.

Hilje, Luko, *Karl Hoffman: Cirujano Mayor del Ejército Expedicionario*, Editorial Colegio Universitario de Alajuela, Costa Rica, 2007.

Quintanilla, Ifigenia, *Esferas Precolombinas de Costa Rica / Pre-Columbian Spheres of Costa Rica*, Fundación Museos del Banco Central, San José, Costa Rica, 2007.

Soto, Gerardo J., (a) '¿Cómo se comporta nuestra Tierra?,' *La Nación*, 07/29/2007, 34A.

Soto, Gerardo J., (b) 'Volcanes y volcanalidad,' *La Nación*, 08/22/2007, 29A.

Soto, Gerardo J., (c) '2008, Año Internacional de la Tierra,' *La Nación*, 12/30/2007, 23A.

Soto, Gerardo J. and Alvarado, Guillermo E., 'In memóriam de Gregorio Escalante Montealegre (1932–2006),' *Revista Geológica de América Central*, 2006, *34–35*: 7–11.

Gerardo J. Soto, San José

Czech Republic

The article by Jan T. Kozák and Alena Čejchanová, on 'Proto-Geological Map dated 1806 by Stanislaw Staszic and its role in the early 19th century process of modern geological map contexture' was published in 2007. It appeared in the Abstracts and Field Guides booklet edited by M. Kölbl-Ebert for the INHIGEO Meeting 2007, on the theme 'The Historical Relationship Between Geology and Religion,' Jura-Museum Eichstätt, Eichstätt, Germany, p. 27. Czech authors also provided a poster display at the Eichstätt meeting. The poster, 'Geological Mapping of the Czech Republic' by A. Čejchanová and L. Kondrová, M. Fifernová, Z. Krejčí, and H. Neubertová, was developed on the occasion of the edition of the geological map of the Czech Republic at the scale 1:500,000. This poster was presented by the authors in San Diego, California (USA) in June 2007, at the 27th ESRI Interntional User Conference.

Alena Čejchanová attended the annual 2007 INHIGEO meeting in Eichstätt, where she participated in meetings and field trips and presented the paper noted above, co-authored with J. Kozák. Dr. Čejchanová has also prepared, with J. Kozák, an article about S. Staszic and his maps, to be published in the periodical *Earth Sciences History*. She is currently working on a publication to include reproduction of maps, at the scale 1:25,000, from the area of České Středohoří (Mid-Bohemian Massif). The original maps were produced by J.E. Hibsch, a prominent Czech geologist (in the period 1896–1930). In cooperation with the Czech Cartographical Society she is creating a new historical portrayal of cartography and mapping production.

Jan Kozák published six papers and a book, on a variety of topics. He co-authored, with D. Oldroyd, M. Pinto, F. Amador and A. Carneiro, two papers on the history of geophysics. The articles were published in a Special Issue of *Natural Science History*, Vol. 26. He also wrote two papers on historical geological maps. One was with J. Hébert, of the Map and Geography Department of the U. S. Library of Congress, (Washington, D.C.) and the other was with J. Vaněk, the article appearing in *Acta Geophysica* (Springer, Berlin). In addition, two papers on the history of rotational components of seismic waves were published in *Symposium Proceedings*, under the editorship of W. Lee (U. S. Geological Survey, Menlo Park, CA, USA). Dr Kozák's book (144 pages, in Czech) on historical floods in Bohemia, Moravia, and Silesia was produced by Professional Publishing, Prague.

Josef Haubelt published six papers in the filed of history of mining. In addition, working with P. Howarth (Arizona State University), he published a book discussing a detailed evaluation of the geological achievements of Ignaz Born (1742–1791). The 218-page book was published by ÖIP Books, Prague, in 2007. During the year, Dr. Haubelt was engaged in research on "geognostic" cooperation in Central Europe at the turn of the eighteenth century, as performed in the framework of the *Society of Montagne (=Mining) Sciences* (Sozietät der Bergbaukunde). He also presented lectures at the Czech Symposia on 'Mining, Geology, and History of Cartograaphy.'

A. Čejchanová and J. T. Kozák, Prague

France

As is the case every year, three scientific meetings were organized in 2007 by the French Committee on the History of Geology (COFRHIGEO). The annual volume of "Travaux" is currently being prepared. Its contents will include nine contributions, as listed below.

- Fabre, J., 'La géologie saharienne dans le passé et aujourd'hui: un survol partial de l'histoire de la géologie au Sahara central et occidental.'
- Beaudoin, B., Henri Fayol (1841–1925), ingénieur et géologue, pionnier de la "théorie des deltas.""
- Gaudant, J., 'Aux sources de la Préhistoire: les céraunies, ces pierres étranges supposées tombées du ciel.'
- Hommeril, P., 'Louis Dangeard (1898–1987), pionnier de la géologie marine en mer de Manche et initiateur de sa renaissance à partir de 1956.'
- Touret, J., 'Le réseau pentagonal d'Élie de Beaumont ou le rêve d'un monde rationnel.'
- Aufrère, M.-F., 'L'homme antédiluvien selon Boucher de Perthes (1788–1868): Divagations théoriques et vraies découvertes scientifiques.'
- Godard, G., and Viaud, J.-M., 'Léon Pervinquière (1873–1913), un géologue de la Belle-Époque en Tunisie et en Tripolitaine.'
- Richet, P., 'L'imaginaire des volcans et les progrès de la volcanologie.'
- Durand-Delga, M., 'Marcel Bertrand (1847–1907), honneur de la géologie française.'

Additionally, we have enjoyed hearing that the French Geological Society has conferred upon Martin Rudwick the Wegmann Award of History of Geology. Martin will receive his medal in June 2008.

Jean Gaudant, Paris

Germany

Meetings

The German history of geology group had its main event in 2007 with the INHIGEO meeting at Eichstätt, organized by Martina Kölbl-Ebert and the staff of the Eichstätt-Museum. Also very active was Cornelia Lüdecke's history of meteorology group. Together with the historical working group of the German Oceanographic Society, a meeting was held on 'Historical meteorological and oceanographic research in high latitudes' in Hamburg on 12 September 2007. And a session on the 'History of Meteorology' was organized for

the 7th Annual Meeting of the European Meteorological Society at the El Escorial monastery in Spain on 5 October 2007. Finally, INHIGEO member Bernhard Fritscher, with the help of Cornelia Lüdecke, organized a symposium on 'Science and Music' for the German History of Science Society, held on 17–19 May at the Munich Center for the History of Science and Technology.

Publications

Burek, C.V. & Kölbl-Ebert, M., 'The historical problems of travel for women undertaking geological fieldwork,' *in* Burek, C.V., and Higgs, B. (eds.), *The Role of Women in the History of Geology*, Geological Society, London, Special Publications, No. 281, 2007, 115–122.

Burek, Cynthia V. & Kölbl-Ebert, M., 'Historical problems of travel for women geologists,' *Geology Today*, 2007, *23*, No. 1, 30–32.

Daber, R., 'Geologische Wissenschaften im Osten Deutschlands—nur volkswirtschaftlich orientierte Geologische Wissenschaften 1946–1990 oder auch theoretische Denkanstösse?,' *Schriftenreihe für Geowissenschaften*, 2007, *16*, 385–387.

Daber, R., 'Exodos der Universitätsdemokratie - Anlaß oder Ursache für das Abwürgen der Fachrichtung Geologie 1968 und der geologischen Paläontologie an der Humboldt-Universität zu Berlin?,' *Geohistorische Blätter*, 2007, *9/10*, No. 1–2, 11–14.

Daber, R., 'Ein Geologe erinnert sich an Hermann Ley,' *Geohistorrische Blätter*, 2007, *9/10*, No. 1–2, 43–45.

Fritscher, B., 'Naturforschung im Geiste Alexander von Humboldts: Alexander Keyserling und die Entwicklung der Erdwissenschaften in Rußland,' *in* M. Schwidtal, J. Undusk, L. Lukas (eds.), *Baltisches Welterlebnis. Die kulturgeschichtliche Bedeutung von Alexander, Eduard und Hermann Keyserling. Beiträge eines internationalen Symposiums in Tartu vom 19–21 September 2003*, Heidelberg, Universitätsverlag Winter, 2007, 71–84.

Fritscher, B., 'Klimalehren,' *in Enzyklopädie der Neuzeit*, vol. 6, ed. by Kulturwissenschaftliches Instituts, Essen, and F. Jaeger, Stuttgart/Weimar, Metzler-Verlag, 2007, 809–812.

Fritscher, B., Review of Carozzi, A. V., Horace-Bénédict de Saussure (1740–1799): un pionnier des sciences de la terre, Edition Slatkine, Genève 2005, *Isis*, 2007, *98*, 383–384.

Guntau, M., together with Hartmann, O., and Paelchen, W. (eds.), *Zur Geschichte der Geowissenschaften in der DDR* (Schriftenreihe für Geowissenschaften, No. 16), 2007, p. 421.

Guntau, M., 'Wissenschaftshistorische Arbeiten zu den Geologischen Wissenschaften in der DDR,' *in* Guntau, M., Hartmann, O., Paelchen, W. (eds.), *Zur Geschichte der Geowissenschaften in der DDR* (Schriftenreihe für Geowissenschaften, No. 16), 2007, 371–384.

Guntau, M., 'Von der Mineralogie zur Wissenschaftsgeschichte,' *in Die Universität Rostock zwischen Sozialismus und Hochschulerneuerung. Zeitzeugen berichten*, pt. 1, ed. by K. Krüger, (Rostocker Studien zur Universitätsgeschichte, vol. 1), Rostock, 2007, 230–257.

Guntau, M., together with H. Laitko, 'Disziplinbegriff und disziplinäre Gliederung der Wissenschaft - Relevanz und Relativität,' *in* Höxtermann, E., Hilger, H.H. (eds.), *Lebenswissen: Eine Einführung in die Geschichte der Biologie*, Rangsdorf, 2007, 33–59.

Guntau, M., Articles on Angelius Johann Daniel and Franz Ulrich Theodosius Aepinus (p. 17), Emil Cohen (p. 110–111), Friedrich Graf von Hahn (p. 249–250), Joachim Jungius (p. 302), Gustav Mie (p. 433), Moritz Schlick (p. 582), Oluf Gerhard Tychsen (p. 669), *in Landeskundlich-historisches Lexikon Mecklenburg-Vorpommern*, ed. by Geschichtswerkstatt Rostock e.V./Landesheimatverband Mecklenburg-Vorpommern/R. Stutz, Rostock, 2007.

Guntau, M., 'Otto Franz Meißner. Würdigung aus Anlass seiner Aufnahme in die Deutsche Akademie der Wissenschaften vor 50 Jahren,' *Geohistorica*, 2007, No. 1, 43–44.

Guntau, M., Herms, W., Pade, W. (eds.): *Zur Geschichte wissenschaftlicher Arbeit im Norden der DDR 1945–1990*, 100. Rostocker Wissenschaftshistorisches Kolloquium, Rosa-Luxemburg-Stiftung and Literaturhaus Kuhtor, Rostock, 2007, p. 194.

Guntau, M., Review of Flügel, H.W., *Das abenteuerliche Leben des Benedikt Hermann (1755–1815).* Vom steirischen Bauernsohn zum Chevalier und Intendanten der russischen Bergwerke, Wien, Böhlau, 2006, *Geohistorische Blätter 9/10*, 2007, 46–48.

Guntau, M., Review of Touret, J.L.R., Visser, R.P.W. (eds.), *Dutch pioneers of the earth sciences* (History of science and scholarship in the Netherlands, vol. 5), Amsterdam: Koninklijke Nederlandse Akademie van Wetenschappen, 2004, *Isis*, 2007, *98*, 206–207.

Hornik, H., and C. Lüdecke, 'Wilhelm Filchner and Antarctica,' *in* Lüdecke, C. (ed.), *Steps of Foundation of Institutionalized Antarctic Research. Proceedings of the1st SCAR Workshop on the History of Antarctic Research*, Munich, 2–3 June 2005 (Reports on Polar and Marine Research, 560), Alfred Wegener Institute of Polar and Marine Research, Bremerhaven, 2007, 52–63.

Kölbl-Ebert, M. (2007): 'The role of British and German women in early 19th-century geology: a comparative assessment,' *in* Burek, C.V., and Higgs, B. (eds.), *The Role of Women in the History of Geology*, Geological Society, London, Special Publications, No. 281, 2007, 155–163.

Kölbl-Ebert, M., 'The geological travels of Charles Lyell, Charlotte Murchison and Roderick Impey Murchison in France and northern Italy (1828),' *in* Wyse Jackson, P.N. (ed.), *Four Centuries of Geological Travel: The Search for Knowledge on Foot, Bicycle, Sledge and Camel*, Geological Society, London, Special Publications, No. 287, 2007, 109–117.

Kölbl-Ebert, M., 'Field Guides: The 'Swabian Volcano, Holzmaden and surroundings (pre-conference fieldtrip) / Eichstätt/Solnhofen and their Lithographic Limestone (central fieldtrip) / The Impact Sites Ries-Crater of Nördlingen and Steinheim Basin (post-conference fieldtrip),' *in* Kölbl-Ebert, M. (ed.): *The Historical Relationship of Geology and Religion: Abstracts & Field Guides*, INHIGEO meeting in Eichstätt, Germany (28 July–5 August 2007), Jura-Museum Eichstätt, 2007, 71–84.

Lüdecke, C. (ed.), *Steps of Foundation of Institutionalized Antarctic Research. Proceedings of the1st SCAR Workshop on the History of Antarctic Research*, Munich, 2–3 June 2005 (Berichte zur Polar- und Meeresforschung, 560), Alfred Wegener Institute of Polar and Marine Research, Bremerhaven, 2007, 228.

Lüdecke, C., 'Karl Maria Herrligkoffer's private "German South Pole Expedition" 1957/58: A failed initiative,' *in* Lüdecke, C. (ed.), *Steps of Foundation of Institutionalized Antarctic Research. Proceedings of the1st SCAR Workshop on the History of Antarctic Research*, Munich 2–3 June 2005 (Reports on Polar and Marine Research, 560), Alfred Wegener Institute of Polar and Marine Research, Bremerhaven, 2007, 195–210.

Lüdecke, C., 'Auf zum Südpol! Georg von Neumayer und sein Einsatz für die deutsche Südpolarforschung,' *in* Wolfschmidt, G. (ed.), *Hamburgs Geschichte einmal anders - Entwicklung der Naturwissenschaft, Medizin und Technik*, pt. 1, (Nuncius Hamburgensis - Beiträge zur Geschichte der Naturwissenschaften, vol. 2) Norderstedt, Books on Demand, 2007, 200–215.

Lüdecke, C., 'Sehnsucht nach Forschung oder Abenteuer? Beispiele aus der Geschichte der deutschen Polarforschung,' *in* Wolfschmidt, G. (ed.), *Es gibt für Könige keinen besonderen Weg zur Geometrie—Festschrift für Karin Reich*, (Algorismus, vol. 60) Augsburg, Dr. Erwin Rauner Verlag, 2007, 371–382.

Lüdecke, C., 'Research Projects of the International Polar Years,' *Geographische Rundschau* (International Edition), 2007, *3*, No. 2, 58–63.

Lüdecke, C., 'Erich von Drygalski: Einer der ersten Überwinterer in beiden Polargebieten,' *Mitteilungen der Geographischen Gesellschaft in München*, 2007, *89*, 47–101.

Lüdecke, C., 'Wissenschaft und Abenteuer in der Arktis: Beispiele deutscher Polarexpeditionen,' *Northern Studies*, 2007, *1*, No. 1–2, 51–79.

Lüdecke, C., 'Die Internationalen Polarjahre seit 1882—125 Jahre Herausforderung für Wissenschaft und Politik,' *Naturwissenschaftliche Rundschau*, 2007, *60*, No. 12, 621–628.

Lüdecke, C., 'Diverging Currents: Depicting Southern Ocean Currents in the Early 20th Century,' *in* K.R. Benson and H.M. Rozwadowski (eds.), *Extremes: Oceanography's Adventures at the Poles*, Science History Publication/USA, Sagamore Beach, 2007, 71–105.

Lüdecke, C., 'Der Meteorologe Alfred Wegener. Vor 100 Jahren führte Alfred Wegener die Aerologie in die Polarforschung ein,' *Naturwissenschaftliche Rundschau*, 2007, *60*, No. 3, 125–128.

Lüdecke, C., 'Über die globale Verteilung von Luftdruck und Temperatur am Beispiel des 1. Internationalen Polarjahres 1882/1883,' DACH MT 2007, Hamburg, p. 10 *http://meetings.copernicus.org/dach2007/download/DACH2007_A_00400.pdf*

Lüdecke, C., 'Friedrich Ratzel (1844–1904) and the Investigation of the Snow-cover in the Alps,' *Die Erde*, 2007, *138,* No. 3, 257–272.

Lüdecke, C., 2007, Articles on Erich Dagobert von Drygalski (p. 351), German Antarctic (Gauss) Expedition (1901–03) (p. 455–456), German Antarctic (Schwabenland) Expedition (1938–39) (p. 456–457), Georg Balthasar von Neumayer (1826–1909) (p. 668–669), *in* Beau Riffenburgh (ed.), *Enzyclopedia of the Antarctic*, 2 vols, Routledge, New York, 2006.

Lüdecke, C., 'Rudolf Hermann Schulze,' *in Neue Deutsche Biographie*, *23*, ed. by Bayerische Akademie der Wissenschaften, München, 2007, 727–728.

Savitt, R., and C. Lüdecke, 'Legacies of the Jackson-Harmsworth expedition, 1894–1897,' *Polar Record*, 2007, *1*, 55–66.

Lectures

Daber, R., 'Kritische Denkanstösse von Stille, v.Bubnoff, Gross und anderen zum Evolutionsgeschehen,' Berlin, Klasse Naturwissenschaften der Leibniz-Sozietät der Wissenschaften zu Berlin e.V., Meeting *Problems of Geologie* (9.11.2007).

Fritscher, B., '"Eine Epoche klirrender Kälte legte sich ... über die Welt": Louis Agassiz (1807–1873) und die Eiszeittheorie,' Munich-University, Department of Earth Sciences, Freundeskreis der geologischen Staatssammlung (16.5.2007).

Fritscher, B., 'Uni-formi-tarianism: Free-church movements and geological practice in 19th century Britain,' Eichstätt, Katholische Universität, INHIGEO-*Conference The historical relationship of geology and religion*, 28 July–5 August 2007.

Fritscher, B., 'Der Begriff des "Kristalls" bei Kant und Hegel in rezeptionsgeschichtlicher und systematischer Perspektive,' Amsterdam, Vrije Universiteit Amsterdam, Faculteit der Wijsbegeerte, International Meeting of the working group "Hegel's Naturphilosophie": *Immanuel Kants Metaphysik der Natur: Naturphilosophie und das Opus postumum*, 20–22 September 2007.

Kölbl-Ebert, M., 'History and religious motivation of the Bishop's Seminary Natural History Collection in Eichstätt,' Eichstaett, Jura-Museum Eichstaett, INHIGEO meeting *The Historical Relationship of Geology and Religion Germany,* (28 July–5August 2007).

Kölbl-Ebert, M., 'Pater Damian Kreichgauer SVD (1859–1940)—his ideas about a mobile Earth, polar wander and the creation,' Eichstaett, Jura-Museum Eichstätt, INHIGEO meeting *The Historical Relationship of Geology and Religion Germany,* 28 July–5 August 2007.

Kölbl-Ebert, M., 'George Bellas Greenough—a man with "fondness for generalization, for system and clearliness",' London, Burlington House, Piccadilly, History of Geology Group: Conference *Celebrating the Bicentenary of the Geological Society of London: In the Footsteps of the Founding Fathers*, 12–13 November 2007.

Lüdecke, C., 'Learning from the local Inuit of the Hudson Bay and Baffin Island—How expedition literature influences private research interests,' Scott Polar Research Institute, Field Stations Workshop, 3–4 April 2007.

Lüdecke, C., 'Terra Incognita—Investigating the Unknown Southern Environment during the first German Antarctic Expedition (1901–1903),' Amsterdam, 4th Conference of the European Society for Environment History, 5–9 June 2007.

Lüdecke, C., 'Moravian contributions to the investigation of the Arctic Climate,' Eichstätt, Jura-Museum Eichstätt, INHIGEO meeting *The historical relationship of geology and religion*, 28 July–5 August 2007.

Lüdecke, C., 'Über die globale Verteilung von Luftdruck und Temperatur am Beispiel des 1. Internationalen Polarjahres 1882/1883,' Hamburg, DACH 2007, 10–14 September 2007.

Lüdecke, C., 'German Meteorological Stations in Northwest Svalbard,' Barrow, Alaska, International Polar Heritage Conference, 24–27 September 2007.

Lüdecke, C., 'The International Polar Year (1957-1958) as Reflected in German Media,' Byrd Polar Research Center, Columbus, Ohio (USA), 3rd SCAR Workshop on the History of Antarctic Research, 25–26 October 2007.

Lüdecke, C., 'Approaching the Southern Hemisphere: The German Pathway in the 19th Century,' Smithsonian Institution, Washington DC (USA), Conference on Making Science Global: Reconsidering the Social and Intellectual Implications of the International Polar and Geophysical Years, 31 October–1 November 2007.

Lüdecke, C., 'Die Abeuteuer des Wilhelm Filchner in der Antarktis (1911–1912),' Eching, Bürgerhaus (8.11.2007).

Lüdecke, C., 'Die Entdeckung und Vermessung Neuschwabenland (1939) zur Sicherung des Walfangs', Dresden, Institut für Planetare Geodäsie (12.11.2007).

Lüdecke, C., '"Die Situation war drohend"—Erlebnisse der ersten deutschen Südpolarexpedition (1901–1903)', Dresden, St. Benno-Gymnasium (on the occasion of the exhibition *Universitas Antarctica*, Dresden (12.11.2007).

Further Activities

Several lecture courses on the history of earth sciences were given by INHIGEO members Cornelia Lüdecke and Bernhard Fritscher at the Universities of Hamburg and Munich. Cornelia held courses 'On Environment and weather: On the development of meteorological instruments, and on Plan and result: Research programs of expeditions and experiments in the field of earth sciences'; Bernhard lectured on the 'History of earth sciences in antiquity, and on Earth history and national identity.' Finally, with the help of Cornelia Lüdecke, an international conference on 'Making Science Global: Reconsidering the Social and Intellectual Implications of the International Polar and Geophysical Years' was held at the Smithsonian Institution, Washington D.C. (USA), 31 October 31–1 November 2007. Furthermore, Cornelia Lüdecke organized the 3rd Workshop of the Action Group 'History of Institutionalization of Antarctic Research' at the Byrd Polar Research Center (Columbus, Ohio, 25–26 October 2007), and, finally, she was a member of the program committee of the 6th meeting BIOMET of the working group 'Bio-meteorology' of the German Meteorological Society at the Albert-Ludwigs-University at Freiburg, 26–28 March 2007). Issue No. 18 of the *Nachrichtenblatt des Arbeitskreises Geschichte der Geowissenschaften* was edited by Oskar Burghardt (Krefeld, 2008, p. 157) and can be ordered via obu.burghardt@t-online.de.

The help of the German members of INHIGEO in the compilation of this report is much appreciated.

Bernhard Fritscher (Munich) and Martina Köbl-Ebert (Eichstätt)

Hungary

In the course of the last two years the activity of the Geohistorical Section of the Hungarian Geological Society was focused on two high-priority topics. (1) In 2006, Hungary celebrated the 50th anniversary of the 1956 October revolution and fight for freedom. We disclosed and presented their events concerning the Hungarian community of geologists. (2) In 2007, the introductory year to the International Year of the Planet Earth, we dealt with the history of Hungarian-language geoscience popularization.

In October and November 2006, respectively, two full-day commemorative sessions were held. In October some of the Hungarian geologists who fled from Hungary in 1956 and achieved sucessful careers abroad presented their memories of the 1956 revolution, some of them personally, others by sending in their accounts. They were: Tibor Parák (Sweden); Miklós Salamon (Republic of South Africa); Éva Saáry (Switzerland); Géza Kisvarsányi and his wife Éva Bognár, and Béla Csejtey (USA); Zsuzsa Tapody (Austria); and László Trunkó (Germany). Tibor Kecskeméti reported about the destruction, by fire grenades of Soviet tanks, of the renowned Mineralogical and Zoological Collections of the Hungarian Museum of Natural History, recalling also his relevant personal memories. After the session we crowned, with a wreath, the statue dedicated to the "Kids of Pest," the teenage freedom fighters of 1956. At the second session, some of those geologists who have chosen to stay in Hungary presented their memories. We commemorated those who suffered repressions after the oppression of the Revolution by the Sovet army. In the garden of the Geological Institute of Hungary a *Gingko biloba* was planted, as a symbol of survival. The presentations will be published in a special volume.

The series of meetings dedicated to the history of Hungarian bauxite exploration and mining, started in 2005, was continued. Every year on Saint George's Day (April 24) a full-day session takes place at the Museum of the Aluminium Industry in the town of Székesfehérvár, organized by Álmos Tóth. The topics were the exploration activity of Hungarian bauxite geologists abroad (2006), and the history of bauxite mining in Hungary (2007). The presentations have been published in the journal *Földtani Kutatás*, Numbers 2–4, 2006 (in Hungarian with English abstracts), and in the *Bányászati Lapok*, Number 6, 2007, respectively.

In 2006, several commemorative meetings were also held. For example, we celebrated the 100th birth anniversaries of three eminent Hungarian paleontologists: László Bogsch; Tivadar Kormos; and Ilona Csepreghy-Meznerics.

The series of lectures on the history of hydrogeological exploration was continued. Irma Dobos and Béla Csath reported on the 75th annversary of the Debrecen-1 well.

In the framework of the International Year of the Planet Earth, a two-day conference took place (13–14 November 2007) on 'Past and present of Hungarian-language popularization of Earth sciences.' This was the first comprehensive overview of the topic from the second half of the 18th century to our days. (Prominent popularizers, books, journals, and electronic media were considered.) It was accompanied by a pertinent exhibiton in the Gological Institute of Hungary. The presentations should be published in a separate volume.

On 26 March 2007 we organized a full-day commemorative session on the occasion of the first anniversary of the death of Professor Vilma Széky-Fux, renowned petrologist and geohistorian. Her disciples and co-workers presented altogether ten lectures on her rather broad spectrum of activities.

Jointly with the Mineralogical-Geochemical Section we commemorated the 100th anniversary of the birth of Kálmán Imre Sztrókay, Professor of Mineralogy, and co-author of the two-volume textbook on Mineralogy (with Sándor Koch). His scientific heritage is kept in the Archives, and his relief portrait has been put on the wall of the lecture room named after him.

In Hungary several official meetings in 2007 commemorated the fact that oil exploitation was started in Hungary 70 years ago. The Lectures organised by our Section were delivered by competent experts such as Béla Csath, Viktor Dank,and István Baráth.

A free discussion was held on the present status of Hungarian-language geological bibliography, with special attention to 18th- and 19th-century papers, and methodological problems. The conclusions were submitted as recommendations to the Board of the Hungarian Geological Society.

The 250th anniversary of the birth of Pál Kitaibel (1757–1817), world-famous polymath was celebrated in 2007. The Hungarian Academy of Sciences held a central conference on November 15. Among the eight presentations were those of Irma Dobos (exploration for medicinal waters, water chemistry), Gábor Papp (mineralogical studies, ore exploration, chemical analytics), and Tibor Kecskeméti (history of the Botanical garden founded by Kitaibel).

Of particular interest was the presentation of the more than 20,000-km-long exploration itinerary Kitaibel had dedicated to the study of mineral waters. He was the first to describe and analyze most of the mineral waters of the Carpathian Basin. His posthumous work *Hydrographica Hungariae* (1829) is a reference work for hydrogeologists even now. Geohistorians study his oeuvre and continually discover new points. A particularly significant one is that found by Gábor Papp concerning the discovery of tellurium. It is unambiguously proved that native tellurium was discovered by mining engineer József F. Müller in a Transylvanian mine, in 1783. In 1789, Kitaibel specified that it was a new chemical element. But it was M.H. Klaproth who gave it a name, tellurium, in 1798. Ever since, Klaproth has been considered the discoverer of this element.

Last but not least, on 10 December 2007, a fascinating and extraordinary mineral exhibition was inaugurated in the Hungarian Museum of Natural History, entitled 'Picture Stones.' It put on display a large selection of the more than 2,000 specimens of agates and other "picture stones" from the private mineral collection of József Arnóth. Arnóth, born in Hungary, left for Switzerland in 1956, and worked as mineralogist at the Museum of Natural History in Basel. Retired, he donated his extraordinary collection to the Hungarian Museum of Natural History. The exhibition was arranged by Gábor Papp, chief museologist of the Hungarian Museum of Natural History. J. Arnóth, who was present at the inauguration, was awarded the *Pro renovanda cultura Hungariae* medal by the Minister of Culture. The exhibition was open to the public for three months, free of charge.

Some books published in Hungary in 2005–2007.

Buda, Gy., Papp G., and Weiszburg, T., 'Short history of teaching mineralogy at the Eötvös Lóránd University, Budapest,' *Acta Mineralogica-Petrographica*, Szeged, 2004, imprint date 2005, *45*, 5–20. (http:// www.sci.u-szeged.hu /asvanytan/acta/ acta45.htm

Papp, G., *History of minerals, rocks and fossil resins discovered in the Carpathian region,* Studia Naturalis, 15. Budapest: Magyar Természettudományi Múzeum, 2004, imprint date 2005, 215 pp. (in English) http://www.nhmus.hu/-pappmin/pg hp studia15 1.html.

* The book received the Gold Medal of the Hungarian Academy of Sciences in 2006.

Papp, G., 'Kitaibel és Klaproth vitája a tellúr felfedezéséről a korabali dokumentumok tükrében,' With English abstract. (The priority dispute between Kitaibel and Klaproth over the disciovery of tellurium, on the

basis of contemporary dosuments, With the transliterated original correspondence in the Appendix), *Börzsönyvidék*, 2005, *3*, 147–178.
Hála , J ., *Ásványok, kőzetek, emberek. Történeti és néprajzi dolgozatok* (*Minerals, rocks, people: Historical and ethnographical papers*) (In Hungarian) MTA Néprajzi Kutatóintézet, Budapest, 2006, 262 pp.
Szente, I.- Főzy, 'A Kárpát-medence ősmaradványai' ('Fossils discovered in the Carpathian Region'), Gondolat, Budapest, 2007, 456 pp.

Teréz Póka, Budapest

Ireland

Gordon Herries Davies published the bicentenary history of the Geological Society of London: *Whatever is Under the Earth: The Geological Society of London 1807 to 2007*. He attended and spoke at various meetings organised by the Society in November 2007.

The year 2007 marked the 150th anniversary of the geophysicist John Joly. This milestone was celebrated by his university in May, when Joly was the subject of the annual Trinity Monday Memorial Discourse which was delivered by Patrick Wyse Jackson.

Patrick Wyse Jackson co-hosted the annual meeting of the Geological Curators' Group and both he and Gordon Herries Davies spoke at the meeting. The following day Patrick took the group on a necrological field excursion to a local Dublin cemetery where homage was paid at the graves of several geologists including those of Sir Richard Griffith and John Joly.

The proceedings of the 28th INHIGEO symposium held in Dublin in 2003 have been published by the Geological Society of London. The handsome volume *Four Centuries of Geological Travel: The Search for Knowledge on Foot, Bicycle, Sledge and Camel* contains twenty-nine papers and is available from the Geological Society on-line bookstore as is Gordon's bicentential history (see: http://www.geolsoc.org.uk/bookshop).

Publications

Herries Davies, G.L., *Whatever is Under the Earth: The Geological Society of London 1807 to 2007*, Geological Society of London, Bath, 2007, 356 pp.
Higgs, B. and P.N. Wyse Jackson, 'The role of women in the history of geological studies in Ireland,' *in* Burek, C. & Higgs, B. (eds.), *The Role of Women in the History of Geology*, Geological Society of London, Special Publication 281, 2007, 137–153.
Wyse Jackson, P.N. (ed.), *Four Centuries of Geological Travel: The Search for Knowledge on Foot, Bicycle, Sledge and Camel,* Geological Society of London, Special Publication 287, 2007, 415 pp.
Wyse Jackson, P.N., 'Global peregrinations: four centuries of geological travel,' *in* Wyse Jackson, P. N. (ed.) *Four Centuries of Geological Travel: The Search for Knowledge on Foot, Bicycle, Sledge and Camel*, Geological Society of London, Special Publication 287, 2007, 1–6.
Wyse Jackson, P.N., 'Grenville Arthur James Cole (1859–1924) the cycling geologist,' *in* Wyse Jackson, P. N. (ed.) *Four Centuries of Geological Travel: The Search for Knowledge on Foot, Bicycle, Sledge and Camel*, Geological Society of London, Special Publication 287, 2007, 135–148.
Wyse Jackson, P.N., 'Irish Rock Stars: George Henry Kinahan (1829–1908),' *Earth Science Ireland*, 2007, *1*, 11.
Wyse Jackson, P.N., 'Irish Rock Stars: John Joly (1857–1933),' *Earth Science Ireland*, 2007, *2*, 11.
Wyse Jackson, P.N. and M.E. Spencer Jones, 'The quiet workforce: the various roles of women in geological and natural history museums during the early to mid-1900s,' *in* Burek, C. & Higgs, B. (eds.), *The Role of Women in the History of Geology.* Geological Society of London, Special Publication 281, 97–113.

Patrick Wyse Jackson, Dublin

Italy

In April, Ezio Vaccari was invited to the International Symposium 'Science - Mountains - Ideologies: Johann Jakob Scheuchzer (1672–1733) and his time,' organized by the Laboratory of History of the Alps at the Università della Svizzera Italiana in Ascona (Switzerland). He presented a paper in Italian on 'J.J. Scheuchzer in the history of geological sciences in the Alps.' The proceedings of this symposium, edited by Simona Boscani Leoni, will be published by the end of 2008.

Gian Battista Vai and Ezio Vaccari also attended the INHIGEO Meeting in Eichstätt in late July through early August, where they presented the following papers: G.B. Vai, 'Catholic Liberalism and the early

development of geoscience: the cases of Aldrovandi, Steno, Marsili (16th to 18th century)'; and E. Vaccari, 'Genesis and Geology in 19th and 20th century Italy.' During the same meeting, three Ph.D. students from the University of Bari, with research projects under the guidance of Ezio Vaccari, presented the following papers: Andrea Candela, 'On the Earth's "revolutions": floods and extinct volcanoes'; Francesco Luzzini, 'Flood conceptions in Vallisneri's thought'; and Francesco Gerali, 'Giovanni Capellini, an Italian geologist of the second half of the nineteenth century.'

Early in September, Ezio Vaccari went to Québec (Canada) as a member of the International Scientific Committee of the 9th ERBE Symposium, focused on 'Cultural Heritage in Geosciences, Archaeology, Mining and Metallurgy,' which was held at the Université Laval. He also presented a paper on 'Mining Academies as centers of geological research and education in Europe between 18th and 19th centuries.'

Gian Battsta Vai was invited to attend the conference 'In the Footsteps of the Founding Fathers' celebrating the Bicentenary of the Geological Society of London (12–13 November) and to give a lecture on 'The status of geology in Italy around 1807,' which is expected to appear in a Special Publication of the Geological Society of London.

In December, Claudia Principe attended two symposia. At the meeting on Robert Mallet, entitled '16 dicembre 1857–2007...da un terremoto laboratorio a laboratori sul territorio' (Certosa di Padula, Salerno) she presented the paper (in Italian) 'From mountain to volcano—a journey through the geological ideas on Mt. Vulture, from abbot Tata to Robert Mallet.' Secondly, at the international symposium 'Le Vésuve en Éruption—Savoirs, représentations, pratiques,' which was held in Naples and organized by the Istituto Italiano di Scienze Umane (Italy) together with the Université Blaise Pascal, Clermont II (France), within the program pluri-Formation 'Connaissance et Représentations des Volcans,' she presented the project of a book on the 1631 eruption of Vesuvius.

Ezio Vaccari and Andrea Candela wrote and organized the content of several pages of the website 'Anguana: Le pagine gialle della Montagna Italiana / Anguana: The yellow pages of Italian mountains,' based on a research project funded by IMONT (the Italian National Institute on Mountains). The website (http://www.bosgrafica.com/Anguana/imont/index.html) presents the reconstruction of some historical-geological itineraries in the Prealps of Varese, as well as a selection from the biographical-bibliographical database of the scientists (mainly geologists) who worked in the Alps and the Apennines from the 18th to the 19th century.

At the end of 2007, under the guidance of Ezio Vaccari, Andrea Candela completed a three-year Ph.D. at the University of Bari, with a research project on the history of geological sciences and the studies on volcanic phenomena in the Lombardian Prealps between the 18th and 19th centuries. His thesis was entitled 'La Natura come Storia: le Alpi e i vulcani nell'età del viaggio scientifico (XVIII–XIX secolo).' It will be published by Insubria University Press (Varese) by the end of 2008. Ph.D. students Francesco Luzzini and Francesco Gerali completed their second year, also under the guidance of Ezio Vaccari, with research projects respectively on the geological works of Antonio Vallisneri and the figure of the 19th century geologist Giovanni Capellini.

Meanwhile, Ezio Vaccari completed his edition of the *Viaggi alle Due Sicilie e in alcune parti dell'Appennino* (*Travels to southern Italy and some parts of the Apennines, 1792–97*) by Lazzaro Spallanzani, with the publication of the second volume (Mucchi, Modena, 2007).

Moreover, Ezio Vaccari's paper 'From Tyrol to Venice: mining and geology in the papers of Giovanni Arduino (1714–1795),' as presented at the 8th ERBE Symposium on 'Cultural Heritage in Geosciences, Mining and Metallurgy. Libraries - Archives - Collections' (Schwaz, Austria; October 2005), was printed in the Austrian journal on Alpine geology *Geo. Alp,* 2007, Sonderband *1*, 155–164. He also published a paper on 'Linnaeus and Giovanni Arduino: some notes on a difficult reception in mineralogy and geology' (in *Linnaeus in Italy. The spread of a revolution in science*, edited by M. Beretta, Canton, Science History Publications, 2007, 189–198), as well as 'The organized traveller: scientific instructions for geological travels in Italy and Europe during the 18th and 19th centuries' (in *Four Centuries of Geological Travel*, edited by P.N. Wyse Jackson, Geological Society of London, Special Publication 287, 2007, 7–17). Vaccari also contributed to the *Dictionnaire Encyclopédique des Alpes* (edited by J. Guibal, P. Kober and D. Vulliamy, Glénat, Grenoble, 2006, vol. 2) with the article 'Étudier les Alpes' (on the history of geological research on the Alps), and to the *New Dictionary of Scientific Biography* (editor in chief N. Koertge, Charles Scribner's Sons, New York, 2007, vol. 1) with a postscript on Giovanni Arduino.

Gian Battista Vai published three papers: 'A history of chronostratigraphy' (*Stratigraphy*, 2007, *4*, n. 2/3, 83–97); a study on the origins and perspectives of the Italian Geological Society ('Origine e prospettive della Società Geologica Italiana,' *Bollettino della Società Geologica Italiana*, 2007, *126*, 131–157), and a paper on the Capellini family ('Piccolo mondo antico: le due Signore Capellini,' *Rendiconti della Società Geologica Italiana*, 2007, n.s., *5*, 3–13).

Claudia Principe published (with Luigi Marini) a paper on 'Evolution of the Vesuvius magmatic-hydrothermal system before the 16 December 1631 eruption' (*Journal of Volcanology and Geothermal Research*: paper accepted 11 December 2007; available online doi: 10.1016/j.jvolgeores.2007.12.004). (Is that the correct access address?) She also completed a work on the history of the geological studies on Mt. Vulture ('Da montagna a vulcano—Viaggio attraverso le idee geologiche sul Monte Vulture, dall'Abate Tata fino a Robert Mallet,' in *Viaggio nelle aree del terremoto del 16 dicembre 1857*, edited by Graziano Ferrari, SGA, Bologna, in press).

A book in memory of Nicoletta Morello, edited by Ezio Vaccari, with the title *The Deluge, the Mountains and the Fossils. Studies in the History of the Earth sciences in memory of Nicoletta Morello*, with papers from a symposium on 'Geology and Deluge' as well as some of Nicoletta's unpublished writings, will be printed by Insubria University Press (Varese) in 2008.

Other interesting publications for the history of geological sciences in Italy include: (1) Annibale Mottana's study of Vasolo's treatise on gems ('*Le miracolose virtù delle pietre preziose per salute del vivere umano* di Scipione Vasolo: un trattatello rinascimentale sulle gemme come mezzi per mantenersi in salute senza ricorrere a medicine,' *Rendiconti di Fisica dell'Accademia dei Lincei,* 2005, *16,*17–73) and (2) his paper 'Nicander on stones and inorganic materials' *(Rendiconti di Fisica dell'Accademia dei Lincei,* 2006, *17,* 333–353). Andrea Candela published papers on (3) the history of geology and mining in the western Prealps of Lombardy ('Problemi di storia geo-mineraria alpina. Il caso delle Prealpi Lombarde Occidentali,' *Ricerche Storiche*, 2007, *37*, 175–198); on (4) 'The Biblical Flood and "Creationism" in Ermenegildo Pini's geological theory (1790–1793)' (in *The Deluge, the Mountains and the Fossils*, edited by E. Vaccari, Varese, Insubria University Press, in press); and (5) on mining archaeology in the western Prealps of Lombardy ('Ricerche di archeologia mineraria nell'area occidentale delle Prealpi lombarde: scenari di conservazione e riqualificazione del "paesaggio culturale,"' *GeoStorie*, in press).

Ezio Vaccari, Varese

Japan

The Japanese Association for History of Geological Sciences (JAHIGEO) held three meetings in 2007. The first meeting was in Hokutopia, Tokyo, on 16 June; the second at Hokkaido University, on 10 September; and the third, serving as the annual meeting, was at Hokutopia, on 23 December.

The main presentations at the first meeting were by (1) Hirokazu KATO on 'Kenji MIYAZAWA's poem and fairy-tale story based on his thorough knowledge of geology,' and (2) Masae OMORI on 'Chronological viewpoint of philosophy of geology.' Kenji MIYAZAWA (1896–1933) was a famous poet and a fairy-tale writer who had great knowledge of geology.

For the second meeting, at Hokkaido University, lectures were presented by (1) Makoto KATO on 'A history of the Department of Geology and Mineralogy, Hokkaido University,' and (2) Masaichi KIMURA on 'A history of geoscience education in Hokkaido after World War II.'

At the third meeting, at Hokutopia, two lectures were given: (1) Ikuo HARA on 'Prof. George KOJIMA and his method of study of field geology'; and (2) Katsumi TAKAYASU and Bon KOIZUMI on 'Lafcadio HEARN's view on Japanese nature.' George KOJIMA (1916–2006) was a professor of geology at Hiroshima University. He produced major works on Sambagawa metamorphic rocks and had a great influence on the study of geotectonics and petrology in Japan. Patric Lafcadio HEARN (1850–1904) was an English novelist who became a naturalized Japanese citizen (his Japanese name was Yagumo KOIZUMI). He wrote many writings based on Japanese legend, feeling affection for the heritage of Japan. Bon KOIZUMI is his grandson.

In addition to those lectures, four meetings on the history of geosciences were held by younger members of the Association at Aogaku-kaikan, Tokyo, on 24 March, 23 June, 29 September, and 16 December. The presentations in March involved five members speaking on Professor Isao IMAI's

contributions to the history of geoscience, plus a round-table discussion. In June, Jiro TOMARI lectured on 'The process of acceptance of plate tectonics by the Japanese geophysical society.' In September, Matsutaro SHIBATA spoke on 'Two of KEMPFER's sketches of Ginkgo,' Michiaki ICHIMURA considered 'History of research of manganese layers and manganese ores in the Ashio Mountains,' and Michiko YAJIMA gave a talk on 'Geological excursions in search of Mary ANNING's footprints.' In December, Yasumoto SUZUKI analyzed 'Progress on geotectonics in the 20th century.'

The History of Science Society of Japan awarded a prize to Toshihiro YAMADA for his paper on 'Stenonian revolution or Leibnizian revival?: constructing geo-history in the seventeenth century,' as published in *Historia Scientianum* (2003).

Toshio KUTSUKSAKE and Michiko YAJIMA attended the INHIGEO meeting in Eichstätt, Germany, in July 2007. At that meeting both Japan and Russian invited INHIGEO to hold its annual meeting for 2011 in their respective countries. Subsequently Commission members voted to meet in Japan in 2011.

In 2007, the Japanese Association for History of Geological Sciences issued its *Bulletin* Numbers 28 and 29 (in Japanese) and the JAHIGEO *Newsletter* Number 9 (in English).

Yasumoto SUZUKI (Ichikawa), Hakuyu OKADA (Fukuoka), and Michiko YAJIMA (Tokyo)

Lithuania

After the 31st INHIGEO Conference on 'The History of Quaternary Geology and Geomorphology,' held at Vilnius in 2006, the Lithuanian, Czech, and Polish members of INHIGEO have established a multilateral 'Staszic Project' for 2007–2008 entitled 'The State of Geological and Mineralogical Sciences in Central and Eastern Europe at the Turn of the 18th Century as Documented by the Earliest Geological Cartography.' A mutual agreement was signed (25 April 2007) in Prague, at the Geophysical Institute. Those signing were INHGEO members and historians of geology: Prof. Dr. Jan Kozák (The Academy of Sciences, Czech Republic); Prof. Dr. Habil. Algimantas Grigelis and Dr. Leonora Živilė Gelumbauskaitė (The Academy of Sciences, Lithuania); Prof. Dr. Habil. Stanisław Czarniecki, Prof. Dr. Habil. Zbigniew Wójcik, and Prof. Dr. Habil. Wojciech Narębski (all three of The Academy of Sciences, Poland). Members of the project group took part in the 5th Readings of Stanisław Staszic *(5e spotkanie Staszicowskie)* at Piła, Poland, on 21 September 2007, where a report was presented by S. Czarniecki, A. Grigelis, and Z. Wójcik entitled 'Staszic's geological map and its significance for European geology and geological cartography.' Project plans in detail were discussed during meetings held in Cracow, 24 May 2007, at the Institute of Geological Sciences, Polish Academy of Arts and Science, and in Warsaw, 6–7 November 2007, at the Geophysical Institute, Polish Academy of Sciences. We plan to study material in archives and to investigate several peer-reviewed journals as we prepare publications on Staszic's scientific and cultural heritage.

Lithuanian INHIGEO members, Prof. Algimantas Grigelis, Dr. Gailė Žalūdienė, and Prof. Algirdas Gaigalas presented reports, publications, and projects on the history of geological sciences of Lithuania in 2007.

Academician Grigelis, present Chairman of the Section on Geosciences of the Lithuanian Academy of Sciences, represents the Academy of Sciences in the National Committee for 'The International Year of Planet Earth,' declared by the United Nations to be held in 2007–2009. Prof. Grigelis is Editor and Publisher of *BALTICA: International Journal on Earth Sciences of the circum-Baltic States.* Volume 20, Numbers 1–2, 65 pp., was published in December 2007.

Prof. Gaigalas, President of the Lithuanian Nature Society, organized an annual Meeting of the Society, held on 27 February 2008. He published several papers and biographies on Lithuanian scientists in the *Universal Lithuanian Encyclopaedia*, vol. XI, XII, Vilnius, 2007.

Prof. Grigelis took part in collecting papers and reviewing procedures of the Proceedings of the INHIGEO 31st International Conference held in 2006, entitled *Contributions to History of Quaternary Geology and Geomorphology*. The collected papers, with a *Preface* by Prof. Grigelis, have been edited by Rodney Grapes, Algimantas Grigelis, and David Oldroyd, and were delivered in 2007, to published in a Special Publication of the Geological Society of London.

Prof. Grigelis, Dr. Leonora Živilė Gelumbauskaitė, and Prof. Kozák took part in the colloquium *Older geological maps of Central and Eastern Europe of the early 19th century*, held at the Institute of Geophysics (Prague), 10–14 May 2007. After the colloquium the group visited the State Mining Archive in Banska

Štiavnica, Slovakia, in 15–18 May 2007. On 16 April 2007 Prof. Grigelis presented a lecture in the Bansky Archive entitled *Počiatky vyučovania mineralógie na starej univerzite vo Vilniuse a prvé geologické výskumy v Litve* (Slovak.).

Two meetings of the Lithuanian Ignotas Domeika Society, led by Prof. Grigelis, the President of the Society, were held in the Lithuanian Academy of Sciences, Vilnius, on 30 March and 12 December 2007. On 24 May 2007, Prof. Grigelis was invited to take part in a presentation of a new book published by Prof. Zdzisław Jan Ryn in 2006, entitled *Ignacy Domeyko. Kalendarium życia (Ignacy Domeyko. Calendar of Life)* held at the Polish Academy of Arts and Sciences in Cracow, Poland. Prof. Grigelis presented a report 'Ignacy Domeyko—an early investigator of Andean geology.'

Prof. Grigelis participated in the Annual Meeting and Conference of the International Commission on the History of Geological Sciences (INHIGEO) held at the Jura-Museum in Eichstätt, Germany, 30 July–5 August 2007. The theme was 'The historical relationship of geology and religion.' Prof. Grigelis presented a report entitled 'Fine minerals in church art: the Vilnius Cathedral treasury.'

Prof. Grigelis gave an interesting public lecture (9 February 2007) in the Amber Gallery-Museum (Vilnius) on the topic 'Prussian origin of Lithuanian amber.'

Miscellaneous matters

Academician Vytautas Gudelis, famous Lithuanian geologist and geographer, died on 17 July 2007, at the age of 84. In recognition of his life and work, Prof. A. Grigelis published a few *In Memoriam* publications in different scientific media sources in Vilnius.

Publications

Czarniecki, S., Grigelis, A., Kozák, J., Narębski, W., Wójcik, Z., 'Staszic's geological map and its significance for European geology and geological cartography,' *Zeszyty Staszicowskie,* No. 7, Piła, 2007. [In press].

Gaigalas, A., 'Geologija' (Geology), *in Universal Lithuanian Encyclopaedia*, vol. XII, Mokslo ir enciklopedijų leidybos institutas, Vilnius, 2007, 652–655. (Lith.).

Gaigalas, A., 'Kvartero geologija' (Quaternary geology), *in Universal Lithuanian Encyclopaedia*, vol. XI, Mokslo ir enciklopedijų leidybos institutas, Vilnius, 2007, 368–369. (Lith.).

Gaigalas, A., 'Five articles on personalities,' *in Universal Lithuanian Encyclopaedia*, vol. XI, Mokslo ir enciklopedijų leidybos institutas, Vilnius, 2007. (Lith.).

Grigelis, A., 'Geology of Lithuania (Lietuva),' *in* Ellen O. Sigmond (ed.), *Geology of the land and seas of Northern Europe*, NGU, Special Publication 10, Trondheim, Norway, 2007, 51–55.

Grigelis, A., 'Development of geological studies in Lithuania: R. Symonowicz' mineralogical travel,' *Geologija, No. 58,* Vilnius, 2007, 51–57.

Grigelis, A., 'Development of geological studies in Lithuania: Imperatoria Universitas Vilnensis,' *Geologija, No. 59,* Vilnius, 2007, 82–89.

Grigelis, A., 'Ten, Ušos srauniosios krantuose. Rašytinis paminklas Ignotui Domeikai' (Here, on the banks of fast Usha. Written monument to Ignacy Domeyko), *Geologijos akiračiai, Nr. 3,* 2007, 42–46. (Lith., Engl. sum.).

Grigelis, A., 'Preface,' *in* Grapes, R., Grigelis, A., Oldroyd, D. (editors), *Contributions to history of Quaternary geology and geomorphology*, Geological Society of London, Special Publication, 2007, London [in press].

Grigelis, A., 'In memoriam. Akademician Vytautas Gudelis 1923-07-13–2007-07-17,' *Geologija, No. 60,* Vilnius, 2007 (Lith., Engl.); *Geologijos akiračiai, Nr. 3,* 2007, 67–69 (Lith., Engl. sum.); *Mokslas ir gyvenimas, Nr. 8,* 2007, 16–17 (Lith.); *Lietuvos mokslų akademijos žinios, Nr. 3 (46),* Vilnius, 2007, 38 (Lith.); *Baltica, Vol. 20, Nos. 1-2,* 2007, 59–61.

Satkūnas J., and Žalūdienė G., 'Oldest geological maps of territory of Lithuania (the period until 1926),' *Geologija,* No.58, Vilnius, 2007, 56–62.

Algimantas Grigelis, Vilnius

New Zealand

The year 2007 was an active one for New Zealanders interested in the history of geology. In November a one-day meeting, organized by Simon Nathan, Hamish Campbell and Ian Speden, was held to mark the achievements of Sir James Hector (1834–1907), the leading scientist in 19th-century colonial New Zealand. Hector, the inaugural director of the New Zealand Geological Survey, was well known before coming to New Zealand to take up the position of Otago provincial geologist, as he had established his reputation on the Palliser Expedition to western Canada. Kicking Horse Pass, utilized by the Canadian Pacific Railway, was surveyed by Hector with almost fatal results to himself. Not only having very broad scientific interests, Hector was also a brilliant administrator or manger in present-day parlance. The meeting, through various guest speakers, dealt with many facets of Hector's life and career and was actively supported by many of his descendents. Simon Nathan is now collecting material for a long-overdue biography of Hector. One of the speakers at the meeting was Tony Hocken, whose PhD thesis concerning Hector's career as Otago provincial geologist, is now in its final stages. Another PhD thesis focusing on Hector is Francis Reid's *The province of science: James Hector and the New Zealand Institute, 1867–1903* (Cambridge University Press 2007). The thesis assesses Hector's role in establishing the New Zealand Institute (now Royal Society of New Zealand) and science publication in New Zealand in the late 19th century. A summary of the Hector's achievements can also be seen at: http://www.rsnz.org/publish/other/hector.php

During the year, Sascha Nolan's thesis on aspects of the life of Ferdinand von Hochstetter (1829 – 1884) has been accepted by the University of Auckland. He is now planning an exhibition that will commemorate Hochstetter's visit to New Zealand in 1858–1859. Leonore Hoke, James Bade and others are progressing with their annotated translation of Hochstetter's fifth diary, which covers part of his stay in New Zealand. The Geological Society of New Zealand is also considering ways that this important event can be celebrated. The Geological Society's *A Continent on the Move – New Zealand Geoscience into the 21st Century*, being prepared under the editorship of Ian Graham, is now in its final editing and contains a lot of historical information on New Zealand geology. Simon Nathan has also completed a history of geological explorations for the on line encyclopedia Te Ara: http://www.rsnz.org/publish/other/te-ara.php

Mettle and Mines, Mike Johnston's account of another 19th-century geologist, Edward Heydelbach Davis (1845–1871), has been published by Nikau Press (see review in this Newsletter). Davis was born in Cumbria and worked in Portugal and Colombia before coming to New Zealand, primarily to assess iron sand deposits but gained employment under James Hector at the Geological Survey. Mike is now researching another 19th-century geologist, Thomas Ridge Hacket (c. 1830–1884), who was arguably the first in this country. Another biography, by Graham Bishop, of the self-taught geologist Alexander McKay (1841–1917), is being edited at Otago University Press. During his career with the Geological Survey, McKay was the first person to recognize transcurrent (strike-slip) faulting and he had a well- deserved reputation as a fossil collector. Members of the Historical Studies Group of the Geological Society of New Zealand contributed articles to the group's Newsletter, two issues of which (33 and 34) were published during the year. Articles included several by Tony Hocken, who is also the newsletter editor, on Hector. Alan Mason, the stalwart of research into the history of geology in New Zealand, also contributed articles and is progressing with his biography of Rev. Richard Taylor (1805–1873) who undertook some of the earliest geological observations in New Zealand.

Mike Johnston, Nelson

Poland

For many years the majority of publications by Polish historians of geoscience were thematically focused on internal problems or referred to the neighboring countries (Germany, Russia, Belarus, Lithuania, Slovakia, the Czech Republic, and Ukraine). This was a consequence of the conditions of development of sciences in the second half of the 18th, as well as in the 19th and the first half of 20th centuries. In this period, the geology of Polish and Lithuanian territories, occupied for more than 120 years by Russian, Prussian, and Austro-Hungarian states, was strictly related with the sciences of these countries. Therefore, in the years 1969–1983 three Polish-Soviet conferences were organized on this subject. The historical-geological problems of Central-Eastern Europe were discussed by Polish geoscientists during conferences and field trips organized in the German Democratic Republic, Romania, Hungary, Bulgaria, Slovakia, the Czech Republic, and Yugoslavia.

The organizing bodies included INHIGEO, the Carpathian-Balkan Geological Association, and the group representing the Mutual Cooperation of Academies of Sciences of Socialist Countries.

Recently, in Poland, we have observed an increase of interest in the history of geoscience among middle-aged specialists. Examples include, Radoslaw Tarkowski, Andrzej J. Wojcik, and others. This phenomenon caused a significant increase of themes and a greater territorial range of historical studies, promoted in recent years by the incorporation of our country into the European Union. In the last several years R. Tarkowski (Cracow) and Piotr Daszkiewicz (Paris) have been carrying out detailed archival studies on Polish-French scientific relations in the 18th and 19th centuries; work that has resulted in numerous publications. On the other hand, A.J. Wojcik is continuing his research concerning the history of geology and mining in Silesia. His source materials have been found in German archives in Bochum, Freiberg in Sachsen, and elsewhere.

W. Narebski (as an ex-soldier of the Polish 2nd Corps) is cooperating with Italian scientists in the study of the significance of geology and geomorphology of battlefields that involved this Polish unit in the Italian campaign. The 2nd Corps conducted its operations, in 1944–45, in the Apennines, along the Adriatic coast, and in the southern part of the Po Lowland. The change of geopolitical relations in the last fifteen years has caused a distinct decrease of cooperation between Polish and Russian historians of geosciences. A similar decline is seen in other ex-Soviet countries, now forming a Commonwealth of Independent States. However, studies on Polish-Russian geological relations in the past are still carried out by the Siberian Commission of the Committee on History of Sciences and Techniques of the Polish Academy of Sciences, lead by Zbigniew Wojcik.,

In accordance with their statutes, history of geological sciences in Poland is studied first of all in the Museum of the Earth, Polish Academy of Sciences in Warsaw (archive, library) and in the Laboratory of the History of Geology of Poland, in Cracow. Stanislaw Czarniecki is a primary worker at the Cracow institution. Moreover, a Historical Section was inaugurated in the State Polish Geological Institute in Warsaw. Archival materials are gathered in the Archives of the Polish Academy of Sciences in Warsaw and the Polish Academy of Arts and Sciences in Cracow. The latter Academy is very active and supports a Commission on the History of Sciences. During their monthly meetings, historical-geological problems are often lectured upon and discussed.

Every second year in Pila (Western Poland)—the birthplace of Stanislaw Staszic, called the "father of Polish geology"—there are organized international conferences devoted to the achievements of this eminent scientist, philosopher and protector of science, education and economy in enslaved Poland. The materials of these conferences are published in a special periodical *Zeszyty Staszicowskie* (*Staszic Fascicles*). Numerous papers on the history of geology are published in each volume of the monthly magazine *Przeglad Geologiczny* (*Geological Review*).

Worth emphasizing is the participation of Polish historians of natural sciences in the celebrations of the third centenary of the birth of Buffon. The *Centre Scientifique de l'Académie Polonaise des Sciences à Paris* has organized a session 'Buffon (1707–1788) et la Pologne,' with participation of French and Polish specialists. Among the lectures delivered we have to mention the following: R. Tarkowski and P. Daszkiewicz discussing 'Buffon et Guettard: Quelques remarques sur la France et les sciences naturelles en Pologne au XVIIIe siècle'; P.-J. Chiappero on 'Quelques objets minéralogiques en relation avec l'histoire franco-polonais dans le collection du Muséum National d'Histoire Naturelle'; and J. Skrzypek speaking on 'Stanislaw Staszic, traducteur et continuateur de l'oeuvre de Buffon en Pologne.'

Moreover, Tarkowski and Daszkiewicz have paid considerable attention to the works of J. E. Guettard concerning Polish territory in the 18th century, and to the influence of R.-J. Haüy on the development of geology in our country in the 19th century. They have also published several papers on the studies pursued in Poland by Jean-Emmanuel Gilibert, who was the professor of natural history at Vilna University in the 18th century. Also of interest is their paper on new data regarding French description of mineral resources of the salt mine in Wieliczka in the years around 1800. Worth mentioning is also their paper on little-known geological activity in France by the Polish naturalist Jakub Malinowski (1808–1897) and his contacts with Ignacy Domeyko. In addition, in cooperation with Jean-Christophe de Massary, they have presented new data on the natural scientific investigations of Konstanty Jelski (1837–1896) in French Guiana.

In 2007, thanks to the initiative of Jan Kozak (Czech Republic), an international group of historians of geosciences was formed to promote the significance of the geologic map of Central-Eastern Europe, published by Stanislaw Staszic in 1815 (see Figures below). Apart from our Czech colleague and his co-worker, Alena Čejchanova, the group is composed of Algimantas Grigelis (Lithuania) and Polish geoscientists Stanislaw Czarniecki, Wojciech Narebski, and Zbigniew Wojcik. Preliminary results of their study were presented at the 5th Staszic's Meeting in Pila. These investigations are carried out under the auspices of the Lithuanian Academy of Sciences. During this meeting, Jerzy Mikuszewski and Zbigniew Wojcik tried to define the methodology of preparation of the map by Staszic in relation to the state of geological studies in Europe in that period.

Several scientific sessions were organized in Lubin and Warsaw on the occasion of the 50th anniversary of the discovery of copper deposits in Lower Silesia in 1957. The lectures delivered were published in the periodical *Przeglad Geologiczny* (*Geological Review*). This monthly has also published a very interesting paper by M. Graniczny, J. Kacprzak, H. Urban, and P. Krzywiec entitled 'Ludwik Zejszner--- eminent man and naturalist, one of the pioneers of geological cartography in Poland.' The authors provide information on an unpublished map of the Holy Cross Mountains region from the middle of the 19th century. They intend to publish a copy of the original map as an important historical source material.

A new positive trend relating to the history of science has been observed, expressed in the organization of museums in smaller towns, particularly in the environs of the Holy Cross Mountains. It is thanks to Stanislaw Czarniecki that in Klimontow, near Sandomierz, a Regional Museum was formed with a section devoted to the history of geology. A similar museum has recently been organized in Starachowice. It is devoted to the documentation of the valuable work of Stanislaw Staszic in organizing the Old Polish Industrial Center. The museum is based on local mineral resources. Polish INHIGEO members are the initiators of all the above-mentioned activities.

Zbigniew Wojcik (Warsaw) and Wojciech Narebski (Cracow)

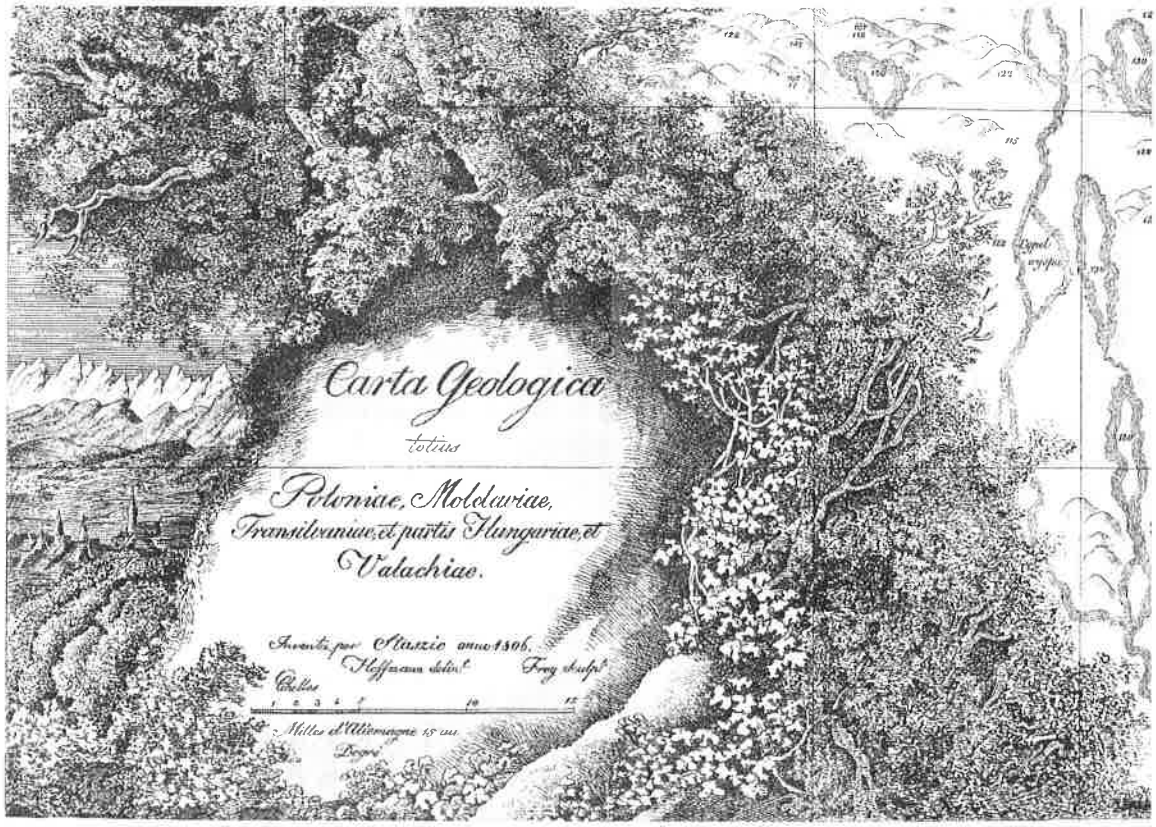


Figure 1: Frontispiece of a map by Stanislaw Staszic

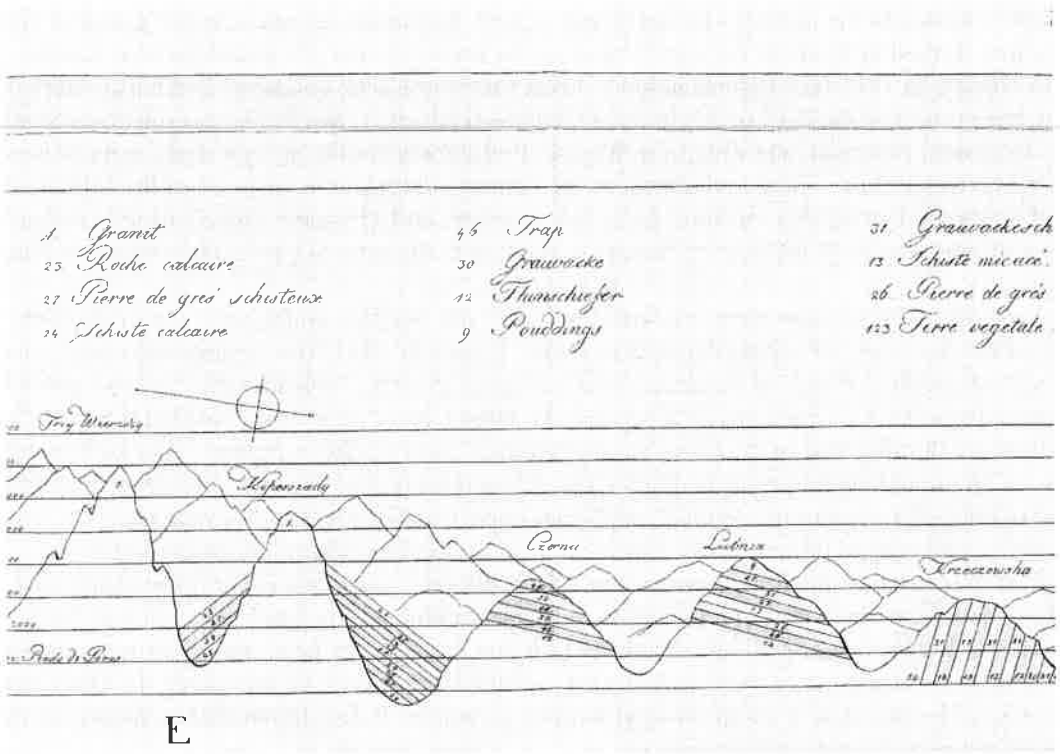


Figure 2: Cross-section view of the Carpathians, by Stanislaw Staszic

Portugal

Publications

Chapters in books

Carneiro, Ana, 'Sharing common ground: Nery Delgado (1835–1908) in Spain in 1878,' *in* Patrick N. Wyse Jackson (ed.), *Four Centuries of Geological Travel: The Search for Knowledge on Foot, Bicycle, Sledge and Camel*, London, Geological Society, Special Publication 287, 2007, 119–134.

Carneiro, Ana and Teresa Salomé Mota, 'Francisco Pereira de Sousa (1870–1931): um terramoto para uma vida' *in* Ana Cristina Araújo, José Luís Cardoso, Nuno Gonçalo Monteiro, Walter Rosa e José Vicente Serrão (org.), *O Terramoto de 1755—Impactos Históricos*, Lisboa, ICS/Livros Horizonte, 2007, 131–143.

Pinto, Manuel S. and Annete Bouheiry, 'The German geologist Georg Hartung (1821–1891) and the geology of the Azores and Madeira islands,' *in* Patrick N. Wyse Jackson (ed.), *Four Centuries of Geological Travel: The Search for Knowledge on Foot, Bicycle, Sledge and Camel*, London, Geological Society, Special Publication 287, 2007, 229–238.

Periodicals

Amador, Filomena, 'O ensino da geologia nas escolas portuguesas, durante o século XIX e primeira metade do século XX: reformas curriculares e manuais escolares,' *Terrae Didatica*, 2007, 3, 1, (online soon).

Amador, Filomena, 'O terramoto de Lisboa de 1755: colecções de textos do século VIII,' *História, Ciências, Saúde – Manguinhos*, 2007, *14*, 1, 285–323.

Carneiro, Ana and Teresa S. Mota, 'The Geological Survey of Portugal (1857–1948), an overview,' *in* Pietro Corsi (ed.), *Earth Sciences History*, Special Issue, 2007, *28*, 85–96.

Mota, Teresa S., 'A mere shadow of an institution: the unhappy story of the Portuguese Geological Survey (PGS) in the period between the two World Wars,' *Annals of Science*, 2007, *1*, 64, 19–40.

Oldroyd, David, Filomena Amador, Jan Kozák, Ana Carneiro and Manuel Pinto, 'The study of earthquakes in the hundred years following the Lisbon Earthquake of 1755,' *Earth Sciences History*, 2007, *26*, 321–370.

Pereira, A. and Filomena Amador, 'A história da ciência em manuais escolares de Ciências da Natureza do 5º ano de escolaridade português,' *Revista Electrónica de Enseñanza de las Ciências*, *6*, 1 (www.saum.uvigo.es/reec/volumenes/volumen6/ART12_Vol6_N1.pdf).

CDRoms

Amador, Filomena, 'Tradições investigativas em historiografia da ciência e respectiva influência na utilização didáctica da história da ciência. Exemplos da história da geologia,' *in* L. Marques, J. Praia and C. Guerra (eds.) *A História da Geologia na Educação Científica*, CDRom, Universidade de Aveiro, 2007, 4–16.

António Soares de Andrade, 'As grandes unidades geológicas do território continental português: uma perspectiva histórica,' *in* L. Marques, J. Praia and C. Guerra (eds.) *A História da Geologia na Educação Científica*, CDRom, Universidade de Aveiro, 2007, 16–27.

Abstracts

Amador, Filomena and Manuel S. Pinto, 'A erupção de Laki (Islândia) nos anos de 1783/84: possíveis efeitos, em Portugal, no clima e na saúde pública,' *II Encontro de História das Ciências Naturais e da Saúde*, Lisboa, July 2007, Abstracts, 12.

Amador, Filomena and Manuel S. Pinto, 'The Portuguese Jesuit preacher António Vieira (1608–1697) and the problems of mining exploitation in South America,' INHIGEO Meeting *The Historical Relationship of Geology and Religion*, Eischtätt, July/August 2007, Abstracts and Field Guides, 5.

Carneiro, Ana and Teresa S. Mota, 'Geology and religion in Portugal: three peculiar case-studies,' INHIGEO Meeting *The Historical Relationship of Geology and Religion*, Eischtätt, July/August 2007, Abstracts and Field Guides, 13.

Pinto, Manuel S. and Filomena Amador, 'Discussing the age of Earth in 1779 in Portugal—religion and geology,' INHIGEO Meeting *The Historical Relationship of Geology and Religion*, Eischtätt, July/August 2007, Abstracts and Field Guides, 44.

Pinto, Manuel S. and Isabel Malaquias, 'Chemistry and metallurgy in Portugal in the 18th century—the cases of gold and silver. *6th International Conference on the History of Chemistry "Neighbours and Territories. The Evolving Identity of Chemistry,"* Leuven, August/September 2007, Abstracts, 56.

Thesis

Mota, Teresa S. Mota, 'Os Serviços Geológicos entre 1918 e 1974: da quase morte a uma nova vida,' Ph.D. thesis, Universidade Nova de Lisboa, Fac. Ciências e Tecnologia, 2007.

Talks

Hugh Torrens, 'Mary Anning (1799–1847): the "greatest fossilist who ever lived",' (Museu de Ciência da Universidade de Lisboa, 7 November 2007).

Martim Portugal Ferreira, 'Raízes e obra de José Bonifácio de Andrada e Silva,' Academia das Ciências de Lisboa, 25 July 2007.

Miscellaneous

- Ana Carneiro, Filomena Amador and Manuel Pinto, members of INHIGEO, attended the Meeting in Eischstätt.
- A drawing of a tri-dimensional model of the Cabo Mondego coal mine (near Figueira da Foz, Portugal), dated 1776, inscribed on a ceramics piece, was recently re-discovered by M. Telles-Antunes, member of INHIGEO, in the collection of the Museu of the Lisbon Academy of Sciences. It is probably the first model of the kind ever made in Portugal. (Editor's note: See the ARTICLE by Telles-Antunes in this newsletter.)
- The Sociedade de Geografia de Lisboa, presently having Luís Aires-Barros, member of INHIGEO, as its president, organized in May 2007, in Lisbon, an international colloquium on Garcia de Orta and on Alexander von Humboldt, the two reputed travellers who gave a very important contribution to natural sciences and geography.

Manuel C. S. Pinto, Aveiro

Romania

During 2007 most geological events and meetings were organized at the following institutions: Romanian Academy; University of Bucharest; "Babeş Bolyai" University-Cluj Napoca; "Al.I.Cuza" University-Iaşi;

Geological Institute of Romania; Geological Society of Romania; and the Bucharest Student Chapter of AAPG (affiliated with the American Association of Petroleum Geologists).

Scientific Meetings, Geological events.

At the Romanian Academy's 150th Anniversary Session, held at the Academy Aula in October 2007, the featured topic concerned the "Foundation and Affirmation of the Petroleum Industry." Members of the Department of Geonomic Sciences emphasized the contributions of Romanian geologists and geophysicists. Among the highlights are the following dates and events:

- 1857: The first record in the world statistics of the production of 275 tons of oil in Romania. In 1856 Teodor Mehedinteanu, from Pacureti-Prahova, built the first refinery at Rahov, close to Ploiesti.
- 1857: An agreement for lamp-oil illumination in the city of Bucharest is signed by the Mehedinteanu brothers, in concert with the municipality of Bucharest. The project immediately went into force. Thus, Bucharest became the first city in the world to be illuminated by lamp oil.
- 1877: The first conference on petroleum is hosted by Grigore Cobalcescu, a member of the Romanian Academy. The meeting is entitled 'On the origins and the depositing manner of petroleum; the general concept and particular focus on the Carpathian area.'
- 1880: The first Romanian geological map is published by Mateiu Draghiceanu, in Vienna.
- 1907: The "Third World Congress of Petroleum" is held in Bucharest, under the high auspices of Prince Ferdinand, the inheritor of the crown, and under the presidency of Anton Carp, Prime Minister of Romania. It was the first congress organized in an oil-producing country. Renowned Romanian personalities in the fields of industry and science participated in the Organizing Committee: Ludovic Mrazec, a member of the Romanian Academy (and its former President) was vice-President of the Congress; C. Alimanisteanu, director in the Ministry of Industry and Trade; Dr. eng. Lazar Edeleanu; and Anghel Saligny. The Congress was organized into three sections: 1) geology, exploration and exploitation; 2) petroleum chemistry and technology; and 3) legislation and trade. A large exhibition, as well as field trips to the petroleum fields in the country, were organized for the participants from the UK, Austria, Belgium, France, Germany, Italy, Holland, Portugal, Canada, and Mexico.
- 1909: The discovery of the first structure of natural gas at Sarmasel. Well 2 yielded gas at the depth of 228 meters.
- First half of the 20th century: A number of scientific papers on the origin and location of oil fields in Romania were published in the years from 1900 to World War II. Examples include: (1907) L. Mrazec (on 'salt diapirs'); Gh. Munteanu-Murgoci ('Das Facies und die tectonic der Tertiares vom Oltenia in Bezung an die Petroleum legenstatten'); Sava Athanasiu ('Esquisse géologique des régions pétroliféeres du District de Bacau'); (1915) Gh. Botez ('Sur la structure géologique du gissement de pétrol de Copaceni-Prahova'); (1923) David Preda ('Petroleum structures from Romania'); (1931) I. Popescu-Voitesti ('Considérations géologiques sur la genèse du pétrol et sa mise en gisment'); (1932) Gh. Macovei ('L'origine du pétrol des Carpathes Roumaines et ses roches-mères'); (1940) Ion Atanasiu ('Contribution à la géologie des pays moldaves').

The GEO 2007 National Symposium of Geology and Geophysics was organized by the Faculty of Geology and Geophysics in partnership with the Geological Society of Romania and Romanian Society of Geophysics. The meeting, held on 25 May 2007, was entitled "Geology for the Future" and was grouped into three sections: 1) Geology; 2) Engineering Geology and Hydrogeology; and 3) Geophysics. A round-table debate on "Geological education in Romania: European challenges – priorities and development strategies" was also organized and was well attended.

At the Romanian Academy, on 8 August 2007, the project entitled "Water for all: From the black gold crisis to the blue gold crisis" was launched. The conference was opened by Mr. Ionel Haiduc, the President of the Romanian Academy. He spoke about identification of new potable water sources at a moment when global warming is becoming a reality. Other papers emphasized the role of Romanian creativity in scientific progress. Prof. Dr. Emil Constantinescu, of Bucharest University, spoke to that topic. The project initiator was Mr. Theodore Orasianu, a member of the Swiss Natural Science Society and senior geologist at PETROCONSULTANTS, Geneva. The main topics discussed were: 1) identification and evaluation of potable water resources from deep aquifers intercepted by oil wells that are now abandoned (Theodore Orasianu); and 2) capture and stocking CO2 in natural reservoirs – a viable option in relation to climate

changes (Jean-Christophe Fueg, senior expert at the Swiss Federal Office for Energy, SFOE). The conclusion was that the project "Water for all" is a viable future project and can be developed within nation and international partnerships.

During 2007, the National Institute for Research and Development for Marine Geology and Geoecology (GEOECOMAR) organized the following scientific events with both national and international scientific participation: 1) Workshop PROFET, concerned with "Multidisciplinary research on natural hazards. Case study: Tsunami in the Black Sea" (Bucharest, 7 September); 2) Symposium on "Paleo-environments and paleo-diversity in the context of global climate changes" (Bucharest, 10 October); 3) Workshop NEAR 3 considered "Network for Environmental Assessment and Remediation in aquatic systems" (Funded by the Swiss National Science Foundation program on "Sustainable Management of Wetlands and Reservoirs"; held in Murighiol, 6-10 October); and 4) the General Assembly FP 7 SESAME Project looking at "South European Seas Assessment and Modeling of Ecosystem Changes: an Integrated Project" (Bucharest, 27 October to 1 November).

An International Conference on "New Practices in Geodiversity for Sustainable Development of the Regions of Eastern Europe," was held in Sibiu (8-10 October 2007). The Conference was organized under the TAIEX (Technical Assistance for new UE member states) Program of the European Union. The presentations were focused on innovative practices in Geoconservation, among which special attention was given to presentations concerning a few UNESCO Geoparks (from Ireland, Germany and Romania) as discussed by Prof. Dr. Dan Grigorescu.

The Bucharest Student Chapter of AAPG (a student association with a scientific profile, affiliated to the University of Bucharest's Faculty of Geology and Geophysics) was supervised by Faculty Advisor, Prof. Dr. Nicolae Anastasiu and Co-Sponsor, Prof. Dr. Ovidiu Dragastan. The group organized the 8th edition of "The Symposium of Romanian Student Geologists," the most prestigious student event in geo-sciences (19 to 22 April 2007). The presentation sessions were grouped into three thematic sections: 1) Petroleum Geology, Sedimentology, Structural Geology; 2) Crystallography, Mineralogy, Petrology, Geochemistry; and 3) Geophysics, Engineering Geology, and Environmental Engineering.

"Al. I. Cuza" University, from Iasi, organized a National Symposium on "Geochemistry of Heavy Metals from Soils," (27 October 2007), and a National Symposium "Mircea Savul," on the same date. The "Third International Conference for Energy and Environment" has prepared a geochemical atlas of heavy metals from the soils of Iasi city and surroundings. Preliminary data were collected by O. G. Iancu, N. Buzgar, L. Apostoae, R. Lacatusu, E. Gandrabura, C. Popa, E. Teodorescu-Soare, M. Lungu, O. Stan, and C. Patriche.

Publications

Anastasiu, N., Popa, M., and Roban, D-R., *Depositional Systems: Sequence analyses in the Carpathian Mountains and Dobrogea (Sisteme depozitionale: Analize secventiale in Carpati si Dobrogea)*, Romanian Academy Publishing House, Bucharest, 2007, 606 pp., 400 figures, 20 color plates, 35 tables. The book is structured in three parts: I) Concepts, factors controlling deposition, depositional events; II) Depositional systems: continental (eolian, glacial, fluvial/ alluvial fan, lacustrine), transitional (deltaic, coastal, evaporitic), marine (shallow-water and deep seas); III) Case studies: reconstitutions of sedimentary environments, with examples from: Eastern Carpathians, Apuseni Mts., Transylvanian Basin, Getic Unit, Moldavian Platform, Moesian Platform, and Dobrogea.

Anastasiu, N., Grigorescu, D., Mutihac, V., and Popescu, Gh. C., *Glossary of Geology (Dictionar de Geologie)*, Second Edition, Didactical and Pedagogical Publishing House, Bucharest, 2007, 347 pp.

Buliga, Gh., *Historical Highlights of the Romania Petroleum Industry*, Oil and Gas Society Publishing House, Bucharest, 2007, 90 pp.

Dinu, C., Matenco, L., Diaconescu, V., and Munteanu, *Sedimentary Basin Analysis (Analiza bazinelor de sedimentare)*, Vergiliu Publishing House, Bucharest, 2007, 377 pp.

Dita, S., *History of Geological Institutions from Romania*, Monitorul de Petrol si Gaze, anul VI, nr. 8 (66). Bucharest, 2007, 52–59.

Gridan, T., Ticleanu, N., and Gridan, S., *Geology and Apocalypse*, Ed. Universitara, Bucharest, 2007, 382 pp. This book is structured in four parts: I) Apocalypse and Terrestrial Life; II) Geological Catastrophes

Endangering Terrestrial Life; III) Terrestrial Life Endangered by Cosmic Accidents; and IV) Will There Be Terrestrial Life in the Future?"

Huica, I., *With and on Geologists (Cu si despre geologi),* Vergiliu Publishing House, Bucharest, 2007,. 600 pp.

Celebrated or commemorated personalities

- It has been 140 years since the birth of the great Romanian geologist, academician Ludovic Mrazec.
- Prof. David Roman died 80 years ago.
- The 6th "Romanian Symposium of Paleontology," was held in Iaşi, (21-23 September 2007) and was dedicated to the memory of Professor Liviu Ionesi, a member of the Romanian Academy who died in December 2006.

Obituary

- Acad. Razvan Givulescu (1920–2007), Professor of Paleobotanic at "Babes-Bolyai" University, Cluj Napoca, Romania.

Nicolae Anastasiu, Bucharest

Russia

The second book of the three-volume series about members of the Russian Academy of Sciences was published in 2007 under the title *Native Corresponding Members of the Russian Academy of Sciences in 18th- to the Beginning of the 21st century: Geology and Mining Sciences*. Authors are Yu.Ya. Soloiyev, G.P. Khomizuri, and Z.A. Bessudnova, with an introductory chapter by I. Malakhova, discussing "Members or correspondents?" The last volume in the series, with 120 biographies of foreign members of the Russian Academy, is scheduled for publishing next year.

Exhibition

The permanent educational exhibition "Art of Nature in a Stone" was opened in the new building of the Humanities Department of the Moscow University in September 2007. T. Ivanova was the exposition's author. The University Rector and Moscow authorities, headed by the mayor, participated in the opening ceremony. Within the informative exhibition one can follow the history of mineralogy through the use of guided excursions.

Anniversaries

The round table "125 Years of the Geological Committee of Russia" was held in the Moscow Polytechnical Museum in February 2007. Z. Bessudnova, Yu. Soloviev (with a co-author) and A. Ryabukhin presented papers on the history of the Russian Geological Survey.

The special meeting of the Russian Mineralogical Society in Saint-Petersburg took place in commemoration of the crystallographer and historian of science I. Shafranovsky (1907–1994). N. Yushkin presented a paper in this conference. The book *Scientific Correspondence (1959–1993)* by I. Shafranovsky and N. Yushkin was published in 2007, and should be of great interest for historians of mineralogy and crystallography.

The centenary of V. Beloussov (1907–1990) was celebrated at the Institute of the Physics of the Earth (Moscow) where E. Milanovsky shared his reminiscences. At a meeting of the All-Russian Geological Institute in Saint-Petersburg, A. Lapo presented a paper on Beloussov's contributions to geoscience. A biographical volume, *Works and Dates of Vladimir Beloussov*, compiled by L. Iogansson, was issued just before the celebrations.

In October 2007, I. Malakhova was honored to take part in events on the Bicentenary of the Geological Society of London. She presented to the President of the Society addresses of congratulation signed by leaders of the Russian Academy of Sciences, the Moscow State University, and two of the oldest scientific societies, the Moscow Society of Naturalists (1805) and the Russian Mineralogical Society (1817). An account of the development of science in Russia at the beginning of the 19th century was presented in the scientific session (I. Malakhova, with Geological Society of London Foreign Member V. Khain as co-author).

In commemoration of the 150th anniversary of Feodosy Tchernyschev (1856–1914) and 125 years of the Geological Committee, the All-Russian Geological Institute in Saint-Petersburg has published a book about Tchernyschev, a famous Russian geologist and the Director of the Committee in 1903–1914.

Meetings

I. Malakhova participated in the annual meeting of the Institute of Science and Technology (Moscow), where she presented a paper concerning the bicentennial of a foreign member of the Russian Academy of Sciences, Jean Louis Rodolphe Agassiz (1807–1873).

Russian historians of geology attended the INHIGEO-2007 Meeting in Eichstätt (Germany). The symposium theme was "The Historical Relationship Between Geology and Religion." Members of the delegation presented a variety of papers: on religion and geological ideas in antiquity (G. Khomizuri); some aspects of relations of geosciences with power and Church in Russia (I. Malakhova); and on the history of the Solnhofen collection of the Vernadsky State Geological in Moscow (Z. Bessudnova).

Irena Malakhova, Moscow

Spain

The proceedings of the Ninth Meeting of the *Spanish Society of History of Sciences and Techniques* (SEHCYT), held in Cádiz (Spain), were published in 2007. The proceedings contain eight Communications on History of Geology (see: www.aspect.org). Likewise, issue number 100 of the *Boletín de la Real Academia Española de Historia Natural* was published in 2007. The journal *Cuadernos Dieciochistas* concerns eighteenth-century history and contains contributions on the Lisbon earthquake (1755). Professors L. F. Mazadiego and Octavio Puche organized an interesting exhibition on copper mining, presented at the High School of Mining Engineering, Universidad Politécnica-Madrid (on 6–16 November). Doctor Carmina Virgili attended the Meeting of the *Catalan Society of Natural History.*

Books and chapters of books

- Alsina Calvés, J., *Historia de la Geología. Un introducción,* Editorial Montesinos, Biblioteca de Divulgación Temática, Barcelona, 2007, 230 pp.
- Barrera, J. L., Martín Escorza, C., and Sequeiros, L., La aportación científica del geólogo gaditano José Macpherson: balance general. *IX Congreso de la Sociedad Española de Historia de las Ciencias y de lasTécnicas, 2005,* Universidad de Cádiz, Cádiz, 2007, tomo II, 1151–1164.
- Gomis, A., & Josa Llorca, J., *Bibliografía crítica ilustrada de las obras de Darwin en España (1857-2005)*, Consejo Superior de Investigaciones Científicas, Madrid, Estudios sobre la Ciencia, Madrid, 2007.
- Masriera, A., *El Museu Martorell, 125 anys de ciències naturals (1878–2003)*, Monografies del Museo de Ciències Naturals, no. 3, 2007, 230 pp.
- Puche Riart, O., 'Edad Media,' *in La Minería de Castilla León*, Edit. Junta de Castilla-León, 2007, 54–64.
- Puche Riart, O., 'Edad Moderna,' *in La Minería de Castilla León.* Edit. Junta de Castilla-León, 2007, 64–69.
- Rivas, P., Reñe, T., and Rabano, I., *El edificio del Instituto Geológico y Minero de España.* IGME, Madrid, 2007, 39 pp.
- Salavert Fabiani, V.L., Pelayo López, F., and Gozalo Gutiérrez, R., Juan Vilanova y Piera (1821–1893): la divulgación como arma legitimadora de las Ciencias Naturales, *in Derecho, historia y universidades. Estudios dedicados a Mariano Peset,* Universitat de València, Valencia, 2007, *vol. II*, 597–605.
- Schroeder, R., and Perejón, A. (edit.), *Contributions to the geology of Spain in memory of Prof. Franz Lotze*, Zeitschrift der Deutschen Gesellschaft für Geowissenschaften, Stuttgart, 2007, *tomo 157, parte 4*, 510–732.
- Viejo Montesinos, J. L., and Gomis, A. (coordin.), *Eugenio Morales Agacino (1914–2002): un naturalista español del siglo XX*, Univ. Autónoma de Madrid y Real Sociedad Española de Historia Natural, 2007, 177 pp.

Publications (selection)

- Aragonés, E., Marià Faura i Sants i el Servei del Mapa Geològic de Catalunya (1914–1924), *Treballs del Museo de Geologia de Barcelona*, 2007, *14*, 81–264.
- Aragonés, E., Martín Escorza, C., and Ordaz, J., Bólidos observados y meteoritos caídos en la península Ibérica durante el siglo XVIII, *Cuadernos de estudios del Siglo XVIII*, 2007, *16*, 5–50.
- Barrera, J. L., Islas Chafarinas. La geología de un archipiélago deseado por todos, *Tierra y Tecnología, Ilustre Colegio de Geólogos,* 2007, *30,* 13–30.
- Barrera, J. L., José Macpherson y Hemas (1839–1902). Nuevas aportaciones biográficas y su testamento, *Boletín de la Institución Libre de Enseñanza*, Madrid, 2006, *62,* 129–138.

- Catalá Gorgues, J. I., Camp i Laboratori a la Història Natural valenciana: l'exploració d'una frontera, *Actes VIII Trobada de Història de la Ciencia i de la Tècnica,* Barcelona, 2006, 41–56.
- Dabrio, C., Necrológica: Alberto Garrido Megías (1936–2006), *Tierra y Tecnología, Ilustre Colegio de Geólogos,* 2007, *30,* 92.
- Diez Herrero, A., Apuntes históricos sobre la colección de minerales, rocas y fósiles de la Academia de Artillería de Segovia, *Llull*, 2005–2007, *28 (62),* 383–414.
- Fernández, M. D., Uskola, A., and Nuño, T., Mujeres en la Historia de la Geología (I): desde la antigüedad hasta el siglo XIX, *Enseñanza de las Ciencias de la Tierra*, 2007, *14 (2),* 118–130.
- Garcia Cruz, C. M., La correspondencia entre Isaac Newton y Thomas Burneo (1680–1681) en relación con la Telluris Theoria Sacra, *Llull*, 2005–2007, *28 (61),* 29–58.
- González Martínez, C., Los riesgos naturales en la composición musical, *Tierra y Tecnología, Ilustre Colegio de Geólogos,* 2007, *30*, 37–43.
- López-Acevedo, M. V., Modelos cristalográficos en terracota de Jean Baptiste Romé de l'Isle (siglo XVIII), Catálogo de la colección del Departamento de Cristalografía y Mineralogía de la Universidad Complutense de Madrid. *Boletín de la Real Sociedad Española de Historia Natural (Sección de Geología)*, 2006, *tomo 101 (1-4)*, 5–29.
- Martín Escorza, C., Torrubia vs. Feijoo, el Diluvio y el inicio de la geología en España, *Tierra y Etnología.,* 2007, *31*, 91–97.
- Martín Escorza, C., Principales pautas geológicas en torno al castro de La Mesa de Miranda, Chamartín de la Sierra, Ávila, *Senderos GeoArqueológicos,* 2007, *4*, 5–12.
- Martín Escorza, C., La Edad de Hierro en La Osera, Chamartín de la Sierra, Ávila, *Senderos GeoArqueológicos,* 2007, *4*, 13–28.
- Martín Escorza, C., Geología de la muralla de Ávila, *Senderos GeoArqueológicos,* 2007, *4*, 29–35.
- Martínez Frías, J., El enigmático poliedro de Alberto Durero en "Melancolía I," *Tierra y Tecnología, Ilustre Colegio de Geólogos,* 2007, *30*, 60–64.
- Ordóñez, S., Aspectos geológicos del viaje por Iberoamérica (1799–1804) de Alexander von Humboldt, *Boletín de la Real Sociedad Geográfica*, 2006, *CXLII*, 9–38.
- Pelayo, F., Controvèrsies científiques i repercussions socials de la Paleontología Humana, *Mètode*, 2007, *53*, 29–36.
- Pelayo, F. (Coord.), Paleontología Humana: Història, Controvèrsies i Comunicació Científica, *Mètode,* 2007, *53*, 38–47.
- Pelayo, F., La evolución humana y su difusión en España en el marco de la JAE (1907–1939), *Asclepio*, 2007, *LIX, 2*, 137–162.
- Perejón, A., and Gomis, A., La Geología y sus protagonistas en España desde 1900 a 1974, Addenda. *Boletín de la Real Sociedad Española de Historia Natural (Sección de Geología)*, 2006, *tomo 101 (1-4),* 159–164.
- Puche Riart, O., Mazadiego Martínez, L.F., Kindelán Echevarría, P., Moslem Mining in the Iberian Peninsula (Part I) *CIM Bulletin*, Quebec, 2007, *Vol. 2, no. 2*, 75–77.
- Puche Riart, O., Mazadiego Martínez, L. F., Kindelán Echevarría, P., Moslem Mining in the Iberian Peninsula (Part II). *CIM Bulletin,* Quebec, 2007, *Vol. 2, no. 3*, 69–71.
- Puche Riart, O., Mazadiego Martínez, L.F., Ortiz Menéndez, J.E., Llamas Borrajo, J.F., Yeserías históricas de Morata de Tajuña (Madrid), *Materiales de Construcción*, 2007, *57, 287,* 79–85.
- Puche Riart, O., Orche, E., Valentín Vallhonrat y Gómez (1884–1965), *Llull*, 2005–2007, *28 (62)*, 545–549.
- Rabano, I., Expedientes de concesiones mineras de Guillermo Schulz (1858–1877) en el Archivo Histórico Provincial de Lugo, años 1834–1836, *Boletín Geológico y Minero*, 2007, *118 (1)*, 141–146.
- Rodriguez de la Torre, F., Bibliografía de impresos sobre terremotos en España acontecidos antes del 1 de noviembre de 1755, *Boletín de la Comisión de Historia de la Geología de España,* 2007, *29*, 7–12.
- Rodriguez de la Torre, F., Bibliografía española sobre Geología, Paleontología, Piedras, Minerales y Vulcanismo (años 1733–1808), *Boletín de la Comisión de Historia de la Geología de España,* 2007, *30*, 4–7.
- Sequeiros, L., and Pelayo, F., Las raíces de la Geología: el Canis Carchariae de Nicolás Steno, *Llull,* Zaragoza, 2007, *28 (61)*, 209–243.

- Sequeiros, L., El Homenaje a Linneo de 1907 en Zaragoza: un siglo más tarde, *Naturaleza Aragonesa,* Zaragoza, 2007, *18*, 4–13.
- Sequeiros, L., Evolución biológica y creación: el debate continúa, *Proyección,* 2007, *225*, 127–137.
- Sequeiros, L., and García Cruz, C. M., Louis Agassiz (1807–1873) y sus aportaciones a la Geología, Implicaciones didácticas. *Enseñanza de las Ciencias de la Tierra*, 2006–2007, *18*, 202–212.
- Sequeiros, L., (edit.), *Boletín de la Comisión de Historia de la Geologìa de España*, *SGE,* 2007, *no. 29*, 24 pp., *no. 30*, 24 pp. (www.aepect.org)
- Sequeiros, L., and García Cruz, C. M., Antidarwinismo y glaciares: Louis Agassiz (1807–1873) y sus aportaciones a la geología, *Razón y Fe,* Madrid, 2007, 361–368.
- Sequeiros, L., Las rocas y los fósiles contra la evolución. El conflicto ciencia y religión en los "creacionistas científicos"; Les roques i els fossils contra l'evolució. El conflicto ciencia i religió en els "creacionistes cientifics," *Mèthode,* Valencia, 2007, *54*, 69–75.
- Sequeiros, L., Barrera, J. L., and Martin Escorza, C., La aportación científica del geólogo gaditano Jose Macpherson: balance general, *IX Congreso de la Sociedad Española de Historia de las Ciencias y las Técnicas 2005,* Cádiz, 2007, Universidad de Cádiz, tomo II, 1151–1164.
- Sequeiros, L & Pelayo, F. Aportación al conocimiento de las raíces de la Geología: primera traducción española del Canis Carchariae de Nicolás Steno, *IX Congreso de la Sociedad Española de Historia de las Ciencias y las Técnicas 2005,* Universidad de Cádiz, Cádiz 2007, *II*, 1189–1199.
- Sequeiros, L., Presentación: el debate sobre el transformismo de Darwin hace 150 años y en la actualidad, *in García Álvarez (1883), Estudio sobre el transformismo (facsímil),* 2007, 1–34.
- Truyols, J., El darrer estiu empordanès de Joan Carandell i Pericay, *Revista de Girona*, 2007, *245*, 44-48.
- Virgili, C., Charles Lyell and scientific thinking in geology, *C. R. Geoscience, Elsevier.* (2007), www.sciencedirect.com, *339*, 572–584.
- Virgili, C., Geologia, Economía I també politica, *in* VVAA: *Miscelánea Ernest Lluch,* 2007, *II*, 277–283.
- Virgili, C., Lyell and the Spanish Geology, *Geological Acta,* 2007, *6, 1*, 110–126.
- Virgili, C., The Permian Triassic transition: historical review of the most important ecological crises. *Journal of Iberian Geology*, 2008, *34, 81*, 113–158.
- Zabala Redondo, D., Edición facsímil de *De Re Metallica. Tierra y Tecnología, Ilustre Colegio de Geólogos,* 2007, *30,* 94–95.

Leandro Sequeiros, Granada

United Kingdom

Sarton Medallist 2007. It is with great pleasure that we report the award of the Sarton Medal, the highest award of the History of Science Society, for 2007, to Professor Martin Rudwick at the History of Science Society's annual meeting in Washington, D.C., last November. This is the first time this premier award, given annually since 1955 in recognition of a lifetime of scholarly achievement for research in history of science, has gone to a historian of any of the "earth" sciences. In his address to the Medallist, Professor James Secord, said that "there can be no question that Martin has been the most influential historian of the Earth sciences in the past fifty years... [He] has shaped the way we see some of the most widely discussed episodes in history of science, and has consistently set standards for analytical rigour, innovation, and depth of research. His writings have been at the forefront of our field for nearly four decades, and are models of appropriate use of visual arguments and engaging prose... Through his encouragement of scholars in different countries, he has been instrumental in developing a cosmopolitan perspective among geologists and historians." (Editor's note: See the full Secord citation and Rudwick response in this newsletter's AWARDS section.)

Having achieved pre-eminence in history of science following a distinguished early career in palaeontology, he has held a series of distinguished posts in departments of history and philosophy of science in the United Kingdom, the Netherlands, Israel, France, and the United States. In 1998, he returned to England, having retired from the University of California at San Diego as professor emeritus of history, and he is currently affiliated with the Department of History and Philosophy of Science at Cambridge. He has received the History of Geology award of the Geological Society of America (1987), the Friedman Medal of the Geological Society of London (1988), and the Founder's Medal of the Society for the History of Natural History (1988). His publications include *The Meaning of Fossils* (Macdonald and American Elsevier, 1972),

The Great Devonian Controversy (University of Chicago Press, 1985), *Scenes from Deep Time* (University of Chicago Press, 1992) and *Bursting the Limits of Time* (University of Chicago Press, 2005).

The Geological Society of London Bicentenary: Walking, Talking and Dining with the Founding Fathers. On 13 November 2007, the Geological Society of London was exactly 200 years old. The bicentenary was celebrated with a three-part event, organised by the History of Geology Group (HOGG) of the Society, over the period 9–14 November 2007, under the theme of the 'Founding Fathers.'

The event began with a field trip on the Isle of Wight, led by Martin Rudwick and Hugh Torrens, assisted by John Mather and Dick Moody of the HOGG Committee. The 33 participants included both geologists and historians from Australia, France, Germany, Italy, Norway, Russia and the United States, as well as Britain. Focussing on the work of Thomas Webster, the Geological Society's first employee, and his wealthy patron Sir Henry Englefield, the trip aimed "to try as far as possible to study the topography of the island, and its rocks and fossils, through the eyes of the early nineteenth-century geologists who first learnt how to make sense of its structure and geohistory." The second part took place at the Society's present quarters, Burlington House, Piccadilly, London. Delegates gathered from many parts of the world heard an array of talks, all with a common theme: the status of geology in 1807. The presentations were given over two days by a distinguished group of international speakers. Following the first day's talks, about 150 delegates gathered for the third part of the event, a meal at the New Connaught Rooms in London which now occupies the site of the original Freemasons' Tavern, where the Society was started. This was held on the exact day, 200 years after the founding fathers (Arthur Aitken (1773–1854); William Allen (1770–1854); William Babington (1756–1833; President, 1822–24); Humphry Davy (1778–1829); James Franck (1768–1843); George Bellas Greenough (1778–1855; first President of the Society, 1807–13); James Laird (d. 1840); Richard Knight (d. 1844); Comte Jacques-Louis De Bournon (1751–1825); James Parkinson (1755–1824); William Hasledine Pepys (1775-1856; President, 1815–16); Richard Phillips (1778–1851) and William Phillips (1773–1828)) first gathered there. To mark the occasion, a specially commissioned enamelled metal plaque was erected on the wall of the New Connaught Rooms, 61–65 Great Queen Street, London, on the exact site of the old Freemasons' Tavern where the first committee meeting was held. Unveiled by the current President of the Society, Dr. Richard Fortey, the plaque reads:

GEOLOGICAL SOCIETY OF LONDON
13 NOVEMBER 1807
The first geological society in the world
was inaugurated in a building on this site
known as The Freemasons' Tavern
BICENTENARY 13 NOVEMBER 2007

Many of the 150 delegates attending the dinner opted to dress for the period, and at a pre-meal soirée, elegant dresses mingled with army and naval officers, hussars, and even a Sir Humphrey Davy look-alike.

Members of the HOGG committee for 2007 are: Alan Bowden (Chair), Dick Moody (Vice-chair), Anne O'Connor (Secretary), Beris Cox (Treasurer), Peter Tandy (Newsletter Editor), Nic Bilham, David Earle, Nina Morgan, Hugh Torrens, and Leucha Veneer.

Selected publications

Ford, Trevor D. and Rieuwerts, James H., 'Lead Miners' Soughs in Derbyshire,' *Geology Today*, 2007, *23*, 57–62.

Ford, Trevor D., 'Soughs, Soughers and Suffering,' *Petros*, 2007, *43*, 27–28.

Ford, Trevor D. and Jones, John A., 'Black Baryte from Derbyshire,' *Mercian Geologist*, 2007, *16*, 276–277.

Ford, Trevor D., '*Charnia masoni*—50th Birthday Party,' *Mercian Geologist*, 2007, *16*, 280–284.

Ford, Trevor D. and Jones, John A., 'The Geological Setting of the Lead and Baryte Mines Around Brassington and Carsington, Derbyshire,' *Mining History*, 2007, *16* (5), 1–23.

Howarth, Richard J., 'John Stuart Webb (1920–2007),' *Mineralogical Magazine*, 2007, *71*, 477–479.

Howarth, Richard J., 'Harold Jeffreys,' *in* Noretta Koertge (ed.), *New Dictionary of Scientific Biography*, Charles Scribners' Sons, Detroit, 2007, *4*, 38–42.

Howarth, Richard J., 'Gravity Surveying in Early Geophysics. I. From Time-keeping to Figure of the Earth,' 'II. From Mountains to Salt Domes,' *Earth Sciences History*, 2007, *26*, 201–228, 229–261.
Howarth, Richard J., 'John Stuart Webb—a tribute 1920–2007,' *Geochemistry: Exploration, Environment, Analysis*, 2007, *7*, 291–292.
Knell, Simon J., 'Museums, Fossils and the Cultural Revolution of Science: Mapping Change in the Politics of Knowledge in Early Nineteenth-Century Britain,' *in* Simon J. Knell, Suzanne M. Macleod, and Sheila Watson (eds.) *Museum Revolutions: How Museums Change and are Changed*, London: Routledge, 2007, 28–47.
Knell, Simon J., 'The Sustainability of Geological Mapmaking: The Case of the Geological Survey of Great Britain,' *Earth Sciences History*, 2007, *26*, 13–30.
Rudwick, Martin, Gohau, Gabriel, Schaffer, Simon and Secord, James, 'The Geohistorical Revolution,' ['Review Symposium' on Rudwick, Martin, *Bursting the Limits of Time* (Chicago, 2005), with reviews by Gohau, Schaffer and Secord, and author's response] *Metascience*, 2007, *16*, 359–395.
Taylor Michael A., *Hugh Miller. Stonemason, geologist, writer.* NMSE Publishing, Edinburgh, 2007.
Torrens, Hugh S. 'The Earliest Geological Essay from Shropshire? "Thoughts on the Formation of the Earth" by a Farmer (1802),' *Proceedings of the Shropshire Geological Society*, 2007, *12*, 53-55.
Torrens, Hugh S., 'Foreword. William James (1771–1837): A member of a truly visionary English Triumvirate,' *in* Miles Macnair, *William James (1771–1837): the man who discovered George Stephenson*, Railway and Canal Historical Society, Oxford, 2007.
Torrens, Hugh S., 'John Farey (1766–1826),' *in* Noretta Koertge (ed.), *New Dictionary of Scientific Biography*, Charles Scribners' Sons, Detroit, 2007, *2*, 5–8.
Wigley, Peter, Dolan, Peter, Sharpe, Tom and Torrens, Hugh S., '"Strata" Smith: His Two Hundred Year Legacy, Digitally Enhanced Maps and Sections by William Smith, George Bellas Greenough, John Cary and Richard Thomas 1796–1840,' DVD, The Geological Society, London, 2007.

Richard Howarth, London

United States of America

Activities of the Geological Society of America, History of Geology Division

At the GSA annual meeting, held in Denver, Colorado in late October 2007, the array of events sponsored by the History of Geology Division featured two sessions of historical papers. In the Topical Session organized by Division chair Julie Newell, 'Exemplars and Exceptions: Using Individual and Group Biography to Understand Critical Issues in the History of Geology,' thirteen papers were presented on topics spanning the period from the eighteenth century to the present. The general session consisted of ten papers, on subjects ranging from Agricola and Kircher to Eduard Suess and F. V. Hayden, and from the development of the Cyclothem concept to the etymology of 'Pangea.'

Among the papers in the general session was 'Experiments in the Field: George Becker, Carl Barus and Geological Experimentation at the Comstock Lode,' by Eric J. Brown, Ph.D. candidate in the Program in History of Science at Princeton University. This paper won the History of Geology Division Student Award for 2007, including a prize of $500.

Details for these sessions can be accessed at
http://gsa.confex.com/gsa/2007AM/finalprogram/session_19359.htm, and
http://gsa.confex.com/gsa/2007AM/finalprogram/session_20092.htm

The Division's Mary C. Rabbitt History of Geology Award was presented to Kenneth L. Taylor. The award citation by Kennard B. Bork, and Taylor's response, can be viewed at
http://www.geosociety.org/awards/07speeches/rabbitt.htm

Joint recipients of the Division's Gerald M. and Sue T. Friedman Distinguished Service Award, were Michele L. Aldrich and Alan E. Leviton, in recognition of their remarkable record of service to the Division and broadly in the interest of historical understanding of geology, over a long period.

HoG Division officers elected for 2008 are: Stephen Rowland, Chair; Yildirim Dilek, First Vice-Chair; Victor Baker, Second Vice-Chair. Christopher J. Schuberth succeeded William Brice in the office of Secretary-Treasurer and Newsletter Editor. (Special recognition was given Bill Brice at the Division's annual business meeting, for the outstanding service he has provided in that office over a decade.) Hugh Rance

continues as Web Master. The Division's quarterly Newsletter is posted regularly on the Division pages of the GSA site: http://gsahist.org/.

At the Southeastern Section meeting of GSA, held at Savannah, Georgia in late March, a historical session entitled 'Geology as Human Endeavor: 19th-Century Guys to 21st-Century Girl Scouts' was organized by Julie Newell, with nine papers. Details can be seen at

http://gsa.confex.com/gsa/2007SE/finalprogram/session_19061.htm

Petroleum History Institute

PHI held its annual symposium and field trip (with GSA's HoG Division as a co-sponsor) at Long Beach, California, in late March. The meeting was organized and hosted by Stephen and Lydia Testa. The PHI journal, *Oil-Industry History,* is edited by William R. Brice. More information about PHI and *Oil-Industry History* is accessible at

http://petroleumhistory.org/

History of Science Society

The history of geology was unusually well represented at the annual meeting of the History of Science Society, held in early November in Arlington, Virginia. In recognition of the meeting's location close to Washington, D.C., Kerry Magruder organized and moderated a session of papers devoted to 'Government and the Earth Sciences.' Authors of papers included David I. Spanagel, Peter L. Guth, Adrienne Mayor, and Ellen Bales, with commentary provided by Naomi Oreskes. Another session, organized by Lydia Barnett, was entitled 'Reading the Earth's History: Geology, Chronology, and Paleontology, 1700–1900.' Papers were presented by Lydia Barnett, Martin Rudwick, Thomas Burnett, Sandra Herbert, and David Sepkoski. Program details, including abstracts of papers, can be accessed at the Society's web site: http://www.hssonline.org/meeting/oldmeetings/archiveprogs/index.html (see program for Friday, 9:00-11:45, and Saturday, 9:00-11:45, respectively). One evening during the HSS conference, an informal gathering of historians of geology enjoyed lively discussion at the nearby home of Sandra Herbert. A piece of 2006 news that should have been included in last year's *Newsletter*: Sandra Herbert received the History of Science Society's Suzanne J. Levinson Prize for her book *Charles Darwin, Geologist* (Cornell University Press, 2005). This biennial prize recognizes an outstanding book in the field of history of the life sciences and natural history.

American Geophysical Union, History of Geophysics Committee

Chair Ron Doel reports that the Committee remains quite active, sponsoring history-based sessions at AGU meetings; promoting oral history interviews with earth scientists; and seeking to preserve archival materials for individual scientists and institutions in the earth sciences (as well as the history of the AGU itself). Special historical efforts have been made within AGU during the past two years to commemorate the 50th anniversary of the International Geophysical Year (IGY). The Committee recently secured sufficient funds to allow it to offer a new grant-in-aid for doctoral students pursuing theses that address the history of the earth sciences and geophysics, broadly defined. Further details will be announced soon. Information on historical activities within AGU can be accessed at http://history.agu.org/

Communications from Members

- *Victor R. Baker* saw his biographies of J Harlen Bretz and Ralph Alger Bagnold published in the *New Dictionary of Scientific Biography*. Two of his historical papers are forthcoming in topical volumes: 'Charles S. Peirce and the Light of Nature,' to appear in the Geological Society of America Special Paper *Scientific Revolution and Enlightenment*, edited by Gary D. Rosenberg; and 'The Spokane Flood Debates: Historical Background and Philosophical Perspective,' in the Geological Society of London Special Publication *History of Quaternary Geology and Geomorphology*. At an international conference 'Applying Peirce,' held in Helsinki, Finland, in June, Baker presented the paper 'Charles S. Peirce and Geological Reasoning.' He was elected Second Vice-Chair of the GSA's History of Geology Division. And he continues to serve as Book Review Editor for *Earth Sciences History*.

- *Kennard B. Bork* enjoyed another year, in 2007, as Secretary-General (2004–2008) of INHIGEO. He reports that it was again rewarding to serve the Commission and to be involved with preparation of the Commission's annual *Newsletter*. The valuable input of articles, reports, and notes from members around the world, and their positive reactions to *Newsletter No. 39*, were gratifying. Other duties included generating and sending the Commission's Annual Report and budget requests to the International Union of Geological Sciences (IUGS)

and the International Union for the History and Philosophy of Science/Division of History of Science and Technology (IUHPS/DHST). Thanks to the magic of e-mail, Ken sent out All-Member mailings about upcoming meetings of INHIGEO, outlines of our 2008 Election procedures, and invitations to contribute to *Newsletter No. 40* (2008, concerning activities of 2007). Corresponding with members continued to be a most pleasurable element in the Secretary-General's workload, even if he admits that colleagues could be forgiven for growing weary of his stream of notes, reminders, and exhortations. A high point of the INHIGEO–2007 year was the meeting in Eichstätt, Germany, hosted so superbly by Martina Kölbl-Ebert. In addition to co-chairing the Business Meeting, with President Taquet, Ken delivered a talk on 'Natural Theology in the eighteenth century, as exemplified in the writings of Élie Bertrand (1713–1797), a Swiss naturalist and Protestant pastor.' An expanded version of that presentation is to be included in a Special Publication of the Geological Society of London, to be edited by Martina Kölbl-Ebert and Bernhard Fritscher. Responding to a request from Dan Merriam, of the Kansas Geological Survey, Ken wrote an essay on 'Back to the Future, Through the Past: Why study the history of science.' The article is to appear (summer 2008) in a Special Edition of *The Compass* (the journal of the geological honorary society, Sigma Gamma Epsilon), along with a strong set of articles by other authors, many of them members of INHIGEO. His review of Dan Merriam's biography of *Raymond Cecil Moore: Legendary Scholar and Scientist* appeared in *Earth Sciences History*, 2007, *26*, 383–384. (See the review in this newsletter.) Continued involvement with the 'Rock Star' Committee of the Geological Society of America was enjoyable but not labor intensive. Ken reports that a personal highlight of 2007 was his service as Citationist for Kenneth L. Taylor, as our INHIGEO Vice President (North America) received the prestigious 'Mary C. Rabbitt Award' from the History of Geology Division of the Geological Society of America. The Citation and Professor Taylor's response may be found at: http://www.geosociety.org/awards/divisions.htm#history.

- *Robert H. Dott*'s article 'Two Remarkable Women Geologists of the 1920s: Emily Hahn and Katharine Fowler' (*Earth Sciences History*, 2006, *26*, 197–214) was reprinted in *Gaea*, the newsletter of the Association for Women Geoscientists (2007, *30*, 6–13). Dott also continues to write articles about the history of his department of Geology and Geophysics at the University of Wisconsin, Madison, Wisconsin, USA. With colleague Ian W. Dalziel of the University of Texas-Austin, Dott co-led a field trip titled 'In the Footsteps of Darwin—the Geology of Tierra del Fuego.' This offering was part of the bicentenary celebrations of the Geological Society of London (founded 1807). The group of 15 British geologists toured much of Tierra del Fuego and southernmost Patagonia, where both Dalziel and Dott had done research over many years. The route followed much of the route of H.M.S. *Beagle* in 1832–34, including Cape Horn, and stressed relevant observations recorded by young Charles Darwin. Some of those observations and inferences had an important impact upon geological science, especially his experience of the Talcahuano Earthquake and excursions into the high Andes Mountains and the marine terraces of the Patagonian coast, which together led him to suggest that incremental uplift of the crust over long spans of time could produce lofty mountain ranges.

- *Gregory A. Good* published several articles in 2007. Among them, his essay from the Dublin INHIGEO meeting of 2003, 'Geophysical Travelers: The Magneticians of the Carnegie Institution of Washington,' appeared in the volume edited by Patrick Wyse Jackson, *Four Centuries of Geological Travel* (pp. 395–408); and his paper from the Prague INHIGEO meeting of 2005, 'Magnetic World: The Historiography of an inherently complex science, geomagnetism, in the 20th century,' was published in *Earth Sciences History* (2007, *26*, 281–300). Good wrote several articles for the *Encyclopaedia of Geomagnetism and Paleomagnetism*, edited by David Gubbins and Emilio Herrero-Bervera (Springer, Dordrecht, Netherlands, 2007): 'Louis Agricola Bauer (1865–1932)'; 'Carnegie Research Vessel'; 'Carnegie Institution of Washington's Department of Terrestrial Magnetism'; and 'History of (geomagnetic) Instrumentation.' Good was also subject editor for geology and geophysics for the *New Dictionary of Scientific Biography* edited by Noretta Koertge and issued in eight volumes. In addition, he was the author of one of the *NDSB* articles, on S. Keith Runcorn (*6*, 298–302). His essay 'Today's Compass: What Can We Learn from Looking back at how Scientists have studied Earth's Magnetism?' is to appear in the forthcoming historical issue of *The Compass*, edited by Dan Merriam.

- *Léo F. Laporte* gave a paper (in absentia) at the Southeastern GSA meeting in Savannah, Georgia: 'Lou Henry Hoover: A woman of independent thinking.' A short version of the paper, with slides, can be accessed at http://gsa.confex.com/gsa/2007SE/finalprogram/abstract_118583.htm

- *Kerry V. Magruder* attended the INHIGEO Symposium in Eichstätt, and presented a paper on 'Biblical idiom and global depictions in Theories of the Earth,' which will appear in the proceedings volume. He has a paper forthcoming on 'Understanding a Contested Print Tradition: Bourguet's Mosaic, Platonic and Aristotelian Theories of the Earth' (in the *Compass* special issue edited by Dan Merriam); and a chapter on 'Thomas Burnet, Biblical Idiom and 17th-century Theories of the Earth' (in *Interpreting Nature and Scripture: History of a Dialogue*, a two-volume work edited by Jitse van der Meer, to be published by the Cambridge University Press). Magruder organized and moderated a session on 'Government and the Earth Sciences' for the annual meeting of the History of Science Society in November. He reports that the online image galleries he oversees at the University of Oklahoma's History of Science Collections reached 14,000 images by the end of 2007. (See the notice under 'Notes and Queries' in this *Newsletter*.)
- *Ursula B. Marvin* agreed to a request by the council of the Meteoritical Society that her article on E. F. F. Chladni and the origins of modern meteoritics, originally published in *Meteoritics and Planetary Science* (*MAPS*) in 1996, would be reprinted and presented to new members of the Society. Having spent ten additional years of research on this general subject, she incorporated a few corrections and numerous additions that expanded the text by 25 pages. The Society published the new manuscript as a booklet for distribution to all members and subscribers as a Supplement to the September, 2007, issue of *MAPS* (*42*, B1–B68). An autographed copy of the booklet was included in a time capsule emplaced on December 14, 2007, at Weston, Connecticut, in commemoration of the meteorite fall at Weston on December 14, 1807. This was the first recorded meteorite fall in the Americas and it received widespread publicity. An apocryphal story related that President Thomas Jefferson said it would be easier to believe that Yankee professors would lie than that stones would fall from heaven. (Jefferson had received a report of the fall at L'Aigle in France four years earlier.) The time capsule is scheduled to be opened on December 14, 2107. Marvin wonders what readers will make of her formalized English after three generations have become accustomed to electronic discourse. Marvin's 'Théodore Andre Monod and the lost *Fer de Dieu* meteorite of Chinguetti, Mauritania' was published in the volume from the 2003 INHIGEO Symposium in Dublin, *Four centuries of Geological Travel*, edited by Patrick Wyse Jackson (pp. 191–205). She also published articles on E.F.F. Chladni and L.A. Kulik in *Biographical Encyclopedia of Astronomers* (New York, Springer, 2007), pp. 229–231, and 661–662, respectively. Her review of Sandra Herbert's *Charles Darwin, Geologist* appeared in *Victorian Studies*, 2007, *49*, 712–714.
- *Clifford M. Nelson* continued to prepare the fourth volume (1939–1979) of the history of the U.S. Geological Survey. Cliff's 'postscripts' about Clarence King (*4*, 120–123) and John Powell (*6*, 149–152) appeared in the 8-volume *New Dictionary of Scientific Biography*, edited by Noretta Koertge, that Scribner's published in paper and on-line versions on December 7. *Endeavour* and *The Western Historical Quarterly* each printed a book review by Cliff. He also completed 'The Sixteenth International Geological Congress, Washington, 1933' for publication in *Episodes*.
- *Sarah (Sally) Newcomb* participated in the INHIGEO symposium at Eichstätt, where she presented a paper on 'Radiometric Dating and its Debunkers.' She reports that she and Bob thoroughly enjoyed everything about the meeting, and commends Martina Kölbl-Ebert for a superbly-organized event (sentiments in which she is certainly joined by all the others who took part). At the Geological Society of America annual meeting, Sally spoke about 'Richard Kirwan, Geological Gadfly,' as a first exploration of what she hopes will be a much larger investigation of that seminal figure. Having reviewed Martin Rudwick's monumental *Bursting the Limits of Time* for the *Journal of Interdisciplinary History*, Sally reviewed Helmut Flügel's *Der Abgrund der Zeit: Die Entwicklung der Geohistorik 1670–1830* for *Isis*. The product of a long and distinguished career by this Austrian paleontologist, and in no way a repeat of Rudwick, this book proves again how useful individual contributions are to our discipline.
- *Julie R. Newell* served as Chair of the Geological Society of America's History of Geology Division. In that capacity she organized and co-chaired the Division's sessions at the 2007 annual meeting in Denver, where she presented a paper on 'Michael Tuomey as Exemplar and Exception: Career patterns among antebellum American geologists.' She also presented 'Undoing Thomas Cooper: Robert Wilson Gibbes' 1849 campaign to rehabilitate the science of geology in South Carolina' at the meeting of the Southeastern Section of GSA, in Savannah, Georgia, in March; and 'A story of things-yet-to-be: the status of geology in the United States in 1807' at the Geological Society of London's bicentennial celebration in November. Newell serves as Chair of

the History of Science Society's Committee on Education, which is compiling the third edition of the Society's syllabus sampler, this version to be entirely on-line. She continues as an Associate Editor of *Earth Sciences History*.

- *Cecil J. Schneer* reports that the Earth Sciences Department at the University of New Hampshire has printed up copies of an elegant poster—36 x 25.5 inches [about 91.4 x 64.8 cm]—of his reproduction of the William Smith map. Copies can be ordered, for $20 (US) including shipping cost ($5 additional for each additional copy in the same mailing tube), from the Department Secretary, Sue Clark (e-mail sue.clark@unh.edu), Department of Earth Sciences, James Hall, 56 College Road, University of New Hampshire, Durham, NH 03824, USA.

- *Kenneth L. Taylor* attended the INHIGEO symposium at Eichstätt, where he presented a paper on 'Reflections on providentialism and naturalism in late 18th-century geology.' His paper from the Dublin INHIGEO meeting in 2003 was published in the *Four Centuries of Geological Travel* volume edited by Patrick Wyse Jackson: 'Geological Travellers in Auvergne, 1751–1800.' At the annual meeting of GSA he was delighted to receive the Mary C. Rabbitt History of Geology Award. He presented a paper to kick off the GSA History of Geology thematic session centered on biography: 'Exemplars and exceptions: Using individual and group biography to understand critical issues in the history of geology.' His paper concerned 'Exploring early geology's development through biography: The case of France in the late 18th century.'

- *Davis A. Young*'s paper was presented (in absentia) at the Eichstätt INHIGEO meeting: 'The Reception of Geology in the Dutch Reformed Tradition: The Case of Herman Bavinck (1854–1921).' His review 'Earth Cycles: A Historical Perspective' was published in *Episodes* (2007, *30*, 310–312); and Young's new book *John Calvin and the Natural World* was published by University Press of America, Lanham, Maryland, 2007.

Kenneth L. Taylor, Norman, Oklahoma

Uzbekistan

In Uzbekistan the year 2007 was most fruitful in the field of researches on the history of geological science. In September, a scientific conference focused on "Current Problems of Geology and Geophysics," was devoted to the 70th-year anniversary of the Institute of Geology and Geophysics, named after H. M. Abdullaev. It was also the 95th birthday of academician Abdullaev. Five major publications were produced to honor this event. L. N. Lordkipanidze's monograph on *Seventy years as the flagship of academic geological science* reported on contributions of institute scientists to world science, theory, and philosophy of geology. The development of Uzbekistan's national economy and professional training were also considered. Brief scientific biographies, with photos of 270 scientists and listings of their main publications were included. Also featured were sixty photographs reflecting the basic history and the international relations of the Institute. The book obtained high evaluation from the Department of History of Geology of the Vernadsky Museum of the Russian Academy of Science, and from the Institute of Physics of the Earth, of the Russian Academy of Science. The booklet about the Institute of Geology and Geophysics was compiled by L. N. Lordkipanidze and was published in three languages (Uzbek, Russian, English). It included historical elements concerning eleven laboratories and museums. The journal *Geology and Mineral Resources* (Number 4) reflects the history and achievements of each scientific institution, with a listing of published and hand-written works. Conference materials have been produced in two volumes, reflecting the work of 182 participating experts from sixty-two organizations within Uzbekistan, as well as eleven other countries.

Also in 2007 we celebrated the 50th anniversary of the Institute of Mineral Resources of the State Committee of Geology and Mineral Resources of Uzbekistan (see the article, by B. A. Isahodjaev, in the journal *Geology and Mineral Resources*, Number 5, 148 pages). This anniversary coincided with the 80th anniversary of the Geological Survey of the Republic of Uzbekistan. In honor of that occasion a conference was held devoted to "Modern problems of geology and development of the mineral raw-material base of the Republic Uzbekistan." Works presented included 117 abstracts of reports produced by 275 authors. Many of the articles contain historical elements. For example, there is a discussion of the analysis of available forecasting methods relating to gold and other metals, their genesis, and evolution of views on tectonics and geodynamics.

October 2007 was the 50th anniversary of the hydro-geological service of Uzbekistan. Historical stages of its development are published in Number 6 of *Geology and Mineral Resources*, which contains

thirty-four articles reflecting the history of development of hydro-geological and engineering-geological research. Historical data relating to a century of monitoring fresh groundwater are given and stages of the development of engineering and hydro-geological geophysics are discussed.

Materials on birthdays of outstanding geologists are published in *Geology and Mineral Resources*. For example, the journal includes mention of: the 100th-year anniversary of academician V. I. Popov, the founder of the lithological school in Central Asia (Number 2); the 90th anniversary of H. T. Tulyaganov, head of the geological survey of Uzbekistan (1957 to 1985) and an expert in hydrogeology and Quaternary geology (Number 5); the 80th anniversary of K. A. Nabiev, a specialist on lithology and regional geology (Number 2); the 75th anniversary A. K. Glukh, who worked on cosmo-geology (Number 6); and the 70th birthday of V. V. Mihailov, who contributed to petrology and regional geology (Number 1).

Lora N. Lordkipanidze, Tashkent

Venezuela

During 2007, the members of the Venezuelan Society for the History of Geosciences developed activities in our discipline, but also in the related fields of risk prevention and in the multidisciplinary study of disasters by natural phenomena.

The main event of the year was the "Sixth Venezuelan Symposium of History of Geosciences," coordinated by Rogelio Altez, Franco Urbani, and José Antonio Rodríguez. It took place as part of the Ninth Venezuelan Geological Congress, Caracas, 21–25 October. The congress was carried out in commemoration of the 70th anniversary of the creation of the Institute of Geology, which today is the School of Geology, Mining and Geophysics of the Central University of Venezuela. The Institute started in 1937. That same year the first Venezuelan serial publication in geology started and the First Venezuelan Geological Congress took place. The President of the Ninth Congress was INHIGEO member, Dr. Franco Urbani.

In the aforementioned Symposium the sessions were very successful, providing opportunity for academic, scientific, and ethical discussions on the history of geosciences in general. There were wide discussions from well-recognized professors such as André Singer, and a superb conference by Aníbal R. Martínez (also an INHIGEO member). A very positive point is that there was wide attendance and enthusiasm from young professionals.

In the areas of risk reduction and the multidisciplinary—including historical—study of disasters, a workshop titled "Research and teaching in Management of Risk mitigation: Advances and New Challenges" took place in the city of Mérida, with the participation of specialists from Colombia, Mexico, United States, Canada, England, Costa Rica, and Switzerland. Many discussions centered in the need to include the variable risk in programs of university level and graduate studies. Positions were also exposed about the formation of trans-disciplinary research in the study of the disasters. Developing a strong historical background was also stressed.

Members of the Venezuelan Society for the History of Geosciences (Rogelio Altez, President, and Franco Urbani, Vice-President) were invited to act as invited editors of two issues of the serial *Aula y Ambiente* of the Liberator Pedagogic Experimental University, Caracas, as special issues to include papers related to the history of geosciences.

Papers Published (they all were presented orally in the Sixth Venezuelan Symposium of History of Geosciences and published in a special issue of the *Boletín de Historia de las Geociencias en Venezuela, Number 98, October 2008*):

Altez, Rogelio & Franco Urbani, 'Editorial: Sobre el VI Simposio Venezolano de Historia de las Geociencias,' p. 5–10.

Altez, Rogelio, 'Alemanes entre temblores: la herencia venezolana en la sismología venezolana,' p. 11–18.

Altez, Rogelio, José Antonio Rodríguez, Alejandra Leal, Gabriel Hernández, Gerardo Córcega & Rosario Soto, 'El Catálogo Sismológico Venezolano del Siglo XX, Documentado e Ilustrado: un paso más hacia el conocimiento certero de la sismicidad venezolana,' p. 19–28.

Duarte Vivas, Andrés & Héctor Pérez Marchelli, 'Examen de la obra de Ralph Arnold, The First Big Oil Hunt Venezuela 1911–1916,' p. 29–31.

Foghin-Pillin, Sergio, 'Los aportes de Antonio Goldbrunner al desarrollo de la meteorología en Venezuela,' p. 33–40.

Goddard, Donald, 'Historia de la mina de mercurio de San Jacinto: Serranía de Baragua, estado Lara, Venezuela,' p. 41–52.

Laffaille, Jaime, Stephanie Klarica, Miguel Alvarado, Omar Guerrero & Marcial Laffaille, 'La reevaluación de los terremotos históricos de Venezuela como una propuesta multidisciplinaria,' p. 53–59.

Leal, Alejandra & Gabriel Hernández, 'Aproximación al pensamiento sismológico cotidiano construido desde el discurso hemerográfico en Venezuela durante el siglo XX,' p. 61–70.

Rodríguez, José Antonio, 'Virgil Winkler (1917–2007): extractos de geología petrolera y anécdotas de una entrevista,' p. 71–77.

Rodríguez, José Antonio & Florantonia Singer, 'André Singer: geología y geomorfología de fallas activas, aludes torrenciales y riesgos urbanos, las ciencias geológicas como excusa biográfica,' p. 79–85.

Urbani, Franco, Santiago Aguerrevere Ruiz, Eduardo Alarcón & Amalys Rodríguez, 'Santiago E. Aguerrevere (1899–1984) y la comisión exploradora de la Gran Sabana, 1939,' p. 87–94.

Urbani, Franco, 'La 'Colección Creole' del 'Centro de Micropaleontología Dr. Pedro J. Bermúdez' de PDVSA-INTEVEP, Venezuela: su historia y sus aplicaciones,' p. 95–105.

In celebration of the *40th Anniversary of the Venezuelan Speleological Society*, a special issue of their *Bulletin* (no. 40, 2007) was published, it contains three papers related to the history of geospeleology, listed below. The issue also includes the index of all issues: 1 (1867) to 40 (2007).

Herrera, Francisco, Franco Urbani, Joaquim Astort, Rafael Carreño, Ángel Viloria, Carlos Galán, Franz Scaramelli, Kay Tarble & Ascanio Rincón, 'Sociedad Venezolana de Espeleología 2007: Profile of structure, history, activities, and exploration,' p. 4–11.

Urbani, Franco, Carlos Galán & Francisco Herrera, '55 años de exploraciones espeleológicas en Venezuela,' p. 17–33.

Scaramelli, Franz & Bernardo Urbani, 'Historia antropoespeleológica de la Sociedad Venezolana de Espeleología: Un recorrido de 40 años,' p. 34–39.

Rogelio Altez (Estado Vargas) and Franco Urbani (Caracas)

HONORARY SENIOR MEMBERS
April 2008

Addresses are provided in the 'INHIGEO Members' listing, along with an asterisk (*) before the last name and the designation 'HonSrMbr.'

Professor Albert Carozzi, USA
Professor Gordon Craig, United Kingdom
Dr. Stanislaw S. Czarniecki, Poland
Professor Robert H. Dott, Jr., USA
Professor Endre Dudich, Hungary
Professor Michel Durand-Delga, France
Professor Wolf von Engelhardt, Germany
Professor Gordon Herries Davies, Ireland
Professor Wolfhart Langer, Germany
Professor Eugenij Milanovsky, Russia
Alan Mason, New Zealand
Professor Alexander Ospovat, USA
Professor Cecil Schneer, USA
Professor Kanemori Suwa, Japan
Professor Emile den Tex, The Netherlands
Professor Rudolf Trümpy, Switzerland
Professor Hong-Zhen Wang, China
Professor Dan Yaalon, Israel
Professor Kenzo Yagi, Japan

INHIGEO MEMBERS

(Upper country listed is current domicile; lower country is the Member's national delegation.)

Dr Daniel G. Rubiolo
Secretaria de Mineria de la Nacion
Avenida Julio à Roca #651, 10 Piso
Buenos Aires
ARGENTINA
ARGENTINA
Fax: 54 1 349 3160
Tel: 54 1 349 3166
Email: darubiolo@yahoo.com

Ms Carol Bacon
Mineral Resources Tasmania
PO Box 56
Rosny Park
Tasmania 7018
AUSTRALIA
AUSTRALIA
Fax: 61 3 6233 8338
Tel: 61 3 6233 8326
Email: cbacon@mrt.tas.gov.au

Dr David Branagan
9 Chiltern Road
Willoughby
New South Wales 2068
AUSTRALIA
AUSTRALIA
Fax: 61 2 9692 0184
Tel: 61 2 9958 7127
Email: dbranaga@mail.usyd.edu.au

Dr Barry Cooper
20 Royal Avenue
Burnside
South Australia 5066
AUSTRALIA
AUSTRALIA
Fax: 61 8 8226 0323
Tel: 61 2 8332 1846
Email: cooper.barry@saugov.sa.gov.au

Dr Thomas A. Darragh
Division of Natural History
Museum of Victoria
P.O. Box 666E
Melbourne, Victoria 3001
AUSTRALIA
AUSTRALIA
Fax: 61 3 9270 5043
Tel: 61 3 9270 5040
Email: tdarragh@museum.vic.gov.au

Professor Bernard Joyce
School of Earth Sciences
University of Melbourne
Melbourne VIC 3010
AUSTRALIA
AUSTRALIA
Tel: 61 03 9347 2958
Email: ebj@unimelb.edu.au

Professor Homer Le Grand
Faculty of Arts
Monash University
Caulfield East
Victoria 3145
AUSTRALIA
AUSTRALIA
Fax: 61 3 9903 4686
Tel: 61 3 9903 4632
Email: homer.legrand@arts.monash.edu.au

Professor Wolf Mayer
Department of Earth and Marine Sciences
Australian National University (Canberra)
AUSTRALIA
AUSTRALIA
Fax: 61 0 2 6125 5544
Tel: 61 0 2 6258 2949 (Home)
Email: wolf.mayer@bigpond.com.au

Dr Doug McCann
Department of Earth Sciences, Deakin University
Melbourne Campus, 221 Burwood Highway
Burwood VIC 3125
AUSTRALIA
AUSTRALIA
Tel: 61 3 9251 7191
Email: douglas@deakin.edu.au

Mr Greg McNally
29A Grosvenor Street
Wahroonga, NSW 2076
AUSTRALIA
AUSTRALIA
Fax: 61 2 9928 2272
Tel: 61 2 9928 2192
Email: gmcnally@skm.com.au

Professor David R. Oldroyd
28 Cassandra Avenue
St Ives
Sydney NSW 2075
AUSTRALIA
AUSTRALIA
Fax: 61 2 9402 7635
Tel: 61 2 9449 5559
Email: doldroyd@optushome.com.au

Dr Susan Turner
Queensland Museum
69 Kilkivan Avenue
Kenmore
Queensland 4069
AUSTRALIA
AUSTRALIA
Fax: 61 7 3406 8355
Tel: 61 7 3406 8348
Email: sue.turner@qm.qld.gov.au

Professor Charles Rowland (Rowl) Twidale
School of Earth and Environmental Sciences
University of Adelaide
Adelaide, South Australia 5005
AUSTRALIA
AUSTRALIA
Fax: 618 8303 4347
Tel: 618 8303 5392
Email: rowl.twidale@adelaide.edu.au

Dr Tillfried Cernajsek
Geologische Bundesanstalt F.A. Bibliothek und Verlag
Geodatenzentrale u. Wiss. Archiv
Postfach 127 Rasumofskygasse 23
A-1031, Wien
AUSTRIA
AUSTRIA
Fax: 43 1 7125 6747490
Tel: 43 1 7125 67465
Email: tcernajsek@cc.geolba.ac.at

Dr Bernhard Hubmann
Institut für Geologie und Paläontologie
Karl-Franzens-Universität Graz
A-8010 Graz,
HeinrichstraBe 26
AUSTRIA
AUSTRIA
Fax: 43 316 380 9871
Tel: 43 316 380 5586
Email: bernhard.hubmann@uni-graz.at

Dr Lieselotte Jontes
Universitätsbibliothek der Montanuniversität Leoben
University Leoben
Franz-Josefstrasse 18,
A-8700 Leoben
AUSTRIA
AUSTRIA
Fax: 43 3842 46380
Tel: 43 3842 402 7800
Email: jontes@unileoben.ac.at

Professor Marianne Klemun
Department of History
University of Vienna
1010 Wien, Dr. Karl Lueger-Ring 1
AUSTRIA
AUSTRIA
Fax: 43 1 4277 9408
Tel: 43 1 4277 40832
Email: marianne.klemun@univie.ac.at

Dr Albert Schedl
Geologische Bundestanstalt
Rasumofskygasse 23
Postfach 127
A-1031 Wien
AUSTRIA
AUSTRIA
Fax: 43 1 7125 67456
Tel: 43 1 7125 67428
Email: aschedl@cc.geolba.ac.at

Dr Claudia Schweizer
Am Modenapark 13/11
A-1030, Vienna
AUSTRIA
AUSTRIA
0043 1 7133 3883
Email: c.schweizer@gmx.at

Dr Johannes Seidl
Archives of the University of Vienna
Postgasse 9
A-1010 Wien
AUSTRIA
AUSTRIA
Fax: 0043 1 4277 9172
Tel: 0043 1 4277 172/17
Email: johannes.seidl@univie.ac.at

Dr Yadviga Anoshko
Institute of Geochemistry & Geophysics
National Academy of Sciences, Belarus
Kuprevich str. 7
220141, Minsk
BELARUS
BELARUS
Fax: 375 017 263 6398
Tel: 375 017 263 8758
Email: igig@igig.org.by

Professor Valeri A. Ermolenko
Geographical Department
Belarussian State University
4 Nezavisimosti Avenue
220050 Minsk
BELARUS
BELARUS
Fax: 375 17 226 5940
Tel: 375 17 260 5312
Email: irkim@tut.by

Professor Eric Groessens
Rue Louis Marcelis 98
B-1970 Wezembeek-Oppem
BELGIUM
BELGIUM
Fax: 02/64.77.359
Tel: 02/78.87.614
Email: eric.groessens@sciencesnaturelles.be

Dr Hiroshi HIRAI
Impasse Nihard 5
4000 Liege
BELGIUM
JAPAN
Fax: 32 4 222 0123
Tel: 32 4 222 0123
Email: jzt07164@nifty.ne.jp

Dr-Ing. Carlos Serrano
Casilla 115
Calle Millares 21
Potosí
BOLIVIA
BOLIVIA
Tel: 591 62 22498
Email: carlos_sarah12@yahoo.es

Associate Professor José Carlos Barreto de Santana
Department of Exact Sciences
State University of Feira de Santana
Bahia State
BRAZIL
BRAZIL
Fax: 55 75 224 8085
Tel: 55 75 622 0307
Email: zecarlos@uefs.br

Associate Professor Silvia F. de M. Figueirôa
Instituto de Geociências
Universidade de Campinas C.P. 6152
13083-970 Campinas
São Paulo
BRAZIL
BRAZIL
Fax: 55 19 289 1582
Tel: 55 19 3521-4553
Email: figueiroa@ige.unicamp.br

Dr Pedro Wagner Gonçalves
Dept. of Geosciencias Applied to Education
Institute of Geosciences
State University of Campinas
P.O. Box 6152 13081-970 Campinas Sao
Paulo
BRAZIL
BRAZIL
Fax: 55 19 3289 1562
Tel: 55 19 3788 7352
Email: pedrog@ige.unicamp.br

Associate Professor Maria Margaret Lopes
Instituto de Geosciências
UNICAMP
Caixa Postal 6152 13081-970 Campinas
São Paulo
BRAZIL
BRAZIL
Fax: 55 19 3289 1562
Tel: 55 19 3289 1097
Email: mmlopes@ige.unicamp.br

Dr Luis Alberto Buatois
Department of Geological Sciences
University of Saskatchewan
114 Science Place
Saskatoon SK S7N 5E2
CANADA
ARGENTINA
Tel: 54 381 425 3053
Email: luis.buatois@usask.ca

Dr Ernst Hamm
Science & Technology Studies Program,
School of Analytic Studies
TEL Bldg Room 2005, York University
Toronto,
Ontario M3J 1P3
CANADA
CANADA
Fax: 416 736 5188
Tel: 416 736 2100 ext 20223
Email: ehamm@yorku.ca

Dr Maria Gabriela Mangano
Department of Geological Sciences
University of Saskatchewan
114 Science Place
Saskatoon SK S7N 5E2
CANADA
ARGENTINA
Email: gabriela.mangano@usask.ca

Dr Gerard Middleton
90 St. Margaret's Road
Ancaster
Ontario L9G 2K9
CANADA
CANADA
Tel: 905 525 9140
Email: middleto@mcmaster.ca

Professor S. George Pemberton
Department of Earth & Atmospheric Sciences
University of Alberta
Edmonton T6G 2E3 Alberta
CANADA
CANADA
Tel: 780 492 2044
Email: George.Pemberton@ualberta.ca

Mr. David Spalding
1105 Ogden Road
RR No. 1 Pender Island
British Columbia V0N 2M1
CANADA
CANADA
Fax: 1 250 629 2047
Tel: 1 250 629 2047
Email: david@davidspalding.com

Dr Jian-Zhao YIN
17-7511 No. 4 Road
Richmond, BC V6Y 4K4
CANADA
CHINA
Tel: 1 604 244-1630
Email: jimyin7@yahoo.ca

Dr Chuanmao JI
Senior Consulting Centre
Ministry of Land & Resources
64 Funei Street,
Beijing, 100812
CHINA
CHINA
Tel: 010 6831 5161
Email: jcmwzx2005@yahoo.com.cn

Professor Hongzhen *WANG, HonSrMbr
China University of Geosciences
Xueyuan Road 29
Beijing 100083
CHINA
CHINA
Fax: 86 10 6231 0897
Tel: 86 10 6231 3652
Email: wwhongzhen@163.com

Professor Jing-yi YANG
Flat 304, Building 309
Yan Bei Yuan, Peking University
Xi Yuan, Haidian District
Beijing 10091
CHINA
CHINA
Tel: 86 10 6288 3390
Email: j_l_yang@163.com

Professor Guangrong YANG
Research Section on History of Geology
China University of Geosciences (Beijing)
29 Xueyuan Road
Beijing 100083
CHINA
CHINA
Tel: 86 10 8232 6368

Professor Zhendong YOU
School of Earth Sciences & Mineral Resources
China University of Geosciences
Bldg. 28-162, Chengfu Road 20
Haidian district, Beijing 100083
CHINA
CHINA
Fax: 86 010 82326368
Tel: 86 010 82322553
Email: zhendongyou@tom.com

Professor Yusheng ZHAI
China University of Geosciences (Beijing)
29 Xueyuan Road
Beijing 100083
CHINA
CHINA
Fax: 86 10 9232 2005
Tel: 86 10 8232 2650
Email: yszhai@cugb.edu.cn

Associate Professor Jiuchen ZHANG
Institute for the History of Natural Science
Academia Sinica
137 Chao Nei Avenue
Beijing 100010
CHINA
CHINA
Fax: 86 10 8402 7627
Tel: 86 10 8402 7627
Email: zhangjiuchen9@sina.com

Professor Armando Espinosa-Baquero
Universidad del Quindio
Faculted de Ingenieria
Armenia
COLOMBIA
COLOMBIA
Fax: 6746 2563
Tel: 6745 2708
Email: armandoespinosa@uniquindio.edu.co

Sr Guillermo E. Alvarado
Oficina de Sismologia y Vulcanologia
Instituto Costarricense de Electricidad
P.O. Box 10032-1000
San José
COSTA RICA
COSTA RICA
Fax: 506 220 8212
Tel: 506 220 6394
Email: galvaradoi@ice-go.cr

Sr Gerardo J. Soto
Apartado 360-2350
San Francisco de Dos Ríos
San José
COSTA RICA
COSTA RICA
Tel: 506-219-4051
Email: katomirodriguez@yahoo.com

Dr Alena Cejchanova
Czech Geological Survey
Klarov 3
118 21 Prague
CZECH REPUBLIC
CZECH REPUBLIC
Fax: 257 531 376
Tel: 257 089 431
Email: cejcha@cgu.cz

Dr Josef Haubelt
Svojsovickà 10/2834
Sporilov II
CZ-14100 Praha 4
CZECH REPUBLIC
CZECH REPUBLIC
Tel: 420 2 7276 2531
Email: haubelt@pohoda.com

Dr Jan Kozák
Geophysical Institute
Czech Academy of Science
Bocni 11/1401
14131 Prague 4
CZECH REPUBLIC
CZECH REPUBLIC
Fax: 420 2 7276 1549
Tel: 420 2 6710 3018
Email: kozak@ig.cas.cz

Professor Rudolf Musil
Department of Geology and Palaeontology
Masaryk-University
Kotlarska Street 2
611 37 Brno
CZECH REPUBLIC
CZECH REPUBLIC
Fax: 420 5 4121 1214
Tel: 420 5 4112 9255
Email: rudolf@sci.muni.cz

Professor Antonin Prichystal
Department of Geology and Palaeontology
Masaryk University
Kotlarska 2
CZ-611 37 Brno
CZECH REPUBLIC
CZECH REPUBLIC
Fax: 420 5 4121 1214
Tel: 420 5 4112 9247
Email: prichy@sci.muni.cz

Dr Milos Zárybnicky
Za Chalupami 144
150 00 Prague 5
CZECH REPUBLIC
CZECH REPUBLIC
Fax: 420 2 5791 0031
Tel: 420 2 5791 1514
Email: hornik@centrum.cz

Professor Jens Morten Hansen
Geological Survey of Denmark
Oster Voldgade 10
DK-1350
Copenhagen
DENMARK
DENMARK
Fax: 45 3544 6201
Tel: 45 3544 6340
Email: jmh@geus.dk

Professor Dimitri Kaljo
Institute of Geology
Tallinn University of Technology
7 Estonia Blvd.
10143 Tallinn
ESTONIA
ESTONIA
Fax: 372 631 2074
Tel: 372 645 4653
Email: kaljo@gi.ee

Mr Tonu Pani
Institute of Geology
University of Tartu
Vanemuise 46
Tartu 51014
ESTONIA
ESTONIA
Tel: 372 7 375 839
Email: tpani@ut.ee

Professor Michel *Durand-Delga, HonSrMbr
8 Rue Charles-Lefebvre
F77210 Avon
FRANCE
FRANCE
Fax: 33 1 6422 5559
Tel: 33 1 6422 5559

Dr Jean Gaudant
Sciences de la Terre
Université Paris 7
2 Place Jussieu
Paris, Cedex 05
FRANCE
FRANCE
Fax: 33 1 4427 8148
Tel: 33 1 4424 1133
Email: Jean.gaudant@orange.fr

Dr Gaston Godard
UFR de Sciences de Terre
Université de Paris 7
2 Place Jussieu
75251 Paris Cedex 05
FRANCE
FRANCE
Tel: 33 1 4427 5191
Email: gg@ccr.jussieu.fr

Dr Gabriel Gohau
2 av. Bernard Palissy
92 210 Saint Cloud
FRANCE
FRANCE
Fax: 33 1 4046 0295
Tel: 33 1 4602 0097
Email: ga.gohau@wanadoo.fr

M. Philippe Grandchamp
5 rue du Coteau
92370
Chaville
FRANCE
FRANCE
Tel:33 1 4709 6465
Email: phgrandchamp@aol.com

Professor Goulven Laurent
5 rue Jean-Paul Sartre
29200 Brest
FRANCE
FRANCE
Fax: 33 2 9805 4367
Tel: 33 2 9805 4367
Email: goulvenn@wanadoo.fr

Dr Pascal Richet
Physique des Mineraux et des Magmas
Institut de Physique du Globe de Paris
4, place Jussieu
75252 Paris cedex 05
FRANCE
FRANCE
Tel: 33 1 44 27 38 10
Email: richet@ipgp.jussieu.fr

Professor Philippe Taquet
Laboratoire de Paleontologie
8 rue Buffon
Paris
75005
FRANCE
FRANCE
Fax: 33 1 4079 3580
Tel: 33 1 4079 3039
Email: taquet@cimrs1.mnhn.fr

Professor Dr Jacques Touret
Musée de Mineralogie
Ecole des Mines
75006
Paris
FRANCE
NETHERLANDS
Fax: 31 20 646 2457
Tel: 31 20 444 7270
Email: jtouret@ensmp.fr

Dr Lydie Touret
Musée de Mineralogie
E.N.S.M.P.
60 bvd St Michel
75006 Paris
FRANCE
FRANCE
Fax: 33 1 4634 2596
Tel: 33 1 4051 9143
Email: touret@musee.ensmp.fr

Professor Rudolf Daber
Humboldt-Universität
Naturkundemuseum
Invalidenstrasse 43
10115 Berlin
GERMANY
GERMANY
Fax:49 30 2093 8561
Tel: 49 30 2093 8576
Email: DrRudolfDaber@web.de

Professor Wolf *von Engelhardt, HonSrMbr
Institut für Mineralogie, Petrologie und
Geochemie
Universität Tübingen
Wilhelmstrasse 56
D-72074
GERMANY
GERMANY

Dr Bernhard Fritscher
Sentilostrasse 2a
D-81477 München
GERMANY
GERMANY
Fax: 49 89 2180 3162
Tel: 49 89 723 4081
Email: b.fritscher@lrz.uni-muenchen.de

Professor Rodney Grapes
Department of Earth and Environmental
Sciences
Korea University
Anam-dong, Seongbuk-gu
Seol 136-713
KOREA
NEW ZEALAND
Fax: 49 761 203 6394/6407
Tel: 49 761 203 6394/6407
Email: grapes@korea.ac.kr

Professor Martin Guntau
Am Fasanenholz 14
D-18147
Rostock
GERMANY
GERMANY
Fax: 49 381 493 4604
Tel: 49 381 201 8810
Email: martin.guntau@web.de

Dr Gottfried Hofbauer
Geowissensschaftliche Dokumentation
Anzengruberweg 2
D 91056
Erlangen
GERMANY
GERMANY
Fax: 49 135 729 917
Tel: 49 9135 729 415
Email: geoldoku@gdgh.de

Dr Martina Koelbl-Ebert
Jura-Museum
Burgstrasse 19
D-85072 Eichstätt
GERMANY
GERMANY
Tel: 49 (0) 8421 89609 and **Fax:** 49 (0) 8421
2956
Email: koelbl-ebert@jura-museum.de

Dr Peter Krueger
Bahnhofstrasse 27
D-13127
Berlin
GERMANY
GERMANY
Email: kruegergeo@aol.com

Professor Wolfhart *Langer, HonSrMbr
Institut für Paläntologie, Rhein
Friedrich-Wilhelm-Univesität, Nussallee 8
D-53115
Bonn
GERMANY
GERMANY
Email: palaeo.longus@gmx.de

Dr Cornelia Lüdecke
Valleystrasse 40
D-81371 München
GERMANY
GERMANY
Fax: 49 89 725 6725
Tel: 49 89 725 6725
Email: c.luedecke@lrz.uni-muenchen.de

Professor Dr N.A. Rupke
Institut fuer Wissenschaftsgeschichte
Goettingen University
Papendiek 16
D-37073 Goettingen
GERMANY
NETHERLANDS
Fax: 49 551 39 9748
Tel: 49 551 39 9467
Email: nrupke@gwdg.de

Dr Wilfried Schröder
Geophysical Institute
Hechelstrasse 8
D-28777
Bremen-Roennebeck
GERMANY
GERMANY
None

Professor Klaus Thalheim
Staatliche Naturhistorische Sammlungen
Dresden
Museum fuer Mineralogie und Geologie
Koenigsbruecker Landstrasse 159
D-01109 Dresden
GERMANY
GERMANY
Fax: 49 0 351 8926 404
Tel: 49 0 351 8926 410
Email:
klaus.thalheim@snsd.smwk.sachsen.de

Dr Irma Dobos
Margit krt 44
H-1027
Budapest
HUNGARY
HUNGARY
Tel: 36 1 202 2741
Email: hidrolog@mail.inext.hu

Dr Endre *Dudich, HonSrMbr
Karolyi M.u. 14/B iv.5
H 1053 Budapest
HUNGARY
HUNGARY
Fax: 36 1 251 0703
Tel: 36 1 251 0109
Email: dudich@axelero.hu

Dr Jósef Hála
Hungarian Geological Survey
Népstadion ut 14
Pf. 106
H 1442 Budapest XIV
HUNGARY
HUNGARY
Email: papp@mafi.hu

Dr Miklos Kazmer
Department of Palaeontology
Eotvos University
P.O. Box 120
H-1518 Budapest
HUNGARY
HUNGARY
Fax: 36 1 381 2104
Tel: 36 1 381 0555
Email: mkazmer@gmail.com

Dr Gabor Papp
Department of Mineralogy and Petrology
Hungarian Natural History Museum
Pf. 137
H-1431 Budapest
HUNGARY
HUNGARY
Fax: 36 1 210 1096
Tel: 36 1 333 0655/2209
Email: pappmin@ludens.elte.hu

Dr Terez Póka
Laboratory for Geochemical Research
Hungarian Academy of Science
Budaörsi ut 45
H-1112 Budapest
HUNGARY
HUNGARY
Fax: 361 319 3137
Tel: 361 319 3119/1153
Email: poka@sparc.core.hu

Dr Peter Rozsa
Department of Geology and Mineralogy
University of Debrecen
H-4010
Debrecen Pf 4
HUNGARY
HUNGARY
Tel: 36 52 447 474 (ext. 2311)
Email: rozsap@tigris.klte.hu

Professor Istvan Viczian
Branyiszko u. 7. I.5
H-1026
Budapest
HUNGARY
HUNGARY
Fax: 36 1 251 0703
Tel: 36 1 275 3263
Email: viczian@mafi.hu

Professor Kottapalli S. Murty
101 Sneh Chaya Apts
28 Hindustan Colony Amaravti Road
Nagpur 440-010
INDIA
INDIA
Fax: 91 712 547 141
Tel: 91 712 557 984
Email: murtysk1931@yahoo.co.in

Professor Gordon *Herries Davies, HonSrMbr
Ballinaclough House
Ballinaclough, Nenagh
County Tipperary
IRELAND
IRELAND

Dr Patrick N. Wyse Jackson
Geological Museum
Department of Geology
Trinity College
Dublin 2
IRELAND
IRELAND
Fax: 353 1 671 1199
Tel: 353-1-896-1477
Email: wysjcknp@tcd.ie

Professor Paul Mohr
Tanagharraun
Corrandulla
County Galway
IRELAND
IRELAND
Tel: 353 91 789 819
Email: pmohr@indigo.ie

Dr Dov Ginzburg
Geological Survey of Israel
30 Malchei Yisrael St.
95 501 Jerusalem
ISRAEL
ISRAEL
Fax: 972 2 538 0668
Tel: 972 2 14 251

Professor Dan *Yaalon, HonSrMbr
Inst. of Earth Sciences
The Hebrew University
Jerusalem 91 904
ISRAEL
ISRAEL
Fax: 972 2 566 2581
Tel: 972 2 570 4411
Email: yaalon@vms.huji.ac.il

Dr Stefano Marabini
Via S. Martino 1
48018 Faenza (RA)
ITALY
ITALY
Fax: 39 054 628 067
Tel: 39 054 628 067
Email: stemarabini@libero.it

Ms Imma Menditti
Via Torre 75
80030 Scisciano
Napoli
ITALY
ITALY
Tel: 39 338 278 3060
Email: immamenditti@libero.it

Professor Giuliano Piccoli
Riviera San Benedetto 27
I-35139
Padova
ITALY
ITALY
Tel: 39 49 872 2055
Email: giulianopiccoli@hotmail.com

Dr Claudia Principe
Istituto di Geoscienza e Georisorse
Area della Ricerca, CNR di Pisa San Cataldo
Via Giuseppe Moruzzi 1
56124 Pisa
ITALY
ITALY
Fax: 39 050 315 2360
Tel: 39 050 315 2335/6
Email: c.principe@igg.cnr.it

Professor Ezio Vaccari
Dipartimento di Informatica e Comunicazione
Universita dell'Insubria
Via Mazzini 5
21100 Varese
ITALY
ITALY
Fax: 39 332 218 919
Tel: 39 332 218 940 (W) 39 332 994 628 (H)
Email: ezio.vaccari@uninsubria.it

Professor Gian Battista Vai
Dip Scienze della Terre e Geologico-Ambientali
Universitá di Bologna, Via Zamboni 67
I-40126
Bologna
ITALY
ITALY
Fax: 39 052 20 94522
Tel: 39 051 20 4552
Email: vai@geomin.unibo.it

Professor Toshio KUTSUKAKE
Laboratory of Geological Sciences
College of General Education
Aichi University
Toyohashi 441
JAPAN
JAPAN
Tel: 81 532 47 4111
Email: kutukake@vega.aichi-u.ac.jp

Professor Hakuyu OKADA
4-8-36-601 Yoshizuka
Hakata-ku
Fukuoka 812-0041
JAPAN
JAPAN
Tel: 81 92 623 8161
Email: hokada@bb.mbn.or.jp

Professor Masae OMORI
3-32-5 Sakujii-di
Nerima-ku
177-0045
Tokyo
JAPAN
JAPAN
Fax: 81 93 3996 2341
Tel: 81 93 3996 2341
Email: user555nob@aol.com

Professor Kanenori *SUWA, HonSrMbr
1-1020 Umemori-zaka
Meito-ku
Nagoya 465-0065
JAPAN
JAPAN
Fax: 81 52 701 0457
Tel: 81 52 701 0457
Email: ysuwa297@sf.starcat.ne.jp

Professor Yasumoto SUZUKI
4-4-15
Sugano
Ichikawa 272-0824
JAPAN
JAPAN
Fax: 81 947 325 0982
Tel: 81 947 325 0982
Email: yasu-suzuki@vega.ocn.ne.jp

Professor Kenzo *YAGI, HonSrMbr
2-5-10 Moiwashita
Minami-ku
Sapporo 005-0040
JAPAN
JAPAN
Fax: 81 11 581 1473
Tel: 81 11 581 1473

Dr Michiko YAJIMA
#901
6-2-10, Hongo, Bunkyo-ku
Tokyo 113-0033
JAPAN
JAPAN
Fax: 81 3 3812 7039
Tel: 81 3 3812 7039
Email: PXI02070@nifty.com

Dr Toshihiro YAMADA
2-22-2-305, Utase
Mihama-ku
Chiba
261-0013
JAPAN
JAPAN
Fax: 81 43 279 7094
Tel: 81 43 279 7094
Email: tosmak-yamada@muf.biglobe.ne.jp

Professor Toshifumi YATSUMIMI
1-22-68, Omiya,
Suginami-ku
Tokyo, 168-0061
JAPAN
JAPAN
Fax: 81 3 5377 2027
Tel: 81 3 5377 2027
Email: uptijg@coral.plala.or.jp

Dr Ervin Luksevics
Department of Geoloyg
University of Latvia
Rainis Blvd 19
Riga LV-1586
LATVIA
LATVIA
Fax: 371 733 2704
Tel: 371 733 1766
Email: Ervins.Luksevics@lu.lv

Professor Algirdas Gaigalas
Department of Geology and Mineralogy
Vilnius University
M. K. Ciurlionio Street
LT-03101 Vilnius
LITHUANIA
LITHUANIA
Fax: 370 239 8272
Tel: 370 239 8273
Email: Algirdas.Gaigalas@gf.vu.lt

Professor Algimantas Grigelis
13 Sevcenkos Street
2699
Vilnius
LITHUANIA
LITHUANIA
Fax: 370 521 36 408
Tel: 370 5 210 47 15
Email: grigelis@geo.lt

Dr Gailé Zaludiene
Institute of Geology & Geography
T. Sevcenkos g.13
03223 Vilnius
LITHUANIA
LITHUANIA
Fax: 370 5 210 46 95
Tel: 370 5 210 47 10
Email: zaludiene@geo.lt

Dr George Zammit-Maempel
148 Triq San Frangisk
Hal Balzan BZN 07
MALTA
MALTA
Tel: 356 442 204
Email: nibmike@onvol.net

Dr Gabriele I. C. Schneider
Geological Survey of Namibia
PO Box 2168
Windhoek
NAMIBIA
NAMIBIA
Fax: 264 61 249 144
Tel:264 61 208 5205
Email: gabi@mme.gov.na

Professor Emile *den Tex, HonSrMbr
Rhijnvreugd 9
2382 BG
Zoeterwoude
NETHERLANDS
NETHERLANDS

Professor Emeritus Frederik R. van Veen
Dorpsstraat 2
9957 ND
Saaxumhuizen
NETHERLANDS
NETHERLANDS
Tel: 0595 425265
Email: f.r.vanveen@gmail.com

Dr Michael Johnston
395 Trafalgar Street
Nelson
NEW ZEALAND
NEW ZEALAND
Fax: 64 3 546 7574
Tel: 64 3 546 7575
Email: mike.johnston@xtra.co.nz

Mr Alan *Mason, HonSrMbr
75-A Argyle St.
Herne Bay
Auckland 1002
NEW ZEALAND
NEW ZEALAND
Tel: 64 9 378 6981
Email: apmason@xtra.co.nz

Dr Simon Nathan
2a Moir Street
Mt Victoria
Wellington
NEW ZEALAND
NEW ZEALAND
Tel: 64 4 384 5444
Email: s.nathan@xtra.co.nz

Professor J. B. Waterhouse
25 Avon Street
Oamaru
NEW ZEALAND
NEW ZEALAND
Email: perma@xnet.co.nz

Professor Geir Hestmark
University of Oslo
Department of Biology
Blindern Postboks 1066
N-0315 Oslo
NORWAY
NORWAY
Fax:47 2285 4664
Tel: 47 2285 4581
Email: geir.hestmark@bio.uio.no

Professor Stefan W. Alexndrowicz
ul. Lobzowska 29/2
31-139 Krakow
POLAND
POLAND
Tel: 48 12 423 44 11 (Cell)
Email: sz.alex@neostrada.pl

Dr Stanislaw S. *Czarniecki, HonSrMbr
Zespöl Pracowni ZNG PAN
ul. Senacka 3
Kracow
POLAND
POLAND
Email: micku@poczta.onet.pl

Professor Andrzej Grodzicki
50-374 Wroclaw ul.
Norwida 15/6
POLAND
POLAND
Fax: 48 (0)71 37 59 371
Tel: 48 (0)71 328 33 36
Email: agrodz@ing.uni.wroc.pl

Professor Wojciech Narebski
Muzeum Ziemi PAN
ul Zelechowskiego 4/30
30-124 Krakow
POLAND
POLAND
Email: wnarebski@op.pl

Professor Janusz Skoczylas
Inst. of Geology, Univerytet im. Adama Mickiewicza
ul. Maków Polnych 16
61-606 Poznan
POLAND
POLAND
Fax: 48 61 829 6001
Tel: 48 61 829 6019
Email: skocz@amu.edu.pl

Professor Radoslaw Tarkowski
Department of Geology
Pedagogical University (Cracow)
ul. Grota-Roweckiego 49/6
30-348 Krakow
POLAND
POLAND
Tel: 48 012 632 67 17 (Home)
Email: tarkowski@min-pan.krakow.pl

Dr Andrzej J. Wojcik
Institute of History of Sciences
Polish Academy of Sciences
ul. Dzialkowa 37
43-600 Jaworzno
POLAND
POLAND
Fax: 48 32 616 21 64
Tel: 48 32 616 21 64 (Same as Fax)
Email: anwoja@jawnet.pl

Professor Zibigniew Wojcik
Chlodna 15/1022
00391 Warszawa
POLAND
POLAND
None

Professor Luis Aires-Barros
Laboratory of Mineralogy and Petrology
Instituto Superior Tecnico
Av. Rovisco Pais
1049-001 Lisbon
PORTUGAL
PORTUGAL
Fax: 351 218 400 806
Tel: 351 218 400 806
Email: airesbarros@popsrv.ist.utl.pt

Dr Filomena Amador
Departamento de Ciências Exactas e Tecnológicas Unversidade Alberta
Rua da Escola Politécnica No. 147
1250 Lisboa
PORTUGAL
PORTUGAL
Fax: 351 213150183
Tel: 351 214108531
Email: famad@univ-ab.pt

Professor Dr João Luís Cardoso
Universidade Aberta
Palacio de Ceia
R. Escola Politecnica n. 147
1200-1000 Lisboa
PORTUGAL
PORTUGAL
Email: arqueolo@univ-ab.pt

Dr Ana Carneiro
SACSA, Faculdade de Ciencias e Tecnologia
Universidade Nova de Lisboa
2825-114 Monte de Caparica
PORTUGAL
PORTUGAL
Fax: 351 21 2948 551
Tel: 351 21 2948 533
Email: amoc@netcabo.pt

Professor Antonio Augusto Soares de Andrade
Dept Geosciencias
Universidade de Aveiro
3810-Aveiro
PORTUGAL
PORTUGAL
Fax:351 34 370 605
Tel: 351 34 370 747
Email: asandrade@geo.ua.pt

Professor Martim Portugal e Vasconcelos Ferreira
Departamento de Ciências da Terra
Apartado 3014
Universidade de Coimbra
3049 Coimbra
PORTUGAL
PORTUGAL
Tel: 351 239 825 144
None

Professor Manuel C. S. Pinto
Department of Geosciences
University of Aveiro
3810 Aveiro
PORTUGAL
PORTUGAL
Fax: 351 2 34 370 605
Tel: 351 2 34 370 744
Email: mspinto@csjp.ua.pt

Professor Miguel C. F. Telles Antunes
Departamento de Ciências de Terra
Centro de Estudos Geologitas
Universidade Nova de Lisboa
P-2825 Monte de Caparica
PORTUGAL
PORTUGAL
Fax: 351 21 2948556
Tel: 351 21 2948537
Email: mtantunes@acad-ciencias.pt

Professor Nicolae Anastasiu
Department of Mineralogy
Bucharest University
1, Bd. N. Balcescu
Bucharest 70111
ROMANIA
ROMANIA
Fax: 0040 21 310 79 47
Tel: 0040 21 314 35 08 / 282
Email: nicanastasiu@gmail.com

Dr Zoya Bessudnova
Vernadsky State Geological Museum
Nakhimovsky prospekt 50, ap. 90
Moscow 117292
RUSSIA
RUSSIA
Fax: 7 095 203 5117
Tel: 7 095 203 5117
Email: zoya@sgm.ru

Dr Tatiana Ivanova
Earth Science Museum, Lomonosov Moscow
State University
Leninsky Gory 119992
Moscow
RUSSIA
RUSSIA
Fax: 7 095 939 1594
Tel: 7 095 939 2227
Email: tkivan@mes.msu.ru

Dr Georgy Khomizuri
Vernadsky State Geological Museum
Mokhovaya Street 11, Bd. 2
103009
Moscow
RUSSIA
RUSSIA
Email: george@sgm.ru

Dr Andrei V. Lapo
All-Russian Geological Research Institute
(VSEGEI)
Sredny pr. 74
199106
St Petersburg
RUSSIA
RUSSIA
Fax: 812 321 30 23
Tel: 7 812 328 87 93
Email: andrei_lapo@vsegei.ru

Dr Irena G. Malakhova
Vernadsky State Geological Museum
Russian Academy of Sciences
11 Mokhovaya str.
125009 Moscow
RUSSIA
RUSSIA
Fax:7 495 203 5117
Email: malakhova@sgm.ru

Professor Efgenij *Milanovsky, HonSrMbr
Department of Geology
Moscow State University
119899 Moscow
RUSSIA
RUSSIA
Email: milan@geol.msu.ru

Professor Anatoly G. Ryabukhin
Faculty of Geology
Moscow State University
119899 Moscow
RUSSIA
RUSSIA
Fax:7 95 954 5103
Tel: 7 095 939 2081
Email: ryabuhin@geol.msu.ru

Dr Yu. Ya. Soloviev
Vernadsky State Geological Museum
Mokhovaya 11
Building 2
103009 Moscow
RUSSIA
RUSSIA
Fax: 7 95 203 4736
Tel: 7 095 203 4796
Email: histgeo@sgm.ru

Professor Nikolai Pavlovich Yushkin
Russian Academy of Science
54 Pervomaiskaya St.
107610 Syktyvkar
Komi Republic
RUSSIA
RUSSIA
Fax: 7 95 82 1242 5346
Tel: 7 095 82 1242 0037
Email: yushkin@geo.komisc.ru

Professor Aleksandar Grubic
Rudarsko-Geoloski Fakultet
Djusina 7
11000 Belgrade
SERBIA
SERBIA
Fax: 381 11 631 137
Tel: 381 11 402 707
Email: aleksandar_grubic@yahoo.com

Professor Vidojko Jovic
Rudarsko-Geoloski Fakultet
Djusina 7
11000 Belgrade
SERBIA
SERBIA
Fax: 381 11 182 363
Tel: 381 11 3226 032
Email: jvidojko@eunet.yu

Dr Johan C. Loock
University of the Orange Free State
Bloemfontein
SOUTH AFRICA
SOUTH AFRICA
Fax: 27 51 447 8501
Tel: 27 51 401 2374
Email: loockjc.sci@mail.uovs.ac.za

Sr Candido Manuel Garcia Cruz
Urbanizacion Llombet 15
38296 La Laguna
Tenerife
Canary Islands
SPAIN
SPAIN
Email:
candidomanuel.garciacruz@gobiernodecanaria
s.org

Dr Carlos Martin Escorza
National Museum of Natural History
José Gutiérrez Abascal, 2
28006 Madrid
SPAIN
SPAIN
Tel: 34 914 11328 ext 1167
Email: escorza@mncn.csic.es

Dr Rodolfo Gozalo
Departamento de Geologia
Universitat de Valencia
c/o Dr Moliner 50
E-46100 Burjassot
SPAIN
SPAIN
Fax: 34 96 3864 372
Tel: 34 96 3864 398
Email: rodolfo.gozalo@uv.es

Dr Jorge Ordaz
Universidad de Oviedo
Jesus Arias de Velasco s/n
33005
Oviedo
SPAIN
SPAIN
Fax: 34 98 5103 161
Tel: 34 98 5103 164
Email: jordaz@geol.uniovi.es

Dr Emilio Pedrinaci
Mirador, 8
41120 Gelves
Sevilla
SPAIN
SPAIN
Fax: 34 95 560 0651
Tel: 34 95 560 0651
Email: pedrinaci@telefonica.net

Dr Francisco Pelayo
CSIC-Universidad de Valencia
Facultad de Medicina
Avenida Vicente Blasco Ibanez 15
46010 Valencia
SPAIN
SPAIN
Fax:96 386 4091
Tel: 96 386 4164
Email: francisco.pelayo@uv.es

Professor Dr Octavio Puche Riart
San Telesforo 8
28017 Madrid
SPAIN
SPAIN
Fax: 34 91 3366 977
Tel: 34 91 3366 951
Email: Octavio.puche@upm.es

Dr Isabel Rabano
Instituto Geologico y Minero de Espana
Rios Rosas 23
E-28003 Madrid
SPAIN
SPAIN
Fax: 34 913 495830
Tel: 34 913 495819
Email: I.rabano@igme.es

Professor Leandro Sequeiros
Apartado de Correos (PO Box) 2002
E-18080
Granada
SPAIN
SPAIN
Fax: 34 58 151 440
Tel:34 58 185 252
Email: lsequeiros@probesi.org

Professor Carmina Virgili
Provenca 229
Barcelona, E-08008
SPAIN
SPAIN
Fax: 34 93 487 2463
Tel: 34 93 215 1411
Email: cvirgili@uoc.edu

Dr Christer Nordlund
Department of Historical Studies
History of Science and Ideas
University of Umea
S-90187 Umea
SWEDEN
SWEDEN
Fax: 46 90 143 374
Tel: 46 90 786 9733
Email: christer.nordlund@histstud.umu.se

Dr Bjorn Sundquist
Falkvagen 2
SE-75756 Uppsala
SWEDEN
SWEDEN
Fax: 46 18 421 282
Tel: 46 18 421 282
Email: bjorn_sundquist@bredband.net

Professor Henri Masson
Institut de Géologie
BFSH2 Université de Lausanne
CH-1015 Lausanne
SWITZERLAND
SWITZERLAND
Tel: 41 21 692 4305
Email: henri.masson@unil.ch

Dr Nazario Pavoni
Sonnenbergstrasse 11
CH-8134
Adliswil
SWITZERLAND
SWITZERLAND
Fax:41 1 710 6689
Tel: 41 1 710 6689
Email: napavoni@bluewin.ch

Professor Rudolf *Trümpy, HonSrMbr
Allmendboden 19
CH-8700
Kusnacht
SWITZERLAND
SWITZERLAND

Dr Marc Weidmann
Sentier du Molard 3
CH-1085
Jongny
SWITZERLAND
SWITZERLAND
Fax:41 21 922 9675
Tel: 41 21 922 9675
Email: weidmann-dutoit@bluewin.ch

Professor A. M. C. Sengör
I.T.U. Maden Fakultasi
Jeoloji Muhendisligi Bolumu
Ayazaga 80 626 Istanbul
TURKEY
TURKEY
Fax:90 242 285 6210
Tel: 90 216 332 0856
Email: sengor@itu.edu.tr

Professor Gordon Y. *Craig, HonSrMbr
Grant Institute of Geology
University of Edinburgh
West Mains Road
Edinburgh EH9 3JW
UK
UK
Fax: 44 131 663 8275
Tel: 44 131 663 8275
Email: gcraig@kevock.demon.co.uk

Dr Trevor D. Ford
21 Elizabeth Drive
Oadby
Leicester LE2 4RD
UK
UK
Tel: 44 116 271 5265

Dr John Fuller
2 Oak Tree Close
Rodmell Road
Tunbridge Wells
Kent TN2 5SS
UK
UK
Tel: 44 1989 253 4644

Dr Andrew Grout
Special Collections
Edinburgh University Library
George Square
Edinburgh EH8 9LJ
UK
UK
Tel: 44 131 651 1720
Email: andrew.grout@ed.ac.uk

Professor Richard Howarth
49 Selwyn Avenue
Richmond
Surrey
TW9 2HB
UK
UK
Fax: 44 20 8332 7835
Tel: 44 20 8332 7835
Email: r.howarth@ucl.ac.uk

Professor Simon Knell
Department of Museum Studies
University of Leicester
105 Princess Street
Leicester LE1 7LG
UK
UK
Fax: 44 116 252 3960
Tel: 44 116 252 3963
Email: sjk8@leicester.ac.uk

Dr Cherry Lewis
Public Relations Office
Senate House, Tyndall Ave
University of Bristol
Bristol BS2 1TH
UK
UK
Tel: 44 117 928 8086
Email: cherry.lewis@bristol.ac.uk

Professor Martin J. S. Rudwick
Department of History and Philosophy of Science
University of Cambridge
Free School Lane
Cambridge CB2 3RH
UK
UK
Tel: 44 1353 665 043
Email: mjsr100@cam.ac.uk

Professor James Secord
Department of History and Philosophy of Science
The University of Cambridge
Free School Lane
Cambridge CB2 3RH
UK
UK
Fax:44 1223 334 554
Tel: 44 1223 334 544
Email: jas1010@cam.ac.uk

Dr Michael Taylor
Department of Geology and Zoology
National Museums of Scotland
Chambers Street
Edinburgh EH1 1JF
UK
UK
Fax:44 131 247 4113
Tel: 44 131 220 4819
Email: m.taylor@nms.ac.uk

Professor Hugh S. Torrens
Lower Mill Cottage
Furnace Lane
Madeley, Crewe
CW3 9EU
UK
UK
Fax:44 1782 751 357
Tel: 44 1782 750 689
Email: gga10@Keele.ac.uk

Professor Victor Richard Baker
Department of Hydrology and Water Resources
The University of Arizona
Tucson
Arizona 85721 0011
USA
USA
Email: baker@hwr.arizona.edu

Professor Kennard B. Bork
Department of Geosciences
Denison University
Granville, OH 43023
USA
USA
Fax: 1 740 587 6417
Tel: 1 740 587 6486
Email: bork@denison.edu

Professor Albert V. *Carozzi, HonSrMbr
7530 Lead Mine Road
#304 Raleigh
North Carolina 27615-4897
USA
USA
Tel: 1 919 845 3451
Email: acarozzi@nc.rr.com

Professor Robert H. *Dott Jr, HonSrMbr
Department of Geology and Geophysics
Weeks Hall University of Wisconsin
1215 West Dayton St.
Madison, WI 53706
USA
USA
Fax: 1 608 262 0693
Tel: 1 608 262 8960
Email: rdott@geology.wisc.edu

Dr Gregory Alan Good
Department of History
University of West Virginia
Morgantown
West Virginia 26506-6303
USA
USA
Email: ggood@wvu.edu

Léo F. Laporte
430 Nimitz Avenue
Redwood City
CA 94061 4226
USA
USA
Tel: 1 650 364 3386
Email: laporte@ucsc.edu

Dr Kerry Magruder
History of Science Collections, University Libraries, University of OK
401 W. Brooks Street, Room 521
Norman, OK 73019
USA
USA
Fax:1 405 325 7618
Tel: 1 405 325 2741
Email: kmagruder@ou.edu

Dr Ursula B. Marvin
Harvard-Smithsonian Center for Astrophysics
60 Garden Street
Cambridge, MA 02138
USA
USA
Fax:1 617 495 7001
Tel: 1 617 495 7270
Email: umarvin@cfa.harvard.edu

Dr Clifford M. Nelson
US Geological Survey
950 National Center
Reston VA 20192-0001
USA
USA
Fax:1 703 648 6373
Tel: 1 703 648 6080
Email: cnelson@usgs.gov

Professor Sally Newcomb
13120 Two Farm Drive
Silver Spring, MD 20904
USA
USA
Fax:301-622-0177
Tel: 301 622 0177
Email: senewcomb@earthlink.net

Dr Julie Newell
Social & International Studies Program, Southern Polytechnic
1100 South Marietta Parkway
Marietta, GA 30060
USA
USA
Fax: 1770 528 4949
Tel: 1 770 528 7442
Email: jnewell@spsu.edu

Professor Alexander *Ospovat, HonSrMbr
2131 Arrowhead Drve
Stillwater
OK 74074 405-377-8448
USA
USA
Email: amospovat@suddenlink.net

Professor Cecil J. *Schneer, HonSrMbr
River Road
Newfields, NH 03856-0181
USA
USA
Fax: 1 603 862 2649
Tel: 1 603 772 4597
Email: cschneer@comcast.net

Professor Kenneth L. Taylor
Department of the History of Science
University of Oklahoma
Norman
OK 73019-0315
USA
USA
Fax: 1 405 325 2363
Tel: 1 405 325 5416
Email: ktaylor@ou.edu

Professor Davis Young
11991 North Labyrinth Drive
Tuscon, AZ 85737
USA
USA
Tel: 1 520 219 2326
Email: dotndave@comcast.net

Dr Lora N. Lordkipanidze
The Kh. M. Abdullaev Institute of Geology and Geophysics
Academy of Sciences of Uzbekistan
H. Khodzibaeva str., 700041
Tashkent
UZBEKISTAN
UZBEKISTAN
Fax: 998 71 1626516
Tel: 998 71 1626381
Email: nurtaev@ingeo.uz

Professor Rogelio Altez
Urb. La Lanada
Residencias De Mar, Torre 4, Apartamento 1-B
Caraballeda
Estado Vargas
VENEZUELA
VENEZUELA
Fax: 58 212 6052 466
Tel: 58 212 3129 934
Email: ryaltez@cantv.net

Dr Aníbal R. Martínez
Quinta Marani
Calle Nunez Ponte
Lomas del Mirador
Caracas 1060
VENEZUELA
VENEZUELA
Tel: 58 212 9923148
Email: anibalrmartinez@cantv.net

Ing. José Antonio Rodriguez-Arteaga
Venezuelan Foundation for Seismological Research
Urbanizacion El Llantino
Prolongacíon Calle Mara, Apartado Postal 76880
Caracas 1070-A
VENEZUELA
VENEZUELA
Fax: 58 212 257 9977
Tel: 58 212 257 5153/7672 ext 228
Email: jrodriguez@funvisis.org.ve

Dr Franco A. Urbani
Apartado 65693
Caracas 1061A
VENEZUELA
VENEZUELA
Fax: 58 212 272 0724
Tel: 58 212 272 0724
Email: urbani@cantv.net

It is requested that contributors to the INHIGEO *Newsletter* kindly use the following conventions for references.

For BOOKS:

Author(s) or editor (ed./eds.), *Full Title: Subtitle [Capitalized First Letters and Italicized full title],* Publisher, Place of publication, date.
Please place a colon between the title and the sub-title.

E.g.

Foster, Mike, *Strange Genius: The Life of Ferdinand Vandeveer Hayden*, Roberts Rinehart Publishers, Niwor (Colorado) and Schull (West Cork), 1994.

For JOURNAL ARTICLES:

Author(s), 'Title [Capitalized First Letters],' *Journal Title [Not Abbreviated, but Capitalized First Letters, Italicized full title]*, date, *Volume number [italicized]*, page numbers.

E.g.

Rudwick, Martin, 'Cuvier and Brongniart, William Smith, and the Construction of Geohistory,' *Earth Sciences History*, 1996, *15*, 25–36.
(Note that volume numbers only, not issue numbers, are needed.)

For CHAPTERS IN BOOKS:

Author(s), 'Title [Capitalized First Letters],' in: Book editor(s), *Full Title and Subtitle [Capitalized First Letters and Italicized],* Publisher, Place, date, page numbers.

E.g.

Briggs, John C., 'Mass Extinctions: Fact or Fallacy?,' in: William Glen (ed.), *The Mass-Extinction Debates: How Science Works in a Crisis*, Stanford University Press, Stanford, 1994, 230–236.

Please use single inverted quotation marks for references cited. The quotation marks come outside commas and periods. En dashes are used for pages.

Please do NOT make ANY abbreviations; and do NOT capitalize the names of persons (except in the case of Chinese or Japanese names, where capitalization of family names is helpful). In articles and reports, *etc.*, please supply "given" or first names where possible, and (as a general guideline) use them in the main body of a text for their FIRST mention ONLY. Thereafter, just give the family name, without the given name(s) or initial(s). SINGLE horizontal spaces between sentences and after colons will suffice.