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International Commission on the History of Geological Sciences

INHIGEO

NEWSLETTER

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Covering activities generally in 2011
Issued in 2012

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is
A Commission of the International Union of Geological Sciences
&
An affiliate of the International Union of the History and Philosophy of Sciences

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INHIGEO Secretary-General

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(Published in May 2012 covering events generally in 2011)

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April 2012

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President's Message
(April 2012)

Dear Members,

This is the last time I use this space to address some words to you, because the term of the Board to which I belong ends next August, during the 34th International Geological Congress, in Brisbane (Australia). However, I do so with happiness in my heart, not because I'm quitting, but due to the fact our Commission has continued to achieve relevant goals, as well as to accomplish important tasks.

The year of 2011 was of particularly intense work for INHIGEO. First, already in February, we were all shocked by the tsunami that devastated part of Japan. Nonetheless, our Japanese colleagues, once more, taught us all lessons of courage, discipline and professionalism. The successful 36th INHIGEO Symposium held in Toyohashi, Japan from 2 to 10 August 2011 consisted of appealing Scientific Sessions, and two superb excursions. Specific details of this symposium are inside.

It was just before the opening of the Toyohashi Symposium that our Commission went through an "ad hoc Review" conducted by IUGS. This was a productive meeting involving the Board, with intense exchange of views that resulted in several proposed modifications to the functioning of INHIGEO. The first, and perhaps most important change, relates to the abolishment of the limit of 11 members per country, and this has already been approved by members during our subsequent Business Meeting in Toyohashi. A revision of the INHIGEO Rules and Terms of Reference were also supported. A summary of all these actions may be found in this Newsletter.

On the side of the International Union of Philosophy and History of Science (IUPHS) INHIGEO is organizing specific symposia within the 24th International Congress of History of Science and Technology, scheduled for Manchester, UK (22 – 28 July 2013). The general theme of the ICHST is "Knowledge at work", and more information may be found at www.ichstm2013.com/.

Our next stop is Brisbane! INHIGEO has set up a pre-congress excursion and several symposia covering a wide range of topics, namely: "Biographical studies of eminent geologists – A symposium in honour of David Branagan"; "Geology in Tropical Regions"; "Achievements in 20th Century Geology"; "Geologists, Resource Exploration and Development"; and "The early history of Continental Drift and associated subjects". Up-to-date information can be found on the Congress website www.34igc.org . We will also have a slot of space in the IUGS stand there, exhibiting a poster about INHIGEO plus some printed information. This can also be a nice meeting point for the members of the INHIGEO community circulating in the 34th IGC. See you there!!

Silvia Figueirôa

Secretary General's Report
(April 2012)

Dear Members,

INHIGEO has experienced another highly successful and very busy year. Like President Silvia Figueirôa, I also appreciate greatly the special efforts of our Japanese colleagues in organising our wonderful 2011 annual conference in Toyohashi, despite a major national catastrophe. A volume of conference abstracts was published for the event as well as guidebooks for the mid conference and post conference excursions and an extended copy of David Oldroyd's keynote address. Please be sure to read to Mike Johnson's account of this superb meeting with associated field trips later in this newsletter. In addition, I recognise the ongoing Japanese efforts that will produce a volume of the full conference papers in the near future.

For the record, as of April 2012, INHIGEO has 227 members from 47 countries. Over the past year, the loss of widely respected INHIGEO members John Fuller (UK), Evgeny Milanovsky (Russia), Wilfried Schröder (Germany) and Emile den Tex (Netherlands), including two Honorary Senior Members, will be sorely felt. With the 2012 ballot now underway with 25 new nominations including from three new countries, our membership should reach record numbers and coverage again in the next few months. As part of the 2012 membership ballot process, the INHIGEO Board has reviewed the membership list for suitable additions to Honorary Senior Membership. In this respect I am delighted that Gabriel Gohau (France), Martin Rudwick (UK) and Hugh Torrens (UK) have now been approved by the Board with final endorsement at the coming INHIGEO Business meeting.

In August 2012, INHIGEO members will meet in Brisbane, Australia as part of the 34th International Geological Congress (34IGC) in Brisbane, Australia. The major INHIGEO symposia at the conference will be:

- Biographical studies of eminent geologists
- Geology in tropical regions: a history
- Major achievements in 20th century geology
- Geologists, resource exploration and development: an historical perspective
- The early history of continental drift and associated subjects

In addition, our indefatigable INHIGEO Past President and Honorary Senior member, David Branagan, is well advanced in planning a pre-conference field trip that traverses from Sydney to Brisbane examining the early activities of Australian geologists in this region. All members should also be aware that the biography symposium at the conference will specially honour David, following his monumental biographical study of Australia's eminent geologist, T.W. Edgeworth David, and his contribution to the history of geology in general. The inaugural Tom Vallance Medal of the Earth Sciences History Group, Geological Society of Australia will also be presented to David during the meeting. In advance, I must also acknowledge the support of Australian INHIGEO members David Oldroyd, Carol Bacon, Bernie Joyce, Ken McQueen and Homer LeGrand in helping each 34IGC symposia come to fruition.

The 2013 INHIGEO conference will be held in association with the International Congress of History of Science and Technology (ICHST) to be held in Manchester, England. British INHIGEO member Cherry Lewis is coordinating the INHIGEO component of the meeting that will centre on the themes of "Geologists in the Field" and "Geology of Art and Literature". Some excellent field trips are also being planned. Please see additional details later in this newsletter. Preliminary plans are also in train for INHIGEO conferences in 2014, 2015, 2017 and 2018 with the 2016 conference being associated with the 35IGC in Capetown, South Africa. Our 2014 meeting will be held in the United States with the 2015 conference in China. Further details on location, theme and dates will be announced as soon as possible. The 2017 meeting is envisaged as a 50th anniversary meeting in Yerevan, Armenia, whilst our Mexican delegation has already offered to hold our 2018 conference.

Administratively the past year has required significant additional commitment as a consequence of the ad hoc review of INHIGEO by IUGS. The significant results of what may be styled as "the Toyohashi Review" are discussed elsewhere in this newsletter. In this introduction it is worth noting that the review demanded preparation of a major set of briefing papers before the event as well as subsequent vetting of the review report coupled with consequent revision of our longstanding Terms of Reference and By Laws. The excellent membership map shown below was prepared by Vice President Gerardo Soto as part of the pre meeting briefing requirements. Another result of the ad hoc review has been the introduction of the "INHIGEO Circular", which will be issued on a occasional basis 3-4 times each year, in order to improve membership communications.

Region	Members	Countries	Average members per country
Europe	135	27	5.0
Asia	28	5	5.6
North America	25	2	12.5
Latin America	21	7	3.0
Australasia & Oceania	20	3	6.7
Africa	2	2	1.0
Total	231	46	5.0

INHIGEO Membership Map prepared by Vice President Gerardo Soto for the ad hoc review of INHIGEO, Toyohashi, Japan, 1 August 2011

IUGS has also asked INHIGEO to advise and recommend on a new IUGS Scientific Award of Excellence in the History of Geology. It is expected that this award will be soon announced with the first award being made at the 34IGC in Brisbane.

INHIGEO continues to provide historical papers for the IUGS Journal *Episodes*. Members are asked to consider making further contributions to this worthwhile series, and are invited to contact, with suggestions and offers, Vice President David Oldroyd who co-ordinates these articles.

The 2012 INHIGEO Brisbane conference, with its associated Business Meeting, will end the term of the current INHIGEO Board. Over the past few months, the composition of the 2012-2016 INHIGEO has been finalised, including the new position of Newsletter Editor. On request Board nominations have recently been forwarded to IUGS Executive Committee for approval.

I will be delighted to continue as Secretary General for the period 2012-2016 although this Newsletter will be my last in the role of Newsletter Editor. I have immensely enjoyed this latter role and will miss the wide-ranging contact with the INHIGEO membership that compilation of the Newsletter entails.

INHIGEO's work continues to be made possible by important support from various organisations. Financially we continue to be greatly assisted by the annual grant provided by the International Union of Geological Sciences (IUGS). We also are aided by funding provided by the International Union of the History and Philosophy of Science, Division of History of Science and Technology (IUHST/DHST). In addition, the University of South Australia has continued to provide me with facilities without which I could not undertake my INHIGEO responsibilities.

My final thanks are to members of the INHIGEO Board who have always been quick to respond to my calls for advice, information and assistance and especially to our President Silvia Figueirôa. I will also miss Past President Philippe Taquet, David Oldroyd (Vice President Oceania), Gerardo Soto (Vice President Latin America) who will leave the INHIGEO Board at the end of its current term in August.

Please remember to keep me advised of any address changes especially to your email address as the latter is now our major means of communication.

My very best wishes to all INHIGEO members.

Barry Cooper

INHIGEO 2012 – BRISBANE, AUSTRALIA
(In association with 34th International Geological Congress)

The 37th annual INHIGEO conference will be held from 30 July – 10 August 2012 as part of the 34th International Geological Congress in Brisbane, Australia.

For the latest news on the Congress, please visit the 34IGC website www.34igc.org.

For up-to-date information on the pre-conference field trip 30 July – 4 August), which is being organised separate from IGC organisation, please contact Professor David Branagan at dbranaga@mail.usyd.edu.au

Congress Sessions and INHIGEO Business Meeting

The INHIGEO Congress sessions will be organised within "Theme 33 – History of the Geosciences" under the following symposia topics with the following key note speakers.

33.1 Biographical studies of eminent geologists: A Symposium in honour of David Branagan
Keynote speaker: Léo F Laporte (USA)
"A novice's biography of George G. Simpson (1902-1984), Paleontologist, Evolutionist"

33.2 The early history of continental drift and associated subjects
Keynote speaker: Allan Krill (Norway)
" Leading textbooks built the consensus against Wegener's continental drift"

33.3 Major achievements in 20th century geology
Keynote speaker: Ian McDougall (Australia)
"Retrospective on the plate tectonic revolution focusing on K/Ar dating, linear volcanic island chains and the geomagnetic polarity time scale"

33.4 Geology in tropical regions
Keynote Speaker: Silvia Figueirôa (Brazil)
"Problems and achievements of geology in tropical regions: A viewpoint from Brazil"

33.5 Geologists, resource exploration and development: an historical perspective
Keynote speaker: Tony Hope (Australia)
"An historical account of selected Queensland, New South Wales and Papua New Guinea mineral discoveries"

Based on offerings received at the abstracts closing date, Theme 33.1 Biographical Studies has attracted 19 presentations out of a total 46 presentation offered for the entire INHIGEO symposium. INHIGEO has requested that the all INHIGEO presentations take place during the first 3 days of the Congress, 6-8 August 2012.

The annual INHIGEO business meeting will be held as part of the Congress on Tuesday evening 7 August 2012.

Pre Congress Excursion

This will provide an historical/geological transect from Sydney to Brisbane, 30 July– 4 August, examining classical outcrops in the Sydney Basin (location of first European settlement); the Hunter Valley, site of early and continuing coal mining with evidence of late Palaeozoic glaciations and tectonism, as well as early mining localities, major structures and associated serpentinite occurrences, late Palaeozoic granites, Mesozoic and Tertiary volcanism and major geomorphology sites in the New England region of New South Wales covering overall a distance of some 1300km.

The excursion will depart from Central Railway Station, Sydney, on Monday 30 July, on the 8.15am Newcastle train, meeting an excursion bus at a Newcastle suburban station. All further travel will be by bus (or supplementary car).

Accommodation will be motel style, with overnight stops at West Maitland, Nyngan, Armidale (two nights), and Tenterfield in New South Wales before arriving in Brisbane on Saturday 4 August. There will be 4–5 stops (geological/historical) daily, depending on weather conditions. Participants will need to arrange separate accommodation for the Congress presentations commencing 4 August. All members interested in participating must contact Professor David Branagan at dbranaga@mail.usyd.edu.au . Further details will be provided to participants registered with David.

INHIGEO BUSINESS NOTICES

INHIGEO members at INHIGEO business meeting, Toyohashi, August 2011

Minutes of the INHIGEO Business Meeting 2011, Aichi University, Toyohashi, Japan
Thursday 3 August 2011

Members Present: Nobuyuki Aida (Japan), Carol Bacon (Australia), Victor Baker (USA), Zoya Bessudnova (Russia), David Branagan (Australia), Xiping Cao (China), Barry Cooper (Australia), Silvia de M. Figueirôa (Brazil), Michiya Inomata (Japan), Tatiana Ivanova (Russia), Mike Johnston (New Zealand), Hirokazu Kato (Japan), Kim Kwang-Nam (Japan), Martina Koelbl-Ebert (Germany), Toshio Kutsukake (Japan), Simon Nathan (NZ), David Oldroyd (Australia), Kanenori Suwa (Japan), Yasumoto Suzuki (Japan), Philippe Taquet (France), Ezio Vaccari (Italy), Michiko Yajima (Japan), Toshihiro Yamada (Japan), Jian-Zhao Yin (Canada/China)

Presiding: President Silvia Figueirôa (Brazil) and Secretary General Barry Cooper (Australia)

1. Welcome and Opening

   President Silvia Figueirôa opened the meeting at 4.10 pm and welcomed members.

2. Regrets and apologies from those unable to attend

   Luz Azuela (Mexico), Kennard Bork (USA), Ana Carneiro (Portugal), Rodney Grapes (NZ), Alan Mason (NZ), Wolf Mayer (Australia), Teresa Mota (Portugal), K.S. Murty (India), Gerardo Soto (Costa Rica), Ken Taylor (USA), Hugh Torrens (UK), Bruce Waterhouse (New Zealand), Jiuchen Zhang (China).

3. Arrangement of the agenda

   An agenda, revised from that published in Newsletter #43, was circulated.

4. Minutes of the previous meeting held in Almadén, Spain, 8 July 2010

   These were accepted unanimously without amendment.

5. Matters arising from the minutes

   All matters were considered under listed agenda items.

6. Presidents Report

   Given the recent earthquake and tsunami in Japan, the President first thanked members for their attendance and for their support of the 2011 INHIGEO conference, and acknowledged the great efforts of the Japanese INHIGEO delegation in organizing the event under difficult circumstances.

Acknowledgement was also made of the passing during the past year of the following INHIGEO members

Evgeny Baskov (1925-2010)
Masae Omori (1919-2011)
Alexander Ospovat (1923-2010)
Manuel Pinto (1936-2011)
Wang Hongzhen (1916-2010)

In her brief report, the President announced to the meeting that our sponsors, the IUGS, had undertaken a wide-ranging "Ad hoc review" of INHIGEO in Toyohashi on 1 August, the day before commencement of the conference. This could have significant ramifications for INHIGEO. Further consideration of the review was deferred and it was discussed as a separate agenda item. In conclusion the President thanked the Secretary General for his diligent efforts on behalf of the Commission.

7. Discussion /Matters arising from the President's report

Philippe Taquet drawn attention especially to the major INHIGEO contribution of the late Manuel Pinto, a Past President of INHIGEO and organizer of an excellent INHIGEO conference in Portugal in 2001.

8. Secretary General's report

The Secretary General reported that INHIGEO has remained very active over past 12 months. He reported activities under the following headings.

(a) Membership

INHIGEO currently has 231 members from 47 countries, which is a record number.

A membership ballot is scheduled for 2012 and, as per routine; nominations will be called in October. New nominations are already held from Canada, Germany and Morocco and new nominations are expected from Mexico and Bulgaria. In addition, nominations for Honorary Senior Membership have been received. At the conclusion of the 2012 ballot it is anticipated that inactive members will be culled after nonvoting at two successive ballots. At the 2012 ballot all members will also be asked to affirm their ongoing interest in INHIGEO.

(b) Newsletter

Newsletter #43 has been successfully edited and collated with printing and mailing arranged by David Oldroyd. It contained a record 139 pages with 10 book reviews and 5 short historical articles. Newsletter #43 is notable for its short non reviewed historical articles as well as the reviews of non English books. The newsletter was made available in pdf format, although all but 15 members continue to prefer receipt in hard format. It is also accessible to members and to the public at the INHIGEO website.

c) Election of first INHIGEO Editor in 2012

The INHIGEO Newsletter remains extremely successful yet increasingly time-consuming to prepare and full of untapped potential. Consequently at the business meeting in 2010, it was agreed that to create a new and separate position of Editor.

This will now occur over the next 12 months at the 2012 Board election with an Editor being elected and added to the Board at the 2012 Board elections for production of the 2013 newsletter.

One of our members has already shown an interest in being elected to this new position so there will not be a problem in filling this post.

d) Board Election

Next year is an election year also with formation of a new INHIGEO Board. Following our By Laws, over the next months, the current Board will finalize Board nominations for 2012-2016, which will be placed before the membership at the next INHIGEO Business meeting in Brisbane.

The current Secretary General is happy to continue if members approve. The current By Laws state that Board members can seek re-election once.

e) Website

The INHIGEO website www.inhigeo.org continues to operate successfully. It contains copies of the Newsletter including recent back issues as well as general information about the Commission and up-to-date information about coming conferences.

It is planned to obtain pdf copies of older newsletters and lodge these also at the site.

There has been much discussion about whether the INHIGEO website could be improved or upgraded. Establishment of a more sophisticated site has been resisted because the current site costs little, offers necessary basic information and is very easy to update by those who are not especially computer savvy.

f) Other Publications

The Madrid – Almadén conference in 2010 resulted in an exceptional number of INHIGEO publications including:

- Special issue for INHIGEO Meeting - *De Re Metallica* 13: 1-116
- INHIGEO Pre-Meeting Excursion Guide 19 pages
- INHIGEO Meeting Book of Abstracts 63 pages
- INHIGEO Meeting Excursions book 62 pages
- INHIGEO Post Meeting Excursion Guide 20 pages
- INHIGEO post conference volume of papers: J. E. Ortiz, O. Puche, I. Rábano and L. F. Mazadiego (eds.) *History of Research in Mineral Resources.* Cuadernos del Museo Geominero, 13. Instituto Geológico y Minero de España, Madrid. ISBN 978-84-7840-856-6.

Classic Geological Papers and Historical Reviews of past International Geological Congress meetings continue to be published in "Episodes", the IUGS Journal under the stewardship of David Oldroyd our Vice President for Australasia and Oceania, and member of "Episodes" Editorial Board.

g) Coming Meetings

Conferences are now planned, some tentatively, up to 2018.
These are:

- 2012 - 34th IGC - Brisbane, Australia (36th INHIGEO Conference)
- 2013 – 24th ICHSTM - Manchester, UK (37th INHIGEO Conference)
- 2014 - USA (38th INHIGEO Conference)
- 2015 - China (39th INHIGEO Conference)
- 2016 - 35th IGC - Capetown, South Africa (40th INHIGEO Conference)
- 2017 - Yerevan, Armenia – 50th anniversary meeting (41st INHIGEO Conference)
- 2018 – Mexico (42nd INHIGEO conference)

Detailed arrangements for the Brisbane and Manchester conference will be discussed under a separate agenda item.

h) Budget

Currently INHIGEO has sufficient funds for its normal operation, plus extra to support keynote speakers at the Brisbane conference.

The biggest fear is that INHIGEO may have to shoulder the cost of posting the newsletter. At the moment this is funded by the University of New South Wales. There is also concern that the Australian Dollar has been increasing in value vis-à-vis the US Dollar, and INHIGEO is funded in US Dollars.

9. Matters arising from the Secretary General report

(a) 2014 - 38th INHIGEO Conference, USA

Vic Baker advised that serious consideration is currently being given to the location of the 2014 conference in the US, specifically whether it should be in the east or west. Currently there seems to be more support for a meeting based in the western states of Colorado, Utah or Wyoming.

(b) 2015 – 39th INHIGEO Conference, China

Xiping Cao advised that the 2015 conference in China may be held in Nanking. A definite announcement with venue is planned to be made at the Brisbane conference in 2012.

10. Toyohashi conference and publication of proceedings

A discussion was held on the possibility of publishing extended papers from the Toyohashi conference. This is currently presenting difficulties as much available funding in Japan is being redirected as a consequence of the recent earthquake/ tsunami.

It was agreed that David Oldroyd, as Editor "Earth Sciences History" and Barry Cooper, Secretary General, liaise with the Japanese delegation with the possibility that papers could be assembled into a book published by the Geological Society of London or published as separate papers in "Earth Sciences History".

11. Meetings of the Commission in 2012 and 2013

34th IGC Congress, Brisbane, Australia (36th INHIGEO Conference), 5 – 10 August 2012, with preconference field trip, 30 July – 4 August 2012

The Secretary General reported that plans are well advanced for this INHIGEO meeting (5-10 August) with the following symposia and conveners.

Theme 33. History of the Geosciences (Coordinators: Barry Cooper, S.F.de M. Figueirôa)

Symposia

33.1	Biographical studies of eminent geologists: A Symposium in honour of David Branagan. Convener: David Oldroyd
33.2	The early history of continental drift: A centenary tribute to Alfred Wegener (1912). Conveners: Homer LeGrand and Allan Krill
33.3	Major achievements in 20th century geology. Convener Carol Bacon
33.4	Geology in tropical regions: An historical perspective. Convener E.B.Joyce
33.5	Geologists, resource exploration and development: An historical perspective. Convener: Ken McQueen
33.6	General contributions on the history of geology. Convener: Barry Cooper

The Wegener symposium was not initially proposed by INHIGEO. It has been suggested to the IGC administration and subsequently adopted by INHIGEO as part of its programme.

Abstracts for papers under these symposia are now being accepted and will close on 17 February 2012.

All symposia are being offered to the geological community as a whole as well as INHIGEO members, while respective conveners are being encouraged to solicit potential contributors.

Symposia Convener, David Oldroyd, has already been especially diligent in doing just this by emailing the entire INHIGEO membership. David is also hoping to organise publication of papers via the Geological Society of London.

Symposia coordinators are also being encouraged to arrange one (or possibly two) keynote addresses that occupy two lecture slots.

David Branagan advised that there was another, non INHIGEO, historical symposia at the 34thIGC being planned on Antarctic and Arctic exploration.

A 6 day pre-conference INHIGEO field trip (30 July – 4 August) involving a Sydney-Brisbane transect is also being organized, separate from the IGC administration, by David Branagan.

This involves a bus trip departing Sydney and stopping at Maitland, Nundle, Armidale and Tenterfield before arriving in Brisbane for the 34thIGC. The cost is anticipated to be less than $1100 per person with an anticipated party of 24.

Conference delegates were asked to indicate their interest to David Branagan on a Field Trip Circular, which was distributed at the conference.

24th ICHSTM Congress – Manchester, UK, 22 - 28 July 2013, with additional field trip (37th INHIGEO Conference)

At the INHIGEO business meeting in 2010, it was agreed that INHIGEO meet in 2013 in association with International Congress for the History of Science, Technology & Medicine for the first time since 1997. This meeting will be held in Manchester, England.

The UK INHIGEO membership under the guidance of Cherry Lewis will convene the INHIGEO symposia at the conference with an initial focus planned on the Geology of Art and Literature. The First Circular is due for release in October 2011 with new symposia proposals accepted until 30 April 2012.

An associated historical field trip to Shropshire and the Welsh Borderland is being planned separately by INHIGEO members. This is the classic Silurian country of Murchison whilst Darwin's birthplace at Shrewsbury is also close.

12. IUGS – ad hoc IUGS review meeting (1 August 2011) and its impact

President Silvia Figueirôa, Secretary General Barry Cooper, Vice President Australasia and Oceania David Oldroyd and Past President David Branagan, as INHIGEO representatives at review, reported on the meeting.

Whilst IUGS seems satisfied with INHIGEO achievements, future plans and current operations, many suggestions were put forward for change by the three people on the IUGS review panel. Their draft report will be formally provided to the INHIGEO Board within six weeks and subsequently, after approval, published in "Episodes".

In summary, significant comments made during the review included:

- The current INHIGEO Statutes and By Laws dating from the early 1990s require revision. With this process it was suggested that the "11 members per country limit" in operation since the so called "Dresden Declaration" in 1991 should be removed. The specialist knowledge requirement for INHIGEO membership in developing countries could also be waived.

- IUGS support for INHIGEO cannot be guaranteed indefinitely. For the future, IUGS believes that INHIGEO should entertain various means of raising funds by itself eg membership levies and conference surcharges. INHIGEO could also examine the option chosen by some other IUGS commissions in becoming a separate association or "Academy" independent of IUGS, whilst still able to drawn upon IUGS for support.

- IUGS would be delighted if INHIGEO apply for IGCP grant funding or similar funding source.

- INHIGEO should place greater emphasis on attracting young geoscientists to its ranks, and interact more with other IUGS Commissions.

- A completely revamped INHIGEO website was appropriate, potentially in association with IUGS. It should provide full back issues of the newsletter and other INHIGEO publications as well information on the history of geology.

- INHIGEO publications should be re-examined. Issues of regular (= monthly or bimonthly) E-Bulletins could be considered.

The proposal to change INHIGEO membership criteria provoked much discussion at the meeting.

It was agreed that the "11 members per country rule" should be removed.
Moved David Oldroyd, Seconded David Branagan, Passed unanimously.

It was agreed that the INHIGEO Board revise the existing "By Laws" and "Terms of Reference" with the Secretary General producing an initial draft for consideration by the Board as soon as possible. Moved Mike Johnston, Seconded David Branagan, Passed unanimously. Other members could also be involved in the drafting process.

With respect to membership and the review of INHIGEO rules, there was also consensus with respect to INHIGEO operations that membership applications in the future could be accepted at any time with vetting by the Board and that the existing method of Board election should be retained.

There was strong support to maintain the INHIGEO Newsletter in its current format and periodicity although possibly with a hard copy only being issued following payment of an annual fee.

It was agreed that a discount registration fee should be offered by INHIGEO for young geoscientists to attend future INHIGEO conferences. Passed with acclamation.

13. New business, Business without notice

Yasumoto Suzuki presented a Certificate of Appreciation to David Oldroyd for his efforts in liaison with the Japanese INHIGEO delegation over many years, and in particular for his assistance in publishing the annual JAHIGEO Newsletter.

Yasumoto Suzuki also drew attention to "Introduction to the History of Geological Sciences in Japan" which was published with the assistance of David Oldroyd and reproduced in the Abstracts volume of the conference.

Philippe Taquet announced that he had copies of several excellent historical / geological brochures that are now being produced in France and distributed via tourist outlets. These were circulated during the conference and subsequent excursion.

14. Vote of thanks for our hosts in Japan

President Figueirôa proposed a vote of thanks for the JAHIGEO Organising Committee for the Toyohashi conference under Toshio Kutsukake as President and Michiya Inomata as Secretary. It was supported with acclamation.
As there was no other business, President Figueirôa closed the meeting at 5.59 pm.

Yasumoto Suzuki presents a Certificate of Appreciation to David Oldroyd during the INHIGEO Business Meeting for his efforts in liaison with the Japanese INHIGEO delegation over many years

INHIGEO Business Meeting
Brisbane (Australia)
Tuesday 7 August 2012 7:00pm

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, Toyohashi, Japan (2011)
(* See above in 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:
Revised INHIGEO Terms of Reference; Future Membership Elections; Member communications
Contributions to *Episodes*

10. Future Meetings of the Commission

11. Finalisation of 2012 Ballot; Declaration of INHIGEO Board 2012-2016

12. New Business / Business without notice

13. Vote of thanks for our hosts.

Report on *ad hoc* review by IUGS of INHIGEO
Toyohashi, Japan - 1 August 2011
(Below is the formal report as provided by IUGS and accepted by the INHIGEO Board)

Date and Venue of the Review:

Monday 1 August 2011
No. 4 Meeting Room Research Building, Aichi University (Toyohashi Campus).
This *ad hoc* review committee (ARC) was scheduled to coincide with the 2011 Annual INHIGEO Meeting and Conference, which was being held in Toyohashi, Japan.

Ad hoc Review Committee Members:

Peter BOBROWSKY – IUGS Secretary General (ARC Chair)
Colin SIMPSON – IUGS Councillor (ARC Secretary)
Niichi NISHIWAKI (Faculty of Social Research, Nara University)
Hisashi NIREI (The Geo-pollution Control Agency, Japan, Member of IUGS-GEM Commission)

INHIGEO Member Participants:

Silvia FIGUEIRÔA (President)
Barry COOPER (Secretary General)
David OLDROYD (Vice-President Australasia/Oceania)
David BRANAGAN (Past President, 1992-1996)

1. *Rationale for the Review*

The International Commission on the History of Geological Sciences, known widely by the acronym INHIGEO, was formally established at an IUGS meeting in Yerevan, Armenia, in 1967, following an earlier proposal made at the 22nd International Geological Congress in New Delhi in 1964. The chief goal of the Commission has been, and remains, the ongoing promotion of international co-operation in the study of the history of the geological sciences. The Commission also works to foster the publication of individual and collective works that illuminate the history of the geological sciences. It is also affiliated with the International Union of the History and Philosophy of Science (IUHPS).

As specified in the Statutes and Byelaws of the Union, the IUGS Executive Committee is required to undertake a formal review of all Commissions, and other bodies funded by the Union, on an approximately 4-year cycle. These reports provide accountability for the expenditures incurred by the Union. Consequently, during the Annual Meeting of the IUGS Executive Committee in February 2011 a decision was made that INHIGEO should be reviewed within the next year. An ARC was established comprising two Executive Committee members: Peter BOBROWSKY (as Chair) and Colin SIMPSON (as Secretary), plus two external reviewers: Niichi NISHIWAKI and Hisashi NIREI. The INHIGEO Secretary General, Barry COOPER, was duly notified of the forthcoming review requirement and the INHIGEO Board were provided with all relevant documentation regarding the review process (e.g. ARC guidelines) prior to the review itself.

The ARC Chair and Secretary compiled as much background information as possible regarding the past activities of INHIGEO. The INHIGEO Secretary-General also provided the Committee with relevant background information on INHIGEO activities, specifically briefing papers, totalling 46 pages, as well as other documents. The Review Committee members also referred to the INHIGEO website at www.inhigeo.org/.

2. *Information to be considered*

At the start of the review process, the Chairman, Peter BOBROWSKY, presented information on the protocols and reasons for such routine IUGS reviews of Commissions as required per the IUGS Statutes and Byelaws, and the Terms of Reference of IUGS *ad hoc* review committees (this information was sent to INHIGEO prior to the Review). He also outlined the "Report of IUGS Commission 8 on IUGS Rules for Commissions, Task Groups, and Projects". The ARC Secretary, Colin SIMPSON, discussed the types of issues normally addressed during such reviews, and the overall process that would be followed during the review.

3. *Summary of the interviews with INHIGEO Review participants*

The ARC addressed a range of general items, topics and issues relevant to all IUGS Commissions, but also addressed particular items uniquely relevant to INHIGEO:

The Review focused on the following items:

- progress relative to the original planned activities over the past 4 years;
- successful items, events, products and activities in the Commission;
- main problems encountered by the Commission;
- financial situation of the Commission;
- relationships with the IUGS and other international bodies; and
- proposed Action Plan for 2012-2016.

The activities of INHIGEO differ from most other IUGS Commissions in that its work on researching and publishing on the history of geoscience is essentially an ongoing task. Also unlike other Commissions it does not need to establish separate Working Groups to focus on specific scientific issues.

When formed in 1967 INHIGEO had 31 members from 16 countries comprising a single Member for each country and as many as 10 Corresponding Members, who supplied information about their activities to their representative Member, who in turn passed it on to the Secretary-General. Subsequently, in 1992, the distinction between Members and Corresponding Members was discarded so that each country could have 11 Members. Later in 2003, members over 70 years were no longer counted towards the country quota of 11. As of June 2011, INHIGEO had 231 members from 47

countries worldwide. It is the only truly international body involved in the study of the history of geology. Most original INHIGEO members were professional geologists with a strong interest in the history of geology, rather than professional historians of science. Although most members are "older" the Commission does have a policy of targeting younger members. It also actively contacts unrepresented countries seeking new members. Attracting younger members has always been a difficulty, in part due to the INHIGEO Statutes and Bylaws which, as said, presently limit the number of members to eleven per country. Non-active Members have been routinely removed from INHIGEO membership since the formation of the Commission.

INHIGEO is actively involved in the production of a variety of publications, including books (mainly via the Geological Society of London), an annual newsletter, and articles in *Episodes* that discuss the history of geology in diverse parts of the world. The Commission also works to foster, and possibly assist with sponsorship, the publication of individual and collective works that illuminate the history of the geological sciences.

The Commission's primary mechanism of communication is via its newsletter which has expanded dramatically over time. The newsletter is produced annually and distributed electronically and by post. The latest Newsletter (No. 43) (weight 393 grams) was distributed to the ARC Review Members and is a printed and bound volume containing 139 pages of information on: past conferences and forthcoming conferences of interest; awards to geological historians; obituaries of geological historians; articles on the history of geology (each about 3 pages long); book reviews; member country reports; and the individual INHIGEO membership list (with contact information). The latter is important for communication and research purposes. At its inception the newsletters were published in Russian and English. Later newsletters were published in German and English. Today the newsletter is published in English only as nearly all Members speak English and that language is almost a prerequisite to be a useful INHIGEO Member. However, the review of non-English language books on the history of geology has become an important aspect of the recent newsletters.

The Commission makes an effort to record the history of IGC meetings and relevant IUGS activities. It also works with various publishing houses and journals, including *Episodes*, to promote the publication of symposia proceedings, and a variety of contributions to the discipline. For more than a decade, INHIGEO has contributed book reviews and meeting reports to *Episodes* as well as occasional historical papers. The historical papers - which are provided by INHIGEO members - generally take two forms: reports on the achievements of past IGC meetings, and discussions of Classic Papers in the earth sciences.

From 1989 onwards, INHIGEO symposia became annual events (rather than every 4 years) and today major symposia are organised annually in various parts of the world. Each annual conference now addresses a specific theme or themes in the history of geology. The annual meetings also involve a field excursion which allows participants to study localities, or sites, of major importance in the history of geology.

In 2009 the INHIGEO established a website, which has recently been updated, and is also a source of basic information on the Commission. It includes the recent issues of the annual newsletter.

INHIGEO is almost totally dependent on the IUGS's annual allocation for its budget, with some additional support from IUHPS as well as indirect support for the Newsletter provided by the University of New South Wales in Australia. Most of the budget goes into postage and printing of the newsletter and review books, as well as travel to conferences. An important strategy of the Commission is continuation with its current budget. Though it is currently financially comfortable the Commission does not have any excess funds to implement new directions, strategies or activities.

Issues

The major challenges affecting INHIGEO center on its ability to attract new members and to obtain additional external financial support that will assist with international activities and in expanding operations. The experience of the INHIGEO Board indicates that there is a significant lack of young people worldwide who have an interest in the history of geology and this will impact on the future recording of history in the earth sciences.

The access to funding from external sponsors is a significant issue resulting in the Commission's primary funding being the annual allocation from the IUGS with a small grant also from IUHPS. Much of the funding is consumed by the significant printing costs of the annual newsletter and the travel expenses of the Secretary General, and sending relevant publications to appropriate Members for review.

The ARC discussions indicated that there is limited communication between INHIGEO members and other IUGS and related scientific bodies. This may reflect a weakness in their ability to communicate with potential new members and also to adequately promote their activities worldwide to other people who are interested in the history of geology.

Some of these issues faced by INHIGEO are related to their Statutes and Bylaws which, though relevant 40 years ago, are not sufficiently up-to-date for current activities.

INHIGEO has a significant historical database recorded in their hard-copy newsletters. However, the bulk of past issues are not readily available for examination and need to be digitised and made widely accessible via the Commission's website.

ARC's Comments

During the review the ARC Members made comments/suggestions aimed at improving INHIGEO activities. These included:

- Although INHIGEO is serving its Members well, it could significantly broaden its activities to become much better recognised outside of the INHIGEO membership and throughout the world.

- The Statutes & Bylaws are long overdue for a revision that allows for improved and increased activity in relation to membership (including membership from developing countries) and in relation to ongoing operations.

- Membership could be changed to be more open and flexible thus allowing anyone with an interest to become a member while the Commission still retains control of membership through an election process. Improved regulations are also needed in relation to the requirements for election to the INHIGEO Board.

- Consideration could be given to allowing non-active members to continue rather than 'deleting' them - such continuing links may assist external information dissemination.

- New possibilities for raising funds should be introduced - for example possibly charging a $10 annual membership fee (dependant on different countries' financial status) (on current membership figures this would add an additional $US2000+ per year).

- Consideration could be given to using any profits from annual meeting registration fees to provide a "Student's fund" for assisting travel etc to annual meetings etc.

- New mechanisms for promoting INHIGEO worldwide should be introduced.

- Significantly update and broaden the website to provide more information on INHIGEO activities (such as providing access to all back issues of newsletters online; providing active links to all INHIGEO articles in the *Episodes* issues available on the IUGS website, adding summaries of other relevant publications, listing the best textbooks on the subject for the benefit of students).

- Consider using the IUGS website as a template (available for about $200) to develop, and easily update, a new INHIGEO website.

- Utilise web technology such as web-based internal communication platforms to improve internal communications, but provide alternatives for those members with limited access to the internet (e.g. many in Africa).

- Consider the possibility of smaller news circulars with greater frequency than the existing newsletter (thus providing more timely information) to be distributed by email where possible.

- Need to clearly identify the advantages of INHIGEO membership and distribute a fact sheet extensively as part of a recruitment strategy.

- Consider applying for an International Council for Science (ICSU) grant to obtain additional funds. Also consider the possibility of initiating an International Geoscience Programme (IGCP) project.

- If the suggested activities lead to an increase in membership, INHIGEO should consider the possibility of forming an International Association or "Academy" to expand international activity in the history of geological sciences. It is recognised that this may complement the existing "History of Earth Sciences Society", based primarily in the United States, as well as several national groups including Australia, China, France, Germany, Japan, Spain, United Kingdom and United States.

4. Conclusions and Recommendations

Since its formation in 1967 INHIGEO has been a dedicated and active group which has been able to produce publications about the history of the geological sciences as researched by their members, which would not have been possible without formation of the Commission. The ARC recognizes and commends these noteworthy achievements by all members of the Commission. Unlike most IUGS International Commissions and Task Groups, which have been established to address specific scientific issues, and which have succinct periods of operation, INHIGEO has an ongoing task whether operating under IUGS or independently.

Based on this review the ARC Committee recommends the following:

1. INHIGEO should immediately review and update its Statutes & Bylaws to allow improved management of identified problems and restrictions.

2. INHIGEO needs to develop, and implement, effective strategies for both the Commission's communications, and for Membership recruitment.

3. INHIGEO must demonstrably improve the regularity and effectiveness of its communications (including rebuilding and populating the website) with the IUGS Executive Committee and other IUGS Commissions/organizations/bodies where relevant.

4. The INHIGEO ARC recommends the IUGS Executive Committee continue to support INHIGEO until next IGC in 2012.

5. The INHIGEO ARC recommends conditional extension of INHIGEO for one extraordinary additional term of 4 years until 2016 following satisfactory progress in dealing with points 1, 2 and 3 before the IGC in 2012.

The IUGS Executive Committee members offer special thanks to Prof. Hisashi NIREI and Prof. Niichi NISHIWAKI for their assistance on the Review Committee.

21 October 2011

Revision of the INHIGEO Terms of References and By Laws

During the ad hoc review of INHIGEO (see above) that took place immediately before the INHIGEO conference in Toyohashi, Japan, it was indicated by the IUGS review panel that the Terms of References and By Laws under which INHIGEO operates as an IUGS Commission were in need of change and updating. These had remained substantively unchanged since 1993.

At the subsequent INHIGEO Business meeting (see enclosed minutes), held a few days later in Toyohashi, this recommendation was accepted by the INHIGEO membership and two important decisions were approved as desired by the review panel :-

1. Removal of the so-called "11 INHIGEO members per country limit.

2. A comprehensive revision of the INHIGEO Terms of Reference and By Laws by the INHIGEO Board with a revised draft to be considered by the INHIGEO Board by the end of 2011.

Following the Toyohashi Review and associated INHIGEO Business Meeting, the Secretary General has prepared a draft revised Terms of Reference and By Laws (ToR) as directed, and these have been subject to intensive scrutiny by the full INHIGEO Board with significant further revision before unanimous acceptance on 19 January 2012 by the Board.

The revised draft ToR have then been sent to the IUGS Secretariat and approved by the IUGS Executive Committee at its annual meeting in San Sebastian, Spain on 14 February 2012.

The draft ToR are now being held by the IUGS Secretariat for consideration at the IUGS Council meeting that will take place in Brisbane, Australia in August 2012 in association with the 34th International Geological Congress and 2012 INHIGEO conference. Following approval by the IUGS Executive Committee it is expected that this further approval will be a matter of formality with the revised ToR coming into operation at that time.

The revised Terms of Reference introduce and codify several significant changes in INHIGEO administration and membership. These include:

1. Removal of the "11 INHIGEO members per country limit" as agreed at the Toyohashi Business Meeting of INHIGEO.

2. Cessation of the biannual membership ballot in favour of all new members being fully approved by the INHIGEO Board as either Full or Associate INHIGEO members following nomination via existing procedures or by direct approach to the Secretary General.

3. Establishment of a new category of Associate INHIGEO Membership to accommodate those applicants who may not qualify for membership on the basis of historical contributions yet are interested in the work of the Commission. Associate Members will not hold office, make nominations or participate in ballots under the proposed ToR. However it can also be offered in order to establish membership from countries with minor scholarly communities.

4. Recognition of email as a routine means of communication within INHIGEO.

5. Recognition of historians as well as scientists as a professional group within INHIGEO.

6. Recognition of the Newsletter Editor and past Secretary General (ex officio) as members of the INHIGEO Board.

7. Recognition of the recently proposed IUGS History of Geology Award.

Members will be emailed a copy of the approved new Terms of Reference after they are approved. It is also expected they will be published in the next issue of this Newsletter.

Liaison with other IUGS Commissions and Task Groups

As a Commission of IUGS, INHIGEO as well as other IUGS Commissions and Task Groups have been specifically requested to liaise and interact as much as possible. The following IUGS Commissions have common membership and/or overlapping objectives with INHIGEO and their activities are reported here.

Heritage Stone Task Group (HSTG)

The work of this new IUGS Task Group was first reported in Newsletter 42. A number of INHIGEO members are already on the list of Task Group "Correspondents". The purpose of HSTG is to create a new international designation titled a 'Global Heritage Stone Resource' that recognises those natural stone resources that have achieved widespread utilisation in human culture. The intent of recognising a GHSR designation arises from the value of:

- Promoting increased community, national and international awareness of natural stone and its widespread utilisation in human culture.
- Gaining additional professional recognition for, and understanding of, natural stone amongst professional workers, primarily in geology, engineering, architecture and stone/building conservation.
- Highlighting the significant positive attributes of natural stone in terms of sustainability and regional economic development.
- Safeguarding and protecting heritage stone resources from subsequent sterilisation by alternative human endeavour.
- Raising the profile of many natural stone materials to greater prominence through researching citations.
- Encouraging proper management of well known existing natural stone extraction operations in order to ensure future availability and utilisation.
- Offering a means or mechanism, operating on a worldwide basis, to formalise selected characteristics of natural stone material, for professional purposes and otherwise, in an internationally accepted context.
- Enhancing international co-operation in the research and utilisation of natural stone resources.
- Assisting marketing of natural stone as a commercial commodity, sculptural/decorative material and as a tourism product.

Currently a number of trial GHSR citations are in various stages of consideration and preparation. These include: Portland Stone (UK), Welsh Slate (UK), Piedra Pajarilla (Spain), Podpeč limestone (Slovenia). Papers on these stones are in preparation or have been submitted to the journals "Episodes" or "Geoheritage". Research is also underway to assess potential of the classic karst region in Slovenia as a "Global Heritage Stone Province".

Once a permanent HSTG Board of Management is established in August 2012 the avenue will be available to approve these citations formally and to place the designated stones on the "Global Heritage Stone Resource" register and to recognise a "Global Heritage Stone Province".

Further information is available on the Task Group at www.globalheritagestone.org . At this web site are also placed the four Circulars that have been issued since May 2009.

International Commission for Geoscience Education, Training and Technology Transfer (COGE)

COGE was established in 2004 by the IUGS to examine and develop programs to assist developed and developing countries to maintain, expand or introduce better earth science education, outreach and technology transfer within their country. As a first step in liaising with COGE, INHIGEO will, as a matter of routine, circulate COGE with information on its activities. Further information is available on the Commission at www.iugscoge.com .

CONFERENCE REPORTS

The International Commission on the History of Geological Sciences (INHIGEO) Meeting, Japan, 2-10 August 2010 with inter- and post-meeting fieldtrips

The 36th INHIGEO Meeting was held in Toyohashi, in the southwest of Honshu Island, Japan. Unlike many recent INHIGEO meetings, the venue was in one of the most geologically active parts of the world. This was amply demonstrated by participants being woken just before midnight prior to the meeting by a Magnitude 6.1 earthquake centred in the Hamaoka area of Honshu. For the more scientifically minded, the initial P wave was immediately followed by the S wave. The Japanese, through strict engineering codes, implementation of warning notices and education have, as we were soon to learn, done much to mitigate the geological and other hazards that their homeland are all too frequently subjected to.

The venue for the INHIGEO meeting was Aichi University, a short commuter train journey from central Toyohashi. In welcoming the 65 participants to the meeting, Toshio Kutsukake of Aichi University and INHIGEO member gave a background summary of the host country. This included a sobering reference to the Great East Japan or Tōhoku M 9.0 Earthquake of 11 March 2011 with its devastating ground shaking, liquefaction and particularly the tsunami it spawned that caused havoc in the coastal areas of northeastern Honshu Island. Sato Motohiko, President of the University, in his welcome referred to the origin of the University in China and the establishment of Aichi University in 1946. The University now has three campuses with a fourth being built in Nagoya. A representative of Toyashi's Education Department extended a warm greeting from the city's mayor. The meeting's translator Sanghue Kim, daughter of INHIGEO member Kwangnam Kim, emphasized that from its location, Toyohashi rightly regards itself as the centre of Japan.

Formal papers commenced with a well researched plenary presentation by David Oldroyd on the early development of geological maps with an emphasis on Chinese and western cultures. The 72 maps and other images used to illustrate the talk were, immediately prior to the talk, distributed by the meeting's organisers in a useful reference booklet. In the paper, and subsequent questions, there was much discussion as to what constituted a geological rather than geonostic map. The papers presented on the first day were:

Session 1: *History of Geological Maps and Related Geological Images in the World*

David Oldroyd – The early development of geological maps: comparisons between Chinese and Western cultures.

Hirokazu Kato – History of small-scaled geological maps in Japan.

Zoya A. Bessudnova – Grigory Helmersen and his 'General map of geological formations of the European Russia' 1841.

Simon Nathan – James Hector and the first geological maps of New Zealand.

Ezio Vaccari – Images of mountains in the 18th century: Geology in the landscape and historical insight.

Ernie Hamm – Visualising concepts in context in Goethe's geology.

Silvia F. de M. Figueirôa and Hector de Assis Júnior – Art and science in Brazilian hinterlands: Geological landscapes from the Province of Ceara (1859-1861).

Martina Kölbl-Ebert – Sketching rocks and landscape: Drawing as a female accomplishment in the service of geology.

Carol Bacon – Historical geological images from Tasmania.

In the evening a welcoming social was held at the University and was capped by an impressive, and deafening, display by the Nagashino jindaiko troupe of traditional Japanese drumming. This was followed outdoors by another tradition, which originated in Toyohashi, of Tezutsu Hanabi fireworks. For this lengths of bamboo about 70 cm in length and some 10 cm in diameter, and bound in rice straw rope, are packed with up to 3 kg of black gunpowder, to produce a gigantic version of what westerners call Roman candles. These impressive and, for those performing them, dangerous pyrotechnics developed from when such displays were used as a means of communication.

INHIGEO members gather around the traditional Japanese drum group, Nagashino jindaiko, at Aichi University, Toyohashi

Day 2 (3 August) – Session 2: *History of Seismology, Volcanology and Geotectonics*

Kanenori Suwa – History of volcanology in Japan.
David Branagan – Australia and the great Kanto Earthquake of 1923.
Tatiana Ivanova – Alexander Petrovitch Orlov – the first Russian seismologist.
Boumsoung Kim – Images of earthquakes and tsunamis in Japan, 1880-1921.
Yo Akamatsu, Hisao Adachi and the Research Group of Deep Structure of Island Arcs – History on the study of deep earthquakes in the Japanese islands and surrounding areas.
Asumoto Suzuki and the Research Group of Deep Structure of Island Arcs – History on the study of fault plane accompanied by earthquakes in Japan.
Kensho Iikawa – Brief history of the geodetic study of the crustal movement of the Japanese island after World War II.
Toshihiro Yamada – Geographical Speculative Images? Mochizuki's Idea on the geotectonics of the Pacific in the age of "Geopolitics".
S. Maruyama and M. Kumazawa – Paradigm shifts in earth science after World War II: A case study of the field of geodynamics.
Shigeyuki Aoki – Some facets of the emergence of earth and planetary science in Japan: A research proposal.
Takeshi Ozawa – Carl Schenk, the first professor of mineralogy in Japan.
Kim Kwang-Nam – Curt Adolph Netto's sketches archived in Japan.
Masanori Kaji – Jun-ichi Takahashi: A forgotten geologist in Japanese scientific history.
Michiko Yajima – Early women earth scientists in Japan.

Following the day's presentations, the INHIGEO business meeting was held at Aichi University, Toyohashi (see separate report in this Newsletter)

Intra-meeting field trip to the Mikawa District

The third day of the meeting dawned hot and sunny for a field trip to one of the fundamental structures of Japanese geology, the celebrated Median Tectonic Line (MTL), along with a number of important archaeological sites. The arc-parallel MTL trends more or less WSW-NNE through southern Japan and separates various tectonic belts showing differing degrees of metamorphism and igneous history. To view this structure we were bussed in comfort from low-lying Toyohashi northeast into the mountains surrounding the city of Shinshiro. The first stop was at the Shitara-ga-hara battlefield on the banks of Rengo Stream. It was here, on 21 April 1575, that over 50,000 men of the Takeda and an alliance of Oda and Tokugawa clans clashed in the bloody Battle of Nagashino. The Takeda clan, who had laid siege to the nearby Nagashshino Castle, were defeated and the total casualties amounted to some 25% of the men involved. On the battlefield, now peaceful paddy fields, an example of the defensive structures erected by the numerically inferior Oda-Tokugawa forces have been reconstructed. In the nearby Nagashino-jyo Historical Museum, sited next to the remains of the moat and inner earthworks of Nagashino Castle, are numerous well laid out exhibits of the battle, including uniforms of the soldiers and the various weapons used ranging from cannons, matchlock guns, swords and spears.

A steep clamber down the banks of the clear waters of the Toyo-gawa River was rewarded by a spectacular outcrop of the Median Tectonic Line. This great fault is here defined by a thin sheared carbonaceous layer dipping steeply (60°) north. The hanging wall comprises granitoid mylonites of the Ryoke Belt whereas the foot wall is tectonised Sambagawa crystalline schist to the northwest and southeast of the MTL respectively. In the riverbed it was possible to get a plan perspective of these rocks.

Toshio Kutsukake shows us the Median Tectonic Line during the mid conference field trip

In the afternoon we headed north into a narrow valley in the mountains and were conducted through the Houraiji-san Museum of Natural History. As the name implies this provided participants with a good overview of the geology, flora and fauna of the Houraiji mountains. Of special interest is a display of live owls, including the Eurasian Scoops-owl (*Otus scops*), the designated Aichi Prefectural bird. From the Museum we followed a circuitous route to the upper slopes of Houraiji-san. On leaving the bus a short walk along a forested track took us through bedded tuffs and pyroclastic flow deposits, of the Miocene Shitara Igneous Complex, which overlie the Ryoke Belt. Soon after, at the head of a long flight of stone stairs flanked by cedars, the Toushou-gu shine was reached. The shrine is dedicated to Tokugawa-Ieyasu who, following the battle of Sekigahara in 1600 AD, became Shogun. A little further on was the Houraiji Temple, established by the hermit Rishu-sen'nin in 702 AD. From it there were extensive views over the mountains south towards Shinshiro. The Shinto religion is still strong and like Buddhism respects the environment and promotes harmony between all living things. From Houraiji-san it was a bus ride back to Toyohashi, where we arrived just after 9 pm well satisfied with what we had seen and learnt. On the last day of the meeting, which concluded at midday on 5 August 2011, the following papers had been presented:

Philippe Taquet – The fabulous voyage of the cast of *Diplodocus* skeleton sent by Andrew Carnegie to Paris in June 1908.

Masatoshi Goto and Masahiko Akiyama – A historical review of the advance of paleobiology in Japan: A contribution by the Fossil Research Society of Japan.

Masaru Yoshida and Okitsugu Watanabe – Role of student mountaineering clubs in the development of geological sciences: An example of the Academic Alpine Club of Hokkaido.

Mike Johnston – The Median Batholith: A fundamental structure in the basement rocks of New Zealand.

Barry J. Cooper – Reg Sprigg and the 1947 discovery of submarine canyons in Australian waters.

Victor R. Baker – Visualising the planetary evolution of Mars: Percival Lowell's Japan travels, Martian canals, and geological critics.

Takao Nakajin – Emperor Seamounts in Japanese Bathymetric Chart 6901: A summary of the history of sea-floor spreading.

In addition to the oral papers an excellent selection of posters on a wide variety of topics were displayed throughout the meeting and comprised:

Kenneth R. Alto – American contributions to the geological mapping of Hokkaido, Late 19th century Japan.

Jun Aizawa – Pumpelly's geological survey of Hokkaido in 1862 and Pumpelly (1867) *Geologic researches in China, Mongolia and Japan during the Years 1862 to 1865*.

Kim Kwang-Nam – Benjamin Smith Lyman's field notes described in Japan.

Junji Itoigawa – Illustrated disasters in the Meiji-Taisho Era (1868-1926) of Japan: Changes of printing methods in scientific journals, magazines and graphs.

Toshio Kutsukake – Illustrations attached to *Sansō-Hiroku* (a secret document on the appearance of mountains in the Edo Period, Japan).

Kanenori Suwa – Namazu-E (Catfish Picture) on the Edo (Tokyo) Earthquake in 1855.

Naotoshi Yamada – A historical review of the Reconnaissance Geological Map of Japan, scale 1: 400,000, published in the last two decades of the 19th century.

Hisao Adachi, Yo Akamatsu and the Research Group of Deep Structure of Island Arcs – History on the study of deep earthquakes in the Japanese islands and surrounding areas.

Shohachi Nakamura and Yasumoto Suzuki – History on the geological survey of volcanoes of the Japanese Islands.

Masumi Osawa – A common knowledge of minerals in the Edo Era, 17th to the mid 19th centuries, Japan.

Keiichi Shiraki, Hayaomi Urano, Naoshi Kuroda, Hiromi Nagai and Kanenori Suwa – Kikuchi Yasushi, a distinguished naturalist in the late 19th century, and discovery of boninite.

Masaru Yoshida and Okitsugu Watanabe – Role of student mountaineering clubs in the development of geological sciences: An example of the Academic Alpine Club of Hokkaido.

Stefano Marabini and Gian Battista Vai – The 1882 Toyokichi's Harada's survey in Italian Alps: a pioneering case of Alpine tectonic visualization.

Michiya Inomata – Abbreviated chronological table of modern ages related to earth science of Japan, China and Korea.

Simon Nathan – Early geological maps of New Zealand.

D. Maratami and Honsho Shizumitsu – High resolution 3D sonic prospecting, Southwest of Tokyo Bay.

Committee for Co-ordination of Joint-prospecting for Mineral resources in Asian Offshore Areas (CCOP) – Studies in East Asian Tectonics and Resources (SEATAR) Central Transect VI: Japan-Korea.

Papers and posters will be published in special volume of the Japanese Association for the History of Geology (JAHIGEO) in 2012.

Following lunch at the University we were bussed to Futagawa Shuku Honjin Museum. This renovated building is one of the few surviving honjins or lodging houses for feudal lords and their retainers that were erected along major routes during the Edo Era. As well as the restored rooms, ranging from guest lounges and bedrooms to kitchens and bathhouses, there are numerous other related exhibits.

Later at the Toyohashi Natural History Museum Immediate Past-president of INHIGEO and a world authority on dinosaurs, Philippe Taquet, gave a public lecture on his favourite subject. This well illustrated lecture was given in English but was simultaneously translated by Ryoko Matsumoto for the benefit of the very receptive Japanese component of the audience. Ryoko was well qualified for this task, having just completed her PhD at University College London on a dinosaur related topic. In the evening a farewell social was held outdoors in a venue close to the Toyohashi Railway Station.

Post-meeting Fieldtrip to southern Kii Peninsula 6–10 August

Despite the social event, all 33 participants on the post-meeting field excursion assembled promptly at 6am on 6 August at the station and boarded a bus for the Kii Peninsula in southeast Honshu. The reason for the prompt start was to catch a vehicular ferry that plies between the Atsumi and Kii peninsulas thereby eliminating a circuitous journey around Ise Bay. The ferry passed close to several forested islands guarding the harbour entrance and which, so we were told, were composed of chert, ultramafics and other rocks indicating that we were again in the outer zone of the MTL. Some of the islands adjacent to Toba are also famous for the cultivation of pearls.

On disembarking from the ferry at Toba we travelled a short distance to examine coastal outcrops of early Mesozoic sediments that had been subjected in the Cretaceous to high pressure-low temperature greenschist (chlorite-epidote-actinolite) metamorphism. These schists form part of the Sambagawa Belt and crop out on the southeast side of the MTL. More of this spectacular rock was observed in a flight of steps leading up to one of the shrines in the large and historically important Ise Jingu complex, one of the most sacred sites in Japan. The various shrines are set on low hills covered by stately trees and beautifully manicured gardens beside the hallowed Isuzu River. By now the heat and humidity was excessive and the overhead canopy proved a welcome respite.

After lunch in a restaurant in the town adjacent to the complex, we then were driven deep into the steep forested mountains. The scenic terrain however was no obstacle to Japanese engineers who simply took the most direct route with the road consisting of a series of major tunnels linked by equally impressive viaducts. Heavy showers of rain also confirmed that the Kii Peninsula is one of the wettest regions in Japan, with a staggering 6000 mm of rain per annum. As a consequence all road cuts, no doubt to the great frustration of Japanese geologists, were hidden beneath a protective layer of concrete retaining structures. To demonstrate the need for such structures the third stop of the day had to be abandoned as the road to it was blocked by a slip resulting from a recent typhoon. Instead we carried southwest along a sunny coast to an outcrop of Miocene pyroclastic rock, belonging to the Kumano Acidic Rocks, whose profile resembled a lion's head overlooking a pebble beach. Amongst the pebbles were shinny black hard metamorphosed mudstone, the Nachiguro Shale. We were soon to see numerous examples of this rock carved into souvenirs in many of the shops on this part of the Kii Peninsula.

All along the coast there were structures in the form of seawalls and off shore groynes to protect the coastal towns from storm surges and in places tsunamis. However, our guides were taking no risk from either for we spent the night in a hotel well above sea level which had the benefit of commanding views out over Kumano city and the Pacific

Ocean. In true Japanese-style sleep was on mats on the floor and with steaming hot bath houses for getting rid of the dust accumulated during the day.

The second day of the trip was again hot and fine, and despite being adjacent to the coast, humidity was also high. After breakfast a short trip in the bus took us to the Hana-no-Iwaya Shrine, which utilises an overhang in an abandoned sea cliff cut in the same Miocene pyroclastic flow deposits we had seen the day before. The importance of this ancient shrine, the tomb of Izanami, the legendary mother of the Japanese islands, was explained by INHIGEO member Hirokazu Kato.

It was then inland west into the mountains following narrow valleys floored with rice fields to the relatively recently closed Kiwa Mine. Like many aspects of Japan the mine has a long history, being worked from the 8th century AD. The mine had exploited a stockwork of epithermal Miocene veins carrying a wide variety of minerals, including silver and gold, although it was primarily noted for its copper. Prior to entering the nearby mine museum, participants were able to bathe their feet in an elongated granite bath through which flowed warm mineralised water. In the museum itself the discovery, working and end use of the minerals was graphically displayed in samples, dioramas, photographs, maps and a video. Included in the display was reference to British prisoners captured during the World War II who worked in the mine and, from all accounts, were well treated by their captors. On the nearby hillside the steelwork of the most recent head works of the mine were visible amongst the trees.

On arrival at the Hayatama Taisha Shrine a pleasant lunch, again in Japanese style, did not really prepare us for a climb by way of a stone stepped pilgrim's route through the forest to the Kumano Kodō at Daimon-zakea. Despite the shade of the magnificent cedars and other trees it was a hot perspiring climb to the Nachi Taisha shrine complex and Seigantoji temple, which are part of a world heritage site. However, it was well worth the effort for the complex is extensive with buildings, reflecting both Shinto and Buddhist ancestry, elegantly perched on the steep mountain slopes. Numerous vantage points gave enchanting views over the valley below and, in the distance, the Nachi waterfall. Travelling in the bus to our next stop a pleasant short walk through the forest brought us to the base of the waterfall, which plunges 133 m over a granite porphyry belonging to the Kumano acidic rocks. The night was in a traditional hotel overlooking a bay enclosed by headlands of Kumano Group mudstone and minor interbedded thin sandstone deposited in a Eocene to Miocene fore arc basin and now preserved as part of the Shimato Belt.

INHIGEO group visit the Hayatama Taisha Shrine complex

In the morning we continued under hot sunny skies southwest along the coast noting extensive engineering works placed to protect vulnerable coastal towns and small harbours from the storm surges that periodically pound the Kii Peninsula. Mudstone was extensively exposed in shore platforms tectonically uplifted by earthquakes. Inland, suites of high level beach profiles testified that this part of Japan is rising at a geologically rapid rate. At Hashihui-iwa an impressive dike of quartz porphyry, dated at 14 million years (Miocene), intrudes gently dipping Kumano Group mudstone forming the shore platform. Being more resistant to erosion the dike stands up to many metres above the shore platform forming an impressive rib of rock giving it its name of "pillars of a bridge". Also noteworthy was the virtual lack of any contact metamorphic effects in the mudstone. The general opinion was that the igneous material was in frothy gaseous state when it intruded the sediments, which were then wet and only weakly consolidated. On southern Kii peninsula, at Sarashi-kubi-sō, the marine beds while only weakly consolidated were disrupted by submarine slumping to form an olistostrome deposit that is exceptionally well exposed on the shore platform.

After another traditional lunch at Tanabe, about halfway along the southern littoral of the peninsula, we headed north to the final coastal stop at the town of Hiromura. The town was devastated by the Ansei Tsunami in 1854, although the loss of life was considerably reduced due to the actions of Goryo Hamaguchi (1820-1885) who warned his fellow citizens to the impending 11 m high wave of sea water. From a nearby hill he realised the significance of the sea retreating and by setting fire to his rice crop thereby saving the lives of all those who rushed to higher ground. He was also instrumental in the construction of a tsunami barrier, the Hiromura or, as it is often called, the Goryo Embankment. This embankment considerably reduced the impact of a 4 m high tsunami in 1946. However, it would be no match to a tsunami the size of the 2011 event.

With these sobering observations in mind it was perhaps with some relief that we then headed around the western end of the Kii peninsula to the large industrial city of Wakayama. Following the Wakayama valley inland, which has developed by erosion of the soft crushed or more schistose rocks enclosing the MTL, the bus negotiated a rather narrow tortuous road climbing south into the cooler atmosphere of the Kōyasan mountains. Kōya, perched on the broad crest of forested mountains some 850 m above sea level, contains a university and numerous holy sites, including our destination for the night a guesthouse in the grounds of the Buddhist temple of Renge-jyoin pleasantly sited in gardens, pools and pebble gardens. Prior to dinner some participants availed themselves of the opportunity for mediation in one of the monastery shrines. Next morning we were shown several other religious sites in the town, thereby capping a truly memorable experience. Participants were later dismayed to learn that soon after our visit the Kii peninsula suffered extensive damage from a wayward typhoon.

From Kōyosan it was a winding descent into the sweltering heat of the Wakayama valley to Hasimoto city before heading north to Asuka and the Ishibutai Kofun Tumulus, the now excavated and restored sarcophagus of Soga-no-Umako, who died in 626 AD. He was by marriage closely associated with the Japanese ruling family and he also played a leading role in the introduction of Buddhism into Japan. The sarcophagus is composed of huge boulders of Ryumon-dake Tonalite that outcrops nearby and is part of the Ryoke Belt on the northwest side of the MTL. Indeed some of the boulders were probably the remains of large tonalite tors. Adjacent to the sarcophagus is a recreation of the tomb that was likely housed in the sarcophagus. By now the temperatures were searing into the high 30s and lunch in a nearby cool restaurant was a welcome relief.

Refreshed we continued northward to reach in the mid afternoon the very large wooden Todaiji Temple, built in 710-794 AD at the behest of the Emperor Shomu. Within this world heritage site is the bronze Daibutsu or Great Budda's statue that stands 15 m high and weighs 500 tonnes. In the grounds are numerous Sika deer which roam freely amongst the visitors waiting to be fed. Although gentle they did get a little stroppy if not fed promptly. The large and culturally important city of Kyoto was reached at 4.30 pm where the temperature was 38°C. After dinner in a hotel overlooking the Kyoto Palace Gardens the field trip was brought to a close with speeches of thanks to our Japanese hosts by Secretary-General Barry Cooper and, on behalf of the INHIGEO President, the immediate Past-President Philippe Tacquet. Fitting responses were given by our hosts. Next day most participants stayed on in Kyoto to visit many of the cities architectural and cultural treasures.

In summary, it was a well run meeting with excellent fieldtrips that not only gave participants an excellent insight into Japanese geology, in particular the Median Tectonic Line, but also a lasting impression of Japanese history and culture. Our hosts were unfailingly courteous and helpful, thereby greatly overcoming language difficulties. Participants are greatly indebted to all the organising team who undoubtedly put very many hours into ensuring the meeting's success. The team were Nobuyuki Aida, Hirokazu Kato, Shigeo Kato, Kim Kwang-Nam, Toshio Kutsukake, Hakuyu Okada, the late Masae Omori, Yasumoto Suzuki, Kanenori Suwa, Fumihiko Tochinai, Michiko Yajima, Toshihiro Yamada, Toshifumi Yatsumimi and Conference Secretary Michiya Inomata. The programme and abstract volume was well laid out and projectionist and time keeper Mika Ito and translator Sanghue Kim ensured that programme was adhered to. The field trip guides prepared by Toshio Kutsukake are a valuable reference and contain a good mix of geology, history and culture. In addition to the publications directly related to the meeting, INHIGEO members had earlier in the year received a special issue of JAHIGEO titled *An Introduction to the History of Geological Sciences in Japan* (May 2011). This was prepared by Japanese members of INHIGEO and edited by Toshio Kutsukake and Michiko Yajima with assistance from David Oldroyd. Final thanks go to Kin-ichi Kurogama our highly skilled and very courteous bus driver. His handling of the bus whether it was on narrow mountain roads or in dense traffic won the admiration of all. In conclusion special thanks go to Professor Toshio Kutsukake for reading this report and correcting my misspellings of Japanese words.

Mike Johnston, Nelson, New Zealand

INHIGEO members gather for their annual conference at Aichi University, Toyohashi

Meetings of the Austrian Working Group "History of Earth Sciences" - 2011

The Austrian Working Group "History of Earth Sciences" was founded 13 years ago and sees itself as a representative organisation investigating the history of geological research in Austria. The Working Group includes a very active core group of about 50 scientists.

On 2 December 2011 the annual Meeting of the Working Group was held in the Archives of the University of Vienna, with its topic "History of Geology and Archives". The presentations of the workshop included earth science research from the "Celtic Gold Rush" up to the geognostic era of the 18th century and to the mid-20th century. In many presentations there was a biographical focus. As part of the meeting, a guided visit through the archives of the University was offered. The abstracts in form of small articles were published in the Reports of the Geological Survey, volume 89, Vienna 2011.

Representatives of the Working Group also participated in the "multinational" Conference on "Beschreibung, Vermessung und Visualisierung der Welt (Europäische Wissenschaftsbeziehungen 4)" [Describing, surveying and visualizing Earth (European relations in science)] in Erfurt (Germany). The symposium was held 6-8 May 2011 in the Old Synagogue in Erfurt with the participation of scientists from Germany, Russia, Turkey, Poland and Austria. Bernhard Hubmann and Johannes Seidl (both INHIGEO members) presented a paper on "Die Donau und ihr Gebiet: Carl Ferdinand Peters' Beitrag zur geologischen Kenntnis der k.k. Doppelmonarchie" which focused the outstanding geological, geographical and ethnological work by Carl Ferdinand Peters in today's Romania in the 1860s. A printed version will be available soon.

Members of the Working Group also attended the International Conference "The History of Geology and Medicine" 1-2 November 2011, in London (see extended report below). This conference was organized by the Geological Society of London. Medicine was essentially the birthplace for both natural science and geology and the first descriptions of rocks, minerals and fossils are often attributed to early physicians. The conference topics included contributions of physicians to the development of geology, pharmaceutical use of rocks, minerals and earths, medical geology and forensic and balneology. Daniela Angetter, Bernhard Hubmann and Johannes Seidl presented a lecture "Physicians and their contribution to the early history of Earth Sciences in Austria" and also made a poster presentation "Physicians and their importance for the early history of Earth sciences in Austria". The abstracts were published in: A History of Geology and Medicine, Abstracts Book, ed. Richard T. J. Moody u. a., London 2011. A paper for publication was submitted.

The following papers were published during the reporting year:

Angetter, D. (2011): Geologische Exoten aus dem Institut Österreichisches Biographisches Lexikon. - In: Seidl, J. & Hubmann, B. (eds.): 10. Tagung der Österreichischen Arbeitsgruppe „Geschichte der Erdwissenschaften", Wissenschaftshistorischer Workshop „GeoGeschichte und Archiv". - Berichte der Geologischen Bundesanstalt, 89, 6-11, Wien.

Cernajsek, T. & Hauser, C. (2011): Das 10. Internationale Erbe – Symposion: Kulturelles Erbe in Geo – und Montanwissenschaften Bibliotheken – Archive – Museen – Sammlungen. – In: Mensch Wissenschaften Magie. Mitteilungen der Österreichischen Gesellschaft für Wissenschaftsgeschichte, 28, 177-184, 5 figs., Wien.

Cernajsek, T. & Hauser, C. (2011): The reward for the preservation of cultural heritage in the earth Sciences: a report on the results of a working group of the „Visegrad – Fund": „Geological mapping in the 18th and early 19th centuries in Central Europe. – In: The 11th Int. Symposium Cultural heritage in Geosciences, Mining and Metallurgy Libraries – Archives – Museums, Mexico, august 29th to sept. 2nd, 2011, 25-26, 1 fig., Mexico D.F.

Cernajsek, T. & Vecer, B. (2011): My travels in Southern Dalmatia: from the diaries of the wife of the geologist Gejza Bukowski <1858 – 1837> from Stolzenburg, Catherina of Bukowski by Stolzenburg. - In: The 11th Int. Symposium Cultural heritage in Geosciences, Mining and Metallurgy Libraries – Archives – Museums, Mexico, august 29th to sept. 2nd, 2011, 88-89, 1 fig., Mexico D.F.

Flügel, H. W., Huber, P., Huber S. & Machan, A. (2011): Jakob Friedrich van der Nüll Großbürger und Sammler in Wien an der Wende zum 19. Jahrhundert. – 208 pp. Wien.

Flügel, H. W. & Wach, G. (2011): Belsazar Hacquets und Ehrenbert von Molls „Reise in die Norischen Alpen" 1785: 225 Jahre geologische Feldforschung in den Ostalpen. – Berichte der Geologischen Bundesanstalt, 84, 50 pp., 4 figs., Wien.

Hamilton, M & Vetters, W. (2011): Amüsante Wissenschaftsgeschichte der Geologie - Wiener "Geo-Poesie" vor mehr als 100. – Berichte der Geologischen Bundesanstalt, 90, 57 pp., 4 figs., Wien.

Hubmann, B. & Seidl, J. (2011): Hommage an Franz Eduard Suess (1867-1941) zur 70. Wiederkehr seines Todestages. – Jahrbuch der Geologischen Bundesanstalt, 151/1+2, 61-86, 4 figs., Wien.

Hubmann, B. & Seidl, J. (2011): Im Schatten seines Vaters? Zur Biographie von Franz Eduard Suess (1867-1941) - In: Seidl, J. & Hubmann, B. (eds.): 10. Tagung der Österreichischen Arbeitsgruppe „Geschichte der Erdwissenschaften", Wissenschaftshistorischer Workshop „GeoGeschichte und Archiv". - Berichte der Geologischen Bundesanstalt, 89, 25-33, 1 fig., Wien.

Carneiro A. & Klemun, M. (Ed.) (2011): Seeing and Measuring, Constructing and Judging: Instruments in the History of the Earth Sciences (= Centaurus, An International Journal of the History of Science and its Cultural Aspects, Vol. 53, Issue 2, 2011).

Various biographical contributions of geologists, paleontologists and mineralogists were published in the 1st Online-Edition of the Austrian biographical dictionary by the Austrian Academy of Sciences. (ÖBL Online-Edition, Lfg. 1, 01.03.2011)

Daniela Angetter, Johannes Seidl and Bernhard Hubmann,
Vienna

Geological Society of London (History of Geology Group)
Conference on "Geological Collectors and Collecting"
Held at the Natural History Museum, London, 4- 5 April 2011

This meeting was innovative in a number of ways. The venue at the Flett Theatre of the Natural History Museum was a first for HOGG and the meeting format was also novel with workshops and behind-the-scenes tours supplementing the talks and posters, thereby offering a choice of activities for the 130 registrants. The conference talks were themed in four sessions to cover firstly the rationale for collecting, and then the three main areas of collecting - maps and books, fossils, rocks and minerals.

The conference was opened by **Richard Fortey** of the Natural History Museum speaking on *Collecting fossils: pitfalls and practice* beginning with his own early experiences of Spitsbergen and trilobites. Richard dealt with the problems of collecting and conservation and the importance of maintaining the longevity of collections for the benefit of future research.

Julian Wilson from Christie's spoke on *Rare geological books and maps: An auctioneer's perspective* considering the sale of important collections from the eighteenth century onwards and providing a context for the evening event when delegates were offered a preview of travel, science and natural history auction lots at Christies saleroom.

The opening theme of the conference was concluded by **Jonathan Larwood** from Natural England who considered *Field collecting: the development of policy and guidance*. Jonathan developed the idea of a hierarchy of guidance, policy and legislation with examples of good field practice and standards.

The second session of talks on map and book collecting began with **Tom Sharpe** from the National Museum of Wales on *North on the map: the geological map collections of the National Museum of Wales*. Tom discussed Frederick John North (1889-1968), his long association with the Museum of Wales and the extensive and important collection of maps which he was responsible for acquiring.

Stuart Baldwin of Baldwin's Scientific Books spoke on *Book collecting in the history of the natural sciences, especially geology, palaeontology and natural history* from the perspective of both a collector and a dealer, illustrated by some rare items from his own collection.

The second session was concluded by **Christopher Toland** of Oolithica Geoscience on *The eye of a collector: how map collecting illuminates history*. Christopher referred to examples of mapping by Adam Sedgwick and the importance of publishers such as J and C Walker and James Knipe. He also discussed recent geological mapping and made the point that much high quality mapping is now undertaken commercially and may never be more widely available.

The second day of the conference opened with the theme of fossil collecting. **Karolyn Shindler**'s topic was *"I have found wonders"- the life, letters and passion for collecting of the 19th century fossilist, Barbara Yelverton, Marchioness of Hastings*. Karolyn described Barbara Yelverton as a well-respected natural scientist who collaborated with Richard Owen and Edward Forbes.

Jonathan Radley (Warwickshire Museum) spoke on *Collecting the Jurassic: local museums and a window on the past* and dealt with Jurassic collecting from William Smith and Mary Anning to the current programme of his museum.

Richard Edmonds (Dorset County Council) continued the theme with *The furtherance of science: the role of the Dorset collectors* dealing with the historical importance and the present day management of the Dorset coast including the important contribution of amateur and professional fossil collectors.

The final theme of the conference, rock and mineral collecting, was opened by **Monica Price** of the Oxford University Museum of Natural History who discussed *The Corsi Collection of decorative stones: how Faustino Corsi brought geology to the arts*. The Corsi collection of one thousand samples, the basis of his systematic study of decorative stone, is housed in the Oxford University Museum of Natural History and can be viewed by appointment.

John Faithfull of the Glasgow Hunterian Museum spoke on *Spending a fortune in the 18th century: William Hunter's mineral collection and how it was used*. William Hunter (1718-1783) was a successful anatomist and royal physician as well as a prolific mineral collector; he thus provides a link to the HOGG conference on *Geology and Medicine* to be held later this year. (From HOGG newsletter report by David Earle)

Report of the 7th SCAR History Workshop
"Antarctic history: probing the unknown"
Stellenbosch Institute for Advanced Study, Stellenbosch, South Africa, 26-29 July 2011

The Scientific Committee on Antarctic Research (SCAR) History Expert Group held its annual workshop in Stellenbosch, South Africa from 26-29 July 2011. The workshop was hosted by the Centre for Invasion Biology at Stellenbosch University with the generous support of the South African National Research Foundation, the German Research Foundation, and SCAR. At this occasion – the first Group meeting on the African continent – twenty-three participants from five continents shared their research. In keeping with the workshop's theme of 'probing the unknown', presentations showcased new methodological perspectives, especially in archeology and anthropology, in addition to unearthing fresh information on the history of polar research.

The workshop was timed to coincide with the launch of two major projects that promise to greatly assist polar history for years to come. The Antarctic Legacy Project, based at Stellenbosch University, has collected and digitized photographs, personal diaries, and oral history interviews related to South African Antarctic research. The University of Cape Town has digitized and indexed over seventy thousand primary documents related to the Antarctic from South African government archives, material that will be of great relevance to scholars around the world. Both projects have been sponsored by the South African National Research Foundation.

Two plenary lectures were given. Peder Roberts presented work conducted with Lize-Marie van der Watt, arguing that Bouvet Island was a means of exploring wider issues in polar history and politics. This remote and nearly inaccessible island was nevertheless at the centre of wider debates concerning British imperial power, South African meteorological ambitions, and Norwegian Antarctic plans during the Cold War. Maria Ximena Senatore challenged the master narratives of Antarctic history by showing that archeological evidence can illuminate nineteenth-century sealing or whaling for which documentary records are extremely scarce, showing that these activities were connected to global commercial networks.

Workshop presentations embraced both local and international perspectives. Archeological research on the lives of sealers and whalers, and anthropological research on the lives of scientists, provided particularly stimulating papers. Other papers brought to light new information on South African Antarctic monuments, archeological research on Marion Island, the careers of early Antarctic scientists, and aviation in the Antarctic and sub-Antarctic. One especially important contribution challenged white-dominated narratives of South African Antarctic history while locating recent counter-narratives in the contemporary political context. Studies focused on new sources for polar history embraced both the opportunities of working with newly-collected materials from the Legacy Project, the value of textbooks as primary historical sources, and the opportunities of disseminating historical material to the public through internet portals. Other papers demonstrated how research on the Crozet Islands sealing trade could profitably draw upon a broad range of material, from statistical records to legal documents, and how more traditional (but hitherto unavailable) documentary records could shed new light on even well-studied episodes, in addition to the challenges of constructing narratives from modern expeditions where source material has been lost. The programme also included a filmed play about the relationship between Chile and the United States in the Antarctic, which prompted further thoughts about the potential of theater as a forum for presenting historical research.

The mix of senior and early-career scholars, in addition to veterans of Antarctic research and key figures from the South African Antarctic programme, led to a series of highly energetic conversations that confirmed the continuing importance of the human element to SCAR's activities.

Cornelia Lüdecke
Munich, Germany

Second Chilean Symposium on the History of Geology, August 2011

On 17 August 2011, the Second Chilean Symposium on the History of Geology was successfully held in Santiago, Chile. It was organized by the Geological Society of Chile under the sponsorship of Andrés Bello University. The conference was held in the university's auditorium, where over 100 participants (professionals and students) attended the event. The symposium commenced with welcoming words from the Geological Society's President. Two outstanding guests also participated: Prof. Armando Cisternas, who delivered a speech on the "History of the Seismology in Chile", and Engineer Pedro Courard, who lectured about the "History of coal in Chile". Ten other talks were also presented on a wide diversity of themes, from the fundamentals of Geology and its pioneers, to mineral and energy resources of the country, to the history of geological knowledge in Chile.

The organizers of this symposium are planning to publish conference papers, together with those papers presented at the First History of Geology Symposium, held in 2010, for which they are looking for funding.

Conference Program
(Expositions were in Spanish, titles here translated)

MORNING
08:15 - 08:55 Registration.

Opening Ceremony
Moderator: Reynaldo Charrier
9:00 Welcome by the Director of the Earth Sciences School, UNAB,
Francisco Fuentes
9:10 Opening of the symposium by the President, Geological Society of Chile,
José Cembrano

Earthquakes
9:20 *Invited lecture*
History of Seismology in Chile
Armando Cisternas
10:00 The Santiago Earthquake, August 7, 1580
Marco Cisternas, Fernando Torrejón, Nicolás Gorigoitia
10:25 Coffee break

Fundamentals of Geology and pioneers
Moderator: Luis Aguirre
10:55 Historical concept of science from geology: Discussion applied around the latest ideas in philosophy and history of science
Hernán Bobadilla
11:20 William Smith (1769-1839) and the map that changed the world
Cristián Ramírez S. & Francisco Hervé A.
11:45 Darwin and the synthesis of the Cordillera de los Andes: The rigorous application of the inductive method
Reynaldo Charrier
12:10 A geoscientific conection Chile - Costa Rica: the Heredia meteorite (1857) and its analysis by Ignacy Domeyko
Gerardo J. Soto (presented by Francisco Hervé)

AFTERNOON

Mineral and energy resources
Moderator: Estanislao Godoy
14:30 *Invited lecture*
History of coal in Chile
Pedro Courard B.
15:10 Continuation of oil exploration in Magallanes after the finding in Manantiales
Alejandro Pérez
15:35 Uranium in Chile: Myth or reality?
Heriberto Fortin Medina, Luis Ernesto Pérez Andraca, Mauricio Núñez Rojas
16:00 El Tatio: The history behind the White smoke
Nataly Castro, Karina Silva
16:25 Coffee break

Geology of Chile
Moderator: Carolina Silva
16:55 History of the Precambrian in Chile
Estanislao Godoy
17:20 Determination of the age of the metamorphic basement of Chile: a complex history.
Francisco Hervé
17:45 Closing words by Dr. Francisco Hervé

Reynaldo Charrier, Santiago, Chile

Geological Society of London (History of Geology Group)
International Conference on the History of Geology and Medicine,
1-2 November, 2011

The HOGG autumn conference for 2011 was an international gathering on the topic of Geology and Medicine, held at Burlington House 1- 2 November with excursions organized on the preceding and following days. Over 70 delegates registered for the conference which was convened by Richard Moody, Chris Duffin and Christopher Gardner-Thorpe and which included the novel elements of a platform discussion and translation services. The abstracts booklet (ISBN 978-1-61364-811-7) set a new high standard for content and presentation. Sponsorship for the meeting was provided by the British Gas Group and the Curry Fund of the Geologists' Association. A total of 29 papers were presented with contributors from thirteen countries. The two major conference themes were the history of the therapeutic use of geological materials, and the contributions of the many individuals who practised both medicine and geology. A private guided tour by Harold Ellis of the Hunterian Museum at the Royal College of Surgeons was attended by 30 delegates. The museum holds a vast range of historical medical instruments, specimens and artwork, and provided an introduction to the work of the surgeon-anatomist John Hunter who, with his brother William, would feature in a number of the conference presentations.

Day One of the conference included fourteen presentations in four sessions.

SESSION 1 EIGHTEENTH CENTURY PHYSICIAN/GEOLOGISTS was opened by **Jeff Liston** *Mixing Gynaecology with Geology: the vertebrate fossil collections of William Hunter* followed by **Christopher Gardner-Thorpe** and **Cherry Lewis** with the keynote address *James Parkinson (1755-1824)*. Links to John Hunter were described and the general points made that four of the thirteen Geological Society founders (including James Parkinson) were medical men and about 20% of the early membership were MDs. Cherry Lewis and Christopher Gardner-Thorpe discussed Parkinson.

SESSION 2 EARLY MEDICINAL USES OF INORGANIC MATERIAL was opened by **Arthur MacGregor** *Terra sigillata: a historical, geographical and typological review* describing the properties of "sealed earth", counterfeits, and the links with Paracelsus. **Efraim Lev** *The practical medicinal use of inorganic substances in Medieval Mediterranean according to the Cairo Genizah* related the importance of the Genizah collection of 250,000 manuscripts now scattered worldwide. **Joaquin Carrasco** and **Maria Linan** *A comparative study of the stomatological stones cited in the Kitab al-tasrif (Albucasis, 1000 AD)* included comparison of ancient and modern remedies in dental practice and the therapeutic uses of lime. The final paper in the session by **Nora Zergi** *Haematite in ancient-medieval medical treatises*, which was read in her absence by Chris Duffin, included the treatment of blood disorders and trachoma and the uses of sympathetic (magic) medicine.

SESSION 3 EARLY MODERN PHYSICIANS AND GEOLOGY comprised three presentations beginning with **Jakob Bek-Thomsen** *From flesh to fossils: Nicolaus Steno and the anatomy of the earth* dealing with the place of natural philosophy in early modern culture and the importance of Steno (1638-1686) – surely the only geologist to approach sainthood. **Evelien Chayes** *Conrad Gessner and Johannes Kentmann: two Early Modern physicians and their contribution to (Medical) Geology* related the work of Gessner (1516-1565) and Kentmann (1518-1574) to the prevailing theology and philosophy. Finally, **Ella Hoch** *The realism of Ole Worm, portender of 'that enlightened and barbaric realm, Europe'* discussed the Danish pioneer of natural philosophy (1588-1654) and the cabinet of curiosities which he established.

The closing session of Day One **FOSSILS, MINERALS AND MEDICINAL FOLKLORE** included five papers. **Eladio Linan *et al.*** *Cryptopalaeontology: the fossils contained in ancient lapidaries and their magico-medicinal use* referred to the Ebers papyrus (1500BC) and the use of trilobite fossils against scorpion stings (sympathetic magic/medicine again). **Chris Duffin** *The Gem Electuary* again referred to the Ebers papyrus and to Pliny and Galen. **Massimo Aliverti** *Religiousness and magic in lithoiatric practices of European folk medicine* was simultaneously translated by **Katriona Munte** and explored legends and myths. **Alessandro Porro *et al.*** *Vomiting Stones: Mental illness and Forensic Medicine in 18th Century Italy* explored the connections between religion, medicine and geology. **John Pearn's** talk *The Sunday Stone*, which was delivered by Christopher Gardener-Thorpe, dealt with the history of miners' diseases with an emphasis on coal mining. The "Sunday Stone" refers to the banded calcareous Chris Duffin deposits in which the less contaminated intervals representing non-working Sundays can be distinguished. The first day was completed with an enjoyable and well attended wine reception and conference dinner.

Day Two again comprised four themed sessions with fifteen presentations.

SESSION 5 GEOLOGY AND PUBLIC HEALTH began with **Beverley Bergmann** *The influence of geology in the development of public health* which dealt with the understanding of public health theories, prevention and treatments from Hippocrates (Airs, Waters and Places, c.400BC) to Victorian times. A paper from **Rais Akhtar** on soils and cancer in Kerala could not be given and was replaced by **Bernard Hubmann** and **Daniela Angetter** *Conrad Clar (1844-1904) and Theodor Posewitz (1851-1917): lives between geology and medicine* considering two practitioners professionally involved in both disciplines. **Aysegul Demirhan Erdemir** *Bursa in the history of Turkish hot spring and some samples (with the Ottoman Archive documents)* considered hydrotherapy in the ancient city of Bursa at one terminus of the Silk Road.

SESSION 6 FROM GALEN TO BIGSBY – GEOLOGICAL CONTRIBUTIONS THROUGH TWO MILLENNIA was opened by **Leonard Wilson** with the keynote address *John Jeremiah Bigsby, M.D.(1792-1881): Geological Pioneer in Canada* which described the huge volume of primary geological work undertaken by Bigsby whilst also acting as a full time medic. **Gillian Hull** *Porcelain, Pox and Anginapectoris* discussed the medical and geological work of John Wall (1708-1776), Edward Jenner (1749-1823) and Caleb Parry (1755-1822). **Miklos Kazmer** *Stones, fossils and the medical profession – a collectors' network in Early Modern Europe in support of the flood* dealt with international collaboration in exchange of information and specimens in the 17th and 18th centuries coordinated by Royal Society members, many of whom Leonard Wilson identified as medical men as well as natural philosophers. **Dimitrious Koutroumpas** was unable to give his paper *The Pharmaceutical use of Earths, Rocks and Minerals by Galen of Pergamum,* and the slot was filled at short notice by **Dick Moody *et al.*** *European Turtles, A historical perspective*. Amongst the many individual workers cited, there was reference to medical men from previous presentations by Parkinson, Gessner and Mantell.

SESSION 7 17TH CENTURY STUDIES comprised three presentations. **Ian Rolfe** *Materia medica in the seventeenth century Paper Museum of Cassiano dal Pozzo* described the Windsor Castle holdings of George III and the Lynxes Academy. **Maria do Sameiro Barroso** *Bezoar Stones, magic, science and art from the Late Middle Ages to the end of the 17th century* described the nature of these stones, their use as protection against poison and the issue of counterfeit stones. **Renzo Console** *Pharmaceutical use of gold in the 16th and 17th Centuries* was based on an extensive survey of medical literature of the 15th to 17th centuries.

The final session of the conference **19TH AND 20TH CENTURY PHYSICIANS AS GEOLOGISTS** involved five presentations and some late reorganization. **David Martill** and **Tony Pointon** *Arthur Conan Ian Rolfe Doyle: physician, author and first true populariser of pterosaurs* considered the background to the 19th century enthusiasm for prehistoric creatures in fact and fiction. A late replacement for **K S Murty** *Medical professionals and their contribution to Indian Geology* was provided at short notice by **Katriona Munte** discussing a common language for the sciences of medicine and geology by symbols and signs. **Henry Guly** *Medical geologists during the Heroic Age of Antarctic exploration* considered examples of doctors acting as expedition geologists in the early scientific exploration of the South. **Simon Wills** *John Whitaker Hulke, Surgeon and Palaeontologist* was another late replacement presentation dealing with a polymath who was President of both the Geological Society and the Royal College of Surgeons. The final paper by **Lorenzo Lorusso *et al.*** *Geology, conservation and dissolution of corpses by Paolo Gorini (1813-1881)* described another polymath and his work including geology applied to human physiology and psychology.

A post- meeting excursion was undertaken by 11 delegates to Oxford museums related to the themes of the conference.

This was a successful, well organised and wide ranging conference which generated interest both within and beyond the HOGG membership by exploring the many relationships between medicine and geology. The proceedings of the conference will be published.

(from HOGG newsletter report by David Earle

Earth Resources, the next 100 years: Security of Supply
Centenary Congress of the Royal Geological and Mining Society of the Netherlands (KNGMG), 16 March 2012

On 16 March 2012 the Royal Geological and Mining Society of the Netherlands (KNGMG) celebrated its centenary with a one day congress under above title. The venue was the great hall of the venerable 'Tropical Institute' (*Koninklijk Instituut voor de Tropen, KIT*, 1910 (see image below); almost the same age as KNGMG) where some 300 delegates assembled to participate in the timely subject of **S**ecurity of **S**upply (of Earth resources).KNGMG's President **Menno de Ruig** welcomed delegates and speakers. The morning session was convened by **Prof. Dr. Henk Brinkhuis** (NIOZ). Speakers were:

- **Prof. Dr. Ir. Eric Smaling** (KIT, Amsterdam): Phosphorus Surpluses and Scarcities at different Spatio-temporal Scales.
  A surprising, very timely topic as phosphorus is worldwide rapidly depleting and not renewable.
- **Ir. Henk van Muijen** (MIT, Holland): Deep Sea Mining, a Challenging New Opportunity. This very Dutch topic demonstrated futuresque possibilities in the national and international offshore worldwide.
- **Prof. Dr. Ir. Marc Bierkens** (Utrecht University): Global Water as Scarce Resource. Convincingly he demonstrated the lack of understanding of groundwater occurrences and quantities.
- **Prof. Drs. Rien Herber** (University of Groningen): Exploitation of the Dutch Subsurface:
  In a densely populated country with many different reasons to explore and exploit the subsurface, there are limits to such activity.

The afternoon session was convened by Prof. Dr. Stefan Luthi (TUD). Speakers were:

- **Dr Mathias Bichsel** (Shell): Myths and Reality in Oil and Gas.
  Hydrocarbons are here still for a long time, was the message.
- **Ir. Hans van Luijk** (Gasunie): A century of Gas:
  A look back to the discovery of Groningen Gas field some 50 years ago and a look forward to its depletion and the consequences thereof in the coming 50 years.
- **Prof. Dr. Jaqueline Cramer** (Utrecht University): Resource Efficiency and Scarcity: Manage recycling efficiently and effectively, was the main message.

The afternoon ended with the presentation of the book that is issued at the occasion of KNGMG's centennial celebrations: 'Dutch Earth Sciences: Development and Impact'. It is reviewed elsewhere and can be bought directly from KNGMG. For details see book review. The congress meeting and the printing of the book were supported by: Shell, Wintershall, Total, GDF- Suez, TNO and EBN.


Meeting hall of KNGMG centenary meeting

EXHIBITION REPORT

Hungarian Natural History Museum, Budapest
"There is something new under the Earth!"
August-November 2011

A temporary exhibition on the history of mineral (plus rock, fossil resin and hydrocarbon) discoveries in the Carpathian Region was open from 20.08.2010 until 21.11.2011 in the Hungarian Natural History Museum, Budapest. In this bilingual (Hungarian and English) exhibition nearly 300, mostly unique, mineral specimens were exhibited, accompanied by posters with additional information and explanation, and dozens of photos and drawings, mostly related to the discovery history of the species, to the life and activities of their finders, describers and eponyms and to the mining history of their localities. Further information could be obtained from electronic databases accessible on a PC installed in the exhibition room. Earlier, never previously displayed, new mineral species, approved in the past 1-2 years were also put on show, which made this exhibition even more unique. There were several exhibits on loan from the Natural History Museum, Vienna, Austria; the Eötvös Museum of Natural History, Budapest; Geological Museum of Hungary at the Geological Institute of Hungary, Budapest; Herman Ottó Museum, Miskolc etc.

The opening was timed to the start of the 20th General Meeting of the International Mineralogical Association in Budapest. The exhibition was a kind of "satellite exhibition" of the large temporary HNHM exhibition "Camera Naturae et Artis Productorum – Natural History in the XIX. century", an exhibition itself containing valuable specimens and information on the history of mineralogy, geology and palaeontology.

Gábor Papp
Hungarian Natural History Museum, Budapest

FUTURE INHIGEO CONFERENCES

38th Annual INHIGEO Conference
(in association with '24th International Congress for the History of Science Technology and Medicine', University of Manchester, England 22-28 July 2013)

The UK's History of Geology committee (Hogg), working with several UK INHIGEO members is planning the 2013 INHIGEO conference, being held as part of the 24th International Congress of History of Science, Technology and Medicine (ICHSTM).

The ICHSTM website is now live at www.ichstm2013.com where up to date information can be found.

The general conference theme is "Knowledge at Work".

Hogg and INHIGEO are planning an exciting schedule of meetings and field trips and information will be provided to all INHIGEO members as soon as possible.

Cherry Lewis (INHIGEO member UK) cherry.lewis@bristol.ac.uk is co-ordinating the INHIGEO effort for this meeting.

INHIGEO will be submitting proposals for two symposia at the conference:

Symposium 1 - Geologists in the Field
Conveners: Leucha Veneer (UK) and Martina Kölbl-Ebert (Germany).

This symposium will explore the history of geological and geophysical fieldwork, examining the work of individuals, research groups and commercial explorers in all areas of the world, from all periods of history. Papers considering the changing nature and status of fieldwork, innovations in the instruments, techniques and training methods of fieldwork, and the role of fieldwork in the development of geological knowledge and theory are welcome. Papers discussing the relationships between fieldwork and collections and museums, or between fieldwork and laboratory-based studies are also welcome, as are papers that relate to any aspect of fieldwork not discussed above, including the importance of geological fieldwork as it relates to any aspect of the history of science, technology and medicine.

Symposium 2 - Geology in Art and Literature
Conveners: Ralph O'Connor (UK) and Noah Heringman (USA)

The symposium will explore the historical relationship between the Earth sciences and the production of art and literature around the world, primarily from the late eighteenth century to the present day. Papers will be invited both on representations of geology, geologists or geological objects in painting, sculpture, poetry, fiction, art criticism and literary criticism, and on representations of the same in printed images, caricatures, pantomimes, songs and imaginative nonfiction (including popular science writing from the eighteenth century to the present day). The symposium will focus on practices of literary and artistic production as well as the products themselves, on audiences' (including geologists') responses to (or uses of) the works in question, and on the role of literary or artistic procedures and productions in shaping the practice and public perception of geology.

INHIGEO is also planning the following Field Trips

Field trip 1 - The Silurian of 'Siluria' and the idea of a Palaeozoic era
Trip Leaders: Martin Rudwick and Hugh Torrens. Date: 18-21 July, 2013

This field trip will complement the "Geologists in the Field" symposium. It will focus on 'retreading' some of the fieldwork undertaken by British geologists in the Welsh Marches, which contributed decisively to the idea of a Palaeozoic era. It will be a historical geological field trip: we shall try to see what they saw, through their 19th-century eyes, rather than in terms of geological ideas current today. The party will assemble on the evening of Thursday 18 July 2013. Friday 19 July and Saturday 20 July will be spent in the field. The party will disperse on the morning of Sunday 21 July, in time to travel to Manchester for the opening of the Congress on Monday 22 July.

Field trip 2 - Buxton Spar and Spa
Trip Leader: Tom Hose
Date: Mid-conference, exact date to be decided

This is a whole-day excursion by train, departing from Manchester Piccadilly Station. The core of the trip will be based on the Geologists' Association 1904 Excursion to Buxton and North Derbyshire. Buxton houses a museum with historical geological collections, including that of Professor William Boyd Dawkins (1837–1929), and the area was examined, mapped and sectioned by White Watson (1760–1835), a pioneer of Derbyshire and Peak District stratigraphy. The excursion will explore the town of Buxton and the geology of its environs in the Derbyshire Wye Valley. There will be an opportunity to examine some of the sites that underpinned the early beginnings of geotourism, based upon caverns, spas and mines. A trip to the historic Poole's Cavern will be a highlight of the day.

Field trip 3 - Ruskin's Geology
Trip Leaders: Alan Bowden and David Oldroyd.
Date: If this trip proceeds it will probably occur during the final weekend of the conference

This field trip will complement the "Geology in Art and Literature" symposium. The Lake District was the favoured home of John Ruskin (1819-1900) whose first love was geology. This was partly inspired by the teaching and friendship he received from William Buckland whilst at Oxford, as well as his trips to the Alps where he developed ideas about glaciations. The trip will probably be centred around Brantwood (Ruskin's home from 1872) and the Ruskin Museum in Coniston. While we will focus on Ruskin's understanding of geology in art and literature – what he described as the "truth of the earth". It will also explore the wider history of geology in the Coniston area.

INHIGEO Conferences 2014-2018

The annual INHIGEO conferences for 2014 to 2018 have been planned by the INHIGEO Board as follows.

2014	United States (location to be confirmed)
2015	China (location to be confirmed)
2016	Cape town, South Africa in association with the 35th International Geological Congress
2017	Yerevan, Armenia (INHIGEO 50th Anniversary meeting)
2018	Mexico City, Mexico

OTHER FORTHCOMING MEETINGS

39th International Committee for the History of Technology (ICOHTEC) Symposium, Barcelona, Spain, 10 – 14 July 2012

The 39th ICOHTEC Symposium will be held in Barcelona July 2012 next year. The main theme of the meeting will be *Technology, the Arts and Industrial Culture*. The aim is to examine technology in a multidisciplinary framework. The key questions to be considered are how technological development has interacted with design, architecture, the arts as well as popular culture and whether industrial culture can be regarded as a melting pot of various influences.
For further information the conference website is www.icohtec.org

9th International Conference on History of Science and Science Teaching, Flensburg Germany, 30 July 30 – 3 August 2012

Details at: www.uni-flensburg.de/science/ankuendigungen/9th-ichsse

5th International Conference of the European Society for the History of Science, Athens, Greece, 1-3 November 2012

Further information at: http://5eshs.hpdst.gr

4th International Conference on Science in Society University of California, Berkeley, USA, 17 - 19 November 2012

This conference addresses the social impacts, values, pedagogies, politics and economics of science. It is an inclusive forum that welcomes a breadth of perspectives on science from practitioners, teachers and researchers representing a wide range of academic disciplines.

The Science in Society Conferences are held annually in different locations around the world. The Inaugural Science in Society Conference was held at the University of Cambridge United Kingdom, in 2009. The Conference was held at the Universidad Carlos III de Madrid, Madrid, Spain in 2010; and the Catholic University of America, Washington DC, USA in 2011.

For further information consult: http://science-society.com/conference-2012/

12th International Symposium: Cultural Heritage Symposium in Geosciences, Mining and Metallurgy, Bolzano, Italy, 30 September– 4 October 2013

This conference will focus on issues involved with libraries, archives and collections in the geosciences. The official conference languages are English, German and Italian. An abstract in English has to be provided. Contact and Information:

Naturmuseum Südtirol
Dipl.-Geol. Benno Baumgarten
Bindergasse 1
via Bottai 39100 Bozen/Bolzano,
Italy
Tel.: 0039 0471 41 29 68,
Mail: benno.baumgarten@naturmuseum.it
Web.: www.naturmuseum.it

People interested in further information on the 12th Cultural Heritage Symposium, either for attending, presenting a lecture or poster, are requested to send their proposal by email or post.

The costs to register for the symposium (registration, excursions, abstract book, receptions) will be 100€, students 70€

NOTICE

2013 DHST Prize for young scholars

The International Union of the History and Philosophy of Science, Division of History of Science and Technology (IUHPS/DHST) invites submissions for the third DHST Prize for Young Scholars, to be presented in 2013. Initiated at the 22nd International Congress of History of Science in 2005 held in Beijing, the DHST Prize is awarded by the IUHPS/DHST every four years to up to five young historians of science and technology for outstanding doctoral dissertations, completed within last four years.

The 2013 DHST Prize will not specify distinct categories, but the entries must be on the history of science or technology in any part of the world. The Award Committee will endeavor to maintain the broadest coverage of subjects, areas and chronology.

Each Prize consists of a certificate, assistance with travel and accommodation expenditures to the IUHPS/DHST Congress in Manchester in July 2013 and a waiver of registration fee.

Award Committee

The Committee comprises the DHST President, Vice-Presidents, Secretary General, and distinguished specialists in specific fields.

Competition Calendar

- Submission deadline: 31 August 2012
- Qualification examination and preliminary selection: September 2012
- Award Committee online meeting: October-November 2012
- Approval by DHST Council: December 2012
- Award Ceremony: July 2013

Conditions

Eligibility: Applicants must have a doctoral degree in the history of science, or technology awarded no earlier than July 2008.

Language: Any dissertation in a language other than English must be accompanied by a detailed summary in English of no more than 20 pages.

Application procedure: Along with an electronic version (preferably MS Word) of original dissertations (and English summaries for non-English language papers), applications must be made on the Form Appendix 3, and received at the Award Committee Office no later than 31 August 2012

DHST-YSP Office:
youngscholars@ihns.ac.cn
Institute for History of Natural Science
Chinese Academy of Sciences
55 Zhong Guan Cun East Road
Beijing 100190, CHINA

AWARDS

Mary Rabbit History of Geology Award of the Geological Society of America (2011) to Sally Newcomb

Citation (Sandra Herbert)

Sally Newcomb has been one of the individuals whose efforts over the last thirty years have led to the currently vibrant state within our field of the history and philosophy of geology. Partly Sally's contribution has been from her publications; partly her contribution has been from her presence. As for all of us, her contributions sprang from her life. In my remarks I will try to show how her life and her contributions fit together.

Born in Williamsport Pennsylvania in 1932, Sally Fritz majored in chemistry at Purdue University, where she received her B.S. in 1954. Her chemistry major is important for it was through that door that Sally would eventually enter geology. Also in 1954 Sally married Robert Newcomb, an electrical engineering student at Purdue. Their children Gail and Rob were born in 1955 and 1956. Robert Newcomb took his Ph.D. in Electrical Engineering at the University of California, Berkeley in 1960. His teaching career has spanned continents, allowing Sally to travel as well. She reports that her travels left her with the feeling that "the world is often a friendly place." Sally's later work as an American member of INHIGEO has no doubt reflected that experience. Sally and Bob have been frequent participants in INHIGEO conferences abroad.

Sally first encountered geology at San Jose State University where she was a student from 1964-1967. Her goal was earning a California teaching credential. This required a more diverse major in physical science than chemistry alone. While at San Jose State she took a number of geology courses, in addition to those in physical chemistry. She reports that, "I was 'hooked' when, on a week's field trip to Death Valley, the geologist gathered us at the top of Golden Canyon and 'read' it like a textbook."

With her teaching certificate in hand, Sally began teaching both chemistry and geology, in a variety of settings beginning with the Palo Alto, California public schools and culminating in an eighteen-year career at Prince George's Community College in Maryland. Deepening her knowledge of chemistry in its relation to geology was a master's degree in Geochemistry and Education, earned in 1980 from the University of Maryland, College Park.

Sally Newcomb's first publication in the history of the earth sciences was an article in *Ambix* in 1986 entitled "Laboratory evidence of silica solution supporting Wernerian theory." In 1987 she earned her second master's degree, this time in the history and philosophy of science. Her thesis, done under the direction of Stephen Brush, was entitled "Contributions of British Experimentalists to the Discipline of Geology: 1780-1920." Twenty two years later, in 2009, she published *The World in a Crucible: Laboratory Practice and Geological Theory at the Beginning of Geology*. It appeared as Special Paper 449 from the press of the Geological Society of America. The book explores what Newcomb termed the paradox that so many geologists initially rejected: the Huttonian theory of the igneous origin for nearly all rocks, preferring instead to find the origin of many rocks from solution. The book describes the patient work by geological investigators seeking to resolve that paradox. In the book one recognizes Sally Newcomb's initial training as a chemist as well her later adoption of the science of geology. In the clarity of the book's treatment of such topics as geological instruments or chemical reactions one also sees her broad and diverse experiences as a teacher. She does not obfuscate. While every inch the scholar, she communicates at a level that everyone can understand. To mention just a small point, original sources are cited in the original language in the book, but translations are provided in footnotes. *World in a Crucible* will prove to be a standard work on the subject, nearly as valuable to historians of chemistry as to historians of geology.

In addition to her scholarly work, Sally Newcomb has been noteworthy for her presence in the discipline. For example, in 2001 at the GSA meeting in Boston, she was the co-convener of a Pardee Symposium and two topical sessions on "Ophiolites as Problem and Solution in the Evolution of Geological Thought." In 2006 at the GSA meeting in Philadelphia she co-led a field trip to sites in the city displaying research collections in the history of geology and paleontology. She has also served this Division as its Chair in 2001. Similarly she was a councilor for the History of Earth Sciences Society in 2004-2006. More informally, as I can attest, she has also provided ready assistance to those who ask her questions about laboratory procedures in the geological sciences.

To do all this of course has required some sacrifice. As she was becoming more active in exploring the history of geology, she gave up performing as a musician, the cello and the lute being her instruments. I can only feel some satisfaction that our field has provided her equal pleasures to those of music. I'm pleased to introduce to you Sally Newcomb, the recipient of the Mary Rabbitt award for 2011.

Acceptance (Sally Newcomb)

If I said I stood on the shoulders of giants in the history of geology, a number of them might object. It could be uncomfortable for them, because many of them are actually in this room. But of course, I do. Geology is known for its mentor relationships. Perhaps the necessity of being outside together in heat, rain, snow, and sleet has something to do with it. However, I've found "library" to be sometimes just as strenuous, which my colleagues here will well understand. Our field of the history and philosophy of geology must be even more notable for those relationships. There often seems to be little recognition of the field, and the number of practitioners world wide is only in the low hundreds. The good news, however, is that recognition is increasing, and we can all point with pride to a series of excellent books and collections of papers published in the last two decades, often by the Geological Society of America and the Geological Society of London, as well as by commercial publishers. Relative newcomers to the field such as China, Japan, South and Latin American countries, and the Arab world, are being recognized, joining the European countries and North America.

My checkered career, anything but a straight line, can best be described as "sequential, not simultaneous." Unlike the admirable young women of today, I first worked as a biochemist, then had children, traveled as a family to my husband's Fulbright and other overseas positions, then went to graduate school and continued teaching when our children were grown. I taught science in primary grades in a museum setting in Palo Alto, substituted in 7th through 12th grade science in those schools, then taught physical science, biology, and anatomy and physiology at the Academy of the Washington Ballet, where the students were all preprofessional dancers. It has been a rich life. During my time at graduate school, I joined the physical science faculty at Prince George's Community College in Maryland and taught physical geology and inorganic chemistry. It is a large institution, just outside Washington D.C., with students from well over a hundred countries. Those positions for faculty were scarce, but a determining factor was that I had lived overseas and had hosted Bob's graduate students from literally around the world in our home. We joke that we can land at any airport anywhere in the world and one of Bob's Ph.D. students will be there to greet us.

Having written a paper on the history of chromite mining in Maryland for the final paper for my first Master's degree, I became interested in the history of geology, and how geology impacted present land and water use, economics, and the transport networks of a region. This led to study with the Committee on the History and Philosophy of Science at the University of Maryland, with one of those aforementioned giants, and Division award winner, Stephen Brush, as my major advisor. I quickly became aware that I was in a different ballgame, entirely unlike my previous technical studies and courses. That first course in historiography was more daunting than X-ray fluorescence analysis or petrology. The first paper I gave at a national GSA meeting was in Indianapolis. It was greeted with great tolerance, but I fear it must have been pretty bad, because I recall wrestling with primary sources and still writing the night before it was presented. I also recall how welcome I was made to feel, and how friendly people were at the Division lunch, particularly Ellen Drake and Bill Sarjeant. Studies at the University continued to widen my horizons. I often felt schizophrenic because in the college setting I was supposed to be an expert, but was anything but in the history of geology.

The anomaly that ultimately resulted in *The World in a Crucible* occurred to me during this time. It seemed that the geology literature of the 18th century veered between theory and field work, and Hutton was sometimes called "the father of geology" in our textbooks and elsewhere. A theory would be proposed, and the natural philosophers of the time would go to the field to test it. But reading the literature, it was clear that theories were not supported by field evidence at least as often as they were. In another puzzle, it was hard to understand why, if Hutton's theory of igneous origin was correct, it took such a long time for the counter-possibility, deposition from water solution, to be falsified. As I started reading the experimental literature I appreciated the significance of the fact that rocks and minerals could be and were put into solution, and components of the solution including silicates, precipitated out sequentially. This was much more immediate evidence of an "aqueous" origin of crystalline rocks than a so-far hypothetical source of heat sufficient to melt them. And, being something of a contrarian, I rather enjoyed being a Neptunist, as well as becoming familiar with the excellent and ingenious chemical research of such people as Kirwan, Bergman, Klaproth, Spallanzani, Saussure, and etc. It became obvious that there was a "third leg" to geological knowledge, namely experiment, and that it was far more ubiquitous and influential than the cursory notice it received in the standard history of geology works. It has been my pleasure to continue to seek to untangle that tale, and to give an account of the many excellent natural philosophers who insisted on "interfering with nature" to the extent of experimenting on earth materials, in the 18th and early 19th centuries.

This quest has led to many happy hours discussing and exchanging ideas with colleagues. The most rewarding part of taking part in HaPG activity has been the collegial relationships throughout the world that I have acquired, as well as discovering the excellent and often rigorous science employed by our 18th-century predecessors. This Division of the Geological Society of America has provided a much-appreciated forum for the exchange of ideas and the introduction of new ones. I am most grateful that my work has been recognized. Thank you.

Gerald M. and Sue T. Friedman History of Geology Distinguished Service Award to Clifford M. Nelson

Citation (Ken Aalto)
Today we honor Clifford M. Nelson, geologist and historian at the U. S. Geological Survey, for the extraordinary service that he has committed to over the decades on behalf of the history of geology in general, and of the Geological Society of America (GSA) - History and Philosophy of Geology Division in particular. He earlier served the Division as Secretary-Treasurer, Newsletter Editor, Vice-Chairman, and Chairman; he chaired the U. S. Committee for History of Geology (National Research Council) from 1985–90; he is a Fellow of GSA and the Linnean Society of London, and a member of the History of Earth Sciences Society, the History of Science Society as well as INHIGEO.

Dr Nelson received his doctorate at Berkeley in 1974. He has published over fifty articles in refereed books and journals, principally on the history of ideas and institutions in the earth sciences, especially US Geological Survey and its predecessor agencies. He has recently co-written *Minerals, Lands, and Geology for the Common Defence and General Welfare, Volume 4, 1939–1961*, and will continue with *Volume 5*(1961–1982) of this series, started by Mary Rabbitt. Aside from history of science he has research interests in the evolution and distribution of Cenozoic northern marine mollusks, especially Neptunidae. In the spirit of the Gerald M. and Sue T. Friedman Distinguished Service Award, we have chosen Cliff Nelson as an excellent exemplar of service to the community of historians of geology.

Response (Cliff Nelson)
Thank you, Ken, for your kind words. But this award really should go to the U.S. Geological Survey, the agency that has enabled me during the past 35 years to practice and serve, mostly under the aegis of other duties as assigned, the history of the earth sciences. This year also marks the more important anniversary of the GSA History and Philosophy Division's founding in 1976. The Division's establishment followed by more than a decade the creation of INHIGEO under the umbrella of the International Union of Geological Sciences. Gordon Craig and Endre Dudich recalled in *Episodes* in 1988 that INHIGEO was conceived at New Delhi in 1964 and born three years later during a symposium at Yerevan.

George White and other U.S. historians of geology returned from Yerevan and subsequent INHIGEO symposia hoping that the Geological Society of America might also wish to actively promote the history of the earth sciences. White led the long effort to establish a new History of Geology Division and GSA's Council approved it as a formal unit on 7 November 1976. Claude Albritton, Gordon Winder and Bob Dott served as the Division's original Management Board; they, Cecil Schneer, and their successors took me along for what proved to be an eight-year ride as Secretary-Treasurer.

(Condensed from original text)

2012 Service Award of the Meteoritical Society to Ursula Marvin

Ursula Marvin, past INHIGEO Secretary General and INHIGEO Honorary Senior Member has received the 2012 service Award of the Meteoritical Society. Ursula who has been long associated with the Harvard-Smithsonian Center for Astrophysics received the award for documenting the history of the Meteoritical Society and the personal histories of some of the most influential people in meteoritics and planetary science. The Service Award of the Meteoritical Society honors members who have advanced the goals of the Society to promote research and education in meteoritics and planetary science in ways other than by conducting scientific research. Ursula also celebrated her 90th birthday in August 2011.

Gold Medal of the University of Barcelona to Carminia Virgili

On 24 May 2011, INHIGEO Member from Barcelona, Spain, Carminia Virgili, received the Gold Medal of the University of Barcelona. Caminia was born in 1927 and completed her doctorate in geology at the University of Barcelona, in 1956. In 1963, she was elevated to the Chair of Stratigraphy at the University of Oviedo, becoming the first woman to be a Professor at that university and the third woman to become a Professor throughout all Spain. Also, Carmina Virgili was President of the Mesozoic Spanish Group, from 1976 to 1980, and of the socialist Foundation Pablo Iglesias, during 1977-1987. She was also the member of the Spanish Commission of Cooperation with UNESCO, from 1982 to 1996, and was prominent as Secretary of State of Universities and Investigation from 1982 to 1985. She was Senator for Barcelona from 1996 to 2000. In addition, in 2008 Caminia was invested *doctor honoris causa* by the University with Girona, and others.

Award to Lora Lordkipanidze, Uzbekistan

In 2011, L.N.(Lora) Lordkipanidze, INHIGEO Member, Uzbekistan has received an award from the International Fund for Academician Habib Abdullaev following her series of articles and publications on the "The history of geological science" in Uzbekistan that dealt with the most important events, publications, anniversaries and personalities in the geology of Uzbekistan up to 2010. Also published at this time was an advance copy of the personal memoirs of Lora describing her 50-year career as an historian of geology.

Inaugural Tom Vallance Medal to be presented to David Branagan

INHIGEO members will be delighted to learn that the inaugural Tom Vallance Medal of the Earth Sciences History Group, Geological Society of Australia has been awarded to past INHIGEO President David Branagan. It will be presented during the coming INHIGEO conference in Brisbane, Australia. The Tom Vallance Medal has been introduced to recognize people who have made a significant contribution to the history of geology in Australia or Australasia. Thomas George Vallance (1928–1993), after whom the medal is named, was also a longstanding INHIGEO member as well as an INHIGEO Vice President.

OBITUARIES

Emile den Tex (1918-2012)

On 3 January 2012, Prof.dr Emile den Tex, emeritus professor of petrology, mineralogy and crystallography at the Universities of Leiden, later Utrecht, passed away in Leiderdorp at the age of 94 years. Weak health forced him to stay home during the last years of his life. Until this time he was a very active member of the Dutch Earth Sciences community, attending regularly the sessions of the KNAW and its Section Geological Sciences, chairman of innumerable commissions, committees or councils on geological affairs. A «Grand Homme» of the Dutch geology, who played a decisive role in the restructuring and development of Earth Sciences in the Netherlands after World War II.

Born in Amsterdam, Emile den Tex began the study of geology in 1937 at Leiden University. His first years were quite exciting, taking an active part in traditional Dutch student life, reaching the Presidency of Minerva, the association building of the Leids Studenten Corps. He had demonstrated in his youth that he was a gifted writer but, somewhat against the will of his father who would have preferred him to be an arts student, he had decided to become a geologist. Unfortunately he was unable to finish his studies, because the university had to close in November 1940 by order of the German occupants. After the closure of Leiden University, he briefly continued his study in Groningen with Ph.H. Kuenen, but was nabbed when doing an illegal activity. He was sent to Germany to work in the war industry and was stationed in Berlin as a factory worker. However, he managed to escape during a bombardment, reached with great pains and danger the Dutch border. From there he finally found a hiding address in Ramsdonkveer with the Lips family, where daughter Finette would become his beloved wife for the rest of his life. It is during this time that he wrote most of his poems (Slagzij, 1942), some of them deeply inspired by the difficulties of this time (« In memoriam patriae », 1944, « Schipbreuk » or « Stilte in de storm », both 1945). He recalled later to some of his collaborators that, for him, these poems were «a sin of his youth». But they remain well known in literary circles, and were included in treatises or encyclopedia of modern Dutch poetry. When Leiden University reopened on the first of September 1945 he returned there to resume his studies. One of his first moves was to revive the geology student association LGV. As its *praeses* he immediately addressed the unusual large number of new geology students explaining that there would never be enough job opportunities and advised them to take another discipline. He quickly obtained his doctoral diploma and decided to remain in Leiden for a promotion, publishing at the same time a couple of essays (Het Jaar Job, Pithecantropus Erectus), which would mark the end of his literary career. Soon after, he approached Professor Gignoux in Grenoble, for permission to do a PhD study in the Belledonne Massif, French

Western Alps, a region which because of its complexity had remained somewhat neglected by French geologists. His work was supervised in Leiden by Prof. Dr. B.G. Escher and Prof. Dr. E. Niggli, son of the famous Paul Niggli in Zürich, who had just been appointed on the chair of mineralogy and petrology in Leiden. He wrote his thesis himself entirely in French – then a tradition for a generation of Dutch geologists in the sixties, many of them speaking and writing French as well (or better!) than most natives. The thesis «Les roches basiques and ultrabasiques des Lacs Robert et du Trias de Chamrousse» was submitted in 1949, and published in Leiden one year after. Demonstrating for the first time the occurrence of a major structural accident in the crystalline Belledonne massif, it remains up to the present day a respected reference for the Alpine geology in France.

Immediately after his promotion, Emile decided to see the world. He went to Australia, first for a short time in Sydney, then for eight years as lecturer in Melbourne. He had been instructed in Leiden to the difficult techniques of universal stage microscopy by Ernst Niggli, and, having followed some lectures by W.G. Perdok in Groningen, he had an outstanding knowledge of the laws governing crystal morphology, the so-called Hartman-Perdok theory. Australia is a paradise for petrologists, with plenty of Precambrian exposures quite different from what is commonly seen in Europe. A geological problem much discussed at this time by Australian geologists was petrofabrics, the orientation of crystals in massive rocks at meso and microscopic scale. Emile was largely self-taught in this field, inspired by books by Sander, Fairbairn, and a few others. He met in Sydney F.C. Philips, a noted British structural geologist who had just introduced crystallographic techniques, notably the use of stereographic projections, in field and microscopic petrology. Then he became himself a specialist in this field, elaborating the technique of constructing petrofabric diagrams and publishing a paper on the orientation of aegyrine crystals in random thin sections, which marked in fact the beginning of a new subdiscipline, microstructural petrology.

Initiated in Australia, this shift from chemical to structural petrology has determined the further evolution of his career. In 1955, Ernst Niggli had returned to Switzerland, professor in Bern and until his emeritus status in 1986 a prominent figure of Swiss geology. Rumors tell that Emile was already asked to take the position, but he and his family were so pleased to be in Australia that he did not accept. The new professor in Leiden was W.P. de Roever who, after a few years, preferred to go back to the University of Amsterdam. Leiden's position was once more free and this time Emile den Tex accepted and came back in 1959 with his family to his native country for the rest of his life. Meanwhile, Leiden field interests had shifted from the French Alps to Galicia in North-West Spain. His first visit there made him enthusiastic for a large field of petrological and structural investigations. The work of the Leiden group in Galicia would last for almost 30 years, including extensive field mapping, about 10 PhD theses, and a great number of publications in scientific journals. Galicia is a key region connecting the Variscan orogens in northern and southern Europe, and outstanding outcrops of peridotites and other mantle rocks provided ideal material to fulfil a major research objective of the Leiden group. Their aim was, among other things, to unravel the fabric of mantle-derived rocks, usually called ophiolites and to reconstruct the formation and evolution of mountain chains. These were exciting years, Emile's charisma and personality attracting large numbers of students and visitors from abroad (France and Spain, notably), many of them would become important personalities in their respective countries. Some important results were published in 1965 in a paper «Metamorphic lineages in orogenic plutonism», followed two year later by another paper by colleague Henk Zwart «The duality of orogenic belts». Both papers, the first one on igneous, the second one on metamorphic rocks, mark the beginning of modern understanding of the formation of oceanic and continental crusts. Both were published in Geologie en Mijnbouw, the journal of the KNGMG (Royal Geological and Mining Society of the Netherlands), giving instant international fame to a hitherto mostly national journal, despite a title that French people, notably, never succeeded to pronounce correctly.

In 1967, the Leiden group of earth scientists was one of the very first in Europe, with three professors, Emile Den Tex in petrology, Henk Zwart in structural geology, Piet Hartman in crystallography, all recognized world leaders in their respective disciplines. Yet the group had to face, together with the other Leiden professors, among which Aart Brouwer, a difficult decision, namely to comply with a structural change imposed by the Dutch Ministry of Education and Science. According to the Ministry there were too many geological subfaculties in the Netherlands with too few students, too many expensive professors, a burden that the country could not afford. Therefore the Groningen geology institute was closed, the two Amsterdam subfaculties as well as Leiden and Utrecht had to merge. After long and heated discussions agreement was reached on the last part of the project: the Leiden group moved to Utrecht, a better location, in the center of the country, in a new campus building well adapted to the use of modern equipment. The reward was a large, hypermodern Department installed in the newly developed Uithof campus of Utrecht University. Later joined by the Netherlands Institute of Applied Geosciences, a merger of Dutch Geological Survey and a branch of TNO (the national applied research organisation), Utrecht University counts now as one of the largest Earth Sciences complexes in Europe. Emile Den Tex became the dean of the new Faculty, and virtually from then until his retirement succeeded with diplomacy and gentle authority to manage the large group, despite striking differences in tradition and culture. The task was not easy, and I remember him telling me that if he had known all problems he would have to face, he would have strongly hesitated to «make the step to Utrecht». As he wrote with his usual sense of humor in a paper published in 1982 : «My particular automorphism I can trace from the facies of a minor poet through a petrologist and microstructural geologist, only to find myself retrograded to a petrologist and finally degraded to a bureaucratic papyrologist». Few of his colleagues would agree with the last part of this sentence, thinking that papyrology at this place was more up than down. Most admit today that, without Emile, Utrecht's experience might well have ended in total chaos. Emile's retirement in 1984 did not mark the end of his scientific career. His vast culture and

experience led him to become much interested in the history of geology. He gave a new impulse to the KNAW Commission on the History of the Geological Sciences and, under the auspices of this commission, wrote in 1998 his last *magnum opus*, a 300 page book on the beginning of volcanology in the 17th and 18th century : « Een voorspel van de moderne vulkaankunde in West-Europa met nadruk op de Republiek der Verenigde Nederlanden ». Many observations had been done at this time by Dutch sailors or merchants discovering the volcanoes of the East and West Indies. But, written in Latin or in old Dutch, often in unpublished letters or diaries, they had remained totally ignored by the scientific community. Elegantly written and superbly printed by the KNAW, this book remains after 15 years an essential contribution to the science of volcanoes. The only regret of the author is the lack of an English translation, which indeed would have given to this book the place that he deserves in the flow of current international publications.

Emile den Tex received the royal distinction of Officier in de Orde van de Nederlandse Leeuw, was an active member of the Royal Netherlands Academy of Science (KNAW) since 1967, was several times president of the KNGMG and received in 1987 its prestigious van Waterschoot van der Gracht medal. Among his international distinctions, those of Honorary member of the Société Géologique de France and of Honorary Senior Member of INHIGEO may be noted.

Emile den Tex will be sorely missed by his many friends and colleagues. He is survived by his wife Finette and his six children, some of which (Gideon, 1948, Charles, 1952) continue the family literary tradition.

Jacques TOURET

Gerald M. Friedman (1921–2011)

Loss of someone we know is always difficult. Death of a star, in whatever firmament—from Hollywood to sports to academics—is noteworthy. And the loss of one who has been both a valued colleague and a true star in his or her discipline is particularly sobering. Such was the feeling upon hearing of the death of Professor Gerald M. Friedman on 29 November 2011, at the age of ninety years.

Gerry was an impressive individual who made major contributions in a number of fields, ranging through geology, history, and education. More than 500 papers and a number of authored and edited books bear his name. Many of us with professional interests in sedimentology were ‘brought up’ on the Friedman and Sanders textbook *Principles of Sedimentology*. Carbonate petrographers learned much of their trade through Gerry’s innovative papers stemming from field and laboratory investigations. Historians of geology found many gems scattered in his textbooks and papers, or through attending conferences hosted by Gerry and Sue Friedman at the Rensselaer Center of Applied Geology in Troy, New York. A champion of American geologists, particularly those associated with Rensselaer Polytechnic Institute, his host institution (1964–1984), Gerry’s field trips often visited the gravesites of Amos Eaton (1776–1842), Ebenezer Emmons (1800–1863), and James Hall (1811–1898). He also founded the Northeastern Science Foundation, which published journals such as *Northeastern Geology*, *Carbonates and Evaporites*, and *Environmental Science*. But the most impactful and lasting legacy of the Friedman interest in the history of the geosciences derives from Gerry’s strong drive to create a new organization, the History of the Earth Sciences Society (HESS), which would support and publicize work in the history of geology. In the late 1970s and early 1980s a small group, led by Gerry Friedman and Ellis Yochelson, developed the operational guidelines for the new society. Also of critical importance, Gerry took on the daunting task of being Editor of a new journal, *Earth Sciences History*. He and his wife Sue spent large amounts of time, effort, and occasionally money, in getting the young journal on its feet and guiding it to maturity as a flagship among history of science journals. While publishing, working for HESS, and setting up the Center of Applied Geology, Gerry also had leadership roles in SEPM (now the Society for Sedimentary Geology) and NAGT (National Association of Geoscience Teachers). Dr Friedman was tireless in his productivity and he made contributions on multiple fronts. The full impact of his contributions can be discerned by looking through the offices he held and the awards presented to him over his long career (see below).

So, what was the background of this dynamo? Born in Berlin in 1921, young Gerry moved to England in the 1930s, received his early education in British schools, and gained a BSc degree from the University of London. Arriving in the United States in 1946, he achieved the MA and PhD degrees at Columbia University, and then a DSc

degree from the University of London (hooded by the Queen Mother!). A teaching job at the University of Cincinnati, while in graduate school, introduced Gerry to the Midwest, but he also conducted research involving igneous petrology (surprise!) and uranium plays in the Canadian Shield. The professional turn to carbonate studies came in the late 1950s with his employment by Amoco, when the company asked him to create a training program in carbonate studies, to be conducted in the Guadalupe Mountains of Texas and New Mexico. Many of us remember, and actually used, Gerry's work on grain-size analyses, including his 1961 paper on size-distribution analyses of clastic sediments (a paper that won SEPM's 'Best Paper' award). As noted above, RPI and Troy, New York, were the Friedmans' home base from 1964 to 1984. In 1985, Gerry accepted a position at Brooklyn College (City University of New York), retiring in 2004 (but continuing to be active in professional activities). Along with the career stepping-stones, it is critical to acknowledge Gerry's close ties to Sue Tyler (Theilheimer) Friedman, his wife and valued associate since their marriage in 1948. The Friedmans had five married daughters and numerous grandchildren and great-grandchildren. Their home in Troy, visited by a number of us in 2000, after a day of discussing "History of Geological Pioneers," was rich in memories, as well as an impressive library.

It is often the case that listing offices held, and awards given, is a rather boring and less-than-informative endeavor. But in Gerry Friedman's case it is quite instructive, as it convincingly illustrates not only his drive and exceptional degree of involvement in a wide range of professional activities, but also graphically shows the esteem accorded to him by colleagues. His contributions to the history of geology were acknowledged with presentation of the Geological Society of America's (GSA) premier award in the field: 'The Mary Rabbitt Award' in 2005. I was honored to be Gerry's citationist for that award. It was also my pleasure, as President of HESS, to present Gerald M. Friedman and Ellis L. Yochelson with Honorary Life Memberships in 2001. GSA's Sedimentary Geology Division bestowed its prestigious Laurence L. Sloss Award in 2006. The American Association of Petroleum Geologists (AAPG) gave him its highest award, the Sidney Powers Medal, in 2000, after SEPM had conferred its highest accolade, the Twenhofel Award, on Gerry in 1997. Recognizing his valuable role as an editor, the Association of Earth Science Editors gave its top award to him in 1993. These, by the way, are but a few, albeit top-of-the-profession, examples of awards received. Gerry had also served as national President of SEPM (1974–1975), the Association of Earth Science Editors (1972–1973), Sigma Gamma Epsilon (1982–1986), the International Association of Sedimentologists (1979), as Vice President of AAPG (1984–1985), and as Founding Editor of HESS (1982–1993). Other noteworthy recognitions include a Fulbright Scholarship and an honorary DSc from the University of Heidelberg—which has given just three in 600 years.

Research and involvement with professional organizations were significant aspects of Dr Friedman's contributions, but he was also a dedicated educator. We have noted his pleasure at hosting meetings and leading field trips that helped inform students and professional peers. He was also an active participation in NAGT and other education-related groups. But it is important to highlight the fact that, in addition to research and service aspects of his career, he mentored almost fifty PhD recipients, fifty-six MA candidates, and thirty post-doctorate professionals, all the while teaching a wide spectrum of undergraduate courses. Those of us who knew him can still recall his depth of knowledge and enthusiasm at sharing information and insights.

We have lost one of the major figures in twentieth-century geology. And he was a person who had a deep interest in the history of geology. Gerry Friedman was a singular individual. Those who knew him, and those who simply profit from what he gave to the present world, will applaud his memory and his considerable legacy.

Kennard B. Bork, Denison University, Granville, Ohio U.S.A. 43023

Evgeny E. Milanovsky (1923-2012)

Evgeny E. Milanovsky, Academician of the Russian Academy of Sciences, the oldest professor of the Geological Faculty of Moscow State University and one of the most prominent Russian geologists, died on 11 February, 2012.

For many years Professor Milanovsky was Head and Chair of Historical and Regional Geology at Moscow University, and in 2001 he became Chair of Geology of Russia, a position created for him by his Faculty. His scientific and professional erudition enabled him to leave a deep trace on many aspects of geological knowledge.

His work provided an enormous amount of material on orogenic volcanism and tectonics of the Caucasus, the Mediterranean region, and the Andes. Studying issues in regional geology, geotectonics, neotectonics, geomorphology, Quaternary geology, volcanology, historical geology, history of geology, and comparative planetology, he worked on five continents. Milanovsky was the leader of the school of 'Geological structure and evolution of continents'.

Professor Milanovsky was honoured with many titles: 'Honorary Prospector of the USSR' (1983), 'Distinguished Professor of Moscow State University' (1996), 'Honoured Scientist of Russian Federation' (2003), and various others. In his scientific work, he meticulously studied the geological structure of the Caucasus and other regions of the Mediterranean and Himalayan mobile belts, investigated the rift zones of Iceland, East Africa, China, and Russia; dealt with issues of neotectonics and the recent volcanism of the Mediterranean and the Himalayan mobile belt; and studied the geological structure and development of oceans.

Milanovsky was born in Moscow on 1 August 1923, into the family of a well-known geologist, Professor E. V. Milanovsky. In his youth he absorbed the atmosphere of an intellectual Russian family and cultural circle, being influenced by his father's friends, among whom were the first world chess champion, A. Alekhin, the artist I. Levitan, and the future scientists, the brothers S. and N. Vavilov. Evgeny Milanovsky became a person of wide-ranging knowledge, intelligent by nature and capable of many-sided approaches to problem solving. He was introduced to his future profession early, when as a young man he participated in geological expeditions to various regions of Russia with his father and uncle—another well-known known geologist—Alexander Mazarovich.

In 1941, Milanovsky entered the Faculty of Geology and Soil Science at Moscow State University. But his studies were interrupted by World War II and he served in the Russian army from 1942 to 1945. He performed his military duties with distinction and was awarded the Order of the Patriotic War (2nd degree), the Red Star, and other medals.

After his graduation with honours in 1949, Milanovsky began his postgraduate studies, having chosen a new direction in geology—neotectonics—as a field for his research. He began his career with a Caucasian expedition, the results of which enabled him to brilliantly defend his doctoral dissertation ('The newest stage of geological development of the Caucasus'), which remains a model for neotectonic research in mountain and folded areas of the Alpine type. By the early 1970s, Milanovsky had published a number of monographs devoted to issues in tectonics, volcanism, Neogene–Quaternary history, and the structure of the Caucasus and other regions of the Alpine belt, gaining him the reputation of an outstanding independent researcher.

In the late sixties, Milanovsky plunged into a new field of research: the study of rift systems in East Africa and Iceland. Later, he investigated other rift zones of the Earth: the Baikal rift system, the Oslo Graben, the Rhine Graben, Rio Grande rift in the Rocky Mountains, Shanxi rift system, and also studied tectonics, neotectonics and the recent volcanism of the Andean orogenic belt in Bolivia. He carried out his fieldwork in most difficult climatic conditions in various continents, setting an example by his enthusiasm, professional approach to solving geological problems, and great personal qualities. His monographs on regional geology, neotectonics, geomorphology, the volcanism of rift and orogenic areas, and also some generalizing monographs on issues of late and ancient rifting on various continents resulted from his studies, made him one of leading authorities on rifting.

At the same time, Milanovsky proved himself in quite another side. His skill in painting and drawing, acquired at art school in his youth, and his talent of a graphic artist, allowed him to supplement his professional notes by fine sketches so that no field of his research went without drawings of what he saw around him. He also developed an impressive knowledge of art history.

In publications of the 1980s and '90s Milanovsky developed the hypothesis of a 'geopulsationary' expansion of Earth, considering problems of global 'geopulsations', and the formation of ocean basins. Basing his studies on the processes of recent and ancient rifting on continents and spreading in oceans and his knowledge of regional geology, and using data from astronomical and physical research, he identified an alternation of global phases of intensification of these processes, producing horizontal compression in mobile belts of Earth. This enabled him to develop the concept of 'geopulsations' occurring throughout Earth's history, contrasting with its general moderate expansion.

Milanovsky further developed a conceptual system of stages of orogenesis and types of orogen structures. He described the character of orogen volcanism and its relation to neotectonic deformations and mantle diapirs, and introduced the idea of sutural zones and margin massifs. He developed the doctrine of continental rifting and its evolution throughout the history of the Earth, as well as a typology of rift zones and their systems that has gained wide recognition. He managed to determine a periodicity of rifting manifestations in geological history and further considered an alternation of phases of intensification of stretching with phases of increased compressive deformations on the global scale, as a result of Earth 'pulsations' superimposed on its expansion.

Milanovsky's scientific accomplishments were appropriately recognised in his native country and he was elected a Corresponding Member of the Academy of Sciences of the USSR in 1976 and Full Member in 1992.

From the early 1990s Milanovsky gave more attention to questions of the history of geology. His interest in this subject wasn't accidental. He was personally acquainted with many of his father's colleagues and he developed an informal interest in the evolution of geological knowledge as he witnessed a succession in time of conceptual theories in geology—which became the basis for his outstanding works on certain major figures in domestic and foreign geology, and about the geological school of Moscow University. His books *Two Hundred Years of the Geological School of Moscow University*, and *Alfred Wegener*, and articles devoted to scientists–geologists, reveal a deep understanding of the work done by these researchers and how they had affected the development of geology as a science. From 1974 to

2006 he actively participated in nineteen INHIGEO Symposiums. In 1980 he was elected a Member of INHIGEO and in 2003 became an Honorary Senior Member of INHIGEO. In his reports on these meetings he considered such important questions as: regional factors affecting the formation of tectonic concepts, the evolution of geological maps with the development of geological sciences, problems of the interaction of geological views of different countries, the history of distribution of ideas of geological evolution of Earth, the main stages of development of volcanological research in Russia, cryological studies in Europe and Russia, the problem of Atlantis, and the biography of the famous geologist Hermann von Abich—the 'father of the Caucasian geology'. His article 'Origin and development of ideas and knowledge on the Pliocene and Quaternary glaciations in Northern and Eastern Europe, Iceland, Caucasus, and Siberia' (2008) was his last work on the history of geology. It stemmed from the Commission's meeting in Lithuania and the resulting Geological Society Special Publication No. 301. The paper was partly autobiographical.

Participation in INHIGEO symposiums and field trips in some of the most beautiful places of our planet with their architectural masterpieces provided some priceless material for Milanovsky's artistic talent. Thousands of pictures are stored in his archives, only a small fraction of his drawings having been published in INHIGEO Newsletters.

Milanovsky was also an excellent teacher. As a professor at Moscow University, he delivered courses of lectures on, among other topics, 'Structural geology and a geological mapping', 'The geology of the USSR', 'Historical geology', 'Quaternary geology', 'The geology of Russia and neighbouring countries (geology of northern Eurasia)', 'Geology of oceans and seas', and 'The geology of China'. He read many special lectures on separate large areas, on the most important and current issues of the tectonic structure and development of the Earth. He was also head of educational practice in the Crimea and conducted many geological expeditions for the Geological Faculty and the Russian Academy of Sciences. During his career Milanovsky prepared more than forty PhDs and doctorates. Astonishingly, he published more than 700 scientific works, including over twenty monographs and several textbooks on regional geology, which are to this day an invaluable source of knowledge for modern geologists in Russia.

Professor Milanovsky's scientific and pedagogical activity was recognised by State awards (such as the Order of Red Banner of Labor), and many honorary degrees. He was recipient of the highest awards of the

Academy of Sciences: the Karpinsky Prize (1985); the Karpinsky gold medal (2001); and the Lomonosov Prize (1988, 1992).

The death of Evgeny Evgenyevich Milanovsky—one of best-educated people of our time—is a huge loss for the world of geology and for society as a whole.

Elena Vinogradova, Tatiana Tveritinova, Zoya Bessudnova

Wilfried Schröder (1941-2011)

Wilfried Schröder, Topical Editor of the journal 'History of Geo- and Space Sciences', passed away on 12 April 2011. He was born on 10 August 1941 in Bremen. He studied mathematics, physics, and geophysics at the Universities of Göttingen, Berlin and Münster and became a high school teacher. From the very beginning of his studies he was interested in the history of science history. Around 1960 he founded the 'Geophysikalische Forschungsstation' in Bremen-Röonnebeck as a one-person business. He undertook observations on noctilucent clouds and aurora, but his main work was the publication of books and scientific articles on history. He received a doctoral degree from the University of Bremen in 1981. After an early retirement from his teaching duties he could fully concentrate on his scientific interests. These were very widespread, touching almost all fields of external geophysics history, but mainly auroral research, solar terrestrial relations, geomagnetism, upper atmospheric physics, and noctilucent clouds. In the 1980s Schröder became involved in the Interdivisional Commission on History of International Association of Geomagnetism and Aeronomy (IAGA). According to a friend he 'constructed' this Commission: "I remember when its sessions had at most 10-20 participants, including the relatives of the speakers. After his great involvement in promoting historical studies, I found that it became eventually embarrassing (we were in Birmingham) realizing that a room with a few hundred seats was insufficient, and several people were listening to the session out of the door. This was the result of Wilfried's promotion!" The Interdivisional Commission on History of IAGA became a unique active body dealing with history of Earth sciences within the entire IUGG, not only of IAGA. He remained active in this Commission by convening sessions and other organizational work until 2005. In order to publish and circulate scientific contributions presented at the IAGA and IUGG symposia he founded his own publishing enterprise 'Science Edition - Potsdam/Bremen' financed mostly with his own money. Many well recognized books were published in this edition, like Das Phänomen des Polarlichts, 1984; Noctilucent Clouds and Mesosphere: a historical Review, 2007; Einstein und die Geophysik, 2004; The aurora in time, 2000. His aim was to publish inexpensive books, in order that they could have a great circulation, and to give many authors an opportunity to publish their work. In this endeavour, Schröder never had any institutional support. Besides, based on his own research, he published more than 200 papers in well-known peer reviewed journals. He was particularly interested in the origin and development of new scientific ideas and in the scientists involved, and was fascinated by the search for the intellectual steps of past scientists who left a heritage to us with their wisdom and achievements. He thus published several articles on well-known physicists and geophysicists,

like Hermann Fritz, Alfred Wegener, Emil Wiechert, Albert Einstein, Arnold Sommerfeld, and Werner Heisenberg. He also maintained a correspondence with Sidney Chapman and with the philosopher Karl Popper. Even before German reunification, Schröder kept close contact and a vivid correspondence with important scientists of the former GDR, like Hans-Jürgen Treder (theoretical physics) and Hans Ertel (geophysical hydrodynamics). Together with Treder he founded the 'Arbeitskreis Geschichte der Geophysik und Kosmischen Physik' (German Commission on History of Geophysics and Cosmical Physics). He was not only active in the IAGA History Commission but was also a member of several other scientific organizations and societies: Deutsche Geophysikalische Gesellschaft, Deutsche Physikalische Gesellschaft, Leibniz-Societät, Max-Planck Gesellschaft, American Geophysical Union, as well as INHIGEO. Schröder's experience and international contacts were very important and valuable in establishing the journal: History of Geo- and Space Sciences. Wilfried Schröder will be missed by many, including the authors of this obituary and other scientists who shared his deep and abiding interest in historical matters.

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INTERVIEW

An Interview with Kennard B. Bork, Secretary-General of INHIGEO (2004–2008) November 2011

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Kennard B. Bork, born in 1940, is Alumni Professor of Geology, Emeritus, at Denison University in Granville, Ohio, USA. He was educated at DePauw University (BA with a major in geology) and Indiana University (MA and PhD in geology and paleontology). A member of INHIGEO since 1984, Ken was Secretary-General from 2004 to 2008. Among many other offices in disciplinary and professional organizations, he has served as President of the History of the Earth Sciences Society (HESS). The Geological Society of America recognized his scholarly work with the History of Geology Award in 1997, and for his distinguished teaching he received the Neil Miner Award from the National Association of Geoscience Teachers in 2000. He is the author of numerous papers in paleontology, stratigraphy, and sedimentology. His voluminous publications in the history of geology span topics from the 17th to the 20th centuries, and geological figures from France, Switzerland, Great Britain, and the United States.

Can you recall how you came to be interested in geology? And in the history of geology?

My interest in geology began in high school. I had long been drawn to both history and biology. An excellent teacher of biology counseled me to major in biology when I went to college. As I reflected on that advice I realized that pursuing the history of life on Earth was a crafty way to combine both interests. I told her of my 'cartoon-light-bulb' vision of pursuing paleontology, as an amalgam of history and biology, and she agreed about the merit of such a choice. Thus, I went to college as a declared major in geology.

A firmer vision of career aspirations came to me in the first semester of my senior year in college. I was living in a 17th-century garret in Aix-en-Provence, France, during a semester abroad. My geology courses were accounted for and my remaining curricular requirements were in art history, philosophy, and literature, so an off-campus adventure was feasible. (It may be noted, as a cultural tidbit, that the bed was in a curtained alcove with a huge mural of a knight carrying a damsel up a hill. Ah, those French!) But I digress... As I sat alone, with time to contemplate larger issues, it

dawned on me that a career as a professor of paleontology at a small liberal arts college was a most attractive scenario. When I returned home I pursued graduate work, finished my PhD in four years, and took what I considered to be a dream job at Denison University. It was, in fact, an ideal niche for me. Few people follow such an orthogenetic straight-line evolution. It is but one model, but it worked for me.

As to my turning to the history of geology, that also had roots in my early interest in history. It should be noted that my dissertation was decidedly esoteric (the taxonomy of Ordovician trepostomatous bryozoa) and I did not see the subject as a viable platform for working with undergraduate geology majors. Thus, I turned to field stratigraphy, general paleontology, and reconstruction of the paleogeography of central Ohio during the Mississippian Period. I greatly enjoyed that work, had success in involving students during summer field investigations, and published on our efforts to decode 350,000,000-year-old environments of deposition. When my first sabbatical approached (1973), another light bulb lit up and I decided to look into the history of human attempts to understand the history of the Earth. Specifically, I thought that investigating French precursors to Darwin would be of value. So my wife (a French and political-science major in college, with a Masters degree in French—see how crafty I could be!), our son, and I headed to Paris for six months. The experience was so good that I became professionally devoted to the history of geology.

It is, by the way, worth applauding French colleagues and institutions for their exceptional support during my 1973 and 1980 sabbaticals. Taking public courses at the Sorbonne, the Collège de France, and the Muséum national d'histoire naturelle were invaluable in deepening my knowledge of, and interest in, Francophone contributions to the evolution of the geosciences. The staff at the Bibliothèque centrale du Muséum d'histoire naturelle were extremely helpful both years. It was a particular delight to interact with and listen to Joseph Schiller, François Ellenberger, Jean Gaudant, Gabriel Gohau, Goulven Laurent, and others, while working in the library and in the course of attending COFRHIGEO (*Comité français d'histoire de la géologie*) meetings.

Similarly, American mentors were of great help and merit huge thanks. Back in 1973, it was the "dawn" of professional interest in the history of geology. Forty years later, I can still recall the great feeling of developing a support network, as I received advice, support, and professional modeling from people such as George White, Cecil Schneer, Michele Aldrich, Albert Carozzi, Rhoda Rappaport, and your very good self. That is why I focused my acceptance comments for the Geological Society of America's History of Geology Award (1997) on the virtues of mentoring.

What have been the main areas of your work in history of geology, and what have you found most intriguing about them?

Precursors and pioneers have always fascinated me. Whether in music, art, science, or exploration, I have found it rewarding to understand the methods and motivations of people at the forefront of expanding knowledge. Back in 1973 that led me to research 18th-century naturalists such as René Antoine Ferchault de Réaumur (1683–1757), Antoine de Jussieu (1686–1758), Louis Bourguet (1678–1742), and the late 17th-century natural theologians of Great Britain. Truth be told, my earliest thoughts and writings had a flavor of "presentism" because I was impressed by proto-geologists and proto-evolutionists who "got it right" in terms of modern thinking. But by the 1980s it became apparent that hagiographies and Whiggish telling of tales really were not the appropriate paths to travel. Seeing people in their own historical context and milieu (political, religious, then-existing theory and knowledge) became my goal.

In the 1990s my attention turned to a 20th-century American. The reason was admittedly quite 'parochial,' in that Kirtley F. Mather was a 1909 graduate of my home institution, Denison University. During the college's 1981 Sesquicentennial, Kirtley was celebrated as an exemplar of a liberally educated scientist, and I was asked to present a lecture concerning his life and times. (Yes, the school was founded in 1831, as Darwin set sail on the *Beagle.*) Mather received his PhD at the University of Chicago, working there with a galaxy of stars (Wallace Atwood, T. C. Chamberlain, Rollin D. Salisbury, and Stuart Weller) then on the geology faculty. He taught for six years at Denison but was called to Harvard University in 1924, where he continued on the active faculty until 1954. Historians of geology may be familiar with *A Source Book in Geology: 1400 to 1900*, generated by Mather and oilman Shirley L. Mason in 1939, or Mather's *Source Book in Geology, 1900–1950* (1967). I found Mather noteworthy because he was a scientist with a strong and liberal social conscience. He served as an expert witness on Clarence Darrow's defense team at the Scopes Trial (1925), worked to support the anti-Franco (anti-Fascist) forces in the Spanish Civil War (1936–1939), and, most visibly, he was a fearless foe of Senator Joseph McCarthy and his ilk in the 1950s. His liberal political stance may not have been widely popular, but American scientists understood his academic worth and political positions as they elected him President of the American Association for the Advancement of Science (AAAS) for 1951. Work at the Harvard Archives—another example of a library with rich collections and a helpful staff—produced sufficient material for me to write a book on Mather's life and exploits. That book, *Cracking Rocks and Defending Democracy: Kirtley F. Mather, 1888–1978*, was published in 1994 by the AAAS, thanks in large measure to Alan Leviton, editor of AAAS's Pacific Division.

Most recently my research involves the quite surprising interactions of a Parisian patrician and a Yankee professor during the early years (1800–1825) of the maturation of mineralogy. Alexandre Brongniart (1770–1847), the celebrated co-worker of Georges Cuvier, wrote a key textbook on mineralogy in 1807. Parker Cleaveland (1780–1858) taught science courses at Bowdoin College in Maine, but found his expertise in mineralogy to be sorely lacking. His

correspondents called attention to Brongniart's book, reporting that it was the best then-contemporary model. It used the heritage of French chemistry, rather than physical attributes favored by the German school, to classify minerals. Cleaveland read the book, was impressed, and corresponded directly with Brongniart. His 1816 textbook on mineralogy was the first such text in the United States and it was based on the French treatise. The two men carried on a significant correspondence. If you wonder how I became aware of that trans-Atlantic story, the answer is the magic word "serendipity." Edgar Owen, a petroleum geologist and author of the 1,647-page *The Trek of the Oil Finders*, was a Denison graduate. He heard of my interest in the history of geology as his health was failing, so he presented me with his voluminous hand-written notes on the evolution of geology, along with an old green book. That book was Brongniart's 1823 memoir on the Tertiary strata of Northern Italy. The punch line is that Brongniart had signed the inside cover, dedicating the work to Cleaveland, and Cleaveland had affixed his own nameplate. The connection was just too spectacular not to pursue.

Has any of your research yielded results that were especially gratifying? Or surprising?

That's an interesting question. I would say that there were many gratifying aspects of my work over the years, but that three particular results struck me most forcefully. One was watching 17th- and 18th-century naturalists struggle with how to make sense of this complex and dynamic planet. The second was being dazzled by the strength of character of Kirtley Mather, and watching how a concerned scientist could defend important values while staying committed to teaching and to interacting with the community at large. And the third is seeing how two men, separated by an ocean, a language, and different stations in life, could come together through correspondence in order to share in the progress of the young discipline of mineralogy. Brongniart and Cleaveland never met, but the richness of their correspondence is a shining example of international collaboration.

What are your views on the sorts of skills and habits that go into being a geologist, and being a historian of geology? Are they similar or different?

Isn't that quite evident? Geologists like to be outside and hammer on things. Historians like to be inside and read things. Oh! Your question was probably more nuanced than that. My serious response derives from my personal observations over the years; others may have quite different analyses. It is possible to lapse into caricature and stereotypes, so I will preface everything that follows by noting that it is good to see modern trends that honor both the practitioners of science and the historians who analyze the development of science. Geologists work with nature, whether in the field or in the lab. For many geologists the required skill set involves observing things and events in the natural world, formulating potent questions and valuable hypotheses, and working out how things work on the planet Earth. Historians deal with documents, whether in a modern computer-connected archive or in (say) a dusty attic in Scotland. Their quest is to understand human endeavor in the past, putting persons, dates, and events into a rich contextual fabric. In the Bad Old Days, some geologists may have looked askance at historians: (a) for being concerned with the opaque past rather than the bright high-tech future (as if geology doesn't deal with the past!); or (b) for sitting in cozy comfort while the geologist was battling horizontal sleet on a mountain peak. Conversely, a scholar of history might have considered the geologist to be a mere 'knapper of chunky stones . . . to see how the world was made' (to paraphrase Sir Walter Scott, 1824) rather than a sophisticated student of complex human events. In the quasi-enlightened 21st century there is hope that similarity of goal—understanding the nature and evolution of science—if not identity of methods, will bring us all together in productive harmony. It's food for aspirational thought . . .

Please tell me a little about your teaching career at Denison. I gather that in addition to teaching the earth sciences you did quite a bit of interdisciplinary teaching. What have you missed (or not missed) about active teaching since your retirement in 2003?

I was hired as the "soft-rock, fossil, and history of the planet" member of a three-person department. In time we grew to five full-time faculty members, but I retained the history-of-the-world slot. My courses in Physical Geology, Historical Geology, Paleontology, and Sedimentology/Stratigraphy were in the classical geology mode, but I added significant components of history to each course. As some readers may recall, *Evolution of the Earth*, by Bob Dott and Roger Batten, contained a great deal of relevant and informative history of geology. Thus, my students received quite a dose of history as they moved through their geology curriculum. Even back in the mid-1960s, Denison was very good about letting faculty members generate innovative courses, particularly in the Honors program. In my first years, therefore, I offered a course in "Origins of Earth Systems," which began with the Big Bang and led up to hominid evolution. I also took on the seminar in Advanced Physical Geology, which allowed geology majors to do their own research so as to develop formal presentations on topics that they had first learned about in their introductory courses. Delving into the evolution of ideas and giving oral overviews paid pedagogical dividends, as a number of students appreciated later in their professional lives. Historians may be interested to know that I team-taught a course with a colleague in the History Department. In two First-Year courses we considered the history of science, from Descartes to Einstein. One of my favorite Honors courses, offered on three separate occasions, was "History of Science in the Age of Enlightenment." After doing quite a bit of my own self-educating concerning big vertebrates, I developed

an Honors course on "Dinosaurs." Demand was such that it was offered four times. During the height of the debate in public schools I gave Honors students the possibility of considering "Evolution and Creationism." My "community service" that year entailed going to a School Board meeting and arguing against 18 Creationists. Happily, I won, thanks to the rationality and firm backbones of board members.

The most interdisciplinary and inventive courses of all were developed under the January Term curriculum, instituted in 1970 and continuing until 1988. I was Director of the first four years of "JT," and I was truly impressed by the range of fascinating courses developed by colleagues across the campus. My own offerings included "The Nature of Time," "Caves and Cave Art," and "The Evolution/Creation Debate." The month-long seminar on Time was one of my favorite interactions with ideas and with students wanting to tackle fascinating but difficult topics.

Your question about the impact of leaving teaching is important. I certainly miss sharing information with motivated students. And I miss the excitement of being engaged with ideas and young people in the adrenaline-rich atmosphere of lecturing and discussing. But there is also a pleasant degree of freedom in pursuing one's own schedule, not grading large volumes of exams and papers, and not having to assess young people who may have all manner of external and internal pressures affecting their academic performance. It is also the case that having the freedom to live in Sedona, Arizona, for three months—away from Midwestern winters—is a significant bonus of retirement. A key point, however, is that the rewards of teaching continue, through watching the successes of past students. It is a delight to go to professional meetings (GSA-2011 was one striking example) and observe my former students becoming leaders in their disciplines. There was one year in which three of 'my' students were selected for three of the top teaching jobs in North America. They deserve the credit, of course, but it is nevertheless rewarding to be part of that passing of the torch. It is also deeply satisfying to stay in touch with geo-grads. Many went into university teaching, petroleum exploration, or environmental consulting, but others had success in the corporate world, law, medicine, or other fields. And there are still those postcards reporting that, "Wow! You were right about the majesty of mountains / the fury of earthquakes / the power of erosion . . ."

What professional activities have engaged you in your post-retirement years?

Well, I've tried to stay out of trouble through the simple expedient of being busy. After formal retirement in May of 2003, I was allowed to retain my office in the Geosciences Department for a full year. That option allowed me to cull my library, welcome my replacement, and enjoy a relaxed transition. It was a major boon in 2004 to have Denison provide me with a superb office in a beautifully renovated fraternity house. (In 1995 the frat houses were made non-residential, so office space for emeriti became available. Who says that American education can't evolve?) In 2004, of course, I took on a four-year term as Secretary-General of INHIGEO, so frivolous spare time was not even a factor. An important point is that I was incredibly fortunate to have David Oldroyd as my precursor. He was extremely helpful during the rather difficult—because of the "learning curve," not anything problematical—first year, and he continued to be a valuable mentor. Ursula Marvin, the Secretary-General prior to David, was also very supportive. The story ends happily, because handing the reins to Barry Cooper, at the 33rd IGC in Oslo (2008), was a wonderful feeling, not simply because my job was finished, but also because Barry was such a superb person to be taking on the task. Continuing as an *ex officio* member of the Board is rewarding.

Beyond the bounds of INHIGEO, I have enjoyed writing professional papers and reviewing books. One of my research topics involved the natural theology of Élie Bertrand (1713–1797). Elements of that work were presented at the INHIGEO meeting in Eichstätt (2007). The paper subsequently appeared in Special Publication 310 of the Geological Society of London, *Geology and Religion: A History of Harmony and Hostility*, superbly edited by Martina Kölbl-Ebert. Another focus of my research is the noteworthy interaction of Alexandre Brongniart and Parker Cleaveland, as they wrote the key texts in mineralogy for students in France and the USA. At the GSA-2011 meeting in Minneapolis, I gave a paper on that trans-Atlantic exchange, and I hope to concentrate on Brongniart for a presentation at the 34th IGC in Brisbane, in August 2012. A most enjoyable and personally rewarding activity has been serving as invited Citationist for honored colleagues at the annual meetings of the Geological Society of America (GSA). Not only was I an enthusiastic supporter of each person, it was deeply satisfying to be part of celebrating their moment in the collegial glow of recognition at the History and Philosophy of Geology Division's award ceremonies. Robert N. Ginsburg (2006) received the Distinguished Service Award, and Gerald M. Friedman (2005), Kenneth L. Taylor (2007) and Gabriel Gohau (2010) were presented with the Mary C. Rabbitt History of Geology Award. Non-taxing and pleasant involvement includes serving as an Associate Editor for *Earth Sciences History* and as a member of the GSA Rock Star Committee, which collects and edits biographic sketches of major contributors to the earth sciences. Those illustrated articles are then published in *GSA Today*.

You've had an unusually great involvement in professional and disciplinary service work, holding many different offices. I suspect one of the reasons is that you're good at it, and people keep thinking of your name when a job needs to be done. How do you see this sort of work as it fits into your life and career as a whole?

As I look back on the years since my first entry into the arena of the history of geology, it's both surprising and gratifying to see that service work has indeed been a significant part of my professional activity. Of course, you, Ken, know almost all of my background because you and I shared so many tasks in so many organizations. We started

together, back in the 1970s, as members of the U. S. National Committee on the History of Geology. Those were early days in the evolution of interest in our discipline, and it was exciting to be part of the growth being fostered by Claude Albritton, Michele Aldrich, Cecil Schneer, George White, and many others. In 1981, as I took on the Chair duties of the GSA History of Geology Division, I organized and convened a Symposium on the History of American Paleontology. That session took place at the GSA annual meeting in Cincinnati, a famous site in the development of paleontology in the USA. As the History of the Earth Sciences Society (HESS) was being founded by Gerry Friedman, Ellis Yochelson and others, I served as Inaugural Editor of Volume 1, Number 1 of the society's journal *Earth Sciences History*. The primary reason was because most of the articles in Volume 1 of *ESH* had been part of my GSA-1981 symposium, so Gerry Friedman, the Founding Editor for many years, asked me to contact the participants, solicit their papers, and edit the final products. The year 1984 was memorable, above and beyond George Orwell's spotlight, because the 27th International Geological Congress was held in Moscow. It was a major treat to attend that meeting and watch some of the great then-contemporary names (V.V. Tikhomirov, Reijer Hooykaas, Tom Vallance, John Rogers, *et al.*) interact. A personal high point came in Moscow, when I was elected a Corresponding Member of INHIGEO. I can absolutely promise that the vision of some day serving as Secretary-General of INHIGEO never dawned on me at the time. From 1987 through 1993, I was Secretary of HESS, while you were Treasurer. That crafty fellow Ellis Yochelson yoked both of us into following his pivotal performance as HESS Secretary-Treasurer during the Society's early years. When I became President of HESS for 1999–2000, you were Chair of the GSA History of Geology Division and we worked together to have HESS become a GSA Associated Society. And as I sat in the Secretary-General's seat of INHIGEO (2004–2008) you were the Vice President for North America. It is probably now evident to the readers why you are conducting this interview and why I was so delighted to be your Citationist in 2007.

Let's get back to INHIGEO in a few moments, but first I would like to ask about your personal life and your family. Your wife, Kay, was a constant participant in INHIGEO meetings from 2004 to 2008. Say a few words about Kay and your son, Rob.

Kay and I attended the same small liberal-arts college (DePauw University, Greencastle, Indiana), but did not meet until heading to Europe on the *Queen Mary* in August of 1961. As the Berlin Wall was being built, Kay was heading to the University of Geneva for a Junior Year Abroad and I was on my way to Aix-en-Provence, as noted above. We did some joint traveling in Europe and our strong friendship evolved smoothly into marriage in 1963. We are at 48 wonderful years of marriage, and counting. Kay graduated in 1963 as a Phi Beta Kappa double major in Political Science and French. She contemplated a career in the Foreign Service and was accepted at premier programs, but because I was pursuing my PhD at Indiana University, she elected to obtain a Masters degree in French at I.U. Subsequently she taught French at the college and high-school levels for 23 years. When the everyday teaching workload became wearying, she moved to library science, earning a Masters degree in Library Science in 1995 and becoming a Reference Librarian at local libraries. Kay's connection with INHIGEO is that she greatly enjoyed meeting people at the five venues we attended (Italy, Czech Republic, Baltic States, Germany, Norway). Her fluency in French allowed her to chat with our revered President, Philippe Taquet. Philippe's English was much better than my rusty French, so he no doubt enjoyed speaking with Kay in a civilized language. Our son Rob was born in 1967, attended the local high school and earned his BA in physics at Harvard. He worked at C.E.R.N. one summer and got his Masters in theoretical physics at the University of California, Santa Cruz. The job market in physics was horrific, so he moved back East and obtained his PhD (in Gothic Architecture!) at Princeton University. That is not as weird as it may sound, as he had been entranced by Gothic cathedrals during our sabbaticals in Paris and he had previously worked as an intern with Dr Robert Mark, of the Princeton School of Architecture. Rob is currently head of the Art History Division at the University of Iowa. Both Kay and Rob have been totally supportive of my research and travel time devoted to the history of geoscience.

Please talk about your avocations. What do you like to do when you are not being a teacher, a scientist and historian of science?

Who has time for avocations? OK, I admit that the old adage about retirees being busier than when they were employed is pretty silly. One key factor is that a retiree's being "busy" is a function of self-imposed schedules and it is not dictated by external agencies. Your question is relevant for much of the aging population, so I'll provide a few personal responses. First and foremost is reading. While on the active faculty I did some occasional reading of fiction and non-professional non-fiction, but the amount of free time for pleasure reading was limited. Post-retirement, I read 75 to 100 books a year, along with magazines such as *Smithsonian*, *Natural History*, *The New Yorker*, and *BBC Knowledge*. My taste tends toward non-fiction, but I now agree that fiction can be both enjoyable and insightful. Riding my Trek road-racing bicycle was exhilarating for many years, until a sun-blinded collision with a downed tree put a damper on high-speed biking. Although not gifted musically as a musician or singer, a major avocation is enjoying a wide spectrum of music. Opera is a particular favorite, now greatly aided by the Metropolitan Opera's simulcasts into movie theatres around the country. Baroque vocal and instrumental works, bluegrass, classic rock, and world music, especially the music of India, are among my favorite types. And, of course, travel is an informative and enjoyable expander of one's mind, while adding to appreciation of world cultures. Post-retirement venues have

included travels throughout the United States, the professionally and culturally valuable INHIGEO meetings noted above, and excellent trips to Mexico (Mayan Yucatan), Spain, China, Greece and Turkey, and, of course, France, with a happy focus on Paris.

What were some of the tasks and rewards of serving as INHIGEO Secretary-General?

Tasks? Oh, yes, there were a few! The primary task and steepest learning curve involved the newsletter. David Oldroyd was an invaluable tutor during that first year. Although the endeavor remained a great deal of work for the ensuing three years, it soon became richly satisfying its own right. Specific efforts included getting all of the national reports and articles turned in on time, editing a quite large volume of material, working with non-native users of English (with all credit to them, because my facility with, let us say, Uzbekistan dialects was just a tad rusty), and getting computers to cooperate so that changes could be made without reformatting the entire text or having fonts turn into Martian script. An important point to make is that I was, and remain, impressed with the exceptional level of cooperation from authors, national representatives, and everyone involved in producing a valuable forum for shared information. Another major task was conducting INHIGEO elections, because each stage in the complex process had its own adventurous aspects. Writing Annual Reports and budget requests were perennial but non-odious obligations. The International Union of Geological Sciences (IUGS) and the International Union of History and Philosophy of Science (IUHPS) were consistently supportive financially, and they understood and appreciated our mission.

The rewards were many. Corresponding with colleagues across the globe—thanks to the magic of e-mail—was a constant source of information, enlightenment, and pleasure. It has been good to see the Commission grow in numbers of members and in countries represented. Attending annual meetings, hearing a rich set of presentations, and participating in the truly valuable field excursions, was an unalloyed professional delight. We all need to applaud the efforts of our colleagues who make the INHIGEO annual meetings and historically oriented field trips so enjoyable and enriching. The person serving as Secretary-General also learns a great deal about activities in the discipline, as news notes, book reviews, and national reports come in and are closely edited. Lastly, it is my view that working with the INHIGEO Board has been, and remains, enjoyable and rewarding. That point is not made in a *pro forma* mode; the levels of productivity and conviviality over the years have been impressive and have made a potentially difficult job actually enjoyable.

Lastly, I must comment that INHIGEO has produced an exceptional record of publication stemming from its annual meetings. Every symposium from 2004 through 2008 (as well as many before and after) has generated a major book. For a relatively small organization to produce that level of productivity is noteworthy. Individual authors and editors deserve credit and commendation.

Can you say a few words about your vision of INHIGEO's future trajectory?

Times do change and evolution does take place (Creationist deniers notwithstanding). The IUGS Review at the 2011 meeting in Japan led to a number of suggestions about finances, structure, and potential future separation from the parent IUGS organization. These matters will have to be seriously considered and steps taken to incorporate them into our operations down the temporal road. We also need to consider how best to reach out to young scholars in geoscience and in history, so as to increase our membership—not simply in numbers of bodies but in terms of enthusiasm for our discipline. The merit of increasing an awareness of the history of science needs to be stressed. New countries and new disciplines, including interdisciplinary areas with rich histories (oceanography is but one example) need to be welcomed under our umbrella. We also would profit, literally and figuratively, from adopting relevant current technologies that could help save money while expanding the reach of our message. Specific examples include using the .pdf format and electronic distribution of the newsletter and developing our website. Speaking of the newsletter, I strongly support the move toward having a separate Editor. I proposed that concept during my time as Secretary-General, so I applaud Barry Cooper's concrete steps toward implementing the reality. Retaining the superb interaction of Board members will aid our upward trajectory. And I must affirm that we should continue to honor our traditions of excellence. The INHIGEO annual meetings, field trips, newsletters, and our record of symposium-related publications strike me as models of what a successful Commission can achieve.

ARTICLES

The phenomenon of Vladimir Tikhomirov

Editor's Note:
Vladimir Vladimirovich Tikhomirov was the Foundation President of INHIGEO (1967-1976). Currently there are moves within INHIGEO and IUGS to create a "Vladimir V. Tikhomirov History of Geology Award" The following information has been kindly provided by our Russian member, Irena Malakhova, as further perspective on this amazing historian of geology.

He often began and finished talks with the words: "I have seen".
And everybody trusted him even though he was blind.

V.V.Tikhomirov 1974

Vladimir Vladimirovich Tikhomirov (1915-1994) was born in Petrograd (Leningrad 1924-1991, Saint Petersburg since 1991) during the World War I (1914-1918). The family moved to Baku where he graduated from the Azerbaijan Industrial Institute in 1938 and was appointed to the Azerbaijan Geological Survey as an engineer-geologist. The Great Patriotic War (1941-1945) split the lives of all Russian people. Tikhomirov felt this in full. Afterwards he never talked much about the War. His article "On the Leningrad battle-front" is his single yet comprehensive and historically precise publication (Tikhomirov, 1990). During the War, geologists had reserve rights. Since the first days of the war Tikhomirov had been pressing for military service. Just before the War he entered a flying school as a volunteer and was trained in a bomber force. At the end of 1942 Tikhomirov was sent to the Leningrad battle-front.

Tikhomirov, the Leningrad battle-front, 1943

Tikhomirov was appointed a commissar of a bomber squadron, made dozens of attacking flights, and was severely wounded on 18 April 1944 whilst clearing mines. Rehabilitation and surgery had no any effects. Tikhomirov lost his vision entirely in 1953 following a stroke. Many years later he wrote: "it didn't much affect
my work" (Tikhomirov, 1990, p. 210). And it was true. His best friend since pre-war years, a full member of the Russian Academy of Sciences and also an INHIGEO member, Victor E. Khain (1914-2009), identified the essential Tikhomirov's features: intellect, diligence, discipline, and persistence. He could be "an Academician, a Director of an Institute or a Minister. But all that he did had a single definition – the feat" (Khain, 1997, p. 129). Tikhomirov had a

vast array of interests in geosciences. Commencing in Azerbaijan as a student, he gained experience mapping and prospecting for mineral resources.

Geological expedition camp, 1935 northern Azerbaijan: (left to right) Khain, Tikhomirov, etc.)

Following war service and injury, in 1945 Tikhomirov became a post-graduate student at the Moscow Geological Prospecting Institute. He was guided by Vladimir V. Beloussov (1907-1990), Alexey A. Bogdanov (1907-1971), and was much supported by Khain. The dissertation of Tikhomirov, entitled "The Lesser Caucasus in the Upper Cretaceous", was research based on personal data. He compiled original paleotectonic maps, entirely in his mind and only with technical support. It was a sensation: "A blind post-graduate student presented and defended a thesis evidently exceeding in quality a normal candidate's dissertation!" (Khain, 1997, p. 125). The awarded scientific degree of the candidate was subsequently elevated to Doctorate (1949). The work was later published as a monograph (Tikhomirov, 1950).

Lacking in practical geological ability following his war injuries, Tikhomirov was successful in finding a new field of interest – the history of geosciences. In 1949 the Director of the Geological Institute of the USSR Academy of Sciences Nikolay S. Shatsky (1895-1960) invited Tikhomirov to undertake studies on the history of geology. Shatsky and Tikhomirov were appointed to head a new Commission of the USSR Academy of Sciences initiated by a famous explorer of Siberia and one of the first historians of geology, Academician Vladimir A. Obruchev (1863-1956).

Academician Obruchev and Tikhomirov; the resort "Uzkoe" near Moscow

The Commission on the Geological Study of the USSR was founded in 1955, and from the late 1950s Tikhomirov headed it. About 80 geological institutions (Academies, Ministry of Geology, research institutes) were involved in the work. The results were remarkable. All geological publications were reviewed and compiled in 50 volumes (more than 1000 issues) for the whole territory of the USSR. The last volume was published in 1991.

Tikhomirov's studies on the history of geosciences began with short biographical articles for different scientific journals and encyclopaediae. Reading of original papers was his everyday duty – with an assistant in work hours and with a special reader after hours. His initial geological experiences coupled with high intellect and perfect memory worked incredible wonders. Tikhomirov published articles about Russian mining engineers and geologists, on

the history of economic geology, mineralogy, stratigraphy, tectonics, paleogeography, etc. The book "A short essay on the history of geology" published by Tikhomirov and Khain in 1956 is today recognized as a classic work. The 2-volume monograph "Geology in Russia in the first half of the 19th century" (1960-1963) by Tikhomirov is the standard reference work for the history of geology in Russia.

Discussion on cooperation: (left to right)
Yu. Saadyan, R. Hooykaas, Tikhomirov, M. Guntau; Moscow, 1960s

Tikhomirov was a founder in 1953 of special series dealing with the history of geology entitled "Contribution to the history of geological sciences". He was also a scientific initiator, the permanent Editor-in-Chief and sometimes a contributor of collected works and monographs. Two final volumes (27 & 28) in commemoration of Victory Day were published in 1991. Tikhomirov's activities soon crossed frontiers and were recognized internationally. He was the first geologist to be elected to the International Academy of the History of Science in 1964. Soon after he launched another great project – the International Committee (Commission) on the History of Geology (INHIGEO). "Founding fathers" met in Yerevan (modern Armenia) in 1967. Tikhomirov was elected the first INHIGEO President.

International Geological Committee on the History of Geology
(with signatures on the reverse): Yerevan, Armenia, USSR 1967.

Opening of the first INHIGEO Symposium; Freiberg, DDR, 1970

With his understanding of the role of international cooperation in the history of geology Tikhomirov had wide contacts all over the world. As INHIGEO President and Vice-President he was involved with many geoscientists in many interesting fields of geology. Some research fellows in the Department for the History of Geology were also later honored to be nominated to INHIGEO by Tikhomirov: Alexandra I. Ravikovich (1968), Yuri Ya. Soloviev (1982), Irena G. Malakhova (1984).

First INHIGEO Symposium; Freiberg, DDR, 1970; a speech of Tikhomirov; (left to right): Ravikovich, Guntau, Mr. and Mrs. Tikhomirov, etc.

V. Tikhomirov traveled much and was welcomed in various countries. He was fluent in German, spoke English, and had no problems in any country. Tikhomirov's success was everywhere overwhelming in the physical as well as the political dimension. He lived in a figurative world and took in new imaginations. I can never forget one story about the Louvre in Paris. He told me "So many visitors have seen the Venus of Milo but I have touched her!"

Tikhomirov's enthusiasm carried people away. He was the true leader of Russian historians of the geosciences. Representatives of many scientific institutions were welcomed at the Department for the History of Geology. Soviet delegations participated in Polish-Soviet, DDR-USSR meetings, and the INHIGEO symposia.

8th INHIGEO Symposium; Münster, Germany, 1978:
(left to right) Sh. Mekhtiev, E. Milanovsky, Tikhomirov, I. Batyushkova, V. Pavlinov.

The clearness of purpose and high capacity for work were the distinguishing features of Tikhomirov. He was always opened for new contacts, and ideas. Those who could follow him are much thankful to such an extraordinary person. As the years progressed, his serious war wounds, coupled with advancing heart disease, increasingly overhung Tikhomirov like the legendary "Sword of Damocles". But he lived a full life. His first pre-war marriage ended tragically. Later in the 1980s, a new love eventuated. The birth of a daughter, Irina, in 1982 without doubt strengthened Tikhomirov in his struggle for life. Vladimir Vladimirovich Tikhomirov passed away on 13 January 1994.

12th INHIGEO Symposium; Edinburgh, 1985;
(left to right): E. Dudich, G.L. Herries Davies, Mr. & Mrs. Tikhomirov, M. Guntau.

12th INHIGEO Symposium; Edinburgh, 1985: G.L. Herries Davies, Mr. & Mrs. Tikhomirov

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Portrait of Tikhomirov at the Department for the History of Geology, Russian Academy of Sciences

Dr. Irena G. Malakhova
Russian Academy of Sciences
Research Fellow, Department for the History of Geology, 1977-1990
Head of the Department, 2005 to present

Hungarians in INHIGEO – a Success Story

The country of Hungary has had a long and illustrious history in INHIGEO and with the history of geology. The following chronology details this significant involvment.

1968 Birth of INHIGEO in Yerevan (Armenia, USSR). Hungary is represented by A.Tasnádi-Kubacska
1972 INHIGEO Symposium in Madrid (Spain). From Hungary, Tereza Póka attends.
1975 Teresa Póka is elected Member of INHIGEO
1978 VIIIth INHIGEO Symposium, Münster-Bonn (Germany).
Three Hungarians attend: Gábor Csíky, Endre Dudich, Teresa Póka.
Lecture and Russian-English interpretation
1980 IXth Symposium, Paris (France). E:Dudich, G. Csiky, T. Póka and L. Zsámboki lecturing
1982 Xth Symposium, Budapest (Hungary) „On the History of Geological Mapping" The Proceedings to be published by the Hungarian Academy of Sciences in 1984
1984 27th International Geological Congress. Invited plenary lecture by E.Dudich: „From Alchemy through Geochemistry to Cosmochemistry". E. Dudich is elected INHIGEO Secretary-General with Professor Gordon Y.Craig (Edinburgh) as President. He is charged with the redaction of the INHIGEO Newsletter
1985 XIIth Symposium, Edinburgh (Scotland)
1986 XIIIrd Symposium, Pisa-Padova (Italy).Annals of the History of Hungarian Geologiy, annals.no 1.
1987 Contact with F.Ellenberger's COFRHIGEO in Paris (France)
1988 History of INHIGEO published in „Episodes" by G.Y. Craig and E. Dudich
1989 Annals, no.2 History of mineral exploration in Hungary before 1945.--– E.Dudich retires as INHIGEO Secretary-General , Ursula B. Marvin (USA) is the new INHIGEO Secretary General
1991 Annals, no.3 History of geological museums and collections in Hungary
1993 Annals, no 4 Chapters from the History of the Hungarian Geological Society – no.5 Brief history of Hungarian Geology
1995 Annals, no 6 Short History of Hungarian Palaeontology.
Homage to Gábor Csiky (80th birthday, biography and bibliography
XXIInd Symposium: Italian volcanoes (Naples and Lipari Islands, Catania).
Gábor Papp lecturing on Etna
1996 XXXth International Geological Congress in Beijing (China). – The number of Hungarian INHIGEO members attending attains the maximum allowed number of 11.
1997 Commemorative session in Debrecen on R.Townson, with Prof. Hugh S. Torrens (Keele,UK)
2001 G.Csíky passes away.
2004 E.Dudich becomes a Honorary Senior INHIGEO Member
2009 XXXnd ICHST (International Congress on the History of Science and Technology),Budapest, Hungary. Eight Hungarian presentations. Section Coorganizer K.Brezsyánszky. Symposium coorganizer M. Kázmér. Professor Hugh S.Torrens is elected International Honorary Member of the Hungarian Geological Society

Endre Dudich
Honorary President, History of Geology Section Hungarian Geological Society

40 years of the History of Geology Section of the Hungarian Geological Society (1970-2010)

Preface

The Hungarian Geological Society (Magyarhoni Földtani Társulat, hereafter the Society) celebrated on 22 November 2011, the 40th anniversary of the birth of its History of Geology Section. Congratulations were presented by János Haas, the Society's President, Éva Vámos, Chairperson of the Commission on the History of Science, Technology and Medicine of the Association of Hungarian Scientific Societies (MTESZ), Béla Csath, member of the Historical Section of OMBKE, the Hungarian Society of Mining and Metallurgy. Seven lectures were delivered, two of which represented the cultural life of Transylvania. Two other lectures dealt with the 40-year history of the Section, and its cooperation with INHIGEO.

The Hungarian Geological Society is the oldest continuous scientific society in Hungary, having been founded in 1848. Within the Society in 1970, a History of Geology Section was created. The present article presents a summary of the Section's history. Obviously it cannot be complete, neither from the chronological nor personal aspects.

Presidents of the History of Geology Section

1970-1975	László Majzon[+]
1975-1983	Irma Allodiatoris[+]
1983-1985	László Bogsch[+]
1985-1996	Gábor Csíky[+]
1996-2003	Endre Dudich
2003-2009	Teréz Póka
2009- present	Álmos Tóth

(those marked thus + have passed away)

Some statistics

Since its foundation the Section has had more than 400 meetings, more than 900 talks, and commemorated 195 people. More than 9 talks have been given by Gábor Csíky (92 talks), Endre Dudich (46), Irma Dobos (38), Teréz Póka (34) Péter Papp (32), Tibor Kecskeméti (31), Álmos Tóth (28), György Vitális (25), Gábor Bidló (24), Vilma Székyné Fux (20); József Hála (18), Béla Csath (17) László Bogsch (16), István Viczián (13), Irma Allodiatoris (12), Gábor Papp (12), László Kordos, Károly Brezsnyánszky (10). Altogether 254 people have contributed. 10-30 persons/event was the usual range of attendance, but on some occasions there were 80-100 participants. As a consequence of cooperation with the related disciplines, there have been many joint meetings.

Main events

- History of Geology Days (1975-1997) 8 times, (organised by G. Csíky);
- Hungarian-Cuban geological research before and after 1990 (MÁFI);
- 200th anniversary of the publication of Robert Townson's book "Travels in Hungary" (E. Dudich);
- Expeditions in Mongolia and Vietnam of the Geological Institute of Hungary (MÁFI);
- 150th anniversary of the birth of Lajos Lóczy (MÁFI);
- The building of MÁFI is 100 years old (MÁFI);
- 115th anniversary of the birth of Professor Elemér Vadász (Á. Tóth);
- Saint George Day Bauxite Meetings (2005-2010) 6 times (Á. Tóth);
- In Memoriam: József Szabó (Museum of Kalocsa);
- Present and past of geological education in Hungary (T. Kecskeméti);
- Outstanding personalities in the field of earth sciences (1998-2002),
- 10 sessions at the Hungarian Academy of Sciences (E. Dudich);
- In Memoriam: Sámuel Mikoviny (several co-organizers);
- In Memoriam: Mike Tóth (I. Romsics);
- In Memoriam: János Böckh and his son Hugo.
  This event became international because relations attended it from all over the world.

The Section has also celebrated the memory of Andor Semsey, who donated among other things a great number of minerals to the Hungarian National Museum (this collection is the second biggest after that of the British Museum). In addition the Section has celebrated in association with local government and schools at the birth places of Hungarian scientists e.g. Károly Papp, an important Professor of Geology in the first half of the 20th century (Gy.Tóth).

Other important activities

The history of geology in Hungary fits many people and topics together, who and which are internationally important. Some names in chronological order: József Szabó, Loránd Eötvös, János Böckh, Lajos id. Lóczy, Pál Rozlozsnik, Ferenc Nopcsa, Simon Papp, Horst Bandat. Some topics (andesitic volcanism in the Carpathian region, noble metal, geophysics, earthquakes, Central Asia, mineralogy, Nummulites, hydrocarbons, aerial photography, and bauxite research) have also attracted international attention. Contributions to the: "Hungarian Scientists Lexicon" include: Sz. Bérczi, G. Bidló, B. Csath, G. Csíky, I. Dobos, E. Dudich, J. Hála, A. Kaszap, M. Kretzoi, T. Póka, V. Székyné Fux, Gy.Vitális; and to the "Lexicon of Environment and Nature Protection": Gy. Bárdossy, Á. Tóth.

The most profilic branches of the history of geology are *sensu lato*: history of industry e.g. aluminium industry (Á. Tóth, B. Vízy), coal industry (L. Fejér), history of institutions e.g. history of MÁFI (J. Hála), history of the Society (I. Dobos, E. Dudich, V. Székyné Fux), history of geological collections (T. Kecskeméti, S. Szakáll, G. Papp et al.).

Many members of our Section are active also in poetry and liberal arts. They paint, write poems, play music and make photographs. Miners' stories and books about the folk usage of stones are also published (J. Hála). Our members also write popular science literature.

INHIGEO, IUHPS

Soon after its establishment, the Section joined INHIGEO. In 1971, A. Tasnádi Kubacska, in 1976 T. Póka attended INHIGEO meetings. In 1978 there were three Hungarian participants at INHIGEO's Münster-Bonn Symposium (G. Csiky, E. Dudich, T. Póka). In connection with the International Geological Congress of 1980 in Paris there was a lecture about the "French-Hungarian geological connections before 1832"by E. Dudich, T. Póka. and L. Zsámboki.

An outstanding event was the INHIGEO Symposium held in 1982 in Budapest. The topic was"The history of geological mapping and map plotting". There were 49 lectures from 11 countries. In 1984 the Hungarian Academy of Sciences published the complete conference proceedings in English.

E. Dudich gave a plenary lecture at the International Geological Congress in 1984 in Moscow: "From alchemy through geochemistry to cosmochemistry". From that year also for 5 years E. Dudich was the INHIGEO Secretary-General. Hungarian INHIGEO members took part in the Symposia of 1985 and 1986. At Pisa, 1987 a Hungarian special publication was presented on Hungarian-Italian geological interrelations in English (Editor J. Hála). This publication was reviewed in INHIGEO Newsletter 21. The "History of mineral raw material exploration in Hungary till 1945" was published in English in 1989 (Editors G. Csíky and Gy. Vitális). In 1997 there was a conference about R. Townson in Debrecen, with Professor Hugh S. Torrens (Keele, UK). In 1999 in Graz, at the inauguration of the Austrian Science History Society, Hungarian INHIGEO members presented the "Cooperation of the Imperial Geological Institute in Vienna and Hungarian geology between 1867 and 1918". The XXIIIrd International Congress on the History of Science and Technology took place in Budapest in 2009. There were 8 Hungarian presentations. On this occasion the Society elected Professor Hugh S. Torrens (Keele, UK) an international Honorary Member.

Some of the Hungarian history publications have also been reviewed in the INHIGEO Newsletter: "French-Hungarian geological relations" (1992), "Chapters from the history of the Hungarian Geological Society" (1993), "Short history of Hungarian geology" (1993), "Baron Ferenc Nopcsa" (1995), "Brief history of Hungarian palaeontology" (1995). In 2004, E. Dudich was elected an Honorary Senior Member of INHIGEO.

Álmos Tóth
President of the History of Geology Section
Hungarian Geological Society

Johannes Herman Frederik Umbgrove (1899 – 1954)
Geologist – Philosopher from the Netherlands

Already at a young age Johannes started collecting fossils; during his life the collection was enlarged to a real museum collection including fossil mammals and reptiles, and a much prized present from his grand uncle, a fragment of a meteorite, which landed near Krasnojarsk in 1749, and malachite from Siberia. He was born at Hulsberg in the province of Limburg, close to the caves of Valkenburg, where Cretaceous building stone was quarried. One of his classmates in the elementary school was the son of a stone mason who admitted him to the caves. Umbgrove used to say: 'The walls of the house where I was born consisted of Maestricht chalk, and therefore I always loved investigating the Senonian of Limburg.' He had, next to natural history, broad interests in history of science, philosophy, sociology, psychology, education, aesthetics, literature, music, and religion. From 1917 to 1933 he kept a record of his reflections in 9 books of *Natural historic- and Philosophical notes no. 1 -331.*

In 1919 he broke with the family tradition to study law and started his geology studies at Leiden University. In 1926 Umbgrove signed a three-year contract with The Netherlands East Indies Mining Service where he was stationed at the paleontological laboratory as a coral specialist. Here began, according to his notebooks, the 'greatest personal and scientific adventure of my life.' In Bandung he became interested in the research on Tertiary macro foraminifera by his colleague Isaac Van der Vlerk and published in 1928 a monograph on the genus *Pellatispira*. Van der Vlerk's

subdivision of the Tertiary proved to be of great interest to oil company stratigraphers. Umbgrove's knowledge of fossil corals enabled him to write on the distribution of recent corals in specific parts of the reefs and on the influence of wind direction on the structure of reefs. But he also devoted his research to volcanos, tectonics, paleogeography, morphology of the seafloor, and coastal phenomena. In January 1928 a new eruption of Krakatoa was reported. Umbgrove succeeded - under the pretext to study the coral islands in the Sunda Strait - to accompany the volcanologist Dr. Stehn and the resident of Bantam on a visit by motor schooner to Lang Eiland where a temporary observatory would be installed. With a motor sloop the enthusiastic young scientists wanted to come close to the volcano. The eruptions appeared at intervals of 1 to 1½ minutes. After dropping the resident – who was afraid of the continuously rumbling eruptions and the impressive plumes of dark smoke, volcanic ashes and lava which reached heights of between 100 and 200 meters, the two young men persuaded the old helmsman to approach the volcano, off wind to escape the poisonous gases, within a few hundred meters. Umbgrove could then take a series of photographs of the eruption which were published in several magazines throughout the world.

In May 1929, Umbgrove guided participants of the 4th Pan Pacific Science Congress in Bandung, where more than 40 papers on coral reefs were presented, to see uplifted fossil coral reefs and living corals in the Bay of Batavia. They also visited the new crater island, a 40 meter high heap of sinter, in the still bubbling crater lake of Krakatoa. This time they used the luxury vessel Rumphius. His travels and personal development are documented in 173 letters written to his mother during his stay in Indonesia.

J H F Umbgrove

In 1930 Umbgrove returned to Holland where he became full professor of geology and paleontology at the faculty of mining engineering at Delft, as the successor of Gustaaf Molengraaff. His inaugural address was on *The present state of coral reef problems.* After reviewing the classic theories of Darwin and Dali, who assumed isostatic lowering of the sea bottom, he elaborated on the complexity of reefs and discussed several new theories on their origin such as the rising of sea levels at the end of the Pleistocene, an idea of Molengraaff, first suggested in 1916.

In 1933 Umbgrove met the famous geophysicist Vening Meinesz (1887 – 1960) who had carried out gravity measurements in the Archipelago in a submarine. Both scientists discussed results of their research and started to unravel the origin of the 'chaotic tectonics' of the Indonesian island arcs. In his notebooks Umbgrove writes: 'The veil of total darkness was slightly lifted, in this chaos we seemed to recognise at least some order and direction: *La joye de connaître*[1]*'.* Vening Meinesz agreed: 'There is nothing more beautiful than trying to solve such problems.' Their collaboration resulted in several publications on the relation between geology and gravity anomalies and theories on the origin of the East Indian Archipelago, and was crowned by Umbgrove's beautifully illustrated *Structural history of the East Indies* which was published in 1949 by Cambridge University Press. During his stay in Indonesia from 1926 - 1929 the basis was also laid of his internationally praised book *The Pulse of the Earth* (1947). In this stimulating and authoritative masterpiece, the world's literature on several domains of geology was assimilated, in so far as it bore on the varying rate of mountain building in the earth's crust. Umbgrove developed original ideas on the origin of continents and island arcs, but could not – contrary to Molengraaff - accept the hypothesis of continental drift. His book has inspired many geologists world wide. After the appearance of *The Pulse* he became an internationally renowned scientist who received many invitations to lecture at universities at home and abroad and at symposia and geological congresses. In September 1950 he and Vening Meinesz were invited to address a colloquium on global tectonics in the USA. In 1962 Harry Hess, in a paper on sea floor spreading, cited *The Pulse* as 'no longer pertinent, but a brilliant summary which I consider as an essay in geopoetry'. The Japanese magazine Chishitsu Nyusu (Geology News) published in 1991 an article on Umbgrove where his contributions to the geology of East Asia are reviewed, illustrated with two of his portrait photographs.

In his notes of 1933 on the geology of the Archipelago he remarks: 'Even more I am fascinated by the evolution of life in its million diverse forms and diversity.' His profound thoughts about the problems of life and

[1] Pierre Termier, *La Joie de connaître, souvenirs d'un géologue.* Paris 1925.

evolution are clearly exposed in his book *Leven en Materie (Life and Matter)* (1943), which within a short time saw three editions. A philosophical study called *Beeldenstorm der Wetenschap (Iconoclasm of Science)* (1945) discusses the power of human reason but also the inability to fully understand the secrets of the universe, 'the most perfect work of art'. In his notebooks of 1917 he already deplores the ignorance of man about the cosmos. He illustrates his ideas with examples of modern theories of physics, chemistry, geology and biology. In 1948 he wrote *Symphony of the Earth.* This ode to geology was most probably inspired by the book *La Joie de Connaître* by the French geologist Termier, which he mentions several times in his Notes and letters.

J. Auboin in his book *Geosynclines* (1965) considers him, due to his pioneering work on corals, sea level changes and island arcs, as belonging to the famous "Dutch School of Geology" founded by Molengraaff. Umbgrove received many honours in appreciation of his research. In 1944 he was elected member of the Hollandsche Maatschappij van Wetenschappen, in 1945 he became an Honorary Fellow of the New York Academy of Sciences, in 1946 a member of the KNAW (Royal Netherlands Academy of Science) and between 1948 and 1952 an honorary member and correspondent of many foreign Geological Societies.

In 1952 he became partially paralysed by a stroke and spent the last two and a half years of his life bedridden in a clinic. The idea of a book on 'Our country 70 million years ago' kept his mind busy. His daughter had to bring him books and papers and he dictated it to one of his Delft assistants. He succeeded to complete his last book *Levensschetsen in de Krijtperiode (Sketches of life in the Cretaceous period),* his autobiographic geological memoirs, dedicated to his three children. It was published posthumously in 1956, completing his list of 122 publications.

Frederik R. van Veen,
7 November 2010

BOOK REVIEWS

Pioneering New Zealand Geology

Johnston, Mike and Nolden, Sascha. *Travels of Hochstetter and Haast in New Zealand, 1858-60*. Nikau Press, Nelson, New Zealand. 336 pages. $NZ50 (2011).

In December 1858 the Austrian frigate *Novara* anchored in Auckland harbour. It was on a world trip, advertising the power and commercial potential of the Austrian empire, and carried a small group of scientists including Ferdinand Hochstetter who had been seconded from the Austrian Geological Survey. The local settlers were keen for Hochstetter to visit and report on newly discovered coal seams near Drury, on the outskirts of Auckland.

This was the first visit of a professional geologist to New Zealand, and within days of Hochstetter completing a well-received report, he was invited to stay in the colony and undertake reconnaissance surveys with an eye on potential mineral deposits. The commander of the *Novara* agreed that Hochstetter could stay, and generously granted him six month's leave on pay.

At a reception for the German community in Auckland, Hochstetter was introduced to Julius Haast, a young traveller representing an emigration company, who had only arrived the day before the *Novara*. The two men got on well, and it was soon agreed that Haast would accompany Hochstetter on his travels. At this stage it was clear that Hochstetter was the geological professional and Haast the field assistant, but Haast was a quick learner and was able to work independently as a geologist by the time that Hochstetter left eight months later. Indeed, it was his mentoring by Hochstetter that set Haast on a prestigious career in his own right.

This book is a copiously illustrated account of their travels. Hochstetter and Haast initially explored the Auckland area, but their main project was an epic 79-day circuit around the central North Island, including visits to Kawhia, the active Taupo volcanic zone, and Tauranga. Soon afterwards he examined the goldfields of Coromandel. After Hochstetter completed a report and public lecture, they travelled south to Nelson where they spent two months exploring and visiting mineral prospects as well as geologically mapping much of the province. It was during a visit to the chromite and copper mines that Hochstetter coined the name dunite for the olivine-rich rock that makes up much of Dun Mountain

Hochstetter finally departed on 2 October 1859, but Haast was to spend the following year exploring the West Coast as far south as Greymouth for the Nelson Provincial Council. Hochstetter incorporated the results of Haast's work in the reports and maps he subsequently published.

Today Hochstetter is regarded as the father of New Zealand geology. His travels have been documented over the last 150 years, but previous accounts have almost entirely been based on material written in English. This book gives a new picture from major unpublished sources written in German, many held in Austrian archives. It also uses the ongoing correspondence between Hochstetter and Haast that has been translated by Sascha Nolden.

One of the most exciting aspects of the new book is the large number of colour illustrations of water colour sketches, previously unseen that are held with the Hochstetter papers. The colour reproduction is excellent.

Hochstetter published the first New Zealand geological maps, including the southern part of Auckland Province and most of Nelson Province. He also published a detailed geological map of the Auckland volcanoes (partly based on Charles Heaphy's work) which has provided a record of some of the volcanic cones which have since been quarried away. One of his most valuable maps covers the area around Lake Rotomahana near the Pink and White

Terraces which were partly destroyed by the 1886 Tarawera eruption. Hochstetter's carefully surveyed 1859 map has been a key piece of information in recent efforts to relocate the terraces. These maps are all reproduced in the book in full colour.

As well as geology, both Hochstetter and Haast had a broad interest in natural science and ethnology, and Hochstetter's brief was to expand the natural history collections of the *Novara* while he was in New Zealand. Indeed, the species named after him include a vivid blue toadstool, a primitive frog, and a large carnivorous land snail. It was the time when moas were still being discovered, and Hochstetter assembled the first complete skeleton from a cave in Golden Bay.

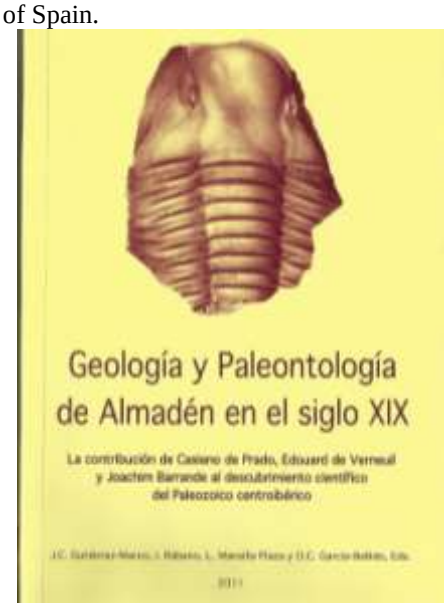
The book provides a comprehensive record of the places that Hochstetter and Haast visited between 1858 and 1860. On one level it is a well written travelogue, using new sources to expand and illustrate a story that was already fairly well known. But what makes it a major contribution to the history of science is the evidence of the two-way linkage between exploration in New Zealand and the development of scientific ideas in Europe in the mid 19th century. Mike Johnston and Sascha Nolden have combined their skills to produce a valuable overview of some of the earliest geological exploration of New Zealand.

Simon Nathan, Wellington

A magnificent record of geology in nineteenth century Spain

J.C. Gutiérrez-Marco, I. Rábano, L. Mansilla Plaza and D.C. García Bellido (Editors).*Geology and Palaeontology of Almadén in the nineteenth century. The contribution of Casiano de Prado, Edouard de Verneuil and Joachim Barrande to the scientific discovery of the central-Iberian [middle-Iberian] Palaeozoic.* SEDPGYM, Universidad Castilla-La Mancha, Almadén, 2011, 269 pages.

For the occasion of the meeting of the Eleventh International Congress on the Ordovician System in Spain in 2011, this book offers a worthy homage to the important scientific activity, developed by three geologist-miners in the region of Almadén (Ciudad Real), around the middle of the nineteenth century. The native of Galicia, Casiano de Prada, the Frenchman Edouard de Verneuil and the Czech Joachim Barrande initiated the geological and palaeontological investigations of this period in Spain. The *Mémoire sur la Géologie d'Almadén, d'une partie de la Sierra Morena et des Montagnes de Toledo* [Memories about the Geology of Almadén, of a part of Sierra Morena and the Mountains of Toledo], published by the Geological Society of France in 1855 (reproduced here in a facsimile edition), established a landmark in the geological knowledge of Spain.



Prada's *Mémoire* is accompanied by an appendix in which is included the work of his contemporaries Edouard de Verneuil (1805-1873) and of Barrande (1799-1883), two people who had a very great impact on the development of the geology and palaeontology of the Palaeozoic in the nineteenth century Europe.

Casiano de Prado y Vallo (1797-1866), Mines Engineer, was, together with Guillermo Schulz and Joaquín Ezquerra del Bayo, one of the most important figures of the Spanish geology during the first half of the nineteenth century. After his appointment as Director of the Almadén mines (1841-1843), and as one of the members of the Commission of the Geological Map of Spain (in its first epoch, from 1849), he published important monographs on the Spanish Geology and Palaeontology: the Cambrian of Ciudad Real (1855), and León (1860); the fossiliferous Ordovician of Madrid (1853, 1862), of Salamanca, of Ciudad Real and of León (1855), the Devonian of León (1848, 1850), the marine Carboniferous of León (1848), of Palencia (1852), and of Córdoba (1855).

The critical study that we are introducing here, has a first historic part, written by Doctors Gutiérrez-Marco and Rábano: "The scientific discovery of the mid-Iberian Palaeozoic of the Almadén region and the bordering areas of the Toledo mountains and Sierra Morena," with an extensive bibliography. The study is completed with several appendices. Among them, the taxonomic revision of some fossils of Almadén, illustrated by Verneuil and Barrande.

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Casiano de Prado y Vallo (1797-1866)

Following this historic study four most important documents are included in facsimile edition of Casiano de Prado: the already quoted *Mémoire* (1855), with Spanish translation, preceded by a study about the geology of Almadén (1845). This work is very little known and was initiated by Prado in 1830, while still a student at the Mines School of Almadén. In it he defends the epigenetic origin of the mineralization of mercury, besides contributing with an authentic treatise on the rules of the exploitation of the mines and the way of distilling the cinnabar, which was not dealt with by any one before him

This study concludes with the description of the fossils of the Ordovician of Almadén, by Verneuil & Barrande (1855) with a magnificent reproduction of the original illustrations.

This beautifully produced edition provides a valuable contribution to our knowledge of the Spanish geologists during the nineteenth century, and to the recuperation of the historical memory of the mines of Almadén.

Leandro Sequeiros, Granada, Spain
(translated by Antonio Maldonado)

Who discovered the largest oilfield in China?

Lisheng, ZHANG, *A Monument in the History of Petroleum Geology of China*, Zhongshan University Press, Guangzhou, 2011, 238 pp. (in Chinese). In memory of the 110th anniversary of the Birth of Prof. C. Y. Hsieh

Which Chinese geologist discovered the Daqing Oilfield, the first big oilfield in the northeast of China? This is the question that Zhang Lisheng, discusses and subsequently answers in this book. According to Zhang, Prof. Xie Jiargon (C.Y. Hsieh) is the geologist who discovered Daqing and other large-scale oilfields in China during the 1950s and 1960s.

Since the 1970s, there have been in existence three different points of views about which Chinese geologist discovered the biggest oilfields in China. The Chinese government, mainly via the original Ministry of Geology of China, claimed that Li Siguang is the geologist who discovered these oilfields by use of his theory of geomechanics. If one searches online for Li Siguang, the following information can be easily found.

Li Siguang (1889–1971), is the founder of China's geomechanics. He made outstanding contributions to changing the situation of "oil deficiency" in the country, enabling the large-scale development of oilfields and raising the country to the ranks of the world's major oil producers. A native of Huanggang, Hubei, Li studied in Japan and the UK in his early years. He became a geological professor at Peking University upon his return from abroad in 1920. After the People's Republic of China was established, Li held the positions of deputy president of the Chinese Academy of Sciences and minister for the Ministry of Geology. Li's key contributions to Chinese geology were thought to include geomechanics—the only 'correct' and officially accepted geological theory that could be taught and applied in China during the Cultural Revolution of China before 1980s—and the discoveries of the Daqing oilfield and glacial remains in

the southern, eastern and northern parts of China. From the late 1980s, many Chinese geologists (not the average Chinese citizen) understood that Li's supposed contributions are neither true nor correct. Geomechanics had many mistakes and was therefore discarded. The Daqing oilfield was found by another well-known Chinese geologist of Li's age. The so-called glacial remains in China were not formed by glaciation but (we now think) by mudflows. Shockingly, many excellent Chinese geologists, including the one who actually found the Daqing oilfield were forced to commit suicide under Li's leadership. These facts only became known in the geological community in China, after China's 'open-door' policy was introduced during the mid-1990s. But even now the typical 'man in the street' in China still does not know these facts since Li has been strongly publicized as an important figure for many years, in the form of movies, non-fiction stories, plays, etc. Simply speaking, Li was believed to be the founder of the big oilfields in China because he was the Minister of Geology at that time. More importantly, Chairman Mao liked him.

The second view suggests that Prof. Huang Jiqing, student of Prof. Xie Jiarong, subject of this book by Zhang, was the finder of Daqing and other big oilfields in China. Huang himself argued that he found the large oilfields by writing letters to the top leader, Deng Xiaoping at the end of 1970s. Huang also confirmed that Xie, as the chief geologist of the Chinese Ministry of Geology contributed much to the discoveries of these big oilfields in China. Huang was the last of the three to survive. Li, Xie and Huang had all died by the 1990s, with Xie committing suicide in 1966, and with Li's death early in 1971.

The third viewpoint on who discovered the biggest oilfields is completely described by Zhang, author of the book: it is Prof. Xie Jiarong. Zhang argues that: "The heated dispute on the contribution of Chinese geologists to petroleum geology, especially, to the eastward shift of the strategic emphasis of oil exploration and discovery of Daqing oilfield in China has lasted for a long time. Some hold that the discovery of giant oilfields such as Daqing oilfield and so on should be attributed to the theory of Li's geomechanics. Others believe that the giant oilfields such as Daqing oilfield were found thanks to Huang Jiqing's theories of polycycle and of the continental origin of oil. It seems that the dispute is ongoing. To the surprise of the author, both sides of the dispute occasionally mention Xie Jiarong's name, but do not deal with his contributions. This paper expounds on and proves Xie Jiarong's great contribution to the petroleum geology and especially, on the eastward shift of the strategic emphasis of oil exploration and discovery of Daqing oilfield in China using strong arguments. Xie worked out the correct strategy of oil exploration in China and contributed a vast amount of specific guiding and practical work. Many of his papers on oil geology remain today of great importance. He was the most meritorious worker in oil geology in the discovery of oilfields in China." (Quote edited here for purposes of linguistic fluency and may not perfectly reflect the original text).

Xie Jiarong (1898–1966), economic geologist and geology educator, is one of a few founders of China's modern economic geology. Born in Shanghai on 7 September 1898 and graduating from the Geological Survey of China in 1916 as one of the first generation of geologists educated in China, Xie went to the Department of Geology at Stanford University in 1917, which contributed to his outstanding achievements. In 1920, Xie gained his master's degree in geology from Wisconsin University in the USA. In 1921, Xie published the paper entitled "Report on Yumen oilfield of Gansu Province China", which was the first paper on oil geology published by a Chinese geologist in history. Xie was one of the 26 founding members of the Geological Association of China in 1921. In 1928, Xie worked as a research professor of the Geological Survey of Guangdong & Guangxi Provinces of China and also as professor of Zhongshan University (Dr. Sun Yatsen University). In 1929, Xie worked and studied in Germany. Xie was director and professor of Qinghua University in 1931. In 1936, Xie was appointed director of the Beijing Branch of Geological Survey of China and also as professor of Peking University. In the 1940s, Xie discovered respectively the Bagongshan Coal deposit and Fengtai phosphate deposit in Anhui Province, and the Zhangpu bauxite deposit in Fujian Province of China. In 1948, he was elected to be an academic member of the China Academy of Sciences. In September of 1950, he was appointed deputy director of the Guiding Committee of Geology of China. In 1952, Xie was the chief geologist of the newly founded Ministry of Geology of China. In 1954, he was the chief geologist and standing member of the Prospecting Committee of China's Ministry of Geology. On 14 August 1966, at the very beginning of the Cultural Revolution of China, Xie, together with his wife, committed suicide. According to Zhang's research, Xie was:

- the first Chinese geologist who investigated and researched petroleum geology in China in 1921.
- the Chinese geologist who published the first monograph on petroleum geology as early as 1930.
- the first Chinese geologist who made an oil estimations in China in 1937.
- one of the first few geologists who studied petroleum geology in the northern Shaanxi, Sichuan and Taiwan Provinces of China.
- one of a few Chinese geologists who believed that large oilfields could exist in China.

After Mobil of USA failed to find any large oilfields in China during 1913 and 1915, many geologists, including Prof. Huang mentioned above, concluded that there were no big oilfields in China. This is part of the reason that Zhang and the Chinese government do not believe that Huang was the major founder of the big oilfields in China. Yet Xie was one of a few geologists who believed there existed big oilfields in the east and northeast China, a belief which proved correct in the 1950s and 1960s. Xie was also a promoter in the search for oil in continental oriented sedimentary rocks, the first planner of large scale oil explorations in China after 1949 and organizer and director of large scale oil explorations in China.

By searching most, if not all of the published and unpublished papers, lectures, and related documents by Xie, Huang and Li, Zhang argued and concluded that Xie was the major contributor, as the chief geologist, who organized and discovered the biggest oilfields in China during the 1950s and 1960s. But because he was believed to be a rightist,

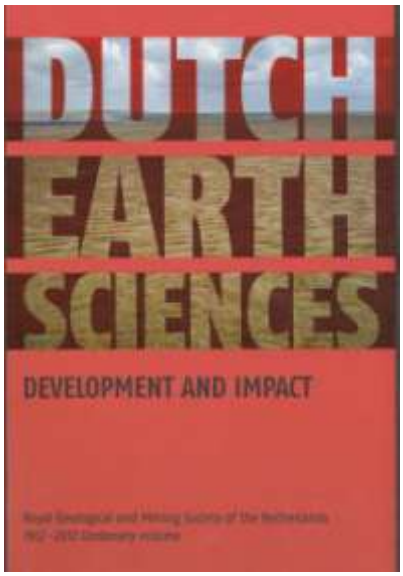
something like an anti-revolutionist in the 1960s, his great contributions were politically concealed and purposely ignored. During the 1950s and 1970s, over half a million top Chinese scholars, artists and government officers were thought to be "bad eggs" – rightists or capitalist academic authorities. They suffered a lot and many of them either committed suicide or were killed through various means.

Of the three geologists mentioned above, Xie published the most papers on petroleum geology and oil explorations. He clearly pointed out in a couple of his papers the need to explore oil in east and northeast China, where the biggest oil fields were found respectively in 1950s and 1960s. Based on available files and papers, there is not enough evidence to show that Huang was the major contributor to the discovery of the biggest oilfields in China, though he did work together with Xie to guide oil exploration during this period in China. It is worth saying that Huang's contributions to oil exploration were also underestimated because he was a near rightist. Li seldom published papers on petroleum geology and never got involved in specific oil exploration. Once, Li himself stated, in a lecture, that he knew little about petroleum geology. More importantly, he never pointed out where to explore for oil in east and northeast China. Because Li was the only politically "pure" geologist, he was thought to be the finder of these biggest oilfields in China.

In order to prove that it was Prof. Xie, not Li and Huang, who found the biggest oilfields including Daqing, Dagang and Shengli in the northeast and east of China, Zhang had to collect and read large numbers of published and unpublished papers and documents by the three geologists mentioned above and then to summarize and find clues on who was the real geologist to have found these oil-fields. This, suffice to say, was by no means a small or easy task to accomplish.

Jianzhao [Jim] YIN,
Richmond, British Columbia,
Canada (Chinese Member)

Dutch Earths Sciences: Development and impact



Floor, P (Coordinating Editor), 2012. *Dutch Earth Sciences: Development and impact*. The Hague, KNGMG, 304 pp., ISBN/EAN 978-90-818623-0-1. €29, 00+ shipping. Order by e-mail from KNGMG at: kngmg@kiviniria.nl.

The Royal Geological and Mining Society of the Netherlands (KNGMG) celebrated its centennial 16 March 2012 with a one day congress and the publication of this book. It summarises the history and impact of geological and mining work by Dutch earth scientists, mainly in the 20th century, all over the world. In the preface, KNGMG's President **Menno de Ruig** stresses changes unforeseen by KNGMG's founding fathers in 1912 and predicts similar changes for new generations of geologists.

The book opens with a historic overview of KNGMG as a society. **Aad van Zuren** and **Ab van Adrichem Boogaert** trace the ups and downs in terms of membership (now 850), intermediate jubilees and internal organisation with topical 'circles' and dedicated 'committees'. Also the variety of publications, external contacts and affiliations are reviewed, convincingly demonstrating the manifold benefits of society membership.

A thoughtful overview of past and future of Dutch geosciences is the first contribution to the main body of the book. Written by invitation, the eminent Austrian scientist **Professor Wolfgang Schlager,** who has been living in The Netherlands for a long period, emphasises that many members (approximately 100) of the relatively small society, together have done an impressive job by contributing to this remarkable book with an unusual broad scope, in time spanning more than four centuries and, geographically, the Benelux countries and the former Dutch overseas territories.

Early attempts to understand the earth (1568-1780) before the science geology was formally born are traced by **Tom Reijers**. He draws attention to characteristic Dutch developments both in universities and academic societies. In the former, religious ministers and in the latter gentlemen of leisure and foreign and Dutch natural philosophers developed theories subsequently impacting on earth sciences. The Dutch Republic was first and foremost an open and tolerant society of merchants and clergy. Strange objects brought in by merchant ships from faraway places and uncommon philosophical/religious interpretations by natural philosophers in the Republic, substantially contributed to the emerging geology.

Emerging sciences (1780-1877) amongst which nascent formal geology teaching, are summarised by **Tom Reijers** and two co-authors. Early geology teaching by holistic professors produced W.C.H. Staring, the 'father of Dutch Geology' who singlehandedly mapped the Dutch territory, a feat never repeated thereafter. Organised formal teaching of geology was triggered by the arrival of the Industrial Revolution in The Netherlands and the need to explore and exploit mineral wealth in The Netherlands and its overseas territories. Therefore the first courses in which some geology was included were taught at the 'Royal Academy' at Delft, later the Delft Technical University.

From the late 19th century onwards full geology diploma was taught at initially five, now three universities. Their rise, culmination, decline and - in two cases - closure, is narrated in great detail by **Peter Floor** and several co-authors. They sketch a fascinating picture of interdigitating political, commercial, religious and societal influences that

gave Dutch university training in geology before and after WWII a special flavour and a worldwide appeal. Geologists from 'the early phase of geology' were taught a thorough and systematic approach to field work, well appreciated abroad where they often found employment. This 'school' has spawned a number of outstanding Dutch earth scientists who contributed significantly to the understanding of our planet. After WWII and in particular from the 1980's onwards, legal reforms and society pressure resulted in diversification, concentration and closure of some geological faculties, as shown with the development of professorial staffing lineages in the various institutes. Interfaces with society and industry are also highlighted and illustrated. Together with chapters 2 and 3 this chapter completes the picture oo the evolution and development of Dutch university training and research.

Dick van Doorn and **Cor van Staalduinen** with many co-authors discuss the various ways of direct and indirect State involvement in geological activities such as mapping, exploration and exploitation of surface and subsurface minerals and commodities and associated research. The exclusive State exploitation for coal and salt at the beginning of the 20th century - at that time very unusual in Europe – and the subsequent interest in mapping the subsurface and surface of the Netherlands to exploit its mineral riches, agricultural potential, nuclear waste disposal and to pinpoint localities for civil engineering works called for government organisations to optimise such activities. After WWII and in particular after the catastrophic inundation of the SW part of the Netherland (1953) offshore mapping and related activities were added, now resulting in Dutch world-wide hydrogeological, engineering, geological and research activities, many with varying government influence.

Chapter coordinator **Mark Geluk** and his co-authors review activities of three of the most prominent Dutch companies respectively engaged in exploration and exploitation of: hydrocarbons (Netherlands Aardolie Maatschappij, NAM, a subsidiary of Shell/Esso), Dutch State Mines (DSM) which evolved from the original state mining company and Royal Dutch Salt Industries (KNZ) that exploits the salt resources in The Netherlands. These companies and many other players in the field of exploration and exploitation of the countries natural riches are reviewed in detail. In addition, industries that supply materials for the Dutch building industries gain attention. Royal Dutch Shell, headquartered in The Netherlands, only actively started exploration in The Netherlands in 1928. By chance, just before WWII it found oil in the western provinces; during WWII it found the largest oil field in Europe in the east of the country and (via its subsidiary NAM) it found the enormous gas field of Groningen in 1956. Of the oil industry the Early- , Golden- and Late years on land and in the offshore are extensively discussed with their highlights and lowlights, interaction with various State policies and with society. Some speculations on the future conclude this section. The history of coal mining covers the first half of the 20th century and terminated (for now) with the discovery of the Groningen Gas field. The exploitation of unconsolidated sediments for building and construction work, the mining of salt and associated chemical industries, and the largely historical exploitation of building stone and cement production close this varied chapter on exploiting our riches by the Dutch industry.

The last chapter, coordinated by **Willem Steenken** who worked together with many co-authors, discusses Dutch Earth Scientists overseas. Roughly a quarter of all Dutch-trained earth scientists ended up working in the former Dutch colonies and in particular after WWII and decolonisation some 15% of all Dutch geologists and mining engineers found employ in countries like Bolivia, Canada, Zambia, Australia and South Africa.

The East Indies (now Indonesia) offered almost unlimited opportunities to gain hands-on experience in various geological disciplines. This practical experience cross-fertilised with the teaching institutions in the homeland. Geologists and engineers with overseas experience took up teaching jobs, thus raising geoscience education at Dutch universities to a high level. Names known worldwide include G.A.F. Molengraaff, E. Dubois, R. W. van Bemmelen, J. H. F. Umbgrove, Ph. H. Kuenen, and F. Vening Meinesz. In the East Indies were also the foundations of two Dutch mega-industries; Billiton (1860) with mining activities and Royal Dutch Shell (1890) with exploration and exploitation of hydrocarbons. Their respective histories are narrated in detail. But also the early mapping expeditions and the growing understanding, until decolonisation, of The East Indies extremely complex geology is extensively illustrated. The transfer of sovereignty over New Guinea took place twelve years later than that to Indonesia. In this time an accelerated inventory was made of its natural riches, first established before WWII during reconnaissance exploration expeditions that discovered some modest-sized oil fields and the gigantic body of gold-bearing copper. Both finds were followed up in the last period of Dutch governance and currently by Indonesia.

In the West Indies, Surinam was the largest overseas territory. Exploration of the country was difficult and only mid19th century geographic interest opened parts of the hinterland. Some gold was discovered that led to a mini gold rush, followed by a rush to map the country during which bauxite was found. Bauxite exploitation culminated in WWII after which it declined. Until Surinam's independence the Surinam Geological and Mining Service was the base for a number of Dutch geoscientists. Oil was discovered, is now locally refined and exported throughout the Caribbean area.

Like the East Indies the Netherlands Antilles - volcanic rocks and coral reefs - were the training and research ground for famous early Dutch geologists. In the Bolivian Andes and in Zambia, - the warm heart of Africa - the activities of a number of Dutch mining engineers are summarised. Thus this chapter concludes with Dutch earth scientists remaining active abroad in a continuing situation.

The editorial committee takes stock in the book's Epilogue and looks ahead to opportunities for future geologists. In the Preface, KNGMG's President remarked that the 20th century brought fundamental changes in geology that were unforeseeable; the same is true for the future. Compulsory for future success seems to be technical and social skills and extensive specialisation, but cross-discipline and cross- fertilisation should not be forgotten. The same is true

for classical field work because field based observational skills remain important, in particular for geologists with desk-bound careers. Centres of excellence, a holistic concept about planet earth, sustainable exploration and exploitation of decreasing earth riches will keep future geologists active. Therefore, an earth sciences career choice will remain challenging for a long time to come.

A detailed table of contents at the end of the book facilitates searching for a specific topic in this mosaic-like comprehensive book. References and suggestions for further reading per chapter and section, an index of persons mentioned in the text and a list of contributors and authors conclude the book. All information of Dutch Geology between two covers makes it a compulsive purchase.

Tom J. A. Reijers,
Anderen, Netherlands

Nicolas Steno and the strata of the deluge

Leandro Sequeiros & Francisco Pelayo (eds.), *Nicolás Steno, los estratos y el Diluvio universal. Un encuentro entre ciencia y religión en el siglo XVII*, Universidad Pontificia Comillas, Madrid, 2011, digital edition in pdf, 170 pp (in Spanish)

On 11 January 2012, Google™ dedicated its daily doodle to Nicolas Steno's birthday (born in 1638). It was then widely reported on the web (just try googling "steno google doodle") as well as in many newspapers around the world, and especially within the geoscientific community (eg. the weekly EOS, from the American Geophysical Union, 24 January 2012). Appearing as a doodle created an outstanding event, which has also been achieved by other scientists such as Charles Darwin, Isaac Newton and Marie Curie; and no doubt an astounding fact, because Steno may be considered the father of geology.

Notably Steno is recognised for works published between 1667 and 1669 and crowned by his *Prodromus* (1669) that marked the beginning of geology. Unfortunately, and it is not clear why, Steno left scientific inquiry in 1673 and dedicated the remainder of his life entirely to religion, until his death in 1686 at the relatively young age of 49 years old. Steno had dedicated one year to the problem of the marine shells, following some of Leonardo da Vinci's interpretations. Geologically speaking, his main contributions are on diedric angles, the concept of stratum and the principle of strata succession and superposition, and thermal waters and minerals. One of his most famous works is about the shark called *Canis Carchariae*, which brought him to ambitious and profound studies on rocks and fossils, by comparing the shark's teeth with those found in ancient strata.

Surprisingly, Nicolas Steno is not well known in geological literature written in Spanish, as almost none of his works have previously been translated to this language. This situation has been remedied by Sequeiros and Pelayo with this book, presenting a detailed study of Steno's works and the translation into Spanish of two of his most outstanding masterpieces.

On the other hand, in English, there are numerous works about Steno, and just one example can be used as a proof: the book *The Revolution in Geology from the Renaissance to the Enlightenment* edited by Gary T. Rosenberg (Geological Society of America Memoir 203; 2009; 283 pages) dedicates eight of its twenty chapters to Steno.

This book by Sequeiros and Pelayo is available only in digital format (pdf) and then, readable on the screen or by personal prints. This latter is a handicap, since once printed, the watermark appears so clearly that it covers part of the text, making it difficult to read some small portions of every page. Nevertheless this book presents in a very attractive edition. Those readers eager to have a copy, can try buying it for only 8 € at the cybersite www.une.es/Ent/Products/ProductDetail.aspx?ID=147010&AspxAutoDetectCookieSupport=1.

As mentioned, the book has significant value in introducing Steno to the Spanish geological literature, where the authors affirm he has been "one of the great forgotten ones". The text is divided in four parts as follows.

A long and well-documented introductive study on Steno's biography is provided giving the context of science and scientists in his epoch, and the explanation of the two following works that are translated. Here, the authors explain not only Steno's contributions to geology (including his ideas on erosion, sedimentation and fossils), but also on medicine and especially anatomy. One important section at the end of this part is the bibliography on Steno and his time with works in Spanish, Italian, French, German and English.

The translation from Latin to Spanish of a part of *Canis Carchariae* relates mostly to Steno's concepts of erosion, sedimentation, the formation of strata and fossils in them, including those from sharks (the *glossopetrae*). They are demonstrated in a series of conjectures, or hypotheses.

The translation from Latin to Spanish of the *Prodromus*, which was Steno's masterpiece in geology, where he refined ideas expounded in the previous work, and that unfortunately, was not followed by further investigations and

writings. Here, Steno's important contribution is his hypothesis on the formation of crystals, minerals, rocks, animal and plant fossils and mountains.

A long synthetic chapter is provided on science and religion by Steno. There is ample discussion on the ideas related to the deluge and the formation of rocks and fossils, and the theological ideas from Jesuit and other clerical fathers including Acosta, Kircher and others. As the authors affirm in conclusion, they wanted to reach a historical elaboration of the ideas of the universal deluge and the extinction of species between the 16th and 18th centuries, thus completing a theological reflection on the work by Steno.

In general, the book is successful in providing a wide perspective of Steno's science in his epoch and later, and discusses the conundrum between the scientific value of his stratigraphical findings and religious thoughts. It is also successful, in presenting to Spanish readers, a very readable and careful translation of Steno's important works. Readers from the Spanish speaking world, interested in the history of geological thoughts, will enjoy this book. It is well worth its price.

Gerardo J. Soto
San José, Costa Rica

A variorum on eighteenth-century geology

Taylor, Kenneth L. and Rudwick, Martin J. S. (eds), *Rhoda Rappaport: Studies on Eighteenth-Century Geology*. Ashgate Variorum, Farnum, Surrey, England, Burlington, VT, USA, 2011, xxiv + 340 pp, appendices, index, hardcover.

If there was ever a need to argue for the concept of a variorum publication (a collection of an author's works, with commentary by others), this compilation of articles by Professor Rhoda Rappaport (1935–2009) could serve as an eloquent positive testimony. It is valuable for contemporary readers to witness the sweep and substance of Rappaport's important observations, analyses, and conclusions. *Rhoda Rappaport: Studies on Eighteenth-Century Geology* (2011) repeatedly evidences the primary element of the definition of a variorum book, bringing together key papers of an important author. The clear and powerful introduction by editors Kenneth L. Taylor and Martin J. S. Rudwick speaks to the second feature of a variorum edition – helpful discussion by experts other than the author – and it contributes significantly to the worth of the book. Not only do the editors explain the organization of the book, they provide valuable insights into Dr. Rappaport's background, methodology, and aspirations. Grounded in the sciences as an undergraduate at Goucher College, she went on to do graduate work at Cornell University. At Cornell she worked with Henry Guerlac, the celebrated historian whose research focused on the life and times of Lavoisier and the evolution of chemistry in the eighteenth century. As a professor at Vassar College, Rappaport focused on French contributions to chemistry and geology and used her research time to go to Paris and immerse herself in the primary literature of the eighteenth century. She had the critical ability to recognize key questions and the gift of being able to combine her wealth of research information with insightful analyses, illuminating conclusions, and clear writing. In other words, this variorum collection of sixteen seminal papers is a welcomed window on the work of a major contributor to our understanding of geology's evolution.

The papers are presented in the context of five major sections: 1) Chemistry; 2) The *Mineralogical Atlas*; 3) Understanding the Earth and its History; 4) The Language of Earth Science; and 5) Scientific Pursuits in Early Modern Europe. The editors provide cogent explanations for the groupings, and the Contents section lists the titles and original publication information for each of the sixteen articles. A reader can therefore select a starting point of particular interest. Without listing each chapter title here, the point should be made that the book contains a broad, but frequently highly focused, look at the construction of the science of geology in the eighteenth century. Biographies underpin the first nine articles, as Rappaport helps contextualize the contributions of Rouelle, Lavoisier, Guettard, Monnet, Hooke, Fontenelle and Leibniz. The richness of the analyses is gratifying, even if the interactions of some of the "heroes" take on the rather grating tone of a soap opera, as the creators of the *Mineralogical Atlas* squabble among themselves. For those who do not care for soap operas, it is important to note that the depth of research, the contextualizing, and the unraveling of reasons for the occasional rancor between Lavoisier, Guettard, and Monnet ("his delusions amounted to paranoia") are rewarding. The narrative is an example of how good historical analysis can help us understand significant interpersonal issues that, in fact, are important in appreciating larger issues. It should also be noted that the bio-sketches are not simple date- and place-telling tales, they bring people like Lavoisier and Fontenelle to life while explaining their methods, goals, and roles in building the foundations for the edifice of geology that continues to be constructed in the twenty-first century. Another example of the relevance of the topics considered is the important question of how much, and in what ways, orthodox religion contributed to, or impeded, science. That exact issue is forcefully treated in Rappaport's classic paper (1978) on Noah's Flood as a geological agent. The general question continues to generate interest, as evidenced by the recent publication of the Geological Society of London's Special Paper 310 on *Geology and Religion* (2009). An entire section of the Rappaport tome is devoted to the role of words in the maturing of geoscience. Whether "borrowed" ('monuments', 'revolutions', and 'accidents') or "dangerous" ('diluvialism', 'neptunism', 'catastrophism') the six key words are treated in a creative and analytical way that transcends dry esoteric splitting of definitional hairs. Moving beyond the productive focus on France, chapters on Vallisneri and Baron d'Holbach are used to document geological contributions from Italy and Germany. The book ends with interesting chapters devoted to (1) a valuable discussion of government support of science in the eighteenth century, using agricultural reform as a focus,

and (2) an entertaining behind-the-scenes look at election and promotion patterns within the Paris Academy of Sciences in the years 1716 through 1785.

Those of us who knew Rhoda (and I will henceforth echo the first-name usage of the editors) can understand the obviously warm tone of the Introduction. We can also applaud the editors' excellent analysis of her methodology and the description of her impact on the young discipline of the history of geology. Those who are reading the papers for the first time will no doubt see the validity of the editors' comments, as the reader moves through the sixteen stimulating papers. Each chapter serves as a superb example of using temporal context to provide a basis for understanding ideas now considered by many to be in the dustbin of history. The mysteries of phlogiston theory, the evolution of geologic mapping, the dawning of awareness of a great age of the Earth, why British proto-geology was quiescent from 1710 to 1775, and the merit of contributions by many now-forgotten naturalists are all treated in a non-Whiggish and illuminating way.

Reviewers should not inject themselves overly much into their reactions to a book, but I must say that it was a delight to work through the sixteen papers and re-visit Rhoda's insights and mode of doing history. I was quizzical when first reading that Guillaume-François Rouelle was largely unknown and underappreciated, and then it dawned on me that my awareness of Rouelle as Lavoisier's teacher and contributor to the burgeoning geosciences came from reading this specific paper some forty years ago. The first pages of "Fontenelle interprets the Earth's history" sounded incredibly familiar until I realized that it was the title of her talk at the Linda Hall Library in 1984, where a number of us shared our visions of "Theories of the Earth". Furthermore, the people and topics covered had been exactly the foci of my 1973 sabbatical in Paris. In her papers and conference presentations, Rhoda really did help her audience, particularly those of us coming out of the sciences, to see the merits of historical context and the pitfalls of "presentism" or "Whiggism". The first sentence of the first paper in this book comments that in many treatments of the history of geology, "the figures (who) excite the most interest are those in whom distinct signs of 'modernity' are apparent". From that sentence onward, Rhoda demonstrates the value of looking at the past through time-appropriate lenses, and she does so by modeling, not lecturing. Her depth of research and her scholarly rigor, even tenacity, in pursuing primary sources are evident throughout the book. The sequencing and stating of prime topics of Robert Hooke's previously confusing set of lectures in his *Posthumous Works* are but one example of her gift of clarification for historians who follow.

After reading the compiled papers, it struck me that a number of basic but potent aspects of Rhoda's writing still have the power to aid historians in the twenty-first century. The editors were justified in alluding to her joy at being an "historical detective." Just a few examples will have to suffice here. In discussing "The case of Noah's Flood" she (1) illuminates the **complexity** of historical events leading to modern concepts. She shows that there was no single vision of the role of the Deluge as an event or as a geological agent. Some people saw the Flood in the literal light of the Bible; others thought that floods may have occurred in a local context; and some naturalists simply considered Noah's Flood to be a cultural myth. The analysis of "borrowed words" (2) **clarifies** the meaning of the word "revolution", as seen by eighteenth-century workers. A particular author, such as an astronomer, might focus on the concept of circular movement, an historian could envisage the passage of time with cyclic successions of empires, while a naturalist might think in terms of major changes in the history of the earth, whether gradual or rapid and "disastrous". Throughout the book a reader is constantly introduced to (3) **lesser-known figures** in the history of science. These "toilers in the field" are seldom known today but they provided a database for the major names and "paradigm shifters" who followed. In order to find out the contributions of William Davisson, Pierre-Daniel Huet, Gabriel-François Venel, Philippe de La Hire, and Abbé Vertot you'll just have to read the book (the strong Index will help). But Rappaport's depth of research and interpretation also help us (4) **revisit** major contributors in illuminating new contexts. Thus, we may gain deeper insights into the work of Buffon, appreciate more fully the power of Fontenelle to inform his learned colleagues while popularizing science, watch Lavoisier move toward quantification in both geology and chemistry, and see the philosopher Leibniz in his geological garb.

As with many variorum editions, the pagination can be confusing, as page numbers are those presented in the original paper. The eleven-page Index aids greatly in finding a particular name or topic with considerable ease. Footnotes are abundant and informative. They not only give references for primary and secondary materials, but also frequently expand on points made in the narrative. Many classic papers are cited, but esoteric and probably little-known articles also appear and could be of value to specialists. Scholars today, particular those new to the history of geology, can profit from pursuing landmark papers by major historians of science who are perhaps less known today (Eyles; Guerlac; Duveen and Klickstein; Lovejoy; Butterfield).

The quality of paper, binding, and typography is excellent. Miscues are extremely rare. We do have to figure out the meaning of "altas" (VI, 233), but in this chapter on the *Mineralogical Atlas*, that is not an insurmountable obstacle. Fonts and symbols on atlas maps displayed within Chapter V really are so small as to be non-informative, but a Publisher's Note warns about that problem and promises to add enlarged maps to this volume. Those maps (Figures 1 to 3, following V, 287) are significant improvements – nonetheless, geologists should bring their 10X lenses and historians their big magnifying glasses.

The book is a treasure trove for a wide audience. Historians and geologists already familiar with many of the general topics considered will likely find many new gems of fact and interpretation. Those new to the field will receive an efficient education into how to pursue their own studies. Rhoda Rappaport's almost fifty years of research about the history of geology produced a corpus of writings that aided many of us in the early years of the discipline. This collection is a valuable memory aid to that older generation, but is also a gift to contemporary scholars and anyone

interested in the evolution of the geosciences. Her clear accounts integrate a wealth of facts, they flesh out personalities, and they contextualize ideas that made the Enlightenment an open doorway to our present knowledge of earth products and processes.

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A treasure trove on the history of minerals research

Ortiz, J.E., Puche, O., Rábano, I. and Mazadiego, L.F. (eds). *History of Research in Mineral Resources.* Cuadernos del Museo Geominero, 13. Instituto Geológico y Mindero de España, Madrid 405pp (2011) (Proceedings of 35th INHIGEO Conference, Madrid and Almadén, Spain)

Apart from their relevance to conference participants as a permanent record of a concentrated exchange of information and ideas over a short period of time, the published Proceedings of such meetings have a wider appeal and value to non-participants, who, like the present reviewer, have an interest in the subjects covered. It could be said that such reviews are of special value as, being multiple-author compilations, Proceedings are, unlike most books, less likely to be readily available outside libraries and may not get the publicity they deserve. Reviewing such diverse material is not without its difficulties, for individual contributions invariably differ markedly in length, depth and relevance to the general theme; while style and presentation can never be entirely under the control of the editors. The reviewer is therefore confronted with a mix of challenges and must aim for a broad overview of the aims and achievements of the conference and an appraisal of its success as reflected in the content of the published papers.

The theme of this conference was ambitious, and the editors have compiled an impressive list of forty- three papers representing seventy three contributors and including oral presentations, poster presentations and papers covering field excursions held in association with the conference. Of these, a 'core' of fourteen papers deal with the Iberian Peninsula and four with Spanish colonial sites in the New World. Others range widely in geographical extent and include Australia (3), Russia (2), with one each from New Zealand, China, Japan, Ireland, and Africa. The conference were held at two locations, Madrid and Almadén, between 1 and 14 July 2010, and the papers presented here cover four main topics: the history of research and exploitation of metallic ores; the history of energy resources (coal, petroleum, and uranium); the history of the research and exploitation of non-metallic and industrial minerals; and the history of mineral exploration techniques.

The Iberian Peninsula has a long history of mining and mineral production, with recent and on-going archaeological research, including lead-isotope dating (M A Hunt-Ortiz *et al*) revealing activity dating back to the sixth millennium BC at sites such as Almadén in south-central Spain. The Almadén district, co-venue for the conference is the subject of a comprehensive paper (P L Higueras Higueras *et al*) on the geology and history of the district which has long been famed as the largest and best known of the world's mercury deposits, the source of cinnabar (mercury sulphide). Archaeology has also been applied to the study of ancient mining sites Otero de Herreros in Segovia (M A Sanz and S V Canovas) where gold, silver and coal were worked in Roman times.

The importance of the Central American mineral deposits (particularly those of Honduras) during the Spanish colonial period are discussed by G J Soto, who makes the point that the industry contributed little to the prosperity of the region, the profits being usurped by the Spanish Crown.

Sardinia also has a long history of mineral exploitation (P Loru *et al*), beginning in the Neolithic with the mining of obsidian and later talc, with metal extraction (copper) following in the Bronze Age, and later the Phoenicians seeking silver and lead. The Romans continued the exploitation of these metals and in the Medieval Period the centre of activity was modern Inglesias in S.W. Sardinia, which was to rival Bohemia as a mining centre for a lengthy period.`An early consequence of the exploitation of mineral deposits was the growth of trade routes connecting developing communities, and the famous Silk Road, connecting the Han civilisation of China with that of Rome to the west was for centuries an important transport route for minerals, both precious and utilitarian - from gold and rock crystal to iron, copper and asbestos.

As a counter-balance to those from the northern hemisphere, the contributions from Australia and New Zealand present an interesting coverage of topics. Mike Johnston's discussion of the source, geological origin and historical use of the fine-grained mudstone known as 'Pakohe', used widely by the early Maori peoples for tool-making, and the discovery of the quarries which produced the rock - not to be confused with the rarer greenstone (nephrite) which was even more highly prized - is a fascinating story. The discovery of copper in South Australia which peaked at Burra in 1845 and led to Australia's first mining boom, is well documented and placed in the context of the State's early history by Barry Cooper. The successful development of the Burra Mine was strongly influenced by the influx of Cornish miners and others from the English county with mining and technical skills, and a lasting memorial to this heritage remains in the numerous Cornish-style engine houses which dot the local landscape. Further to the north east, in central Queensland, the geology and chequered mining history of the Anakie sapphire fields are described by David Oldroyd. A product of volcanic activity, possibly related to 'hot-spot' activity, the gemstones were first discovered in the 1850s and after display at the Greater Britain Exhibition in London in 1899 became fashionable with the Russian nobility.

Enlightening, and something of a surprise to this reviewer, is the contribution from M S Pinto and A.S de Andrade which points up the historically recent linkage of ore deposits with the geology of Portugal, where it seems, old theories of ore-genesis lingered on well into the twentieth century, with Agricola an authority in the 18th and 19th centuries, and E de Beaumont to the 1940s. Some of the background to this situation is explored in Teresa S Mota's paper which treats the relationship between the Portuguese Geological Survey and the mining sector in the 20th century. In contrast, Ezio Vaccari's account of the work of the Italian geologist and mining expert S B N de Robilant, in the second half of the 18th century, reveals how this little-known savant brought together his practical geological and mining knowledge with theoretical considerations including his insightful 'Theory of Mountains and Mines'.

Space does not allow the individual treatment of all the papers included in this 400 page volume, but it is hoped the sample presented will give some indication of the variety of riches which it contains. It is a treasure trove of geological, historical, and theoretical information related to the main theme, and the editors are to be congratulated on producing such a comprehensive and well-illustrated record. The numerous maps, figures and black and white images are a particularly striking feature of the publication.

David Corbett, Adelaide

Wegener and continental drift re-examined

Allan Krill, *Fixists vs. Mobilists in the Geology Contest of the Century, 1844-1969*.
An E-Book accessible at http://fixists.com/

The theory of continental drift with its adherents (mobilists) and detractors (fixists) and sub-controversies is one of the great debates of geology – on a par with the debate between evolutionist and creationist biologists that erupted a few years after Darwin. Unlike the debate on evolution which is still going (just!), resolution of the 125 year debate over continental drift, culminated in the mobilist triumph of plate tectonics, i.e., mobile plates of both continental and oceanic lithosphere that fundamentally changed our ideas on how the earth works.

This well-written 298-page e-book, as the author Alan Krill, a geology professor at the Norwegian University of Science and Technology, points out, is a revisionist account of fixists verses mobilists (terms that were introduced by the Swiss geologist Émile Argand at the 13th International Geological Congress in 1922) in their long drawn out debate on continental movement. Krill's purpose, as he points out in Chapter 1, is to present a history of the evidence and theories for continental mobility, and to show how and why these ideas were suppressed, particularly in the United States of America. He looks for cover-ups in the history of continental drift and finds them. Written in an understandable and fresh style, the book makes for fascinating reading with plenty to reflect upon. Although particular attention is paid to what the main English-language geology textbook authors wrote, Krill's account is almost everything you would want to know in a nutshell – a compendium of the development of the ideas of fixist/mobilist scientists involved in the unfolding panorama of whether and how continents moved or otherwise - Alfred Wegener, of course, who introduced the concept in 1912 at a meeting of the Geological Association in Frankfurt (although credit must also go to the American geographer and geologist Frank Bursley Taylor who advocated drift in 1910), along with 223 others that are conveniently listed at the back of the book.

Krill's book has 11 chapters; 1. *Introduction*; 2. *Hypothesis of Neptunian Continental drift*; 3. *Former continental connections*; 4.*Alfred Wegener's displacement theory*; 5. *Coping with ancient climates*; 6. *Three books that boosted the displacement theory*; 7. *Theory of continental drift- labeled and libeled*; 8. *Wegener's hypothesis frozen out of North American Science;* 9. *Continental drift in English-language geology textbooks*; 10. *Summary in the form of historical citation* (the *raw* data without comment or narrative – a useful chronology); 11. *Closing statements*, that includes an unusual, but humorous summary of the debate portrayed as a football match between the leading fixist defenders and mobilist challengers! a "contest of nonsensory", possibly not to everyone's taste.

Figures are adequate, being scanned and inserted from his sources, but in their present form (a number of figures also include part of the text and are skewed) would not be acceptable in a hard cover publication. The work is made up of bite-sized sections (there are 70 of them) that provide a useful stratigraphy of related ideas and developments and their impact. I found this structure very useful in keeping track of the time-line of developments because Krill's account delves deep and exhaustively into the historical record and unearths material that has been missed or ignored by others.

The geological background (introductory geology; radioactive heating and mantle convection; geologic time; Alfred Wegener and the history of plate tectonics) is presented in Chapter 1. The rest of the text is dominated by extracts from relevant primary source material tied together by narrative and comment. Other than Wegener, the main contestants quoted and discussed in Chapters 2 to the early part of 8, are:- Charles Lyell 1837, 1859 (horizontal "transfer" of continents, the Europe-North America connection, vertical crustal movement); Evan Hopkins 1844 (northward shifting of continents – ignored and forgotten); Antonio Snider-Pellegrini 1858 (fitting continents bordering the Atlantic); John Henry Pepper 1861 (unorthodox hypothesis of Neptunian continental drift); James Dana 1863 (creation-origin of continents and oceans); Ormond Fisher 1889 (sub-oceanic convection currents); Charles Schuchert 1910, 1915, 1928 (land bridges; historical geology; critical review); Bailey Willis 1910 (permanence of ocean basins); Du Toit 1921, 1927, 1937 (Permo-Carboniferous ice of South Africa; geological comparison; wandering continents);

Arthur Coleman 1926 (ancient ices ages); Wladimir Köppen with Alfred Wegener (past climates); Émile Argand 1924 (tectonics of Asia); Reginald Daly 1926 (mobile Earth); the American Association of Petroleum Geologists (AAPG) 1928 symposium volume (now a rare book with 15 papers on the theory of continental drift by fixists and mobilists); Arthur Holmes 1927,1931 (mantle convection – a mechanism for moving the continents and Wegener's recognition of it in 1929).

In Chapter 8, Wegener's accomplishments and shortcomings are usefully summarized and commented upon. We are then launched into a detailed discussion on *Mountain-Building Forces* – horizontal compression and its cause that fixists had no answer for (ideas of Chester Longwell, Bailey Willis, Charles Schuchert and others), of Willis and Schuchert on land bridges - examples of manipulated evidence and presentation, and Du Toit's *Our Wandering Continents* (1937) with criticism leveled by the eminent paleontologist George Gaylord Simpson (1943), who was to convert to mobilism in 1970 on the basis of paleomagnetism, rather than fossils. This takes us up to Chapter 9 and the inclusion or rejection of continental drift in English-language textbooks (mainly American), and obviously an important issue for Geology professors as the principles of geology are learned by students early in their courses. British textbooks such as those by Phillip Lake and Robert Rastall (1927,1941), Edward Bailey (1939), culminating with the *Principles of Geology* of Arthur Holmes (1944), together with another little volume by Samuel Shand (1933) in South Africa, all included sections on continental drift and mobilism which they supported. The prodigious output of eminent paleogeographer, Amadeus Grabau (1913, 1921), described as a displaced professor (he lost his position at Columbia University and went to Peking University in 1920), shows that he started off as a fixist but later devised a new model for the Earth which he called the pulsation (of sea level) theory that was closely tied to mobilism. In America, Wiley's *Textbook of Geology* series (1915 to 1969) written and revised by eminent Yale professors, mainly Charles Schuchert and Louis Pirsson to begin with, and later joined by nine others, dominated the scene. Needless to say they continued the fixist doctrine and the subject of continental drift was barely if at all mentioned, a major emission and obviously a conscious decision by the authors not to do so. In other Yale-derived textbooks, Chester Longwell (1939) refers to Wegener's 1924 book as "an entertaining volume" in the reference list, although in 1955, 1962 and 1969 revisions with Richard Flint and later John Sanders, continental drift was recognized, although tentatively as a suspect "*hypothesis on trial*" and with never enough information to suggest that it had scientific merit. At the Australian symposium on continental drift in 1956, the Mid-Atlantic Ridge along which the Atlantic Ocean was considered to be opening by mobilists Samuel Warren Carey (Tasmania) and Lester King (South Africa), drew the comment from Longwell in the symposium volume Epilogue that the ridge was a "strange accident" with "no genetic relation to the margins of the Atlantic basin"! In 1969, however, the Longwell *et al*., textbook presented a schematic sketch illustrating creation of new lithosphere at a mid-ocean ridge (the magnetic stripes) that demonstrated sea-floor spreading together with a convergent continental margin showing the development of a trench and subduction (although not labeled as such and obviously not an Atlantic margin) descending along a zone of earthquake foci. Carl Dunbar (1949) with a new version of Schuchert's *Historical Geology* continued with land bridges. He also depicted clouds to cover critical areas on Paleozoic and Mesozoic (up to the Cretaceous) paleo-North American maps to conceal land areas that existed east of North America, thus hiding the mobilist alternative of Pangea. The clouds had evaporated in the 1960 edition. It was only in the last edition in 1969 that Dunbar with co-author Karl Waage accepted and promoted mobilism. By this time with plate tectonics well under way since sea-floor spreading was proposed by Americans, Harry Hess and Robert Dietz, in 1960, no reputable geologist was denying it. According to Krill, the debate (in America) officially ended in 1969 with the publication of a new AAPG symposium volume, *North Atlantic – Geology and Continental Drift, a Symposium,* the papers in which are firmly in favour of mobilism.

There are many interesting snippets of clarification and personal revelation throughout this account. It is interesting to learn, for example, that Wegener consistently used the term *continental displacement* (*kontinentalverschiebung*), rather than *continental drift* – a potentially misleading term that was applied to the AAPG special symposium volume *Theory of Continental Drift* published in 1928, and stuck as did the criticism. At this symposium, Wegener found few converts to his idea in America and returned to Europe where "many geologists and geophysicists were equally convinced that the hypothesis of continental displacement on a large scale should not be summarily dismissed." The overwhelming rejection of continental drift in America that stemmed from this conference effectively put an end to serious scientific discussion of the idea for the next four decades, and Charles Schuchert is singled out as the arch antagonist (Longwell must be a close second) – the leading campaigner against mobilism, defending a flawed interpretation all his life. With a strong social and scientific culture of its own, a section in the last chapter entitled *American Reactions to Non-American Revolutions*, argues that America was/is more inclined to reject outside systems and ideas that it has not helped to develop – hence an aversion to continental drift, evolution and atheism, adoption of the metric system, and styled by Krill as the "North American Plight*"*. As a major player in establishing the theory of plate tectonics, do American geologists have a psychological need of a special status for the North American continent and is this still evident in modern plate tectonic interpretations with an insistence on having their own North American Plate, distinct from a South American Plate? Perhaps this harks back to North America's special status among continents – the type continent created during the separation of land and water described in *Genesis*, an idea first promulgated in James Dwight Dana's 1863 *Manuel of Geology*.

Wegener's perseverance in the face of criticism, and the fierce intensity of much of it, and the eventual acceptance of his theory by the overwhelming majority of the Earth science community offer important lessons about the scientific process and about the quest for truth. Alan Krill's e-book on the fixist verses mobilist debate is a timely

production as we are now in the middle of another global debate - about changing climate and the anthropogeneic effect. There are many parallels. Debates are always messy and complicated things as Krill's book shows and he is to be congratulated for his effort in bringing the multifarious threads together and clarifying it all. Debates, as this one also shows, invariably demonstrate that maintaining an open, unbiased stance can be difficult if real progress in understanding our Earth is to be made, and on this theme I leave the last words to Wegener (with my added italics);

> Scientists still do not appear to understand sufficiently that all earth sciences must contribute evidence toward unveiling the state of our planet in earlier times [*now and in the future*], and that the truth of the matter can only be reached by combing all this evidence. . . It is only by combing the information furnished by all the earth sciences that we can hope to determine 'truth' here, that is to say, to find the picture that sets out all the known facts in the best arrangement and that therefore has the highest degree of probability. Further, we have to be prepared always for the possibility that each new discovery, no matter what science furnishes it, may modify the conclusions we draw.
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> Alfred Wegener. *The Origins of Continents and Oceans* (4th edition) 1929.

Rodney H. Grapes, Wellington, New Zealand

Essays that interest historians of earth science

J.A .Agnew and D.N. Livingstone (Editors). *The SAGE Handbook of Geographical Knowledge*. Sage Publications, London, 2011, 636 pp.

The recently published SAGE Handbook of Geographical Knowledge offers 46 original essays, all but 3 single authored, on the nature, origins, venues, concepts and controversies that have characterized the development of geography into its present form. Based on their known scholarship, each author was invited to contribute to a specific theme on a menu devised by the editors (John Agnew of the University of California, Los Angeles [UCLA], and David Livingston of Queen's University, Belfast). The book is thus no disconnected series of essays by research teams but a reflection of the when, where, how, and why of geography as a discipline over the ages, viewed thoughtfully from a modern perspective.

Whereas the collection as a whole reveals the peculiarities and eclecticism of geographers of various ilks, several essays are likely to interest historians of earth science and are noted here for that reason. Among those essays devoted to venues, Keith Richards (Cambridge) examines the field as a source of knowledge and ideas, developed from expedition and experiment, subject to privation and disaster, and encouraged or limited by political agendas. Scott Kirsch (North Carolina) traces the evolution of the laboratory from a workshop for specialized labor in the seventeenth century, through the nineteenth century revolution that provided dedicated space for technical and industrial changes, to the modern processing facilities that allow for the isolation of variables. These latter are exemplified by Michael Goodchild (University of California, Santa Barbara) in modern GIS laboratories, by Heike Jöns (Loughborough) in evolving 'centers of calculation,' and by Yongwei Sheng (UCLA) in the rapid growth of remote sensing laboratories since 1960. Michael Heffernan (Nottingham) traces the role of learned societies in promoting scholarly association, initially in seventeenth and eighteenth century Europe, later elsewhere, thereby facilitating the globalization of European scientific practices. Stuart Lane (Lausanne) evaluates how mathematical models perform in geographical space, perhaps as parodies of conventional scientific method leading, hopefully, to validation.

Among the essays devoted to critical concepts and controversies are several that address, predictably for geographers, relations between nature and society, space and place, and landscape broadly defined. Of special interest to Earth scientists are six essays that address changing explanations of landforms and issues of climate and environmental change. Nick Spedding (Aberdeen) summarizes these concepts over the past three centuries and concludes by noting the complexities of modern landform science and Earth-surface dynamics. Antony Orme (UCLA) examines the Davisian cycle of erosion against the cycle mania of the nineteenth and early twentieth centuries and explains how it waned in response to new facts and revised interpretations of Earth's crustal dynamics and surface processes. Bryan Mark (Ohio State) traces the gradual acceptance of glacial theory, the subsequent recognition of multiple glaciations, uncertain correlations with climate cycles, and the continuing role of glaciers in studies of climate change. Nick Clifford (King's College, London) examines changing approaches to the measurement and understanding of rivers and drainage basins, and the significance of recent integrative research to fluvial ecosystems and water resources. Andrew Goudie (Oxford) defines human impacts on the environment, major milestones in the recognition of these impacts, some examples of climate oscillations at decadal, centennial and millennial timescales, and climate influences on human history in the Holocene. Glen MacDonald (UCLA) examines global climate change against a background of recent instrumental data and urges a better understanding of climate cycles, solar variability, and greenhouse gases in the search for explanation.

Antony Orme,
Emeritus Professor of Geography,
University of California, Los Angeles

BOOK NOTICE

The History of a Historical Science
A Special Issue of the *Revista de la Asociación Geológica Argentina*
with articles presented at the
Second Argentine Congress on the History of Geological Sciences (IICAHGEO)

The IICAHGEO Meeting was held in Buenos Aires, in August 2010. As communicated in INHIGEO Newsletter 43, after careful reviewing and editing, 16 extended articles presented at *IICAHGEO* were published towards the end of 2011 as a special issue of the *Revista de la Asociación Geológica Argentina* (volume 68, number 3). All contributions are in Spanish, with the exception of Menichetti's, written in English. Titles of the articles (together with English translation of these) are listed below:

Aceñolaza, F.G. - JUAN VALENTIN: UN GEÓLOGO QUE SUPO RESUMIR LA GEOLOGÍA ARGENTINA. *Juan Valentin: A geologist who compiled the geology of Argentina*.

Alonso, R.N. - AMADEO RODOLFO SIROLLI (1900-1981): IMPULSOR DE LOS ESTUDIOS PALEONTOLÓGICOS Y LA CREACIÓN DE LA UNIVERSIDAD NACIONAL DE SALTA. *Amadeo Rodolfo Sirolli (1900-1981). Promoter of the paleontological studies and the foundation of the National University of Salta*.

Aguirre-Urreta, M.B. & Camacho H.H. - MARTÍN DOELLO JURADO Y LA ENSEÑANAZA DE LA PALEONTOLOGÍA EN LA UNIVERSIDAD DE BUENOS AIRES. *Martín Doello Jurado and the teaching of Paleontology at the University of Buenos Aires*.

Concheyro, A. & Montenegro, T. - GUIDO BONARELLI, EXPLORADOR Y GEÓLOGO INCANSABLE: PIONERO EN LA PROSPECCIÓN DE HIDROCARBUROS EN LA REPUBLICA ARGENTINA. *Guido Bonarelli, tireless explorer and geologist: pioneer in the prospecting of hydrocarbons in Argentina*.

Ermili R.A. & Martínez, **A.** - POLÉMICA TRUNCA: LOS YACIMIENTOS MINERALES SEGÚN ERWIN KITTL. *Truncated controversy: ore deposits by Erwin Kittl*.

González Díaz, E.F. – DOCTOR JORGE POLANSKI (1892-1975). *Doctor Jorge Polanski (1892-1975).*

Salfity, J.A. & Rodrigo Gainza, L.A.- FÉLIX CELSO REYEZ GAINZA (1924-1972): RESEÑA DE SU VIDA PROFESIONAL Y CIENTÍFICA. *Félix Celso Reyes Gainza (1924-1972): An appreciation of his professional and scientific life*.

Ottone, E.G. – HISTORIA DE LA PALEOBOTÁNICA EN LA ARGENTINA DURANTE EL SIGLO XIX: CIENTÍFICOS, EXPLORADORES Y EL PÀÍS EN EXPOSICIÓN. *History of paleobotany in Argentina during the 19th century: scientists, explorers and the country on display*.

Riccardi, A.C. - EL DESARROLLO DE LA PALEONTOLOGÍA DE INVERTEBRADOS EN EL MUSEO DE LA PLATA. *The development of Invertebrate Paleontology in the La Plata Museum*.

Ramos, V.A. - DOSCIENTOS AÑOS DE CIENCIAS DE LA TIERRA EN ARGENTINA. *Two hundred years of Earth Sciences in Argentina*.

Malumián, N. – HISTORIA DE LA CONCEPCIÓN DE UN ESPACIO GEOGRÁFICO DENOMINADO PLATAFORMA CONTINENTAL. *History of the idea of a geographical space termed the Continental Platform*.

Ottone, E.G. – FÓSILES DE NOVELA: PALEONTOLOGÍA Y LITERATURA EN LA ARGENTINA DE FINES DEL SIGLO XIX Y PRINCIPIOS DEL SIGLO XX. *Fossils as fictional characters: Argentine paleontology and literature in the late 19th century and the beginnings of the 20th century*.

Pasquali, R.C., Bond, M. & Tonni, E.P. - LA CAMBIANTE CLASIFICACIÓN DE *TOXODON* OWEN 1837. *The changing classification of Toxodon Owen 1837*.

Tonni, E. & Zampatti, L.H. - EL ‘‘HOMBRE FÓSIL’’ DE MIRAMAR. COMENTARIOS SOBRE LA CORRESPONDENCIA DE CARLOS AMEGHINO A LORENZO PARODI. *The "fossil man" of Miramar. Comments on the letters of Carlos Ameghino to Lorenzo Parodi*.

Charrier, R. & Hervé, F. - EL ABATE JUAN IGNACIO MOLINA: UNA VIDA DEDICADA A LA HISTORIA NATURAL Y CIVIL DEL REINO DE CHILE. *Abbot Juan Ignacio Molina: a life devoted to the natural and civil history of Chile*.

Menichetti, M. – THE GEOLOGICAL PERSPECTIVE OF ITALY AND CHILE BY ABBOT JUAN IGNACIO MOLINA BETWEEN THE 18TH AND 19TH CENTURIES

Revista de la Asociación Geológica Argentina can be purchased at: http://www.scielo.org.ar/scielo.php?pid=0004-4822&script=sci_serial.

Eduardo G. Ottone, Buenos Aires, Argentina

COUNTRY REPORTS

Armenia

Arkadi Karakhanyan has continued his studies on ancient monuments in Egypt related to ancient earthquakes and evidence of them in the Luxor temples. He has also worked on ancient Egyptian quartzite quarrying at Gebel-Tigar and Gebel-Akhmar. A publication have been prepared on these issues which will be published in the second half of 2012 as a special issue of the Annals of Egyptology.

In 2011, Arkadi has also continued investigating ancient petroglyphic maps of geology associated with a possible early volcanic eruption in Armenia. This report is also ready for publication. An image of one of such petroglyphs is shown here.

Petroglyph "Map-1"and a satellite image of the landscape with meandering river, which is depicted by the petroglyph. Yellow pin points to the location of the petroglyph.

In Arkadi's Institute of Geological Sciences, the Geology Museum has been reorganised. It is the sole geological museum in Armenia. The museum holds documents about the activities of Dr. Bonnet, a French geologist, who worked in Armenia early in the 20th century. Jointly with French colleagues from the Lille University, they have prepared materials related to this issue for a book that was published in France. The title is in French - "Armenie russe: Aventures scientifiques a l'epoque des tsars 1904-1914. Carnets de voyage de Pierre Bonnet, un geographe francais en Transcaucasie" . Edition Les Ardents Editeurs, 2011.

Gourgen Malkhasyan is planning a website, devoted to the outstanding Armenian geologists. He has already collected a large archive of biographies and photographs detailing for example the main activities of Academician K.N. Paffengolc- a legendary personality in Armenian geology, Academician I.G. Magakyan, F.Y. Levinson-Lessing - first President of Transcaucasian Department of Academy of Sciences of USSR, S.A. Movsisyan-famous geologist, who later became the first Vice-Prime Minister of Republic of Armenia,. There is also some material on the activity of other geologists like V.N. Lodochnikov (Navavaryants), S.S Mkrtchyan- ex Director of the Institute of Geology in Armenia, first Vice -President of Academy of Sciences in Armenia, and some others. He has been fortunate to meet the members of the families of some of these geologists in order to collect historic materials. The first trial version of the website, which is also being designed by Gourgen should be available soon.

Australia

The Earth Sciences History Group, a Specialist Group of the Geological Society of Australia continues to thrive with its administration based in Western Australia. A major project of the Group is currently the establishment of the Tom Vallance Medal to recognize those people who have made a significant contribution to researching, recording, investigating, documenting and/or publishing about people or places or events of historical importance to the geological sciences in Australia or Australasia. T. G. Vallance (1928–1993) was a longstanding member of INHIGEO and an INHIGEO Board member. The inaugural Vallance Medal will be presented during the 34th International Geological Congress in Brisbane.

Carol Bacon attended the 2011 INHIGEO conference in Toyohashi, Japan and presented a paper entitled "Historical geological images from Tasmania." Carol retains an interest in the history of geology of Tasmania and has plans to work on a dictionary of Tasmanian mining.

David Branagan attended the INHIGEO meeting at Toyohashi, Japan in July–August, participating in the review meeting held with executive and invited members of IUGS, and presenting a paper on the Australian connections with the Tokyo Earthquake of 1923. He participated in the excellent field excursion held following the conference. As some of the material in his paper had been published previously in Earth Sciences History, he did not submit a paper for the Conference proceedings.

He attended the Annual meeting of the Australian Mining History Association at Hahndorf, South Australia, in November presenting a paper on the visit to South Australia by Geologist Alfred Selwyn in 1859, when he made the discovery of the first clear evidence of ancient glaciation. This is part of a continuing project documenting the life of this important figure. An invitation paper on the history of Geology in Australia was completed for *Episodes* in an issue being published in association with the forthcoming 34th International Geological Congress in Brisbane.

An article was prepared on the 1970s–1980s student geological excursions from the University of Sydney to New Zealand that he led. It has subsequently been published in the *Journal of the Historical Studies Group of the Geological Society of New Zealand*, No. 42, February 2012.

A paper on the author's part in the establishment of open cut coal mining in the Western Coalfield of New South Wales, during the 1950s is in press, as are two papers concerning Antarctic exploration (the Japanese Expedition of 1910–1911, and the Life of Carsten Borchgrevink, leader of the first Antarctic wintering party, 1899–1900).

A brief invitation article on Edgeworth David's Antarctic work was published in *History* (Magazine of the Royal Australian Historical Society (June 2011, No. 108, pp. 6–7. An article, David's 'Try, real or imagined?', was published in *Record* (The University of Sydney Archives) 2011, pp. 18–25. Local presentations were given on the work of Edgeworth David and Mawson.

In his role as INHIGEO Secretary General **Barry Cooper** reports that it has been an unexpectedly busy year with the consequence that his historical investigations have been somewhat curtailed.

For the INHIGEO Conference held in August 2011 in Toyohashi, Japan, Barry presented a paper entitled 'Reg Sprigg and the 1947 discovery of submarine canyons in Australian waters'. Subsequently this presentation has been expanded and submitted for publication together with other conference papers.

Barry also contributed to a joint paper with Bernard O'Neil at the Australian Mining History Association conference held in Hahndorf, South Australia in September 2011. This was entitled 'Johannes Menge (1788–1852): The South Australian Company's mine and quarry and geologist'.

Following encouragement from the Royal Geographical Society of South Australia, Barry has completed and submitted a paper to the Society's Journal entitled 'The historic use and trading of building stone in South Australia, and support for the associated industry'.

Barry continues his involvement with the Global Heritage Stone project. In February, this was approved as a new IUGS Task Group. Terms of Reference have been subsequently prepared and submitted to IUGS for approval. Corresponding geologists associated with the project number 123 from 33 countries. Two joint papers on heritage stone from the UK, specifically Portland Stone and Welsh Slate, are at different stages of preparation and publication.

For the forthcoming International Congress in Brisbane in August 2012, Barry began work on a paper dealing with pioneering geologist Ralph Tate, jointly with local science historian, Barbara Kidman.

Publications:

'The Emu Bay Shale lagerstätte: a history of investigations', *Australian Journal of Earth Sciences*, 2011, *58*, 235–241 (with J. B. Jago).

'Building stone as part of a World Heritage site: "Piedra Pajarilla" granite and the city of Salamanca, Spain', *Geophysical Research Abstracts 13, EGU General Assembly 2011* (with D. Pereira).

'Geologists and the Burra Copper Boom, South Australia, 1845–1851'. In: Ortiz, J. E., Puche, O., Rábano, I. and Mazadiego, L. F. (eds), *History of Research in Mineral Resources. Cuadernos del Museo Geominero*, *13*. Instituto Geológico y Mindero de Espaňa, Madrid, 2011, 193–200.

'Pioneering geology in remote Western Australia', *The Forgotten Explorers: Pioneer Geologists of Western Australia 1826–1926*, by John Glover with Jenny Bevan. *INHIGEO Newsletter* 43: 74–76 (book review).

'Reg Sprigg and the 1947 discovery of submarine canyons in Australian waters', *INHIGEO 2011 Japan Conference, 2–10 August 2011, Aichi University, Toyohashi, Japan, Abstract*s, pp. 38–41.

'Johannes Menge (1788–1852): the South Australian Company's mine and quarry and geologist', Australian Mining History Association, Annual Conference, 12–18 September 2011 Hahndorf, South Australia, *Abstracts*, p. 23 (with B. O'Neil).

Tom Darragh has continued working on the Australian notebooks of Ludwig Leichhardt. The Queensland Museum has agreed to publish the translation of the five notebooks in its Memoir series, together with a companion volume of scholarly essays on various aspects of Leichhardt's life. Tom has submitted an essay on Leichhardt as a geologist for the essay volume.

Publication:

Darragh, T. A., 2011. Review of: Ruth Pullin, *Eugene von Guérard: Nature Revealed*, National Gallery of Victoria: Melbourne, 2011. *Historical Records of Australian Science*, 2011, *22*, 314–315.

In 2011, **Bernie Joyce**, **Doug McCann** and colleagues completed a significant book on the Burke and Wills expedition, reviewing the value of its scientific results and those of the several relief expeditions. Burke and Wills left Melbourne on 20 August 1860, 150 years ago in 2010 on the first north-south exploring expedition across Australia, during which both leaders perished.

Including other contributions, Bernie and Doug report the following publications during 2011.

Joyce, E. B. 2011. The Basin Banks near Camperdown 1857, Lake Bullenmerri 1858, Basin Banks from MacNickles Station - Bullen Merri 1857. (A note on Bullen Merri and Gnotuk maar volcanoes). In: Ruth Pullin, *Eugene von Guérard, Nature revealed*, pp.144-145. National Gallery of Victoria, Melbourne.

Joyce, Bernie, McCann, Doug & Leahy, Frank, 2011. The 150th Anniversary of the Burke & Wills Expedition - reviewing the exploration and mapping of the route, and the naming of places, and relocating the Royal Park departure camp. *Southern Latitudes, 2011 ANZMapS conference, State Library of NSW, Sydney*.

Joyce, Bernie & McCann, Doug. 2011. The Scientific Legacy of Burke & Wills. *Australasian Science*, June 2011, pp. 29-31.

Joyce, E. B. & Hughes, R. L. 2011. Analysing the spatial distribution of volcanic activity over time: the young monogenetic newer volcanic province of southeastern Australia. *IUGG poster*

Joyce, E. B. 2011. A new assessment of risk and hazard for the young volcanoes of Australia. *IUGG poster*.

Joyce, E. B. 2011. IGC Brisbane 2012. *ProGEO NEWS*, p.10.

Joyce, E. B. & McCann, D. A. (eds), Burke & Wills: The Scientific Legacy of the Victorian Exploring Expedition, *CSIRO Publishing, Collingwood, Australia*. 343pp.

Joyce, Bernie & McCann, Doug. 2011. Geology, soils and landscapes of the expedition route. Chapter 3, In Joyce, E. B. & McCann, D. A. (eds), *Burke & Wills: The Scientific Legacy of the Victorian Exploring Expedition*, CSIRO Publishing, Collingwood, Australia. pp.58-96.

McCann, Doug & Joyce, Bernie. 2011. Conflicting priorities: exploration, science, politics and personal ambition. Chapter 1, In Joyce, E. B. & McCann, D. A. (eds), *Burke & Wills: The Scientific Legacy of the Victorian Exploring Expedition*, CSIRO Publishing, Collingwood, Australia. pp.1-22.

McCann, Doug & Joyce, Bernie. 2011. Conclusion: rewriting history. Chapter 9, In Joyce, E. B. & McCann, D.A. (eds), *Burke & Wills: The Scientific Legacy of the Victorian Exploring Expedition*, CSIRO Publishing, Collingwood, Australia. pp. 275-292.

Ken McQueen has continued his mining history research, particularly from the geological perspective. During the year he visited a number of field sites in New South Wales and southern Queensland as part of a study on the history of mercury mining in Australia. This work was completed and published during the year. He also joined the Editorial Board of the *Journal of Australasian Mining History*. On 7 October he addressed the Mineralogical Society of New South Wales at the University of Western Sydney on 'The nature and historical development of the Albert Goldfield, Milparinka–Tibooburra, western NSW'. Ken has been organising one of the symposia for the INHIGEO contribution to the 34th International Geological Congress to be held in Brisbane in August 2012. This symposium is entitled 'Geologists, resource exploration and development: an historical perspective'. Abstracts have been received from the invited keynote speaker, Tony Hope, and six other presenters.

Publications:

McQueen, K. G. Henry William Nancarrow: member of the Cornish diaspora and his role in the Cornish, Scottish and Australian Mine, Cobar, New South Wales. In: Claughton, P. and Mills C. (eds), *Mining Perspectives*: *Proceedings of the 8th International Mining History Congress 2009*, Cornwall and West Devon Mining Landscape World Heritage Site, Cornwall Council, Truro, pp. 180–186.

McQueen, K. G. Mercury mining: a quick history of quicksilver in Australia, *Journal of Australasian Mining History*, 2011, *9*, 74–93.

Wolf Mayer contributed to a symposium held at the National Library of Australia, Canberra, in June 2011, on the topic: 'The Freycinet map of 1811: the 200th anniversary of the publication of the first map of Australia'. He also presented a lecture on 'Baudin's naturalists in Australia: early scientific surveys of the fauna, flora and geology of the country's coastal regions, 1801–1803'. The proceedings of this symposium will appear as an e-publication and in printed form. Wolf has continued his research on the scientific work of Nicolas Baudin's expedition of discovery to Australia, in libraries in Paris and Vienna. He has also started work on an account of the life and work of the eminent Australian/New Zealand geologist William Noel Benson (1885–1957).

Publication:

Mayer, W. 2011. The discovery and exploitation of iron ores in colonial Australia with emphasis on the deposits in the Tamar Valley district of northern Tasmania. In: Ortiz, J. E., Puche, O., Rábano, I. and Mazdiego, L. F. (eds), *History of Research in Mineral Resources*. Instituto Geológico y Minero de España, Madrid, 2011, pp. 139–148.

David Oldroyd has continued his work as editor of *Earth Sciences History* and gave the keynote address at the INHIGEO Conference in Japan, with a paper on the early history of geological mapping. He has also been organising one of the INHIGEO Sessions for the IGC in Brisbane—on geologists' biographies or autobiographies. For this event he has compiled a large database of biographical and autobiographical works on or by geologists, worldwide. In addition, he has written a survey article on the history of geomorphology in the first half of the twentieth century for an Elsevier encyclopedia on geomorphology (in press) and a historiographical contribution to a volume of essays in honour of Charles Coulson Gillispie, recently published (2012).

Publications:

'Arthur Holmes' paper of 1929 on convection currents within the Earth as a cause of continental drift', *Episodes*, 2011, *34*, 41–50.

'The 22nd International Geological Congress at New Delhi, 1964', *Episodes*, 2011, *34*, 263–267 (with Kottapalli Murty).

'A brief history of the sapphire industry in Queensland', in: J. E. Ortiz, O. Puche, I. Rábano and L. F. Mazadiego (eds), *History of Mineral Resources*, Cuadernos del Museo Geominero, *13*, Publicaciones del Instituto Geológico y Minero de España, Madrid, 2011, 155–166.

'The Geological Society's birthday' (essay review of Gordon L. Herries Davies, *Whatever is Under the Earth: The Geological Society of London 1807 to 2007*, The Geological Society, London, 2007; and Cherry L. E. Lewis and Simon J. Knell (eds), *The Making of the Geological Society of London*, The Geological Society, London, 2009). In: *Metascience*, 2011, *20*, 177–184.

'Mineralogy, chemistry, botany, medicine, geology, agriculture, meteorology, classification, . . . : the life and times of John Walker (1730–1803), Professor of Natural History at Edinburgh University' (essay review of Matthew Eddy, *The Language of Mineralogy: John Walker, Chemistry and the Edinburgh Medical School, 1750–1800*. Ashgate Publishing Ltd, Farnham and Burlington, 2008). In: *Metascience*, 2011, *20*, 395–399.

Review of: *Protogaea: Gottfried Wilhelm Leibniz*, translated and edited by Claudine Cohen and Andre Wakefield, The University of Chicago Press, Chicago and London, 2008. In: *Metascience*, 2011, *20*, 303–307.

Review of: Alexander von Humboldt and Aimé Bonpland, *Essay on the Geography of Plants*, edited with an introduction by Stephen T. Jackson and translated by Sylvie Romanowski. The University of Chicago Press, Chicago and London, 2009. In: *Metascience*, 2011, *20*, 581–584.

Review of: Mike Johnston and Sascha Nolden, *Travels of Hochstetter and Haast in New Zealand 1858–1860*, Nikau Press, Nelson, 2011. In: *Episodes*, 2011, *34*, 282–284.

Susan Turner has continued to investigate the history of vertebrate palaeontologists, Professor Friedrich von Huene and his daughter Erika, and the history of palaeontology and geology in Germany in the mid-20th century. In May she met again for discussion a branch of the von Huene family including Friedrich's remaining daughter Irmele, now 98 years old, in Tübingen. They have entrusted Friedrich von Huene's field notebooks to Sue but sadly a computer crash wiped out an initial assessment of his 1924 S. African expedition. In Paris in May at the HOGG meeting (see below), she met German historian Florian Mildenberger, who informed her of some of Erika von Huene's biographical material of her life in Berlin and beyond that explains her ultimate failure to continue her work; more of this when items are verified. In June Sue was able to spend a delightful day in the American Philosophical Library and view letters between the von Huenes and George Gaylord Simpson.

A short article published this year in *The Geological Curator* on Paul Strzelecki (see refs below) was the progress report of Sue's search for the earliest collected fossil fish in Australia (from the Lower Carboniferous of New South Wales). Brief visits to the Geological Society Library in April and December with the able assistance from Wendy Cawthorne and Michael McMinn, allowed her to examine their materials on current projects including Australian 19th century collectors and geologists; she examined the large (1864) geological map of the geology of Eastern Australia (mostly New South Wales) by William Keene (LDGSL 731) and was surprised to see labelled in his section the words "a heterocercal fish found in these shales" at Shepherd's Hill and is now aiming to find out more on this. The Geological Society are looking for funds to help conserve this item if anyone feels they can help with a donation.

Work on the 19th century self-taught geologist and polymath Thomas Sopwith, begun again in 2009 and featured at the INHIGEO meeting in Spain, published in mid-year in the INHIGEO-2010 volume *History of Research in Mineral Resources*" edited by organisers José Ortiz, Octavio Puche, Isabel Rabano, and Luis Mazadiego, continued this year with a search for new material and missing models, a most productive meeting with Robert Sopwith, author of several books on his relation, and in conjunction with Dave Greenwood of London who in April astonishingly brought to me six box-folders of work that Professor W.R. Dearman and I did in Newcastle Upon Tyne from the 1970s to early 1980s. These he had rescued from the Devon association that had inherited much of Bill's estate. Dave Greenwood and Sue are finding new connections for Sopwith, such as to the Geological Association, and plan a joint article soon. The 2011 paper includes a brief memorial to Bill Dearman, who died in 2009.

Sue also continues to research the lives of women (in the IUGS and IGCP, in palaeontology, and the oil industry) and to gather material in general on those who worked at high level within the IUGS. At the Natural History Museum archives in April, she investigated material on the Woodward sisters, Alice and Gertrude as part of her research into women in the 'saurian' world (e.g. Turner *et al*. 2010, see last newsletter) and the Woodwards at the museum in general.

Presentations

A poster (see refs below) on 19th to early 20th century collectors and collections from queensland was given at the HOGG *Geological Collectors & Collecting* meeting in early April at the Natural History Museum, London; fellow HOGG member, John Henry of 19th century geomaps, www.geolmaps.com, is thanked for his generous help with this.

At the excellent HOGG meeting in Paris (9-14 May) on *Dinosaurs, Their Kith And Kin: A Historical Perspective* run by Eric Moody, Jean Le Loueff and Dick Moody, Sue gave a talk (see refs below) on the lives of the von Huene family members and the role of the Nazi movement in shaping the careers of father Friedrich and daughter Erika as well as other contemporary geologists. She also offered a poster on the history of dinosaur ichnology in Australia (see refs below). She thanks Eric Buffetaut for logistic support.

Publications

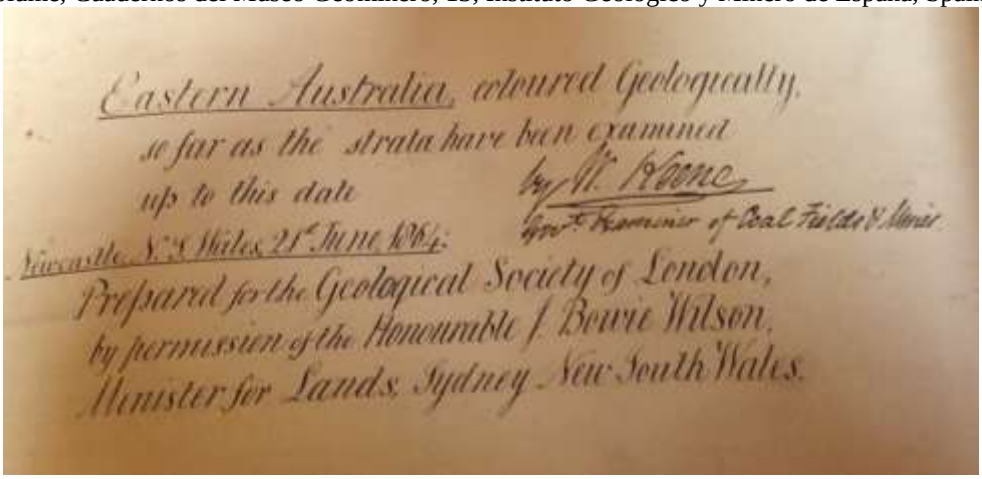
Turner, S. 2011a. Beautiful One day; Perfect the Next! 19th–early 20th century geological collectors and collecting in the Great State of Queensland. HOGG Geological Collectors & Collecting, Poster Abstracts, April 4–5, Natural History Museum, London, p. 17.

Turner, S. 2011b. Tracking Trackmakers: A Brief History of Dinosaur Ichnology in Australia. In: HOGG, Dinosaurs, Their Kith And Kin: a historical perspective. May 3-6, 2011, SGF & MNHN, Paris, Poster Abstracts, p. 30.

Turner, S. 2011c. Dinosaurs and Lost Dreams: the von Huene–Longman story. In: HOGG Dinosaurs, their Kith and Kin: a historical perspective. May 3-6, 2011, SGF & MNHN, Paris, Abstracts, p. 32.

Turner, S. 2011d. Australia's first fossil fish is still missing! *The Geological Curator*, 9, no. 5, 285-290.

Turner, S. 2011e. Thomas Sopwith, the miner's friend: his contribution to the geological model-making tradition. In: Ortiz, JE, Puche, O, Rabano, I & Mazadiego, LF eds "*History of Research in Mineral Resources*" INHIGEO-2010 volume, Cuadernos del Museo Geominero, 13, Instituto Geologico y Minero de Espana, Spain. 177-192.



Label on 1864 Geological Map of Eastern Australia by William Keene.
Held by the Geological Society of London

Austria

(The Editor apologises for omitting Marianne Klemun's report for 2010 from the 2011 newsletter. It is now included here)

In February 2009 **Marianne Klemun** participated in an International Symposium "State, Mining and Mining Academies: Mining experts in the 18th and 19th centuries " at the Technical University in Freiberg (Germany) with the lecture " 'Knowledge in a Knapsack': Travelling Mining Personnel between the Mining Districts in the Habsburg Lands (1765-1805)", while in September, Klemun was invited to give a lecture on the "Symbiosis as a Provocation: Franz Unger's Visualization of Geological Periods", at the International Conference (University of Siegen) on the topic "Evolution and the Public (1859–2009). The discussion of a scientific idea and its ramifications since Charles Darwin".

During the Autumn of 2010, in cooperation with the German INHIGEO member Bernhard Fritscher (Munich), Klemun attended the Conference "Geodarmstadt 2010", presenting the paper "'Deutschland' und 'Österreich' – Beziehungsgeflechte zwischen den erdwissenschaftlichen Organisationsformen (1848 – 1914) im langen Jahrhundert nationaler Diskurse". [" 'Germany' and 'Austria' – Relationships between the Geographical Forms of Organization (1848 – 1914) in the Long Century of National Discourses"]. In November 2010 Klemun gave a lecture on the topic of "Sammeln verbindet" ["Collecting Unites"] at the Austrian Academy of Sciences.

In November 2009 Marianne Klemun conceptualized and organized the symposium "Unity in Diversity. Franz Unger's natural research in international context", held at the Austrian Academy of Sciences in Vienna with different international contributions, and in November 2010 she functioned as a session organizer of the topic " 'Moved' Natural Objects – Spaces in Between" at the 4th International European Conference for the History of Science, which took place in Barcelona, where the INHIGEO members Ezio Vaccari (Italy) and Bernhard Fritscher (Germany), gave lectures, together with many other international contributers. In July 2011 Marianne Klemun and Elmar Schübl organized the symposium "Historicized Nature – Naturalized History", at 13th International Congress for Eighteenth Century Studies in Graz, where the INHIGEO members Ana Carneiro (Lisbon), Bernhard Fritscher (Munich), Ernie Hamm (Toronto) and Ezio Vaccari (Insubria), gave lectures together with many other contributers.

Marianne Klemun edited a volume of the historical journal (*Wiener Zeitschrift zur Geschichte der Neuzeit* 9/2, 2009) on the topic "Wissenschaft und Kolonialismus" ["Science and Colonialism"] and together with the INHIGEO member Ana Carneiro (Portugal) was particularly engaged in the publishing of papers that were given at the XXIII international Congress of Science and Technology (ICHST 2009), held in Budapest on the topic "Ideas and Instruments in Social Context". The papers given in the session "Seeing and Measuring, Constructing and Judging: Instruments in the History of the Earth Sciences" with 12 participants (mostly INHIGEO members) are printed in *Centaurus, An International Journal of the History of Science and its Cultural Aspects*, Vol. 53, Issue 2, 2011.

In addition Marianne Klemun has published a number of articles:

Marianne Klemun, Brückenschläge: NaturWissen-schaf(f)t und Popularisierung – der Naturwissenschaftliche Verein für Kärnten und die Zeitschrift *Carinthia*.[Natural Sciences and Popularization – the Natural Science Association for Carinthia and the Journal *Carinthia*.] In: Martin Seger (Hg.), Kärnten. Landschaftsräume – Lebensräume. Eine geographische Landeskunde. Jubiläumsband aus Anlass des 200. Jahrgangs der Zeitschrift Carinthia hg. vom Geschichtsverein für Kärnten und vom Naturwissenschaftlichen Verein für Kärnten (Klagenfurt, 2010) 17–24.

Marianne Klemun, Die Österreichisch-Ungarische Nordpolexpedition (1872–1874). Euphorie der Gemeinsamkeit und die Positionierung der Akademie der Wissenschaften (Wien) im Vorfeld der Expeditionsplanung. [The Austro-Hungarian North Polar Expedition (1872-1874). The Euphoria of Commonality and the Positioning of the Academic of Sciences (Vienna) in the Process of Expedition Planning]. In: Die Leidenschaft des Sammelns. Streifzüge durch die Sammlung Woldan, hg. von Gerhard Holzer et al. (= Edition Woldan, Österreichische Akademie der Wissenschaften, philosophisch-historische Klasse Bd. 3/2, hg. von Christine Harrauer (Wien 2010) 343–364.

Marianne Klemun, History of Science.- In: 18th Century Studies in Austria 1945-2010, ed. by Thomas Wallnig, Johannes Frimmel and Werner Telesko (= The Eighteenth Century and the Habsburg Monarchy, International Series Vol.4. Bochum 2011) 51-69.

Marianne Klemun with Ana Carneiro, Instruments of Science - Instruments of Geology. Introduction to: Seeing and Measuring, Constructing and Judging: Instruments in the History of the Earth Sciences, ed. by Ana Carneiro and Marianne Klemun (= Centaurus, an International Journal of the History of Science and its Cultural Aspects, Vol. 53, Issue 2, 2011).

Marianne Klemun, The Geologist's Hammer - "fossil tool, equipment, instrument and/or badge? In: Seeing and Measuring, Constructing and Judging: Instruments in the History of the Earth Sciences, ed. by Ana Carneiro and Marianne Klemun (= Centaurus, An International Journal of the History of Science and its Cultural Aspects, Vol. 53, Issue 2, 2011).

Marianne Klemun, The Understanding of Resources and Knowledge of Raw Materials, as presented at the Big Exhibitions in the 19th Century. In: History Research in Mineral Resources, ed. by J.E. Ortiz, O. Puche, I. Rabáno and L. F. Mazadiego (=Cuadernos del Museo Geominero 13, Madrid 2011) 247-252.

Marianne Klemun, „Geognosie im Vormärz“: Ami Bouè (1794-1881) und dessen Mittlerfunktion zwischen den unterschiedlichen europäischen geologischen Wissenskulturen und Kärnten.[A. Boué and his function as mediator between different European knowledge-cultures and Carinthia] In: Carinthia II, 201/121. Jg. (2011) 249-268.

Marianne Klemun, Zwischen Praxis und Dokumentation: Die von der Geologischen Reichsanstalt durchgeführte Landesaufnahme (1849-1863/67). [Between practice and documentation, the geological survey in the working] In: Berichte der Geologischen Reichsanstalt 89 (2011) 34-36.

Reisen, Aufzeichnen, Beschreiben. Visualisierung erdwissenschaftlichen Wissens und „Mineralogische Reisen“ innerhalb habsburgischer Territorien. [Visualization of knowledge in earth sciences and travelling in Habsburg territories.] In: Images en capitale: Vienne, fin XVIIe –début XIXe siècles, ed. Christine Lebeau und Wolfgang Schmale (Bochum 2011) 95-115.

Marianne Klemun and Heidi Rogy: Berg –Naturwissenschaft – Visualisierung: Das Alpine Museum in Klagenfurt und dessen Gründung im Jahre 1911. [Mountain- Sciences-Visualization: The foundation of the Alpine Museum in Klagenfurt 1911]. In: Carinthia I 2011/ 201. Jg. , 403-422.

Marianne Klemun, Verwaltete Wissenschaft – Instruktionen und Forschungsreisen. [Administrated Science – Instructions and Expeditions] In: Ordnung durch Tinte und Feder? Genese und Wirkung von Instruktionen im zeitlichen Längsschnitt vom Mittelalter bis zum 19. Jahrhundert, hg. von Anita Hipfinger, Josef Löffler, Jean Paul Niderkorn, Martin Scheutz et al. (=Veröffentlichungen des Instituts für Österreichische Geschichtsforschung 60, Wien 2012) S. 391-414.

Belarus

Scientific Conferences

In the year 2011 Belarussian geologists took part in the following scientific conferences:

- ”The Contemporary State of the Earth Sciences” (Moscow);
- The Tempo of Evolutionary Development of the Organic Word and Biostratigraphy” (St. Petersburg).

An International Conference “Geochemistry of the Quaternary Deposits in Belarus” commemorating the corresponding member of the National Academy of Sciences of Belarus V.A. Kuznetsov (1931-2008) was also held in Minsk by the Belarussian Research Geological Exploration Institute. Scientists from Belarus, Russia and the Ukraine participated in this Conference.

Memorable dates

It has been 150 years since the birth of a well-known geologist Piotr Yavorovsky (1861-1920). After graduating from St. Petersburg Mining Institute (1888), he worked for a long period in Siberia and the Far East. His main works were devoted to researching placer and fundamental gold fields, patterns of distribution of gold in deposits and processes of gold mining. At the end of 1919 Yavorovsky was invited to St. Petersburg to work in the Russian Geological Committee, but, soon after, heart illness destroyed the life of this prominent geologist. A list of his published works was presented in the necrology of the Russian Geological Committee in 1920. In the journal “Lithosphere” (Nr 2, 2011) an article by V.Ermolenko about life and work of Piotr Yavorovsky was published.

It has also been 100 years since the birth of Margarita Tsapenko (1911–1968), doctor of geology, founder of the Belarussian Quaternary school.

Jubilees.

It was the 80th anniversary of Prof. German Karatayev – doctor of geology, chief research associate of the Institute of Nature Management of the National Academy of Sciences of Belarus.

It was 70th anniversary of Vladimir Zuy - doctor of geology, a well-known expert in geophysics, Head of the Geothermal Department of the Belarussian Research Geological Exploration Institute.

It was 60th anniversary of Prof. Anatoli Makhnach, doctor of geology, academician of the Belarusian National Academy of Sciences, chief research associate of the Belarussian Research Geological Exploration Institute, (in 1998-2008 he was the Head of the Institute of Geochemistry and Geophysics of the National Academy of Sciences of Belarus).

Losses to science.

On 10 May 2011, Prof. Eduard Vysotski, doctor of geology, a distinguished specialist on the evaporite deposits died at the age of 68 years. He was the author of the monograph "Potassium pools of the world" (in co-authorship with academician R. Garetski).

Valeri Ermolenko,
Minsk

Belgium

Eric Groessens reports the following publications during 2011.

GROESSENS, E. Quelques pierres blanches au pays de la pierre bleue. « Célèbres ou Obscur – Hommes et femmes dans leurs terroirs et leur histoire » *Actes du 134e Congr. nat. Soc. Hist. et Sc., Bordeaux, Ed. C.T.H.S.*,Paris, 2011, pp. 165-176.

GROESSENS, E & TOURNEUR, Fr. Les « Pierres bleues », fleurons incontestés de l'industrie extractive walonne, une industrie toujours bien vivante !… In « Regard sur le bleu », coll. *Monographies du Musée provincial des Arts anciens du namurois*, n°54, (240 p.), pp. 49-64.

TOURNEUR, Fr. & GROESSENS, E. Le fameux « Bleu belge », un marbre belge pas très bleu certes, mais qui a eu de la « veine ». In « Regerd sur le bleu », coll. *Monographies du Musée provincial des Arts anciens du namurois*, n° 54, (240 p.), pp 65-71.

GROESSENS, E. Van den Broeck's life and contribution of the VMR book to karst science. *Abstracts book* of Intern. Symp. « Karst Research, Challenges for the XXIst century », IRScNB, 2011, p. 20.

COURTOIS, L. (dir.) et coll.
Mémoire de Wallonie. Les rues de Louvain-la-Neuve racontent… André-Dumont, par E. Groessens (pp. 153-154) *Publ. Fond. Wallonne P.-M. & J.-F. Humblet*, Louvain-la-Neuve, 2011, 560 p., 600 ill. coul.

The following papers are also in press for 2012

NICLAES, M., DUSAR, M. & GROESSENS, E. A Database and reference collection of historical building stone in Belgium. EGU 2006 – Natural stones for historical monuments *Engineering Geology* (sous-presse)

GROESSENS, E. Les débuts de l'exploitation de la pierre en Belgique. Actes du Coll. intern. « Pierres-papiers-ciseaux – Architecture et sculptures romanes (Meuse –Escaut), Namur, 07-08 déc.2009, (sous-presse)

Bolivia

The author of this report participated in several activities related to the History of Geology during 2011.

I was invited by the Polytechnic University of Catalunya, Spain as lecturer to the "12th International Congress on Geological Heritage and Mining" and to the "16th Scientific Meeting of the SEDPGYM: Appraisal of the Geomining Elements in the Context of the Geoparks", which took place in Boltaña (Huesca) from 29 September to 2 October. These events were organized by the Sobrarbe Geopark, the local government of Sobrarbe and SEDPGYM. Participants came from Bolivia, Colombia, Ecuador, Peru, Spain and France. I delivered a paper entitled "Restoration of the Industrial Heritage of the Potosí enbankment, Bolivia".

Before the congress, some of the participants took an excursion along the Barrosa Cirque and the Parzan Mines. During the inauguration, the SEDPGYM paid tribute to Josep Mata and the Francisco Ayala Award was presented. The opening lecture was presented by Prof. Belmonte, from France. After the Congress we had a second field trip to the countryside to inspect the Geological Heritage of the Añisclo Valley, this excursion being led by Professors Belmonte and Pocovi.

On 18 October, I participated as a lecturer in the "First journeys on mining and development: Artisanal mining in South America", sponsored by the General Foundation of the University of Castilla-La Mancha, which took place at the School of Mining and Industrial Engineering of Almadén (EIMIA) in Almadén, Spain. The title of the case study I presented in these journeys was "A sample of craft and sustained activity: El Cerro de Potosí, Bolivia". Other participants came from Peru, Colombia, Spain and Bolivia. As part of the visits to the mining city, a tour was led by L. Mansilla to the Center for Interpretation of Almadén, the interior of the mine, the melting plants (the modern one and that one which was brought from Huancavelica, Perú, at the end of the XVIII century, and the Bustamante furnace for recovering mercury).

Early in November, I was also invited as lecturer to the VIII National Congress of Tourism Guides, that was held in Potosí, organized by the Association of Tourism Guides and sponsored by the Departamental Autonomous Government of Potosí and the Secretariat of Tourism and Culture. In this event, the paper "Sustained Craft in the Cerro of Potosí, Colony-Republic", was presented.

On 10 November I delivered a lecture on "Artisanal Mining: Prehispanic-Charcas-Bolivia and Contamination Produced", which took place at the Maison des Sciences de l'Eua, Université de Montpellier II, France attending an

invitation of the IRD. Another lecture, entitled "The work of children in the mining in Potosí", was delivered as an informal lecture to the pupils of the College Drederic-Bazille de Castelnaule-Lez, Montpellier.

In December, I was invited together with Prof. Josep Mata from Manreza, Spain, by the 20th Century National University, in Llallagua, Potosí, for guest lectures. He spoke on "Geological Mining Heritage" and I focused on the topic "Artisanal Mining in Potosí".

Carlos Serrano, Potosi

Canada

Keynyn Brysse

In November 2011, I completed my postdoctoral position in the Science, Technology, and Environmental Policy Program of the Woodrow Wilson School at Princeton University, though I continue to collaborate with my colleagues there and elsewhere. With support from the US National Science Foundation given to Principal Investigators Naomi Oreskes of the University of California, San Diego, Michael Oppenheimer of Princeton University, and Dale Jamieson of New York University, we are co-authoring a book on 'Assessing Assessments: A Historical and Philosophical Study of Scientific Assessments for Environmental Policy in the Late 20th Century'.

I presented on my ozone depletion and environmental science assessments work at the 2011 International Year of Chemistry (IYC) O_3 Symposium on Stratospheric Ozone and Climate Change, held in Washington, DC November 7-10, 2011.

I also presented my work on the role of vertebrate paleontologists in the mass extinctions debates at two venues: the Biennial Meeting of the International Society for the History, Philosophy, and Social Studies of Biology (ISHPSSB) in Salt Lake City, Utah, July 10-15, 2011, and in an invited guest lecture for the Science, Technology, and Society Program at the University of Alberta in Edmonton, on October 19, 2011.

I am currently working as a Course Instructor and Adjunct Professor in the Science, Technology, and Society Program, Office of Interdisciplinary Studies, at the University of Alberta.

Publications and presentations (2011) are:-

Brysse, K. "What is a phylum? Systematics, evolution, and the Burgess Shale." In: Johnston, P.A. and Johnston K.J. (eds.), 2011. International Conference on the Cambrian Explosion, Proceedings. *Palaeontographica Canadiana* No. 31: 19-38.

Brysse, K. "Learning to assess ozone depletion." 2011 International Year of Chemistry (IYC) O_3 Symposium on Stratospheric Ozone and Climate Change, Washington, DC. 10 November 2011.

Brysse, K. "Evidence, interpretation, and communication: lessons from the interdisciplinary mass extinction debates." Invited Lecture, Science, Technology, and Society Program, University of Alberta, Edmonton, Alberta. 19 October 2011.

O'Reilly, J., Brysse, K., Oppenheimer, M., and Oreskes, N. "Characterizing uncertainty in expert assessments." *Wiley Interdisciplinary Reviews: Climate Change.* vol. 2 (September/October 2011): 728-743.

Brysse, K. "Lessons from interdisciplinary (non-) communication in the mass extinction debate." Biennial Meeting of the International Society for the History, Philosophy, and Social Studies of Biology (ISHPSSB), University of Utah, Salt Lake City, Utah, USA. 13 July 2011.

Ernst Hamm

In 2011 my INHIGEO related activities have included presenting a paper at the 13th International Congress for Eighteenth Century Studies, which was held at Graz, Austria. My paper, "Picturing, Classifying, Historicizing: Goethe and the Earth," was part of a symposium on the theme "Historicized Nature – 'Naturalized' History." Many thanks to Marianne Klemun and Elmar Schübl for doing a very fine job in organizing this symposium, which included a number of historians of geology. I was also fortunate to attend the INHIGEO 2011 meeting in Toyohashi, where I presented a paper on "Visualizing Concepts in Goethe's Geology." It was a very good meeting and our hosts did a wonderful job of introducing many of us to the geology, history and culture of Japan.

Gerard Middleton

My contributions in 2011 have all been to a local web page. This has provided me with a way to make my work on local building stones (and 19th Century masons) known to the greater Hamilton community. My notes are now in the ROM archives.

Middleton,G.V.,(2011).Hamilton building stone.
http://www.raisethehammer.org/article/1438/hamilton_building_stone
Middleton,G.V.(2011) Hamilton building stone, Part 2. Eramosa dolomite.
http://www.raisethehammer.org/article/1441/hamilton_building_stone_part_2:_eramosa_dolomite
Middleton, G.V. (2011) Hamilton stonemasons and quarry men.
http://www.raisethehammer.org/article/1448/hamilton_stone_masons_and_quarry_men
Middleton, G.V. (2011) Use of fieldstone in southern Ontario buildings.
http://www.raisethehammer.org/article/1491/use_of_fieldstone_in_southern_ontario_buildings
Middleton, G.V. (2011) Imported stone in Hamilton buildings.
http://www.raisethehammer.org/article/1509/imported_stone_in_hamilton_buildings

Randall Miller

The Maritimes Regions of eastern Canada had many public geology activites in 2011 to celebrate the region's fascinating geology. In an area so rich in the early history of geological investigation in North America there is much to explore.

The Joggins Fossil Cliffs, a UNESCO World Heritage Site (http://jogginsfossilcliffs.net/) welcomed home one of the world's most significant fossils in 2011. The fossilized remains of *Hylonomus lyelli*, the earliest occurrence of reptilian life discovered and only found at Joggins, was on exhibit at the Joggins Fossil Centre from April to October. *Hylonomus lyelli* was discovered in a fossilized tree stump at Joggins in 1859 by Pictou-born geologist, Sir John William Dawson. Dawson had been working closely at the time with Sir Charles Lyell, the founder of modern geology, as they had previously discovered fossilized remains of other amphibious tetrapods (four-legged creatures) in the upright fossilized trees at Joggins. Cambridge University vertebrate palaeontologist Dr. Jenny Clack gave a special presentation about the significance of this rare fossil.

The Nova Scotia Museum of Natural History hosted the world's most famous dinosaur, with an exhibit on 'A *T. rex* Name Sue'. It was the first Canadian museum to host the exhibition which showcases the most complete *Tyrannosaurus rex* skeleton ever discovered(http://museum.gov.ns.ca/mnhnew/en/home/default.aspx)

The New Brunswick Museum's (www.nbm-mnb.ca) story and walking tour about building stones in Saint John, New Brunswick (titled 'Rebuilt in Stone') received a 2011 Citation for Excellence in Heritage Preservation, from the City of Saint John. The museum's Curator of Geology and Palaeontology was awarded the 2011 E.R. Ward Neale Medal from the Geological Association of Canada. The award recognizes outstanding efforts to communicate and explain geoscience to the public. Next year (2012) marks the 150th Anniversary of the foundation of the Natural History Society of New Brunswick (1862–1932). The Society was a leading scientific organization in eastern Canada that produced significant geological discoveries. The Society was founded on the work of young geologists who had formed the Steinhammer Club in 1857. Sir John William Dawson (1820–1899) was so impressed with their geological work, especially Charles Frederic Hartt (1840–1878) and George Frederic Matthew (1837–1923), that he used their studies concerning Cambrian trilobites and the geology and palaeontology of the Pennsylvanian 'Fern Ledges' in the second edition of *Acadian Geology*.

Stonehammer Geopark (www.stonehammergeopark.com), North America's first member of the Global Geoparks Network, received the Deloitte Innovator of the Year Award from the Tourism Industry Association of Canada in November 2011. The geopark has hired an interpreter for the 2012 tourist season to develop programs with experience providers and for the school curriculum. EARTH Magazine published a story about the geopark in the June issue and an article is expected in a 2012 issue of Geological Magazine.

The renamed Department of Earth Sciences at the University of New Brunswick opened the Quartermain Centre in October 2011 including an exhibit space for earth sciences outreach at UNB. This new facility was made possible by a generous donation from UNB Geology alumnist Bob Quartermain, former President and Chief Executive Officer of Silver Standard Resources. Information about the Quartermain Centre can be found on the department's web site: http://www.unb.ca/fredericton/science/geology/quartermain.php.

Publications concerning Geological Heritage:

Bremner, G., Fullerton, J., Miller, R.F. and Pearce, J. 2011. North America's First Geopark – Educating through marketing and experience development, p. 36. In: Rangnes, K. (ed.) *Proceedings of the 10th European Geoparks Conference. European Geoparks Network, Porsgrunn, Norway* 140 p.

Buhay, D.N., Best, L.A. and Miller, R.F. 2011. Stonehammer Geopark: Evolving Strategies for Communicating the Message, p. 133. In: Rangnes, K. (ed.) *Proceedings of the 10th European Geoparks Conference. European Geoparks Network, Porsgrunn, Norway* 140 p.

Grey, M. and Finkel, Z.V. 2011. The Joggins Fossil Cliffs UNESCO World Heritage site: a review of recent research. *Atlantic Geology* 47: 185 – 200.

Grey, M. and Skilliter, D. 2011. Collections Management at the Joggins Fossil Cliffs UNESCO World Heritage Site: A New Model? *The Geological Curator* 9: 273-278.

Grey, M., Pufahl, P.K. and Aziz, A.A. 2011. Using Multiple Environmental Proxies to Determine Degree of Marine Influence and Paleogeographical Position of the Joggins Fossil Cliffs UNESCO World Heritage Site. *Palaios* 26: 256-263.

Miller, R.F. 2011. Stonehammer Geopark, Canada. A Billion Years of Stories. *EARTH Magazine*, pp. 44-51, June issue.

Nowlan, G.S. and Miller, R.F. 2011. Global Geoparks: A New Reality in Canada. *Program and Abstracts, Joint Annual Meeting of the Geological Association of Canada, the Mineralogical Association of Canada, the Society of Economic Geologists and the Society for Geology Applied to Mineral Deposits*, May 25-27, Ottawa.

David Spalding

I have continued as a board member of the History of Earth Sciences Society and an editorial board member for Earth Sciences History. My review of: Brinkman, Paul D. "The Second Jurassic Dinosaur Rush. Museums and Paleontology at the Turn of the Twentieth Century" is in press, and others are in preparation.

I also continue my role as literary executor for the late William Sarjeant. My revision of his paper "The First Discoveries" is still in press for "The Complete Dinosaur" (University of Indiana Press), with currently projected publication date in June 2012.

A further tribute to Bill will be in the centennial edition of Arthur Conan Doyle's "The Lost World" currently in press by John Lavas in New Zealand. My paper (one of several by various authors forming a new and extensive introduction) is entitled "Before the Lost World: Prehistoric Life in Science and Fiction to 1912." It proved very interesting to write partly because of the large amount of previously unavailable older material now available on the web, and some new insights into Doyle's possible involvement in the ever-fascinating Piltdown affair. The copiously illustrated volume will be out before the end of the year, and copies may be ordered in advance from its editor/publisher j.lavas@auckland.ac.nz.

There has been no progress with republication of Sarjeant's ten volume bibliography Geologists and the History of Geology. However, I am monitoring the increasing availability of electronic versions of books and of devices to read them on, in the hope that a means may eventually be found for republication.

Darren H. Tanke

Another busy year for me. I continued doing research and writing projects on some of the lesser known persons involved in past vertebrate paleontological activities in the province of Alberta. Some of these people are still with us, though getting on in years, so I am proactively interviewing them and getting their stories and histories now. Since last reporting, the article on the first ever helicopter lift of a plaster-jacketed dinosaur skeleton from the field (in Alberta, Canada; September, 1967) was published. Originally cited as "in press" in the last INHIGEO annual report, it is now finally published (Tanke and Walker, 2011).

At the 15th annual meeting of the Alberta Palaeontological Society in Calgary, I gave an oral presentation on the late Hope Johnson (1916-2010) an important self-trained amateur fossil collector and scientific illustrator of mostly Late Cretaceous vertebrate fossils in Alberta (Tanke, 2011a). A larger biography on her, by myself, is in the works and nears completion.

Probably the most significant Earth Science history work I have done in the past year is the recently resurrected project to relocate old dinosaur and other fossil quarries in the Drumheller Valley corridor. This length of fossil-rich Late Cretaceous badlands stretches many kilometres from East Coulee, AB upstream to the Content Bridge, well over 200 square kilometres of badlands terrain. Dinosaurs and other significant finds have been collected there from 1884 to the present. Many of these sites were excavated between 1884 and 1956 and most only have poor locality data, some none at all. Dr. Loris S. Russell (1904-1998) spearheaded quarry relocation efforts for several years in the late 1980s with about 20 old dinosaur quarry sites relocated (some with my assistance), but the project was not continued. Relocating these sites is important for now developing research on dinosaur biostratigraphy and evolution. A local man, with an interest in the relocation of old fossil sites, has volunteered his time to try and find them, once I share with him site photographs and rough locality information gleaned from fieldnotes and old maps. He was able to relocate an AMNH site from 1910 that yielded the skeleton of the armoured dinosaur *Ankylosaurus*. Another old fossil site was located, but its identity remains uncertain. These sites will be mapped with very accurate hand-held GPS units which also provide excellent stratigraphic information.

In our province there is the Municipal Heritage Partnership Program funded by the provincial government to preserve Heritage properties (buildings, bridges, statues) in Alberta. I joined the group in Drumheller and nominated the home of Harold D. R. Lowe (1886-1952) whose former residence is now a small restaurant in Drumheller. Lowe was a field assistant to the Geological Survey of Canada's Charles M. Sternberg most years from 1925-1937. Lowe had the horned dinosaur *Monoclonius lowei* named after him by Sternberg. Lowe was also involved in the first and ultimately failed efforts to build a paleontology museum in Drumheller, a valid project doomed by the Great Depression and WWII. Whether or not Lowe's former home will get special funding for preservation is uncertain at time of writing. It did meet the requirements, but just barely, so made it onto a list of potential candidates. I also wrote a short article on Lowe for the local newspaper (Tanke, 2011b), largely a rewritten and shortened version of Tanke (2008).

A project I am working on at the Royal Tyrrell Museum about 1 day per week is an historical census of all major vertebrate fossils collected along the Red Deer River corridor from 1884-present. This work involves much historical research, sleuthing, and compiling.

A random and unsolicited email to the Royal Tyrrell Museum from Alaska in the summer of 2011 resulted in me making contact with the grandson of Robert C. Reid, who worked with Barnum Brown of the AMNH in Alberta as a field cook (1912); field cook/field assistant (1913); and field assistant (1914). The grandson and I are now writing Reid's biography as part of my "Remember Me……" series on lesser known "blue collar" folk involved in the early history of vertebrate paleontology work in Alberta.

A posting by me to a Johnson family genealogy website in 2007 resulted in a reply in mid-March 2012 of a relative of Albert F. Johnson (1875-1956). For a short time, Johnson lived near today's Dinosaur Provincial Park, Alberta and worked with independent fossil collector William E. Cutler and Barnum Brown of the AMNH collecting

dinosaurs and other vertebrates in Alberta, prior to and early into World War I (1913-1915). He may have temporarily moved to New York City over one winter during this time to prepare fossils at the AMNH. In 1916 he worked with Brown in northern Montana. He later joined the Roy Chapman Andrews-led AMNH expeditions to Mongolia; in 1923 and was involved in the discovery of dinosaur eggs and nests there. He excavated a number of important mammal and dinosaur specimens that summer- the ornithopod dinosaur *Bactrosaurus johnsoni* was named in his honor. I have just begun writing his biography as part of my "Remember Me……" series; Clive Coy of the University of Alberta (Edmonton), a former Royal Tyrrell Museum technician and AMNH Central Asiatic Expeditions expert is also providing information. Johnson is a mysterious character, and is sometimes confused with another "Albert Johnson", also known as the Rat River "Mad Trapper". That Albert Johnson (of still unconfirmed true identity) shot and killed a Royal Canadian Mounted Police officer and wounded several others during a now famous manhunt for him in the Yukon, Canada in 1932. He was eventually shot and killed but he remains a cryptic and legendary character.

In 1992, a partially excavated dinosaur quarry was located in Dinosaur Provincial Park, Alberta. It was excavated by persons and when unknown. It was documented in 1992 on air photographs and maps and largely forgotten about. In 2011, material like bits of newspaper allowed us to determine that the site was likely worked from 1920, excavated by George F. Sternberg and was the type locality of the hadrosaur *Corythosaurus excavatus*. Though now synonymized with *C. casuarius*, it is still an important discovery and one less lost dinosaur quarry in the Park that needs resolving (Tanke and Russell, 2012; see also Switek, 2012). Activities related to that work brought the mystery quarry project and old items related to this and past research to the attention of archaeologists and now the human artifacts recovered from these sites will be properly conserved and catalogued in a museum yet undetermined.

Historical data and site relocation efforts were conducted to try and relocate a bonebed which yielded a new Late Cretaceous horned dinosaur: *Spinops sternbergorum* (Farke *et al*., 2011). The *Spinops* site has not been found but work to locate it is ongoing. One site that was found during the *Spinops* quarry search was a Royal Ontario Museum (ROM) site from 1934. Color comics among newspaper fragments included a Mickey Mouse cartoon. A Scandinavian Mickey Mouse historian was quickly found via the Internet and he was able to confirm the exact date the comic was issued. Unfortunately we later learned from ROM records that the turtle specimen itself had been discarded!

A digital scan of an old map which appears to show the location of J.B. Tyrrell's 1884 *Albertosaurus* skull locality near Drumheller, Alberta was seen last year for the first time, but attempts to revisit the site will have to wait until summer 2012.

Work continues on a paper on the history of Mesozoic marine reptile discoveries in Alberta. Alberta was never known for its marine reptile remains, but that is steadily changing. A good number of specimens have been found in the past decade (mostly due to heavy industry activities at oil sands and "ammolite" mines) which will be of interest to future Earth Science historians. Ammolite is crushed, slightly metamorphosed and colourful ammonite shell which is cut, processed and polished into jewellery.

In late September 2011, the Royal Tyrrell Museum hosted the International Hadrosaur Symposium. There I gave an oral presentation on my successful efforts to relocate the Royal Ontario Museum's first dinosaur skeleton- the type specimen of the hadrosaur *Gryposaurus incurvimanus* (Tanke and Evans, 2011).

In mid-April 2012, I gave an historical talk on the use of helicopters to collect dinosaur specimens in western Canada at a fossil preparator's conference in Seattle, Washington (Tanke, 2012).

A reminder that PDF copies of all my papers (including Earth Science History-related titles) can be found here: http://tyrrellmuseum.academia.edu/DarrenTanke/Papers

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Darren Tanke
Drumheller, Alberta, Canada

China

Academic activities

1) The re-election of the History of Geology (HG) Commission of the Geological Survey of China (GSC) was completed in 2011. Late in the 2010 the 6th Commission of HG had concluded its term of office, and the 7th Commission was then elected and approved by the GSC. The constitution of the 7th Commission includes: Director of the Commission Professor Academician Zhai Yusheng , Deputy Director Yu Guang and 13 other professors, Secretary in Chief: Chen Baoguo and Vice Secretary Ai Suzhen and 3 others.

2) "The Special Symposium on the Development History of Geological Science in China" was held in Beijing. 23 participants attended the meeting. The symposium focused on several major problems on the development history of geological science in China, such as, the evaluation of major historical events and distinguished geologists and the segmentation of the history of geological science in China.

3) "The 23th annual academic meeting of the HG Commission of GSC" was held in October 2011 in Beijing. The major topics of the meeting were:

- The centennial disciplinal history of geological science in China;
- The centennial history of academic thinking of geological science in China;
- The centennial history of regional geological surveys in China.

Other topics include: the history of geological education, the history of important persons in geological circles in China. 87 participants attended the annual meeting. Some 36 articles have been received, 32 of them were presented at the meeting.

Keynote speakers of the symposium were as follow:

- Research Fellow Pu Qingyu: "The formation and development of geotectonic schools in China"
- Professor Cai Keqing: "A thinking and research on the disciplines of geological science in China"
- Professor Academician ZhaiYusheng: "A dialectic view of the researches on the geology of mineral deposits".

In addition, Research Fellow Chen Baoguo gave a talk on: "A study on the history of regional geological survey in China and its economical, social-culture significance".

Professor Cai Keqing, Deputy Director of the Commission, in his summary remarked that this annual meeting commemorated the 90th anniversary of GSC in 2012 and the centennial development of Chinese geological undertakings and it had achieved good results. First, the wide coverage of papers including a number of important papers dealing with the history of disciplines in geological science, history of geological undertakings, and the history of important geologists. Second, the in-depth nature of most studies presented at the meeting, as viewed from a whole-sided development, had probed into the depth of objectiveness, comprehensiveness and dialectic points of view, which reflects on the idea of "learning from history, carrying forward the subject and forging ahead into the future". It was also encouraging that so many young scientists actively attended the meeting.

Scientific research work

1) In 2011, the HG Commission, joint with the program of "Collecting information on the academic achievements of senior scientists" from the China Science and Technology Association, collected and organized information on late director of the HG Commission, Professor Wang Hongzhen. Based on this, a chronological table of Wang Hongzhen was compiled and the related materials were organized.

2) Research on the history of scientific exploration in Qinghai-Tibet plateau was undertaken. In the year 2010, the HG Commission together with the Institute of History of Geology of China University of Geosciences had undertaken a research project on the "history of scientific exploration in Qinghai- Tibet". In this year under the support of relevant institutions we have on 2 occasions held a symposium "On the history of scientific exploration in Qinghai-Tibet". More than 20 papers were received. "The outline of the history of scientific exploration in Qinghai –Tibet plateau" together with its "chronology" had been compiled.

3) On the basis of 2 years research work, "The chronicle of events in the history of regional Geological Survey in China (1829-2005)" was published in October 2011. This is the first book which studies and organizes the historical data on the history of regional geological surveys in China.

4) Early in 2011 the HG Commission and the Institute of History of Geology of China University of Geosciences arranged a special program on "The study on the history of development of geological sciences in China" supported by the Geological Survey of China. At present this research on the segmentation of the history and data collections has been completed.

Publications

Chen Baoguo *et al.*:*"The chronicle of events in the history of regional geological survey in China (1829-2005)"* (Geological Publishing House, Beijing, October 2011) This book deals with and records the development and evolution of the regional geological survey since the mid of 19th century in China, including the geological investigations made by foreign geologists during 1829-1912 and the regional geological survey organized by the late Central Geological Survey of China

Wu Fengming:*"Selected works of Wu Fengming Volume 2"* (Petroleum Industry Publishing House, Beijing June, 2011), The book includes 22 papers published in various journals and newspapers in China during the past 5 years including articles on history of geology, philosophy in geological science and others.

Chen Baoguo, Beijing

Costa Rica

There are two Costa Rican members in INHIGEO (Guillermo E. Alvarado and Gerardo J. Soto). Soto has served as INHIGEO Vice-President for Latin America since 2004 and will finish his second term during the forthcoming 34th IGC in Brisbane. His duties have included frequent communication with regional members of INHIGEO, the promotion for new INHIGEO members in the region (especially those countries not currently represented in INHIGEO), and cooperation with the Board in its business, which has been very active throughout 2011 (see S-G report).

Soto could not attend the INHIGEO meeting in Toyohashi (Japan) in August ("Visual Images and Geological Concepts") because of funding problems, but presented an abstract on "The Heredia meteorite (Costa Rica, 1857), the work on meteorites by Ignacy Domeyko and 19th century meteoritics in Spanish Latin America". On the other hand, a paper with his authorship from the previous INHIGEO meeting in Spain 2010, on metal mining in Central America, was published in 2011.

Soto was invited to the *Segundo Simposio de Historia de la Geología* [Second Symposium on the History of Geology], organized by the Geological Society of Chile on 17 August in Santiago, but could also not attend. A short contribution entitled "*Una conexión geocientífica Chile - Costa Rica: el meteorito Heredia (1857) y su análisis por Ignacy Domeyko*" [A geoscientific conection Chile-Costa Rica: the Heredia meteorite (1857) and its analysis by Ignacy Domeyko], was presented on his behalf by Prof. Francisco Hervé during the meeting.

As a result of the "*Simposio Geonaturalia Geografía e Historia Natural hacia una Historia Comparada, Cuarto Encuentro Internacional*" [Symposium Geonaturalia Geography and Natural History to a comparative history, Fourth International Meeting], held in Buenos Aires, Argentina, in July 2010, a fourth book in the *Geonaturalia* series appeared in 2011, including three papers related to the history of geosciences in Central America, authored by Costa Rican geologists Soto and Giovanni Peraldo, and historians Flora Solano, Adolfo Quesada and Ronald Díaz.

Soto also published other papers on geological maps in Central America during the 19th century, as well as a short divulgation article in the scientific supplement of the University of Costa Rica newspaper, on the history of metal mining in Central America.

During the year, two books authored by INHIGEO member Guillermo E. Alvarado, appeared as reimpressions of previous editions. *Los volcanes de Costa Rica: Geología, historia, riqueza natural y su gente* and *Costa Rica, Land of Volcanoes*. Both books include a substantial chapter on the history of volcanology in Costa Rica.

Lucas and co-workers (including Alvarado) have also published a paper on the discovery of the first vertebrate fossils in Central America in 1858. Despite being discussed previously by others, the paper provide an interesting discussion on the stratigraphy of the remains and the history involved, as well as its importance for the subsequent discovery of mastodons and other vertebrates in Central America.

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Gerardo J. Soto, San José

France

The French Committee on the History of Geology 2011 was 35 years old in 2011. It was a normal year during which we convened three times for the hearing of ten contributors to our annual volume of « Travaux », that we are now preparing. Additionally, Jean Gaudant prepared a short written notice remembering the existence of an ephemeral society called "Society of the Geological Map of France" (1869-1872).

Contributions were as follows:

- Medioni, R., 'L'œuvre des géologues français au Maroc'.
- Hanot, F., 'Quatre-vingts ans d'exploration pétrolière dans le bassin de Paris'.
- Grandchamp, P., 'Une figure méconnue de la géologie alpine : Gustave Maillard (1860-1891)'.
- Pelucchi, S., 'Lavoisier, sa collection de minéraux et fossiles et l'Atlas minéralogique de la France'.
- Lallemant, S., 'La formulation initiale de la tectonique des plaques (1967-1969) à la lumière de quarante ans de recherches en sciences de la Terre'.
- Godard, G., 'Les travaux géologiques de la première Accademia dei Lincei (1603-1651)'.
- Mergoil, J. & J., 'L'abbé Gui de Mortessagnes : des *Lettres sur les volcans du Velay et du Vivarais* (1776) à celle sur les galets de basalte dans la vallée du Rhône (1782)'.
- Wyns, R. : 'Altération et pédogenèse : origine et conséquences d'une ambiguïté'.
- Lorenz, J. et Ricour, J., La naissance de la Maison de la Géologie.
- Le Vigouroux, P., Les conditions de la réception en France de la théorie de Wegener sur la dérive des continents.
- Gaudant, J., La Société de la Carte géologique de France (1869-1872) : une éphémère réaction à la création du Service de la Carte géologique de la France.

It should also be noticed that the first volume of a new series of books was published in February, 2011 by the Presses des Mines. It was written by Jacques Debelmas (formerly Professor in the University of Grenoble). It is entitled: *L'Exploration géologique des Alpes franco-italiennes* (cf. analysis by Giambattista Vai). The manuscript of the second

volume of this series, on the history of geological researches in Provence (South France) has just been completed and is expected to be printed in 2012.

Additional contributions from 2006 and 2007 are expected to be soon available on line from to the following address: www.annales.org/archives/cofrhigeo/travaux.html .

Jean Gaudant, Paris

Germany

Meetings and presentations

The German working group on the "History of Earth Sciences" held its annual meeting on 23 September at Nuernberg on "Images and Self-images of (German) geologists in 20th century". The workshop has been organized by INHIGEO-member Gottfried Hofbauer (Erlangen) in cooperation with the Nuernberg Natural History Society (founded in 1801, i.e. one of Germany's oldest Natural History Societies). Papers have been presented by Gottfried Hofbauer, Martina Koelbl-Ebert (Eichstaett), Peter Schimkat (Kassel), and Bernhard Fritscher (Munich); further presentations were given by Angela Kiessling (Freiberg), Sabine Stadler (Vienna) and Juergen Strehlau (Kiel). An opening presentation by Gottfried Hofbauer on the history of geology in Franconia and an excursion to various points of geological and historical interest (such as the former university of Altdorf, and the "cave of Rabenstein", described in William Buckland's "*Reliquiae diluvianae*) completed the well-organized meeting.

INHIGEO-member Cornelia Luedecke organized a workshop on the occasion of the centennial of the expedition of Ernst II., Duke of Saxe-Altenburg to Spitsbergen, on "German research in Spitsbergen until 1914", held on September 24–25 at the Natural History Museum *Mauritianum* at Altenburg (Germany). A further conference that she organised was the *7th SCAR (Scientific Committee on Antarctic Research) History Workshop* on July 26-29 at the Stellenbosch Institute for Advanced Study (Stellenbosch, South Africa) on "Antarctic history: Probing the unknown".

Several German INHIGEO-members presented papers at national and international conferences. Martina Koelbl-Ebert participated in the 2011 INHIGEO-meeting in Japan with a paper on "Sketching rocks and landscape: Drawing as a female accomplishment in the service of geology". Bernhard Fritscher presented papers on "Scientific practice as philosophical methodology: William Whewell's 'Principles of geology'" at the annual meeting of the *German History of Science Society* (Vienna, May 19-21), and on "Vitalizing the earth: 'Physiological time' and the historicization of nature in late 18th century earth sciences" at the *13th International Congress on the Study of the 18th Century* (Graz, July 25-29). Cornelia Luedecke's various presentations include papers on "Traditions in German Arctic Research" (International Conference on Exploring Ice and Snow in the Cold War, Rachel Carson Center, Munich, January 28), "Investigation of the unknown: The flight programme of the German *Schwabenland* expedition 1938/39" (7th SCAR History Workshop at Stellenbosch, mentioned above), and two papers at the conference "German research in Spitsbergen" at the Natural History Museum *Mauritianum* at Altenburg (also mentioned above) on "W. Filchner's Polar expedition 1910-1912" and on the "Zeppelin-Research-Expedition to Spitsbergen, 1910). Further presentations she gave at the University of Marburg on the occasion of the 100th anniversary of Wegener's theory of continental drift (on "Alfred Wegener's meteorological studies in Greenland", February 22), and at the Volkswagenstiftung, Hannover, on "Polar research at the beginning of 20th century" (October 12).

Publications

In 2011, Martin Guntau and others edited the second volume of their *History of Earth Sciences in the German Democratic Republic* (Schriftenreihe für Geowissenschaften, 18), and Klaus Thalheim presented a paper on "The mineralogical collections at Dresden: One of the oldest geoscientific collections in the world" (in: *Senckenberg: Natur, Forschung, Museum*, 141, pp. 122-129). Cornelia Luedecke published her biography of Roald Amundsen (Freiburg: Herder Publishers), and papers on "Parallel Precedents for the Antarctic Treaty" (in: P.A. Berkman et al., eds., *Science Diplomacy: Antarctica, Science, and the Governance of International Spaces*, Washington DC: Smithsonian Institution, pp. 253-263), and on "Neumayer's impact on meteorology in Germany" (in: *Transactions of the Royal Society of Victoria* 123, pp. 35-47). Furthermore, she co-authored a paper "From IPY-1 to IPY 2007-2008: Making Global Science" (in: Igor Krupnik, ed., *IPY 2007-2008 Report* from the Joint Committee, Washington DC, pp. 253-263). Finally, Bernhard Fritscher has written a paper on the "harmonic system of the world" of the German crystallographer Victor Goldschmidt, published in a volume on Wilhelm Ostwald's *Annalen der Naturphilosophie* (ed. by Pirmin Stekeler-Weithofer; Abhandlungen der Sächsischen Akademie der Wissenschaften zu Leipzig. Philologisch-historische Klasse, 82, No. 1, pp. 167-186). Already published in 2010 (but not yet mentioned) are the proceedings of the 10th International Symposium on Cultural Heritage of Geoscientific Libraries which had been held at Freiberg/Saxony in 2009, that is: P. Hoheisel et al., eds., *Bibliotheken - Archive - Museen - Sammlungen. Beiträge des 10. Internationalen Symposiums Kulturelles Erbe in Geo- und Montanwissenschaften*. Veröffentlichungen des Sächsischen Staatsarchivs/Publications of the Saxon States Archive, series A, vol. 14).

Further Activities

The Dresden Museum for Mineralogy and Geology contributed to an exhibition of the Technical University Dresden on the interaction of science and the arts in constructing "world images" and "world experiences" (entitled *terra incognita: World Images – World Experiences*) by a presentation of a famous Dresden geological site (*Plauenscher Grund*); see the paper of K. Thalheim and M. Wilmsen in S. Zimmermann-Törne (ed.), *terra incognita. Weltbilder - Welterfahrungen*. Catalogue of an exhibition at the Technical University Dresden, University collections in arts and technics, Dresden.

At the Dresden Museum for Mineralogy and Geology also a very valuable dissertation has just recently been finished by Mareen Czekalla on the work of the mineral collector Richard Baldauf (1848-1931); the book is already available online (including an English summary). The Dresden museum will continue its various activities in 2012, amongst others; by hosting the *7th International Conference on Mineralogy and Museums* (see www.mm7-dresden-2012.de).

Finally, some university classes were given by German INHIGEO-members: by Cornelia Luedeke at the University of Hamburg on "From Amundsen to Zeppelin: Important persons and their achievements in earth sciences", and on "Climate, weather and prediction: Milestones in the history of meteorology", and by Bernhard Fritscher at the University of Munich on "Spacing earth history: Geological maps of 19th century", and on "G.W.F. Hegel's physiology of the earth".

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

Bernhard Fritscher, Munich, and Martina Koelbl-Ebert, Eichstaett

Ireland

Patrick Wyse Jackson is continuing to research the history of the Irish Geological Association and at a meeting in September 2011 outlined in a lecture his progress up to that date: *Dusting off the Archives: 50 years of the Irish Geological Association*. Trinity College, Dublin. To mark another quinquagenary **Gordon Herries Davies** published an account of the discovery, and subsequent research, of a unique outlier of Cretaceous chalk in southern Ireland.

Recent publications

M. DeArce, N.T. Monaghan and P.N. Wyse Jackson (2011) 'The uneasy correspondence between Thomas Henry Huxley and Edward Perceval Wright on fossil vertebrates found in Jarrow Colliery, Clogh, Co. Kilkenny (1865-1867)', *Notes and Records of the Royal Society,* 65 (2011), 253–271.

G.L. Herries Davies, 'The chalk outlier at Ballydeenlea, Co. Kerry; a story of discovery', *Irish Journal of Earth Sciences,* 29 (2011), 27–39.

P.N. Wyse Jackson, 'Irish 'Rock Stars': William Acheson Traill (1844–1933)', *Earth Science Ireland,* 9 (2011), 13.

P.N. Wyse Jackson, 'A transatlantic bryozoological spat: Edward Oscar Ulrich (1857–1944) versus George Robert Vine (1825–1893)' *In* P.N. Wyse Jackson and M.E. Spencer Jones (eds), *Annals of Bryozoology 3: aspects of the history of research on bryozoans*, Dublin, International Bryozoology Association, 2011, 219–225.

P.N. Wyse Jackson, 'Irish 'Rock Stars': John Semple Jackson (1920–1991)', *Earth Science Ireland,* 10 (2011), 18.

P.N. Wyse Jackson, 'History of Ichnology: John Joly (1857–1933) on *Oldhamia*: Poetic and Scientific Observations', *Ichnos,* 18 (2011), 209–212.

P.N. Wyse Jackson, M. DeArce and N.T. Monaghan, 'A letter from William Bookey Brownrigg to Thomas Henry Huxley, dated 29 November 1865, authorising him to describe his fossil vertebrates from Jarrow Colliery, Co. Kilkenny and giving details of his find', *Irish Journal of Earth Sciences,* 29 (2011), 19–22.

P.N. Wyse Jackson and M.E. Spencer Jones (eds), *Annals of Bryozoology 3: aspects of the history of research on bryozoans*. Dublin, International Bryozoology Association, 2011, viii+226pp.

Patrick Wyse Jackson, Dublin

Italy

The activities of the Italian members included several participations in international symposia and national meetings, involvement in research projects and organization of conferences or exhibitions, as well as teaching in the field of the history of the Earth sciences.

Andrea Candela started in May a two-year project as research fellow at the University of Insubria on the topic "Historical routes and places of the Earth Sciences in Lombardy: From historical-scientific study to cultural tourism". He has also worked on the edition of a book which contains the results of the two-year national project *Geological travels in the mountain areas of Northern Italy: The fieldwork in the stratigraphic localities of historic importance during the 18th century*, coordinated by Ezio Vaccari at the University of Insubria in 2009-10. The volume, with the title *La pratica del viaggio naturalistico in Italia. Un'antologia di scritti settecenteschi* [*The practice of the naturalistic travel in Italy: An anthology of Eighteenth-century writings*], will be published in 2012 by the Centro Insubrico Cattaneo e Preti of the University of Insubria. This volume includes some significant writings by naturalists and scientific travellers in Italy during the 18th century, such as Antonio Vallisneri (1661-1730), Lazzaro Spallanzani (1729-1799), Paolo Sangiorgio (1748-1816), Paolo Spadoni (1764-1826) and Carlo Amoretti (1741-1816), with introductions and notes by Ezio Vaccari, Andrea Candela, Francesco Luzzini, Francesco Gerali and Libera Arena.

Luca Ciancio (University of Verona) continued his researches on the 18th century history of geology in the Venetian region and published a facsimile edition of the essay by Alberto Fortis (1741-1803) on the volcanic-marine valley of Roncà, near Verona (Venice, 1778).

Pietro Corsi (University of Oxford) continued his research into 19th century Italian geology, with particular attention on the history of geological institutions and national projects, such as the Italian Geological Survey and the geological map of Italy. Corsi was also nominated a member of the Editorial Board of HOPOS, The Journal of the International Society for the History of Philosophy of Science.

Francesco Gerali (Universidad Nacional Autonoma de Mexico - UNAM) from January to March 2011 was Visiting Fellow (Andrew Mellon Travel Grant Program) at the History of Science Collection of Oklahoma University, Norman, USA, where he had the possibility to enlarge his studies on oil geology and oil technology during the 19th century. During his fellowship Gerali also presented at a departmental colloquium the first outcomes of his research. Back in Italy in April, Gerali started to revise for the publication the manuscript of his PhD thesis, approved in 2009. Currently the manuscript is under review by the editor, the Geological Museum of Bologna University. In June 2011 Gerali started a Post Doctoral Fellowship at the National Autonomous University of Mexico, under the supervision of Prof. Luz Fernanda Azuela (coordinator for the INHIGEO Mexico Commission). At UNAM Gerali is running the research project *Techniques, men and science in the development of the oil industry in the 19th and early 20th centuries. A comparative study on Mexico and the countries involved in an activity that has influenced the economy and collective culture*. The aim of this investigation is to analyze the path followed by the early Mexican oil industry and contextualize its development into the international oil economy. During the first semester at UNAM Gerali presented papers to the following international symposia: in August at the 38th ICOHTEC meeting in Glasgow (Scotland), with the paper: *Oil and illumination. The satisfaction of a need at the base of the development of an industry*; in September at the 11th ERBE Symposium in Mexico City, with the paper *Oil mining in Romania. Analysis of the "Report on the petroleum districts in Wallachia" written by Giovanni Capellini in 1864*; in November at the 54th SHOT Meeting in Cleveland, USA, with the paper: *Before and after the beginning of oil industry: petroleum in the technical-scientific literature of 19th century*. In December, Gerali started to collaborate with ICON, the journal of the International Committee for the history of technology, as associate book reviewer. At the end of December Gerali was entrusted with the project *PhD. Corner* by ICOHTEC Officers. The work aims to built an on line information platform, updated with the announcement of travel grants and scholarships offered to promote the international mobility of young scholars (http://www.icohtec.org/resources-phd-corner.html). During 2011 Francesco Gerali became member of the International Committee for the History of Technology (ICOHTEC), the Society for the History of Technology (SHOT), Historiadores de la Ciencias y la Humanidades (HSH), and the Petroleum History Institute (PHI).

Stefano Marabini took part in the INHIGEO meeting in Japan with a poster on "The 1882 Toyokichi's Harada's survey in Italian Alps: a pioneeristic case of Alpine tectonic visualization" (with G.B. Vai) and in September he presented the following papers at the Geoitalia 2011 Forum of Earth Sciences in Turin (Italy): "The Stoppani and Taramelli's project for a post-unitarian geological cartography in the eastern Alps" (with Stefano Magnani and Elena Zanoni) and "Importance of the post-unitary geologic cartography in Calabria (1861-1889)" (with Fabio Procopio).

Claudia Principe (Istituto di Geoscienze e Georisorse – CNR, Pisa) continued her researches in the history of volcanology and geo-archaeology. In December she took part in the conference "1861. Il Vesuvio celebra l'unità d'Italia" in Torre del Greco (Italy), on the eruption of Vesuvius in 1861, where she presented a paper with Marina Bisson on the new GIS map based on the medieval lavas of Ercolano and Torre del Greco.

Ezio Vaccari (University of Insubria, Varese) continued his research on the history of stratigraphy and mountains in 18th-19th century Italy. In May he was invited to give a paper on the translations of the *Briefe aus Wälschland* by Johann Jakob Ferber (1743-1790) in the international meeting on "History, Science and art: translation and transfer in the 18th century among Italy, France and Germany" at the Academy of Agiati of Rovereto (Italy). During the summer Vaccari attended the INHIGEO Meeting in Japan, presenting the paper "Images of mountains in the 18th century: geology in the landscape and historical insight" and the 13th International Congress of 18th Century Studies in Graz (Austria) with the paper "The concept of geological epoch in the late 18th century: Giovanni Arduino and Georges–Louis Leclerc Count de Buffon" within the session "Historicized nature". In September he gave a talk on "Boscovich and the Earth Sciences" at the International Conference on the 3rd centenary of the birth of R.G. Boscovich (1711-1787) which was held in the University of Pavia (Italy); and in the same month he took part to the Geoitalia 2011 Forum of Earth Sciences in Turin (Italy), where he presented three papers on the following topics: "The history of geology as communicative tool for scientific education in the Earth sciences", "Judging by colour in the early history of stratigraphy" and "Geology, cartography and knowledge of the territory in the travels of Alberto Ferrero Della Marmora (1789-1863)".Vaccari also continued to teach history of geological sciences within some of his courses, in particular "History and resources of the mountains" at the University of Insubria.

Gian Battista Vai (University of Bologna) continued his research activity in history of geology and paleontology as Director of the Museo Geologico Giovanni Capellini in Bologna. In this Museum, Federico Fanti has succeeded in restoring the oldest known marine crocodylian-like reptile preserved in some polished Rosso Ammonitico slabs. More ongoing information is available in the web site www.museocapellini.org. Vai also convened a session on the 'Contribution of Geologists to the Political Unity of Italy in 1861' at the Geoitalia 2011 Forum of Earth Sciences in Turin for the 150 year celebration of the Italian political unity. The proceedings of this session, edited by M. D'Andrea, are available on-line (www.isprambiente.gov.it/site/it-IT/Pubblicazioni/Atti/Documenti/atti_150anni.html).

Publications:

Candela A., *History of uranium and nuclear policy in Italy (1946-1965)*. In: *History of Research in Mineral Resources*, edited by J. E. Ortiz, O. Puche, I. Rábano & L. F. Mazadiego, Cuadernos del Museo Geominero 13, Instituto Geológico y Minero de España, 331-336.

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Cau A., Fanti, F., *The oldest known metriorhynchid crocodylian from the Middle Jurassic of North-eastern Italy:* Neptunidraco ammoniticus *gen. et sp. nov., "*Gondwana Research" 19 (2011), 550–565.

Ciancio, L. (editor), A. Fortis, *Della valle vulcanico-marina di Roncà*, (Venezia, 1778), Soave, 2011.

Corsi, P., *Jean-Baptiste Lamarck. From Myth to History*. In E. Jablonka and S. Gissis (eds.), *Transformations of Lamarckism: From Subtle Fluids to Molecular Biology*, MIT Press, Cambridge, MA, 2011, 12-28

Corsi, P., *The politics of theory in the history of science*. In F. Ardigo, ed. *Histórias de Uma Ciência Regional: Cientistas e suas instituições no Paraná (1940-1960)*, Editora Contexto, São Paulo, 2011, 355-363.

Corsi, P., *Science e Tecniche. Introduzione*, in U. Eco, ed., *Il Medioevo. Castelli, Mercanti, Poeti*, Encyclomedia Publishers, Milan, 2011, 400-403;

Gerali, F., *The investigation of the Italian Naturalists on the origin and the nature of the Hydrocarbons between the eighteenth and nineteenth century*. XI international conference "Current problems on the knowledge on natural history and chemical technology of petroleum". Reactive Editor. Ufa, Russia, 2011, 9–10.

Gerali, F., *The technological development of the modern oil industry in Abruzzo in the second half of nineteenth century. The geological contribution of Giovanni Capellini*. In *History of Research in Mineral Resources*, edited by J. E. Ortiz, O. Puche, I. Rábano & L. F. Mazadiego, Cuadernos del Museo Geominero, N`º 13. Instituto Geológico y Minero de España, Madrid, 2011, 201 – 211

Gerali, F., *Il petrolio in Italia: l'Emilia*. "Energia", 4 (2011), Bologna, 62 – 67.

Gerali, F., Malakhova, I., Vai, G. B. *Giovanni Capellini – Knighted In Russia* (Русский Орден Джованни Капеллини). In History of Earth Sciences, (История наук о Земле), vol 4. Vernadsky State Geological Museum, Moscow, 2011;

Gerali, F., *L'attività scientifica dell'Accademia Lunigianese all'estero. Rendiconto dei simposi INHIGEO di Calgary e Madrid*., Accademia Capellini, La Spezia, Italy (in press).

Gerali, F. *Scientific Maturation And Production Modernization; Notes on the Italian oil industry in the XIX Century*. "Oil Industry History",12, n. 1 (in press).

Vaccari, E., *Travelling with instruments: Italian geologists in the field in the 18th and 19th centuries*, "Centaurus", 53 (2011), n.2, 102-115.

Vaccari, E., *Spirito Benedetto Nicolis di Robilant (1724-1801) and the «theory of mountains and mines»*, *History of Research in Mineral Resources*, edited by J. E. Ortiz, O. Puche, I. Rábano & L. F. Mazadiego, Cuadernos del Museo Geominero 13, Instituto Geológico y Minero de España, 2011, 113-120.

Vaccari, E., *Le scienze della Terra: tradizione scientifica e rinnovamento istituzionale*, in *Storia d'Italia. Annali. Vol. 26: Scienze e cultura dell'Italia unita*, a cura di F. Cassata e C. Pogliano, Torino, Einaudi, 2011, 525-545.

Vai, G.B., *Giovanni Capellini, Michele Gortani, e la valorizzazione vecchia e nuova del patrimonio marsiliano in vista del tricentenario dell'Istituto delle Scienze di Bologna*. "Museologia Scientifica" Memorie, 7/2011, 99–111, (*Musei Scientifici Universitari. Una grande risorsa culturale da valorizzare*. Accademia Nazionale dei Lincei, Roma 6 maggio 2009, a cura di Ernesto Capanna, Giancarlo Malerba, Vincenzo Vomero).

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Ezio Vaccari, Varese

Japan

First of all, we, Japanese INHIGEO members, appreciate very much all members of INHIGEO around the world who gave special regards to us and attended the meeting at Aichi University in Toyohashi on 2-10 August 2011 in spite of the 3/11 disastrous earthquake and nuclear station disorder. Fortunately we organized the conference and excursion, including a travel to Nagoya for accompanying guests, safely with warmest support of the members, being 65 participants at the conference and 33 on the excursion. At the end of the conference, an address of sincere gratitude was expressed by the chairman of the administrative committee Yasumoto SUZUKI. A detailed report was given by the Conference Secretary Michiya INOMATA in our Bulletin No. 37 (November 2011, pp. 40-53, in Japanese and also partly in English). [See also the excellent 'Conference Report' elsewhere in this Newsletter by Michael Johnston.] Photos taken during the events have been cited on the website by Kwang-Nam KIM (http://www.inhigeo-jp.org/). The proceedings of the symposium are being edited now by Hirokazu KATO.

The JAHIGEO (Japanese Association for the History of Geological Sciences) held, as usual, three meetings during 2011. The first was held at Hokutopia, Tokyo, on 25 June; the second at Ibaraki University on 10 September, and the third, serving as the annual meeting, at Hokutopia on 23 December. The main presentations at the first meeting were: Takeshi OZAWA, "Emil von Decken (1837–1897), mining engineering teacher in the Kanazawa Clan" and Kazuhisa GOTO, "The evidence of the 1771 Meiwa tsunami which assailed the Miyako-Yaeyama Islands". The former was a detailed description of the March meeting of Chigaku-shi Kenkyu-kai, mentioned below, while the latter discussed stones carried by the tsunami with the aid of computer simulation. The second meeting formed part of the annual meeting of the Geological Society of Japan and two regional topics were given: Michio TAGIRI, "History of the research on Hitachi metamorphic district and the Cambrian" and Kazuo AMANO, Haruna TAKIMOTO, and Maiko WATAHIKI, "Stratigraphical studies of Ibaraki Prefecture: the Neogene along Tanakura Fault and the Mesozoic of Yamizo Mountain". At the third meeting, two lectures on the geological contributions in the Meiji Era were given: Ikuo HARA, "The study of the Sambagawa Metamorphic Belt by Bunjiro Koto (1856–1935) in the1880s" and Naomoto KOMATSU, "The oldest contour map of petroleum field by Benjamin Smith Lyman (1835–1920) and his pupils".

Three meetings on the history of geosciences (Chigaku-shi Kenkyu-kai) were conducted by younger members of the association at the Waseda Service Garden, Tokyo, on 28 March, 12 June, and 10 October. The March meeting was the first history meeting held after the 3/11 disaster and still in the unstable region of the megalopolis. Toshiaki OSADA spoke on the "Life and work of Thomas Wright Blakiston (1832–1891) as a naturalist" and Takeshi OZAWA about "Careers of o-yatoi German mineralogy teachers, C. Schenk and E. Decken in the early Meiji Era". They shed new light on the introduction of modern sciences into Japan. In June, Tatsuya FUJIOKA considered the issues of "The significance of geoscience history from the viewpoint of education for sustainable development". He maintained the importance of international activities in this arena such as the HFA (Hyogo Framework for Action) based on the ISDR (International Strategy for Disaster Reduction), which has been linked with the UNDESD (United Nations Decade of Education for Sustainable Development: 2005–2014). In October, Naotoshi YAMADA and Michiko YAJIMA spoke on their work of translation as "Some topics about the E. Naumann's 'Nihon sangaku-shi taiyo' translated from 'Skizze der Orographie von Japan' (1893)".

At the 58th annual meeting of the History of Science Society of Japan (HSSJ) held at the University of Tokyo, Komaba, Tokyo, 28-29 May, which celebrated the 70th anniversary of its foundation, many distinguished papers concerning the history of geoscience were read. These are as follows: Satoshi NAKAZAWA, "Visualizing river flow: river maps of Nicolaas Cruquius (1678–1754) and the background of its genesis"; Tomoko FUKUKAWA, "The geography books to which K. Kume referred for editing Bei-o kairan jikki [Descriptions about the journey around America and Europe published in 1878], part 4: the volume on Russia and Scandinavia"; Tomoko TAKAHASHI, "Research of nautical astronomy in the Hydrographic Department"; Toshihiro YAMADA, "Tayama Risaburo (1897–1952)'s southern regional geography"; Kazuo GESI, "On the 'Akashi genjin (Early man of Akashi)': 80 years since its discovery"; Toshiyuki TAJIMA, "SAM [Stellar Astronomy Meeting] and GOPIRA [Group of OPtical and InfraRed Astronomers]: two movements in the observational astrophysics in Japan"; Seiichi TOKUNAGA, "V. I. Vernadskii's researches on the evolution of species and the evolution of the noosphere"; and Hirotaka YAMADA, "History of

Hokkaido Jinzou Sekiyu Co. [Company for the production of synthetic petroleum in Hokkaido 1938–1952] with the Takikawa Plant now an industrial heritage site".

On 22 May, from 14:15 to18:00, at the Makuhari Messe, Chiba, the Japan Geoscience Union (JpGU) provided a session for geoscience studies including history, philosophy and STS of earth and planetary sciences, in which twelve papers were read and two posters presented. Seven papers on history of geoscience were: Masahiro OSAKO, "Early instruments of the Japanese Imperial Land Survey"; Michiko YAJIMA, "Early women earth-scientists in Japan"; Jiro TOMARI, "The histories of Japanese seismology and Mode theory"; Atsushi MIYASHITA, Mamoru HAYASHI, and Mineo KUMAZAWA, "Akiho Miyashiro and his long term blueprint for promoting geological sciences"; Toshihiro YAMADA, "How to describe the history of geoscience; MIYASHIRO Akiho's essays in the 1960s"; Miyoko SHIBAZAKI, "The lost decade of acceptance of plate tectonics and geological revolution in Japan"; and Jun'ichi CHIBA, "The plate boundaries in the vicinity of Japan: the recognition of experts and non-experts". The last four discussed the contemporary history of Japanese geoscience. Philosophical issues were focused in the following three: Shigeyuki AOKI and Kiyoshi KURAMOTO, "From earth science to earth and planetary science – A preface to the philosophy of earth and planetary science"; Kazuhisa TODAYAMA, Mineo KUMAZAWA, Seiichiro WATANABE, and Shigeo YOSHIDA, "Historical reconstruction in science"; and Tetsuji ISEDA and Yuichi OBA, "Is the category 'historical science' appropriate?: examining the applicability of Tucker's philosophy of historical science". It is interesting that the character of geoscience as a historical science has attracted the modern attention of philosophers. Two papers that discussed STS and science communication issues were: Fumihiko TOCHINAI, "Earth science and science and technology communication" and Mutsuko INUI and Kazuhiro OKAJIMA, "History and presence of the serpentinite quarries in Chichibu area". Two posters of the session were Yasuhiro NARIYUKI, Takeshi FUKUDA, and Mitsuhiro HOSOKAWA, "Torahiko Terada's study on geomagnetism: Toward the expansion into engineering design education" and Hidenori SUZUKI, Shigeo YOSHIDA, Naotaka NAGANAWA, and Kazuhisa TODAYAMA, "Models and Simulations in Geosciences".

In 2011, JAHIGEO issued its Bulletin, Numbers 36 and 37 (in Japanese), and the JAHIGEO Newsletter, Number 13 (in English). The latter covered the Japanese history of geosciences written by the working group of Japanese INHIGEO members. The crisis caused by the big earthquake and tsunami and the nuclear plant accidents have stimulated science studies in Japan. We have observed growing attention to the history of geological sciences and our responsibility of studying it more diligently and persuading it more effectively to the general public to learn from the history.

Toshio KUTSUKAKE, Toyohashi; Michiko YAJIMA, Tokyo; Toshihiro YAMADA, Chiba

Lithuania

The Lithuanian INHIGEO group consists of two members, Acad. Prof. Dr. Habil. Algimantas Grigelis and Dr. Gailė Žalūdienė. The group was not present at INHIGEO Annual meeting in Japan, 2011. No new members have been proposed for elections at INHIGEO Annual meeting in Brisbane, Australia, 2012. The Lithuanian group has worked during 2011 mainly on the following academic pursuits:

The international project 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"* resulted in the paper "Stanisław Staszic' – an early surveyor of the geology of Central and Eastern Europe", published in *Annals of Science*, Toronto, Canada, 2011.

Prof. Grigelis took part in the annual conference SCIENTIA ET HISTORIA held in Vilnius, 25 March 2011, where he gave a lecture *„Academician Vytautas Gudelis – the way of personality"*.

Prof. Grigelis is also Editor and Publisher of *BALTICA: An International Journal on Earth Sciences of the circum-Baltic States* [ISI Web of Science, IF 0.913]. Volume 24 (Nos. 1 & 2). An additional Special Issue of BALTICA was published in 2011.

An academic monograph *'Academician Vytautas Gudelis'* (Editor A. Grigelis), devoted to science and life of the famous Lithuanian geographer and geologist was published in April 2011.

Prof. Grigelis also took part in the Eighth Baltic Stratigraphical Conference held on 28–30 August, 2011, in Riga, Latvia where he presented a report *'Twenty years of the Baltic Regional Stratigraphical Commission (1970–1990)'*.

Prof. Grigelis presented a report *'Some insight on early geoscience maps'* at the meeting held at the Czech Geological Survey in Prague 10-13 October, 2011; this meeting was devoted to *Višegrad Fund* project *Geological mapping in Central Europe in the 18th and early 19th centuries.*

An extended anniversary exhibition named *'At space of mountains and seas'* devoted to scientific achievements of Prof. Acad. Algimantas Grigelis and his wife Dr. Leonora Živilė Gelumbauskaitė was opened on 27 May, 2011, in the Wroblewski Library of the Lithuanian Academy of Sciences.

Annual meetings of the Lithuanian Ignotas Domeika Society, led by Prof. Grigelis, have been cancelled since 2010 due to low member activity. In 2011, Dr. Gailė Žalūdienė, Secretary of this Society, continued his work with history of geology in Lithuania.

Main publications (books, periodicals, papers)

Academician Vytautas Gudelis / Compiler and scientific editor Algimantas Grigelis. – Klaipėda University Printing House, 2011. – 368 pp. [In Lithuanian].

Algimantas Grigelis. Bibliography / Compiled by V. Juodėnienė *et al.* – Wroblewski Library of the Lithuanian Academy of Sciences and Institute of Geology and Geography of the Nature Research Centre. – Vilnius, 2011. – 320 pp. [In Lithuanian].

Leonora Živilė Gelumbauskaitė. Bibliography / Compiled by S. Dagienė *et al.* – Wroblewski Library of the Lithuanian Academy of Sciences and Institute of Geology and Geography of the Nature Research Centre. – Vilnius, 2011. – 96 pp. [In Lithuanian].

BALTICA. Vol. 24 (Nos 1 & 2). An International Journal on Earth Sciences. – Vilnius, 2011. – No. 1, June, 1–60 p.; No. 2, December, 61–122. *[ISI Web on Science, IF 0,913]*.

BALTICA. Vol. 24. Special Issue. Geosciences in Lithuania: Challenges and Perspectives. – Vilnius, 2011, 172 pp.

Grigelis, A. New data on Roman Symonowicz mineralogical travel to Transilvania (1803). *In Historia et Sapientia,* Proceedings of the Conference "Scientia et Historia". – Vilnius, 2011, p. 87–100.

Grigelis, A. Twenty years of the Baltic Regional Stratigraphic Commission (1970–1990). – *Earth and Environment Sciences / Acta Universitatis Latviensis, 2012* [In press].

Grigelis, A., Gelumbauskaitė, L. Ž. Development of geological studies in Lithuania : new records on Roman Symonowicz's 1803 mineralogical travel. – *Baltic Journal of European Studies.* – Tallinn. – Vol. 1, No. 1 (2011), p. 157–180.

Grigelis, A., Gelumbauskaitė, L. Ž. New archive data on Roman Symonowicz and its mineralogical" travel (1803). *Geological Horizons (Geologijos Akiračiai)*. – Vilnius, 2011, Nr. 1/2, p. 8–14. [In Lithuanian].

Grigelis, A., Wójcik, Z., Narębski, W., Gelumbauskaitė, L. Ž., Kozák, J. Stanisław Staszic—an early surveyor of the geology of Central and Eastern Europe. *Annals of Science*. – Toronto (Canada). – Vol. 68, Iss. 2 (2011), p. 199–228.

Narbutas, V., Karatajūtė-Talimaa, V., Žalūdienė, G., 2011. Uncompleted history of Devonian research in Lithuania: results and problems. – *Baltica, Vol. 24, Special Issue* // Geosciences in Lithuania: challenges and perspectives, p. 89–98. [In Lithuanian].

Žalūdienė G. Historical retrospective of the earth crust investigation in Lithuania. – *Geological Horizons (Geologijos Akiračiai)*. – Vilnius, 2011, No. 3-4, p.14-19. [In Lithuanian].

Algimantas Grigelis, Vilnius

Mexico

After a couple of years' efforts, in 2011 a small but consistent group of scholars and graduate students have been invited to join a "local INHIGEO group". We have been having informal meetings, where ideas have been discussed in order to consolidate our group and organize academic activities together.

We have already submitted their membership nominations and expect them to be accepted as INHIGEO members this year. These are their names:

- **José A. Uribe-Salas**. Ph.D. (History), Universidad Complutense de Madrid. Professor and researcher at the History Faculty, Universidad Michoacana de San Nicolás de Hidalgo.
- **Dante Morán**. Ph.D. (Geophysics), UNAM, 1991. Teacher of Historical Geology and researcher at the Geochemistry Department, Institute of Geology, UNAM.
- **Luis Espinosa**. Paleontologist. Head of the Geological Museum, UNAM.
- **Enrique Gonzalez**. M.Sc. (Geology), UNAM. Researcher at the Department of Regional Geology, Institute of Geology , UNAM.
- **José Lugo-Hubp**. Ph.D. (Geomorphology), State University of Moscow, 1976. Researcher at the Physical Geography Department, Institute of Geography, UNAM.
- **Luis Sánchez-Graillet**. M.Sc. (Philosophy of Science), Institute of Philosophy, UNAM, 2007.

All of them have been informed about INHIGEO's aims and are very enthusiastic about their nomination.

Our group has been enhanced by INHIGEO member Francesco Gerali, currently working in UNAM's Geography Institute, as Post-Doctoral Resident, under Azuela's guidance. Gerali has been working on the Oil Industry in Mexico during the Nineteenth Century, and has already found some very interesting documents and data. He has been welcomed by our young scholars, Lucero Morelos and Luis Sánchez-Graillet, who familiarized him with archives and libraries, and guided him around our very large and complicated Mexico City. Gerali has already given a conference for academic staff and has participated in a choice of scientific conferences in Mexico[2]. As a final point on this matter, Óscar Torres, another graduate student, might join INHIGEO in the future, since he is already working on a thesis about North American geologist William M. Gabb, under Azuela's supervision and with Gerardo Soto's long-distance support.

As we reported last year, an historical exhibit on geological cartography has been organized by Lucero Morelos, Dante Moran, Enrique Gonzalez, among other people. A chronological display of 17 maps, depicting very complex geological areas in Mexico was presented, in order to illustrate emblematic examples of sophisticated cartography. Maps, dating from 1889 to the present, were produced by the newly founded Institute of Geology staff and by other Mexican institutions connected to Geological Sciences. Ancient books, magazines and manuscripts, were exhibited, as well as mineral and fossil samples. Nineteenth Century equipment and geological field gear were displayed next to mining and mineralogical instruments. The successful exhibition was held until May 2011 in the Geology Museum, and then was relocated to another university facility: Museo de la Luz [Light Museum], an exhibition center devoted to scientific exhibits, where it remained open until November 2011.

Also regarding the University's Centennial Anniversary, the Geology Museum contributed with 35 selected minerals, rocks, fossils, meteorites and art works from its collections in another major exhibit: Tiempo Universitario (University Time), where historical and artistic objects related to the University's history were displayed. A commemorative book dealing with the exhibition was published, containing one chapter written by Luis Espinosa, dealing with the history of the Geology Museum and its collections. The book was intended as a museum catalogue of the specimens and collections displayed.

During 2011 some papers related to the History of Geological Sciences were read in Scientific Conferences. These were:

Azuela, Luz, "Zoltan de Cserna y la historia de la geología. Una interpretación historiográfica" (Historiographical Interpretation of Zoltan de Cserna's History of Mexican Geology), Simposio *Zoltan de Cserna*, Sesenta años geologizando en México [*Zoltan de Cserna's Simposium: Sixty Years researching Mexican Geology*], Auditorio Tlayólotl, UNAM, June 2011.

Morelos, Lucero, 2011. "El X Congreso Geológico Internacional de México en 1906" [The Tenth International Geological Congress, Mexico, 1906], *Simposio Dr. Zoltan de Cserna. Sesenta años geologizando en México* [*Zoltan de Cserna's Simposium: Sixty Years researching Mexican Geology*], Instituto de Geología, UNAM, México, D.F., June 2011.

Morelos, Lucero, "El primer mapa geológico general de México" [Mexico's First General Geological Map], *Simposio Internacional de Legado Minero y Ciencias de la Tierra [International Symposium of Mining Cultural Heritage and Earth Sciences: Libraries, Archives and Museums (Erbe Symposium)]*, Palacio de Minería, UNAM, México, Pachuca, Real del Monte, September 2011.

Azuela, Luz and Lucero Morelos, "Las representaciones mineras en la prensa científica y técnica (1860-1904)" [Mining Representations in Scientific and Technical Periodicals (1860-1904)], Simposio *Naturaleza y territorio en la ciencia mexicana. Siglos XVIII al XIX*, Facultad de Filosofía y Letras, October 2011.

Azuela, Luz, "La política científica en el México independiente" [Scientific Policy in Independent Mexico], Ciclo de Conferencias *Independencia y Revolución. Historia y conmemoraciones: una visión trasatlántica [Independence and Revolution. History and Commemorations. A Transatlantic Vision]*, Cátedra José Gaos, Facultad de Filosofía y Letras, UNAM, November 2011.

Azuela, Luz, "Contenidos geográficos de las revistas literarias del siglo XIX y su interpretación en términos de la cultura científico-técnica a nivel local e internacional" [Interpreting Geographical Contents in Nineteenth-Century Literary Periodicals in Terms of Scientific and Technical Culture], Geotertulias del Instituto de Geografía, November 2011.

Azuela delivered the manuscript of a collective book untitled *La geografía y las ciencias naturales en el siglo XIX mexicano* [*Geography and Natural Sciences in Nineteenth-Century Mexico*]. The book, containing six chapters derived from the research program *Geography and Natural History in Nineteenth-Century Mexico*, was written by program teammates under Azuela's direction. The book will be released in May.

Recent Bibliography

Azuela, Luz and Rodrigo Vega, 2011. "El Museo Público de Historia Natural, Arqueología e Historia (1865-1867)" [The Natural History, Archaeology, Ethnography and History Public Museum (1865-1867)], in Luz F. Azuela and Rodrigo Vega (coords.), 2011. *La geografía y las ciencias naturales en el siglo XIX mexicano* [*Geography and Natural Sciences in Nineteenth-Century Mexico*], p. 103-120.

[2] As Gerali was appointed to INHIGEO as a member from Italy, his report is given in the Italian Report.

Azuela, Luz and Lucero Morelos, 2011. "Las representaciones mineras en la prensa científica y técnica (1860-1904)", in Luz F. Azuela and Rodrigo Vega (coords.), 2011. *La geografía y las ciencias naturales en el siglo XIX mexicano* [*Geography and Natural Sciences in Nineteenth-Century Mexico*], p. 163-177.

Azuela, Luz y Lucero Morelos, 2011. "Surveying Independent Mexico: New actors and old ambitions", pp. 149-154, in Ortiz, J.E., O. Puche, I. Rábano and L.F. Mazadiego (eds.), *History of Research in Mineral Resources*. Cuadernos del Museo Geominero, 13, Instituto Geológico de España, Madrid.

Azuela, Luz 2011. "La emergencia de la geología en el horizonte disciplinario del siglo XIX" [The Emergence of Geology in Nineteenth-Century's Disciplinary Horizon], in Jorge Bartolucci (coord..), *La Saga de la Ciencia Mexicana. Estudios sociales de sus comunidades. Siglos XVIII al XX*, Instituto de Investigaciones sobre la Universidad y la Educación, p. 55-77.

García, Alejandro y Lucero Morelos, 2011. "La Geografía y la Mineralogía en *El Minero Mexicano* (1873-1879)", in Celina Ana Lértora (coord.), *Geografía e historia natural, hacia una historia comparada: estudio a través de Argentina, México, Costa Rica y Paraguay*, Buenos Aires, FEPAI, 2011 pp. 225-257.

Morelos, Rodríguez Lucero, 2011. "Mexican geologic cartography: an exhibition marking the centennial of the UNAM", *INHIGEO, Newsletter*, No. 43, May, Australia, pp. 57-59.

Morelos, Rodríguez Lucero, 2011. "La cartografía geológica mexicana en el marco del centenario de la Universidad Nacional. Exposición organizada por el Instituto de Geología en el Museo de Geología, UNAM" [Mexican Geological Cartography in the National University Centennial. Exhibition organized by the Institute of Geology and presented in Museum of Geology,], *Boletín del Instituto de Geografía, Investigaciones Geográficas*, México, Universidad Nacional Autónoma de México, Abril 2011, pp. 137-139.

As a final note, we would like to add that even though we cannot report on the activities of members proposed this year, we would like to make a note on their productivity, since they have been working within our country's organization. In this regard, our Mexican group reports 7 book chapters and 3 scientific articles; more than 15 scientific papers delivered in different congresses; and a geological exhibit. Of course, we are only reporting on history of geological sciences matters.

Dr. Luz F. Azuela
México DF

New Zealand

2011 saw the publication of two books on aspects of the history of geology in New Zealand. The first to appear was *The Travels of Hochstetter and Haast in New Zealand 1858-1860* by Mike Johnston and Sascha Nolden (see review in this newsletter). Ferdinand von Hochstetter, who was on leave from the Austrian Novara Expedition, set the foundations for understanding the geology of this country and which resulted in him becoming known as the "Father of New Zealand Geology". He was also instrumental in guiding Sir Julius von Haast into an exemplary career in science and museums in Canterbury. With Leonore Hoke, Johnston and Nolden have completed an annotated translation of Hochstetter's fifth diary in which the geologist documents the last of the two months he spent in Nelson in 1859. The second book, by INHIGEO member Rodney Grapes is *The Visitation – the earthquake of 1848 and the destruction of Wellington* and is published by Victoria University Press. The earthquake, with an estimated magnitude of 7.4-7.5, caused rupture along a 100 km length of the Awatere Fault in the northeast of the South Island. However, this area was sparsely populated and it was in the town of Wellington, not yet the capital of New Zealand, on the other side of Cook Strait that experienced the most damage. The 1848 earthquake was the first of many to be documented in New Zealand that have originated on strike slip faults, of which this country has many.

Simon Nathan is continuing his extensive and far ranging research into the resourceful and multitalented Sir James Hector who dominated New Zealand science for much of the latter half of the 19th century. In this he is benefiting from Rowan Burns transcriptions of Hector's appalling handwriting, including, for example, copies of Hector's letters to Sir Joseph Hooker written over a 40 year time span.

The Historical Studies Group, of the Geoscience Society of New Zealand, continues to be active under the convernorship of Simon Nathan (s.nathan@xtra.co.nz). Two of the group's journals (40 and 41), edited by Heather Nicholson (docroc3@gmail.com), were published during the year. As always, the journals contain a range of well written and interesting articles on the aspects of the history of geology in this country. Members of the group, and others interested in the history of geology, met in Nelson in late November during the annual conference of the Geoscience Society.

Two INHIGEO Members, Mike Johnston and Simon Nathan, attended the 36th INHIGEO Meeting in Japan, a country that has many geological similarities with New Zealand, and each presented a paper on their respective current research topics.

Mike Johnston, Nelson

Papua New Guinea

A breakthrough in the search for the source of a jadeite tool

The search for a likely source of the jadeite jade gouge recovered below Lapita pottery at a 3300 year old site on Emirau Island in northeastern Papua New Guinea was discussed in the 2010 Annual report. The search took a positive turn in 2011 when the composition of the jade tool was found to closely match the composition of a rock recovered by a missionary in 1891 from a site northwest of Jayapura, and held in the collection of Reinoud Vissers at Utrecht University in The Netherlands. The matching analyses were by George Harlow of the American Museum of Natural History (Harlow et al., 2012). The match-up indicates for the first time a likely trading link between western mainland New Guinea (now the Indonesian province of Papua) and the outer islands of the Bismarck Archipelago and with the early Austronesian expansion into the Pacific.

Historic Collections

The Earth Sciences Division within the School of Natural and Physical Sciences of the University of Papua New Guinea several years ago took receipt of the specimen collection and index card collection of the Australasian Petroleum Company micropaleontology group. The collections, originally held at the APC complex in Badili, Port Moresby, were looking for a new home after the withdrawal of BP Petroleum from Papua New Guinea. They are a national and geological treasure. The index cards are handwritten by the late Martin F. Glaessner amongst others. The collection can be made available for inspection by interested parties.

Harlow, G.E, Summerhayes, G.R., Davies, H.L., and Matisoo-Smith, L., 2012, A jade gouge from Emirau Island, Papua New Guinea (Early Lapita context: 3300 BP): A unique jadeitite. *European Journal of Mineralogy* DOI 10.1127/0935-1221/2012/0024-2175.

Hugh Davies, Port Moresby

Poland

In the reporting year, several books relating to the history of geosciences were published in Poland. Unfortunately, they are written mostly in Polish with short English abstracts. Three of them were dealing with the biographies and the activity of Polish geoscientists abroad in XIXth century and the beginning of XXth centuries, when they were forced to leave their home country in the period when Poland was partitioned among Russia, Prussia and Austria and disappeared from the map of Europe:

- Radosław Tarkowski – „Konstanty Jelski (1837 – 1896). Naturalist and explorer of South America". Monographic series no. 605. Pedagogic University Edit., Cracow, 2011.
  Jelski's significant natural collections are preserved in numerous museums in Western Europe.

- Andrzej J. Chodubski – „Witold Zglenicki (1850- 1904) , miner and geologist".
  Zglenicki is well known as the author of the concept to exploit oil from the bottom of the Caspian Sea after backfilling its shallow gulfs.

- Małgorzata Hrebnicka –„ Stanisław Doktorowicz-Hrebnicki. His life and geological excursions based on his wife's diaries." Wyd. PIG, 2011.
  Doktorowicz-Hrebnicki has investigated the metal deposits in the environs of Lake Baykal in Siberia.

Other books concern the history of various branches of geosciences in Poland.

- Joanna Popiołek – "Amber in Poland from 1534 to 1900. Ed. Marpress Gdansk.

- Jadwiga Biała & Andrzej Manecki – "Bibliography of Polish meteoritics 1805-2010" Muzealnictwo, 52 Warsaw. Ed. Meteoritic Soc. Sosnowiec.

- Janusz Skoczylas – "History of geological investigations in Greater Poland (Wielkopolska) before 1939. Wyd. A. Mickiewicz University, Poznan.

- Antoni Stryjewski – "The Mineralogical Museum of the Wroclaw (Breslau) University in last 200 years". Muzealnictwo, 52, Warsaw.

Moreover in 2011, thanks to the efforts of Lithuanian INHIGEO member Algimantas Grigelis, supported kindly by David Oldroyd, the paper on Stanisław Staszic, earlier prepared in cooperation with Zbigniew Wojcik and Wojciech Narebski was published in the Annals of Science:

- Algimantas Grigelis, Zbigniew Wojcik, Wojciech Narebski, Leonora Zivile Gelumbauskaite & Jan Kozak: Stanislaw Staszic: An Early Surveyor of the Geology of Central and Eastern Europe. Annals of Science vol.68, No.2, 2011, 199-228.

In 2011 several historical papers, partly in foreign languages, were published by Polish geologists. Here are the most important.

- J. Daimar & Piotr Krzywiec – "Murchison in Poland: an example of international collaboration leading to the advancement of knowledge". Geol. Soc, Amer. Annual Meeting.

- Radosław Tarkowski – "Les etudes geologiques, mineralogiques et meteorologiques de Jean-Etienne Guettard en Pologne (1760-1762). Ann. Centre Scient. L'Acad. Sci. a Paris.vol.12, 91-110.

- Andrzej J. Wójcik – "The achievements of Jozef Cieszkowski in Polish mining. Mining Perspectives, Stirling, Scotland, 122-131.

Two regional museums have organized, in 2011, scientific conferences devoted to the history of geology and geological collections.

In successive session at the Stanislaw Staszic Muzeum in Pila, Zbigniew Wójcik delivered lectures on the patron of this museam and Andrzej J. Wojcik on Georg Gottlieb Pusch, Saxonian geologist, who settled, worked and died in Poland.

The Museum of Agriculture in Ciechanowiec (NE Poland) has organized the conference "Princess Anna Jabłonowska and priest Krzysztof Kluk – people who anticipated their époque". The following delivered lectures have been published in Polish:

- Jan Parafiniuk – "K. Kluk's mineralogical collection"

- Andrzej J. Wojcik – "Geological-mining problems in K. Kluk's publications"

- Iwona Arabas, Ewa Lewandowska & Zbigniew Wojcik – "The importance of Poland in XVIIIth century natural historical collection of Princess A. Jablonowska, sold to Russia at the beginning of XIXth century".

In 2011, the XXV International Conference on the History of Cartography was organized in Poznan and among the presented lectures, two were delivered by Polish INHIGEO members:

- Wolkowicz Stanislaw & Wolkowicz K. – Development of geological cartography of Poland during the partition period,

- Andrzej J. Wojcik – On geognostic map of Jan Hempel, published in 1856.

Stefan W. Alexandrowicz published several papers on biographies of some Polish geoscientists. (Marian Książkiewicz, Jan Sarnicki, Andrzej Zuber). Moreover, he presented biographies of about 30 Polish natural historians in weekly popular-scientific broadcasts on Cracow Radio.

Two of the oldest Polish INHIGEO members Stanislaw Czarniecki and Wojciech Narebski are cooperating with the Director and staff of the Institute of Geological Sciences of the Jagellonian Unversity in the preparation of biographies of all the past assistants employed in this important scientific institution.

Polish historians of geosciences are often cooperating with foreign institutions and specialists in their field. Andrzej J. Wojcik, during his studies on the history of geology, cartography and mining in the Kingdom of Poland in XIXth century is cooperating with the Institute of History of Science and Technics of the Russian Academy of Sciences in St. Petersburg.

Piotr Krzywiec was called as a member of the History of Petroleum Committee associated with the Ameerican Association of Petroleum Geologists.

Stanislaw Wolkowicz and Piotr Krzywiec are cooperating with the international group of central European INHIGEO members engaged in the preparation of the monograph Atlas of Early geological maps of Central Europe as the result of the Visegrad Project entitled "Geological mapping in Central Europe in the 18th and Early 19th centuries", initiated and lead by Czech historians of geosciences.

Wojciech Narebski (Cracow) and
Zbigniew Wojcik (Warsaw),

Portugal

Antonio A. S. Andrade reports the following publications.

Serrano Pinto, M. & Soares de Andrade, A. (2011) – Geology and Ore Deposits – A Recent Marriage. *In:* J.E. Ortiz, D. Puche, I. Rábano & L.F. Mazadiego (eds.), *History of Research in Mineral Resources*. Cuad. Museo Geominero, 13, INME, Madrid: 367-376.

Soares de Andrade, A. & Serrano Pinto, M. (2011) – Geotectónica e granitos portugueses: o pioneirismo dos anos 40. In: L. Neves, A. Pereira, C. Gomes, L. Pereira & A. Tavares (eds.), *Modelação de Sistemas Geológicos*, Univ. Coimbra: 87-102.

Ana Carneiro reports the following activity during 2011.

Oral Communications

Ana Carneiro, Ana Simões, Maria Paula Diogo, 'Nature and History in the work of the Portuguese naturalist Correia da Serra (1750-1823),' Session: CS 017: 'Historisierte Natur – Naturalisierte Geschichte,' *13th International Conference for the 18th Century Studies (ISECS) Time in the Age of Enlightenment: Situating the Present, Imaging the Future*, Graz, Austria, July 25-29, 2011.

Papers

Ana Carneiro, Marianne Klemun, eds., *Seeing and Measuring, Constructing and Judging: Instruments in the History of the Earth Sciences*, *Centaurus*, special issue, **53** (May 2011), 77-189.

Jesús Catalá-Gorgues, Ana Carneiro, 'Like birds of a feather: the cultural origins of Iberian geological cooperation and the European Geological Map of 1896,' *The British Journal for the History of Science*, published on-line, 18 April 2011.

Teresa Salomé Alves da Mota reports the following activity during 2011.

Oral Communications

Mota, T. S., "A Geologia, esse 'lugar estranho': o caso da Escola Politécnica a da Faculdade de Ciências da Universidade de Lisboa", Congresso Luso-Brasileiro de História das Ciências, Coimbra, Portugal, 2011.

Mota, T. S., "Spending some time in the field: geology teaching in the Faculty of Sciences of the University of Lisbon", History of European Universities. Challenges and transformations, Lisbon, Portugal, 2011.

Papers

Mota, T. S., "A bursting landscape in the middle of Portugal: theories and experiments by Georges Zbyszewski", *Centaurus*, 53 (2011), 146-163.

Henriques, M. H., Pena dos Reis, R., Brilha, J. and Mota, T. S. (2011), "Geoconservation as an emerging geoscience", *Geoheritage*, Vol. 3, No 2, 117-128.

Chapters in Books

Mota, T. S., "From failure to achievement: the relationship between the Portuguese Geological Survey and the mining sector, in the 20th century" in Ortiz, José E., Puche, Octavio, Rábano, Isabel and Mazadiego, Luis F. (eds.) *History of Research in Mineral Resources* (Madrid, Publicaciones del Instituto Geológico y Minero de España, 2011), pp. 299-305.

Others Publications

Mota, T. S. "A Geologia, esse 'lugar estranho': o caso da Escola Politécnica a da Faculdade de Ciências da Universidade de Lisboa" in Carlos Fiolhais, Carlota Simões e Décio Martins (coord.), *Procedings of the Congresso Luso-Brasileiro de História das Ciências, Coimbra, Portugal, 2011,* pp. 1106-1119.

Mota, T. S., "Carlos Teixeira, um Geólogo com uma Missão", *Letras Com Vida*, 3 (2011), 49-50.

Russia

International meetings

36th INHIGEO Symposium (Japan, August, 2011).
Russian participants with presentations –
Z. Bessudnova "Grigory Helmersen and his 'General map of geological formations of the European Russia' (1841)".
T. Ivanova "Alexander Petrovitch Orlov – the first Russian seismologist".

Geological Society of America, Annual Meeting (Minneapolis, MN, USA, October, 2011).
I. Malakhova with a presentation "An attempt of cooperation in geotectonics: History of the IGC Commission Crust of the Earth".

Polish Academy of Sciences, Conference of the Institute for the History of Science, Institute of Literature, and Archiv of the Polish Academy of sciences «"Mężne niewiasty": historie i paradoksy»
(Warsaw, Poland, December, 2011).
Z. Bessudnova has presented a paper "Maria Wasiliewna Pavlowa (1854-1938) – a professor of zoology of the Moscow University".

University of Vienna, Conference of the Geological Survey of Austria and the Archive of the University of Vienna (Vienna, Austria, December, 2011).
A presentation by I. Malakhova: "Ivan V. Mushketov – a correspondent of Eduard Suess in Russia: Letters from Archives".

Country meetings

300th anniversary of the first Russian scientist M.V. Lomonosov (1711-1765). N. Yushkin has presented papers on M.V. Lomonosov at various meetings, including an international conference in Arkhangelsk entitled "Academic science in the native land of Lomonosov".

100th anniversary of academician A.L. Yanshin (1911-1999) – a meeting and exhibition at the Vernadsky State Geological Museum, with G. Khomizuri as a member of the organizing committee.

100th anniversary of L.I. Krasny (1911-2008) – a meeting at the A.P. Karpinsky All-Russian Geological Research Institute (VSEGEI) in St. Petersburg. In its program was a presentation by A. Lapo on the book "Recollections about L.I. Krasny" (see below).

Other meetings

N. Yushkin headed the organizing committee for the 14th science students meeting 'Geological and archeological studies in the Timan-North Urals region', and presented papers for the jubilees of Yanshin and Yu. Osipov at conferences in Syktyvkar.

Annual meeting, Institute of the History of Science & Technology (Russian Academy of Sciences). Presentations were: "Geological studies of G. Helmersen" (Z. Bessudnova) and "The jubilee of A.L. Yanshin at the Vernadsky State Geological Museum" (G. Khomizuri).

Other activities

N. Yushkin has studied the mineral collection of a daughter of Emperor Paul I at the Museum of Natural History, University of Budapest.

Digital Library *Scientific Heritage of Russia.* Please see URL: http://nasledie.enip.ras.ru/index.html

New historic acquisitions

20 articles (e.g. Brandt, J; Eichwald, Ed.; Ferber, J.; Keyserling, A., Murchison, R.; Mushketov, D.; Tschernyshev; Th.; Verneuil Ed., et al.) including 55 publications, for example:

Brandt, J.F. 1864. Observations de Elasmotherii reliquiis (Cum tabulis quinque). Commentatio academiae conventui oblata die 3 Junii 1864. *Mém.'Acad. sci., St.-Ptb*. 7 ser. 8. 4. 1-34.

Murchison R.I. 1849. On the geological structure of the Alps, Carpathians and Apennines. *Philos. mag. and journ. sci*. Ser. 3. 34. 207-216.

Karpinsky, A.P. Obituaries: Schmidt (1908), Moeller (1910) Tschernyshev (1914).*Bull. Acad. sci., St.-Ptb*. (in Russian).

Gubkin, I.M. 1939. World petroleum reserves. *Report of the XVII session, Union of Soviet Socialist Republics 1937*. 1. 177-188. (in Russian).

Vernadsky, W.J. Sur l'importance de la radiogeologie pur la geologie moderne. *Ibid*. 219-243 (in Russian)

Bohdanowicz, K. The earthquake at the 4th of January, 1911 in the northern Tian-Shan between Verny and Issyk-Kul. *Bull. Geol. Com*. 30. 189. 329-419. (in Russian).

Selected bibliography of Russian members 2011

Bessudnova, Z.A. Geological studies of G.P. Helmersen. *Inst. hist. sci. & techn. RAS. Annual meeting. Moscow: Yanus*. p. 386-389. (in Russian).

Bessudnova, Z.A. Johann Gotthelf Fischer (1771-1853) – a director of the Museum of natural history of the Moscow university. *The Germans in Russia: meetings at a crossroads of cultures. St-Ptb.: Rostok*. p. 294-310.

Bessudnova, Z.A. Johann Carl Freiesleben (1774-1846) and history of his collection in Vernadsky State Geological Museum of the Russian Academy of Sciences. *Inst. hist. sci. & techn. RAS. Annual meeting. Moscow: Yanus.* p. 359-362. (in Russian).

Frolov, A.V., Koval, A.G., Lapo, A.V., a.o. In memory of O.N. Kabakov (1928-2009). *Entomological Review*. 2001. Vol. 90. № 2. p. 476-488 (in Russian and English).

Gerali, F., Vai, G.-B., Malakhova, I.G. Giovanni Capellini – knighted in Russia. History of the Earth Sciences. Vol. 4. N 1. P. 27-34. (in Russian).

Lapo, A.V., Yakobson, K.E. Matil'da Moiseyevna Tolstikhina (1901-1984).*Regional Geology and Metallogeny*. 2011. №47. P. 119-121 (in Russian).

Malyshev, Yu.N., Kandinov, M.N., Bessudnova, Z.A., *et al.* Vernadsky State Geological Museum of the Russian Academy of Sciences. In: *M.V. Lomonosov and his epoch: to the 300 anniversary. Catalogue of the exhibition. Moscow: Drevlekranilische*. p. 170-172. (in Russian).

Khomizuri, G.P. An Armenian mineralogist Andreas Arzruni – a foreign correspondent of the Imperial Saint-Petersburg Academy of sciences. *Inst. hist. sci. & techn. RAS. Annual meeting. Moscow: IEIT*. p.412-415. (in Russian).

Khomizuri, G.P. The jubilee of academician A.L. Yanshin at the Vernadsky State Geological Museum of the Russian Academy of Sciences. *Inst. hist. sci. & techn. RAS. Annual meeting. Moscow: Yanus*. p. 455-456. (in Russian).

Malakhova, I.G., Shiolashvili L.N. Data Base 'History of Geology" // Informatization of science: new technologies. Moscow: Nauchny Mir. P. 250-253. (in Russian) URL: http://www.benran.ru/SEMINAR/SEM/Sb_11/sbornik/doc_250.pdf .

Malakhova, I.G. The INHIGEO Symposium in Spain, 2010. *Inst. hist. sci. & techn. RAS. Annual meeting. Moscow: IEIT*. p.393-397. (in Russian).

Malakhova, Irena G. The Russians in Madrid, 1926 – the Spaniards in Moscow, 1937: two IGC meetings. In: Ortiz, J.E.; Puche, O.; Rábano, I. and Mazadiego, L.F. (eds.). *History of Research in Mineral Resources. Madrid: Instituto Geológico y Minero de España*, 2011. P. 315-324. (Cuadernos del Museo Geominero. N 13).

Malakhova, I.G. [Rev.] (2010). Obručev, Vladimir A. u. M. Zotina: Eduard Sueß. Aus dem Russischen übersetzt von Barbara Steininger mit einem Geleitwort von A.M. Celâl Şengör, herausgegeben von Tillfried Cernajsek & Johannes Seidl. – Berichte der Geologischen Bundesanstalt, 63, Wien 2009. 182 S. *Bull. Soc. natur. Moscow. Geol. section.* T. 85. N 6. p.70-73. (in Russian).

Minina, E.L. Grigory Gagarin – a painter, and a public figure. In: *Proceedings of the Conference to the 200 anniversary of a vice-president of the Imperial Academy of arts count G.G. Gagarin. St.-Ptb.: Repin St. Petersburg State Academy of painting, sculpture and architecture*. p.172-181. (in Russian).

Petrov, O.V., Zhamoida, A.I., Lapo, A.V. (eds.). "Recollections about L.I. Krasny". St.-Ptb. *VSEGEI.* 224 p. (in Russian). From its contents:

Lapo, A.V. The last years of Lev Isaakovich. p. 166-177.

Lapo, A.V. Pinsky, E.M. I`m here. p.208-215.

Trifonov, G.F. The lithological discussion in the USSR. In: Ortiz, J.E.; Puche, O.; Rábano, I. and Mazadiego, L.F. (eds.). *History of Research in Mineral Resources. Madrid: Instituto Geológico y Minero de España, 2011*. p.315-324. (Cuadernos del Museo Geominero. N 13). P. 337-342.

Trofimov, V.T., Ryabukhin, A.G. Geological ideas of M.V. Lomonosov (1711-1765): a history and the contemporaneity (to the 300-anniversary from birthday). *Bull. Soc. natur. Moscow. Geol.* section. T. 86. N 3. p.3-10.(in Russian).

Trofimov, V.T., Pushcharovsky, D.Yu., Ryabukhin, A.G. Features and the little-known facts of development of geology in Moscow University within Great Patriotic war of 1941-1945. *Herald Mosc. Univ. Ser. 4. Geology*. N 4. p.3-6. (in Russian).

Yushkin, N.P. A mineralogical letter of a Russian tsarevna to progeny. *Herald of the Urals Branch of the Russian Academy of sciences. Science. Society. Man*. N 4 (38). (in Russian).

Yushkin, N.P. M.V. Lomonosov – a founder of mineralogy in Russia. In: *Academic science in the native land of Lomonosov. Arkhangelsk*. p.276-280. (in Russian).

Irena G. Malakhova, Moscow

Spain

Many diversified activities can be reported from the Spanish INHIGEO group.

The Spanish Geological Survey published, in 2011, *History of Research in Mineral Resources*. This book was born of the joint effort of the INHIGEO Spanish delegation and the Spanish Society for the Preservation of the Geological and Mining Heritage/Sociedad Española para la Defensa del Patrimonio Geológico y Minero (SEDPGYM), which collaborated with the Spanish Geological Survey/Instituto Geológico y Minero de España (IGME). The book contains contributions presented at the 35th INHIGEO-IUGS Meeting held in Madrid-Almadén, Spain, in 2010. It is sold by the Spanish Geological Survey: www.igme.es/internet/serv_publicaciones/principal.htm .

The *Biographical Dictionary of the Real Academy of History* has now been partially published. It contains historical information on numerous geologists.

The Commission of the History of Geology of Spain, section of Spanish Geological Society (SGE) has 50 members, they receive regularly information about Spanish activities on the History of Geology. The person in charge of this section is Ms Isabel Rábano, Director of the Geo-Mining Museum/Museo Geominero (Isabel is an INHIGEO member).

The *XII International Congress on Geological and Mining Heritage* was held in Sobrarbe Geopark, Boltaña (Huesca) from 29 September to 2 October 2011. For further information contact: rocpetrus@gmail.com . On 24 May 2011, Carminia Virgili, INHIGEO member from Barcelona, received the Gold Medal of the University of Barcelona. Please see the "Awards" section for details.

Rodolfo Gonzalo edits the *Spanish Paleontological Review*/*Revista Española de Paleontología* and Isabel Rábano edits *De Re Metallica*, directed by Luis Felipe Mazadiego.

Publications:

ARAGONÈS, Enric and ORDAZ, Jorge, 2011, "Cometes i altres senyals de foc: quan el cel avisava (segles XVI-XVIII)". *Afers*, 69, pp. 437-457.

BOIXEREU VILA, E.; PUCHE RIART, O.; ROBADOR MORENO, A. (2011). Sobre el origen del mapa geológico de España: el mapa geognóstico de los alrededores de Burgos de Felipe Naranjo y Garza (1841). *Libro de Actas del XII Congreso Internacional de Patrimonio Geológico y Minero, Boltaña (Huesca), 28 de septiembre-2 de octubre de 2011. Valoración de elementos geomineros en el contexto de los Geoparques. Apéndice. Salidas de Campo y otras comunicaciones*. Ed. SEDPGYM. Pobla de Segur, Lérida. Págs. 35-44.

CAÑAL, P.; DEL CÁRMEN, L.M: GARCÍA, S.; JIMÉNEZ, M.P.; MÁRQUEZ, C.; MARTÏNEZ, C.; PEDRINACI, E.;PRO, A.; PUJOL, R.M.; SANMARTÍ, N. (2011). *Didáctica de la Biología y de la Geología.* Formación del Profesorado Educación Secundaria. Ministerio de Educación y Graó. Barcelona. 2 Vol.

CASANOVA HONRUBIA, J.M.; OCHANDO GÓMEZ, L.E.; GOZALO GUTIÉRREZ, R. (2011). William Maclure (1763-1840) y la Mineralogía del Reino de Valencia. *Macla*, 15, 53-54. (September 2011)

CATALÁ, J. (2011). Absolutamente sin cuidado?: Juan Vilanova y la polémica sobre el hombre terciario. *Asclepio. Revista de Historia de la Medicina y de la Ciencia*, 63 (2), 379-404.

MARTÍN ESCORZA, C. (2011). José Longinos Martínez Garrido (Calahorra, 1756-Campeche, 1802): Visto por coetáneos y posteriores biógrafos. In: *Naturalistas Proscritos*, Cervantes Ruiz de la Torre, E. (Coord.). Ediciones Universidad de Salamanca, Acta Salmaticensia, Biblioteca de las Ciencias, 85, 41-60, ISBN: 978-84-9012-019-4. Salamanca.

GONZÁLEZ RECIO, J.L. (2011). Entre John Herschel y Charles Lyell: los compromisos metodológicos y teóricos en la geología de Darwin. *Llull*, Sociedad Española de Historia de las Ciencias, Zaragoza, 74, 293-314.

GUTIÉRREZ-MARCO, J.C., RÁBANO, I., MANSILLA, L.; GARCÍA-BELLIDO, D. (Eds.) (2011). *Geología y paleontología de Almadén en el siglo XIX*. Universidad de Castilla-La Mancha-SEDPGYM, 269 pp.ISBN: 978-84-614-9993-3.

GUTIÉRREZ-MARCO, J.C.; RÁBANO, I. (2011). El descubrimiento científico del Paleozoico centroibérico: la contribución de Casiano de Prado (1797-1866) al conocimiento de la región de Almadén y áreas limítrofes de los Montes de Toledo y Sierra Morena. In: *Geología y paleontología de Almadén en el siglo XIX* (Gutiérrez-Marco *et al*., Eds.), Universidad de Castilla-La Mancha-SEDPGYM, 7-64.

LOZANO OTERO, G.; PUCHE RIART, O. (2011). El Patrimonio Minero de Otero de Herreros (Segovia). *De Re Metallica*, 16, 43-52 (January-June 2011).

MATA, J.M.; TORRO ABAD, L.; FUENTES PRIETO, N. (Eds). PUCHE RIART, O.; NEIRA, A. (Coeds.) (2011). *Libro de homenaje a Claude Domergue. Actas del V Congreso Internacional sobre minería y metalurgia históricas en el suroeste europeo. León 2009*. Ed SEDPGYM (2011). Andorra, ISBN: 978-9920-1-790-6

MAZADIEGO MARTÍNEZ, L.F.; PUCHE RIART, O.; ORTÍZ MENÉNDEZ, J.E. (2011). Information about petroleum in America prior to the nineteenth Century. In: *History of Research in Mineral Resources* (ORTÍZ, J.E; PUCHE, O.; RÁBANO, I; MAZADIEGO, L.F., Eds.). Ed. IGME. Col. Cuadernos del Museo Geominero, 13, 237-243. Madrid.

DE NIGRIS, M.R.; PUCHE RIART, O. (2011). El uso de los hornos pachamanca y guayra para la fundición en los Andes. *De Re Metallica*, 16, 21-31 (January-June 2011).

ORDAZ, Jorge, GUTIÉRREZ CLAVEROL, Manuel and DE LORENZO ÁLVAREZ, Elena, 2010. "Notas inéditas de Jovellanos sobre mineralogía". *Cuadernos Dieciochistas*, 11, pp. 37-53.

ORDAZ, Jorge and GUTIÉREZ CLAVEROL, Manuel, 2011 "Observaciones geológicas de Jovellanos en el castillo de Bellver y su entorno". In: Jovellanos , *el valor de la razón (1811-2011), Instituto Feijoo del Siglo XVIII, Gijón,* pp. 861-874.

ORTIZ, J.E.; PUCHE, O.; RÁBANO, I; MAZADIEGO, L.F. (Eds) (2011). *History of Research in Mineral Resources*. Ed. IGME. Col. Cuadernos del Museo Geominero, 13. Madrid. ISBN: 978-84-7840-896-6

PUCHE RIART, O; MAZADIEGO MARTÍNEZ, L.F. (translated by LEGIDO, R; MALUGANI, L.) (2011). X International Geology Congress, México 1906. *Episodes* (IUGS), V. 33, Nº 3, 197-207. Bangalore, India (September 2011).

PUCHE RIART, O.; HERVÁS EXOJO, A.; MAZADIEGO MARTÍNEZ, L. (2011). El patrimonio histórico minero-metalúrgico en España: su impacto en el turismo cultural.*De Re Metallica*, 17 (July-December 2011).

PUCHE RIART, O. (2011). Apuntes biográficos de Claude Domergue. In: Libro de homenaje a Claude Domergue. *Actas del V Congreso Internacional sobre minería y metalurgia históricas en el Suroeste europeo. León 2009* (MATA, J.M.; TORRO ABAD, L.; FUENTES PRIETO, N., Eds.; PUCHE RIART, O.; NEIRA, A., Coeds.). `Ed SEDPGYM (2011). Andorra, 5-50.

PUCHE RIART, O.; MAZADIEGO MARTÍNEZ, L.F.; ORTÍZ MENÉNDEZ, J.E. (2011). Petroleum in the Spanish Iberian Peninsula. In: *History of Research in Mineral Resources* (ORTÍZ, J.E; PUCHE, O.; RÁBANO, I; MAZADIEGO, L.F., Eds.) Ed. IGME. Col. Cuadernos del Museo Geominero, 13, 225-236. Madrid.

SEQUEIROS, L. (2011) *José de Acosta, antropólogo, misionero y naturalista en la América hispana*. Bubok publish (digital edition). See: http://www.bubok.com/libros/199068/JOSE-DE-ACOSTA-15401600-antropologo-misionero-y-naturalista-en-America-hispana

SEQUEIROS, L. (2011). *Leer las rocas con Nicolás Steno*. Bubok publ. 153 pp. (digital edition). Available in: http://www.bubok.com/libros/199152/LEER-LAS-ROCAS-con-Nicolas-Steno

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SEQUEIROS, L. (2011). *La Geología, Darwin y Humboldt. Creatividad y Ciencia.* Editorial Académica Española, Saarbrücken (Alemania), 91 páginas. ISBN: 978-3-8454-9471-5

SEQUEIROS, L. (2011). *Geología y Heterodoxia. La Vindicación de La Geología de Casiano de Prado (1835).* Bubok publishing, (Digital edition) 170 páginas. Avaliable in: HTTP://metanexus.bubok.com

SEQUEIROS, L. (2011). Recensión extensa de Gutiérrez Marco, J. C. y otros. "Geologia y paleontologia de Almadén en el siglo XIX. La contribución de Casiano de Prado, Edouard de Verneuil y Joachim Barrande al descubrimiento científico del paleozoico centroibérico". *Naturaleza Aragonesa,* 27, 88-90.

SEQUEIROS, L.: GONZÁLEZ FABRE, M. (2011) "Vindicación de La Geología" de Casiano de Prado (1835): pueden ser subversivas las Ciencias de La Tierra? *Enseñanza de las Ciencias de La Tierra,* 19 (2), 162-168.

Lectures:

BARRERA, J. L. (2011) *Eruptions warn, not how the earthquakes.* Colegio San José de la Excma. Diputación Provincial de Guadalajara December 1.

MARTÍN ESCORZA, C. (2011). *The landscape of Sonseca (Toledo) seen through geology*. V Sonsecanos Studies Conference. Ernest Lluch room, Brotherhood of St. John the Evangelist, Sonseca City Council. May 2.

MARTÍN ESCORZA, C. (2011). *Impacts and Earthquakes: Singularities in La Rioja*. Official Association of Industrial Engineers of La Rioja, Logroño. May 5.

MARTÍN ESCORZA, C. (2011). *Table Outlaws Naturalists Book.* Presentation at the Centre for Brazilian Studies, University of Salamanca. December 16.

TRUYOLS, J; SEQUEIROS, L. (2011). *Mineralogy, Geology and Palaeontology.* Curso: Técnica e Ingeniería en España: Conceptos, métodos y patrimonio en el ochocientos (II). Real Academia de la Ingeniería de España, Institución Fernando el Católico, Diputación de Zaragoza y Universidad de Zaragoza. Zaragoza. October 2-5.

Field Guides:

MARTÍNEZ ESCORZA, C. (2011). *Guidance on the Geology of the Montes de Toledo area Yébenes The (Toledo).* Majadahonda Walker Group (Madrid). March 20.

MARTÍNEZ ESCORZA, C. (2011). *Tour Guide of the SAM, Overland Arlanza (Burgos)*. Society of Friends of the National Museum of Natural Sciences, CSIC. 30 people, 14 cars. 6, 7 and 8 May.

MARTÍNEZ ESCORZA, C. (2011). *Tour Guide of the SAM for land vineyards (Valladolid).* Society of Friends of the National Museum of Natural Sciences, CSIC. 55 people. Bus. October 1.

Research Projects:

GARCÍA CORTÉS, A.; CARCAVILLA URQUÍ, L. (Col. MAZADIEGO, L.F., PUCHE, O. and others). *Documento metodológico para la elaboración del inventario español de Lugares de Interés Geológico (IELIG)*.

PELAYO LÓPEZ, F. *Ciencia y educación en los institutos madrileños de enseñanza secundaria a través de su patrimonio cultural (1837-1936).*

Switzerland

Marc Weidmann has published the following paper.

Weidemann M. Le Jorat du comte Grégoire Razoumowsky (1759-1837). *Bulletin de la Société vaudoise des Sciences naturelles* 92.3: 121-136 *(2011).*

Andrea Westermann reports the following publications.

Westermann, A. "Geologiegeschichte als Verwaltungsgeschichte: Stabilisierungseffekte zwischen Amtshandeln und Forschungshandeln bei Hans Conrad Escher (1767–1823)"*Traverse* 18 (2011) 2, 57–74

Westermann, A. "Disciplining the Earth: Earthquake Observation in Switzerland and Germany circa 1900" *Environment and History* 17 (2011) 1, 53–77.

United Kingdom

Simon Knell reports that his book "The Great Fossil Enigma: The Search for the Conodont Animal" will be published in 2012 by Indiana University Press.

Cherry Lewis reports that 2011 marked the centenary of the publication by Arthur Holmes (1890–1965) of the first radiometric date and geological timescale, and as Holmes's biographer, she was invited by the Geological Society of London to celebrate the occasion by writing an article on Holmes's radiometric dating work for the June issue of *Geoscientist* (http://www.geolsoc.org.uk/gsl/geoscientist/page9864.html).

The GSAmerica's annual meeting in Minneapolis during October also commemorated the event by holding the Pardee Symposium on Holmes: *Honoring British Geologist Arthur Holmes for Contributions to Geochronology, Plate Tectonics, and the Origin of Granite.* Lewis was invited to contribute a paper on Holmes's scientific legacy. The abstracts and other material from the eclectic mix of papers presented at the meeting can be found here: gsa.confex.com/gsa/2011AM/finalprogram/session_28117.htm .

Lewis also contributed two other articles to *Geoscientist.* The first, published in May, reported on the little-known mineralogist, Robert Ferguson of Raith (1767-1840), a Fellow and trustee of the (then) newly-formed Geological Society of London and one of its first four Vice Presidents (1810-1815). He caused a great scandal when he ran off with the wife of Lord Elgin (of the Elgin marbles fame). The second article, published in November, recounted the genesis and publication of the Geological Society's first volume of Transactions in 1811.

Lewis was one of the invited keynote speakers at the meeting in November at Burlington House on the *History of Medicine and Geology* where she presented new data regarding one of the Geological Society's medical founders, James Parkinson (1790-1824), and how he adapted his religious beliefs to accommodate his geological discoveries. She then discussed the life and work of James Parkinson with Christopher Gardner-Thorpe in an open forum.

Continuing her interest in promoting the history of geology to a wider audience, Lewis also gave talks to a number of geological and non-geological groups around the country.

In the past year (2011-12), **Ralph O'Connor** has completed the following:

- *Science as Romance*, vol. 7 of *Victorian Science and Literature*, 8 vols, ed. Bernard Lightman and Gowan Dawson (London: Pickering & Chatto, to be published June 2012) - includes editions of extracts from John Mill, *The Fossil Spirit* (1854); Gideon Mantell, *The Wonders of Geology* (1838); Horace Smith's poem in honour of Mantell, 'A Vision' (1838); the geological chapter from Robert Hunt's novel *Panthea* (1849); a review of Hugh Miller's *Old Red Sandstone* (1841); Hugh Miller's *Sketch-Book of Modern Geology* (1859); Charles Kingsley's *Glaucus* (1855), Thomas Hawkins's *Memoirs of Ichthyosauri and Plesiosauri* (1834) and Henry Hutchinson's *Prehistoric Man and Beast* (1896)

- 'Victorian Saurians: The Linguistic Prehistory of the Modern Dinosaur', *Journal of Victorian Culture* (in press 2012)

In addition, Ralph delivered the following keynote conference paper: 'Mythes anciens et nouveaux: science et dragons, 1800-1950', conference 'Science et chimères', Université Paul Sabatier, Toulouse (10 June 2011).
Michael Taylor and Ralph have been working on an annotated reprint of Hugh Miller's *The Old Red Sandstone* (publisher to be determined). With Noah Heringman and in liaison with Cherry Lewis and Alan Bowden, Ralph has also been organizing the 2013 INHIGEO Symposium on 'Geology in Art and Literature', to be proposed for the

ICHSTM conference in Manchester. In addition Ralph was elected a Member of Council of British Society for the History of Science for 2011-2014.

Martin Rudwick reports that his only relevant news is the publication of his contribution to a review of the wide-ranging work of the Enlightenment Philosophe Jean-André Deluc (or de Luc), who should be better known since he was the first to propose the word "geology" in anything like its modern sense! The volume has had a lengthy gestation: It originated from a meeting in Geneva in 2008. The details are:

Martin Rudwick, "Geohistory and the historicity of Genesis", pp. 242-260. In: J. L. Heilbron and Réné Sigrist (eds.), *Jean-André Deluc: Historian of Earth and Man, Geneva*: Editions Slatkine, 2011.

Mike Taylor reports that he has been working with Lyall Anderson (Sedgwick Museum, University of Cambridge) on the history of Hugh Miller's collections and their displays, especially the history of Hugh Miller's birthplace cottage and the other family house in Cromarty. The local historian David Alston pointed out to us that the annual valuation survey books for rates (local taxation) from the mid-19th century are now deposited in the Scottish national archives. These assessed local taxation and confirm property qualifications for voting, and can be referenced backwards from large scale annotated maps (around 1910 for Cromarty). They give considerable detail on properties and their occupation, which complement well the data from the decennial census. Combined with family letters and newspaper accounts, it is now at last proving possible to pinpoint the actual establishment of the museum in the mid-1880s, and therefore to clarify the family's intentions and options.

Another aim of this project is to clarify if possible what happened to Hugh Miller's papers. Unfortunately it now seems clearer than ever that the bulk of Miller's letters and papers went missing in Australia at about this time, because of the early deaths of his daughter Harriet and her husband Professor John Davidson of the University of Adelaide. In exile, and perhaps influenced by the painkillers she was taking for her terminal cancer, Harriet wrote a nostalgic children's novel of family life in Scotland, plainly based on life with her parents but with a strong dose of wish-fulfilment as well, and this has now been republished with an introduction by Henry McKenzie Johnston, her great-grandson-in-law: Davidson, Harriet Miller 2011 [first published 1884]. *Sir Gilbert's Children*. For the Right Reasons, Inverness: ISBN 978-1-905787-66-1.

Mike's publications are:

Taylor, M. A. and Benton, M. J. 2011a. Dr Arthur Cruickshank [obituary]. The Herald, 7 December 2011, p. 18; http://www.heraldscotland.com/comment/obituaries/dr-arthur-cruickshank.16074720.

Taylor, M. A. and Benton, M. J. 2011b. Dr Arthur Richard Ivor Cruickshank [obituary]. Southern Reporter, 22 December 2011, p. 12.

Taylor, M. A. and Benton, M. J. 2011c. Arthur Richard Ivor Cruickshank 1932-2011 [obituary]. http://www.geolsoc.org.uk/gsl/society/history/obituaries/page8951.html
Taylor, M. A. and Torrens, H. S. 2011. Hugh Miller and the Coalheugh Well at Cromarty. *Hugh's News. Newsletter of the Friends of Hugh Miller* **12**, 3-4, http://www.hemy.me.uk/HM/NewsletterWinter11.pdf

Hugh Torrens reports the following publications:

John Randall (1810-1910) as writer and geologist, *Proceedings of the Shropshire Geological Society*, 15, pp. 28-43, 2011. Paper is online at http://www.shropshiregeology.org.uk/SGSpublications/Proceedings/2010%20No_15%20028-043%20Torrens%20Randall.pdf and in a slightly shorter version in *Transactions of the Wrekin Local Studies Forum*, for 2010, pp. 17-34, 2011).

Robert Townson (1762-1827): an all too long forgotten Salopian. *Proceedings of the Shropshire Geological Society*, 16, 10-21, 2011. Paper is online at www.shropshiregeology.org.uk/SGSpublications, 2011. [This paper is an online version of a 1999 paper]

Uncurated Curators, no. 3. Ronald Frederick Pickford (1920-12010), Bath curator, a Tribute. *Geological Curator* 9, no. 4, 243-254, 2011.

Hawking History - a vital future for Geology's past (revised version of 1988 paper from *Modern Geology*, 13, 83-93, 1988), in *The Compass* 81, 26-37, 2011.

(with Trevor D. Ford) Elias Hall, pioneer mineral surveyor and geologist in the Midlands and Lancashire, *Mercian Geologist* 17 (4), 249-261, 2011.

Richard Howarth reports that he did not have any historical publications in 2011, though one has just been published in 2012 in the Proceedings of the Geologists Association. Unfortunately, Richard suffered recently a severe (20 ft) fall in early 2012 from which he is recovering only slowly.

It is reported that the History of Geology Group (HOGG) of the Geological Society of London has had another good year, with interesting meetings that are reported elsewhere in this newsletter. The HOGG committee continues to plan meetings for the future, including an *Open Meeting* organized to be held at the Geological Society in March 2012. There will also be a 2-day conference on *Geotourism* in the autumn, and HOGG has shared the organization of a conference on *Archibald Geikie*, to be held at the Haslemere Museum in April. The committee has also begun in earnest the preparations for the symposia to be included as INHIGEO's contributions to the 2013 ICHSTM Congress – the 24th International Congress of History of Science, Technology and Medicine – which will be held in Manchester in 2013. The Group's excellent publication record continues; with a volume planned from the conference on *Geology and Medicine*, and another from the *Geotourism* conference.

United States

Vic Baker (University of Arizona) continued to serve as Book Review Editor for the journal *Earth Sciences History*. He also did two reviews for that journal in 2011: (1) The Story of Vaiont: Told by the Geologist Who Discovered the Landslide by Edoardo Semenza (*Earth Sciences History*, v. 30, no. 2, p. 295-297), (2) Time Matters: Geology's Legacy to Scientific Thought by Michael Leddra (*Earth Sciences History*, v. 30, no. 1, p. 176-177). In early August Vic attended the 2011 Japan conference of the International History of Geology Commission (INHGEO), Aichi University, Toyohashi, Japan, where he presented the paper "Visualizing the Planetary Evolution of Mars: Percival Lowell's Japan Travels, Martian Canals, and Geological Critics". At the October Geological Society of America (GSA) annual meeting in Minneapolis, Vic presented the paper "William Whewell and the Nature of Geological Inquiry." He also completed his term as Past Chair, Geological Society of America, History and Philosophy of Geology Division. Under the auspices of The Geological Society of America (GSA) 125th Anniversary initiative Vic is currently editing a successor volume to the classic 1963 book *Fabric of Geology*, which was edited by Claude C. Albritton, Jr., for the 75th anniversary of the GSA.

Kennard B. Bork was surprised by the invitation, in June 2011, to be the topic of this year's INHIGEO Newsletter "Interview." The process, initiated by Secretary-General Barry Cooper, profited from Ken Taylor's astute questions and enjoyable correspondence in November, and resulted in the product seen in this newsletter. Bork's review of Daniel Merriam's book on *Observations, Recollections, and Impressions of the Kansas Geological Survey at the University of Kansas* (2011) was published in *Earth Sciences History*. In March 2011, the Special Issue of *The Compass* devoted to the history of geology finally appeared in print, and it included a number of noteworthy items of relevance to Commission members, including Bork's essay on "Why Study the History of Geology." At the annual meeting (2011) of the Geological Society of America (GSA) he presented a paper on the trans-Atlantic sharing of ideas between Alexandre Brongniart (1770-1847) and Parker Cleaveland (1780-1858), as they both wrote pivotal textbooks (1807 for Brongniart; 1816 for Cleaveland) on mineralogy. The sad news of the death of Gerald M. Friedman, in December 2011, led Ken to write a memorial that appears in this newsletter and other publications. Reviewing papers for *Earth Sciences History*, continuing service on the Rock Star Committee of GSA, and corresponding with INHIGEO members around the world were rewarding activities throughout the year. It is also true that serving on the INHIGEO Board in an *ex officio* capacity helped KBB keep busy, particularly given the volume of Commission work in 2011 and the taskmaster nature of Secretary-General Barry Cooper's e-mails, friendly and efficient though they were.

Bob Dott hopes to re-emerge on the historical scene later in 2012 after having to deal with several personal issues.

Gregory A. Good (Greg) was rather fully engaged in 2011, his first year of a two year term as President of the History of Earth Science Society (HESS). In addition, Greg published "Measuring the Inaccessible Earth: Geomagnetism, In Situ Measurements, Remote Sensing, and Proxy Data," in *Centaurus: An International Journal of the History of Science and its Cultural Aspects.* Also, his essay "Todays Compass: What Can We Learn from Looking Back at How Scientists Have Studied Earth's Magnetism" was published in a special issue of *The Compass* edited by Daniel Merriam. Greg also acted as referee for both *Earth Sciences History* and served on the editorial board of *History of the Geo- and Space Sciences.* Lastly, Greg made a number of professional presentations, including "Making the Inaccessible Accessible: Studies of Earth's Near-Space Environment before Satellites," at the triennial meeting of the International Union of Geodesy and Geophysics in Melbourne, Australia.

In 2011 **Ursula Marvin** reviewed *A professor, a president, and a meteor. The Birth of American Science* by Cathryn J. Prince, Prometheus Books, 2011, 254 p. for *Meteoritics and Planetary Science*, 46, No. 10, 1608-1616.

Clifford M. Nelson received the Gerald M. and Sue T. Friedman Distinguished Service Award from the History and Philosophy of Geology Division at the Geological Society of America's annual meeting in Minneapolis in October 2011. Layout began on *Minerals, Lands, and Geology "for the Common Defence and General Welfare": Volume 4, 1939−1961*, by Mary C. Rabbitt and Cliff; the book should be published before the end of 2012. Cliff continued preliminary work on Volume 5 (1961−1982). He also completed a draft article, co-authored with Edward P. F. Rose (University of London), about the USGS Military Geology Unit in World War II; the article was submitted in September 2011 for consideration by the editors of the *Quarterly Journal of Engineering Geology and Hydrology*.

2011 was a very good year for **Sally Newcomb**. She was the pleased recipient of the Rabbitt Award of the History and Philosophy of Geology Division of the Geological Society of America, given at the division lunch at the general GSA meeting in Minneapolis in October. The citation and reply are elsewhere in this Newsletter. For GSA, she continues as a member of the GSA Foundation's Development Committee, especially supporting Geocorps. At that meeting she continued her exploration of the work of Richard Kirwan, and gave a paper titled "Richard Kirwan (1733-1812): A Journey". This investigated Kirwan's changes of religion throughout his life, in some explanation of his Mosaic geology. In March, 2012 she and Bill Brice will co-chair a session at the Northeast GSA meeting in Hartford Connecticut titled "Historical Perspectives: 250 years of geology in the Northeast". On a personal note, she had very successful orthopedic surgery in November. Bring on the field trips!!!

Julie Newell reports that she has been fully occupied as Departmental Chair at Southern Polytechnic and has no historical studies to report.

John A. Norris had a book chapter and two book reviews published in 2011:

- Dolování a představy o metalogenezi v Čechách 16. století ("Mining and Theories of Metallogenesis in Bohemia during the Sixteenth Century"), in Ivo Purš and Vladimír Karpenko (eds.), *Alchemie a Rudolf II.*; Artefactum, Praha, 2011: 657-670.
- Sally Newcomb: *The world in a crucible: Laboratory practice and geological theory at the beginning of geology*; Boulder, Colorado, Geological Society of America, Special Paper No. 449, 2009; *Metascience* (online 2011: Digital Object Identifier 10.1007/s11016-011-9621-6, print version forthcoming).
- Warren A. Dym, *Divining Science: Treasure Hunting and Earth Science in Early Modern Germany*; Leiden, Brill, 2011; *Early Science and Medicine* XVI no. 6, 2011; 629-630.

Both reviewed books are excellent and highly recommended. An English edition of *Alchemy and Rudolf II* is currently being prepared.

Antony Orme (University of California, Los Angeles) published three papers in 2011, of which the most relevant to historians of Earth Science was a piece on "The Cycle of Erosion: Changing Times, Changing Science", one of 46 essays presented in *The Sage Handbook of Geographical Knowledge*, 636 pages, edited by John Agnew and David Livingstone (please see a review of this book elsewhere in this Newsletter). A second paper on "Climate Change in Eurasia: Perspectives over Space and Time" (invited for *Eurasian Geography and Economics*, 52 (1), 2011, 12-29) addressed this contentious subject in part from a temporal perspective involving nested hierarchies of decadal, centennial, millennial, and longer climate oscillations and cycles, which may coincide to promote major change. Finally, a paper on "Beach Changes along the Southern California Coast during the 20th Century: A Comparison of Natural and Human Forcing Factors" (Orme, A.R., Griggs, G.B., Revell, D.L., Zoulas, J.G., Grandy, C.C., Koo, H., *Shore & Beach*, 79 (4), 1911, 38-50) showed, *inter alia*, how developments in remote-sensing technology (e.g., from rectified aerial photography to topographic LIDAR) and Geographic Information Systems could be used to quantify beach changes over time, and in turn relate net seasonal erosion or accretion on 'natural' beaches to decadal ocean-atmosphere oscillations. In addition, a number of Earth-science historians and theorists from around the world are contributing to volume 1, *The Foundations of Geomorphology*, in a multi-volume *Treatise on Geomorphology* (Elsevier, Oxford, on-line and print editions), scheduled for 2012 (see this Newsletter next year for details).

Steve Rowland's primary history-of-geology effort in 2011 was the completion of a Russian-to-English translation (co-translated by my former grad student Slava Korolev) of an eighteenth century book titled "On the Strata of the Earth," by Mikhail Lomonosov. It will be published in 2012 by the Geological Society of America as a GSA special paper, with an introduction by my Russian colleague Irena Malakhova.

Ken Taylor continues work for a book on Nicolas Desmarest, and trusts that when finally completed the study's total time of preparation will not have exceeded the length of the career it delineates. In 2011 Ashgate published the late Rhoda Rappaport's *Studies on Eighteenth-Century Geology*, a collection of her papers that Ken edited - with an introductory essay - in collaboration with Martin Rudwick.

Davis A. Young reports two publications in 2011:

- Origin of the American quantitative igneous rock classification: Part 4, *Earth Sciences History*, v. 30, 1-38.
- Book Review of *Geochemistry: Exploration Environment Analysis*, v. 10, part 3, August 2010, INHIGEO Newsletter No. 43, p. 66-68.

Uzbekistan

The year 2011 was very productive in Uzbek scientific and industrial geological organizations. There were presented reports on completed projects (2007-2011) and the justification of new projects (2012-2016). This productivity has been reflected in the revitalization of publication and participation in various international meetings and symposia. It has led to active preparation for the 100th anniversary of Academician Kh.M.Abdullaev in 2012 and preparation for participation in the 34th International Geological Congress (Australia, 2012). Many reports reflected on these efforts.

With regional geology, tectonics and geodynamics there have been detailed studies on the stages of evolution of transform faults, supporting the possibility of their isolation in the Western Tien Shan (D.B.Djamalov, L.N. Lordkipanidze, R.N. Abdullaev). As part of a conference dealing with "Geological processes in the areas of subduction, collision and sliding crustal plates" papers were published dealing with: the historical aspect of the conceptual and analytical framework of the South Fergana suture and the possibility of treating it as a deep fault and lineament (L.N. Lordkipanidze , in journal "Geology and Mineral Resources" № 2), an overview of ideas about the types of the crust of the Central Tien Shan (A.S. Masumov, T.A. Masumova, in journal "Geology and Mineral Resources" № 6), the evolution of ideas by outstanding researcher, V.S. Burtman on the tectonics and geodynamics of Tien Shan and High Asia Paleozoic (L.N. Lordkipanidze, in journal "Geology and Mineral Resources", № 3), the views of researchers on the nature of the flexure-rupture zones "antityanshan" trend in Centralasian-Kazakhstan region (O.P and D.O. Mordvintsev, in journal "Geology and Mineral Resources", № 1), and at the International Conference "Modern state of the earth", dedicated to the memory of Viktor Efimovich Khain, Moscow State University), in the section on the history of science, a paper on the "History of Geodynamics of the Western Tien-Shan "(B.S. Nurtaev, L.N. Lordkipanidze).

In the field of petrology and metallogeny, research has been directed towards the conceptualization of Turkestan quasi-plate magmatism (A.A. Kustarnikova, A.I. Usmanov in the International Symposium on "Modern Problems of Geodynamics and Geoecology in intracontinental orogens", Bishkek), Western Tien-Shan Mountains (T.N. Dalimov in journal "Geology and Mineral Resources" № 1), on magmatic formations of Uzbekistan and separate areas: intrusive basement Bukhara-Khiva region (Kh.U. Uzakov, R.A. Snurnitsyn in journal "Geology and Mineral Resources", № 6), intrusive and volcanic rocks of Chatkal -Kurama region (Mikhailov, V.V. in journal "Geology and Mineral Resources", № 6), rare-metals (U.D. Mamarozikov, etc. in journal "Geology and Mineral Resources", № 1) and ophiolites (K. Urunbaev, I.K. Abubakirov in journal "Geology and Mineral Resources", № 3).

In their review on the prediction of mineral deposits an historical background was offered by V.P. Fedorchuk and I.K.Turapov of their development in Central Asia and Uzbekistan in journal "Geology and Mineral Resources", № 6.

Among the works on geophysics, available historical data on 3D seismic survey in Uzbekistan has been provided (A.V.Kirshin, etc. in journal "Geology and Mineral Resources" № 1) as well as geomagnetic research in areas of man-made objects (K.N.Abdullabekov, etc., Bishkek), the deep structure of the lithosphere of Uzbekistan (I.P.Sidorova , Bishkek - extended abstract, dedicated to the memory-B.B. Tal Virsky - an outstanding geophysicist Central Asia (28 August 1928 -23 February 2011).

Widely celebrated was the 80th anniversary of Uzbekistan's outstanding petrologist Alla Alekseevna Kustarnikova, the author of numerous publications and maps and the final monograph "Metallogeny of gold and copper", dedicated to the 100th anniversary of the famous twentieth century metallogenist Habib Mukhamedovich Abdullaev, published in early 2012.

In 2011, L.N.Lordkipanidze was awarded the International Fund for Academician Habib Abdullaev following a series of articles and publications on the "The history of geological science" in Uzbekistan, the most important scientific events, publications, anniversaries, personalities, on the basis of 2010. Also published was an advance copy of personal memoirs of L.N.Lordkipanidze ("Lora") describing a 50-year career of a historian of geology including photographs V.V.Tikhomirov, V.Y.Khain, A.L.Yanshina, H.M. Abdullaev, I.Kh.Khamrabaev, etc.

During 2011, geological science in Uzbekistan suffered several heavy losses. These included the death of Academician Turabek Nugmanovich Dalimov (18 August 1936 – 12 October 2011) - an outstanding scientist in the field of petrology and geodynamics, doctor of geological-mineralogical sciences, professor, rector of National University of Uzbekistan (1994-2004), head of the Department of Petrology and Metallogeny of the Institute of Geology and Geophysics of the Academy of Sciences named after H.M.Abdullaev until his the last days. He had published over 200 works including 15 monographs and three textbooks, including a Russian-Uzbek dictionary of geology, and created a series of specialized geological maps. His works are devoted to magmatism in Central Asia, Geology and Mineral Resources of Uzbekistan, the geodynamics of Tien Shan, the evolution of the Earth. Laureate of the State Prize, from journal "Geology and Mineral Resources", № 6.

The death of Alexander Sadykovich Masumov (2 June 1938 – 12 October 2011) was also recorded - a prominent scientist in the field of regional geology and stratigraphy of the Upper Paleozoic of Central Asia, doctor of geological-mineralogical sciences, author of conception of development of late Paleozoic of Tien-Shan, who made a great contribution to the study of the crust and upper mantle processes, petroleum and petroleum accumulation, from journal "Geology and Mineral Resources", № 6.

Also passed away has been Svetlana K. Smirnova (22 January 1935 – 21 May 2011) - an outstanding mineralogist and geochemist of Uzbekistan, candidate of geological-mineralogical sciences, the author of more than 150 works, including the four-volume collective monograph "Minerals of Uzbekistan", a specialist in mineralogy of gold and silver -lead deposits, a member of the International Association on the Genesis of Ore Deposits IAGOD. Her predictions were confirmed in a number of field investigations. She won grants from Soros, INTAS, and NATO and STCU, from journal "Geology and Mineral Resources", № 3.

Another death has been has been that of Edward B. Bertman (1938-2011) - a renowned expert in the field of geochemistry of gold deposits of Uzbekistan, candidate of geological-mineralogical sciences, the author of more than 100 works, which made a significant contribution to the increase of the gold potential of the Republic, as well as stocks of non-metallic minerals and other minerals, from journal "Geology and Mineral Resources", № 6.

Lora N. Lordkipanidze, Tashkent

Venezuela

The main event relating to the history of geosciences was the "VII Venezuelan Symposium of the History of Geosciences" a special session of the "I Venezuelan Congress of Geosciences" held at the Venezuelan Central University, 4-5 December 2012. Contrary to previous events fewer papers were presented. These were:

- "120th Anniversary of Seismology in Bulgaria, South-East Europe" by R.Glavcheva
- "Historical reconstruction of prehispanic and colonial goldsmith in North Central Venezuela" by L. Barboza
- "Geodiversity of the Aroa mines park, Yaracuy state". By R. López
- "Biography of Dr. Louis Kehrer (1897-1979)" by F. Urbani

Also a set of invited speakers talked about the historical perspective of several geological issues and topics, closing with a statement of the future perspectives for Venezuela. The issues were:

- Graduate studies in geology
- Undergraduate geological education in Los Andes University
- Geohazards
- Coal
- Bauxite
- Vertebrate paleontology

The authors Rogelio Altez, Franco Urbani, Andrea Noria and Michael Schmitz finished the 280 page manuscript of the book "The ´1812 Effect´ in the press and science of XIX Century" in which we compile 100 newspaper news and scientific notes and papers about the major earthquake of 26 March 1812 with a detailed analysis of the way in which the news of the event were propagated and how it was perceived in the scientific literature. During March 2012 several events will be held to commemorate this earthquake, the worst disaster in the history of Venezuela. The manuscript has been submitted to the publisher.

Rogelio Altez & Franco Urbani, Caracas

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