# *International Commission on the History of Geological Sciences*

## INHIGEO

## ANNUAL RECORD

No. 50

Covering Activities generally in 2017
Issued in 2018

INHIGEO
is
*A Commission of the International Union of Geological Sciences*
*&*
*An affiliate of the International Union of the History and Philosophy of Science and Technology*

**Compiled and Edited by William R. Brice**
**INHIGEO Editor**

**Printed in Johnstown, Pennsylvania, USA, on request**
**Available at [www.inhigeo.com](http://www.inhigeo.com)**

**ISSN 1028-1533**


INHIGEO

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***INHIGEO Annual Record No. 50***
**(Published in August 2018 and covering events generally in 2017)**

# INHIGEO Board Members 2016-202

**President**
Barry Cooper (Australia)
School of Natural & Built Environments
University of South Australia
Mason Lakes Campus
GPO Box 2471, Adelaide, SA, 5001
AUSTRALIA
barry.cooper@unisa.edu.au

**Editor**
William R. Brice (USA)
116 Luna Lane
Johnstown, PA 15904-3068
USA
wbrice@pitt.edu

**Vice-President Europe**
Ezio Vaccari
Dipartimento di Scienze Teoriche e Applicate,
Università degli Studi dell'Insubria
Via Mazzini 5
21100 Varese
ITALY
ezio.vaccari@uninsubria.it

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Michiko YAJIMA (Japan)
College of Humanities & Sciences
Nihon University
#901, 6-2-10, Hongo, Bunkyo-ku
Tokyo 113-0033
JAPAN
pxi02070@nifty.com

**Vice-President (Latin America)**
Luz Azuela (Mexico)
Instituto de Geografía
Universidad Nacional Autónoma de Mexico
Circuito Exterior s/n; Ciudad Universitaria
04510 MEXICO. D. F.
lazuelab@yahoo.com.mx

**Secretary-General**
Marianne Klemun (Austria)
Department of History
University of Vienna
Universitätsring 1
1010 Wien
AUSTRIA
marianne.klemun@univie.ac.at

**Past-President**
Ken Taylor (USA)
Department of History of Science
University of Oklahoma
Norman, OK 73019-0315
USA
ktaylor@ou.edu

**Vice-President North America**
Stephen Rowland (USA)
Department of Geosciences
P. O. Box 454010
Univ. of Nevada; Las Vegas
Las Vegas, NV 89154-4010
USA
steve.rowland@unlv.edu

**Vice-President Australasia/Oceania**
Mike Johnston (New Zealand)
395 Trafalgar Street
Nelson 7010
NEW ZEALAND
mike.johnston@xtra.co.nz

**Episodes Coordinator (ex officio)**
Karen Cook (USA)
914 W. 27th Terrace
Lawrence, KS 66046
USA
kscook@ku.edu

## PRESIDENT'S MESSAGE
## (April 2018)

Our 50th anniversary year is over, and it has been a wonderful success. Thank you all who have been involved.

Most of all extra special thanks are due to our Armenian delegation who organised a highly memorable anniversary meeting in the same country, the same city and even the same meeting hall as in 1967. Sadly, one influential Armenian member, Arkadi Karakhanyan, has passed away since our meeting.

In anticipation of the occasion our past Editor, Wolf Mayer, created a magnificent special anniversary volume *History of Geoscience: Celebrating 50 years of INHIGEO* that was launched at the conference

Then a large conference volume was offered with abstracts, excursion guides and an introduction to Armenian geology, together with spectacular INHIGEO ornaments made from Armenian obsidian.

Our Armenian delegation also presented delegates with another two extra publications that were especially prepared for conference. These were:

"The origins and development of geological thought in Armenia
(5th century BC – 17th century AD) by R. Jrbashyan, G. Khomizuri and A. Harutyunyan

"Unique Geological Monuments of Armenia: Guidebook for Tourists"
by Ashot Avanessian, Edward Malkhassian and Sergey Nazaretyan

It is highly gratifying that our conference stimulates such significant additional contributions.

2017 has also heralded the 25th International Congress on the History of Science and Technology (25ICHST) in Rio de Janeiro (Brazil). INHIGEO held two successful symposia at this congress.

"History of Petroleum (origins, exploration and exploitation)".
"Multiple Spaces: Mapping Communication via Letters between Naturalists and Geologists".

Conveners, Silvia Figueirôa, Marianne Klemun, and Johannes Mattes are to be congratulated for their efforts.

Our Commission has certainly been extremely active over the past 2 years and it reached a pinnacle with our 50th anniversary celebration. Of course, we will have another major conference in 2018 and it will be in a country where INHIGEO has never ventured before: Mexico. It will provide a great opportunity for us all to learn about the geology and history in another significant part of the world.

I invite you all not to miss this occasion. From the information already provided you can already appreciate that conference organizer Luz Azuela will arrange a delightful event.

In conclusion, I thank specially also Secretary General Marianne Klemun, Editor Bill Brice, Webmaster Johannes Mattes, as well as the residual INHIGEO Board, for their ongoing major contribution to INHIGEO. We cannot thrive without you.

I look forward to seeing many of you soon in Mexico City.

Barry Cooper
Adelaide, SA Australia

**SECRETARY-GENERAL'S REPORT 2018**

Summarizing our INHIGEO activities during 2017, I have the pleasure to thank all our members for their lively engagement in history, for "our" shared field, the history of geology among our scientific community, and for the fifty-year existence of the Commission. Thanks to Bill Brice's tremendous editorial work, our Annual Record turns out to be an impressive manifestation of INHIGEO's multifaceted enterprise. Thanks to our webmaster Johannes Mattes, all of our Annual Records are available on our homepage (www.inhigeo.com).

I, also, have to thank many colleagues who contributed to the success of our **annual meeting, held in September 12-18, 2017 at the Armenian Academy of Sciences, Yerevan:** Khachatur Meliksetian, Ruben Jrbashyan, Arkady Karakhanyan, Ashot Pilipossyan, Karapat Vardanyan, Georgi Khomezuri, Gourgen Malkhasyan from the local committee. However tragically Arkady Karakhanyan has already left us and thus does not appreciate our gratitude to him. Overall, I wish to express my heartfelt gratitude to each person (I cannot mention all of them by name) of the Armenian team for hosting scholars from 17 countries. Fifty-nine interesting papers were presented, and twelve informative posters were displayed. During the well-prepared fieldtrips, we admired the medieval stone heritage of monasteries as well as canyons, lava flows and volcanic sites. A full report of this meeting including the fieldtrip written by Mike Johnston can be found in this Annual Record, thanks to Mike's commitment. It is extremely satisfying that our meeting took place at the same place where the INHIGEO was founded in 1967: in Yerevan.

A highlight of the conference was the anniversary book launch ***History of Geoscience: Celebrating 50 Years of INHIGEO*.** The book was edited by Wolf Mayer, assisted by R. M. Clary; L. F. Azuela, T. S. Mota, and S. Wolkowicz and published by the Geological Society London in 2017. Barry Cooper hosted the book launch in his capacity as INHIGEO President, Marianne Klemun contributed brief thoughts about the global frame of our profession. One of the Editors, Teresa Salome Mota, gave a brief overview of the book in general. She recalled the first steps of developing an idea into a book and explained the main topics. It is a masterpiece of collective work of our members and the INHIGEO's efforts. We would like to acknowledge all Editors of the book, especially Wolf Mayer.

It is only a small token of gratitude for his tremendous achievements - but nevertheless a deserved recognition by INHIGEO - that Wolf Mayer was endorsed as new **Honorary Senior Member in 2017**.

He has been the Editor of the Annual Record for four years and also coordinated the publication of our anniversary book! Dr. Kennard Baker Bork, our former Secretary General, was also endorsed as a new Honorary Senior Member. At this point, I would also like to mention that our former President from 1996 to 2000, David BRANAGAN, was honoured as a Member (AM) of the Order of Australia. Congratulations to all three of them. They have gone a long way with us.

Let's get back to our review on 2017. Furthermore, INHIGEO also participated in two sessions at the **25th ICHST (International Congress of History of Sciences and Technology in Rio de Janeiro (Brazil)** which took place from 23 to 29 July 2017 on the Praia Vermelha campus of the Federal University of Rio de Janeiro (UFRJ). The overall conference theme was "Science, Technology and Medicine between the Global and the Local" (see the website http://www.ichst2017.sbhc.org.br/). INHIGEO-members hosted two symposia at this congress, and both of them were very successful. Conveners of the symposium on the topic "Black Gold": History, Exploration & Exploitation of Oil and Gas in National and International Contexts" were **Silvia F. de M Figueirôa, Brian Frehner, Drielli Peyerl and Gregory Good**.

The symposium on "Multiple Spaces: Mapping Communication via Letters between Naturalists and Geologists" was conducted by **Marianne Klemun and Johannes Mattes.** A big thank you to the conveners for organizing these two successful sessions and for representing the INHIGEO at this very important international event on the history of science! As we are affiliated to the ICHST, we are obliged to contribute to this congress.

As Secretary-General and representative of the INHIGEO, I attended the general assembly of IUHPST/DHST which took place over two days during the congress. Barry Cooper was confirmed by the assembly as our new president. The nomination of **Greg Good as assessor** was also successful. He gained the majority of votes and is now one of six assessors. Congratulations to Greg and good luck for him in his new position! We have now closer ties to the IUHPST/DHST than ever before.

These two meetings (the Annual INHIGEO Meeting in Yerevan and the sessions at the ICHST) were by no means the only events organized under the roof of our Commission in 2017. In response to the suggestion of the IUGS at the executive meeting in Potsdam in January 2018 that every Commission should convene several times a year we can confirm that this is already the case. While the Commission meets regularly, in order to reduce costs, meetings of several days duration are held at different locations each year, these events are listed within the Annual Record. The Commission also keeps its members fully informed by quarterly electronic circulars and, if necessary, by additional e-communciation.

We received financial support from IUGS and IUHPS/DHS. We are grateful for this support to both organizations, although these contributions are not sufficient to support our younger scholars as much as we would like.

The Annual Record emphasizes that the members of our Commission have been successful in publishing a number of significant books this year that are listed in the individual reports of our annual record.
As to our members: the ballot from April/May 2017 has accepted all eleven scholars who were nominated as new members: William Birch, Friedrich Steininger, Drielli Peyerl, Liang Liu, Nicolas Ginsburger, Pierre Savaton, Akira Yamamoto, Serge V. Naugolnykh, Peter Konečný, Sharad Master, Bruce Cairncross.

As of the end of the year 2017, INHIGEO has 288 members (from 57 countries), compared to 265 members from 54 countries in 2014. The increase is especially gratifying, but we also mourn the deaths of several members who made huge contributions to the history of geology and to INHIGEO: Prof. Hakuyu Okada, President of the Geological Survey of Japan, INHIGEO Honorary Senior Member Robert H. Dott, Jr., Endre Dudrich (Hungary), Trevor Ford (UK), Arkady Karakhanyan (Armenia), INHIGEO Honorary Senior Member Ursula Marvin (USA), Phil Playford (Australia), INHIGEO Honorary Senior Member Cecil Schneer (USA).

As a final note, I would like to mention that INHIGEO approved the "History of Geoscience Section – Geological Society of Italy" as a new INHIGEO Affiliated Association. A warm welcome to this new Association!

We are looking forward to a fruitful year, exchanges, debates and discussions and our next annual meeting in Mexico City in November 2018!

Marianne Klemun

**EDITOR'S MESSAGE 2018**

The first thing that I must do is to thank everyone who contributed material, information, articles, etc. for the *INHIGEO ANNUAL RECORD*, No. 49 2017, and who, each year, help make our publication the success that it is. Please accept this expression of appreciation for your many contributions, and, please keep them coming in 2019. A very special thank you goes out to Mike Johnston for once again reporting on the INHIGEO Annual Meeting, and to Leonid Kolbantsev and Zoya Bessudnova for sharing their poster presentation from the meeting with the *Record*. I'm sure their photographs will bring back lots of memories for those who attended the various meetings and envy of all the good times from those who were not able to attend.

Secondly, I must express my sincere apologies to my friend and long-time colleague, Dr. Kennard Baker Bork, for my oversight last year. I failed to mention his election as an Honorary Senior Member of INHIGEO, an honor that is both earned and well deserved. I hope Ken will accept my apology for this oversight, and perhaps this mention will, in some small way, make up for my error.

And along that same line, may I offer my congratulations to my predecessor as INHIGEO Editor, Wolf Mayer of Australia, on his election as an Honorary Senior Fellow. And my congratulations to our colleague David Branagan on whom was bestowed the Order of Australia (AM).

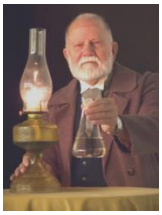
Sadly, we lost several colleagues this past year and our sympathies go out to their families and friends. Prof. Hakuyu Okada, President of the Geological Survey of Japan, Ken Alto (USA - 2018), INHIGEO Honorary Senior Member Robert H. Dott, Jr. (USA - 2018), Endre Dudrich (Hungary), Trevor Ford (UK), Arkady Karakhanyan (Armenia), INHIGEO Honorary Senior Member Ursula Marvin (USA - 2018), Phil Playford (Australia), INHIGEO Honorary Senior Member Cecil Schneer (USA). I had the honor and pleasure of knowing and working with four of them, Ken Alto, Ursula Marvin, Bob Dott, and Cecil Schneer. All will be greatly missed by everyone who knew them. For those members who died in 2018, their obituraries will appear in the *Record* for 2018.

I join my colleagues in welcoming our new INHIGEO members. The complete list, with their addresses, is to be found within this issue. I hope we all will take the time to send a welcoming note to each of them.

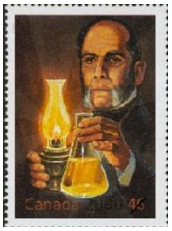
And finally, thank you for the privilege of being your editor.

Cheers to all,
Bill Brice

PS: Who says history can't come to life?



Photograph courtesy of Oil Region Alliance, Oil City, Pennsylvania



Abraham Gesner (1797-1864)

# CONFERENCE REPORT

## YEREVAN, ARMENIA

**The International Commission on the History of Geological Sciences** (INHIGEO) 42nd Meeting, Yerevan, Armenia, 12 to 18 September 2017 with intra- and post-meeting field trips from 16 to 21 September.


*Figure 1. Participants at the 42nd INHIGEO Meeting on the steps of the National Academy of Sciences of Armenia building where the inaugural meeting took place in 1967. Dr Khachatur Meliksetian, Director of Institute of Geological Sciences, is in the front row third from the left (wearing tie). Photo: Institute of Geological Sciences, Armenian National Academy of Sciences.*

INHIGEO returned to its roots in Yerevan, the capital of Armenia, for its 42nd meeting. Yerevan has a population of about one million, about a third of that for the entire country. The meeting notably marked the 50th anniversary of INHIGEO's founding during the International Symposium on the History of Geology in 1967. The 2017 meeting was appropriately held in the same meeting room as the inaugural one, the Round Hall of National Academy of Sciences of Armenia, a handsome edifice constructed, in

keeping with many of the buildings in the capital and its environs, of a purplish coloured ignimbrite (Fig. 1). Rising to the occasion, our hosts headed by Dr Khachatur Meliksetian, Director of Institute of Geological Sciences of the National Academy of Sciences, and the organising committee ensured that we were made to feel at home and well looked after. Language difficulties were overcome with the provision of an excellent translation service. In addition, a comprehensive lavishly illustrated volume, containing an introduction to Armenia and its varied geology, fieldtrip guides and abstracts, was made available on arrival. In addition, each delegate receiving a beautiful plaque made from a multi-coloured local obsidian and inscribed with the INHIGEO motif and appropriate wording (Fig. 2).

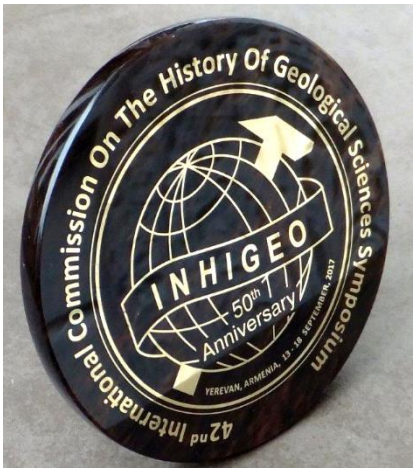



*Figure 2. Commemorative plaque of the 42nd INHIGEO meeting. (All following illustrations are by Mike Johnston unless otherwise stated).*

In addition, to acknowledging "50 years of INHIGEO", the themes for the meeting were the "Development of geological ideas and concepts", "History of geology in Armenia", "Ancient knowledge of stone and metals", "Studies of historic and prehistoric evidences of seismic and volcanic activity" and "General contributions and biographies of famous geologists".

The weather for the meeting and field trips was fine and very warm although, being autumn, skies were hazy. Biblical Mount Ararat was still visible on the skyline from Yerevan. In conjunction with this report it is recommended that readers avail themselves of an excellent, and very comprehensive, visual electronic record of the meeting and fieldtrips that was compiled by the Armenian Institute of Geological Sciences: https://photos.google.com/share/AF1QipPhm0aM5a6fl5xFiVwI7EChX27-qu1fqbFqwbLdaIKRE4SQG1D1Vv_H9g0FTGOOqA?key=a3pzODAxN3R2OFB5ejl6RlB3Q2hrVDhYanp2ZFZB; and https://www.flickr.com/photos/inhigeo/albums/with/72157687089165604

## INHIGEO Meeting

**13 September**

**Introduction and Welcome addresses by:**

Vache Gabrielyan, Deputy Prime Minister of Armenia.

Ruben Jrbashyan, Academician of the National Academy of Sciences of Armenia, head of INHIGEO-2017 Organizing Committee.

Barry J. Cooper, President of INHIGEO (Presentation: *The beginnings of INHIGEO*).

Irena Malakhova, (Presentation: *History of Geology of Geological Institute of the Russian Academy of Sciences*).

Radik Martirosyan, President of the National Academy of Sciences of Armenia.

**Anniversary book launch:** *History of Geoscience: Celebrating 50 Years of INHIGEO*; Edited by W. Mayer, R.M. Clary, L.F. Azuela, T.S. Mota and S. Wolkowicz (Geological Society, London, Special Publications, 442, 2017)

Chair: Barry Cooper (INHIGEO President)
Marianne Klemun (INHIGEO Secretary-General) –
History of Geology and History of Science in a global frame.

Presenter of the book: Teresa S. Mota in lieu of Wolfgang Mayer
The INHIGEO 50th Anniversary Volume: a Post-Scriptum.

**Session I – Chair: Phillipe Taquet** **NOTE: For multiple authors, the underlined name was the presenter.**

M. Sosson, A Karakhanyan, T. Kangarli, Sh. Adamia, V. Starostenko, T. Danelian, H. Phillip, J. F. Riya, Y. Rolland, M. Hässig, D. Bosch, B. Smith, M. Meijers, A. Avagyan, L. Sahakyan, Gh. Galoyan, R. Melkonian, N. Sadradze, V. Alania, O. Enukidze, T. Yegorova, O. Gintov, A. Murovskaya, Y. Sheremet – *The highlights and the contribution of International Research Group (IRG) "South Caucasus Geosciences: France, Armenia, Azerbaijan, Georgia and Ukraine*.

G. Malkhasyan – *Edward Malkhasyan - the first INHIGEO member in Armenia*.

K. Meliksetian – *Prehistoric use of copper ores and obsidian in the southern Caucasus*.

A. Piliposyan, Kh. Meliksetian, A. Zaqyan, D. Berger, E. Pernicka. – *Transit trade of tin in ancient Near East in Bronze Age and Armenian Highland*.

E. Vaccari – *Between insiders and outsiders: INHIGEO and the history of geology in Italy*.

**Session II – Chair: Khachatur Meliksetian**

G. Gabrielyants, V. Poroskun – *The history of scientific foundations of oil exploration (battle of ideas, theories and concepts)*.

R. Jrbashyan, G. Khomizuri – *History of geological knowledge in the works of medieval Armenian authors*.

R. Melkonyan – *Institute of Geological Sciences of the NAS of the RA in the history of geology in Armenia*.

H. Melik-Adamyan – *Research in the Crimea, the Caucasus and Armenia by Armenian geologist N. I. Karakash*.

G. Grigoryan, S. Avagyan – *The role of geological museum after Hovhannes Karapetyan of IGS NAS RA in the history of geology in Armenia*.

A. Grigoryan, H. Melik-Adamyan – *Contribution of European paleontologists to the study of Paleozoic deposits of the Armenian Highlands (XIXc)*.

K. Vardanyan, G. Hovsepyan – *The history of Geological Survey of the Republic of Armeni*a.

A. Avanesyan – *An overview of the history of geological mapping in Armenia*.

**Session III – Chair: Johannes Mattes**

P. Taquet – *Joseph Pentland and Georges Cuvier: A French – British Entente cordiale*.

M. Yajima – *Geological and Palaeontological Studies by Teiichi Kobayashi (1901-1997)*.

E. Hamm – *Mountains, Romantics, Geology*.

Announcement about the 43rd International Commission on the History of Geological Sciences (INHIGEO) Meeting, Mexico, 2018.

**14 September**

**Session IV – Chair: Ernest Hamm**

G. Galoyan – *History of geological studies of Mesozoic ophiolites of the Lesser Caucasus (Armenia, Karabakh).*

C. Cohen – *Deluge, Diluvialists and Diluvium in early Geology, From Leibniz to Cuvier and beyond*.

G. Godard – *The Accademia dei Lincei and the early geology around the year 1630*.

I. Malakhova – *Some features of the history of geology in Russia*.

J. Mattes – *Between the Organic and Inorganic: Concepts of an Animated Earth in the Debates on Cave Minerals in Early Modern Europe*.

M. Klemun – *How the Caucasus became 'our' Caucasus: from geology to alpinism*.

**Session V – Chair: John Diemer**

L. Azuela, R. A. Vega – *Geology in the public sphere in Mexico (1840-1876).*

M. Povarennykh – *Changeover of mineralogical paradigms during the 350-year period of the existence of mineralogy as a science*.

P. Richet – *1751-1798: The sudden beginnings of volcanology*.

B. Cooper, J. Jago – *Robert Bedford (1874-1951): A unique contributor to international geology from the Australian outback.*

**Session VI – Chair: Irena Malakhova**

R. Clary, T. Sharpe (presented by Greg Good) – *The furthest end of the earth: The role of geological research in Antarctic exploration, 1895-1922*.

S. Wołkowicz, K. Wołkowicz, M. Graniczny, H. Urban – *Evolution of geological map of Poland in the 19th century*.

S. Rowland – *Mikhail Lomonosov's unusual mid-eighteenth-century view on the beneficent effect of earthquakes on human civilization*.

A. Kazarian – *The challenge of geochemical earthquake prediction- History of the* Problem.

R. Schwab, K. Meliksetian, S. Kraus, E. Pernicka – *Extraordinary arsenic-rich alloysused for jewellery in Bronze Age Armenia*.

A. Rideaud, B. Helly – *Ancient Buildings and Seismic Cultures: The cases in Armenia*.

A. Avagyan, L. Sahakyan, M. Martirosyan, T. Atalyan, A. Hayrapetyan – *Palaeoseismological evidences of strong earthquake repetition in Shirak basin*.

**Session VII – Chair: Mike Johnston**

A. Carneiro, P. Urze – *Nery Delgado (1835-1908): The diplomatic dimension of a geologist's career*.

D. Sack – *C. A. M. King, pioneering (woman) geomorphologist*.

**Presentation at Ministry of Energy and Natural Resources, Republic Square**

Following the last session of papers for the day, participants were bused to the Ministry of Energy and Natural Resources, in central Yerevan, to a presentation explaining the government's "Implementation process of Armenia to the International Extractive Industries Transparency Initiative (EITI)." The Armenian government, with the support of the US Agency for International Development, is digitising paper geological reports and maps along with other information, mostly of mining sites. In addition,

digitised copies of new reports as they are generated will be added. As the database is publically available it will prove of great benefit to historians of geology. More information is available at: www.geo-fund.am.

**15 September**

**Session VIII – Chair: Sharad Master**

H. Urban, M. Graniczny, K. Wołkowicz, S. Wołkowicz – *Professor Edward Rühle (1905-1988), creator of the Polish modern geological cartography*.

J. Diemer – *Fossils, maps, museums and collaboration: keys to success in Murchison's 1845 field campaign in Sweden*.

K. Wołkowicz, M. Graniczny, S. Wołkowicz, H. Urban. *Splendors and shadows which is about the life of Jan Wyżykowski (1917-1976) and the discovery of the "great copper" in Poland*.

L. Kolbantsev – *Vladimir Lodochnikov and Russian Petrographic Schools*.

M. Napolitani – *Building Earth Sciences through Mineral Collections. The Mineralogy Museum of the Parisian École des Mines, from the Curiosity Cabinet to the Science Museum (1783-1803).*

M. Pantaloni, F. Console, F. M. Petti – *On the trail of Hermann Abich in Italy: a journey through the Italian volcanoes*.

**Session IX – Chair: Ezio Vaccari**

M. Kölbl-Ebert – *Closing the iron curtain: How geologists in Germany experienced the beginnings of the Cold War era.*

N. Bryanchaninova, I. Vtorov, A. Makeyev – *Transcaucasian academic expedition (1927-1930) led by F. Loewinson-Lessing.*

S. Master – *South African geologist Alex L. Du Toit, pioneer of continental drift, in the Caucasus (17th IGC, July 1937) - diaries and photographs of an excursion.*

S. Figueirôa – *A 'Hidden figure': Oscar Nerval De Gouvêa (1856-1915), Mineralogy & Medicine in Brazil*.

**Session X – Chair: Stephen Rowland**

S. Nathan – *James Hector (1834-1907) and the birth of the New Zealand Geological Survey*.

T. S. Mota – *Francisco Luís Pereira de Sousa (1870—1931): the scientific life of a 'everyday man of science' in Portugal in the beginning of the 20th century*.

T. Yamada – *The meaning of museums: The background of the geologist Teiichi Kobayashi's 'geoscience' conception in the 1940s*.

Z. Bessudnova – *The heritage of the author of the first Russian monograph on the history of geology Grigory E. Shchurovsky in the collections of Vernadsky State Geological Museum*.

**Session XI Posters – Chair: Dorothy Sack**

T. Atalyan, A. Avagyan, D. Arakelyan, M. Martirosyan – *Geological impact on St. Hovhannes Karapet Monastery*.

M. Graniczny, S. Wolkowicz, H. Urban, K. Wołkowicz – *Jan Samsonowicz (1888 – 1959) outstanding Polish explorer and educator of the several generations of geologists*.

G. Grigoryan, G. Khomizuri, M. Misakyan – *Leonid Afanasievitch Spendiarov Prize*.

Gh. Galoyan. *History of geological studies of Mesozoic ophiolites of the Lesser Caucasus (Armenia, Karabakh).*

H. Hovakimyan – *Historical overview of diatom records from Sisianpalaeolake (Armenia)*.

L. Kolbantsev, Z. Bessudnova – *Personalities of INHIGEO: from Madrid (2010) to Cape Town (2016).*
I. Malakhova. I. Vtorov – *It began with Yerevan*.
M. Martirosyan, A. Avagyan, S. Vardanyan, T. Grigoryan – *Paleoseismological studies of the eastern part of Karkar-Tsghuk pull-apart of Pambak-Sevan-Syunik active fault*.
S. Master – *Geomorphological theory in 10th century Basra (Iraq): The Epistles of the Brethren of Purity (Ikhwân Al-Safâ'), in geographical context*.
E. N. Matvienko, A. S. Alekseev, M. Y. Povarennykh – *Problems of restoration of cultural heritage monuments from the point of view of a geologist*.
H. Melik-Adamyan, Kh. Khachanov – *Initial stages of mining and geological studies of the ancient Armenian region of Artsakh.*
R. Melkonyan, L. Atayan – *The outstanding mineralogist and petrologist Vladimir Nikita Lodochnikov (Vardan Mkrtich Gayakchyan).*
S. Wolkowicz, K. Wolkowicz – *Geological map of the Kerch and Taman peninsulas (1851) – interesting map developed by Hermann Abich (1806-1886).*

**INHIGEO Business Meeting (See separate report).**

**Geological Museum**

Following the business meeting the nearby Institute of Geological Sciences Museum, which commenced in 1937 and also constructed of ignimbrite, was opened for participants. Named after its initial benefactor Professor H. T. Karapetyan this small museum has a comprehensive display of Armenian rocks, minerals and fossils, including a large collection of the huge range of the country's different varieties of obsidian. However, pride of place goes to the skeleton of a large Pleistocene elephant, *Elephas trogontherii*, unearthed in an Armenian sand quarry (Fig. 3).

*Figure 3. In the Geological Museum, Yerevan. INHIHEO Secretary-General Professor Marianne Klemun (Austria) on left.*

**Conference Dinner**

In the evening following the INHIGEO Meeting a very enjoyable conference dinner was held at the Tavern Yerevan in central Yerevan. Traditional Armenian food and beverages were served and a delegate from each of the many countries represented at meeting gave short eulogies to our hosts.

**Field Trips**

The three field trips, two of one-day duration and the other of four days, were led by Khachatur Meliksetian who was joined at various stops by other experts.

**16 September – Mid-conference Field Trip (Day 1)**

The field trip commenced with a visit to the Mesrop Mashtots Institute of Ancient Manuscripts, more commonly known as the Matenadaran or "repository of manuscripts" (Fig. 4). The building was completed in 1957 on a commanding site overlooking the city and contains around 17,000 manuscripts and 30,000 other documents. It has one of the largest collections of medieval manuscripts and books in the world. The material ranges over a wide variety of topics and a fascinating selection of these exquisite objects is on display in the many rooms open to the public and through which we were assisted by knowledgeable guides at the Matenadaran.

*Figure 4. A few of the many priceless volumes in the Mesrop Mashtots Institute of Ancient Manuscripts ("the Matenadaran").*

From the Matenadaran participants were bused eastwards, stopping for lunch at a restaurant high in the haze on a sun-baked ridge before arriving at the Garni Fortress, in the foothills of the Gregham volcanic ridge some 40 km from Yerevan (Figs. 5-6). The ridge is part of a large, monogenetic, shield volcano that commenced erupting in the Late Miocene. Cutting down into the volcanic deposits is the Azat River, whose valley has been partly filled, 127,000 years ago, by a large flow of trachy-basaltic andesite. A meander of the river has almost isolated part of the flow's surface, making an ideal defensive site on which the Garni Fortress was constructed. Being surrounded on almost all sides by perpendicular cliffs, a short defensive wall with a gateway, was only required across the neck of the meander. The first known occupation of the site was in the 3rd millennium BC. On the meander a Hellenistic temple was built, like the fortress wall, out of local basalt, in the 1st century AD. The temple is generally considered to have been dedicated to Mithra (Mihr in Armenian), god of the sun. The temple was all but destroyed in a 17th century earthquake but has subsequently been restored to its original pristine condition. Beside the temple are the remains of a palace,

the most significant part being a bathhouse with a stone mosaic floor. Several other rooms show remnants of coloured plaster on the remaining walls. Rather than returning directly to the bus, participants were transported in a fleet of local cars by way of a steep rough road down into the Azat canyon where there is what must be one of the world's most spectacular exposures of columnar jointing (Fig. 7). As the basalt was cooling it was still flowing and this has resulted in cathedral-like caverns roofed in arching columns.

*Figure 5. INHIGEO field trippers pose in front of the 1st century AD Hellenistic temple at the Garni Fortress. Photo: Institute of Geological Sciences, Armenian National Academy of Sciences.*

*Figure 6. An informal grouping of INHIGEO members at the Garni Fortress. Khachatur Meliksetian (centre) directing traffic.*

Heading northeast a short bus ride brought participants to the last stop for the day, which was the Geghard Monastery, a UNESCO World Heritage Site (Figs. 8-9). The monastery, more correctly called Geghardavank, takes its name from the most famous of a number of relicts, it was formerly custodian of, which was a spear that had reputedly

wounded Christ on the Cross. The spear's presence at Geghard (it is now in a museum) is attributed to the Apostle Thaddeus. The monastery is partly dug into cliffs of volcanic breccia, much of it probably of ignimbritic origin, with layers and lenses of paler coloured tuff. These rocks are part of the Late Miocene-Early Pliocene Vokhcaberd volcaniclastic suite. Carved out of the cliffs and also in the walls of underground chapels, cells for the monks and tombs are crosses or khachkars, which must have been a difficult sculpting task considering the coarseness of the rock.

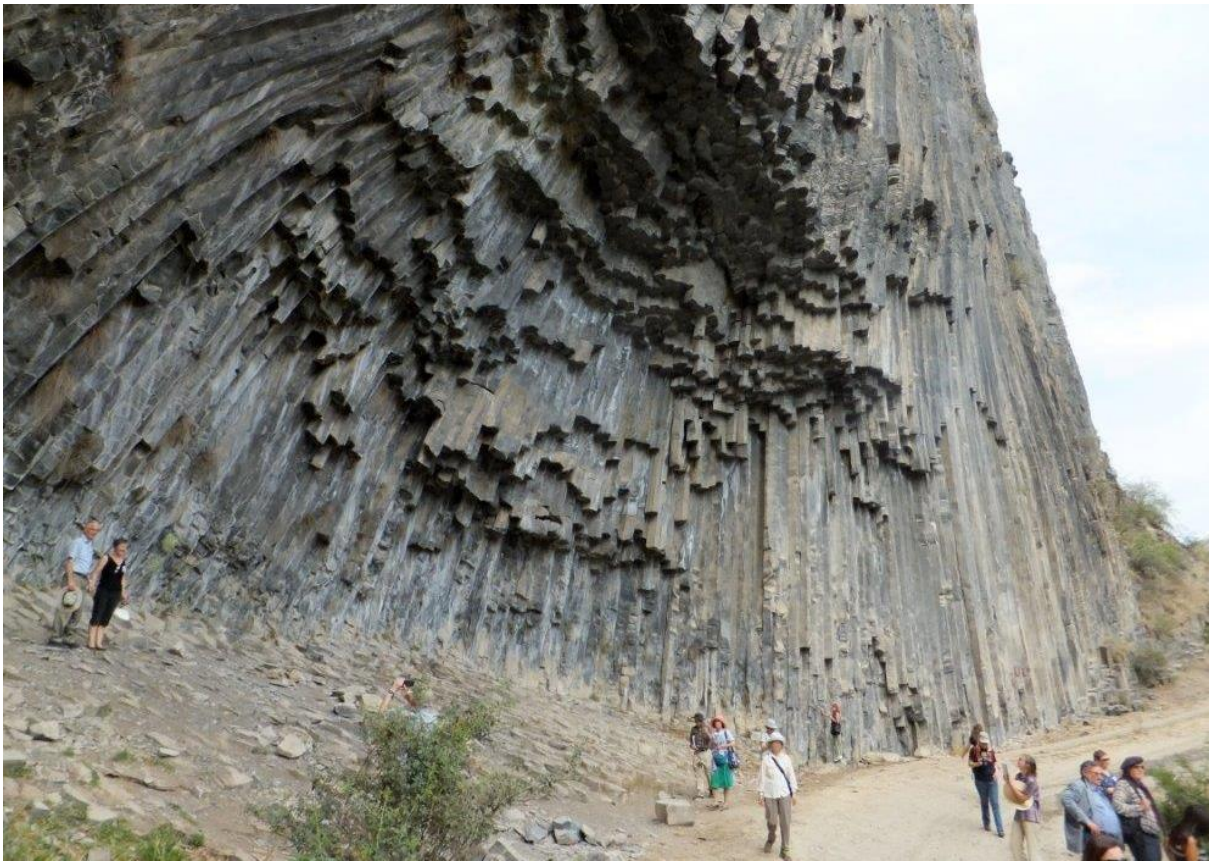


*Figure 7. Columnar jointing in trachy-basaltic andesite in the canyon of the Azat River.*

*Figure 8. Geghard Monastery, a UNESCO World Heritage Site, flanking and partly dug into a cliff of volcanic breccia with tuffaceous lenses.*

*Figure 9. Khachkars carved into the walls of a subterranean chapel at the Geghard Monastery.*

The monastery dates back to the 4th century AD, when Christianity was adopted as Armenia's state religion, but following its destruction most of the present-day complex was completed during the 12th and 13th centuries. While now dominantly a tourist destination, it remains a major place of worship and there is still a small ecclesiastical presence.

**17 September – Mid-conference Field Trip (Day 2)**

The trip, like the previous one, followed a similar pattern with a stop in Yerevan and then into the nearby countryside but this time to the west. The first stop was the State History Museum of Armenia, fronting Republic Square, which was founded in 1919. The museum provides, through its displays, an insight into the history and culture of Armenia. It is a museum in the traditional mould in that there is a huge and varied amount on display, with all exhibits labelled, rather than following the trend of many modern museums where only a limited number of items are on view at any one time. While we were guided through the museum, one could stop and take more time appraising exhibits that where of particular interest.

Following lunch in a restaurant in Yerevan beside the Hrazdan River (Fig. 10) that flows in a deep valley, flanked by cliffs of columnar basalt, the next stop was at Vagharshapet or Etchmiadzin where our guide was Dr Armine Hayrapetyan. In this city is the first Christian cathedral built in Armenia and which is also considered to be the oldest such structure in the world. Within its ignimbritic walls, which were receiving maintenance, are a host of treasures and the painted domed ceilings were eye-catching. The focus of a large religious complex, it deservedly warrants is UNESCO World Heritage Status. The next, and last, stop was the nearby Saint Hripsime's Church (Fig. 11), a more modest structure but in Armenian style architecturally similar, standing rather lonely on a flat landscape.

*Figure 10. Khachatur Meliksetian (standing) overseeing lunch beside the Hrazdan River in Yerevan. INHIGEO president Professor Barry Cooper (Australia) on left.*

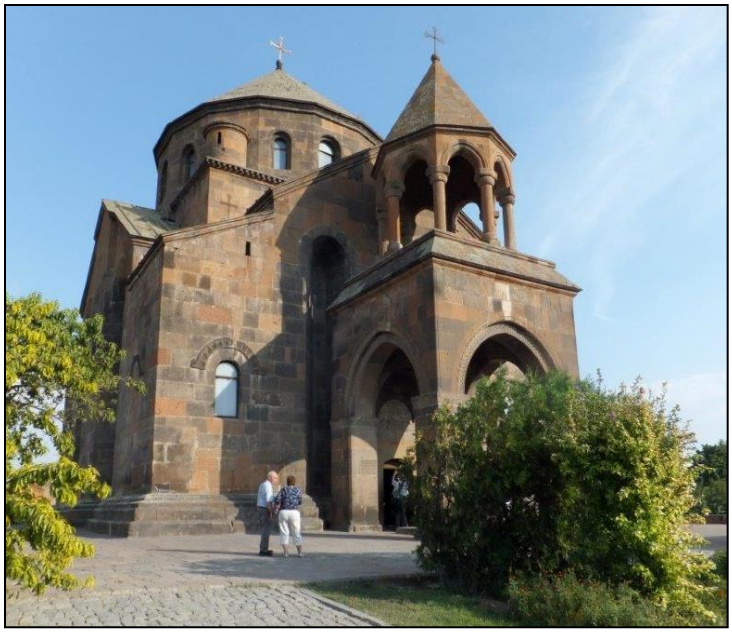


*Figure 11. Saint Hripsime's Church the oldest in Armenia having been completed in 618 AD.*

This church, completed in 618 A.D., is the oldest in Armenia and was built on the site of a Hellenistic temple and honours Hripsime and other nuns martyred three centuries earlier. The church is still in use and while we were there a celebration marking the Exhalation of the Cross was taking place.

**Post-conference Field Trip**

This four-day field trip was in two parts. The first three days involved a clockwise circuitous route centred on the huge, over 4,000 m high, stratovolcano of Mount Aragats, one of the largest in Armenia. The volcano had four major eruptive periods, the first commencing in Late Pliocene and last around 500,000 years ago. Its Quaternary ignimbrites, which with other volcanic deposits cover 6,000 $km^2$, being the source of many of the building stones utilised in Yerevan and other towns peripheral to it.

**18 September**

On leaving Yerevan the first stop was at the Agarak Historic-Archaeological Preserve (Fig. 12-13) where evidence of Early Bronze age excavations is visible in a 600,000 year-old ignimbrite sheet. INHIGEO President Barry Cooper has suggested that the because of the great importance of ignimbrite in Armenia over a long period of time it should be designated a "Global Heritage Stone". At Agarak the excavations come in a variety of sizes and shapes and include bowls for rituals, water troughs and graves. Nearby are the remains of primitive stone buildings and archaeological digs have recovered fragments of ceramics.

*Figure 12. At the Agarak Historic-Archaeological Preserve an Early Bronze Age site.*

*Figure 13. Early Bronze Age excavations in a 600,000 year-old ignimbrite, Agarak Historic-Archaeological Preserve. Mount Aragats, a 4,000 m high stratovolcano is just visible - top right.*

*Figure 14. Palaeolithic flaking floor, covering about 6 hectares, at the foot of the early Pleistocene Arteni rhyolitic volcano. Basalt hammer stones were used to split and shape obsidian into tools.*

Following an early lunch in the rather unassuming town of Tallin, the trip deviated to the southwest to the early Pleistocene Arteni rhyolite volcano, which rises sharply above a dry dusty plain. On the flank of the volcano, obsidian, present in clear, black or red colours, is quarried for crushing to sand grain size for the manufacture of cement. The sharp edges also meant that the obsidian was widely used in pre-history for the manufacturing knives, axes, spear, arrowheads and other tools. On the plain adjacent to the volcano we visited an extensive Palaeolithic flaking floor, spread over about 6 hectares (Fig. 14). Basalt hammer stones were used to split and shape the obsidian into the required shape leaving behind tens of thousands of fragments on and below the surface. The importance of the site, and how it was excavated, was explained by Boris Gaspargan of the Institute of Archaeology and Ethnography, Armenia National Academy of Sciences, Narozh. From Tallin we again headed north reaching Araks Hotel in Gyumri, Armenia's second city with a population 125,000 (Fig. 15). The city is still recovering from the devastating 1988 Spitak Earthquake but a programme to restore its historic centre is gaining momentum and impressive churches and other structures front its huge square. After a meal in a nearby restaurant we were treated to an evening participating in ethnic dancing.

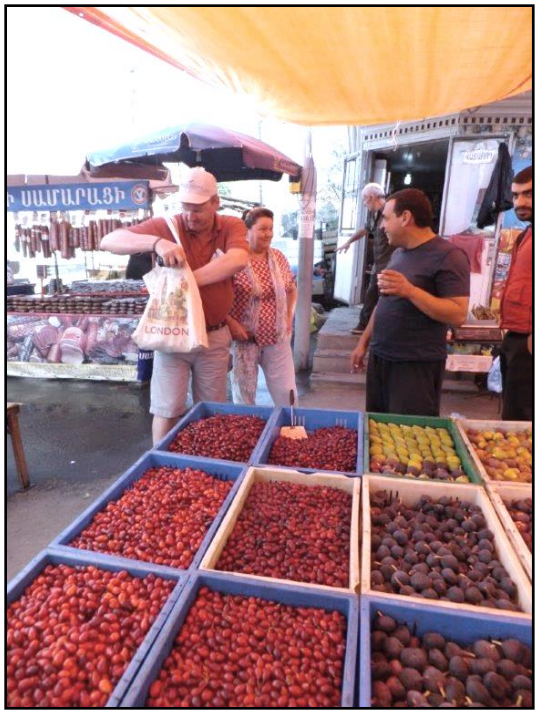


*Figure 15. Greg Clota and Carol Bacon (Australia) bartering at the Gyumri Market.*

**19 September**

After visiting the city's historic precinct and its bustling market, the trip headed east into the mountains enclosing the Spitak valley, which is aligned WNW-ESE along the Pambak-Sevan-Syunik Fault System. The right-lateral, strike-slip fault

system is part of the boundary between the Eurasian plate, folded into the Caucasus Mountains, to the northeast and the South Armenian crustal block, a small fragment of the great southern continent of Gondwana to the southwest. This fault system is active, with a number of earthquakes recorded through Armenian history. However, the earthquake risk had been underestimated until a 37 km length of the fault ruptured on 7 December 1988. The resulting Mw 6.9 earthquake killed more than 25,000 people with an even greater number of injuries ranging from slight to severe. The earthquake caused a drastic rethink of the seismicity of Armenia and what can be done to mitigate against similar events in the future, particularly in relation to engineering design for buildings. Near the town of Spittak the1-1.6 m high scarp of the 1988 rupture is still well preserved and early ruptures parallel to it are also easily recognisable (Fig. 16). Dr Arkadi Karakhanyan and colleagues from the Institute of Geological Sciences, Spitak, explained the fault and also interpreted for us the tectonic history revealed in a trench dug across the scarp. The trench showed that this particular fault had previously ruptured around 17,500 and 25,750 years before present.

*Figure 16. Inspecting the 1.6 m high scarp in the Spitak valley that ruptured during the devastating Mw 6.9 earthquake in 1988.*

Continuing ESE along the valley the mountains became higher and more enclosing with forest becoming dominant in Dilijan National Park. Set in the forest above the Dilijan-Ijewan Highway is the magnificent Haghartsin Monastery (Fig. 17), a complex built between 10$^{th}$ and 14$^{th}$ centuries. Amongst its main buildings are several churches and a refectory. Building stones included limestone with bivalves and, most unusually, in parts of the refectory a porous travertine that had been deposited by springs draining the limestone outcrops. Crossing the divide into the watershed of Lake Sevan, island arc volcanic rocks are exposed in road cuttings and after passing through a road tunnel, there were sheared outcrops of serpeninite, part of the Sevan Ophiolite caught up along the Pambak-Sevan-Syunik Fault System. After driving around the northwestern shore of the lake we headed inland, passing a series of monogenetic cones of the Gegham volcanic uplands with extensively preserved outflows of Late Miocene to Holocene basalt, to Tsaghkadsor, a town that caters for winter skiers in the nearby mountains.

*Figure 17. Haghartsin Monastery, built between 10th and 14th centuries, surrounded by verdant forest of the Dilijan National Park.*

**20 September**

The first stop for the day was on a small hill, on which is situated the 9$^{th}$ century Sevanavank Monastery, overlooking Lake Sevan. This large (5,000 km$^2$), but shallow lake 1,900 m above sea level, occupies a tectonic depression within the boundary of the Eurasian Plate and the South Armenian Block that has been enhanced by lava flows impeding drainage. This enhancement was offset by ill-advised draw off for electric power generation, but recent remedial measures have seen the lake rise, although still far below its former level, with a dramatic improvement in water quality. The remaining stop was to the Nor Geghi archaeological site on the canyon wall of the Hrazdan River (Fig. 18). Wedged between two basalt flows is a sedimentary sequence containing tools and other material that marks the transition from Lower to Middle Palaeolithic. The basalts have been dated, by $^{40}$argon/$^{39}$argon method, at approximately 400,000 and 250,000 years. If correctly interpreted, this site indicates that advances in the way tools were made occurred independently in a number of areas and were not simply exported out of Africa. In the early evening we were back in Yerevan.

*Figure 18. Khachatur Meliksetian on the edge of the main excavation at the Nor Geghi archaeological site on the canyon wall of the Hrazdan River. The sediments beneath the 250,000 year-old basalt flow (top) contains tools that mark the transition from Lower to Middle Palaeolithic.*

**21 September**

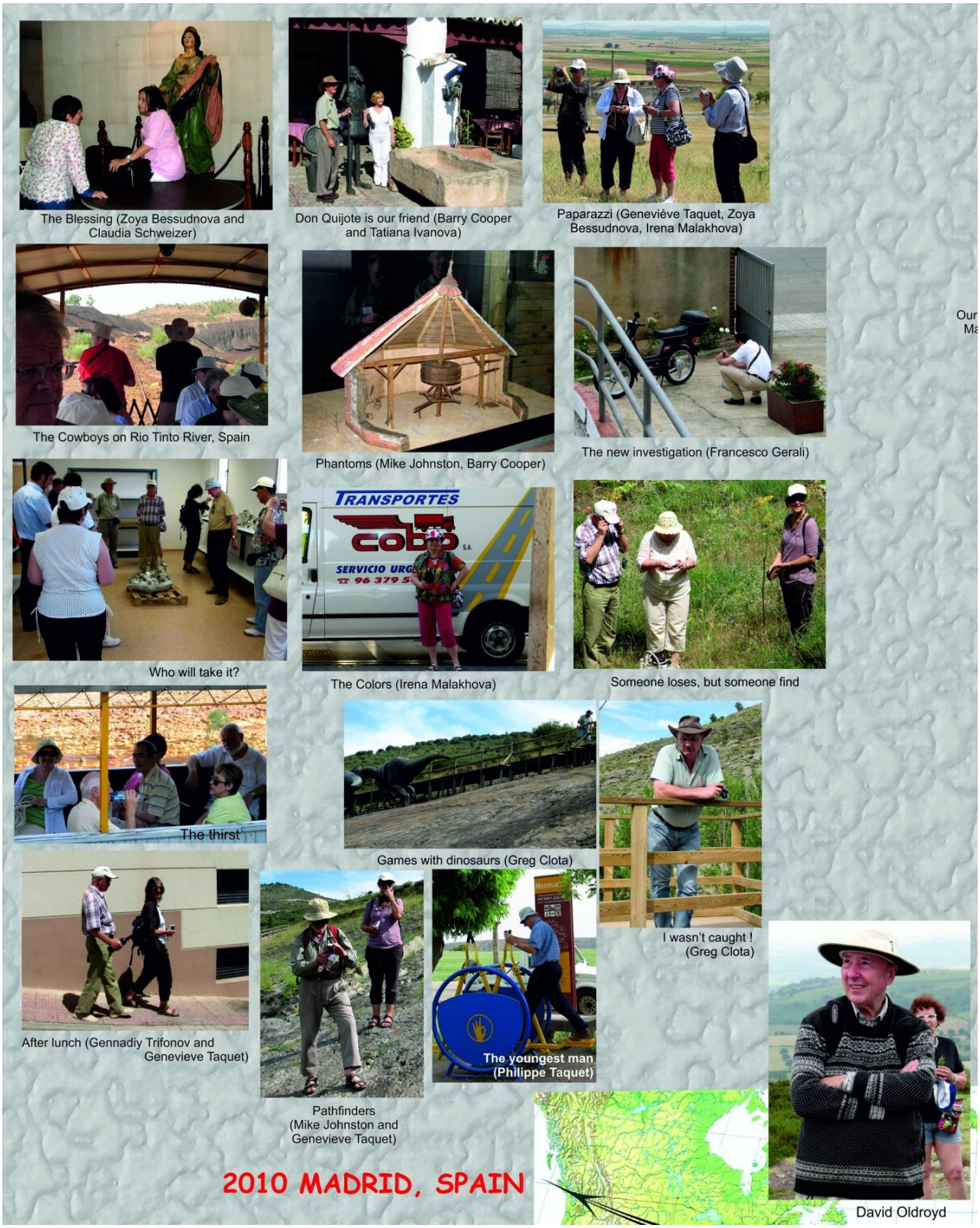
The last day of the fieldtrip was to the west of Yerevan. After reassembling at the Geological Institute, it was about a 60 km drive to the Aknashen Neolithic Site on the Ararat Plain, a tectonic depression flanked by active faults. Our guide Dr Ruben Badalyan of the local office of the Institute of Archaeology and Ethnography, explained that in the excavations six layers have been identified in a continuous sequence. The youngest (I) being Early Chalcolithic and the remaining extending down through the Neolithic. After lunch, the Metsamor Archeological Site and Museum, between the Metsamor and Araxes rivers, was visited. The site has yielded archaeological remains indicating discontinuous settlement in the Early Bronze age reaching its full flower in the Late Bronze Age but continuing into the Iron Age. Strategically sited on a volcanic hill are the remains of the Metsamor Citadel, which has been the focus of much archaeological attention in recent years. Many thousands of artefacts from the site and nearby are housed in the Metsamor Museum under the directorship of Dr Artavazd Zakian. Another fortress and associated Museum is at Erebuni, a hill overlooking the Hrazdan valley. Its outer wall and some of the buildings within it have been partially restored. Erebuni will, in 2018, celebrate its 2,800$^{th}$ birthday. The name Erebuni has been modified to become Yerevan. Back in Yerevan, in the Geological Museum, the 42$^{nd}$ INHIGEO Meeting came to a close and, with a glass of Armenian wine in hand (Fig. 19), the opportunity was taken to thank our hosts for what proved to be a very instructive, enjoyable and well-run meeting and fieldtrips that did justice to celebrating 50 years of our commission.

*Figure 19. Barry Cooper, INHIGEO President, proposing a toast, at the Geological Museum, to the Armenian hosts at the close of the 42nd INHIGEO meeting, on the 50th anniversary of INHIGEO's founding. Standing are (left to right) are Gayane Grigoryan, Director of the museum; Barry Cooper; Marianne Klumen (Austria), INHIGEO Secretary-General; Ernie Hamm (Canada); Martina Kölbl-Ebert (Germany); and Ivan Vtorov (Russia). Photo: Institute of Geological Sciences, Armenian National Academy of Sciences.*

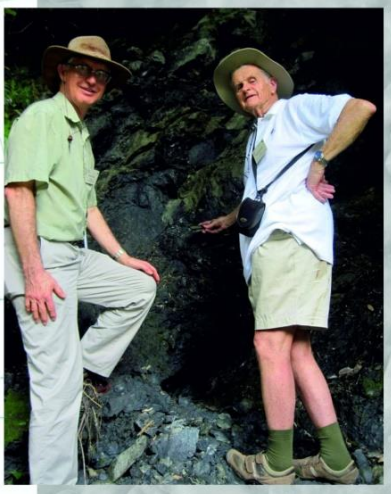
Grateful acknowledgement goes to the Armenian Organising Committee, comprising Academician Ruben Jrbashyan (Chairperson), Dr. Arkadi Karakhanyan, Dr. Ashot Pilipossyan, Karapet Vardanyan, Dr. Khachatur Meliksetian, Dr. Georgi Khomezuri and Gourgen Malkhasyan. Drs. Meliksetian, Pilipossyan and Academician Jrbashyan, along with Arkadi Karakhanyan, A. Avagyan, R. Badalayan, B. Gasparyan, D. Manucharyan and M. Misakyan contributed to and/or edited the meeting volume. This volume is thoroughly recommended to anyone wishing to gain an appreciation of Armenian geology and culture. Those who freely provided their expertise on segments of the field trips were Dr. Armine Hayrapetyan, Boris Gasparyan, Dr. Arkadi Karakhanyan, Dr. Ruben Badalyan, Dr. Ashot Piliposyan (Ministry of Culture of Armenia Metsamor) and Dr. Artavazd Zakian. Finally, I take this opportunity to thank Mary Misakyan, of the Institute of Geological Sciences, for her outstanding secretarial work and helping delegates as well as the assistance she, Khachatur Meliksetian, and Barry Cooper provided in compiling this report.

Mike Johnston, Nelson, New Zealand.

**"Personalities of the INHIGEO: From Madrid (2010) To Cape Town (2016)"**
**by L. Kolbantsev and the Z. Bessudnova**



# 2011 TOYOHASHI, JAPAN

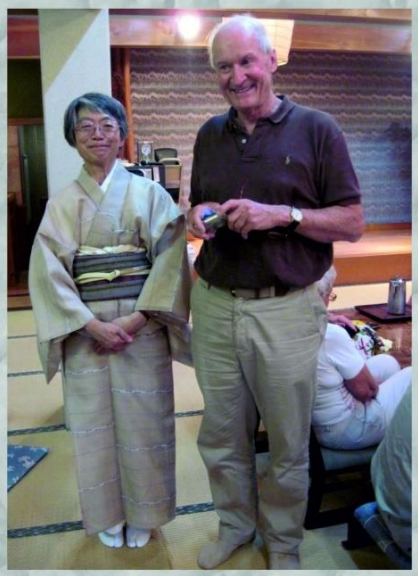


Discovery of Japan (Barry Cooper and David Branagan)

Welcome to Japan (Yasumoto Suzuki and David Oldroyd)

Relax in a hot spring

Drum Solo (Zoya Bessudnova)



Michiko Yajima and Philippe Taquet

# 2012 BRISBANE, AUSTRALIA

Being a guide is very hard work
(David Branagan)

Australian pioneers
(David Oldroyd)

Luz Fernanda Azuela and
Francesco Gerali

Ladies travelers

Good-fellowship
(Zoya Bessudnova)

Studying local fauna
(Luz Fernanda Azuela)

The Brisbane water road
(Marianne Klemun)

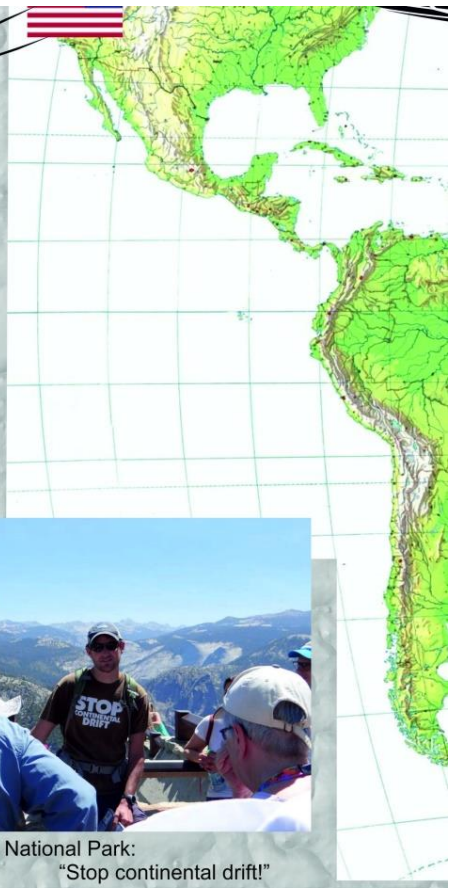
34 IGC welcome party (David
Oldroyd, Irena Malakhova)


Our English guides: Hugh Torrens and Martin Rudwick with Claudine Cohen
Ludford Corner
Marina Kozlo, Eber
LUDFORD CORNER
This is the world-famous type locality for the Ludlow Bone bed in which the fragmented remains of primitive fish are abundant. It marks the beginning of a change in this region about 400 million years ago from open seas to extensive land areas with large rivers. Sir Roderick Murchison in 1839 placed the Fish bed near the upper limit of his Silurian System.
Ludford Corner. Paparazzi.
Philippe Taquet in Siluria
Two views
(Geir Hestmark and Mike Johnston)
Grange
WENLOCK SITE
NO UNAUTHORISED PERSONS OR VEHICLES ARE PERMITTED TO ENTER THIS SITE
But we are entering…
No fences will stop us!
Mineral spring (Tatiana Ivanova)
Discussion: Hugh Torrens and Martin Rudwick
Reflecting about Murchison
(Mike Johnston)
No fences will stop us!
Philippe Taquet under protection
Somewhere in northern England:
Jian-Zhao Yin and Jim Spenser
What had Murchison saw here? (John Diemer)
«…I found myself within a shadowed forest…»
(Ken Taylor)
Susan Turner, a call from Siluria
Very long story
Renee Clary
Which one is the best?
2013 MANCHESTER, UNITED KINGDOM

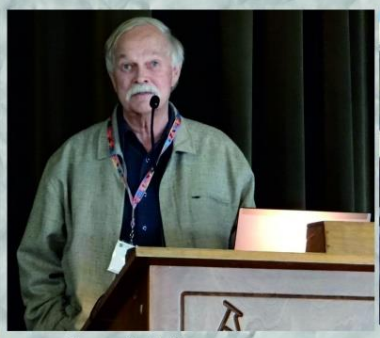
# 2014 ASILOMAR, USA

Gregory Good, the optimist.
High spirits.

Intense attention



Philippe Taquet:
"Do you know Georges Cuvier?"



Kenneth Aalto,
Plate tectonic interpretation


Yosemite National Park:
"Stop continental drift!"

Dee Ann is alone with the phone

Serenade (Stephen Rowland)

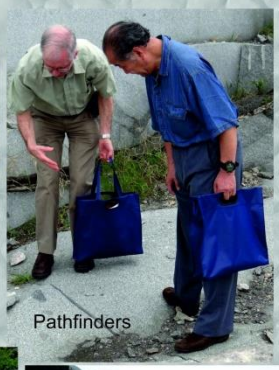
Restaurant "At the High Pine"

David Branagan: 1. Search, 2. Discovery, 3. Research

# 2015 BEIJING, CHINA

Are we going to Armenia, really?
(Barry Cooper and Khachatur Meliksetian)

Will it be hot in Armenia? (Leonid Kolbantsev, Khachatur Meliksetian and Zoya Bessudnova)



Pathfinders

The song from Barry Cooper

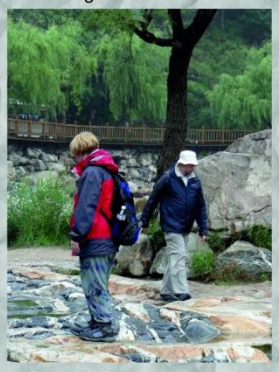
Martina Koelbl-Ebert and Baoguo Chen

Zoya Bessudnova: a difficult mission

The Mount Tai flanks – Country of migmatites.

1-5: Mount Tai trip: Dry up and wet down

Krystyna and Stanisław Wołkowisz with Zoya Bessudnova in the meeting room



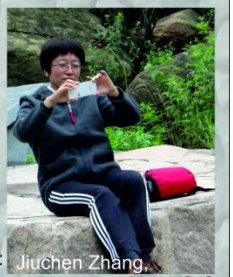
How did it happen? (Ezio Vaccari and Kathleen Histon)

Mike Johnston, Placer miner.

Two glances (Martina Koelbl-Ebert and Ezio Vaccari)

It is necessary to help the miners

Barry Cooper and Leonid Kolbantsev: "What kind of beast is this?"



Jiuchen Zhang, it's selfie?


**43rd INHIGEO Conference, Mexico City, 12-21 November 2018**

The conference will be held in the Palace of Mining, Mexico City, one of the masterpieces of Neo-classical architecture in the Americas, designed by Spanish sculptor and architect Manuel Tolsá. Visits will be arranged to the ancient library and archives.

The closing ceremony will be held in the Geological Museum (1906), the original seat of the Geological Institute, where a guided tour will be organized, as well as cocktails and refreshments.

The mid-meeting field trip to Tepoztlan will cross one of the most impressive Quaternary volcanic fields of the Transmexican Volcanic Belt in central Mexico. The field trip includes a visit to the scenic Miocene volcanic succession near Tepoztlan, which is a beautiful village with traditional architecture.

A post-meeting five-day field trip to Oaxaca, with the goal of traveling along a representative section of the central Mexico styratigraphy, from Quaternary volcanic succession to Protoerozoic high-grade metamorphic terrains. Overnight stops will be in Puebla, Tehuacan, and Oaxaca. Important geological landscapes seen on this excursion are the highest stratovolcanoes in Mexico, the Tehuacán Valley, the Juarez Range, and the colourful Jurassic units of Oaxaca.

For additional information, please contact our Vice-President Latin America, Professor Luz Azuela, Instituto de Geografía, Universidad Nacional Autónma de México, Circuito Exterior s/n Ciudad Universitaria, 04510, México, D. F. MEXICO; his e-mail is: lazuelab@yahoo.com.mx. Also check the INHIGEO web site: www.inhigeo.org. Also, please feel free to contact organizing committee directly by e-mail: inhigeo@igg.unam.mx.

**SCHEDULED FUTURE INHIGEO CONFERENCES 2019-2021**
Those currently planned:

**44th INHIGEO Symposium, Varese and Como (Italy), 2-12 September 2019**

The conference will take place at the University of Insubria, with scientific sessions being held in Varese and Como and a final session in memory of Nicoletta Morello at the Visconti di San Vito medieval castle in Somma Lombardo. This area of North-Western Lombardy is also known as the Italian 'lake district', located within the mountains and the attractive scenery of the Prealps bordering Switzerland.

Participants will be based in Varese and transport for the sessions in Como and Somma Lombardo will be provided. The morning scientific session in Como will be followed by a half-day visit of the city. There will be a special program for accompanying persons.

**Conference themes:**
- History of the Earth sciences in mountain environments.
- History of communication in the geological sciences.
- General contributions on the history of geology.

The mid-meeting one-day field trip will follow the path of the geo-paleontological excursion on the Prealps north of Varese, undertaken by the participants of the 7th meeting of the Italian Society of Natural Sciences in September 1878.

A post-meeting five-day field trip (8-12 September) will include the UNESCO World Heritage Site of Monte San Giorgio (one of the most important fossil localities in the world for the Middle Triassic, which has been studied since the mid-19th century), the mining park in Cortabbio, the quarries of Valceresio and Ornavasso, Turin city, Oulx and Monginevro in the western Alps.

The first circular will be available in October 2018.

For additional information, please contact our Vice President Europe, Ezio Vaccari, and the Organizing Committee: Inhigeo2019@uninsubria.it.

2020 – 45th INHIGEO Symposium – New Delhi, India (in association with the 36th International Geolgocial Congress).
2021 – 46th INHIGEO Symposium – Poland.

# OTHER CONFERENCE REPORTS

**Argentina**

In Argentina the most important activity related to the history of geology during the last year was a **Symposium on the Birth of Geology in Argentinean Universities**, held during the XX Argentinean Geological Congress (San Miguel de Tucumán, August 10th, 2017). The Symposium was organized by V. A. Ramos (Buenos Aires University) and R. D. Martino (Córdoba University). Several INHIGEO members participated.

Twelve presentations covered the subject for the Universities of: Buenos Aires (V. A. Ramos), La Plata (A. C. Riccardi), Córdoba (R. D. Martino), Tucumán (F. G. Aceñolaza), Salta (R. N. Alonso), San Juan (B. Castro de Machuca), San Luis (A. Ortíz Suárez & A. Morla), Rio Cuarto (L. Pinotti), Comahue (J. M. Vallés), Río Negro (M. A. Diez & S. Casadio), Tierra del Fuego, Antarctic and South Atlantic Islands (M. Guillot), La Pampa (W. G. Bertotto).

The presentations will be included in a special volume to be published during 2018 in the Revista de la Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de Córdoba.

**Austrian Working Group "History of Earth Sciences" (AWGHES) with the support of the Austrian Geological Society**

On December 15th, 2017, the annual meeting of the AWGHES was held in the Archives of the University of Austria with its topic "Geology and Women".

Although there are no "asymmetrical gender relations" among geoscientists today, it is a fact that regular university studies were not possible for women until the end of the 19th century. Some individuals, such as the famous Dolomite researcher Maria Matilda Ogilvie Gordon (1864-1939), who was the first Anglo-Saxon geologist with a PhD, had to look for open-minded professors who would enable them to study. But all too often it happened that the young ladies were allowed to follow lectures only from an adjoining room through a crack in the door!

During our annual meeting we did not want to analyze the reasons for the "gender gap", which is still evident in the geoscientific occupational field (in the economy as well as in research). Much more, our focus was on the portrayal of the positioning of women in the earth sciences – primarily in Austria – during the different history periods.

The presentations span a wide range, starting with excellently educated aristocratic mineral collectors of the 18th century, about the first doctoral mineralogists, geologists and paleontologists of the early 20th century at the Vienna and Graz University to "contemporary" representatives of these sciences.

The next meeting of the AWGHES will be held in autumn 2018 in Vienna with the theme: Geology and the years 1848/68, 1918/38/68.

## VIII Chilean Symposium on History of Geology

Prepared by: Reynaldo Charrier and Francisco Hervé

Organized by the Geological Society of Chile, the VIII Chilean Symposium on the History of Geology took place in November 13 and 14 at the auditorium of the Universidad Santo Tomás and the Central Archives of the University of Chile, Santiago de Chile. Nearly 40 persons attended, including three colleagues from Argentina. One third of the participants are geology students from different universities in the country.

Subjects treated were the development of some geological concepts and theories, the role of some great naturalists and their influence on the Chilean natural sciences, pioneering works in the geology of Chile or other countries, biographical sketches and achievements of past and present Chilean geologists, geological structures and natural disasters, and the perception of Geology in the work of Chilean poets.

Among the very different topics considered this time by the presenters, one well-treated subject was the awareness of geological time (deep time) by James Hutton and how this concept influenced other scientists like Charles Lyell and Charles Darwin. Alexander von Humboldt also deserved a talk emphasizing his conceptions of nature in which all elements are related with each other and constitute an articulated system. Another talk traced the ideas in Antiquity, Renaissance and Modern Age about the origin of 'stones' (as the rocks were used to be named at those times), and other rock-forming minerals, gems and other objects of the Mineral Kingdom. It was also interesting to hear how the Chilean landscape, dominated by the Andes Mountains have been mentioned and treated in the poetical work of the two Chilean Nobel Prizes, Pablo Neruda and Gabriela Mistral. Continental Drift has also been a selected subject. One of the talks stressed the influence of the German geologist Hans Keidel in establishing the

former connections between South America and Africa through the correlation between the late Paleozoic glacial deposits exposed in the Buenos Aires province and the Cape region in southern Africa.

Apart from the mentioned rather classical subjects generally presented in symposia devoted to the History of Geology, in this meeting three presentations were centered on the interpretation of the influence of Geology in the world-view of native populations in Chile.

On Tuesday 14th a visit to the Central Archive of the University of Chile was organized. The archive keeps the old books of the University collection. Important is the publication Series called *Anales de la Universidad de Chile*, which has been published since 1844, and where Ignacio Domeyko and many other famous Chilean and foreign scientists published the results of their activities. It was also commented that Alexander von Humboldt read this publication.

Abstracts in Spanish of the presentations can be downloaded from www.sociedadgeologica.cl

The group decided to hold the next symposium in about a year's time during the XVI Chilean Geological Congress to be held in the city of Concepción.

Presentations to the VIII Chilean Symposium on History of Geology, organized by the Geological Society of Chile.

**PROGRAM**
**Monday, November 13th**

*08:00 – 08:50 Registration*
*Registration to visit the Central Archive on Tuesday 14 (up to 10 people)*

08:50 – 09:00 Welcome
09:00 – 09:20 James Hutton y El Tiempo Profundo. *Manuel Suárez*
09:20 – 09:40 Alexander von Humboldt (1765 – 1857): Precursor y visionario de las ciencias naturales. *F. Hervé - R. Charrier*
09:40 – 10:00 El retorno de un sismólogo o la historia de un sismólogo retornado. *Edmundo Polanco V*
10:00 – 10:30 Aventuras y desventuras buscando fósiles en los confines australes del mundo. *Beatriz Aguirre - Urreta*
10:30 – 11:00 Coffee Break
11:00 – 11:20 Cosmovisión indígena en Sudamérica: una perspectiva Geológica. *Sebastian Perroud*
11:20 – 11:40 La Cultura Mapuche en la minería. *Elisa Ramírez S.*
11:40 – 12:00 La Piruquina. *Cristián Bastías C.*
12:00 – 12:20 Percepción geológica en la obra de Pablo Neruda y Gabriela Mistral. *Reynaldo Charrier*
12:20 – 13:00 Acerca del origen de las "piedras": algunas teorías desde la antigüedad Greco Romana a la Edad Moderna. *Luis Aguirre L.*
13:00 – 14:00 Lunch time
14:00 – 14:30 La influencia de Hans Keidel en la Teoría de la Deriva de los Continentes de Wegener. *Víctor A. Ramos*

14:30 – 14:50 Guillermo Billinghurst: investigador pionero de Tarapacá. *Fernando Sepúlveda*

14:50 – 15:20 Arnold Heim y su aporte al conocimiento geológico del sur de Chile y Argentina. *Carlos A. Cingolani*

15:20 – 15:40 Reynaldo Charrier González: Formador de la Moderna Escuela Geológica Chilena. *Diego Rojo*

15:40 – 16:20 Coffee Break

16:20 – 16:40 A 42 años del Corrimiento del Fierro: los estudios desde Davidson a Mosolf. *Estanislao Godoy*

16:40 – 17:00 Los desastres no son naturales. Análisis de los terremotos de 1906 y 1960 en Chile. *F. Orellana - D. Oberreuter*

17:00 – 17:20 "The Geological League": Superhumans for Science. *Tomas Reyes*

**Tuesday, November 14th**

10:00 Visit to the Central Archive of the University of Chile.

## ITALY

**The HISTORY OF GEOSCIENCES SECTION** (SSG) of the Geological Society of Italy continued its activity in promoting studies and researches on the work of geologists, naturalists and philosophers who influenced the development of geological science through the definition of the role played by scientists, the description of places of geological interest and the reconstruction of the events that characterized the geological sciences in Italy. SSG is managed by a coordinator, a secretary, a committee of his members and is open to anyone with an interest in the History of Geology. Currently the number of SSG members is about 120. The SSG activity is promoted by posts on the website *www.geoitaliani.it*.

SSG is a section of the Geological Society of Italy, founded in Bologna on September 29, 1881, the oldest and most representative Italian scientific association in the field of geosciences. The Geological Society of Italy is committed to the advancement, promotion and dissemination of geological knowledge in their theoretical and applied aspects.

**Publications by members of the SSG:**

- Abate T., Branca S., 2017, *Jean Houel e la vulcanologia dell'Etna.* In *Architetti in viaggio. La Sicilia nello sguardo degli altri*, a cura di Paola Barbera, Maria Rosaria Vitale. Siracusa, LetteraVentidue, pp 243-257.
- Argentieri A., 2017, *Francesco Penta, a 1899 boy*, "Italian Journal of Groundwater" - AS22-297: pp. 67 - 69. (DOI 10.7343/as-2017-297)
- Argentieri A., Capelli G., Mazza R., Petitta M. (2017) - Thirty years after the hydrogeological scheme of Central Italy. Italian Journal of Groundwater - AS23-312: 65 - 69. (DOI 10.7343/as-2017-312)
- Cubellis E., Luongo G., Obrizzo F., 2017, *Cultural climate in Naples between the birth and development of volcanology*, "Rendiconti Online della Società Geologica Italiana.", 43, pp. 64-78 (10.3301/ROL.2017.36).
- Piro M., 2017, *Latium underground: geologists and speleology between XIX and XX century*, "Italian Journal of Groundwater" - AS21-281, pp. 69 - 71. (DOI 10.7343/as-2017-281)
- Roghi G., 2017*, L'origine dei Fossili, secondo Fracastoro*. "La Lessinia - Ieri oggi domani". pp. 73-76.

- Roghi G., Lonigo A., 2017, *La carta geologica del Tirolo meridionale di Leopold von Buch dedicata ad Adelaide De Zigno. Un regalo straordinario*. "Atti dell'Accademia Galileiana di Scienze, Lettere ed Arti".
- Goti O., Branca S., 2017, *Fotografie senza voce e frammenti di storia nell'Archivio fotografico toscano*.
- Romano R., Palombo M.R., 2017, *When legend, history and science rhyme: Hannibal's war elephants as an explanation to large vertebrate skeletons found in Italy*. "Historical Biology" (DOI 10.1080/08912963.2017.1287178)
- Romano M., 2017, *Fragili come la statua colossale del Nabucco: L'Abate Fortis e la critica ai "grandi sistemi geologici*, "Rendiconti Online della Società Geologica Italiana", 43, pp. 28-35 (DOI 10.3301/ROL.2017.33)
- Romano R., 2017, *Palaeoecology before ecology: The rise of actualism, palaeoenvironment studies and palaeoclimatology in the Italian panorama between the fourteenth and eighteenth centuries,* "Italian Journal of Geosciences", 137 (DOI 10.3301/IJG.2017.14)
- Romano R., 2017, *Italian Diluvianism and antidiluvianism within the international arena: The great debate that lasted more than six centuries*. "Proceedings of the Geologists Association" (DOI10.1016/j.pgeola.2017.07.001)
- Romano M., Avanzini M., 2017, *The skeletons of Cyclops and Lestrigons: misinterpretation of Quaternary vertebrates as remains of the mythological giants*, "Historical Biology" (DOI 10.1080/08912963.2017.1342640)
- Salvador I., Romano M. Avanzini M., 2017, *Da per tutto il cielo sembrava di fuoco": gli strani fenomeni atmosferici del 1821 in Trentino e una misteriosa eruzione*. "Studi Trentini di Scienze Naturali", 96, pp. 133-141

**<u>Conferences by members of the SSG</u>**:

- Abate T., Branca S. (2017) - Tra disegno e vulcanologia: la struttura e l'evoluzione del Monte Etna nei disegni di Joen Huoel. Seminario internazionale di studi "Sicily through foreign eyes: travelling architect". Siracusa, 18-19 maggio 2017.
- Argentieri A., Pantaloni M. (2017) - Walking and talking on the mountains of Saint Francis: geological field trips and meetings in Umbria between XIX and XX centuries. Meeting GeoSed-SGI (Perugia,19-20 Giugno 2017).
- Goti O., Branca S. (2017) - Fotografie senza voce e frammenti di storia nell'Archivio fotografico toscano. Prima Conferenza dell'Associazione Italiana di Public History, Ravenna, 5-9 giugno 2017.
- Roghi G. (2017) - La carta geologica del Tirolo meridionale di Leopold von Buch dedicata ad Adelaide De Zigno. Conferenze all'Accademia Galileiana di Scienze, Lettere ed Arti.
- Roghi G. (2017) - Un viaggio "geologico" nelle Dolomiti nell'Ottocento; quando a Predazzo si arrivava a piedi. Predazzo (Trento).

Ezio Vaccari (Varese)

**The JAHIGEO (Japanese Association for the History of Geological Sciences)** held two meetings at the Hokutopia, Tokyo in 2017. The first was held on 17 June and the second on 23 December. The presentations at the first meeting were: Toshihiro Yamada "The transformation of 'Geocosmos' in seventeenth-century Western Europe: 350-year anniversary of Steno's *Canis Carchariae dissectum capu*t (1667)" and Ren Hirayama "Long history of turtles." At the second meeting, Daiji Hirata gave "Short

history of the natural history museums in Japan" and Kantaro Fujioka "Strolling around Sagami Bay: The mystery of three deepest bays in Japan."

The Study Group for the History of Geosciences (*Chigaku-shi Kenkyu-kai*) conducted by JAHIGEO members had three (66th to 68th) meetings at the Waseda Service Garden, Tokyo, on 11 March, 18 June, and 7 October. At the March meeting, Takuya Miyagawa presented "Typhoon study in the Japanese Empire: Imperial observational network and overcoming peripherality" and Toshiaki Osada, "Tadao Kano as a physiographer, the first half of his life." At the October meeting, Yuto Ishibashi presented "The standardization of time in the nineteenth-century British Empire" and Kae Takarabe, "The case study of introduction of American observation method of climate into Japan." In October, Yoshinari Hayashi gave the lecture of "How to cope with societal issues as geoscientific researches: A short history of Prof. Yasuo Shimazu's practices toward 'social earth sciences'", and additionally, Toshihiro Yamada introduced the Shimazu's archives related to the SCOPE-ENUWAR conferences of the 1980s.

At the 64th annual meeting of the History of Science Society of Japan (HSSJ) held at Kagawa University, Takamatsu, 3-4 June, five papers were read on the history of earth sciences: Tomoko Fukukawa, "A consideration on Kume Kunitake's article "'Kougoishi' needs consideration from the global viewpoint"(1902)"; Takuya Miyagawa, "Modernizing traditional calendar in Colonial Korea"; Michiko Yajima, "Discovery of the list of fossil localities in Japan (1884)"; Toshihiro Yamada, "Between geotectonics and geopolitics: The geologist Katumi Motizuki's wartime and post-war period"; and Toshifumi Yatrumimi, "The requisitioning of the Shanghai Science Institute by Academia Sinica."

Two weeks before the HSSJ sessions, on 21 May, at the Makuhari Messe, Chiba, the Japan Geoscience Union (JpGU) provided sessions for geoscience studies: historical, philosophical and STS studies, in which twelve papers were read and ten posters presented. The twelve oral papers were: Toshihiro Yamada, " The framework of the geohistory in seventeenth-century theories of the Earth and its implication"; Toshiyuki Shimazu, "The Edmund Naumann documents in the Gotha Research Library at the University of Erfurt"; Hidehisa Mashima, "Geological philosophy and consciousness of Tatsuro Matsumoto (1): His contributions to acceptance of plate tectonics in Japan"; Akira Yamamoto, "The father of National Meteorological Services in Japan: An weather observer Henry Batson Joyner – England, Japan, and Brazil –"; Jiro Tomari, "Histories of climate change research in Japan"; Naoki Miyano, "Comparison and visualization of cultures by academic disciplines"; Hiromichi Higashihara, "Psychosomatic human ability and mind climate"; Fuki Ueno *et al*., "Towards the better interdisciplinary collaborations"; Shigenori Maruyama, "Developmental rule of complex science"; Shigeyuki Aoki, "Meaning of life from the cosmological viewpoint"; Makoto Kureha, "How does political philosophy contribute to the policy controversy concerning space exploration?"; and Vincent Tong, "Interdisciplinarity in geosciences: Maximizing societal impact through research-outreach-teaching synergy."

Ten posters were: Jun'ichi Chiba, "The day after the acceptance of the Plate Tectonics theory"; Hidenori Nakamura, "Citizen-led environmental governance: Collective decision making, science communication, and mind-climate"; Mineo Kumazawa and Shigenori Maruyama, "A proposal of activating history, theory and social demands of the earth and planetary sciences"; Fuki Ueno, Junya Fujimoto, Yuta Ohashi, and Takamasa Iida, "A review of studies on " Mind Climate""; Ishibashi Takashi, Ken Ito, Nakano Yoshifumi, Fujiwara Yutaka, and Watanabe Katsunori, "Research on ore and mineral specimens in the Edo Period, from Iwami Ginzan Silver Mine, Japan"; Harufumi Tamazawa, Kiyomi Iwahashi, and Yasuyuki Kano, "Natural disaster research archived in records in Kamo-wake-ikazuchi shrine (Kamigamo-shrine)"; Sho

Morishita, " The development of space geodetic technologies and the transformation of the 'form of life' of researchers"; Akira Taneko, "Proving method by abduction of new stationary cosmology in astrophysics. (Describing the Earth-centered redshift and isotropic background radiation, neither expansion nor creation)"; *Idem*., "Proof method of origin in space physics by abduction, at the past before the earth and life are formed (Earth-large red spot-asteroid belt-moon-deep ocean floor -plate tectonics-life), the best way to unify all origins"; and Michiko Yajima, "Discovery of the list of fossil localities in Japan (1884)."

In 2017, the JAHIGEO issued its *Bulletin*, Numbers 48 and 49 (in Japanese), and the *JAHIGEO Newsletter*, Number 19 (in English). The content of the Newsletter is "German science teachers in the early stages of the Meiji period in Japan" written by Takeshi Ozawa.

To our sadness, INHIGEO Member Professor Hakuyu Okada (b. 1933) passed away on 22 December 2017 after long disease. He was a Vice-President of the INHIGEO, 2004-2007. He was interested in the history of sedimentology and wrote a number of papers and books, one of which was translated into English: *The Evolution of Clastic Sedimentology* (Edinburgh: Dunedin Academic Press, 2005), with Alec Kenyon-Smith and foreword by Robert H. Dott, Jr.

Hirokazu Kato and Michiko Yajima, Tokyo; Toshihiro Yamada, Chiba

**Petroleum History Institute Annual Symposium and Field Trip**
**Findlay, Ohio, July 13-15, 2017**

*The PHI group at the Woods County Historical Center and Museum in Bowling Green, Ohio*

Approximately 50 people attended the Petroleum History Institute's 16th meeting in Findlay, Ohio, on July 13-15, 2016; with the Headquarters at the *Country Inn and Suites*, but with the Reception, Symposium, and Awards Banquet at other venues. Though sometimes challenged by floodwaters, the

group managed to "muddle" through. The Thursday evening Welcome Reception was held at the *Hancock Historical Center and Museum*. The Friday Symposium was held at the *Marathon Center for the Performing Arts*, but due to rising waters causing some plumbing problems, the group re-located just before lunch back to the *Hancock Historical Center and Museum*; the group is most grateful to the Museum staff for the unexpected hospitality. The change of venues notwithstanding, there were 17 papers presented, plus two poster presentations, including such topics as: "Oil in the First World War;" "*Standard Oil* and the Great Lakes;" and "The Discovery of the Daqing Oilfield in China" (for a complete list of the abstracts see *Oil Industry History*, v. 18, no. 1, 2017, p. 193-201).

At the Awards Banquet, held at the *Hilton Garden Inn*, PHI presented the following awards: *The Colonel Edwin L. Drake Legendary Oilman Award* – Dr. Robert W. Chase; *The Samuel T. Pees Keeper of the Flame Award* – Rhonda L. Reda and Dr. Mark J. Camp; *The Gerald M. Friedman Award for Excellence in Oil History Presentation* – Charles Moyer. For 2017 there were no awardees for *The Distinguished Service Award* or *The Ellsworth "Pete" Sparks Award for Excellence in Oil History Poster Presentation*. Except for missing the first stop due to high waters, the field trip took the group to Cygnet, the site of an early oil and gas boom in the 1880s; the lunch stop at the Wood County Historical Center and Museum in Bowling Green, with a working central power and a cable-tool drill rig in operation. The last stop of the day was at the Husky Energy Inc. Refinery, in Lima, where the group was treated to an historical overview of one of the oldest continuously operating refineries in the United States and a guided tour of the facilities; a stop much appreciated by all. The meeting officially ended with the return to the Headquarters hotel late Saturday afternoon. www.petroleumhistory.org. For the full meeting report see: *Oil-Industry History*, v. 18, no.1, 2017, p. 1-12. Bill Brice

## OBITUARIES

### **Trevor David Ford** 1925 – 2017

Distinguished Leicester University academic, describer of Charnia, enthusiastic speleologist and expert on the geology of Derbyshire.

Trevor Ford, one of the giants of traditional British Geology and Senior Lecturer in the Department of Geology at Leicester University until he retired in 1987, died on 22 Februaryat the age of 91.

Early in his career he was recognized as an astute and energetic geologist from the quality of his work on the Ingleton and Stainmore Coalfields, and his growing interests in speleology, geomorphology, and the mineral deposits of the Peak District.

**Essex:** Trevor was born 19 April 1925 at Westcliffe-on-Sea in Essex. His family moved to Sheffield soon after, where he attended the King Edward VII School from 1939 to 1941. He became a temporary wartime bank clerk from 1941 to 1944 before being called up to the RAF. However, he was soon transferred to the Royal Navy because of his colour-blindness.

He was a Stores Assistant from 1944 to 1946 with service in Ceylon, India, Burma, Singapore and Hong Kong. At the age of 22 he went to Sheffield University to study geology, following his BSc with a PhD on the Ingleton and Stainmore Coalfields before coming to Leicester.

In 1952 he was appointed as an Assistant Lecturer at University College, Leicester to join Mac Whitaker. Between them they taught all branches of Geology up to the standard required by London University External Honours Regulations. As the department grew and the University was granted its Royal Charter, enabling conferment of its own degrees, his teaching was mainly in stratigraphy, palaeontology, micropalaeontology, map interpretation, quaternary geology, economic geology (mainly coal, oil and water-supply), environmental geology and the history of geological science.

He also taught a variety of extra-mural courses at Vaughan College and elsewhere. He was an enthusiastic lecturer and field course leader, and despite a deceptively gruff manner was greatly respected and appreciated by his students for the encyclopaedic knowledge of his subject and his kind understanding in helping with their problems. Many of them became lifelong friends.

Trevor was well known internationally for his tremendous geological output on Derbyshire and elsewhere; specifically, his work on tufas, and the variety of fluorite known as Blue John became well known.

***Charnia*:** The aspect of Trevor's work that enjoyed the greatest international impact concerned his description of the Precambrian fossil *Charnia*. This frond-like organism was found in Charnwood Forest by a Leicester schoolboy, Roger Mason (himself later a well-known geologist), and described scientifically by Trevor in 1958. It was one of the first convincing organisms to be described from rocks that were incontestably Precambrian. *Charnia* and its relatives are now renowned as members of the enigmatic Ediacaran biota, following further discoveries in many parts of the world as well as in Charnwood itself. Their interpretation continues as a lively and controversial field of research, discussed at special conferences, including one in Leicester in 2007, the 50th anniversary of *Charnia*'s discovery, at which Trevor was revered as a founding father. He himself followed up the Charnwood discoveries with visits to Australia, Newfoundland and especially the Grand Canyon, on which he became an authority, leading many field trips to the National Park. For many years he was a geological guide on raft cruises down the Colorado River.

Trevor supervised 22 research students and examined a similar number of PhDs. He held visiting Professorships in both US and Australian Universities. He published over 500 papers, books, guides and reviews. He was promoted to Senior Lecturer in 1980 and retired from the University in 1987, after 35 years' service.

He was then given the title of University Fellow and maintained links with the Department, continuing his work on local geology, mining history, and caving. He was a frequent visitor and may be described as an iconic figure in the Department. He became immobile in his final years but more than welcomed home visitors who never ceased to be astonished by his lively mind and extraordinary memory.

**Senate:** He served the University extensively, as a member of the Board of the Faculty of Science and an elected member of Senate and Council serving on the Honorary Degrees Board, Sites and Buildings Committee, Higher Degrees Board, Research Board, Board of Education, Departmental Assistants Board, Collegiate Studies Board, Part-time Degrees Committee, Vacation Awards Board, Vice-Chancellor's

Committee on Teaching Methods, and as an Assessor for the Disciplinary Committee. He was Senior Tutor and later Associate Dean for Combined Studies in Science. He was chairman and Convenor of the Board of Studies in Earth Science at Nene College, Northampton from 1974 to 1987.

Trevor's standing in the community is reflected in the posts he held outside the University. He was elected Honorary Editor of the Cave Research Group in 1964 (later the British Cave Research Association), and also of the Peak District Mines Historical Society in 1965. He held both posts until c. 1990 and was Chairman or President of both organizations for various periods. He was President of the East Midlands Geological Society from 1982-1985. He was Hon Editor of the Transactions of the Leicester Literary & Philosophical Society from 1986 to 2000, and President of the Society in 1982. He was the series editor of the Limestone and Caves of…. books, of The Science of Speleology, and general editor of the Proceedings of the 7th International Congress of Speleology, 1977.

**Honours:** Trevor's achievements have been well recognized by a number of awards culminating in an Order of the British Empire (OBE) in the 1997 Queen's Birthday Honours List, for 'Services to Geology and Cave Science'. He was awarded the 'Champion of British Sport' medal by Derbyshire Caving Association in 1998. In 1974 he was awarded a moiety of the Lyell Fund by the Geological Society of London. In 2016 an honorary D.Sc. was conferred upon him by the University of Derby (at his home, because of his limited mobility) in recognition of his contributions to the geology and landscape of Derbyshire.

Trevor's first wife Ann (née Thornhill) died in 1956. In 1958 he married Betty (née Thomas) who died in 2006. He is survived by his two daughters, Alison Tagg and Janet Baxter and his granddaughter, Kirsty Baxter. **Trevor Ford OBE, PhD, BSc, FGS 1925-2017**.

Submitted by: Aftab Khan and Janet Baxter

## IN MEMORY OF ARKADY I. GALKIN (1935-2017)

Ivan Vtorov, Geological Institute RAS. (Moscow)

**Arkady Ilyich Galkin**, a Russian historian of geology, chairman of the Russian Historical and Civil Rights Society "Memorial" Branch, died in July 28, in Bonn, Germany, at age 81. He was not a member of INHIGEO, but was closely involved with the INHIGEO network of historians from former USSR Republics.

A.I. Galkin at a conference. April 2015.

Galkin was born in November 9, 1935, in the city of Rechitsa (Gomel region, Byelorussian SSR), and graduated from the Gubkin Moscow Petroleum Institute in 1958. He worked in the oil and gas prospecting expeditions in Siberia, European regions of Russia. In 1967, he moved to the North Ural to work at the Institute of Geology, Komi branch Academy of Sciences of the USSR. In 1975, he became a senior research geologist in Ukhta City, a well-known place of oil fields and soviet political prisoners' camps – "Gulag." In 1980, he expressed his interests to the history of geology, especially Stalinism political repression against geologists.

In 1994, he was one of the founders of the series of papers "People of the Ukhta." He organized meetings with local historians and established a collection of the "Gulag Foundation" in the Ukhta State Technical University Museum. He wrote biographical papers about geologists and developed methods to study the history of repression in the Russian European North.

In 2001, Galkin presented a Ph.D. thesis and several publications about Ivan Strizhov (1872-1953), to show his contribution to the organization and development of oil and gas geology in Russia. He also deeply studied scientific biography of the soviet academician Ivan Gubkin (1871-1939), published a book about the myths about him, and negative impact upon several petroleum geologists (2009, ed. G. Khomizuri, INHIGEO member). He was one of the first historian described official Gubkin personality cult.

Several years ago, Galkin and his family moved to Germany, but he participated annually in the history of geology conferences and was involved in several history projects in Russia. In 2012, he summarized his research in the book *History of oil and gas geology in Russia: knowledge and problems*. He worked hard in archives and libraries. His ideas were inspiring to his colleagues and made him unforgettable. The list of his publications are included in the Information System "History of Geology and Mining" (scirus.benran.ru).

**Arkady Karakhanyan** (1951-2017)

Geological science of Armenia suffered a great loss. On November 13, 2017 Arkadi Karakhanyan, an outstanding scientist, Doctor of Geological Sciences, died suddenly at the age of 66. He was a member of INHIGEO since 2010.

A. Karakhanyan was born on March 19, 1951. After graduating Faculty of Geology of Yerevan State University in 1973, he started his career at the Institute of Geological Sciences of the National Academy of Sciences of Armenia. After the devastating Spitak earthquake in north Armenia in 1988, he was one of the first who studied the surface rupture in the zone of the northern segment of Garni fault identified by him. At that time, he denied the dominant opinion of geologists and seismologists about impossibility of occurrence of such a strong earthquake in South Caucasus.

Since 1994, A. Karakhanyan headed the Department of Geodynamics and Hazardous Geological Phenomena of IGS NAS of Armenia, 1998-2006- "GEORISK" Scientific Research Company established by him, and from 2006 till 2017 he was the director of Institute of Geological Sciences of NAS, Armenia and head of laboratory of geomonitoring and geoarchaeology. A. Karakhanyan was founder of school of active tectonics, paleo- and archaeoseismology. He has taught many young specialists in this field. A new seismotectonic model created under his leadership, which included assessments of the risk of segments of active faults, became a basis of a new seismic zoning map used for safe construction of the most important buildings in the Republic of Armenia.

A. Karakhanyan adapted the studies of active tectonics and seismic risk assessment in Armenia to international standards. His scientific reputation was so high that he worked not only in Armenia but was invited to work in Iran, Georgia, Syria, Russia, Cyprus, Turkey, Egypt and Kazakhstan as well. He was an IAEA expert on seismic hazard assessment of nuclear power plants. A. Karakhanyan has successfully managed republican and international scientific research projects, as well as works of a great scientific-applied importance. These include seismic risk assessment of Yerevan, Gyumri, Dilijan, Kapan and other cities, compilation of a new seismic zoning map of Armenia, management works of geothermal energy exploration and many other works which have greatly promoted and will continue to promote development of science and economy of Armenia.

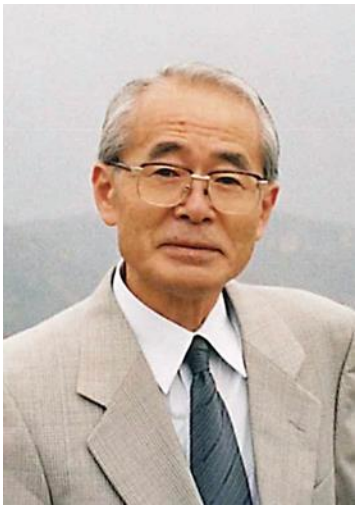
A. Karakhanyan was a field geologist, strictly principled and demanding both towards him as well as his colleagues. He was full of vital energy, endless diligence and unreserved dedication to his work and family.

A. Karakhanyan's warm memory will always remain alive in the hearts of those who knew him.

Kh. Meliksetian, G. Malkhasyan, G. Khomizuri

**Professor Hakuyu Okada (1933-2017, 岡田博有)** © JGS（Geological Society of Japan)

To our great sadness, the geologist and historian Hakuyu Okada passed away on 22 December 2017 in Fukuoka at the age of 84. He was an active member of the INHIGEO as well as of the JAHIGEO. He was a vice president of the INHIGEO, 2004-2008, after his predecessor Kanenori Suwa.



Born in Kunisaki City of the Oita Prefecture, he became a student in the Department of Geology at Kyushu University. It may be natural for him to learn geology in such a geo-scientifically attractive district as the eastern part of the Kyushu Island, where the Median Tectonic Line was supposed to extend with volcanic activities. After his undergraduate course work under the guidance of Professor Tatsuro Matsumoto (1913-2009), famous geologist and palaeontologist, Okada decided to concentrate in the fields of stratigraphy and sedimentation. As an insightful leader, Matsumoto, then in the United States, introduced Okada to a promising student of Kansas University, George de Vries Klein, later professor of Illinois University. Okada and Klein shared similar interests in the field and soon became intimate friends which served to accelerate their research interests.

As a result of his diligent study, Okada accomplished his doctoral thesis on the petrological study of Cretaceous sandstones in 1961 and became an assistant of the Department. The new trend for the sedimentology (*taiseki-gaku* in Japanese) in 1950s Japan had stimulated him. Moreover fortunately, being invited by Percival Allen of the University of Reading (England), Okada had opportunities to study abroad among those who were cutting new ways of study in the discipline of sedimentology. He stated later that there was no way to measure all that he gained from them, including: E. K. Walton, H. G. Reading, W. C. Cummins, A. J. Smith, G. Kelling, Ph. H. Kuenen, and A. H. Bouma.

Coming back home in 1965, Okada elaborated on his doctoral thesis and devised an efficient method of classifying sandstones, which was ultimately published as an article of *Journal of Geology* in 1971 with great success. Okada was appointed first as a professor of general education at Kagoshima University in 1972. Then, geology professor at Shizuoka University (1976-1988) and Kyushu University (1988-1997). His geological interest expanded by his engagement with the survey of marine geology in the 1970s, especially the surveys done on the Glomar Challenger DSDP cruises. This, it was natural for him to accept the plate tectonics theory earlier than some of his Japanese colleagues. He wrote an article interpreting the geology of Hokkaido from the plate tectonic perspective.

Okada trained the younger generation with an earnest effort and developed Japanese sedimentological society. He was the president of Geological Society of Japan, 1994-1995, as well as the chairman for the *Taiseki-gaku Kenkyu-kai* (now Sedimentological Society of Japan), 1989-1996. It was quite natural for him to become interested in the history of geology in both pedagogical and social contexts. In fact, he narrated the four stages of the development of the Japanese sedimentology: 1950-1960, 1960-1980, 1980-2002, and after 2002. He evidently wanted to evaluate the Japanese geological history in the context of the history of world geology through his prominent science history books of 2002 and 2006; and finally organized the International Sedimentological Congress in Japan in 2006.

Even after the big international event, Okada industriously investigated the history of geology in Japan, tracing back to its origin into the Edo Period. Unfortunately (or fortunately), he suffered from dementia before deeply suffered from other diseases. We just remember his indefatigable investigations of every stop of the post-congress INHIGEO excursion of 2004 IGC in northern Italy from Pisa to Venice. We suppose he spent a happy career as a sedimentologist and historian, step by step, stratum by stratum, and hope he would dream a good and eternal dream on his stratified bed.

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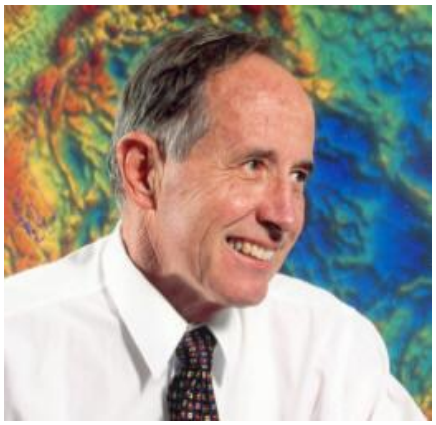
Toshihiro Yamada and Michiko Yajima

**Phillip Elliott Playford (1931- 2017)**

Phil Playford has been the only INHIGEO member from the Australian State of Western Australia (WA) having been elected as recently as 2014.



He was born in Perth and studied geology at the University of Western Australia (1948–1953). In his early career, Phil worked for the national Bureau of Mineral Resources (BMR) and WAPET (West Australian Petroleum Pty Ltd).

Phil's time with WAPET took him to the remote Carnarvon and Canning Basins in WA and this had four important impacts on his subsequent career. The first was discovering stromatolites at Hamelin Pool in July 1954. This led to his lifelong interest in stromatolites and the geology of the Shark Bay area.

The second was meeting stockman Tom Pepper at Tamala station, also in July 1954, who showed him various items that he said came from a shipwreck at the foot of the coastal cliffs south of Tamala. Thus began Phil's involvement with what he eventually deduced was the wreck of the early eighteenth century Dutch ship *Zuytdorp*.

Thirdly, in 1956 Phil was introduced to the Devonian reef complexes in the Kimberley region of WA, which started a life-long involvement with these superbly exposed rocks.

Fourthly, the Aboriginal cave paintings in these Devonian limestones also fascinated Phil, resulting in his research into the mythological significance of the paintings and the mapping of tribal boundaries.

In 1959, Phil was awarded a Fulbright Scholarship which took him to Stanford University, USA where he obtained a PhD for his thesis on the geology of the Egan Range, near Lund, eastern Nevada. He completed the project in two years and decided to return to Western Australia.

In 1962 Phil joined the Geological Survey of Western Australia (GSWA) as Supervising Geologist of the newly created Sedimentary (Oil) Division and was progressively promoted to work as Assistant Director GSWA – 1978-1980, Deputy Director GSWA – 1980-84, Assistant Director General – 1984-1986, Director GSWA – 1986-92).

After retirement, Phil wrote up his work on the Zuytdorp and other aspects of early Dutch contact with WA and continued to work on the geology of the Devonian reef complexes, Shark Bay, and most recently Rottnest Island, from an office in GSWA until late in 2015.

The Devonian reef complexes were the subject of several lecture tours by Phil, through the USA and Canada in 1978 as an AAPG Distinguished Lecturer; through Australia in 1980 as a PESA Distinguished Lecturer; in China in 1988 as an Exchange Scientist for the Australian Academy of Science and Academia Sinica; and through Europe in 1989 as a Guest Fellow of the Royal Society of London.

Regular updates on the geology of the Devonian reef complexes continued through the 1980s and 1990s, until their culmination in 2009 with publication of GSWA Bulletin 145. This also included observations on Permian glacial pavements and subglacial channels, lakes, tunnels, cave systems, tower karst, collapse breccias, and solution dolines. En route to the Kimberley, and as separate short trips, visits to Shark Bay and the Zuytdorp Cliffs continued.

After Bulletin 145, completion of Shark Bay research became Phil's top priority. The remarkable stromatolites were largely responsible for Shark Bay being declared a World Heritage Area, but they were not the only focus of Phil's work. Another comprehensive Bulletin, again oriented towards the field geology but also including the history of the Shark Bay region and the suggestion of megatsunami deposition, was published in 2013 (GSWA Bulletin 146).

Phil's final paper, reviewing the history of our geological understanding of the Canning Basin reef complexes was published posthumously in SEPM (Society for Sedimentary Geology) Special Publication 107, which is dedicated to his memory.

Phil's scientific achievements and work especially promoting the petroleum prospectivity of Western Australia have been recognized in many ways. These include: Special Commendation Award of the AAPG, Lewis G Weeks Gold Medal of APEA, Gibb Maitland Medal from the Geological Society of Australia, Honorary DSc from UWA, Honorary Membership of RSWA, Royal Society Medal from RSWA, and Distinguished Honorary Membership of PESA. He served geology and other sciences as President of the Royal Society of Western Australia, Australian Petroleum Exploration Association Professional Division (WA), Petroleum Exploration Society of Australia (WA), Australian Geoscience Council, and National Trust (WA). He was also Chairman of the Board, WA Museum of Natural Science, Adjunct Professor of Petroleum Geology, Curtin University, and Adjunct Professor of Geology, University of Notre Dame, Australia and an Honorary Associate of the Geological Survey of WA and the WA Museum. Phil was also a founding member and Fellow of the Geological Society of Australia, and a Fellow of the Australian Academy of Technology and Engineering.

Although Phil's geological legacy is considerable, he may be best remembered by the general public as well as by historians for his contributions to WA's history, principally the early Dutch explorers along the West Australian coast and aspects of Aboriginal art and heritage. Phil's major task after his retirement from Director GSWA was completion of historical research on the Dutch wreck, the *Zuytdorp*, (in 1994 Phil and Tom Pepper were officially rewarded by the State as being the co-discoverers of this historic shipwreck). This was published in 1996 as *Carpet of Silver* by UWA Press, received the Premier's Book Award for Historical and Critical Studies in 1997, and was reprinted in 1998 and 2006.

Phil followed this *Zuytdorp* research in 1998 with a book on Willem de Vlamingh's voyages, *Voyage of Discovery to Terra Australis: by Willem De Vlamingh, 1696-97*, after he discovered de Vlamingh's personal journal; this work was also reprinted. Phil was involved in the 400th anniversary celebrations of

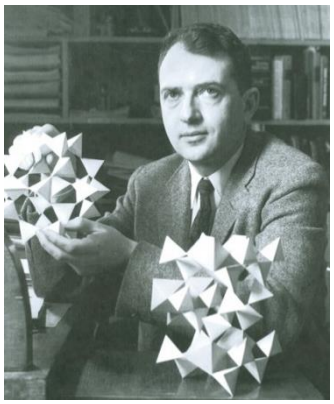
the landing of Dirk Hartog in Western Australia and jointly edited *The life and times of Dirk Hartog* published by the Royal Western Australian Historical Society in 2016. These interests also led to several public lectures and articles, the chairing of committees promoting aspects of WA's pre-colonization history, and the installation of a replica of Dirk Hartog's plate on Dirk Hartog Island. Parts of geological bulletins on the Devonian reef complexes and on Shark Bay were also devoted to the history and Aboriginal heritage of the West Kimberley and the Shark Bay areas, respectively. In 1998 Phil was made a Member of the Order of Australia (AM) for 'contributions to geology and the history of early Dutch exploration and shipwrecks in Australia'.

Phil was elected to membership of INHIGEO in 2014, on the unanimous recommendation of fellow West Australian members of the Earth Sciences History Group of the Geological Society of Australia. His historical and geological contributions to Western Australia will be long remembered.

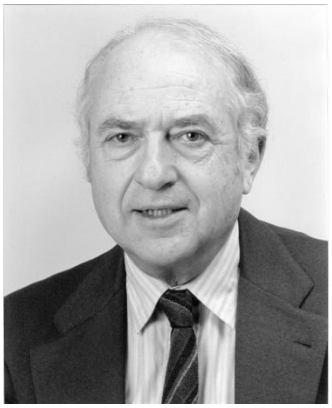
*(Compiled by Barry Cooper from an obituary prepared by Tony Cockbain, Roger Hocking and Pam Reid and published in "The Australian Geologist", Newsletter of the Geological Society of Australia in September 2017, utilizing 'Biographical Notes' written by Phil Playford in 2000).*

## CECIL J. SCHNEER (1923–2017)

KENNETH L. TAYLOR
*Department of the History of Science University of Oklahoma, Norman, OK 73019, USA*
ktaylor@ou.edu



Cecil J. Schneer with coordination models in the early 1950s.



Professor Schneer, probably late 1980s.

(Courtesy of the University of New Hampshire, Department of Earth Sciences).

We lost a leading figure in studies on the history of geology when Cecil Jack Schneer died 9 February 2017 at his home in Exeter, New Hampshire, at the age of 94.

Born 7 January 1923, Cecil was raised in the Far Rockaway neighborhood of Queens, New York City. He was educated at Harvard University (A.B. 1943, A.M. 1949) and Cornell University (Ph.D. in mineralogy, 1954). He served in the U.S. Navy during World War II and worked for a couple of years as a mining geologist in Peru, before resuming his education. After teaching for two years at Hamilton College, in 1954 he joined the University of New Hampshire Geology Department (which later became the Department of Earth Sciences) and served there until his retirement in 1988. Specializing in crystallography, he also taught mineralogy and general geology.

At Cornell, Cecil's geological studies were complemented by work in the history of science with Henry Guerlac. In part through international contacts he formed with other history-minded geologists (facilitated through research leaves at Zürich, Milan and Paris), Cecil cultivated a keen interest in the history of the geological sciences. His earliest historical articles focused on the early development of ideas about Earth history, and on Renaissance and early modern ideas about crystal structure and matter theory. These were followed by studies emphasizing nineteenth-century debates in America over structural and dynamical issues. Cecil also played a major editorial role, during the 1960s and 1970s, in the *Dictionary of Scientific Biography*, overseeing contributions on geological figures.

In the meantime, Cecil published a book on the development of ideas in the physical sciences (*The Search for Order*, 1960), and another on the history of chemical thinking (*Mind and Matter*, 1969). For the Benchmark Papers series, he edited a collection of historic works on *Crystal Form and Structure* (1977). Within the community of historians of geology, he is especially well remembered for his leadership in promoting work on the history of geology, notably by organizing two major conferences held in New Hampshire, in 1967 and 1976. Each conference resulted in a volume of papers that he edited (*Toward a History of Geology*, 1969, and *Two Hundred Years of Geology in America*, 1979). In recognition of his scholarly activities of a historical nature, in 1974 the University of New Hampshire augmented the title of his appointment, to Professor of Geology and the History of Science.

One of Cecil's crystallographic papers (on symmetry and morphology of snowflakes) won the 1988 Hawley Medal of the Mineralogical Association of Canada. With George White and Grover Murray, he was one of the three Americans who took part in the forming of INHIGEO at Yerevan in 1967. He also participated in the initiative to establish a History of Geology Division of the Geological Society of America in 1976 (now the History and Philosophy Division). Cecil was President of the History of the Earth Sciences Society in 1986. He received the Geological Society of America's History of Geology Award in 1985. At the University of New Hampshire, he was instrumental in developing a History of Science Collection within the Library, in part by donations from his personal library, with emphasis on early geological works.

Cecil was a highly civilized, cultivated man with broad interests and a wry wit. During his retirement he continued for many years to pursue historical questions in particular. Besides his post-retirement publications (see below) these included efforts in historical documentation concerned with William Smith's 1815 map, Charles Darwin's theory of evolution by natural selection, and the history of INHIGEO and the IUGS. He also lectured from time to time at the retirement community where he spent his later years, on topics ranging over the fine arts as well as the sciences.

In 1943 Cecil married his high school sweetheart, Mary N. Barsam. They had been married for 58 years when Mary died in 2001. Among the many interests they shared were a love of books and of art. The Schneers are survived by their two children, Jean S. Silverman and David Schneer, both of Exeter, New Hampshire.

**Publications of Cecil J. Schneer**

This listing does not include published abstracts of Cecil's numerous presented papers, nor does it include his many book reviews, which appeared in journals such as *Science*, *Journal of Geology*, *American*

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**Acknowledgement:** The author is grateful for assistance provided by Cecil Schneer's colleagues at the University of New Hampshire, especially Wallace Bothner (Earth Sciences) and William Ross (Library, Special Collections and Archives).

[Editor's note: doi: 10.17704/1944-6178-37.1.213; originally published in Earth Sciences History, v. 37, no. 1, p. 213-216.]

**ARTICLE**

# MINING AND GEOLOGICAL INVESTIGATIONS OF JÓZEF CIESZKOWSKI IN ENGLAND, BELGIUM AND FRANCE (1825-1827)

Dr Andrzej J. Wojcik, Institute of History of Sciences
Polish Academy of Sciences, ul. Dzialkowa 37
43-600 Jaworzno, Poland

Józef Patrycy Cieszkowski, the son of Franciszek and Rozalia of Długoborscy, was born on 8 March 1798 in Czubrowice. He came from a family of land owners, and his father owned estate near Wieluń[1]. Having finished the gymnasium in Opole he took up further education at the Academy of Mining in Kielce. Because the education at the School lasted three years, it should be stated that he probably remained in Kielce between 1817 and 1820. In 1820 Cieszkowski was employed as an assistant engineer in the Olkusz – Siewierz territory, and from 1823 as an inspector of calamine mines in Sławków[2]. The abilities he showed must have been noticed by his superiors, as he was send to study abroad. Probably, it must have been connected with the Academy's students training program. This is how Cieszkowski wrote about the aim of his foreign travel[3]: *The aim of my journey, with which I was sent abroad, was to scout the mines there in order to introduce the use of more efficient and less costly mining methods in our mines, by comparing the foreign mines with ours. With this in mind I tried to explore all areas connected with my subject, from the location, extraction, up to the destination of minerals.*

[1] The reconstruction of the first years of Cieszkowski's life presents many difficulties. Maybe the not very rich Cieszkowscy family often moved from one place to another in search for profit, as it was with many representatives of the poor nobility. It should be pointed out that S. J. Adamczyk, *Academic Mining School in Kielce (1816-1827)* "Jard" Advertising-Publishing Agency, Kielce, 2003, p. 1-144; gives (p. 70) the following names of Cieszkowski: Jerzy Józef Patrycy. The *Great Illustrated Encyclopaedia*, on the other hand, S. Sikorskiego Press, Warsaw, 1893, vol. 11, p. 1005 states that Cieszkowski was born *"in the village of Czubrowice in the area of Skalbmierz"*. It should also be stated that J. Jaros, *Cieszkowski Józef*. [in:] Orłowski B. (ed.): *Dictionary of Polish pioneers of technique*. Śląsk Publishing House, Katowice 1984, p. 42-43, gives the town of Czubrynowice near Skalbmierz as Cieszkowski's birth place. The author however, based upon the analysis of the material, believes that Józef Cieszkowski was born in the Kalisz province, not the Cracow province, as was believed so far.

[2] A. J. Wójcik, The *miners of Stanisław Staszic – the organization of the mining authorities of The Polish Kingdom*. [in:] Mining and Tunneling Engineering, 2005, no. 2, p. 41-50. It should be mentioned, that J. Jaros, *Cieszkowski Józef…*, 1984, stated that he started professional work as late as 1826.

[3] A. S. Kleczkowski, *The report from the mining journeys of Józef Cieszkowski to England, France and Belgium in 1825-1827*. Review of Earth Museum, 1977, vol. 27, p. 41-45; compare also to ref. 9, concerning Volume I.

Hieronim Łabęcki placed multiple references in his *Dictionary of Mining*[4] to reports written by Cieszkowski[5]. Cieszkowski's foreign voyage, as well as those of other specialists, was realized with the intention of deep understanding of industrial achievements, as well as orienting in the possibility of purchasing appliances, which were not made in the Kingdom of Poland[6]. Apart from Cieszkowski, the mission was also carried out by Konstanty Wolicki and Adam Maksymilian Kitajewski, and probably Juliusz (Julian) Adolf Gutt, a graduate of the Academy of Mining in Kielce, who, after 1835, was employed in the mining industry as a clerk for special missions[7].

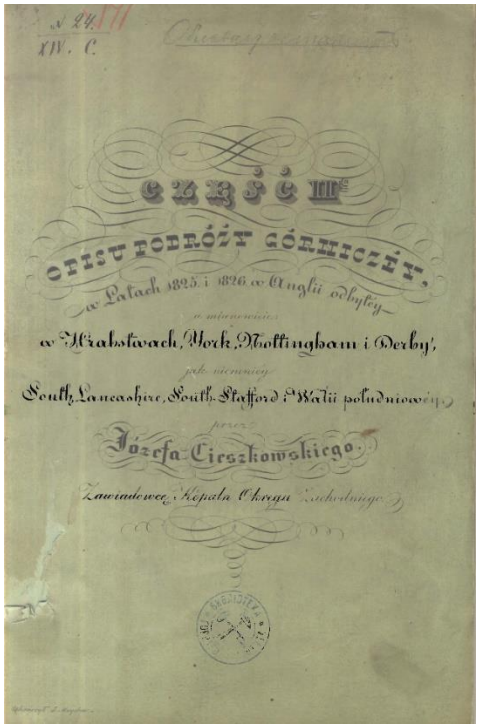

CZĘŚĆ III.
OPISU PODRÓŻY GÓRNICZEJ,
w Latach 1825 i 1826 w Anglii odbytey
w Hrabstwach, York, Nottingham i Derby,
South Lancashire, South Stafford i Walii południowej
przez
Józefa Cieszkowskiego.

*Figure. 1. Reports of Józef Cieszkowski.*

Unfortunately, for a long period it was impossible to state whether the manuscripts of the reports were preserved. But A. S. Kleczkowski, during a query of the collections of the Mining Institute in Sankt Petersburg, found Cieszkowski's manuscripts. They are three notebooks with signatures: G 911-913, previously N24/XIVC, and later 170-172/XIVC (the size in cm of 33.5 by 22; 32 by 21; 31 by 21 – numbering in total 208 pages of text, richly illustrated with drawings)[8]. It is worthwhile to cite the list of contents of these materials, recapitulating the travels of Józef Cieszkowski: *Notebook I. The first part of the description of the mining voyage to England in 1825 and 1826, during which Northumberland and*

[4] H. Łabęcki, *Polish-Russian-French-German and Russian-Polish mining dictionary (with the addition of words relating to mineralogy, geology, chemistry and the more important ore crafts) and the Glossary of medieval minig latin in Poland. Posthumous edition.* K. Kowalewski Printing House, Warsaw, 1868, p. 1-347, [p. 83], [p. 36]. Compare also to H. Łabęcki, *Mining in Poland. The description of Polish mining and metallurgy in the technical, historical-statisticaland legal respects.* J. Kaczanowski Printing House, Warsaw, 1841, vol. I, p. 1-538; vol. II, p. 1-551, and especially vol. I, p. 591. It should be noticed, that the introduction to the "Dictionary of Mining" by Hieronim Łabęcki lists: "Explanations of the abbreviations of the names of writers brought up in the Dictionary by the side of words, which they created or used for the first time" – where the term "Coalfield" ("Zagłebie") is introduced as the definition of a geological structure with a synclinal arrangement of sedimentary rock layers. Cieszkowski's reports lack the term: "Coalfield". The introduction to the mining terminology probably happened gradually, and must have taken place about 1840. The first map, consisting of 18 sheets, whose title includes the term "Zagłębie", should also be mentioned. Compare to J. Hempel, *The geognostic card of the coalfield in The Polish Kingdom, made by order of the director of mining, General Major Szenszyn*. Litogr. M. Fajans, Warsaw, [scale 1:20 000], 1856. Compare to A. J. Wójcik, *Jan Hempel – the author of the first "Geognostic map of the coalfield in The Polish Kingdom".* Mining and Tunneling Engineering, no. 1, p. 45-46; same author, *Jan Hempel – miner and geologist - author„ Geognostic map of the coalfield....".* Scientific Review of Technical University in Wrocław, Studies and Materials Series no. 32. *„Heritage and history of mining and the possibilities to use the remains of the old mining works*", 2006, p. 349-359.

[5] A. S. Kleczkowski, *The report from the mining journeys...*, 1977.

[6] J. Szczepański, *The modernisation of mining and metallugry in The Polish Kingdom in the I half of the XIX century. The role of German and British experts*. Higher Pedagogical School, Kielce, 1997, p. 1-249.

[7] The same, and S. J. Adamczyk, *Academic Mining School...*, 2003.

[8] A. S. Kleczkowski, *The report from the mining journeys...,* 1977.

*Durham Counties were visited* […]. *Notebook II of the mining voyage of Józef Cieszkowski, stationmaster of the mines of the West Region, to England in 1825 and 1826, to York, Nottingham and Derby Counties, as well as South, Lancashire, South-Strafford and Southern Wales […]. Notebook III. The description of the mining voyage to England, France and Belgium, taken in 1825, 1826 and 1827 by Józef Cieszkowski, stationmaster of the mines of the West Region*.

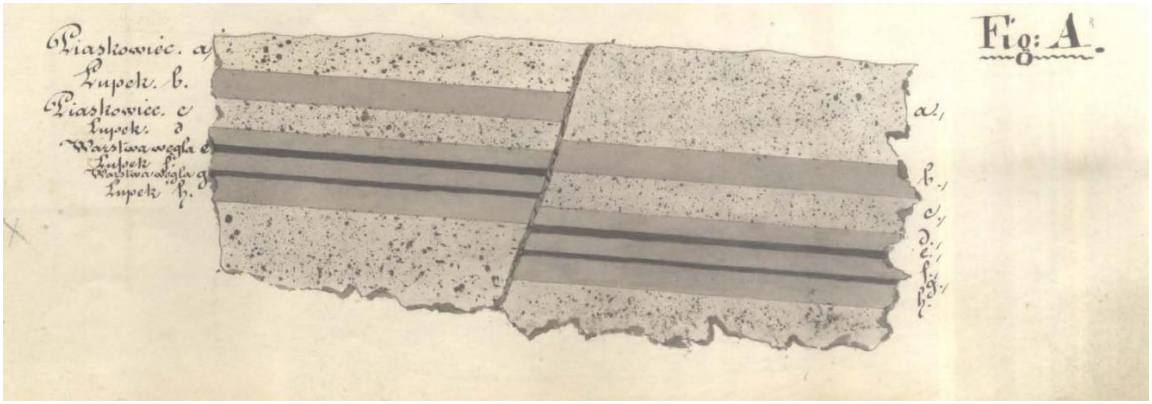



*Fig. 2. Fault in coal mine.*

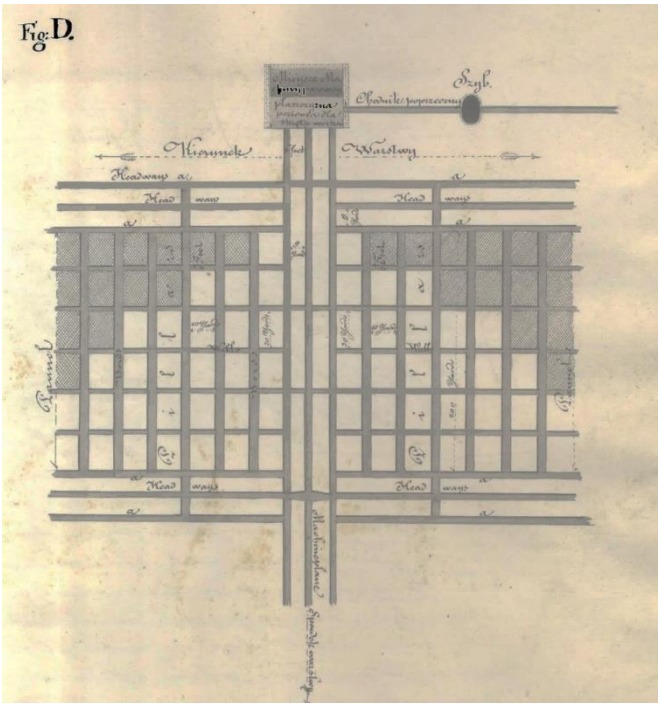



*Fig. 3. Plan of John Pitt coal mine.*

The reports from the voyage were made in 1834 (Notebook III) and in 1836 (Notebook I). The texts include geological descriptions of places, where coal deposits of coal were situated (coal districts), but concentrate mainly on mining descriptions (methods of drainage, mining and specialized underground transport). According to A. S. Kleczkowski, the descriptions are[9]: ...*carried out carefully. The form of the report is concise and very factual. Many of the important technical details were presented by numerous designs, which take into consideration the scale and materials. The author paid his attention especially to the mechanical equipment of the mines: tools, means of transportation, on-surface transport. […] However, the conclusions about using the observations in these fields in Polish mines are very poor. […] Cieszkowski analyzes his observations, but sees a possibility to use only some of the transportation devices*.

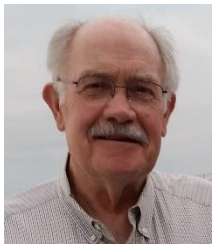
Cieszkowski was promoted over the years in ministerial mining from assistant engineer (1820), inspector of calamine mines (1823) to the position of stationmaster of mines, which happened in 1829. In 1831 he

[9] A. S. Kleczkowski, *The report from the mining journeys…,* 1977.

became the stationmaster of mines and in 1837 the Chief stationmaster of Mines, and from 1843 he was the head of the West Mining District, Division of Mines (until 1861)[10]. During his work he repeatedly stayed abroad in official business. In 1840 he visited the mining establishments in Trenczyn in Hungary (today Slovakia). The beginnings of Cieszkowski's career in Dąbrowa [Górnicza] coincided with changes in his personal life. After marriage with Florentyna Ksawera of Grabowscy, his children were born there[11].

In 1850 Józef Cieszkowski rented the farm in Strzemieszyce Małe and lived in the manor-house there. The farm, as property of the mining authorities, was rented to various people[12]. Unfortunately there is no iconography record concerning the building, in which the Main Stationmaster of the Mines of the West Mining District spent part of his life. The descriptions of the time state that it was a modest, wooden building, although it was called a manor-house, it did not have the characteristic columned porch. Józef Cieszkowski, who probably suffered from gout in his final years, died on 11 June 1867. Cieszkowski was undoubtedly buried at the parish cemetery in Gołonóg, but his grave was not maintained and has been lost[13].

## Interview: Ken Taylor, in conversation with Ken Bork
## For INHIGEO Annual Record for 2017 (issued in 2018)



*[Prefatory note: Kennard B. Bork (INHIGEO Secretary-General, 2004–2008) interviewed Kenneth L. Taylor (INHIGEO President, 2012–2016).]*

*Kenneth L. Taylor*

**KBB:** The "as the twig is bent, so goes the tree" cliché can be misleading, but a person's youth and early family experiences often do have a significant impact on their evolution. You are a Californian by birth and upbringing, and by education a product of Harvard University. Yet you've lived all your working life in Oklahoma. How did someone from your West/East-Coast background end up in the USA's south-central plains?

[10] A. J. Wójcik, *The miners of Stanisław Staszic...*, 2005. It should be mentioned that J. Jaros, *Cieszkowski Józef...*, 1984, states that Józef Cieszkowski became the head of the West Mining District in 1840.

[11] The father of F. K. Grabowska – Franciszek, was the owner of the Popów land in the Kalisz district, a major of artillery and the last commander of the Częstochowa stronghold.

[12] A. Rybak, *From the history of education in the territory of Strzemieszyce Małe 1820-2000.* Dąbrowa Górnicza, 2002, p. 24–26. These were, among others, Jan Kubiczek the mayor of Sławków and next, Józef Dobiecki. Between 1847 and 1850, the farm was rented by peasants from Strzemieszyce, and after Józef Cieszkowski's death, Joanna Ucka and after her the Warsaw Association of Coal Mines and Ironworks.

[13] Jaros, *Cieszkowski...*, 1984, states that Cieszkowski died in Warsaw. The record in the parish register of the St. Anthony church in Gołonóg, lead by priest Józef Gąsiorowski (1802-1888), vicar of the parish in the years 1841-1888, states it explicitly: *"Strzemieszyce Małe. It happened in the village of Gołonóg on 14 June 1867 at noon. Andrzej Szlęzak, the 49 years old government forest warden, and Feliks Czerniak, the 40 years old land owner, both living in Strzemieszyce Małe showed up and stated that on 11 June of the current year at 9 p.m. Józef Cieszkowski, a married pensioner, the son of Franciszek and Rozalia, married couple Cieszkowscy, from the village of Czubrowice died, having left a widowed wife Ksawera of Grabowscy. Having assured myself personally of the decease of Józef Cieszkowski, this act was read to the setters and signed by us/me only, as the setters are unable to write. Priest Gąsiorowski"*.

**KLT:** It's where the job was. When I was finishing the PhD program in History of Science at Harvard, the most interesting position available to me was in an established teaching program at the University of Oklahoma. In fact, OU (such is the local shorthand) was the fourth university in the country to set up a graduate curriculum in the field—following Harvard, Cornell, and Wisconsin—to go along with undergraduate course offerings. And OU had the core of an excellent history of science library, which was then expanding rapidly. My aspiration was to teach in my general field (which I took to be the history of science in Western civilization), preferably at both undergraduate and graduate levels. So that was an easy decision.

As it happened, there might have been one rather different prospect, if I had wished to pursue it. As I neared completion of my graduate program, Harvard's senior historian of science, I. Bernard Cohen (he and Everett Mendelsohn were my two main mentors), let me know that there might be a new position for me on the staff of the Harvard Library, if I wanted it. This was apparently for acquisitions related to the history of science. But this discussion didn't go very far, as I told him I felt committed to trying my hand at teaching—and in any case I'd already accepted Oklahoma's offer.

So, I've been an Oklahoman now for fifty years, since the fall semester of 1967. But I will admit to having a permanent sense of confused identity. I don't feel completely connected with any one place. Some of my youthful attachment to California persists, and so does my affinity with New England and Harvard, where I was a student for nine years. And for that matter I also feel a link with France, where over a long period I have spent an accumulated total of more than four years. Oklahoma is, though, where my wife and I met and where we raised our family of three children, and where we decided to stay following retirement. We have lived in the same house in Norman since 1971.

**KBB:** Your early education included some time in Europe. How important was that to you? Were there enduring consequences?

**KLT:** The two different periods I was abroad during my childhood and youth influenced me greatly. My father was a professor of mathematics at the University of California at Los Angeles (UCLA). His first sabbatical leave occurred when I was six years old. We spent that year in England, at Cambridge. This was 1947–48, still just a short time after the war's end, and among many vivid memories from that year I recall a lot that amounted to residues of the war. That included a rather general awareness of privation—people in Cambridge still stood in line to purchase limited (and rationed) foodstuffs and other items. Britain was in the midst of an economic crisis (although as a child I was at most only dimly cognizant of this). There was a remnant bomb shelter in the school playground. But all these things notwithstanding, I felt no personal privation. To the contrary, this was to me a magical year in a fascinating and beautiful place. My parents and my older brother and I each had bicycles, and I recall joyfully roaming our neighborhood, close by the colleges, and riding out to nearby places like Grantchester. Our family also travelled a good deal, during vacation periods and especially in the summers of 1947 and 1948. We took numerous trips to various parts of Britain (Scotland, the Lake Country, northern Wales, London and various cathedral towns), and prolonged journeys as well on the Continent (France, Switzerland, Italy, and the Scandinavian countries).

One thing these experiences nourished in me was an appetite for geographical knowledge, which only grew in the course of time. My parents were enthusiastically inquisitive travelers. They both loved beautiful out-of-doors places, and both were keenly interested in European history and culture. My mother

was especially fascinated by art, not least the architectural part, and she was the main driving force behind our visits to countless museums and galleries, to castles, and to (as it seemed to me) every cathedral or abbey within reach. My brother and I sometimes complained about the museums and cathedrals, but Mom smartly realized we could be co-opted by special efforts to locate artistic manifestations of things we considered interesting, such as instruments of warfare or images of St. George slaying the dragon.

Looking back on these youthful experiences, I have often been struck by how much detail I recall, and also how much it meant to me, even though I was just six. I knew even then what a special privilege it was to be exposed quite literally to so much that is remarkable in our varied world.

**KBB:** So, we gather that was just the first of two of your father's sabbatical-related years abroad. What was the nature and impact of your second extended visit to Europe?

**KLT:** Yes, we did it again seven years later (1954–55) when Dad had his second sabbatical leave. This time we lived in Geneva, in *la Suisse Romande*, the French-speaking part of Switzerland. My brother Gordon and I were enrolled in the International School of Geneva, a bi-lingual school with a broad range of students from many countries and with varied backgrounds—in a few instances children of famous figures in politics and the arts, more frequently from families with governmental or business reasons for a sojourn in Geneva. Some of the students, mainly those whose parents were elsewhere, were boarders in the *internat*. Our parents located a modest rental house nearby, so Gordon and I were day students. (Our younger sister Kitty was in a separate pre-school.) We were on the "English side," so our classes were largely in English. But intense study of French was mandatory, of course, and the protocol called for French to be a default means of communication socially and on sports teams, in which Gordon and I both were involved. Plus, there was the simple fact of living in a French-speaking city (a very attractive one, as you know). In addition, I had a good year-long course in German, so I learned the fundamentals of two foreign languages. I liked Ecolint (the Ecole Internationale's nickname) a lot. I happily imbibed the internationalist esprit it advocated and have embraced it ever since.

We did more family travelling that year. This time we had a small car, a Ford Zephyr. We made driving trips to Italy and to England, with visits to parts of France, Belgium and the Netherlands, Germany, and Austria. For me the part of our travels that mattered most was the Alps, for by this time I had become greatly interested in mountains. That's actually putting it mildly: I became absorbed in a kind of mountain passion, which I confess has never fully subsided. No doubt this happened mainly because my parents both loved mountains, especially the California Sierra Nevada where we went camping and hiking nearly every year. By the time I was in my early teens I had already begun to make easy Sierra climbs. I also had begun to read in my Dad's collection of books about mountaineering, especially about Alpine and Himalayan climbing. So, in 1955 when there was the opportunity to do a couple of climbs of high (but not difficult) Alpine peaks—the Zermatt Breithorn, and the Rimpfishchhorn—this was heaven to me.

At Zermatt, of course, the Matterhorn looms colossally over everything in sight (even though it is only about the tenth highest peak in the vicinity, depending on what you count as a summit), and I recall gazing in 1955 at its dizzying flanks and feeling sure this mountain would always be beyond my reach. I little imagined that just two years later I would in fact manage to scale it, at the age of 16. This happened when there was a sort of family windfall: Dad had some unusual success in sales of one of his mathematics textbooks, and this money was used to fund practically an entire summer of climbing in the Alps in 1957. I was able to reach a dozen or more summits of those stunning 4000-meter peaks.

**KBB:** Did you think then about becoming a professional mountaineer, or at least devoting serious time to climbing whenever feasible?

**KLT:** Something like that may actually have been a pipe-dream for a while. But of course, I knew no such thing was practical. The truth is that until I was about 19 I felt very little sense of vocation and had little idea of what I might do. My parents made plain that the main imperative was to work hard at school. I accepted this and, on the whole, I liked being a student. Both by inclination and from teacher encouragement I felt that my talents were strongest in the area of mathematics and the sciences, so I expected I might become a scientist. At college I had to declare a concentration (Harvard-ese for a major field), and so I chose chemistry, which of course also meant taking a certain amount of mathematics and physics.

**KBB:** What led you from California to Harvard?

**KLT:** The answer may make it sound like family fore-ordination. My father was a graduate of Harvard College, and his older brother was a faculty member there in economics. (We knew this was remarkable enough, as they had been born children of poor homesteaders in northwestern Colorado.) My own older brother was then already a Harvard student (an English concentrator). Obviously, these were not discouragements. Also, our parents made it clear we were to choose a college somewhere away from home: I was required to get out of town. Few places in the U.S. are as far from Los Angeles as Cambridge, Mass. But no less important than all that, I think, was my own notion that if the country's most prestigious college would have me, I ought to go there. And so, it worked out that way.

Harvard at that time (1958) was well along in its transition from having a regional identity toward being a truly national university. But undergraduates from California and other western states were still hugely outnumbered by easterners. A demographic indicator no less meaningful to me, as a graduate of a public high school, was that my Harvard class ('62) was the first one in history with as many members graduated from public schools as from the private prep schools.

**KBB:** That shift is interesting. I gather that you started out as a chemistry major at Harvard, but then moved into the history of science. How did that happen?

**KLT:** It was a consequence of the liberal-arts curriculum. In brief, my years at Harvard College opened doors with vistas into the humanities and social sciences previously unknown to me. I soon abandoned a juvenile preconception to the effect that clear and rigorous thinking could not be found outside mathematics or the natural sciences. I began to think that some of the most meaningful questions could only be addressed from perspectives lying outside the sciences. Also, gradually I began to realize I felt more at home in a library than in a laboratory. Once it became apparent to me that I was capable of succeeding as a Harvard student, some urgency began to attach to the question: what sort of education should I pursue? I felt motivated to reorient myself in a way that would permit me to continue studies in the social sciences and humanities, without abandoning contact with the natural sciences. The History of Science faculty's undergraduate program, called History and Science, appeared to offer such an option, and midway through my sophomore year I took it.

In the History and Science concentration, the set of requirements obliged one to do extensive coursework in a single field of science. So, I continued taking chemistry, to the point where at graduation I had been enrolled in a Chem course practically every semester. In addition, one took a series of History of Science courses, and there was a requirement as well to select a field in History for study. As it happened, I had taken a pair of courses involving ancient Greek art and culture, so I chose ancient Greek history for my field, and underwent a comprehensive examination over it as a senior. So, I was an example of the diffuseness and contingency implied by the *and* in History and Science: there was no requirement that the science field (chemistry, for me) and the history field (ancient Greece) have anything to do with each other. Nor for that matter was it seen as necessary that either one relate to the area of the obligatory senior honors thesis—in my case, a topic in the history of American science, bearing the title *Motivations for Federal Support of Science in Overseas Explorations, 1842–1856* [119 pp.].

Anyway, study of the history of science was just part of my undergraduate major, although a big part. And the way I came to it was, really, a result of my growing uneasiness as a student nominally on a scientific track, when the world of studies in the humanities and social sciences was just beginning to open up for me.

**KBB:** Yes, those undergraduate years are a fertile time for personal evolution. When did you decide that you would go into the History of Science as a field of graduate study?

**KLT:** This must have been fairly soon after I got launched in the undergraduate History and Science concentration. I quickly became absorbed in various questions about science's development, in varied periods, both early and recent. The subject seemed a good fit for me. And I saw it was a young field, with plenty of opportunities to get involved in discussions on issues that seemed significant. This was just the moment when everyone seemed to be discussing C. P. Snow's contentions about the "two cultures," and historians of science appeared well situated to function as useful mediators. I would also say that, as far as I was concerned, there were hardly any competing ambitions on the horizon. I was not interested in becoming, say, a lawyer or a [medical] doctor—although these were ambitions held by many of my classmates. While I was far from sure that I had what it took to be successful in an academic career, I certainly regarded it as a very honorable calling. Looking at my trajectory in general, I would say that certain important things happened to me without my spending a lot of time or energy deliberating over them.

**KBB:** Finding one's true calling is a critical element of setting the stage for life. What were the alluring factors that led you to the history of geology?

**KLT:** Good question. And again, I am not sure I really have a good answer: certainly this idea did not occur to me right away. Unlike many people going into graduate school, I had little notion of what to specialize in. There were pressures, formal and informal, emanating from both my teachers and my fellow students, to define some circumscribed set of interests. There was a part of me that wanted to resist those pressures, and not just because I have a contrarian streak in me (which I do), but also because during my undergraduate studies in the history of science I had ranged widely, from projects addressing topics in ancient Greek science (such as astronomy and mathematical optics) to others having to do with science in 19$^{th}$ and 20$^{th}$ century America. I was not enthusiastic about having to give up on holding to such a broad array of interests. In fact, there was an aspect of the Harvard tradition in the field that encouraged breadth. That may have been a lingering relic of the influence of George Sarton, who had founded the Harvard

program and whose old office in Widener Library continued as the program headquarters for some years after his death (1956). Sarton's commitment to comprehensive study of science as a kind of motor and barometer of civilization's course was then still visible in his published work (to which we still sometimes turned for study) and in the journal he founded, *Isis*, the flagship serial of the field.

Anyway, for reasons it is hard for me to reconstruct precisely, early in my graduate school career I decided that my research emphasis would lie in the history of geological science. Such a choice was certainly not a reflection of where my formal studies in science had been invested. While I had taken a lot of coursework in chemistry, as well as some in mathematics and physics, the nearest I had come to being enrolled in an undergraduate geoscience course was in Prof. Clifford Frondel's class on the chemistry of crystals, during my senior year. I did, however, audit some geology (notably the basic course taught by Prof. Bernhard Kummel). And once they knew of my intentions, my History of Science mentors directed that I should take at least a couple of graduate-level geology courses, which I did during my second graduate year (courses in structural geology, and regional geology of the U.S., both taught by Prof. Marland Billings). I also ended up doing a reading course with Kummel, centered on certain old geological texts.

I think, though, that what mainly led me to select the earth sciences as my main historical focus was geology's association with exploration, with out-of-door encounters with the natural world. As I have mentioned, history of explorations was one of the areas of my undergraduate study. Then add to that my long-standing fascination with geography and with mountainous terrain (which, not incidentally, had afforded me some chances over the years to learn a bit of geoscience).

**KBB:** You came eventually to specialize in research on early French geology. How did that happen?

**KLT:** It came in a bit sideways, surprising even to me. In identifying myself with history of geology, it was understood that I would direct myself particularly to geology in American history. This was at least partly because by now I had become more involved in study of U.S. history than of any other subfield. It was not until well into my third year as a grad student, and after my General Exams were completed, that I approached my mentors (Cohen and Mendelsohn) about a change of direction. The idea of doing this occurred to me during my preparation for Generals, in fall of 1964. I made a short list of topics in the history of geology that sounded interesting to me, and not all of them were American-related. I had begun to see myself as more strongly motivated to investigate the conceptual foundations of earth science in 18$^{th}$-century Europe, than to focus on the (as it seemed to me) comparatively practical development of geology in 19$^{th}$-century America. At the top of the list was a plan for close examination of the work of the 18$^{th}$-century figure, Nicolas Desmarest. It was this idea—abandoning a course of research situated in 19$^{th}$-century America, and instead taking up one in 18$^{th}$-century France—that I presented to Professors Cohen and Mendelsohn sometime during the winter of 1964–65.

Thinking back on this, I am astonished that they were so tolerant and flexible, in agreeing to my changed focus of research. They could well have rejected my proposal, saying: "No dice, you got this far with your coursework emphasizing American history, you'll just have to see it through that way." But the response instead was—after only a brief moment of reflection—"Well, okay: but to do that you'll need to go spend some time in France." And they soon helped engineer a Sheldon Fellowship for me to take a year in Paris to do research.

**KBB:** In retrospect, what did that year in France do for you?

**KLT:** It was a tremendously valuable and formative experience. I spent an enormous amount of time in the libraries and archives (especially the Bibliothèque Nationale, the Bibliothèque Centrale du Muséum National d'Histoire Naturelle, the Archives Nationales, and the Archives de l'Académie des Sciences), getting acquainted with those institutions and with the riches they retain, including both printed and manuscript sources. I greatly strengthened my command of and confidence with the French language. In the process I improved my understanding of the French people and their culture. Along with various acquaintances I made among scholars and fellow students, I got in contact with the Centre Alexandre Koyré, which was the main center of activity for French historians of science and gave a seminar there on my research on Desmarest at the invitation of its kindly director, René Taton. I was able to locate a living descendant of Desmarest's, Mme. Marthe Chartrin of Blois, who generously and enthusiastically allowed me to examine some of the manuscript materials retained by her family.

I was also able to spend a week in Auvergne in Spring 1966. I had been there once before, during the mid-1950s year when my family lived in Geneva, but of course that was long before I had developed historical interests in that district. Very fortunately for me, I had some Auvergne friends who were eager to show me their home province. This was a couple, Micheline and Robert Rochias, who were long-time friends of my parents. They were both teachers in Clermont-Ferrand, and they had a house in Volvic! (This meant that the water running out of their kitchen and bathroom taps was the very same stuff which, bottled, sells throughout France as the acknowledged leader in purity among all the French mineral waters.) They kindly drove me around to many of the places discussed by Desmarest in his 1770s memoirs on the Auvergne basalts.

In short, my 1965–66 research year in France equipped me with experiences and associations that were to continue to inspire and support my subsequent work for years afterward. Most of all, it allowed me to begin assembling a great deal of valuable documentation and information. I was able to start constructing a picture of Desmarest's life and work, and particularly of the circumstances of his highly original geoscience thinking, which I like to think are more detailed and far-reaching than had before been available.

**KBB:** Why do you think Desmarest is important? What is it about him that made you think it worth years of your time to study what he did?

**KLT:** My answer to this question has been evolving over a long period. At first, a candid response would have been simply that authorities like Archibald Geikie had said Desmarest was a significant figure, and so I accepted that and wanted to gain a finer-grained understanding of why it was true. Before too long, though, I developed a somewhat more refined viewpoint that was more directly informed by looking closely at Desmarest's own writings, both published and unpublished. In close examination of any historical figure, you are impressed (so it seems to me, at least) that in practically all cases the subject of study has little or no awareness of where his work is leading, what the historical consequences of it will be. And since one of the goals of historical research is to try to recover as well as one can what the past historical moment was like, you do what you can to set aside momentarily your own knowledge of eventual historical outcomes. You try to see things as your subject saw them.

In trying to scrutinize the totality of what Desmarest did, an overarching impression that formed in my mind was that here we had an intelligent and ambitious man—a thinker and an investigator engaged in addressing problems most of which didn't even have an obvious disciplinary identity at the time. He was trying to understand large-scale past changes in landforms, for example, and the possibility of judging how rocks were formed by using evidence displayed in their present features. When Desmarest got involved with these kinds of questions, around the mid-point of the 18th century, geological science didn't really exist yet. He was therefore struggling (just as some other figures were struggling around the same time) to situate these problems within the contemporary scientific map. He was trying to figure out—and if necessary to reinvent—the disciplinary framework that could yield methods suitable to resolving them.

In other words, while we can say in retrospect that Desmarest was doing geological work from rather early in his career (and in the course of this, underwent some quite important changes amounting to his becoming a very good field geologist), he did not necessarily see it that way. Instead, he was undertaking studies that as far as he was concerned belonged mainly in the field of physical geography, a discipline that already existed but that he thought was often practiced in ill-advised or erroneous ways. Moreover, his studies had evident connections with a rather different ongoing scientific tradition, namely Theories of the Earth, of which he had considerable suspicion and doubt, but which could by no means be completely ignored because they were the home of some Big Questions generally acknowledged to be important.

So Desmarest's long life in science can be seen as dominated by his uncertainties about the proper disciplinary identification of his work. He belongs among the founding figures of geological science, but practically to the end (he died in 1815 at age 90) he resisted identifying himself that way. This is not the only thematically coherent way of examining Desmarest, I am sure, but for a long time now it has seemed to me one of the most compelling. To investigate Desmarest's life and work is, in a sense, to attempt an understanding of how geology took form as a science and became an organized discipline just around the time his career was coming to a close.

**KBB:** Fair enough. But there must be quite a few characters for whom nearly the same thing could be said. Werner and Hutton, to name just two who have been more often associated with the beginnings of geology. Did Desmarest belong in quite the same category?

**KLT:** No, probably not, if only for the reason that both Werner and Hutton developed comprehensive schemes bearing, respectively, on discerning the structural relations in the distribution of rocks (Werner's *Geognosie*) and on a cycle of decay and renovation for explaining alterations in the terrestrial surface (Hutton's geostrophic cycle, as we have come to call it). Desmarest created no comparably general scheme or system, whether for rock distribution or for terrestrial dynamics (although he seems to have held presciently to a rather far-reaching form of fluvialism in his geomorphological outlook). It is well known, in fact, that he was hostile to the very notion of systems.

Nonetheless, Desmarest's engagement in geoscience problems served as "game-changing" in at least two ways: in identifying columnar basalts as volcanic in origin he altered the rules for determination of agents responsible for rock production, and in his interpretation of stages or "epochs" in the shaping of the Auvergne landscapes he provided a very early example of how to construct histories of landforms using actualistic principles. Desmarest was among the leaders, during the second half of the 18th century, in

framing geological issues in terms that presumed their resolution depended on the operation of ordinary agents over enormously long periods of time.
While I have never been much interested in trying to measure Desmarest's merits along a scale for judging who counts as a "founder" of geology, it is worth saying that he can be taken as representing a substantial cohort of francophone figures (French, Swiss, Belgian) addressing geological issues during the same period as Werner and Hutton, whose part in the story has to be taken into account. In fact, as I wrote up my doctoral dissertation in 1966–67 I realized that a task I badly needed to undertake was to repair my ignorance of so large a part of that francophone group of which Desmarest was a member.

**KBB:** Was that when you got involved in writing biographical sketches for some of those figures for the *Dictionary of Scientific Biography*?

**KLT:** Yes, pretty much so. But that was not my own initiative. It just happened that the *DSB* project was getting under way as I was finishing graduate school, and probably most of my cohort was recruited to contribute. I had met Charles Gillispie (the chief *DSB* editor), and in any case I am sure he was in regular communication with Cohen and Mendelsohn, who no doubt were making suggestions of people who might write some of the articles. I was also acquainted with Leonard Wilson, who was on the *DSB* editorial board. Then in 1967 I got to know Cecil Schneer, who was an associate editor tasked, I believe, with overseeing most of the geology-oriented biographical articles. Among the *DSB* articles I wrote, perhaps only two or three were really on contemporaries of Desmarest. But working on them (which occupied a good portion of my research time for a few years) certainly broadened my understanding of what was going on during his time.

**KBB:** Speaking of Cecil Schneer, he convened the 1967 New Hampshire conference that yielded the volume *Toward a History of Geology*, which some think of as a landmark event for our field. Can you say a few words about that?

**KLT:** I agree with that assessment. I think the conference Cecil organized and the resulting volume he edited marked a moment when it became apparent that a discernible community was beginning to take form, applying itself to serious historical study of the geosciences. That book (1969), which included my first published paper, got some favorable attention, and I think it raised the profile of the field, and played a role in stimulating more research of a high standard.

I remember very well, by the way, that it was at the second of Cecil Schneer's New Hampshire conferences on the history of geology, in 1976, that you and I first met. In this instance, as you know, the theme was supposedly narrowed to the history of geology in America—it was a bicentennial event. But the number of attendees was greater than in 1967, which perhaps illustrated the growth in interest I am talking about. With Cecil's death early in 2017 at the age of 94, I've reflected lately on all the good he did for our endeavor. He was a consequential figure, somebody it was a privilege to know. [Editor's note: see the obituary for Cecil Schneer in this volume.]

**KBB:** Would you like to comment on your interactions with some of the other historians of geology who have influenced you?

**KLT:** Yes, gladly so. I owe so much to so many, it will be impossible to mention more than just a few of them. Maybe I'll choose to confine myself almost entirely to those who are no longer with us (and alas, as time passes this applies to an ever-growing number).

Let me start with Rhoda Rappaport, whose scholarly interests and outlook were in many ways similar to my own. We first met in 1964, when she had just finished her doctorate at Cornell, where Henry Guerlac was training a generation of excellent historians of science many of whom worked on 18th-century French science. Rhoda's research for her Master's degree had been on the chemist Rouelle, then for her doctorate she studied Guettard, Lavoisier, and Monnet and their mineralogical mapping project. From the start Rhoda was always a helpful and encouraging colleague, and I admired and respected her knowledge and historical judgment. We remained good friends until her death in 2009. She was one of very few colleagues with whom I enjoyed a sustained correspondence centered on mutual research and teaching interests. Her dedication to history as an enterprise aimed primarily at understanding the past on its own terms—as distinct from using the past to rationalize the present—was intense and inspiring. I was especially struck by her keen focus on the vocabularies used in the past by our scientific subjects.

**KBB:** You've told me that you probably met and talked with Rhoda in Paris more often than anywhere else.

**KLT:** That's right. And that reminds me, Rhoda was also involved in my initial encounter with two other remarkable characters, whose achievements in history of geology I also admire greatly: Jacques Roger and François Ellenberger. This was in 1974, near the end of my first sabbatical year in Paris, when I held a fellowship in affiliation with the Centre Alexandre Koyré. Rhoda regularly spent a month or so in Paris as soon as the spring semester ended at Vassar (this was so regular a practice that her hotel on Boulevard Raspail gave her privileges for permanent storage of some of her things in their basement). She already had an acquaintance with Jacques Roger, the Sorbonne Professor well known for his wonderfully learned edition (1962) of Buffon's *Les Époques de la Nature* and for his deep study of French ideas about animal generation during the 18th century (1963). In some way, the details of which I have forgotten, it was arranged that Rhoda and I—two relatively young American historians of science interested in early French geology—would spend the better part of a day talking with Jacques and with another person then unknown to us: a highly accomplished geologist named François Ellenberger, who had lately decided to reorient his energies (which we soon learned were formidable) toward the history of his science.
So, we had a sort of ad hoc private *Journée d'étude*, just the four of us, three historians and one senior geologist then newly embarked on historical research, in a small Sorbonne seminar room arranged for by Jacques. Our day of conversation was punctuated by a midday adjournment for lunch together at one of the brasseries nearby. I enjoyed all of this, indeed I felt gratified by the courteous attention given my opinions by these two French elders. The most memorable element of this encounter was the palpable energy, the almost ferocious historical eagerness, displayed by François. I confess that at the time I was not at all sure he would make a good historian: he seemed discernibly beset by a form of "precursitis" (an impulse, described by Joseph Clark in a famous late-1950s essay, to seek and find precursors of important ideas or discoveries, in his case particularly of Hutton-style concepts of uniformity), and I had doubts that he would manage to overcome subservience to the "terminal fallacy"—an assumption that the overriding criterion in judging what is interesting historically is the state of knowledge we have acquired in our own time. Rhoda saw more of François for the next several years than I did, and it was apparent that her assessment of him was similarly guarded. In time, however, I came to see I had underestimated François: he soon showed himself to be a very good historian, and a prodigiously productive one.

Anyway, for me François Ellenberger and Jacques Roger were two of the outstanding French figures engaged in history of geology, representing in their different ways models for inquiry in this field. Jacques had such magisterial command of historical knowledge, and such a deeply perceptive understanding of characters like Buffon. François had, of course, a great advantage in his vast store of scientific knowledge, but he also had a humanist scholar's commitment to seeking understanding through a close examination of original sources. And both of them, I wish to say, were really extremely nice, kind men, always generously encouraging to me.

**KBB:** Would you agree with me, that in our field there is a lot of that sort of thing: generous encouragement and support?

**KLT:** Yes, I certainly do agree. I don't mean to imply that this is necessarily especially surprising. But we know that in certain fields this is sometimes less clearly the case. Also, as you and I both know, it is noteworthy that scholars in France who concern themselves with the history of geology have generally exhibited great receptiveness and hospitality to people like ourselves, foreigners venturing into their historical territory. They have treated us with respect and kindness, and I am grateful. Invidious though it may be to name just a few French colleagues while neglecting others who also merit gratitude, I would like to mention the gracious help I have been offered, over the years, by our late friend Jean Gaudant, as well as by Gabriel Gohau, Claudine Cohen, and Philippe Taquet, among others.

Of course, I think that a similar spirit of international encouragement is in play among anglophone historians of geology too. I would judge this to be true when I think of INHIGEO colleagues such as Hugh Torrens, or David Branagan, or our late friend David Oldroyd, not to mention yourself. In my own particular case, especially, I would be remiss if I failed to say how much I appreciate the sustained encouragement given me by Martin Rudwick. I could go on about how highly I value Martin's example as a historian of geology, but perhaps it's best for me to respect the limitation I mentioned, and fortunately Martin is still very much among the living.

**KBB:** Speaking of internationalism, how has INHIGEO figured in the broader framework of activities in history of geology? How has INHIGEO affected your thinking?

**KLT:** I see INHIGEO as an important meeting ground between the two main groups who give serious attention to geology's past: geologists who have committed themselves to engagement in historical study of their science, and the rather smaller number of historians of science like myself whose research focus is on geology. As we all know, INHIGEO was founded by geologists, not by historians of science. I am comfortable with that and have no wish to see it change: People who identify professionally with geology have always predominated in the Commission, and I believe that should continue to be the case. That said, it is also good that INHIGEO includes a number of professional historians too. The two groups stand to learn a lot from each other.

An additional observation I would make from my viewpoint as a historian of science is that the history of geology continues to have too low a profile in the history of science profession. This is true notwithstanding the very important progress that has been made on this score during recent decades, owing to work done for example by people like Martin Rudwick, Rhoda Rappaport, Roy Porter, Leonard Wilson, Mott Greene, Rachel Laudan, and Naomi Oreskes. It continues to be the case that if you count only the professional historians of science, the population of historians of geology is far too small; it is short of

critical mass. The picture is different, though, when you count the geologist-historians as well (and these constitute the majorities in organizations like the Geological Society of America's History and Philosophy of Geology Division, and the History of the Earth Sciences Society, or COFRHIGEO in France, and similar groups in other countries). From the standpoint of identifying an audience for historical work about geology, and also of promoting involvement in research in this field, the substantial presence of active geologist-historians is essential.

What I've learned from geologist-historians through INHIGEO is beyond measure. And a big part of this has been a benefit through INHIGEO excursions, the historical field trips organized in conjunction with Commission meetings. One of the best of these, in my experience, was the very first one I took part in: the nine-day trip across a good portion of France in 1980, organized by François Ellenberger with the assistance of Georgette Legée, prior to the INHIGEO meeting in Paris with the 1980 International Geological Congress. Others that stick out in my memory include two in Italy: the from-Pisa-to-Padua trek in 1987, and the 1995 Naples-Vulcano-Catania trip, in both of which Nicoletta Morello played a leading organizational role. These excursions, and many others as well, were special not least because of the remarkably interesting places we visited. (While I would have wished to be a participant in every one, of course there were many that I missed.) But probably the key ingredient for me personally has always been the opportunity to profit by seeing places in the company of people well informed regarding both the geological and the historical dimensions of what we saw.

**KBB:** This is maybe an off-the-wall sort of question: Is there any single geologist you would say has influenced you the most?

**KLT:** It's a good question, actually. And I have a ready answer: No geologist had a more lasting effect on my thinking than David B. Kitts, who was my long-time colleague at OU. In fact, he was one of the main reasons I ended up working at OU.

Dave, who died in 2010, did his doctoral work under the supervision of G. G. Simpson at Columbia, and joined the Oklahoma geology faculty in 1954. A paleontologist working mainly on Cenozoic animals, and an outstanding teacher, he developed a course he called *Metageology*. This was mainly about the philosophy of geology, a subfield you could say he helped to create. At OU he found that the historians of science were among those most congenial to his interests, and he became more and more engaged with their teaching program. Eventually he had a faculty appointment in both geology and the history of science, and during his later years he taught full time in my department.

I had met Dave in summer of 1964, when I was still a grad student. I was allowed to "gate crash" a National Science Foundation Summer Institute in history of geology, in which Dave was one of the instructors (along with George White, Aurèle LaRocque, and Joe Gregory). The Institute's purpose was to encourage college and university teachers of geology to incorporate historical perspectives in their courses. Permitting me to take part was of course exceptional, since I was neither a geologist nor (yet) a college-level teacher. But this was for me a very stimulating experience, and it marked the beginning of my close friendship with Dave Kitts.

I had never before encountered anyone so deeply engaged in thinking about geological science in the philosophical and historical manner Dave exemplified. And he loved debating over his views, some of which were far from being universally agreed to (for example, his contention that geology is a radically

historical science, aimed centrally at establishing claims about the earth's historical development). In the long run, although Dave and I did not agree on everything, for me there was never anyone who was his equal in provoking thinking about geology's history and basic character. And geology wasn't by any means the only thing we discussed. Aristotle might have been his favorite topic; and, of course, an understanding of Aristotle is pretty basic for anyone who teaches the history of science.

**KBB:** Can you say a little about your role as a teacher at Oklahoma, and the part history of geology played in it?

**KLT:** Sure. Teaching was at the center of my professional life. But it might surprise you how modest a portion of my teaching effort was addressed to the history of geology, given that this was where most of my research was situated.

First, a confession: I came to the profession of teaching not out of some inner compulsion to do good by helping others to learn (although it did not take long for me to realize there are real satisfactions in doing this), but rather mainly because this was a practical way to make a living while advancing my own education.

And by the way, my preparation for teaching would nowadays be regarded as very weak. Aside from taking part in a voluntary and informal series of meetings on aspects of college and university teaching, at Harvard I think my main resource in learning about teaching was through judging the examples presented by my own teachers (and on the whole I thought they were good models). As a graduate student Teaching Fellow, I did gain valuable experience interacting with undergraduates individually and in small groups (this was "tutoring" at Harvard), but when I began teaching at OU I had had almost no real "stand-up" experience in a classroom. Did I learn a lot that first year! And I mean both in how to manage lecturing and other aspects of classroom teaching, and in developing a grasp on making out coherent narratives about science's development. Before long I gained confidence in my teaching abilities and came to be reasonably comfortable in the role of teacher. Teaching, and especially preparing to teach, always took a very large portion of my time, but I loved it. I might not ever have taken retirement, were it not for the part of teaching I began to find the most onerous: the constant grading of undergrad exams and essays.

Let me inflict one of my favorite (true) stories on you. One day, not terribly long after I had retired from teaching at age 65, I was talking with my wife Mike, no doubt providing some pertinent and valuable information I could see that she needed at the moment for some reason. And Mike said to me: "I can tell you aren't getting your regular weekly quota of telling people stuff." This was of course to signal that she was not about to take over the role my students had played for some four decades. This brought home to me one of the ways students have indeed been important to me. I did get over this setback, although it required a bit of adjustment on my part. Internet communication helps, as of course does writing in any form.

**KBB:** That's an entertaining anecdote. You can't be the only one who became a professional explainer and got called on it. Now, you've answered only part of my question. What about how history of geology fit into the larger pedagogical picture?

**KLT:** Although it's questionable to try to quantify it, I'd say that as a teacher I had history of geology in view at most ten percent of the time, and often less. (In saying this, I exclude certain specific contradictory

instances, such as when I directed a graduate seminar focusing on Lyell, or co-taught an undergraduate honors colloquium in collaboration with my petrologist colleague Charles Gilbert, centered on understanding igneous rocks.) This applies even at the graduate level, where my portfolio as historian of geoscience was at most an equal partner with, if not subordinate to, my other main role as a teacher of science over the "long" eighteenth century, roughly from Newton to Cuvier. You can judge of this from the fact that out of the eleven graduate students I have supervised (or co-supervised) to completion of their PhD degrees, only three chose to write dissertations on projects identifiable as history of geology.

How things worked out this way is linked with the history of my field at OU. The curricular patterns into which I stepped as a neophyte teacher had been established by my senior colleague Duane H. D. Roller, the first historian of science at OU. The biggest commitment was in teaching multiple separate sections of two "survey" courses over Western science: the first from Antiquity to about 1600 or 1650, the second carrying on from there to the 20th century. And for most of my career, it was in effect a point of principle that each of us taught both parts of the survey. This was fine with me: I relished teaching about ancient, medieval, and Renaissance science (all of which therefore became progressively more intelligible to me), as much as teaching about Copernicanism, or about Newton and Newtonian science, or about Lavoisier and the chemical revolution, or Darwin, or the new physics and the Bomb.

Other courses were organized, for the most part, on a chronological criterion. For a long time, I offered a course on 18th-century science. The program ethos tended to look askance at treating disciplinary histories in tunnel-like fashion, as for example in tracing the history of physics or chemistry or geology as autonomous fields. This was out of respect for the fact that the differentiations between these sciences familiar to us are comparatively recent.

One curricular change in which I participated was in the creation of other sorts of thematic courses. The two with which I was most involved were *Science in Social Context, 1600 to the Present*, and *Lives in Science: History of Science through Biography*. I always found these fun to teach.

All this may help explain why history of geology entered into my own teaching not through any course dedicated to that subject, but rather through its appropriate entry in a chronologically- or thematically-defined course. For practical purposes this usually meant that my students—particularly in the second part of the survey—got exposed to figures like Steno, Buffon, Werner, Hutton, Smith, Cuvier and Lyell. They were also asked to confront problems (mostly from the 17th through 19th centuries) like the interpretation of fossil objects, efforts to classify distinct rock masses, evidence of transformations in the earth's surface features by natural agents, evidence of a historical sequence of living things, and arguments over rates of change and the extent of natural time. Of course, evolutionary theories would always loom large in such courses.

**KBB:** How have you been spending your time since retiring from teaching?

**KLT:** Sometimes I tell people I am semi-retired. If an explanation seems in order, I say this means that I am still working, at a measured pace, but not getting paid for it. I am in fact very fortunate that my university has continued to support my work, and my department continues to provide me with work space, computer and copying facilities, and the like.

An unforeseen benefit of having fallen short in publishing as much of my research as I would have wished, over the years, is that in these post-retirement years I still have challenges to meet. It is also a piece of good luck that I am in a field where continuation of research is quite feasible. (For some colleagues in, say, the laboratory sciences, this is not always the case.) I get a lot of satisfaction out of regular application to unfinished business, mostly about Desmarest and his contemporaries. I have also enjoyed continued involvement in professionally-related activities, such as refereeing and reviewing, and particularly in organizational offices such as with INHIGEO.

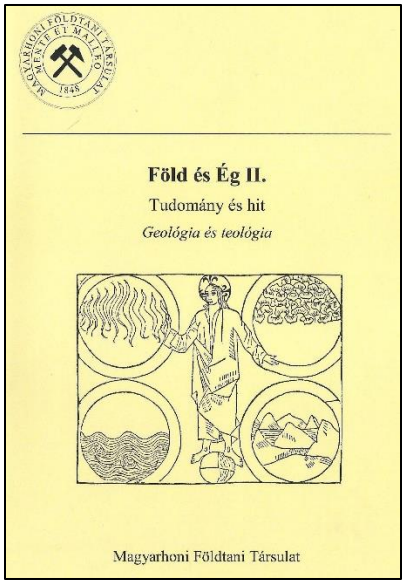
Retirement has brought with it more time for personal pleasures, especially reading. I take part in a reading-and-discussion group I have belonged to for nearly 40 years. And I read widely on my own, a mix mainly of history and fiction. My wife and I enjoy travel, although we are doing less of that than we might wish on account of difficulties I have with degeneration of the spine. For avoidance of being too sedentary, there is the blessing that my wife is an avid gardener, who needs an active gardener's helper.

Ken, my friend, thank you for indulging me in these long-winded musings.

# BOOK REVIEWS

Unger, Z. (ed.) 2017: *Föld és Ég II. Tudomány és hit. Geológia és teológia.* (*Earth and Heaven vol. II. Science and Faith. Geology and Theology*.) – Published by Magyarhoni Földtani Társulat (Hungarian Geological Society), Budapest. 85 p.

In this little volume the Hungarian Geological Society published the lectures presented on a special section of the annual regional meeting of the society, held August 24 – 27, 2016, at the Reformed Theological Academy of Sárospatak. The book was edited by professor Zoltán Unger, vice-president of the society. The number "vol. II." in the title refers to a previous book (vol. I.) with the same title and subject, published 2009 on the occasion of the International Year of Planet Earth (see Planet Earth Lisbon 2009, p. 61).




The venue of the 2016 annual meeting, the Reformed College of Sárospatak is also related to the history of mineralogy. Already Domokos Teleki reported on its mineralogical collection in 1796. The school has a historical rock sample collection from the19th century. The rock samples were collected by József Szabó during his classical geological mapping of the Tokaj-Hegyalja region and donated by him in 1871.

The authors of the papers in the book will be presented separately, first the theologians, then the earth scientists.

Theologians discussed partly geographical relations of biblical lands, partly questions of evolution.
*Péter Balla*, professor of New Testament Theology and rector of the Károli Gáspár Reformed (Calvinist) University, Budapest discussed a historical question of the biblical geography, the difference between the inhabitants of the Roman province *Galatia* and the ethnic *Galatians*. The distinction may be important for the understanding of epistle of apostle Paul to the Galatians.

*László Pál Szalay,* Calvinist pastor (Telkibánya, Hungary), representative of the religious eco-movement discussed the ecological conditions of the Holy Land in biblical times which are expressed several times by the term *"land flowing with milk and honey" (Exodus 3,8).*

*Imre Sipos,* Roman Catholic monk and biologist (Miklósi, Hungary) discussed the classical controversy in the interpretation of evolution. He completely accepts the scientific results concerning the history and timing of the events from the Big bang until human evolution, however, considers its deepest driving forces and tendency a divine mystery, in the sense of *I. Corinthians 3,22-23.*

*S. Béla Visky,* professor of the Protestant Theological Institute of Kolozsvár (Cluj, Romania) criticised the atheistic interpretation of the origin of time by the famous British physicist Stephen Hawking. He states in general that God cannot be banished into the so far uncovered dark realms of our knowledge.

Among the *earth scientists*, *Károly Brezsnyánszky,* former director of the Geological Institute of Hungary dealt with the essential role of William Smith in the development of modern geological mapping and stratigraphy. These were essential steps toward our present-day ideas about formation and evolution of the universe which he calls *"the creation myth of our times".*

The hydrogeologist *Tamás Madarász,* professor of Miskolc University and leader of an evangelical congregation discusses the chief water-related events of the Bible, from the division of land and waters during creation until calming the storm by Jesus. The chief idea of the paper is that God is who *"sets the boundary"* for the waters *(Psalms 104,9).*

The founder of the mineralogical collection of the Debrecen Reformed (Calvinist) College, Szőnyi Pál (1808-1878) was commemorated by *Mihály Nagy,* former curator of the collection and director of the school.

*László Végh*, fellow of the Debrecen Nuclear Research Institute demonstrated, how the laws of thermodynamics may determine the formation of more complex compounds and this way, govern even evolutionary processes.

*László Szarka,* geophysicist and member of the Hungarian Academy of Sciences discussed strategic and moral questions of present-day science. He pointed out that there is not any antagonism between science and Christian religion. However, there are contradictions between science and pseudo-sciences, and between religions and pseudo-religions. Scientific research can be corrupted by inappropriate moral behaviour of scientists, such as accommodation to commercial requirements and following fashionable spiritual trends at the expense of scientific truth.

*Tibor Zelenka,* chief exploration geologist pointed out the contradiction which permanently existed in the history between the development of our knowledge and the poor moral conditions of mankind. The situation results in ever returning catastrophes. The only solution would be faith in the Creator and following his commandments.

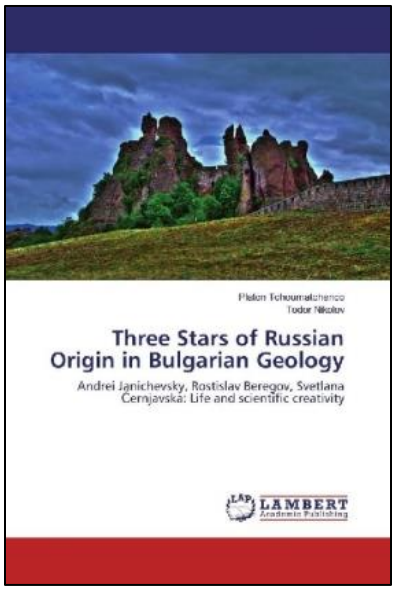
*István Viczián* studied the ideas of John Calvin about the relevance of the nature in the recognition of God, as expressed in his chief work *Institution* and in his biblical commentaries. The whole creation was

considered by Calvin as the "magnificent theatre" (*theatrum magnificum*) of the glory of God. However, according to the principle *"Sola Scriptura"* he radically states that only the Holy Scripture can be reliable source of our knowledge about God and refuses speculations about the nature. On the other hand, our knowledge about the nature may be based on our observations and experiments, according to the divine mandate given to the man after the creation.

Later, especially in the period of Enlightenment, the ideas expressed by Calvin were formulated in the parable about *Two books*, the Book of Grace and the Book of Nature. An example of the application of this theory is presented in another report by *István Viczián*. Ferenc Benkő, the author of the first mineralogy in Hungarian language (1786) formulated these ideas in his theological considerations.

In appendix the volume contains the guide of the excursion to the surroundings of Sárospatak, compiled by *Zoltán Unger*. The town itself is considered to be the birthplace of St. Elisabeth (1207-1231) and the surrounding area as the "Holy Land of the 16th century Reformation" in Hungary. István Viczián

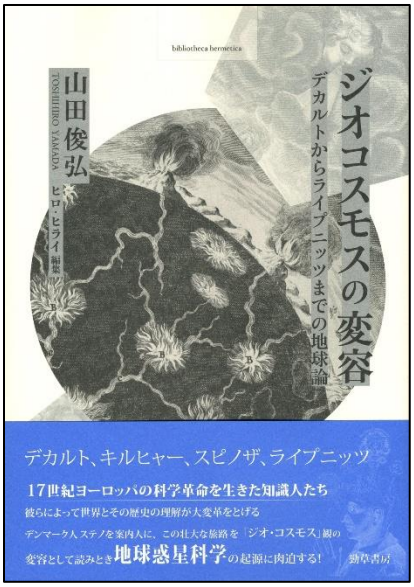
Tchoumatchenco P., T. Nikolov. 2017. *Three Stars of Russian Origin in Bulgarian Geology: Andrei Janichevsky, Rostislav Beregov, Svetlana Cernjavska: Life and scientific creativity, published by Lambert Academic Publishing*. Lambert Academic Publishing, 103 p.




Prof. Dr. Platon Tchoumatchenco and acad.Dr. Todor Nikolov published their research on the life and the scientific creativity of three Bulgarian geologists of Russian origin – Doc. Eng. Andrei Janichevsky (1904-1949), Dr. Rostislav Beregov (1908-1946), and Associate Professor Dr. Svetlana Cernjavska (1929-2002). Two of them arrived in Bulgaria after the Civil War in Russian with their families; S. Cernjavska was born in Serbia and moved to Bulgaria after 1948. Doc. Eng. Andrei Janichevsky was specialist of ores deposits, the regional geology and the geology of the metamorphic rocks of Strandzha and Rhodopes (Southern Bulgaria). Dr. Rostislav Beregov was specialist of the Tertiary coal basins in Bulgaria – brown and lignite coal, the stratigraphy and the paleontology of Tertiary. Dr. Svetlana Cernjavska was the founder of the paleopalynology in Bulgaria and studied Paleogene palynomorphs (South West and North East Bulgaria and the Rhodopes Mountains) and Lower and Middle Jurassic palynomorphs from land outcrops (Eastern Stara planina) and the deep wells for oil and gas prospections in the Moeasian Platform in North and North East Bulgaria.

**How Earth Was Seen in the Age of the Scientific Revolution**

Yamada, Toshihiro, *The Transformation of* Geocosmos: *Perceptions of Earth from Descartes to Leibniz* (Series "bibliotheca hermetica" edited by Hiro Hirai). Tokyo, Keiso Shobo, 2017, 256, xxvii pp. [in Japanese] ISBN 978-4326148295 Reviewed by Michiko Yajima




Generally speaking, most geologists in Japan, even now, like to believe that modern geology started in 19th century Britain, after the heroic age of Hutton, Smith, and Lyell, despite some introductions of the claims of 'revisionist' view. In reality, we knew little information about the situation of geological thinking in the 17th century, excluding the contributions of Steno and Hooke only as precursors' names. Toshi Yamada had realized 'another' geoscience history during his teaching geosciences in high school. He began to study especially the life and works of Nicolaus Steno (1638–1686) and investigated into the literatures of 16th and 17th century Europe, some of which were very rare. At last he successively submitted a doctoral thesis on the history of geoscience: "The Emergence and Development of the Theories of the Earth in 17th Century Western Europe: A Special Reference to Nicolaus Steno's Works," University of Tokyo, 2004, 458 pp. (including Japanese translation of Steno's geological papers). This book is the essence of his thesis.

The contents are as follows:



After the overview of the Renaissance geocosmic concept in various fields, *e.g.,* mining, natural history, and geography, Yamada gives an outline of Cartesian theory of Earth contrasted against Kircherian one. This might be a stereotype dichotomy of mechanic vs. organic models. But the important point of Yamada's view would be a role of Gassendi, whose theory of Earth included the meaning of fossils, while Cartesian without fossils. Kircher also shared similar attitude to fossils with Gassendi. Even more important is that Steno was very much interested in the Gassendi's and Kircher's works in his student years. Steno was not just a Cartesian. Here we come to the climax of the first half of this book.

Yamada stresses the important role of geography at that age and carefully examines Varenius' *General Geography* of 1650, which represented a post-Cartesian new geography and Steno took notes when he

was young. Interestingly, Varenisu also wrote a book on Japan. Despite Yamada's favor of Steno, he admits the priority of Hooke's achievement in this field. Hooke demonstrated the meaning of fossils as remains of past creatures before Steno. According to Yamada, Hooke's *Micrographia* revealed 'new worlds' including 'geocosmos' *i.e.* 'earth world' by the power of microscope.

It is hard to understand for non-Christian people why so many wise scholars in the 17th century adopted the biblical chronology; as Steno did. The excommunicated Jewish person Spinoza was, however, critical about such reading of the Scripture. Steno established principles of solids within solids as the way of reconstructing geohistory, but within the Bible story. If one accepted Spinoza's criticism against such stories, one should tell the geohistory as a history of Nature itself. Yamada thinks there emerged the concept of modern 'history of nature' and this was the very point that would have urged Leibniz' interest in Spinoza and Steno and their relations. Indeed, Leibniz was interested in not only medieval and Chinese histories, but also geological mapping, which made possible both reconstructing geohistory and developing mines. Thus Steno-Spinoza-Leibniz relationship was crucial in the history of geoscience. This is the climax of the latter half of the book and would be the core of the whole book.

In his postscript, Yamada mentions three key persons who helped his achievement: Professors Hiro Hirai in Liege, David Oldroyd in Sydney, and Chikara Sasaki in Tokyo. It was fortunate for him to study such theme using internet supporting without staying abroad a long time.

Fortunately, with abundant figures, which more or less help understanding contents, *Transformation of Geocosm* is welcomed by Japanese readers and favorable book reviews have been presented by historians of early modern science and geoscientists, especially geographers. Unfortunately, non-Japanese readers may not approach the contents of this book written in Japanese, but they can understand the outline through his following English papers on this topic:

Yamada (Toshihiro), "Leibniz's Unpublished Drawings in a *Protogaea* Manuscript," *JAHIGEO Newsletter* 3 (2001), 4-6.

Yamada (Toshihiro), "Stenonian Revolution or Leibnizian Revival? Constructing Geo-history in the Seventeenth Century", *Historia Scientiarum*, 13-2 (2003), 75-100.

Yamada (Toshihiro), "Kircher and Steno on the 'Geocosm', With a Reassessment of the Role of Gassendi's Works," in G. B. Vai and W. G. E. Caldwell, eds., *The Origins of Geology in Italy* (Boulder: Geological Society of America, 2006), 65-80

Yamada (Toshihiro), "Hooke-Steno Relations Reconsidered: Reassessing the Roles of Ole Borch and Robert Boyle," in G. D. Rosenberg, ed., *The Revolution in Geology from the Renaissance to the Enlightenment* (Boulder: Geological Society of America, 2009), 107-126.

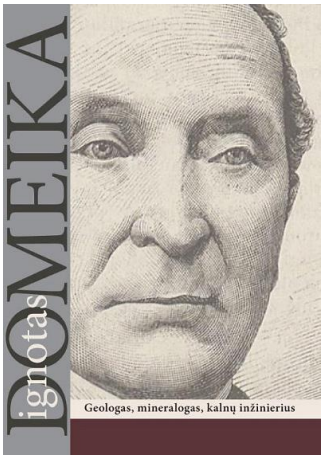
# CHILE, A SECOND HOMELAND OF IGNACY DOMEYKO. AN EPILOGUE

Algimantas Grigelis
The Lithuanian Academy of Sciences, Vilnius, Lithuania
e-mail: algimantas.grigelis@geo.lt

Translated from Lithuanian by Markas Aurelijus Piesinas (Vilnius)

[Editor's note: this manuscript was submitted 23 December 2017 for Litasfera / Litosphaere journal, 2018, Minsk]

## INTRODUCTION




A thoughtful look of a man is pointed at a reader of the book from its top cover. What does this face say to us?

On July 20, 2017, at midwinter, the flowers have emerged in the world driest Atacama Desert in all shades of colours after intense and unexpected rains... The same day in Vilnius, a book by a large team of scholars has come out about Ignacy Domeyko, the famous 19th century geologist and mineralogist and the father of the Chilean mining industry. This is a written monument to the person every intellectual should know. There the attempts have been made to analyse both the physical traits of Ignacy Domeyko and the meaning of symbols marked on the mausoleum in the central cemetery of Santiago, Chile.

Book: *Ignotas Domeika – geologas, mineralogas, kalnų inžinierius = Ignacy Domeyko – geologist, mineralogist, mining engineer*. Mokslinis redaktorius / Scientific Editor Algimantas Grigelis. Vilnius: Vilnius University Publisher, 2017. 726 p., ca. 600 ill.

## THE SEVEN IGNACY'S PORTRAITS

The portraits of Domeyko and his facial features can say a lot about the man's personality. This is the field of physiognomy (facial reading) – a century-old science. Without any ambition to qualify for a comprehensive analysis, I would wish to attempt and characterize the personal traits of I. Domeyko, which would perhaps disclose the peculiarities of his person. The most valuable for the practice of face reading are natural photographed portraits. About thirty of Ignacy Domeyko's images sit in the author's archive, collected from various periods of Ignacy's life. These are painted portraits, photographs (daguerreotypes) and sculptural busts. Until the period of Santiago, only two images are known: the Vilnius miniature, attributed to I. Domeyko and dated circa 1820, and an 1833 portrait, produced by the painter Kurovsky in Paris. Other known original images are from the period of his life in Santiago (from 1850).

Ignacy Domeyko is described as being 169 cm in height, with an aesthetically-pleasing face, of dark complexion and handsome posture. He was stocky, strong and persevering; during mountain expeditions, either on horseback or on foot, he could endure both hunger and cold; in the desert – both thirst and heat. However, he would get motion sickness when sailing. Upon reaching middle age, he would occasionally

complain of toothaches; he began to turn deaf upon reaching the age of 80, yet up until old age he managed to retain an excellent physique. When he came to Kraków in 1884, he was described as a curious and enthusiastic individual of young spirit. While living at his daughter's residence in Zyburtowszczyzna, he would daily go on several kilometer treks, all the while admiring his native surroundings.

01  02  03 

*Figure 01. Portrait of young Ignacy Domeyko, circa 1820. Based on the miniature by artist Goebl (Nieciowa, In Domeyko, Moje podróże, 1962, vol. I, p. 26).*

*Figure 02. Ignacy Domeyko in Paris, circa 1833. Based on the portrait by Józef Szymon Kurowski (source: Henryk Mościcki, 1924, p. 72). Holdings of the LMA VB, sign. 540602.*

*Figure 03. Portrait of Ignacy Domeyko, 1850. (Nieciowa, In Domeyko, 1963, vol. III, p. 52).*

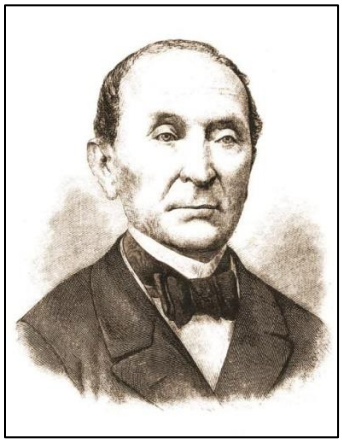
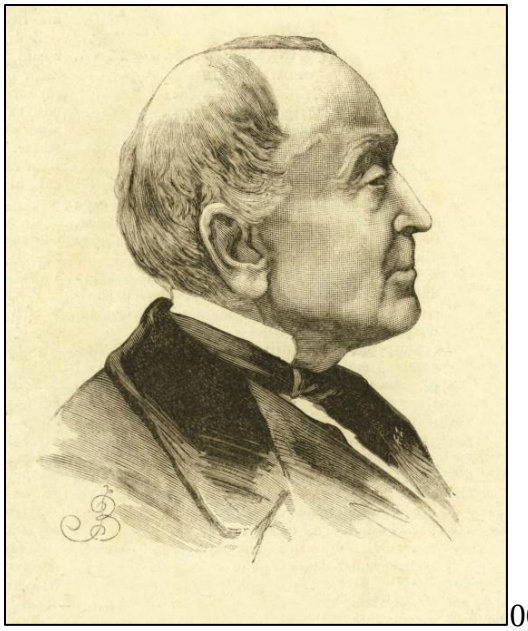
 04  05

*Figure 04. Ignacy Domeyko, Rector of the University of Chile. Tygodnik ilustrowany, no. 186, 1871, p. 37. Holdings of the LMA Wróblewski Library (LMAVB) * 1871-1880.*

*Figure 05. Ignacy Domeyko, Rector of the University of Chile, 1880 (Stupnicka-Kępińska, 2002, p. 277).*



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07

*Figure 06. Ignacy Domeyko. Tygodnik ilustrowany, 1884, vol. IV, sierp. 9, no. 84, p. 1 (Warszawa). Holdings of the LMA VB.*

*Figure 07. Ignacy Domeyko in his native land, 1888. Warsaw, photography studio "Leonard and Co." LMAVB, RS sign. Fg. 1-1802.*

Ignacy Domeyko's facial features, if judged from the photographs, saw little change over time. His was a quite broad face with rather large cheekbones. It is said that people with broader faces tend to occupy higher social positions. The dark color of his eyes shows the person being of quick reaction. His nose is not large, and the not-so-acute point of his it may signify a milder attitude and patience. Fair and not protruding ears are signs of vitality and independence, they also shape the pleasant view so characteristic of the face. Large ear nipples symbolize extraordinary luck in one's life.

So, the humanly characteristics of Domeyko were created by the genes of his ancestors, but he himself, as well as the environment of his parent's family and school, had shaped his personality. Perhaps it would be viable to state that he was vibrant and spirited and had the traits of a leader. He did not allow himself to be governed by his own emotions, and he was fast in resolve. He had built his life in such a way as to allow himself to be occupied with only those activities that pleased him. In addition, he was prone to listening to others, yet he would consider his own opinion when making decisions. He always took a liking to knowing all there is to know. He was a man of exceptional honesty, generosity, altruism and faith. He had faithful friends to whom he was sincere and open. He knew what was needed for him to feel comfortable and well. He strived for a perfect family, yet when he experienced family losses, he did not plunge to depression, instead he rode into the mountains to recover in nature. He felt a remarkable love for his occupied Homeland, yet he had great respect for his second Homeland and its people, serving them with devotion. When he had felt that the time was near to confront the One, he had returned from Lithuania to pass away in Chile. His children were neither Lithuanians nor Poles, but they were Chileans. This country became the country of the Domeyko, and it has thanked them generously.

## THE FOUR COATS OF ARMS

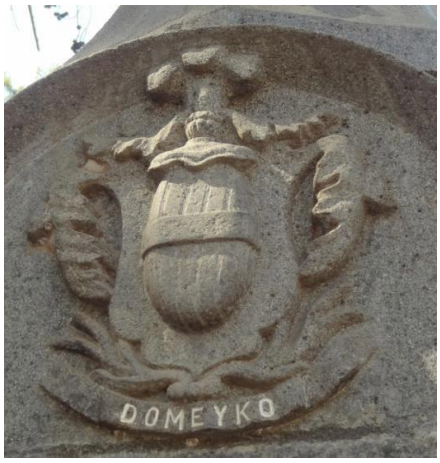
The coats of arms at Ignacy Domeyko's resting place in Santiago give sense to the symbolism of large Chilean families and the aim not to be divided even beyond life. The solemn monument to Ignacy Domeyko at the central Alley of the Santiago Cemetery is a mausoleum, under the shelter of which are resting the remains of his family and descendants.

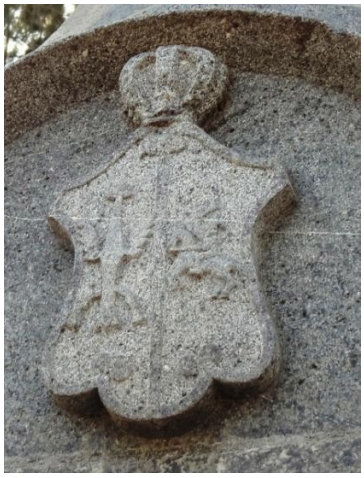
08  09 

*Figures 08-09. The monument of Ignacio Domeyko in the Santiago Central Cemetery. Photo taken by A. Grigelis, 2014.*

Within the four plates of the monument, inscribed previously and continuously are the first and last names of Domeyko's family members, children, grandchildren and great-grandchildren. The last inscription – Ana Domeyko Alamos 1902-2007 – is left by his famous great-grandchild. All of them are the DOMEYKO.

A special symbolic meaning is held by the coats of arms, chiseled in stone on all four sides of the monument. First is the Domeyko family coat of arms – a symbol of this family; second – the coat of arms of the Chilean University in Santiago; third – a cross of the Catholic Church – the symbol of faith; fourth – the coat of arms of the Republic of Chile – a symbol of his Homeland.



10  11

*Figures 10-11. The Domeyko family coat of arms Danguel and the coat of arms of the Chilean University in Santiago.*

12

13

*Figures 12-13. A cross of the Catholic Church and the coat of arms of the Republic of Chile.*

*No riches of the New World, which I have never felt a need for, not the marvelous sky and mountains of his, not the affability of the local people, no merits, no quiet life, no surplus, not even my wife's grave would halt me if only I had an opportunity to break away across the Atlantic and spend time near You, with You, and even for a day before my death glance upon our Native Land, which draws me with the same kind of love…* (1872).

This gives meaning to the presence of this great man in our world.

We thank you, blessed Ignacy!

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I. Domeika. *Mano kelionės. Tremtinio atsiminimai*, t. 1. – Pradai, Vilnius, 2002, p. 49–50. [In Lithuanian: *Moje podróże. Pamiętniki wygnańca*, t. 1].

I. Domeika. *Lietuvoje // Ignotas Domeika – geologas, mineralogas, kalnų inžinierius*. – Vilniaus universiteto leidykla, 2017, p. 81. [In Lithuanian: *Na Litwie*].

I. Domeyko. *Listy do Władysława Laskowicza*. – Instytut Wydawniczy Pax, Warszawa. 1976, s. 552.

Z. J. Ryn. *Ignacy Domeyko – Kalendarium życia*. – Kraków, 2006, s. 622.

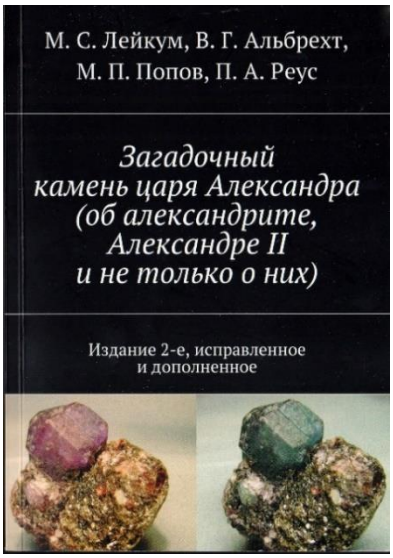
I. Domeyko. *Listy do Władysława Laskowicza*. – Instytut Wydawniczy Pax, Warszawa. 1976, s. 571.

I. Domeyko. *Moje podróże. Pamiętniki wygnańca*, t. 1. – Zakład Narodowy imienia Ossolińskich, Wrocław–Warszawa–Kraków, 1962.

Leykum, M.S., Albrecht, V.G., Popov, M.P., Reus, P.A. *Mysterious stone of Tsar Alexander (about Alexandrite, Alexander II and not only)*. Second edition revised and enlarged. St. Petersburg: Ridero, 2016. 376 p. (In Russian)

By *Leonid Kolbantsev* VSEGEI (St. Petersburg)

This book is dedicated to *alexandrite*, one of the rarest and most mysterious gemstone and, according to the authors, "the most Russian" one. Its origin, life, characteristics, are still, to a large extent, shrouded in mystery. It is named "dvutsvet" (a gem having two colors), "a stone-chameleon," "a widow stone." It changes color and sometimes changes its crystal habit, growing in the form of a single crystal, or a twin, and more often - a trilling, forming a hexagonal pyramid or prism.




Alexandrite is a rare chrome-containing variety of the mineral chrysoberyl. Its color can be lovely green in daylight or fluorescent light, changing to brownish or purplish red in the incandescent light from a lamp or candle flame. This property, which was called "alexandrite effect," can also be found in other gemstones, but in alexandrite, it is highly conspicuous. Although alexandrite might have been known in ancient times, in modern times chrysoberyl was first described by A. G. Werner in 1789, and alexandrite itself was discovered and described in the Middle Urals in 1834.

Using the historical events and people's fates associated with the Ural Emerald Mines as a backdrop, the authors tried to consider alexandrite in all possible aspects: geological, mineralogical, and gemological. Therefore, the book can be of interest to various readers: amateurs along with specialists in geology, mineralogy and jewelry art, history and mythology; those who just love stones, and even those who are fascinated by mystical and esoteric properties of stones. Moreover, the authors successfully combined a professional geological (mineralogical, gemological) approach to the description of the stone with an account of various popular scientific views, hypotheses, legends and myths.

The book begins with the description of alexandrite as a unique variety of mineral; this small section is written at a high professional level. With the help of ancient Indian and later sources, the book carefully traces the way alexandrite has been treated throughout the history of civilization. The dramatic story of alexandrite's discovery and extraction in the Ural Emerald Mines was carefully studied and described in the book in much detail; often with features of a detective story. The authors describe the main characters acting in the process: nameless miners, the heads in charge of the Ural mines - Y. Kokovin (1787-1840), A. Kemmerer (1789-1858), and the most prominent mineralogists - N. G. Nordenskiöld (1792-1866), G. Rose (1798-1873), N. I. Koksharov (1818-1892) and others, as well as the royal dignitaries, who played an important role in the story - L. A. Perovski (1792-1856), P. A. Kochubey (1825-1892). In each case, the authors do not take the established point of view at face value as if it was absolute truth; instead, they try to form the chain of events, using numerous sources, critically analyzing the opinions of both participants in the events and surrounding those people. The history of the Emerald Mines in the Urals as such is presented in a historical context covering the period before the 1917 revolution, the Soviet era and the modern time. The part dedicated to the tragic fate of Emperor Alexander II, after whom the mineral

was named, and the time of his reign turned out to be somewhat overloaded and slightly subjective, but this does not spoil the impression from the book as a whole.

Separate sections on the use of alexandrite as a precious stone and its gemological characteristics contain many references about how to determine the quality and cost of alexandrite, methods of treatment (gem cutting), and how its price depends on the properties of the stone. Alexandrite imitation and forgery methods as well as possibilities for its diagnostics are described in the book. The book contains a quite informative shorter dictionary of special terms for the readers who are not quite ready to absorb specific geological, mineralogical or gemological terminology. The list of references contains 113 titles.

By and large, in our opinion, the book is a successful synthesis of a scientific reference book "all about alexandrite," scientific research on "the history of alexandrite," and a popular manual "alexandrite in our life".

**Authors:**
*Mikhail Leykum* is a geologist and an expert in the field of forecasting and prospecting for various types of mineral raw materials. He worked in the All-Russian Geological Research Institute (VSEGEI) more than 20 years. Now he is an employee of Gipronickel Institute, St-Petersburg. The area of his geological research in Eastern Siberia extends from the Yenissei River to the Amur River. He is the author of several popular books and numerous Internet publications about the history of geology, mineralogy and stone-cutting art.

*Vladimir Albreht* deals with the extraction and processing of precious metal ores (gold, platinum) in the Urals. He was the head of various mining companies, and now he is a professor at the Ural State University, Yekaterinburg. He is the author of more than 120 publications on the history and technology of mining precious metal ores in the Urals.

*Mikhail Popov* is a geologist, an expert in the prospecting, extraction, and processing of precious and semiprecious stones. His scientific interests cover the geology, mineralogy and metallogeny of the Ural Emerald Mines. At the same time, he is an assistant professor at the Ural Mining University in Yekaterinburg, and he is author more than 100 scientific publications.

*Petr Reus* is a prospector and writer. He is the author of numerous reference publications on the prospecting and extraction of precious and semiprecious stones, as well as the search for ancient treasures.

# COUNTRY REPORTS FOR 2017

## ARGENTINA

**2017-2018 Activities**

Several papers were published, some of which are listed below:

**Ricardo N. Alonso**

**Books** (in Spanish)

Alonso, R. N., 2017. Minería en La Rioja. Las memorias de Federico Benelishe y su descripción del Famatina en 1887. 1ra. Ed., Prólogo de Dr. Florencio Gilberto Aceñolaza. Mundo Gráfico Salta Editorial, 2017. 92 p.; 16 x 22 cm. ISBN 978-987- 698-175-0. Salta (History of an important mining district, the Famatina Mountain).

Alonso, R. N., 2017. En torno a Martín Miguel de Güemes. La ciencia y minería de su tiempo. 1ra. Ed., Contribución de Antonio David Sorich. Mundo Gráfico Salta Editorial, 140 p.; 20 x 14 cm. ISBN 978-987-698-191-0. Salta (History of geology and mining during the Independence time of Argentina).

Alonso, R. N., 2018. Libros, libreros, bibliófilos y otras disquisiciones. 1ra. Ed., Mundo Gráfico Salta Editorial, 160 p.; 22 x 15 cm. ISBN 978-987-698-204-7. Salta (Old books related with history of science, mining and other subjects).

Aceñolaza, F. G. y Alonso, R. N., 2018. Historia de la Geología del Noroeste Argentino. 1ra.Ed., Mundo Gráfico Salta Editorial, 104 p.; 20 x 14 cm. ISBN 978-987-698-203-0. Salta (A short history of geology in northwestern Argentina. Main geologist and his biographies).

**Papers** (in Spanish)

Alonso, R. N., 2017. Benjamin C. C. Scott: Un científico inglés desconocido de comienzos del siglo XIX de Tucumán. Centro de Investigaciones Genealógicas de Salta. Publicación Especial Vigésimo Aniversario. Número 10, 326 p., pp. 205-220. 23x15 cm, ISBN 978-987-22075-9-5. Salta. (The life and works of an English miner in northern Argentina in the early XIX century).

Aceñolaza, F. y Alonso, R. 2017. Historia de los estudios geológicos del noroeste argentino. En: Muruaga, C.M. y Grosse, P. (Eds.), Ciencias de la Tierra y Recursos Naturales del NOA. Relatorio del XX Congreso Geológico Argentino, San Miguel de Tucumán, 1194 p. (23-41 pp). ISBN: 978-987-42-6666-8. Tucumán. (History of geology in northwestern Argentina).

Alonso, R. N, 2017. El cerro San Bernardo (Salta): Geoforma y geositio. En: Simposio N° 8: "Patrimonio Geológico, Geoparques, Desarrollo Sostenible y Estilos de Vida Saludables. XX Congreso Geológico Argentino, Tucumán, 7-11 de agosto de 2017, Aceñolaza, G., *et al.* (Eds.), Actas, pp. 1-5. Tucumán. (History of the geology of a hill of Salta city. Past and present).

Alonso, R. N., 2017. Los orígenes de los estudios de geología en Salta. En: Simposio N° 16: "El Nacimiento de la Geología en Nuestras Universidades". XX Congreso Geológico Argentino, Tucumán, 7-11 de agosto de 2017, Ramos, V. y Martino, R. (Eds.), Actas, pp. 6-9. Tucumán. (History of geology and geologist in the Salta University, Argentina).

Alonso, R. N., 2017. Historia Geológica del Río Bermejo. Primer Foro de Navegación del Bermejo. Parlamento del Mercosur. 22 de septiembre de 2017, Salta, Argentina. Consejo Federal de Inversiones, 92 p. (pp. 21-34). (Geological history of the Bermejo River in northern Argentina).

**Articles in Newspapers and WEB pages** (in Spanish)
On a weekly basis a column was published in a newspaper (https://www.eltribuno.com/salta/) referred to different subject of history of geology, history of mining and miscellaneous issues (at least 50 articles are published yearly by the author). These essays and opinion articles are reproduced in several web pages of Argentina as: *Mining Press*, *Diario Once*, *Pregon Minero*, between others. Most of the articles are included in the web page of: http://danielsalmoral.com/category/columnistas/dr-ricardo-alonso/, as well as https://noroestesalvaje.com.ar/, *etc*. The articles are considered to be in the field of divulgation and scientific journalism.

**Alberto C. Riccardi**
**Papers**

Riccardi, A. C., 2017. Desarrollo histórico de la exploración petrolera en la Argentina. Anales de la Academia Nacional de Ciencias de Buenos Aires. Academia Nacional de Ciencias de Buenos Aires, Anales 49: 171-203. (Historic development of Oil exploration in Argentina)

Riccardi, A. C., 2017. Semblanza de Francisco Pascasio Moreno. Revista Museo 29: 11-22. Fundación Museo de La Plata, La Plata. (Biographical sketch of Francisco Pascasio Moreno)

Riccardi, A. C., 2017. Origen y desarrollo de la enseñanza de la Geología en la Universidad Nacional de La Plata. En: Simposio N° 16: "El Nacimiento de la Geología en Nuestras Universidades". XX Congreso Geológico Argentino, Tucumán, 7-11 de agosto de 2017, Ramos, V. y Martino, R. (Eds.), Actas, pp. 42- 43. Tucumán. (Origin and develpment of the teaching of Geology in La Plata University)

Tchoumatchenco, P., Riccardi, A., †Durand Delga, M., Alonso, R., Wiasemsky, M., Boltovskoy, D., Charrier, R. & Minina, E., in press. Geologists of Russian origin in Latin America. Revista del Museo de La Plata.

Information submitted by A. C. Riccardi on behalf of the Argentinean Commission on the History of Geology. riccardi@fcnym.unlp.edu.ar

## ARMENIA

### ANNUAL REPORT 2017

On the 50th anniversary of INHIGEO, the 42nd INHIGEO International Symposium was held at Institute of Geological Sciences of NAS, Yerevan, Armenia, on 12-18 September. The Symposium was attended by 70 participants from 17 countries, namely Australia, Austria, Brazil, Canada, France, Germany, Italy, Japan, Mexico, New Zealand, Nigeria, Poland, Portugal, Russia, Slovakia, South Africa and USA. 59 papers (including 11 posters) were received and 48 of the participants delivered presentations at the Symposium. The symposium provided insights into the history of geology and current state of the study of history of geological science in Armenia, and greatly advanced the international academic exchange of studies in this sphere. All Armenian members of INHIGEO (A. Karakhanyan, Kh. Meliksetian, G. Khomizuri, G. Malkhasyan and A. Pilipossyan) took an active part in the organization and holding of the Symposium.

**A. Karakhanyan and Kh. Meliksetian** are editors of special volume of the "42nd International Commission on the History of Geological Sciences [INHIGEO] Symposium" dedicated to the 50th anniversary of INHIGEO (1967-2017). A. Karakhanyan was a co-author of the presentation titled "The highlights and the contribution of International Research Group (IRG) "South Caucasus Geosciences": France, Armenia, Azerbaijan, Georgia and Ukraine." He also led a tour in Spitak city where there is scarp of Spitak 1988 earthquake.

**Kh. Meliksetian** was appointed the director of Institute of Geological Sciences of NAS of Armenia on March 29, 2017. In April he participated in European Geosciences Union General Assembly 2017 held in Vienna, Austria and delivered two presentations titled "Relation of compositions of deep fluids in geothermal activity of Pleistocene-Holocene volcanic fields of Lesser Caucasus" and "Ignimbrites of Armenia – Paleomagnetic constraints on flow direction and stratigraphy of pyroclastic activity of Mount Aragats." On 12-18 September he was a co-organizer of the 42rd International Symposium on the History of Geological Sciences in Armenia. He delivered a presentation titled "Prehistoric use of ores and obsidian in the Southern Caucasus" and was a co-author of the presentation titled "Extraordinary arsenic-rich alloys used for jewelry in Bronze Age Armenia." Kh. Meliksetian and A. Pilipossyan delivered a presentation titled "Transit trade of tin in ancient Near East in Bronze Age and Armenian Highland." Kh. Meliksetian was involved in the organization of mid-conference and post-conference field excursions included in the program of the symposium. During 2017, the first step to the establishment of electronic library was made with the digitalization of all published and unpublished reports available at the library of IGS. In late 2017 he started the preparation of International Conference "30 years after the Spitak Earthquake: Experience and Perspectives" which will be held on December 03-07, 2018 in Yerevan.

**G. Khomizuri** carried on the work on the compilation of a list (with brief data) including the Armenian geologists and geologists from other countries who have made any contribution to the development of geological thinking in Armenia. At the same time, on basis of the "Access Database," the work of creating Database of these authors is being conducted. The research with the topic "History of geological knowledge in the works of medieval Armenian authors" has been conducted. The result of this study was presented at the Symposium with the report "History of geological knowledge in the works of Medieval Armenian authors" by R. Jrbashyan and G. Khomizuri. G. Khomizuri with G. Grigoryan presented a poster at the symposium with the title of "L. A. Spendiarov Prize."

**G. Malkhasyan** was worked on the program of the conference and tour organization, as well as development and maintenance of website of the Symposium. He edited the guidebook "Unique Geological Monuments of Armenia" and reissued it for the 42nd INHIGEO symposium. He delivered a presentation titled "Edward Malkhasyan – the first INHIGEO member in Armenia." He digitized and prepared a print-version of the 1:500 000 scale geological map of Armenia (authors – K. Paffenholtz, S. Mkrtchyan, E. Malkhasyan, R. Arakelyan, etc.) published in 1967. He published articles about professors E. Malkhasyan, S. Meschyan and B. Vardapetyan and made a few additions in the articles about academicians K. Paffenholtz and L. Spendiarov in the Armenian Encyclopedia of HAYAZG Foundation.

**A. Pilipossyan** and **Kh. Meliksetian** delivered a presentation titled "Transit trade of tin in ancient Near East in Bronze Age and Armenian Highland." A. Pilipossyan led a tour in "Erebuni Urartian Fortress and Museum" during the post-conference field trip.

**Publications:**

*Grigoryan G., Khomizuri G., Misakyan M.* L.A. Spendiarov prize // 42nd International Commission on the History of Geological Sciences [INHIGEO] Symposium. Yerevan, Armenia, 12-18 September 2017. 50th Anniversary of INHIGEO 1967-2017. P. 151-152.

*Jrbashyan R., Khomizuri G.* History of geological knowledge in the works of Medieval Armenian authors // 42nd International Commission on the History of Geological Sciences [INHIGEO]. Yerevan, Armenia, 12-18 September 2017. 50th Anniversary of INHIGEO 1967-2017. P. 126.

*Jrbashyan R., Khomizuri G., Harutyanyan A.*. The Origin and Development of the geological thought in Armenia. Yerevan: 2017. 87 p.

*Khomizuri G.* Andreas Yeremy Artsruni (1847-2017) // News of the National Academy of Sciences of the Republic of Armenia. Earth Science. 2017. N 2. P. 86-94.

*Malkhasyan G.* Edward Malkhasyan – the first INHIGEO member in Armenia // 42nd International Commission on the History of Geological Sciences [INHIGEO]. Yerevan, Armenia, 12-18 September 2017. 50th Anniversary of INHIGEO 1967-2017. P. 97-98.

*Meliksetian Kh.* Prehistoric use of ores and obsidian in the Southern Caucasus // 42nd International Commission on the History of Geological Sciences [INHIGEO]. Yerevan, Armenia, 12-18 September 2017. 50th Anniversary of INHIGEO 1967-2017. P. 97-98.

*Meliksetian Kh., Malkhasyan G., Khomizuri G.* Arkady Karakhanyan (1951-2017): Obituary // INHIGEO Circular. 2017. N 4. December.P. 4.

*Piliposyan A., Meliksetian Kh.* Transit trade of tin in ancient Near East in Bronze Age and Armenian Highland // 42nd International Commission on the History of Geological Sciences [INHIGEO]. Yerevan, Armenia, 12-18 September 2017. 50th Anniversary of INHIGEO 1967- 2017. P. 135-136.

*Schwab, R., Meliksetian Kh., Kraus S., Pernicka E.* Extraordinary arsenic-rich alloys used for jewelry in Bronze Age Armenia // 42nd International Commission on the History of Geological Sciences [INHIGEO]. Yerevan, Armenia, 12-18 September 2017. 50th Anniversary of INHIGEO 1967-2017. P. 134.

*Sosson M.., Karakhanyan A., Kangarli T. et al.* "The highlights and the contribution of International Research Group (IRG) "South Caucasus Geosciences: France, Armenia, Azerbaijan, Georgia and Ukraine," 42nd International Commission on the History of Geological Sciences [INHIGEO]. Yerevan, Armenia, 12-18 September 2017. 50th Anniversary of INHIGEO 1967-2017. P. 118-119.

**A. Karakhanyan**'s sudden death in November was a great and irreparable loss for INHIGEO members and all the geologists from Armenia. [See obituary in this volume.]

G. Khomizuri, Yerevan (Armenia); g.khomizuri@yandex.ru

## AUSTRALIA

**Barry Cooper** has been enjoying the role of INHIGEO President, especially with the 50th anniversary conference in Yerevan, Armenia in 2017. For the anniversary he spoke on "The beginnings of INHIGEO" and in an associated symposium dealing with biographies he presented a joint paper (with J.B. Jago) entitled "Robert Bedford (1874-1951): A unique contributor to international geology from the Australian outback". This latter paper is being prepared for submission to *Earth Sciences History*.

Barry's contributions to the INHIGEO 50th anniversary volume "History of Geoscience: Celebrating 50 Years of INHIGEO" were published in Geological Society of London, Special Publication 442, and edited by W. Mayer, R. M. Clary, L. F. Azuela, T. S. Mota & S. Wołkowicz. They are as follows:

INHIGEO in recent times. Geological Society of London Special Publication 442: 29-39 (joint with K. Bork)

Changing reflections on the history of geology. Geological Society of London Special Publication 442: 63-67.

Barry also continues his involvement as Vice Chair, IUGS Heritage Stone Subcommission.
In addition, on a local level in Adelaide, he remains Vice Chair of the "History of Science, Technology and Ideas Group".

**J. B. (Jim) Jago** was a joint author (with Barry Cooper) on a paper presented at the 50th anniversary conference in Yerevan, Armenia, The paper was entitled "Robert Bedford (1874-1951) A unique contributor to international geology from the Australian outback." This paper is being prepared for publication.

**Wolf Mayer –** The hardback edition of the INHIGEO Anniversary Volume appeared in the second half of 2017. It includes contributions from many of our members, who have written on a wide range of topics relating to the history of geology. As chief editor of this publication I would like to express my appreciation for their valuable and insightful work and for their commitment to this project.

The need to care for my wife, who suffers from dementia, has prevented me from attending the last two INHIGEO conferences and has considerably reduced my ability to carry out research. Unfortunately, I will also have to miss this year's meeting in Mexico but hope to be able to make arrangements that will allow me to attend the 2019 symposium.

While my contributions to INHIGEO in the foreseeable future must necessarily be very limited, I would like to hear from friends and colleagues from time to time and keep up with their work and other activities.

**Publications:**

Mayer, W., Clary, R. M., Azuela, L. F., Mota, T. S. and Wolkowicz, S. (eds.). *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London, Special Publication, 442, https://doi.org/10.1144.SP442.41 .

Mayer, W. 2017. Introduction: enquiries into the history of geology. In: *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London, Special Publication, 442, https://doi.org/10.1144.SP442.41 , pp. 1-8.

**Ken McQueen** was active in the areas of geological heritage and education through his ongoing membership of the Steering Committee for the Australian National Rock Garden and the Heritage Committee of the ACT Branch of the Geological Society of Australia. He maintained his activities related to mining history and heritage, while continuing as President of the Australasian Mining History Association (AMHA). In February, Ken presented a paper related to ethnogeomorphic interpretation of the landscape history of the Clarence River catchment in northern New South Wales at the 17th Biennial Australian and New Zealand Geomorphology Group Conference, held in Greytown, New Zealand. In September, he attended the 23rd Annual AMHA Conference held at Traralgon in the East Gippsland region of Victoria, where he presented a paper on the history of early gold discoveries in Australia and their

influence on scientific theory related to gold deposit formation. Over August, Ken visited sites of interest in the history of science in France, Poland and Greece, including the Marie (Skłodowska) Curie historic haunts and laboratory museum at the Sorbonne, the Geological Museum of the Polish Geological Survey in Warsaw and geological sites and museums in Athens and several Greek Islands. During the year, Ken also completed notes on the mining history of the New England region of Australia for a new 1:500,000 scale metallogenic map to be published by the Geological Survey of New South Wales in May 2018. In October, Ken, on behalf of the AMHA, wrote a letter of support for the Milparinka Heritage and Tourism Association in their application for funding from the NSW State Government to establish a high-quality facility for the interpretation of the mining and related cultural heritage of the Milparinka-Tibooburra region in far north-western New South Wales. The application was successful and the AMHA will be engaged in assisting development of the facility.

**Publications:**

McQueen, K. G. 2017. Nymagee copper: Birth, death and resurrection? *Journal of Australasian Mining History*, **15**, pp. 99-117.

McQueen, K. G., 2017. Formation of the Clarence River in SE Australia and the story of Dirrangun: Ethnogeomorphology and relevance to landscape evolution and climate change. *17th Biennial Australian and New Zealand Geomorphology Group Conference*, 6-10 February 2017, Greytown, New Zealand, Conference Programme and Abstracts, p. 30.

McQueen, K. G., 2017. Early gold discoveries in Australia: Their influence on theory and practice, particularly in Victoria. In Williams, M. and Williams, N. (eds), *Mining from the Mountains to the Sea*, Proceedings of the 23rd Annual Conference, AMHA, Traralgon, 25-29 September 2017, Australasian Mining History Association, Perth, p. 25.

McQueen, K., 2017. Update on the National Rock Garden. *AIG News*, No. 127, p. 31.

McQueen, K., 2017. The Australasian Mining History Association. *AIG News*, No. 127, p. 37.

McQueen, K., 2017. New rock for the National Rock Garden. *AIG News*, No. 139, p. 54.

**Susan Turner** and Martina Kölbl-Ebert contributed an essay on the history of women in geoscience to the INHIGEO Anniversary volume and work continues on the data base of women geoscientists. In part Sue uses the Facebook page 'Women in Geoscience', which she created.

Following on from earlier work on the history of women in the 'saurian' world (Turner *et al.* 2010), in the past year Sue was invited to join her colleague Professor Annalisa Berta (University of California, San Diego) to write a history of women 'bone hunters', which they hope to publish with John Hopkins University Press in late 2019. This volume will consider individual women from the late 18th century on to the present day, as well as gender disparity in their career tracks and look at the development of the Society of Vertebrate Paleontology and VP conferences and VP education worldwide as they affect women.

In July 2017, her own history of 50 years of scientific work was celebrated when she was honoured at the 14th Early/Lower Early Vertebrates Symposium held in Poland: Warsaw and Chechiny, Holy Cross mountains (Blieck & Burrow 2017, Ginter 2017, Hairapetian 2017, Itano 2017, Schultze 2017, Turner 2017).

Facebook is one venue for historical research via pages as noted above, plus the 'Thomas Sopwith Appreciation Society', 'Friedrich and Erika von Huene', 'Halstead-Tarlo, Lambert Beverly'.

**References:**


Blieck, A. & Burrow, C. 2017. Fifty years of international symposia on early/lower vertebrates: honouring Dr. Susan Turner, colleague, friend and mentor. In: Ginter, M. ed. 14th E/LVS Warsaw & Holy Cross Mts Poland, July 3-8, Abstracts. *Ichthyolith Issues* SP 13, 10-11.

Ginter, M. 2017. International Symposium on Early and Lower Vertebrates in the Holy Cross Mountains, Poland with list of major works by Sue Turner. In: Ginter, M. ed. 14th E/LVS Warsaw & Holy Cross Mts Poland, July 3-8, Abstracts. *Ichthyolith Issues* SP 13, p. 13-20.

Hairapetian, V. 2017. Early/Lower Vertebrates Meetings: Sue Turner and her impact on palaeoichthyology in the Middle East. In: Ginter, M. ed. 14th E/LVS Warsaw & Holy Cross Mts Poland, July 3-8, Abstracts. *Ichthyolith Issues* SP 13, p. 12.

Itano, W. 2017. Some brief remarks on Susan Turner and my experiences with the Early/Lower Vertebrates Meetings. In: Ginter, M. ed. 14th E/LVS Warsaw & Holy Cross Mts., Poland, July 3-8, Abstracts. *Ichthyolith Issues* SP 13, 12-13.

Kölbl-Ebert, M. & Turner, S. 2017. Towards a history of female geologists. In: Mayer, W. *et al.* eds. Anniversary Volume, *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London Special Publication 442, 205-216 + supplementals.

Schultze, H-P. 2017. Fifty years of symposia on Early/Lower Vertebrates. In: Ginter, M. ed. 14th E/LVS Warsaw & Holy Cross Mts. Poland, July 3-8, Abstracts. *Ichthyolith Issues* SP 13, p. 9.

Turner, S. (with help from many others) 2017. Tracking Palaeozoic (mostly micro) fish Pt 2. In: Ginter, M. ed. 14th E/LVS Warsaw & Holy Cross Mts Poland, July 3-8, Abstracts. *Ichthyolith Issues* SP 13, p. 76.

Turner, S., Burek, C. V. & Moody, R. T. J. Forgotten women in an extinct saurian (man's) world. In: R. T. J. Moody, E. Buffetaut, D. Naish & D. M. Martill (eds). 2010. *Dinosaurs and Other Extinct Saurians: A Historical Perspective*. Geological Society, London Special Publication 343, 111-153.


## AUSTRIA

**Marianne Klemun:** Publications 2017: 1 book, 5 articles (invited, all peer reviewed), 1 contribution to a textbook on history of science, 1 organisation of a conference (Panel within a conference), 11 lectures (including book launches)

**Book:**

Marianne Klemun / Helga Hühnel: *Nikolaus Jacquin (1727–1817) – ein Naturforscher (er)findet sich* [*A Naturalist finds/invents himself*] (Göttingen: Vienna University Press, 2017), 650 p.

**Articles:**

Spaces and places: an historical overview of the development of geology in Austria (Habsburg Monarchy) in the eighteenth and nineteenth century. In: Wolf Mayer, et al. (Eds.), History of Geoscience: Celebrating 50 Years of INHIGEO (= Geological Society, Special Publications 442), 263-270.

Evolutionskonzepte im Wandel. Debatten in der Zeit vor Darwin. [Concepts of Evolution. Debates in the time before Darwin] In: Angela Schwarz (Hg.), Streitfall Evolution (Cologne: Böhlau Verlag, 2017), 32–45.

Im Aufbruch: Verwissenschaftlichung von Forschung und Lehre und Gregor Mendels Studium an der Universität Wien [Scientification of research and teaching and Gregor Mendel studying at the University of Vienna]. In: 150 Jahre Mendelsche Regeln: Vom Erbsenzählen zum Gen-Editieren, ed. by Gottfried Brem (Nova Acta Leopoldina, Abhandlungen der Deutschen Akademie der Naturforscher Leopoldina, neue Folge, Nr. 413) (Stuttgart, 2017), 21–36.

Classification and Experience, Rocks and Taste. 'Vulgar Reasoning' in the Earth Sciences. In: Taste and Smell in the Eighteenth Century, ed. by Lieke van Deinsen, Beatrijs Vanacker and Inger Leemans, De Achttiende Eeuw 48 (2017): 113–126.

Instrucciones y viajes de investigación. Práctica de la administtración. [Instructions for Voyages] In: De las instrucciones de viaje al viaje sobre el terreno en el sglo XVIII. Revista Escuela de Historia 15 (2017), Vol. 1, Colaboraciones (02).

Gärten und Sammlungen [Gardens and Collections]. In: Handbuch Wissenschaftsgeschichte [Companion to the History of Sciences], ed. by Marianne Sommer, Staffan Müller-Wille und Carsten Reinhardt (Stuttgart: J. B. Metzler Verlag, 2017), 235–244.

**Organisation of conferences, public lectures and book launches:**

Metropolitan Geology: Turning Vienna into Stones in the Nineteenth Century, at: Science in the Metropolis. Spaces and constellations of scientific knowledge 1848-1918. Österreichische Akademie der Wissenschaften [Austrian Academy of Sciences], Vienna, 15-17 November 2017.

Wissenschaftliche Relationen zwischen Charles Darwin, Franz Unger und Eduard Suess [Scientific relations between Charles Darwin, Franz Unger and Eudard Suess]. Bei: Darwin in Zentraleuropa. Die wissenschaftliche, weltanschauliche und populäre Rezeption der Evolutionstheorie im 19. und frühen 20. Jahrhundert, Ignaz-Lieben-Symposium 2017, organisiert von der Ignaz-Lieben-Gesellschaft, 9-10 November 2017, Österreichische Akademie der Wissenschaften [Austrian Academy of Sciences], Vienna (invited).

History of Geology and History of Science in a Global Frame. Introduction at the book launch: "History of Geoscience: Celebrating 50 Years if INHIGEO), 13-15 September 2017, Yerevan, Academy of the Republic of Armenia.

How the Caucasus became 'our' Caucasus: from Geology to Alpinism (19th and 20th Century), at: Conference of the INHIGEO, 13-15 September 2017, Yerevan, Academy of the Republic of Armenia.

Together Johannes Mattes: Organisation of the session: "Multiple Spaces: Mapping Communication via Letters between Naturalists" (7 speakers, 1 comment), 23-29 July, at: 25th International Congress of History of Science and Technology, Rio de Janeiro (Brazil).

From Local to Global: The Petroleum Geologist Hans Höfer von Heimhalt between Empires, Economies and Epistemologies at "'Black Gold': History, Exploration and Exploitation of Oil and Gas in National and International Context, 26 July 2017, at: 25th International Congress of History of Science and Technology, Rio de Janeiro (Brazil).

Connecting Spaces – Mobile Meanings of Plants, workshop "Transplanted Places. Garden Design and Shifting Cultural Geographies 1650-1800. Transregional Perspectives, Freie Universität Berlin, Museum of Asian Art, 22-24 June 2017 (invited).

Book launch together with Helga Hühnel: "Nikolaus Joseph Jacquin: ein Naturforscher (er)findet sich" [Nikolaus Joseph Jacquin: a naturalist finds/invents himself] (Göttingen: Vienna University Press, 2017) with comments by Karl Vocelka and a conversation with Helga Hühnel and Marianne Klemun, 31 May 2017, at: Institute of History, University of Vienna.

Book launch, "Expeditions as Experiments" (Basingstoke: Palgrave MacMillan, 2016) together with Ulrike Spring (Oslo) at: Institute of History, University of Vienna, 12 May 2017, with comments by M. Ash, papers by Yuko Taginawa, Kurt Schmutzer, Johannes Mattes, Katarina Matiasek. Institute of History, University of Vienna.

Franz Unger (1800–1870): Einheit in der Vielfalt. Von der Ökologie zur Evolution [Unity in Diversity] Buchpräsentation, at: Österreichischer Naturschutzbund Wien, Museumsquartier, Museumsplatz 1, St. 13, 21 February 2017, Vienna (invited).

Von der Paradiesvorstellung zur blutenden Insel: Madagaskar – ein Naturparadies voller Widersprüche [From Paradise to Bleeding Island: Madagascar – a natural paradise full of contradictions], at: New Year Meeting of the biologists. Institute of Plant Sciences, University of Graz, 13 January 2017, (invited).

**Johannes Mattes**

Johannes Mattes has prepared three papers for publication in journals and books:

J. Mattes: Hans Wawrickas Tagebücher aus literaturwissenschaftlicher und sozialgeschichtlicher Perspektive [The Diaries of Hans Wawricka through the Perspective of Literature Studies and Social History]. In: Ernst Straka, Johannes Wallner (Hrsg.): Tagebuch Hans Wawricka (1924-34). Graz: Speldok 2017. S. 3-12.

J. Mattes: Politische Tiefenblicke und gelenkte Urgeschichtsforschung – „Ostmärkische" und ungarische Grabungskampagnen in Höhlen vor und während der Zeit des Nationalsozialismus [Political Claims on the Past – Archaeological Cave Excavations in Austria and Hungary before and during the Third Reich]. In: Schild von Steier (Universalmuseum Joanneum) (publication in 2018). 30 pp.

"Zeigen und Verschweigen" – Wissens- und Raumkonzepte in historischen Höhlenkarten ["Displaying & Keeping Secret" – Concepts of Knowledge and Space in Historical Cave Maps]. In: 18. Kartographiehistorisches Colloquium Wien 2016 (publication in 2018), 20 pp.

Further, Mattes has prepared two books, which will be published in 2018:

J. Mattes: Wissenskulturen des Subterranen. Vermittler im Spannungsfeld zwischen Wissenschaft und Öffentlichkeit. Ein Biografisches Lexikon [Scientific Cultures of the Subterranean. Mediators between Science and the Public Sphere. A Biographical Lexicon]. Wien, Köln, Weimar: Böhlau 2018. (approx. 500 pp.)

J. Mattes, D. Kuffner (Eds.): Höh(l)enluft und Wissensraum. Die Gassel-Tropfsteinhöhle im Salzkammergut zwischen wissenschaftlicher Forschung, Naturkunde und Volkskultur [Mountain Air & Spaces of Knowledge. The Cave Gassel-Tropfsteinhöhle in Salzkammergut between

scientific research, nature study and folk culture]. Linz: Oberösterreichisches Landesmuseum 2018. (more than 35 authors, approx. 400 p.)

Johannes Mattes gave 4 oral presentations within the following international conferences:

"Speleological Circles of Exchange. Spaces in-between and go-betweens in Vienna" International Conference "Science in the Metropolis", Austrian Academy of Sciences (Vienna, Austria 11/2017).

"Between the Organic and Inorganic. Concepts of an Animated Earth in the Debates on Cave Minerals in Early Modern Europe", 42nd Conference of the International Commission on the History of Geological Sciences (Yerevan, Armenia 9/2017).

"Mapping Narratives, Making Politics – Discourses on Space and Identity in the Correspondence of the Geoscientist Jovan Cvijić". 25th International Congress of History of Science and Technology (Rio de Janeiro, Brazil 7/2017).

"Traveling Olms. Local and Global Perspectives on the Research on Proteus anguinus (1700-1930)" Conference of the International Society for the History, Philosophy and Social Studies of Biology (São Paulo, Brazil 7/2017).

Together with Marianne Klemun und Marcelo Fabián Figueroa, Mattes has organized the symposium "Multiple Spaces: Mapping Communication via Letters between Naturalists" at the 25th International Congress of History of Science and Technology (Rio de Janeiro, Brazil 7/2017).

**Matthias Svojtka** – In 2017 Matthias authored 10 biographies of natural scientists for part 68 of the Austrian Biographical Dictionary and 7 biographies for the (online published) second edition of the Austrian Biographical Dictionary (part 6, November 27th), which included the botanist and palaeobotanist Roberto de Visiani (1800-1878), the mining engineer Franz Maria von Friese (1820-1891), the palaeontologist Ignaz Alois Hawle (1785-1870) and the mineralogist Roman Anton Botzenhart (1812-1848). Apart from that he discussed life and work of the first four alumnae of geology – Marta Furlani (1886-1974), Marianne Möller (1885-1973), Paula Steiger (1881-1966) and Maria Kober (1888-1968) – since the opening of the University of Vienna to the enrollment of women (1897/98).

**Publications:**

Mitić, B. & Svojtka, M. 2017: Visiani Roberto (de). *Österreichisches Biographisches Lexikon 1815-1950*, 68. Lfg., 296-297 (ISBN 978-3-7001-8181-1).

Svojtka, M. 2017: Botzenhart Roman Anton. *Österreichisches Biographisches Lexikon ab 1815* (2nd ed. – online), Lfg. 6, 27.11.2016 (ISBN 978-3-7001-3213-4).

Svojtka, M. 2017: Friese Franz Maria Ritter von. *Österreichisches Biographisches Lexikon ab 1815* (2nd ed. – online), Lfg. 6, 27.11.2016 (ISBN 978-3-7001-3213-4).

Svojtka, M. 2017: Hawle Ignaz Alois. *Österreichisches Biographisches Lexikon ab 1815* (2nd ed. – online), Lfg. 6, 27.11.2016 (ISBN 978-3-7001-3213-4).

Svojtka, M. 2017: Dissertantinnen aus dem Fach Geologie an der Universität Wien (1872–1937) und Probleme biographischer Forschungen. *Berichte der Geologischen Bundesanstalt (Wien)* 123, pp. 106-110.

**In addition to the annual meeting following articles were published by members of the AWGHES:**

Angetter Daniela (2017): Der Krieg in Fels und Eis. Das Entstehen der hochalpinen Front. – In: Jordan Alexander (ed.): „Die kahlen, kalten Berge … "Der Erste Weltkrieg im Alpenraum, die Deutsche Gebirgstruppe und das Württembergische Gebirgsbataillon. – Begleitband zur Sonderausstellung 21. Oktober 2017 bis 15. April 2018 im Wehrgeschichtlichen Museum Rastatt. – Katalog 13 aus der Reihe Studiensammlungen und Sonderausstellungen im Wehrgeschichtlichen Museum Rastatt, 62-83, Bruchsal (Stork Druckerei GmbH).

Angetter Daniela & Seidl Johannes (2017): Ferdinand von Hochstetter (1829-1884) und Franz von Toula (1845-1920) – zwei österreichische Pioniere der geologischen Balkanforschung. – In: Seidl Johannes, Kästner Ingrid, Kiefer Jürgen & Kiehn Michael (eds.): Deutsche und österreichische Forschungsreisen auf den Balkan und nach Nahost. – Europäische Wissenschaftsbeziehungen, 13, 2017, 183-202.

Fritz Harald & Hubmann Bernhard (2017): Zur Erinnerung an Univ.-Prof. Mag. Dr. phil. Eckart Wallbrecher (6.8.1940–1.9.2016). – Austrian Journal of Earth Sciences, 110, p. 162, 1 fig., Vienna.

Hamilton Margret (2017): "Prodromus Crystallographiae de Crystallis improprie sic dictis commentarium." Die erste kristallographische Dokumentation in der Geschichte der Kristallgraphie von Moritz Anton Cappeller (1685-1769). – Mensch - Wissenschaft - Magie. Mitteilungen der Österreichischen Gesellschaft für Wissenschaftsgeschichte, 33, 55-64.

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Hubmann Bernhard (2017): Die ersten Promovendinnen in den Erdwissenschaften an der Grazer Karl-Franzens-Universität bis 1945. – In: Hubmann Bernhard, Angetter Daniela & Seidl Johannes (2017): Jahrestagung 2017 der Arbeitsgruppe "Geschichte der Erdwissenschaften:" Geologie und Frauen. – Berichte der Geologischen Bundesanstalt, 123, 78-80, Wien.

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Hubmann Bernhard & Wagmeier Claus (2017): Rudolf Hoernes (1850-1912), vielseitiger Erdwissenschaftler und "Kämpfer für die Freiheit der Wissenschaft" im Spiegel seiner Zeit. – Berichte der Geologischen Bundesanstalt, 122, 165 pp., 34 figs., Wien.

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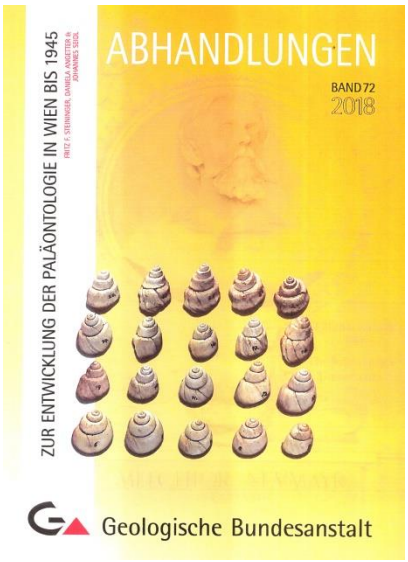
Steininger Fritz F., Angetter Daniela & Seidl Johannes (2017): Zur Entwicklung der Paläontologie in Wien. Von den Anfängen bis 1945. – Abhandlungen der Geologischen Bundesanstalt, 72, 159 pp., Wien.

Steininger Fritz F., Gebhardt, Holger & Sames B. (2017): Eustasy and sea-level changes in the footsteps of Eduard Suess. – Berichte der geologischen Bundesanstalt, 121, 89-113, Wien.

Steininger Fritz F., Röder, G. & Hammer Vera M.F. (2017): Johann Wolfgang von Goethe – "Brunnengast, Geolog und Spaziergänger" – Erdwissenschaftlche Beobachtungen in Böhmen. – Führer zur Exkusion der Freunde des Naturhistorischen Museums 71, 123 pp., 68 figs., Wien.

**In addition to the articles mentioned above, three more comprehensive monographs were published:**

*Zur Entwicklung der Paläontologie in Wien. Von den Anfängen bis 1945.*
*On the development of paleontology in Vienna. From the beginning to 1945.*




By
Fritz F. Steininger, Daniela Angetter & Johannes Seidl

In Vienna, certainly the early natural history institutions such as the Natural History Museum, the so called "k.k. Hofkammer für Münz- und Bergwesen", the "Montanistische Museum" and the Geological Survey, which originated from the "Montanistische Museum", functioned as the first institutions for the scientific descriptive Palaeontology in the late 18th and the early 19th century. It is remarkable that we even discovered a first script for the lectures of Franz von Hauer on Palaeontology held in the "Montanistische Museum" starting in 1844.

At the end of the 18th and the first half of the 19th century, lectures on general natural history and mineralogy were given at the University of Vienna, namely at the Medicine Faculty and the Philosophical Faculty, in which paleontological facts were assumingly taught. Those lectures - no doubt - also presented palaeontological information. There are also early university natural history collections known, which obviously served teaching. Unfortunately, we do not have information about the content of those lectures or about the early collections.

The first curriculum of palaeontology teaching at the University of Vienna is known from 1853 onward by the teaching of Priv. Doz. Dr. phil. Lukas Friedrich Zekeli. In his lectures he covered all aspects of Palaeontology and gave numerous fieldtrips.

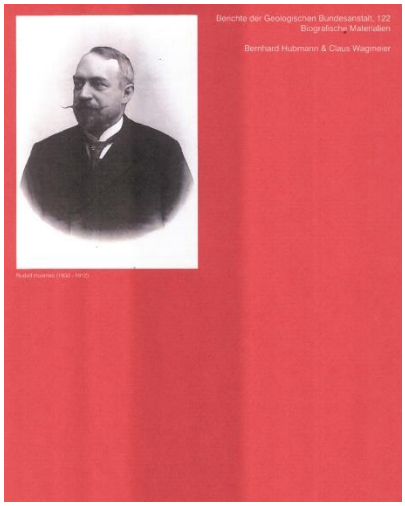
The first chair for Palaeontology was founded in 1857 for Eduard Suess. In 1873 Melchior Neumayr was appointed director of the newly inaugurated Institute for Palaeontology (= Paläontologische Sammlung or Paläontologisches Universitätsmuseum) – the first independent Institute of Palaeontology worldwide. One of Melchior Neumayr's successors was Othenio Abel, who also had an important influence on

fortunes of the institute and is one of the pioneers of modern paleobiologic. The history of paleontology clearly shows the changing importance of this field. During the 19th century especially mining operators were interested in stratigraphic classification of rock formations. In the first half of the 20th century the focus of interest lay on hydrocarbon industry and over the time macro-, micro- and nannofossils as well as palynology became significant.

In this publication the evolution of the institute of Palaeontology from director to director is described, the scientific and general staff is named, as well as all the lectures given in this current period and all the dissertations and habilitations up to 1945. Particular reference is made to the main part of the study, a biographical handbook of the Viennese paleontologists from the beginning to 1945. At the end a voluminous list of publications and a register of persons are given.

*Rudolf Hoernes (1850-1912), vielseitiger Erdwissenschaftler und „Kämpfer für die Freiheit der Wissenschaft“ im Spiegel seiner Zeit.*
*Rudolf Hoernes (1850-1912), versatile earth scientist and "fighter for the freedom of science" in the mirror of his time.*

By Bernhard Hubmann & Claus Wagmeier



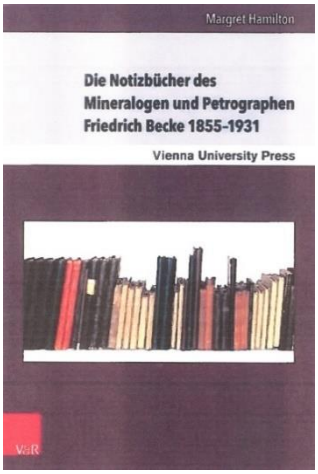

Rudolf [Franz Moriz] Hoernes, born on October 7th, 1850 in Vienna, was the eldest son of the later head of the imperial Court Mineral Cabinet (now: Natural History Museum in Vienna) Moriz Hörnes (1815-1868) and his wife Aloisia Strauss (1819-1902).

Supported by his father Rudolf Hoernes became acquainted with geological sciences. In addition, many relatives of Rudolf Hoernes had excellent reputations as scientists, especially as geologists. With his uncle Eduard Suess (1831-1914), uncontested the most important Austrian geologist, Rudolf Hoernes has had a professional connection from his childhood onwards.

After completing high school, Hoernes attended lectures of Melchior Neumayr (1845-1890) at the Paleontological Institute and lectures of Eduard Suess at the Geological Institute at the Vienna University. In 1875 Hoernes received his doctorate. During his employment at the Austrian Geological Survey Geological Institute, he carried out geological mapping in the South Tyrolean Dolomites together with Edmund von Mojsisovics (1839-1907). In 1876 Rudolf Hoernes, who had already a considerable number of publications but had no habilitation, was appointed associate professor in Graz. During the following year, he married Johanna ("Jenny") Reuss (1859-1943), the daughter of the famous micropalaeontologist August Emanuel Reuss (1811-1873). In 1883 Hoernes was appointed full professor of geology and paleontology. A heart disease that has occurred as a result of his general poor health may have led to his early death. Rudolf Hoernes died on August 20th, 1912 in Judendorf near Graz.

Hoernes was a proven scientist and therefore came several times in conflict with opponents of theory of evolution. Likewise, he was an advocate of the "freedom of science" at the university and therefore stood up mainly against the influence of the Catholic Church in matters of teaching.

*Die Notizbücher des Mineralogen und Petrographen Friedrich Becke (1855-1931).*
*The notebooks of the mineralogist and petrographer Friedrich Becke (1855-1931).*
In: *Schriften des Archivs der Universität Wien*, Band 23. Hg.: Kurt Mühlberger, Thomas Maisel und Johannes Seidl (Wien 2017).
By Margret Hamilton




Margret Hamilton examines the notebooks of Friedrich Becke. These books are witnesses of his remarkable and multifaceted oeuvre. Geoscience owes the following discoveries to Friedrich Becke: the theoretical knowledge about crystal classes, the further development of the research recording feldspar, crystalline schists and metamorphic rocks, also the technical development of microscopes and the geological investigation of the Waldviertel, the Sudeten and the Alps.

## BULGARIA

**Professor Dr. B. Mavrudchiev** published an article on the life and the scientific creativity of the petrologist Assoc. Prof. Dr. Ivan Ivanov.

Mavrudchiev B. 2017. The 80th Anniversary of Assoc. Prof. Dr. Ivan Todorov Ivanov. – *Review of the Bulgarian Geological Society*, 78/1-3, 159-160.

## CANADA

**Ernie Hamm**
The past year was one in which I was occupied with a number of administrative duties, but thankfully I did manage to devote some time to INHIGEO related matters. As President of the Canadian Society for the History and Philosophy of Science (CSHPS) I was much involved with the organizing and running of that society's 2017 annual conference, held in May at Ryerson University in Toronto, it was the largest CSHPS meeting has held. INHIGEO members should know that CSHPS welcomes papers on the history of the geological sciences. The 2018 conference program is now available at the CSHPS website and I'll take this opportunity to invite INHIGEO members to consider submitting an abstract for the 2019 CSHPS conference, to be held at the University of British Columba in Vancouver. One of my other administrative hats is that of President of The History of the Earth Sciences Society. HESS does not hold annual meetings, but its journal, Earth Sciences History, is the leader in the field and well known to INHIGEO members, many of whom have published in it. Please do consider subscribing to Earth Sciences History or encouraging your institutional library to subscribe—this is a very reasonably priced journal! One of

my highlights of 2017 was the INHIGEO meeting in Yerevan, Armenia, where I presented a paper on "Mountains, Romantics, Geology." It was a wonderful meeting, thanks above all to the hospitality of our hosts and the care they took arranging field trips to several spectacular archaeological and geological sites.

**David A.E. Spalding**

History of Earth Sciences Society: I continued to serve as an editorial board member for Earth Sciences History, with particular responsibility for vertebrate paleontology, geological education, conservation and Canada.

Cloning of Mammoths in children's fiction: An unusual experience this year was the opportunity to read in draft and comment on a new novel for children in which cloning of mammoths takes place. The work is closely based on current research in this area and should be enjoyed by any child interested in elephants and mammoths. Set in the U.S., *Elephant Secret* by Canadian writer Eric Walters will be published by Clarion Books in hardcover and electronic form in August of 2018.

Iron Creek Meteorite: I am able to report further on developments in the ongoing story of the Iron Creek Meteorite (Manitou Stone) that I discussed in INHIGEO Annual Record #47 (for 2014). As I was responsible for bringing the meteorite back to Alberta when I was on the museum staff in the 1970s, I have been observing with interest the developing plans for treatment of this remarkable object. Appropriate treatment presents considerable challenges for the museum profession; its original location is only approximately known; it is of uncertain ownership; and is simultaneously an important scientific specimen; an object regarded by some First Nations as sacred; and by other citizens as a desirable tourist attraction.

The meteorite will be featured in the new Royal Alberta Museum building, now being completed in Edmonton, Alberta at an estimated budget of Canadian $375.5 million. In a period when the whole country is engaged in a Truth and Reconciliation program with First Nations, the Manitou stone is to get special treatment that will reflect its importance to the Indigenous people of Alberta. "When the meteorite fell from the sky, some Indigenous people thought it contained the face of the creator," said a CBC report in December 2017. "The stone, believed to be about 4.5 billion years old, is still considered sacred by many." Reflecting its importance to Indigenous peoples, "…the museum will also create a separate room where people can view the famous Manitou Stone, without having to pay admission. The new display room will be 26 feet in diameter and the stone will sit on earth from the place it was first discovered near Hardisty, Alberta." Director Chris Robinson explained that "…people will be allowed to pray and make offerings to the 150-kilogram stone."

Music inspired by Earth Sciences phenomena: In 2009, the world celebrated the bicentennial of the birth of composer Felix Mendelssohn. "Well, at least we don't have to worry about that," said the late David Oldroyd of INHIGEO to me (I think in an email concerned with a number of things he did have to worry about). Immediately, I thought of the Mendelssohn's overture "The Hebrides" composed in 1830. It is often known as "Fingal's Cave" from the location in the columnar basalts of the Isle of Staffa which inspired the work. In the subsequent years I have developed a file of other music inspired by Earth Science phenomena; from Richard Strauss's "Alpine Symphony" to an opera heroine who dies in an avalanche; to jazz pieces named after tidal waves and oil well scandals, and blues deploring the floods of the Mississippi. I am not aware of any study of the many connections between music and earth sciences, but I am at least part of the way towards a working list of material, which may initiate further discussion.

I also wrote a foreword for the book on amateur paleontologist, botanist, historian and artist Hope Johnson being worked on by Canadian INHIGEO member Darren Tanke.

**Darren H. Tanke:** I was involved in a 2017 paper identifying the original fossilized contents of an old dinosaur quarry. The site, in Dinosaur Provincial Park, was rediscovered in 1992 and a headless and partial hadrosaur skeleton was found therein. It was thought that the original finders partially uncovered the skeleton long ago but seeing no skull, abandoned it. Then, fragments of 1920 newspaper and plaster of Paris was later found in a scree slope below the quarry and these indicated something was in fact collected there. Only George F. Sternberg worked in that part of the Park that summer and he collected only one major hadrosaur specimen - the partial skull (type specimen) of the crested hadrosaur *Corythosaurus excavatus* which ended up at the University of Alberta (UA). This new paper (Bramble *et al*., 2017) further explores that the partial skeleton (since collected by the UA), a dentary at the Royal Tyrrell Museum of Palaeontology, and the *C. excavatus* skull are all from one and the same individual. Some media outlets and soft science bloggers picked up the story (e.g. Anonymous, 2017a-b; Clancy, 2017; Switek, 2017). At the Canadian Society of Vertebrate Paleontology 2017 meeting I gave a field trip stop talk at the site of this quarry to conference delegates.

In another old dinosaur project, in 1922, a *Gryposaurus* hadrosaur was collected from Dinosaur Provincial Park by the Chicago Field Museum. It sat in Chicago until the late 1950's and was then traded to a museum in Milan, Italy, where it was roughly prepared, and a couple anatomical descriptions published. I had relocated the lost quarry (now numbered as quarry 137) some years ago and shared the spatial and stratigraphic data with that museum. They decided to make a diorama of the dig as it might have appeared in 1922. I helped, again years ago, with current site photographs and even rock chips used for reference for a painted mural background. It seems the project stalled but has recently been completed (Bardelli *et al*., 2017) and a monograph on the skeleton (which I co-edited) also includes a historical section regarding the specimen's collection (Bertozzo *et al*., 2017).

I attended the 2017 Canadian Society of Vertebrate Paleontology meetings in Dinosaur Provincial Park, Alberta from May 15-17 and there gave a poster presentation on Canada's first academically-trained woman vertebrate paleontologist Jane Colwell-Danis (Tanke, 2017) who began her career in Alberta in 1965. I continue working on her biography and visit her regularly in her retirement apartment here in Drumheller learning about her interesting life. Jane recently had a Paleocene fish named after her: the osteoglossomorph *Lopadichthys colwellae* (Murray *et al*., 2018). On a field trip stop at this conference I gave a talk to delegates on the use of scows (flat-bottomed and decked boat with a tent and two tillers) at the scene of a 1:1 scale replica (named the "Peter C. Kaisen") of the 1912 American Museum of Natural History expeditions to the Park around WWI.

Some of my oral presentations involved earth science history. At the Society of Vertebrate Paleontology meetings in Calgary, on August 23, 2017, I gave a *Women in Paleontology* luncheon address entitled: "Three heroines of early Albertan vertebrate paleontology." This 20-minute talk covered the lives and contributions of Hope Johnson (1916-2010), Irene Vanderloh (1917-2009), and Jane Colwell-Danis (1941-). A room with 100 seats and food for as many was provided, but 170+ attended! At the meeting, I was approached by two women asking for my input on some planned books on women in the earth sciences. We'll see how that develops. November 4, 2017, I gave a talk in Calgary at the Dinosaur Research Institute's annual fund-raising dinner on the historical and rising role of industry in our province

in finding and reporting fossils, with special reference to the Royal Tyrrell Museum's relationship with Korite International, the world's leader in ammolite manufacturing and distribution. They have found excellent marine reptiles, dinosaurs and invertebrate fossils for our museum.

In November, I teamed up with Korite representative John Issa and we gave a joint talk at the Dinosaur Research Institute annual dinner and fundraiser in Calgary. We spoke of the rise of industry in Alberta and fossil discoveries made by a variety of digging activities, oil/gas, mining, road construction, etc., but focussed more on the history of Korite's mining for crushed ammonite shell and its making into jewelry grade ammolite. In the course of this mining marine reptile (mostly) skeletons are found though recently several dinosaurs have been found also, representing carcasses being washed out to sea then sinking to the bottom.

On April 27th, I gave a talk in Lincoln, Nebraska on successful efforts to identify a "mystery quarry" located upstream from Drumheller (Tanke, 2018c). It was a hadrosaur collected by the University of Alberta Edmonton in 1964. The identity of that site is now known, but locating the specimen itself is proving problematic.

I was also busy working on the biography of Maurice Stefanuk an amateur fossil collector in Drumheller, Alberta and former Royal Tyrrell Museum of Palaeontology technician. On October 15th, a Drumheller man guided me to a place called "Scout Rocks", a place where Maurice liked to play as a boy. On March 17th I gave a keynote address at the Alberta Palaeontological Society in Calgary on the story of his life and paleontological contributions (Tanke, 2018a). As Maurice served in the Navy in WWII, I have been sharing his information with a website remembering these men and women (Anonymous, 2018) and wrote a short biography on him for that (Tanke, 2018b). I also posted links to the short paper on him (Tanke, 2018a) to the Facebook group "Battle of the Atlantic 1939-1945.

As I submit this report, I am soon to leave for Ottawa, Canada to work with Dr. Jordan Mallon and his student Brigid Christison. This project is the first real description of the first Late Cretaceous vertebrate remains collected in western Canada in the late 1800's.

A paper I co-wrote on the first ever (1967) helicopter lift of a dinosaur skeleton (Tanke and Walker, 2011) was reposted to the Canadian Army Aviation website; see http://canadianarmyaviation.ca/ops_dino_bones.html#Top. A video of the lift, digitized from an original 1967 8mm film was also posted on that site (http://canadianarmyaviation.ca/ops_dino_bones.html#5).

Work on a 1960's history of vertebrate paleontology activities in Alberta, Canada continues. A paid subscription to the newspaper archive site *Paper of Record* which carries many issues of the Drumheller Mail newspaper was well worth the investment. There are lots of news stories on dinosaur digging going on in the area; failed attempts at making a local prehistoric park to protect the badlands; early, but fruitless attempts to build a paleontology-themed museum in Drumheller during the 1930's; excessive predations on dinosaur bones by amateur fossil collectors and some issues with them taking carloads of dinosaur bones away to use for lapidary purposes; development and progress of the first fossil museum in town (c. 1957-); and development, planning, construction, opening, and various activities of the Royal Tyrrell Museum of Palaeontology which opened September 25, 1985. There are also articles on geology and oil and gas exploration in the region for those who are interested. Part of this project involved the relocating of a then high school boy (D. E.) who with a fellow student, excavated dinosaurs north of Drumheller in

the early 1960's. It turned out that D. E. was also my junior high school science teacher in 1975, something that was lightly considered years earlier, but discarded as too fantastic a possibility. But it was true!

Some years ago, I went to the Canadian Museum of Nature office in Alymer, Quebec and photographed hundreds of sent and received letters from the late 1800's to the mid-1960's, correspondence between mostly Charles M. Sternberg and Wann Langston Jr. and their respective colleagues. These letters are of course filled with all sorts of historical data which I am starting to put into some order and integrate into my ongoing historical projects. There were also some topographic maps with old quarry sites marked-these were unknown to contemporary workers. I suspect some relocation efforts of these sites will occur soon.

An old dinosaur quarry near Tolman Bridge in the Drumheller Valley was reported to me a few years ago. I was able to finally visit it this summer. A lot of rock was moved, suggesting it was something significant. Only ornithischian (hadrosaur?) dinosaur bone scrap remained there. On site and close by was plaster of Paris pieces, two filter-tips from cigarettes, a plastic cap from a glue(?) bottle, and the colored plastic packaging for some food freezer bags. Enough of the packaging was present to show a woman in late 1950's/early 1960's style of hair and clothing. Using the Paper of Record website noted above, I was able to find the same bag in a Drumheller newspaper advertisement figured only once from August 1966 which gave a rough vintage for the quarry itself. Later discussions with the landowner revealed that he as a boy watched a University of Alberta crew excavate the site in the mid-1960s. Further research revealed it was a University of Alberta hadrosaur quarry from 1964. At that point in time, after over sixty years of dinosaur collecting in Alberta, this quarry appears to represent the first major dinosaur skeleton collected by an Alberta-based institution. A talk on that is slated for the 11$^{th}$ annual meeting of the Association for Materials and Methods in Paleontology in Lincoln, NE for session on conservation of *in situ* fossil sites. Also, in the same area, I was involved in a small project trying to relocate a Royal Ontario Museum 1922 *Parksosaurus* quarry. This small ornithopod dinosaur is undergoing a redescription by staff of the Royal Ontario Museum and the Smithsonian. Owing to poor site locality recording early on, we were unable to verify where this specimen came from. Some new information has recently come to light so once winter is over we'll try again.

I did some editing and fact-checking work with Mr. Brian Leyland in England who is finishing up a book on famous citizens of the Liverpool/St. Helen's area. My involvement is in regards to his write-up on Drumheller resident Harold D'Acre Robinson Lowe who was born in St. Helens. Lowe was a regular (but not always concurrent) and trusted field assistant with the Geological Survey of Canada's C.M. Sternberg on dinosaur and other paleontological digs in Manitoba, Saskatchewan, but mostly in Alberta from 1925-1937. In thanks, Sternberg named the Late Cretaceous horned dinosaur *Monoclonius lowei* after Harold.

I discovered the free genealogy site FamilySearch hosted by the Church of Jesus Christ of Latter Day Saints is actually a useful place to find and copy "portrait" images of American earth scientists from their old passport photographs. I was able to find a good number of 1920's American Museum of Natural History vertebrate paleontology department staff this way. The site is easy to use and can be accessed here: https://www.familysearch.org/. Possibly other INHIGEO members may find this site of interest for their research.

Work on early field hand Albert Johnson continued. He dug up dinosaur and other fossils with Barnum Brown in Alberta during WWI and was on the Roy Chapman Andrews-led expeditions to China and

Mongolia in 1923. By chance I crossed paths with a man from Nebraska who unknowingly was also doing research on Albert, so he has ceased his work and shared what he had found with me.

A short, but quite interesting project was where I helped Carl Mehling of the American Museum of Natural History identify a partial handbill describing the exhibit of a large marine vertebrate. Enough printed clues were available to indicate the handbill was in regards to the display of a *Basilosaurus* skeleton in Chicago museum during 1863-1871, exhibited and promoted by the fraudster Albert Koch who added vertebrae to several such skeletons to increase their length and making them into sea serpents. As much of this story has been written up fairly recently it seems doubtful it will be pursued further.

I continue sorting through the extensive papers of Jane Colwell-Danis (1941-), Canada's first female vertebrate paleontologist (beginning in 1965). Most of these are being used for a biography on her being written by me, but a box of old letters of outside interest proved particularly interesting. How she came into possession of these letters is unknown. Most are carbon copies of letters written by University California Berkeley senior scientific staff (Stirton, Savage, Camp) from the 1940's and 1950's, but some are original letters from the 1920's, some penned by legendary vertebrate paleontologist Alfred Sherwood Romer. Efforts are being made to identify and possibly repatriate these documents to their respective institutions if there is interest. One short series of correspondence from the summer of 1927 is of especial interest: Mr. Handel Tong Martin (1862-1931) of the University of Kansas (Lawrence) writing to Dr. William Diller Matthew (1871-1930) of the University of California Museum of Paleontology. The five-page letter relates to Martin trying to sell an extensive collection of Kansas Chalk marine vertebrate fossils. Use of these letters for a small historical project is currently being considered. Jane's papers also included some 35 mm slides taken at other museums, and these will be offered to those institutions for repatriation if wanted. As part of Jane's biography research still ongoing, I am trying to find some of her former university colleagues and found one who has provided some personal perspective on Jane's Berkeley school environment in the late 1950's/early 1960's.

Some old exhibit signage in our museum was being thrown out so I saved two of these large illustrative panels of early Drumheller-area fossil collector Ferdinand Jungling and got them to his grand-daughter Debra Jungling who plans on displaying them in her knick-knack shop in Drumheller.

A major project, started in 2009, nearing completion is the extensive biography of Hope Johnson (1916-2010), an amateur fossil collector of much renown (Tanke, 2018). INHIGEO member Dr. David Spalding wrote one of the book's forewords. Now that this massive project is nearly over, I can move on to other historical projects in various stages of completeness.

Dr. Michael C. Wilson was at our museum (Royal Tyrrell Museum) in late January 2018 to give a public talk. He worked for the Paleontology Department at the Provincial Museum of Alberta on some field projects in 1970 and 1971. During his visit, he was also assisting me on the Hope Johnson biography noted above. While working on that, the topic of a partial hadrosaur skeleton (TMP 1971.038.0001) he co-collected in 1971 came up and we did some historical sleuthing and searched old fieldnotes, catalogue records and viewed the unprepared and unjacketed specimen. Though broken up into pieces and mostly boxed up, much of the skull and partial skeleton of the lambeosaurine hadrosaur, *Hypacrosaurus*, revealed itself. This forgotten specimen is now being added to the preparation list, some 47 years after its collection.

After years of looking off and on, I had major breakthroughs in late January 2018 on finding biographical information on Dr. Wesley Robert Read (1915-1994). He was one of the founders and President of the Drumheller and District Fossil Museum from the late 1950's to 1965 during its early formative years. Enough biographical information is now at hand that a detailed biography on him has been started with colleagues Dr. Michael C. Wilson. I was also able to get information on his wife who was also involved in the museum's early development so now I will be able to get more information on her as well.

Another man (not named here for privacy), seemingly lost to history worked in Alberta for several years in the late 1960s. He published several papers on varying aspects of Alberta vertebrate paleontology, then vanished. Using a couple clues I was able to find a man by that name in a small town in England. His wife's name matched too. Both were members of an amateur acting troupe. I wrote to a group which overseas amateur performing arts in that part of England and wrote a detailed letter about the man, who he worked with in Alberta, his research, and my interest in contacting him. I asked them to forward my email to him on the chance it was him. It was, and now we are corresponding, and I hope to get copies of his never before seen field notes and photographs.

I'm a board member of the Dinosaur Research Institute (since 2007) and this summer we are conducting "Dinotour 2018" a four-day guided tour of southern Alberta dinosaur and other fossil localities. This of course will involve a history component, so I've included such in the tour guidebook and in the fieldtrip hikes.

I have begun writing my own autobiography, and have been gathering notes, etc., to beef up my CV to act as a framework of my life's work so far. A reminder that many of my earth science history and other articles can be found free of charge on my www.academia.edu page. Just search for me by name there.

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**Clinton Tippett**

I am a retired geologist, formerly with Shell Canada, living in Calgary, Alberta, Canada.

Petroleum History Society (PHS): My focus on historical geology over the past year continues to be primarily through the Calgary-based PHS. I am both its President and the Editor of its newsletter Archives (back issues of which are accessible through our website at www.petroleumhistory.ca). Production of this newsletter involves the creation of articles summarizing presentations that have been given, news items from the media, photographs (current and historical) and excerpts from the publications of related organizations.

The PHS sponsors 6-7 luncheons each year at which speakers address historical petroleum-related topics, many of which have a significant geological component. We have an annual awards program recognizing the preservation and communication of the history of the Canadian petroleum industry comprising Book of the Year, Article of the Year, Multimedia, Preservation and Lifetime Achievement. We have in the past organized topical field trips and walking tours, both of which have strong geological flavours.

Turner Valley Oilfield Society (TVOS): During 2016, both the PHS and I continued co-operation with the TVOS which is building its organizational capacity with the assistance of the charitable Calgary Foundation. The TVOS is working with the Government of Alberta to develop and enhance an interpretive program, including guided walking tours, at the Turner Valley Natural Gas Processing Plant. This now-inactive facility is both a provincial and a federal historic site, dating back to the late 1910's. The tours feature all aspects of petroleum exploration and production including the interpretation of the

geological context of this oil and gas field. The TVOS has a number of other preservation and communication initiatives ongoing as well.

American Association of Petroleum Geologists (AAPG): I am a member of the History of Petroleum Geology Division of the AAPG whose meeting I attended in Houston in April 2017. This convention featured talks and exhibits related to the 100th Anniversary of the APG, founded in 1917.

Canadian Society of Petroleum Geologists (CSPG): In 2017, I became President-Elect of the CSPG and am now its President for 2018. Within this organization I am also the Chair of the History and Archives Committee. We are planning to reinvigorate our historical activities through the establishment of a committee in preparation for our own centennial in 2027. This will involve interviews with key society participants and other activities, following in the footsteps of our 75th anniversary celebrations in 2002. In addition, I am the Chair of the CSPG Stanley Slipper Gold Medal Committee that selects the recipient for this award that honours an individual who has made outstanding contributions to petroleum exploration in Canada, be that through their own accomplishments, by leading exploration teams or through mentorship. An understanding of the evolution of geological concepts is a key factor in exploration success.

Petroleum History Institute: I am a lifetime member of that organization.

Geological Society of America (GSA): I am a member of the History and Philosophy of Geology Division of the GSA. Darren Tanke, INHIGEO editor (CANADA)

## CHILE

### Publications about History of Geology in Chile

### Published documents


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**Primer Simposio 2010**

- No records available

**Segundo Simposio - Universidad Andrés Bello, 17 de Agosto 2011**

Presentaciones orales:

- Estudios pioneros de ostras fósiles del sur de Sudamérica: validez de '*Gryphaea calceola* Q.' y del 'Grupo de la *G. santiaguensis* H.', by Alfonso Rubilar R.
-Aproximaciones a la Geomitología en Chile: el Mito de Kaikai y Trentren, by F. Amaro Mourgues O.
- Historia de la sismología en Chile, by Armando Cisternas
- El terremoto de Santiago del 7 de Agosto de 1580, by Marco Cisternas, Fernando Torrejón, Nicolás Gorigoitia
- William Smith (1769-1839) y el mapa que cambio al mundo, by Cristián Ramírez S. y Francisco Hervé A.
- El Profesor Juan Tavera Jerez (1917-1991) y su trayectoria en el campo de la Paleontología, by Ernesto Pérez d'Angello
- Historia del Precámbrico en Chile, by Estanislao Godoy
- Determinación de la edad del basamento metamórfico de Chile: una historia compleja, by Francisco Hervé
- Una conexión geocientífica Chile - Costa Rica: el meteorito Heredia (1857) y su análisis por Ignacy Domeyko, by Gerardo J. Soto
- Concepto histórico de ciencia desde la geología: discusión aplicada en torno a las últimas ideas en filosofía e historia de la ciencia, by Hernán Bobadilla
- Historia del carbón en Chile, by Pedro Courard B.
- Continuación de la exploración petrolera, en Magallanes, luego del hallazgo en Manantiales, by Alejandro Pérez
- Uranio en Chile: ¿Mito o realidad?, by Heriberto Fortin Medina, Luis Ernesto Pérez Andraca, Mauricio Núñez Rojas
- El Tatio: La historia tras el humo blanco, by Nataly Castro y Karina Silva

- Darwin y la síntesis de la Cordillera de los Andes: La aplicación rigurosa del método inductivo, by Reynaldo Charrier

**Tercer Simposio - XIII Congreso Geológico Chileno, Antofagasta (in Proceedings), 2012**

Presentaciones orales:

- Chile, país minero, by Rafael Sagredo
- Reconocimiento a los personajes de la geología de Chile a través de la mineralogía, by Álida Pérez Fodich
- Antecedentes históricos acerca del tiempo geológico, by Cristián A. Ramírez Salvo and Francisco Hervé Allamand
- La noción de Tiempo Geológico y su influencia en el desarrollo de la Teoría de la Evolución, by Reynaldo Charrier

- El terremoto de Chile central de 1647 como un evento intra-placa, by Marco Cisternas

- Legado de Roberto Araya A. (1939-1976): un geólogo inusual by Francisco Camus, Reynaldo Charrier, Francisco Hervé, Álvaro Tobar, Marcos Zentilli.

**Cuarto Simposio - Departamento de Geología, Universidad de Chile, Octubre 27, 2013**

Presentaciones orales:

- Los pioneros de la Geología en Chile en el siglo XIX, by Eric Ridelle y Aníbal Gajardo
- Los iniciadores de la institucionalidad geológica en Chile en el siglo XX, by Aníbal Gajardo y Eric Ridelle
- Origen y creación de la Carrera de Geología de la Universidad de Chile, by Reynaldo Charrier y Ricardo Thiele
- Crónicas de la creación del Instituto de Investigaciones Geológicas (IIG) y la profesión de geólogo en Chile, by Raúl Salas
- Charles Lyell y el comienzo del pensamiento científico en la geología, by Sebastián García
- El terremoto de 1835: Conocimiento científico y análisis geológico entre los años 1835 a 1858 en Chile, by Patricio Leyton
- ¿Es la geología una ciencia histórica? Cuestionamientos metodológicos y conceptuales desde las escuelas filosóficas analítica y continental, by Hernán Bobadilla
- Los indios americanos, los españoles y las erupciones volcánicas: distintas visiones de un mismo fenómeno, by Francisco Bucchi
- El viaje de los hermanos Heuland a Chile (1795), by Claudio Canut de Bon
- La geología como discurso: sociedad, cultura y política como determinantes del quehacer geológico, by Hernán Bobadilla
- Clivaje y esquistosidad entendidos por Charles Darwin como parte de un mismo proceso, by Daniel Boyce
- 50 años de investigación geológica del Departamento de Geología de la Universidad de Chile en la Antártida, by Francisco Hervé
- La gran aventura de Don Giovani Cecioni por Magallanes y la Patagonia: un indiscutible pionero de la mágica geología austral, by Raúl Ugalde, Reynaldo Charrier y Francisco Hervé
- El estado del arte de la carrera de geología en Chile, by Joseline Tapia y Mario Pereira
- La Tectónica de Placas: un alumbramiento difícil pero feliz, by Luis Aguirre

**Quinto Simposio - Departamento de Geología, Universidad de Chile, 2014**

Presentaciones orales:

- Eduard Poeppig, un naturalista en los comienzos de la República, by Luis Aguirre
- Luis de la Cruz y Goyeneche y los primeros registros fósiles del Neuquén, by Beatriz Aguirre-Urreta
- Quienes fueron los primeros geólogos chilenos que entraron a la Gran Minería del Cobre, by Francisco Camus Infanta
- Mina Radomiro Tomic - del descubrimiento a la puesta en operación, by Patricio Cuadra C.
- El salto geotectónico desde Hans Stille hasta Tuzo Wilson, by Estanislao Godoy
- Los primeros pasos de la carrera de Geología en la actual Universidad Católica del Norte (UCN), by Arturo Jensen Iglesias y Guillermo Chong Díaz
- Los trabajos geológicos y geográficos en el Observatorio Astronómico Nacional en el Cerro Santa Lucía (1852-1856), by Patricio Leyton Alvarado.
- Minas de pórfidos cupríferos chilenos, by Juan Carlos Marquardt Lechuga

- La cooperación japonesa en el desarrollo del Departamento de Geología de la Universidad de Chile: 50 años de historia, by Tsuyoshi Nishimura, Luis Aguirre and Francisco Hervé
- Treng-Treng y Cai-Cai Vilu: ¿qué podría haber detrás del mito?, by Rodrigo Otero
- La geología y el golpe de estado de 1973, by Edmundo Polanco Valenzuela
- Domingo F. Sarmiento: un impulsor de las Ciencias Naturales en Argentina y Chile, by Victor A. Ramos
- Los aportes y dificultades de las primeras mujeres en geología: Maria Graham (1785-1842) y Etheldred Benett (1776-1845), by Carolina Silva Parejas
- De la Antártica a los Andes: los trabajos geológicos de Michael Bell en Chile, by Manuel Suárez
- Estado, Terremotos y Ciencia. La Comisión de Estudios de 1906, by Lorena B. Valderrama

**Sexto Simposio - XIV Congreso Geológico Chileno, Coquimbo, 2015**

Presentaciones orales:
- Rocas Verdes basin, southernmost Andes: birth of a concept and its evolution over four decades, by Ian W.D. Dalziel1and Robert H. Dott, Jr.
- Elevación de montañas a través de intrusiones plutónicas y la controversia geológica vivida por Maria Graham, by Carolina Silva Parejas
- Contribución al desarrollo de la geología de Chile de la Oficina Técnica Puerto Varas de SERNAGEOMIN, by Jorge Muñoz B., Ignacio Bascuñán A., Eduardo Córdova Z., Paul Duhart O., Carolina Jara I., Mauricio Mella B., Hugo Moreno R., Jorge Parra R., Edmundo Polanco V., David Quiroz P. y Rosa Troncoso V.
- Reconocimiento geológico y exploración en Aisén: 1962-1963, by Marcos Zentilli
- La enseñanza y la investigación geológica desarrolladas en la Universidad de Buenos Aires: 150 años de historia, by Victor A. Ramos
- Historia de una arbitrariedad cometida por el gobierno de Chile durante la dictadura con un académico del Departamento de Geología de la Universidad de Chile, by Francisco Hervé y Reynaldo Charrier
- El valle del Rio Copiapó: Una incisión de visitas ilustres y un retrato de la evolución del conocimiento geológico, by Matías Peña
- Trágicas muertes que marcan la historia de la geología de Chile: los casos Carmona, Jensen y Valenzuela, by Edmundo Polanco Valenzuela, Jorge Muñoz Bravo y Sonia Vogel Briceño.
- Historia de SOQUIMICH, una revisión, by Edmundo Polanco Valenzuela
- 100 Years of Metallogenetic Theory in Andean Manto and Central African Stratiform Deposits: What Can We Learn?, by Isabel Fay Barton
- Minas de Pórfidos Cupríferos de Chile. II Parte, 1960-1990, by Juan Carlos Marquardt Lechuga

**Séptimo Simposio - Departamento de Geología, Universidad de Chile, 2016**

Presentaciones orales:
- La historia de los Pórfidos de Cobre en Chile, by Francisco Camus
- Minas de Pórfidos Cupríferos de Chile. III Parte, 1990-2000, by Juan Carlos Marquardt
- La producción transnacional del conocimiento y el estudio de los glaciares chilenos durante el siglo XIX, by Carlos Sanhueza
- El primer estudio geológico de las Provincias Unidas del Río de la Plata: Los aportes de Dámaso A. Larrañaga, by Victor Ramos
- Vida y obra de Ignacio Domeyko, by Pablo Domeyko

- Ignacio Domeyko y el desarrollo de la geología en Chile, by Francisco Díaz
- El "Despoblado de Atacama": exploradores y naturalistas del siglo 19, by Florencio Gilberto Aceñolaza
- Cronología eruptiva histórica de los volcanes Tupungatito y San José: una revisión crítica, by Carolina Silva
- Un naturalista olvidado: Franz Meyen y los fósiles de Lo Valdés, by Beatriz Aguirre-Urreta
- El fenómeno de los temblores pertenece a la geología": Montessus de Ballore y los límites disciplinares a inicios del siglo XX, by Lorena B. Valderrama
- Carvajal, M., Cisternas, M., Muñoz, D. y Araya-Cornejo, C., Source of the 1906 Metropolitan Chile earthquake constrained by written records and far-field tsunami mareograms
- Exploring the historical earthquakes preceding the giant 1960 Chile earthquake in 1737 and 1837: implications for the width of the region´s seismogenic zone, by Cisternas, M., Carvajal, M. y Gorigoitía, N.
- Louis Agassiz en Chile: una historia poco conocida, by Francisco Hervé y Reynaldo Charrier
- Enrique Cappelletti (1831-1889) y el magnetismo terrestre como causa de los sismos en Chile, by Patricio Leyton
- Contribución del Prof. Hans Brüggen a la geología en Chile, by Reynaldo Charrier, Francisco Hervé y Patricio Aceituno
- Don Giovanni o "El Checho", by Estanislao Godoy
- Mis experiencias como geólogo, by Guillermo Chong

**Presentaciones de posters:**
- Primera noticia del hallazgo de icnitas de vertebrados en el continente antártico, by Carlos Lamperein
- María Angélica Fortt precursora femenina de la geología en Chile, by María Eugenia Fortt,

**Visita:**
Visita a casa de Don Ignacio Domeyko

**Octavo Simposio - Universidad Santo Tomás, Santiago; 13 y 14 de noviembre 2017**

Lunes 13 de noviembre 2017
Presentaciones orales:
- James Hutton y El Tiempo Profundo, by Manuel Suárez
- Alexander von Humboldt (1765 – 1857): Precursor y visionario de las ciencias naturales, by Francisco Hervé y Reynaldo Charrier
- El retorno de un sismólogo o la historia de un sismólogo retornado, by Edmundo Polanco V.
- Aventuras y desventuras buscando fósiles en los confines australes del mundo, by Beatriz Aguirre – Urreta
- Cosmovisión indígena en Sudamérica: una perspectiva Geológica, by Sebastian Perroud
- La Cultura Mapuche en la minería, by Elisa Ramírez S.
- La Piruquina, by Cristian Bastías C.
- Percepción geológica en la obra de Pablo Neruda y Gabriela Mistral, by Reynaldo Charrier
- Acerca del origen de las “piedras”: algunas teorías desde la antigüedad Greco Romana a la Edad Moderna, by Luis Aguirre L.
- La influencia de Hans Keidel en la Teoría de la Deriva de los Continentes de Wegener, by Victor A. Ramos
-Guillermo Billinghurst: investigador pionero de Tarapacá, by Fernando Sepúlveda

- Arnold Heim y su aporte al conocimiento geológico del sur de Chile y Argentina, by Carlos A. Cingolani
- Reynaldo Charrier González: Formador de la Moderna Escuela Geológica Chilena, by Diego Rojo
- A 42 años del Corrimiento del Fierro: los estudios desde Davidson a Mosolv, by Estanislao Godoy
- Los desastres no son naturales. Análisis de los terremotos de 1906 y 1960 en Chile, by Felipe Orellana Solar, Daniela Oberreuter Villanueva.
- The Geological League": Superhumans for Science, by Reyes

**Martes 14 de Noviembre 2017**

**Visita post simposio**
- Visita a los Archivos Centrales de la Universidad de Chile, Casa Central Universidad de Chile

marianne.klemun@univie.ac.at

## CZECH REPUBLIC

### Czech INHIGEO members - activities in 2017

**Karel Pošmourný**

**Pošmourný K.,** Rambousek P. (in print): History of mercury mining in the Czech lands in the context of large Hg-deposits in Europe. - 14th International "ERBE" Symposium 2018: 25 Years ERBE-Symposia, European Year of the Cultural Heritage 2018; Cultural Heritage in Geosciences, Mining and Metallurgy - Libraries - Archives - Museums. Ravne na Koroškem / Slovenia 4th - 9th June 2018.

**Alena Čejchanová**

**Čejchanová, A.** (2017): Fotografická kolekce portrétů významných českých a světových osobností geologických věd v publikační webové aplikaci Fotoarchiv ČGS [*Photographic collection of portraits of the significant Czech and world personalities of geological sciences in the publishing Web Application of the Photo Gallery CGS*]**.** Report ČGS 345200. 15 pp., MS Czech Geological Survey, Prague.
http://fotoarchiv.geology.cz/sprava/

**Čejchanová, A.** – Sidorinová, T. (2017): Propojení zajímavých fotografických kolekcí Odborného archivu a Fotoarchivu ČGS [*Linking of interesting photographic collections of the Archives of CGS and the Internet Application of the Photo Gallery CGS*], Praha. In Šimon, L.; Kováčová, M.; Ozdínová, S.; Michalík, J.; Pivko, D.; Goliáš, V.; Bokr, P.: Otvorený geologický kongres Slovenskej geologickej spoločnosti a České geologické společnosti Vysoké Tatry, – Slovenská geologická spoločnosť. Bratislava. ISBN 978-80-972667-7-6

Večeřa, J. – **Čejchanová, A.** – Jírů, R. – Sedláček, J. Ing. – Jansta, J. – Pořádek, P. – Čoupek, P. (2017): Databáze povrchových těžeben *[Databases of the surface mining sites]*. Final report CGS 344200, 24 s., MS Czech Geological Survey, Prague

Budil, P - **Čejchanová, A.** - Kadlecová, E. (2017): Naplnění dílčích cílů "Návrhu koncepce

dalšího rozvoje skladů hmotné a písemné dokumentace ČGS" - reskartace a nové uložení lokalitních paleontologických sběrů a sanace kolekce J. Sekyry v Lužné u Rakovníka. Project CGS 343500. 14 pp., MS Czech Geological Survey, Prague
*[Archival processing of texts, maps and photographs from the inheritance of doc. Josef Sekyra - geomorphologist, geologist and first Czech, who visited the southern Pole (Antarctica)]* *http://www.geology.cz/sekyra*;
*http://fotoarchiv.geology.cz/cz/galerie-nahledy/galerie/99/*

Paleček, M. – Kondrová, L. – **Čejchanová, A.** (2017): Historie geologického mapování území ČR. [*History of the Geological Mapping of the Czech Republic* ]. CGS. Prague. Software URL https://mapy.geology.cz/stare_mapy

Kondrová, L. – **Čejchanová, A.** – Paleček, M. (2017): History of the Geological Mapping of the Czech Republic - poster. CGS, Prague . 1 s. MS.

Kondrová, L. – **Čejchanová, A.** – Paleček, M. (2018): Historie geologického mapování ČR [*History of the Geological Mapping of the Czech Republic*]. ARC Revue 26, 1/2018, 22-24. ISSN 1211-2135.

**Jan Kozak** activities 2017

1) The pictorial book *Selected biblical illustrations as a reflect of real geophysical events* by Jan Kozák and Marcela Švamberková (2016), Prague, was reedited and prepared for publishing as bilingual Czech/Emglish book in 2017 in larger print run volume.
2) The manuscript by Jan Kozák entitled "Natural disasters and Collapse of the present Civilization"was completed and submitted for publishing in the collection edited by M. Barta and M. Kolář entitled *Collapses*. The expected publishing of this collection in a book form is expected with the ACADEMIA editor, Prague, is Autumn 2018.
3) The text and illustrations of the pictorial book written By Jan Kozák (Prague) and Roger Musson (Edinburgh) entitled "History of the Elements" is being finished for submission and publishing with Springer editorial house later in 2018. The book contains 282 commented and discussed historical prints.
4) In 2017 former pictorial collection of historical images of dynamical manifestations of the Earth elements Kozak Collection (KC), build by Jan Kozák in late 1990 together with the University of California at Berkeley (CA, USA) has been systematically widened and supplemented, was transferred back to Prague in 2016 and re-named as "New Kozak Collection (NKC) in Prague". This new pictorial collection of pre-photo images is now kept as the private series of its owner Jan Kozák in Prague. At present the collection consists of some 2900 pre-photographic colitaire prints and of some 155 original pictorial books and albums printed in the 18th-19th cc.

Alena Cejchanova alena.cejchanova@geology.cz

## FRANCE

Report on the activities of the French COFRHIGEO in 2017

In 2017, the French Committee on the History of Geology (COFRHIGEO) met in three sessions, during which the following contributions were presented:

Delphine ACOLAT : "De terra exit flamma" : productions souterraines, éléments ignés, formes et phénomènes d'origine volcanique décrits par les auteurs antiques : de la curiosité à la tentative d'analyse scientifique [volcanism seen by the ancient authors].

Frédéric LE BLAY : Expliquer les feux des montagnes : la science d'avant les volcans [how volcanism was explained in ancient times].

Alain COUTELLE : Les principaux modèles d'univers des Anciens et leur survie au Moyen-âge [the universe models of the Ancients and their survival in the Middle Ages].

Jean-Marc DROUIN : Les faluns de Touraine : naissance d'un paradigme [the Miocene shelly sands of Touraine, from Réaumur to nowadays].

Jessie CUVELIER et Thierry OUDOIRE : L'histoire des collections géologiques lilloises: d'une collection d'amateurs du 19ème siècle aux musées (Musée de Géologie et Musée Houiller), rénovés après la Grande Guerre [history of the geological collections and Museum at Lille].

Alain BLIECK: Présentation d'ouvrage : « La Société géologique du Nord et l'histoire des sciences de la Terre dans le nord de la France », *Société géologique du Nord, Mémoires*, n° 17, 183 p. [presentation of a special issue, with 15 contributions on the history of geology in northern France, the *Société géologique du Nord* and the Channel Tunnel projects].

Jean-Paul POIRIER et Philippe TAQUET: Lettres inédites de Dolomieu au Duc de la Rochefoucauld [inedited letters sent by Dolomieu to La Rochefoucauld, between 1775 and 1797, with geological observations in France and Italy].

The session of December 13 was dedicated to the memory of Jean Gaudant, with the following presentations:

Gabriel GOHAU, Philippe TAQUET et Philippe JANVIER : Jean Gaudant, le collègue et l'ami;

Giorgio CARNEVALE : L'œuvre paléoichthyologique de Jean Gaudant;

François MEUNIER : Jean Gaudant et la paléohistologie;

Philippe GRANDCHAMP : Jean Gaudant, cheville ouvrière du Cofrhigéo;

Gaston GODARD et Jacques TOURET : la carrière contrariée de Jean Gaudant à l'Université Paris-Diderot.

Our Committee publishes an annual periodical, *Travaux du Comité français d'Histoire de la Géologie* (ISSN 1156-2919), which is available online at the following addresses:
https://hal.archives-ouvertes.fr/COFRHIGEO/browse/period
http://www.annales.org/archives/cofrhigeo/travaux.html.

The 29th volume of this periodical was issued in 2017 and contains the following articles:

MOREAU, Christian et GAUDANT, Jean. L'exploration géologique des Charentes (partie septentrionale du Bassin aquitain), p. 1-26.

COUTELLE, Alain. Peut-on appliquer les concepts de la tectonique des plaques aux chaînes de la Méditerranée occidentale?, p. 27-41.

MEDIONI, René : Georges Lecointre (1888-1972). Entre Touraine et Maroc, les itinéraires d'un géologue, p. 43-69.

GUERIN, Arnaud : le Mont Aimé à la limite Crétacé-Tertiaire dans le Bassin parisien, p. 71-77.

GRANDCHAMP, Philippe. L'histoire de la découverte de l'allochtonie des Préalpes revue et corrigée, p. 79-95.

A symposium on the history of geology was organized by Pierre Savaton during the annual meeting of the *Société française d'Histoire des Sciences et des Techniques* in May 2017, at Strasbourg. A special volume of the periodical *Cahiers François Viète* will bring together the seven articles resulting from the presentations made during this symposium. The Cofrhigéo also participates to an editorial project on "Geology and First World War" (to be published in November 2018).

Despite the loss of Jean Gaudant, the series of books he had initiated on the history of the discovery geology of France continues (https://www.pressesdesmines.com/). After the volumes on the history of geology of the Provence, Armorican Massif, Alps and Rhône corridor, the volume on Corsica is in preparation.

Several theses on the history of geology in France and Europe were defended in 2017:

Patrica BOBECK, Abbé Jean-Baptiste Paramelle (1790–1875) and his book, *L'Art de Découvrir les Sources*. PhD thesis, March 2017, University of Texas.

Pascal RETIF, De la cartographie dans l'histoire de la géologie des granites [cartography in the history of granite geology]. Thèse soutenue le 5 octobre 2017, Université de Nantes, Centre François Viète.

Thierry RENAUX, L'aluminium au XIX$^{e}$ siècle. Une industrie aux pieds d'argile, entre chimie et métallurgie (1854-1890) [Aluminium in the 19$^{th}$ Century]. Thèse soutenue le 4 décembre 2017, Centre Koyré, École des Hautes Études en Sciences Sociales, Paris.

Lény PATINAUX, Enfouir des déchets nucléaires dans un monde conflictuel. Une histoire de la démonstration de sûreté de projets de stockage géologique, en France (1982-2013) [history of the geological disposal facilities for radioactive wastes in France]. Thèse soutenue le 11 décembre 2017, Centre Koyré, École des Hautes Études en Sciences Sociales, Paris.

Marie ITOIZ, Genèse de la pétrographie microscopique, Les conditions de mise en œuvre d'une nouvelle pratique d'observation au cours du XIX$^{e}$ siècle [Genesis of the petrographical microscopy]. Thèse soutenue le 12 décembre 2017, Paris-Saclay, Groupe d'Histoire et de Diffusion des Sciences d'Orsay.

Françoise DREYER, La controverse sur l'étage danien dans la fixation de la limite entre terrains crétacés et tertiaires : émergence de la notion de limite dans la géologie du XIX$^{ème}$ siècle [the controversy on the Danian Stage and Cretaceous-Palaeogene boundary]. Thèse soutenue le 20 décembre 2017, Université de Nantes, Centre François Viète.

Finally, several members of the Cofrhigéo published various studies on the history of the geosciences:

GODARD, G. (2017). The "Discourse on the seashells […, found] in Champagne", written by Vignier to Peiresc (1635): An early text supporting the organic origin of fossils. *Comptes Rendus Palevol*, 16, 122-131.

GODARD, G., GUZZETTA, G. & FRATI, G. (2017). Manuscript on the Vesuvius eruption of 1631 by the Carthusian Dom Severo Tarfaglione. *Analecta Cartusiana*, 291, 16-66.

GODARD, G., REYNES, J., BASCOU, J., MÉNOT, R.P., PALMERI, R. (2017). First rocks sampled in Antarctica (1840): Insights into the landing area and the Terre Adélie craton, *Comptes Rendus Géoscience*, 349, 12-21.

RICHET, P. (2017). The creation of the world and the birth of chronology, *Comptes Rendus Géoscience*, 349, 226-232.

RICHET, P. (2017). L'Âge de la Terre, Encyclopædia Universalis (2017), https://www.universalis.fr/encyclopedie/age-de-la-terre/

TOURET, J., BULAKH, A. (2017). From Russia with rocks: the tombstone of Napoleon. *Minerazl Observer* (Mineralogical Almanac), 22, 82-89.
TOURET, J., BULAKH, A. (2017). The Russian contribution to the edification of the Napoleon tombstone in Paris. *Vestnik Univ. St Petersburg*, 15-3, 71-82 (Вестник СПбГУ. Сер. 15. Искусствоведение. 2016. Вып. 3) (2016, Published 2017).
TOURET, J., NIJLAND, T.G. (2016). Het graf van Napoleon in de Dôme des Invalides in Parijs. *Geobrief* 2016, Mei issue, 4-7 (in Dutch).

G. Godard, secretary of the Cofrhigéo; godard@ipgp.fr

## GERMANY

### Meetings and events

The International Symposium "Abraham Gottlob Werner und die Geowissenschaften seiner Zeit" took place from 20 June to 1 July 2017 at the Technical University (Mining Academy) in Freiberg to commemorate the bicentennial of Abraham Gottlob Werner's death. The proceedings of this conference will be published as *Freiberger Forschungsheft*. Abstracts to the 28 oral and poster presentations have been collected in an abstract volume. The symposium was followed by a fieldtrip to Görlitz including tour of the town, visit to the Görlitz Collections on History and Culture and to the geological outcrop Landeskrone. On July 1st, a celebration took place at the cemetery Neuer Annenfriedhof in Dresden-Löbtau to remember the bicentennial of A. G. Werner's death. A new information column was revealed to explain the Werner-Memorial in Dresden.

**Cornelia Lüdecke** organized the following conference sessions:

During the International Congress of History of Science, Technology and Medicine, on July 24, 2017, which took place in Rio de Janeiro (Brazil), she co-convened the session on "The Human Ocean: Producing Knowledge in and on the Oceans!" of the International Commission of the History of Oceanography: (Homepage: https://oceansciencehistory.wordpress.com/).

The History of Antarctic Research Expert Group under the chair of Cornelia Lüdecke took part in the conference on "Depth and Surfaces: understanding the Antarctic region through the Humanities and Social Sciences", which took place in Hobart, Tasmania (Australia) from July 5-7, 2017.

German INHIGEO members presented talks at the following conferences:

Kölbl-Ebert, Martina: German Petroleum Geologists in World War II.- 79th EAGE Conference & Exhibition 2017, Paris, France, 12–15 June 2017: We C1 09, 5pp.
Kölbl-Ebert, Martina: Closing the Iron Curtain: How geologists in Germany experienced the beginnings of the Cold War era.– 42nd International Commission on the History of Geological Sciences (INHIGEO) Symposium, Yerevan, Armenia, 12–18 September 2017, Abstract Volume: 174.
Lüdecke, Cornelia: "Des Morgens ebene Wolken zum Regen entwickelt" – David Fabricius' Wetterbeobachtungen und die Meteorologie. Tagung Oll' Mai über David Fabricius (9. März 1564 - 7. Mai 1617), Osteel (13 May 2017).

Lüdecke, Cornelia: A drift across the Pole – How Petermann's concept of the Arctic influenced the German exploration of Antarctica. International Congress of History of Science, Technology and Medicine, Rio de Janeiro (24 July 2017).

Matiu, Michael; Lüdecke, Cornelia; Newell, Dianne and Menzel, Annette: Arctic cyclones in the Labrador Sea based on the Moravian historical collection of meteorological data in Labrador and Greenland since the mid-18th century. EGU2017, Vienna (26 April 2017).

Newel, Dianne; Lüdecke, Cornelia; Matiu, Michael and Menzel, Annette: Historical Collection of Meteorological Data from Moravian Greenland and Labrador mission stations (1841-1879). EGU2017, Vienna (26 April 2017).

Thalheim, Klaus: Abraham Gottlob Werner und seine Beziehungen zur Residenzstadt Dresden. - In: Werner Symposium. 29. Juni bis 1. Juli 2017. Abstracts. Technische Universität Bergakademie Freiberg, Universitätsbibliothek Freiberg. Internationales Symposium Abraham Gottlob Werner und die Geowissenschaften seiner Zeit (Hrsg.): 39-40, Freiberg.

**Publications**

Kölbl-Ebert M (2017): Geology in Germany 1933–1945: People, Politics and Organization. *Earth Sciences History* **36**(1): 63–100.

Kölbl-Ebert M (2017): Popularisierung der geologischen Forschung am Nördlinger Ries: Vom Vulkan zum Impaktkrater. In: Wolfschmidt G (ed.) (2017): Popularisierung der Astronomie. tredition, Hamburg: 474–479.

Lüdecke, C., und I. Heidbrink (2017): Historische und archäologische Forschung. In: Heinemann, G., Braun, M., Brey, T., Damaske, D., Melles, M., Rhein, M. and Willmes, S. (eds), 2017, Polarforschungsagenda 2030 – Status und Perspektiven der deutschen Polarforschung. Statusbericht des Deutschen Nationalkomitees SCAR/IASC der DFG,127-130 pp.

Lüdecke, C. (2017): "Des Morgens ebene Wolken zum Regen entwickelt" – David Fabricius' Wetterbeobachtungen (1586-1613). In: David Fabricius (9. März 1564-7. Mai 1617). Astronom, Kartograph, Astrologe und Wetterbeobachter. Oll' Mai Dokumentation Nr. 11 /2017, 57-74 http://www.ostfriesischelandschaft.de/fileadmin/user_upload/BIBLIOTHEK/Dokumente/Oll_Mai_2017.pdf

A new volume (28) of the journal *Geohistorische Blätter* has been edited by Ulrich Wutzke (Berlin).

**Public Talks and Lectures**

Cornelia Lüdecke continued to teach each semester at the University of Hamburg, and presented the following public talks:

Der größte Umweg der Welt: Roald Amundsens Expeditionen zum Nord- und Südpol. Naturwissenschaftliche Gesellschaft Bayreuth (13 March 2017).

Die Entdeckung Neuschwabenlands in der Antarktis 1938/39. Forum Volkshochschule Seligenstadt (17 March 2017).

Verborgene Eiswelten - Erich von Drygalskis Bericht über seine Grönlandexpeditionen 1891, 1892 – 1893. Münchner Künstlerhaus, Munich (26 April 2017)

Alexander von Humboldts Beiträge zur Meteorologie und Ozeanographie. Vortragszyklus Spektrum der Wissenschaften. University of Munich (6 December 2017).

**Martina Kölbl-Ebert** presented the following public lectures:
Vom Riesvulkan zum Mondlabor: Die geologische Riesforschung im Wandel der öffentlichen Wahrnehmung. University of Hamburg (24 October 2017).
Darwin's Evolutions Theorie im Kontext ihrer Zeit. University of Hamburg (13 December 2017).

**Peter Schimkat** / Inhigeo Annual Record for 2017
In 2016, Peter Schimkat was amazed how little time he was able to spend on matters devoted to the history of geology. Since external circumstances didn't change for 2017, it came as less of a surprise that this year saw only a miniscule improvement. At least, he was busy in preparations for a study on 19th century Hildesheim palaeontologist Friedrich Adolph Roemer, whose work was of crucial importance for the establishment of the British subdivision of the Older Palaeozoic in the German-speaking world.

**News of the profession**
In October 2017 Martina Kölbl-Ebert completed her *Habilitation* in history of science at the University of Hamburg.

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

Martina Kölbl-Ebert, Eichstätt (Germany) Koelbl-Ebert@Jura-Museum.de

## HUNGARY

*Lectures in the sessions of History of Science Section of Hungarian Geological Society, 2017:*

*January 16.*
Brezsnyánszky, K., Radócz, Gy. – Documents of the geological mapping expedition in Cuba, 40 years ago.
Solti, G. – The memory of Dr. Márton Löw in Klotild-liget.

*February 20.*
Viczián, I. – Report on the 9th Meeting on History of Science and Technology, held at Jegenye-fürdő (Leghia, Romania), June 30 – July 3, 2017, organised by the Hungarian Technical Scientific Society of Transylvania (EMT).
Csath, B. – The 125th anniversary of birth of Gusztáv Faller, mining and drilling engineer.

*March 20.*
Mészáros, I., Kordos, L. – The inauguration of a Ferenc Nopcsa (1977-1933) memorial in Northern Albania.
Magyari, G. – The memory of Nopcsa in Albania.
Gyurkovics, Gy. – Newly discovered documents on Ferenc Nopcsa.

*April 11.*
*Mining, literature, folklore.*
Celebration of the 90th birthday of Béla Csath.

*May 17.*

Póka, T. – Presentation of the book "Székyné Fux Vilma 100" (Vilma Székyné Fux 100) (presented by Éva Zsadányi)

Németh Z. – The rock sample collection of József Szabó (1822-1894) in the Sárospatak Reformed College.

Harman-Tóth, E. – "Lost" and "found" barite on the Castle Hill of Buda (Budapest) – hommage à József Szabó.

*June 19.*

Papp, P. – Correspondence between the geologist József Szabó (1822-1894) and the poet János Arany (1817-1882).

Tóth, Á. – History of the company "Alumíniumérc Bánya és Ipar Rt." (Aluminium Ore Mining and Industrial Co.), 1917-1950.

*September18.*

Tóth, Á. – The memory of the mining engineer Pál Káposztás (1893-1957), his activity in Serbia and Hungary.

Zsadányi, É. - László Bendefy (1904-1977) in the Kőszeg Mts. (W Hungary)

*October 16.*

*Report on the Werner-Symposium, Freiberg, Germany, June 29.– July 1, 2017. (Session jointly held with the Mineralogy and Geochemistry Section of HGS)*

In the Symposium, devoted to the 200$^{th}$ anniversary of the death of Werner three lectures were presented from Hungary, by Dezső Gurka, Péter Rózsa and István Viczián. Two of these lectures were given in the session held in Budapest, in Hungarian language:

Gurka, D. – The influence of the works of Abraham Gottlob Werner in Hungary, in the 18–19$^{th}$ centuries.

Viczián, I. – Hand-written mineralogical tables in the Teleki Library of Marosvásárhely (Târgu Mureş, Romania).

*November 4.*

*Memorial session celebrating the birthday of professor Károly Papp (1873-1973) at birthplace and home Tápióság.*

Lectures were held by Baksa, Cs., Brezsnyánszky, K. and Vitális, Gy.

*November 20.*

*Session jointly held with the National Association of Mining and Metallurgy (OMBK)*

Benke, I. – St. Catherine, patron of Hungarian ore miners.

Szlabóczky, P. – "KRIVANOIDS-XC" (solifluction, cryoturbation and other "fluctions" and "turbations") – The memory of Pál Kriván (1927-1985).

*December 4.*

*Session closing the year: Presentation of classical geological works in the Library of the Hungarian Institute of Geology and Geophysics*

Works of Ami Boué, Edward Brown, Mór Déchy, Johann Ehrenreich Fichtel and Abraham Gottlob Werner were discussed by Papp, P., Kázmér, M., Puzder, T., Papp, G. and Viczián, I.

István Viczián and Éva Zsadányi

## ITALY 2016-2017

The activities of the Italian members included publications, participations to international symposia and national meetings, involvement in research projects and exhibitions, as well as teaching in the field of the history of the Earth sciences. Ezio Vaccari (Varese)

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**Libera Paola ARENA** (University of Insubria, Varese) from January to June (2016) taught History and Philosophy in a high school in Gallarate (Varese), Italy. Then, from October to December (2016) she was appointed a Research Fellow at the Department of Theoretical and Applied Sciences of Insubria University (Varese, Italy). She has focused her research on the preparation of the geo-historical content for the website of the paleontological site Monte San Giorgio (UNESCO heritage site) with the planning of some geo-historical routes (GHR)* about an excursion around Varese made on the 28 September 1878 by the Italian Naturalists of the Italian Society of Natural Sciences. The realization of a GHR comes from the study of historical primary sources (like letters, diaries, etc.), then followed on the field in the same routes made by the naturalists and the scientists of the past. This project will continue with a research grant until the end of 2017. The next goal is the creation of the GHRapp for smartphone and the website (in progress).

**Conferences**:

- 15-17 September 2016: National Conference of the Italian Society of History of Science with the paper *"Carlo Amoretti and the scientific and government institutions between the XVIII and the XIX century"* [Sasso Marconi (Bologna) - Italy]
- 18-20 October 2016: GEOTOUR 2016 - International Conference on Geotourism, Mining Tourism, Sustainable Development and Environmental Protection with the paper *"The GHR project: new tools and strategy for an historical geotourism".* [Florence – Italy]

**Publications**:

- Arena L. P., 2016, *The GHR Project: New tools and strategy for an historical geotourism, Acta Geoturistica*, volume 7, number 2, pp. 7-13.
- Arena L. P., 2016, *Carlo Amoretti: l'esperienza di un poligrafo ligure al servizio del governo austriaco e francese tra il 1781 e il 1816.* "Physis. Rivista Internazionale di Storia della Scienza", 51(1-2), pp. 117-127.

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**Andrea CANDELA** (University of Insubria, Varese) is continuing his researches on the history of uranium and nuclear energy in 20th century Italy, trying to develop some new historiographical approaches based on the heuristic category of "environmental conflict." He has recently published a single-authored monograph about the environmental history of nuclear energy in the second half of the 20th century, which lays emphasis on the Italian background from the late 1960s to the end of the 1970s

(*Storia ambientale dell'energia nucleare. Gli anni della contestazione*, Mimesis, 2017). Nuclear power, both for civilian and military uses, has been part of scientific and social controversies for more than sixty years, and worries about its uses and developments are still strong today. Using a wide variety of archive sources, the book aims at offering one of the first accounts of nuclear energy from the perspective of the environmental history studies. In 2016, Candela was appointed member of the reading committee of the Italian online journal *Viaggiatori. Circolazioni, scambi ed esilio (secoli XII-XX)*. The journal is also devoted to the history of scientific travel. In 2017, Candela published three papers on the history of Earth Sciences, and he continued his research on the history of uranium as well as on relationships between geology and nuclear industry.

**Conferences**:
In 2016 and 2017, Candela made significant contributions to the study of the history of Earth Sciences. In September 2016, he attended two conferences held in Naples (*Three Centuries of Geology in Italy*, Sept., 7-9) and Sasso Marconi (Bologna, *National Meeting of the Italian Society of the History of Science*, Sept., 15-17), where he presented two lectures: the first about the geological travel of the Milanese *savant* Paolo Sangiorgio in Valsassina (Lombardy, 1770), and the second on the birth of nuclear geology in Italy (1948-1964).

**Publications**:
- Candela, A. 2017. *Storia ambientale dell'energia nucleare. Gli anni della contestazione*, Milano – Udine, Mimesis, 340 pp.

- Candela, A. 2017. *La corsa all'uranio e gli esordi negli usi pacifici dell'energia nucleare. Un'inchiesta attraverso le pagine del Notiziario del CNEN*. In: *Il prisma dei beni comuni tra diritto e scienze umane*, edited by A. M. Orecchia e C. Perini, Milano-Udine, Mimesis, pp. 41-57.
- Candela, A. 2017. *Sorting out nuclear concerns: The Australian uranium debate from Jervis Bay to Ringwood's Synroc*. "Earth Sciences History", 36(1), pp. 116-141.
- Candela, A. 2017. *Il viaggio settecentesco di Paolo Sangiorgio in Valsassina*. In: *L'esilio come viaggio: categorie, pratiche ed esperienze*, edited by F. D'Angelo, "Viaggiatori, circolazioni, scambi ed esilio", a. 1, n. 1, pp. 436-491.
- Candela, A. 2016. *La nascita della geologia nucleare in Italia*. "Physis. Rivista Internazionale di Storia della Scienza", 51(1-2), pp. 239-252.
- Candela, A. 2016. *Recupero, Giuseppe (1720–1778)*. In: *Dizionario Biografico degli Italiani*, Roma, Istituto della Enciclopedia Italiana, Treccani, vol. 86.

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**Luca CIANCIO** (University of Verona), continued his research on the 18th century history of geology and natural history, as well as on the relationship between natural sciences and antiquarian studies.

**Publications:**
- Ciancio, L., 2016, *The Many Gardens - Real, Symbolic, Visual - of Pietro Andrea Mattioli.* In *From art to science. Experiencing nature in the european garden 1500-1700,* edited by B. Aikema and J. Ferdinand, Treviso, Zel Edizioni, pp. 34-45
- Ciancio, L., 2017, *Sabbadino, Cristoforo*. In *Dizionario biografico degli italiani*, Roma, Istituto dell'Enciclopedia Italiana, Treccani, vol. 89, pp. 414-416

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**Fabiana CONSOLE** (Library – ISPRA, Rome) continued her research on the history of geological sciences, with particular attention to historical geological maps, history of Geological Survey of Italy and biographies of geo-scientists. She became Head of the historical Cartographic and bibliographic Collections and Archive of the Geological Survey of Italy (1867-1940) preserved in ISPRA Library. She is responsible for Cataloging (IFLA standard ISBD-CM Material) and maintaining custody of old maps, atlases, and other cartographic materials in books. In July 2017 she started the revision of some papers submitted to the special volume "Three Centuries of Geology in Italy", to be published in March 2018 on the "Rendiconti online della Società Geologica Italiana".

**Conferences:**

In September 2017 she presented the talk "On the trail of Hermann Wilhelm Abich in Italy: a journey through the Italian volcanoes" at the 42nd International Commission on the History of Geological Sciences (INHIGEO) Symposium in Yerevan, Armenia.

**Publications:**

- Pantaloni M., Console F., Petti F.M., 2018, *On the trail of Hermann Wilhelm Abich in Italy: a journey through the Italian volcanoes*. "Italian Journal of Geosciences", 137, pp. 106-127. DOI:10.3301/IJG.2017.20

- Console F., Motti A., Pantaloni M., 2017, *L'intermittenza delle sorgenti del Torbidone nella Piana di Norcia: analisi delle fonti storiche a partire dal XIV secolo*. "Rendiconti Online della Società Geologica Italiana", 43, pp. 36-56. DOI:10.3301/ROL.2017.34
- Pantaloni M., Console F., Petti F.M., 2017, *La cartografia geologica delle Alpi meridionali tra XIX e XX secolo: un esempio di collaborazione italo-austriaca*. "L'Universo", 5/2016, pp. 910-931.
- Fabbi S., Console F., Pantaloni M., 2017, *1876 -1881: Domenico Lovisato and the geology of Calabria (Southern Italy)*. "Italian Journal of Geosciences", 136, pp. 471-484. DOI: 10.3301/IJG.2017.100
- Pantaloni M., Console F., Lorusso L., Petti F.M., Romano M., Franchini A.F., Porro A., 2017, *Italian Physicians' contribution to geosciences*. In: *Geology and Medicine: Historical Connections*. Geological Society of London, Special Publications. Vol. 452. DOI: 10.1144/SP452.17
- Pantaloni M., Console F., 2017, *The ephemeral Ferdinandea*. In: *Geology in History. EuroGeoSurveys*. 131 pp.

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**Pietro CORSI** (Oxford University) was awarded the *Médaille Marc-Auguste Pictet* 2016 in History of Science on November 16, 2016 by the Société de Physique et d'Histoire Naturelle of Geneva (Switzerland).

**Publications:**

- Corsi, P., 2016, *What Do You Mean by A Periodical: Forms and Functions*, "Notes and Records of the Royal Society", 70, pp. 325-341.
- Corsi P., 2018, Preface. In Georges Cuvier, *Histoire des sciences naturelles*, (new ed. and Engish-language translation), Paris, Éditions du MNHN, 2018

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**Francesco GERALI** (University of Oklahoma / University of Western Australia) in 2017 worked at the School of Library and Information Studies of the University of Oklahoma as Content Curator for the digital humanities project Digital Latin Library. In April, he was Moran Fellow for the History of Science at the Australian Academy of Science (Canberra, ACT, Australia), to develop the project "Unity is strength: A Commonwealth of scientists to find oil." The research aimed to study manuscript collections from selected Australian learned societies and gauge how relevant they were in the sharing of knowledge on petroleum among the Australian geoscientists throughout the 20th century. He is also presently Honorary Research Fellow at the University of Western Australia FABLE School of Humanities. In July, he was elected Officer in the Board of the International Committee for the History of Technology (ICOHTEC), and appointed Newsletter Editor. On August 1st, Francesco obtained the Master's Degree in Library and Information Studies (Curriculum in Special Collections) at the University of Oklahoma and defended the thesis *Science, energy, and knowledge*; an analysis of the scientific literature on the synthetic fuels in the 1970s and 1980s. The manuscript answers to the research question: How can historical and bibliographical research converge together and provide scholars with better understanding of the activities of the scientists committed in the studies on synthetic fuels technology? The research documents the trend of scientific publications on synthetic fuels technologies between 1972 and 1988 in the United States. The analysis was developed on a sample composed of 9,317 records of scholarly and professional literature on synthetic fuels that I gathered from the on-line repositories of the United States Department of Energy. From August to September, Francesco was Eugene Garfield Fellow at the American Philosophical Society, Philadelphia, PA, to work on the research proposal "The oil explorations of Benjamin Smith Lyman in India and Japan, 1870-1880." His goal was to complete new research on the work of Benjamin Smith Lyman (1835-1920) in the transfer of know-how and expertize in oil geology from the Western oil industry to the British India and the Meiji Japan. Lyman is considered the founding father of oil geology in Japan. He was the first in the country to unveil and map the distribution of numerous oil deposits (many of which guaranteed Japan a consistent yield in the years to follow), and to plan exploratory drilling based on geological evidences. He shared with many young Japanese scholars his remarkable knowledge on oil finding previously matured in the U.S. and Indian oil fields. Later in September, he took the position as Senior Research Associate at the University of Oklahoma College of Law - Oil, Gas, Natural Resources and Energy Center where he continued his research on the early development of the unconventional oil technologies and the geological knowledge that ignited the early 1990s the Shale Boom in the United States. In December, Francesco was Invited Professor at the University of Bologna School of Engineering, Department of Civil, Chemical, Environmental, and Materials Engineering, to present seminars on the history of the oil industry upon invitation of Professors Paolo Macini and Ezio Mesini.

He organized the following symposia:
- S36 The workflow of oil: upstream, midstream, and downstream technologies in 19th and 20$^{th}$ centuries, and S37 Unconventional History: Sixty Years of Science and Technology in Hydraulic Fracturing. 25th ICHST, Rio de Janeiro, Brazil, July 23-29;
- T167 The history of the petroleum industry: Hydraulic Fracturing - the 20th and 21th century. Geological Society of America Annual Meeting Seattle, WA, United States, October 22-25;

and he received the following awards:
- Prize for the 2015 Best Article on Business History awarded by the Mexican Committee for the Historical Sciences to the article: Riguzzi, Paolo, Gerali, Francesco. 2015. *Los veneros del emperador. Impulso petrolero global, intereses y política del petróleo en México durante el Segundo Imperio, 1863-1867*. "Historia Mexicana", LXV, no. 2, pp. 747-808 (Listed in Clarivate Web of Science).

- Special Library Association, Philadelphia Chapter, Knower Fund Conference Travel Award
- ICOHTEC Travel Grant to attend the 25th ICHST, Rio de Janeiro, Brazil, July 23-29.

His professional developments include: 10/2017 Geological Society of America Annual Meeting - The Geoscience Information Society: Geoscience Librarianship 101 / 06/2017 Special Library Association Annual Conference: Project Management 101 / 03/2017 University of Oklahoma Human Resource Department: Effective Communication / 02/2017 University of Oklahoma Human Resource Department: Innovative Thinking

**Conferences**

- December 7, University of Bologna, School of Engineering. Seminars on the history of the oil industry. Petroleum: good to nothing or indispensable feedstock? Centuries of blunders, and science;
- December 7, University of Bologna, School of Engineering. Seminars on the history of the oil industry. The day after: the inception of the modern oil industry in the Emilia and Maiella oil regions after the Pennsylvanian oil boom;
- Geological Society of America Annual Meeting, 2017, Seattle, WA, United States, October 22 – 25. The unconventional driller. The development of new paradigms in oil exploration in the 20th Century;
- September 12, American Philosophical Society, Philadelphia, PA. From Massachusetts to the Japanese oil fields - passing through 104 South 5th Street. Benjamin Smith Lyman (1835-1920), a local-globetrotter scientist;
- 25th ICHST, Rio de Janeiro, Brazil, July 23 - 29. The unconventional thinker and the hippogriff: the making of new technological trajectories in oil production during the 20th century.

**Publications:**

- Gerali, F., 2017, *Salse, gas e petroli. Gli itinerari percorsi da Lazzaro Spallanzani a Montegibbio e nell'alto Frignano*. "Rassegna Frignanese" 53, pp. 287-323.
- Gerali, F., Jenny G., 2017. *Understanding and Finding Oil over the Centuries: the Case of the Wallachian Petroleum Company in Romania*. "Earth Science History", 36, no. 1, pp. 41-62.
- Gerali, F., 2017, *INHIGEO Virtual Bibliography: Canada, Costa Rica and Croatia*, "INHIGEO Annual Record", n°49, pp. 146-188.
- Gerali, F., 2017, *History of the Petroleum Industry. A digital repository for historical resources on the early oil industry*. A digital library available at https://oilhistory101.omeka.net/

Editorial Activities:

09/2016 – 12/2017 Co-editor for the volume: Craig, J. Gerali, F., MacAulay, F. Sorkhabi, F. (eds), *History of the European Oil & Gas Industry*. Geological Society, London, Special Publication 465. To be published on August 2018.

ICOHTEC Newsletter (monthly), issues 148-153.

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**FRANCESCO LUZZINI**

MAX PLANCK INSTITUTE FOR THE HISTORY OF SCIENCE, DEPARTMENT I (BERLIN, GERMANY)
MUSE-MUSEUM OF SCIENCES, GEOLOGY AND PALEONTOLOGY SECTION (TRENTO, ITALY)

**ANNUAL REPORT – 2017**

In 2017 Francesco served his second year as Councilor for *Earth Sciences History*, the Journal of the History of Earth Sciences Society (http://www.historyearthscience.org). By decision of the HESS Nominating Committee, his appointment has been extended for an additional term (2018-2019).

Francesco is Affiliate Scholar at Department I of the Max Planck Institute for the History of Science in Berlin (MPIWG), where he is member of the Anthropocene Research Group (https://www.mpiwg-berlin.mpg.de/project/earth-making). His research focuses on a historical period (late seventeenth to early eighteenth century) which is conventionally described as the "prehistory" of Anthropocene – that is, the period before human activities began to significantly impact geologically and ecologically on the Earth's environment. He is particularly interested in the interdisciplinary cross-pollination which set the stage for the explosive rise of human technologies and the dramatic impact they would exert on the environment in the following centuries.

In August, Francesco was appointed Contributing Editor for IsisCB, the "Isis" *Current Bibliography of the History of Science* (http://isiscb.org/contributing-editors). Contributing editors coordinate with the "Isis" Bibliographer, Stephen Weldon (University of Oklahoma), to help collect resources in a specific area. Francesco is special editor for Italian language sources and is charged with contributing material in this language, in order to ensure that the IsisCB has an adequate coverage of non-English resources.

2017 was a crucial year for the completion of Francesco's critical edition of Antonio Vallisneri's manuscript *Primi Itineris Specimen* (1705). The book (*Theory, Practice, and Nature In-between. Antonio Vallisneri's* Primi Itineris Specimen, Berlin, Edition Open Access/Max Planck Institute for the History of Science, Sources 9, 2018) is now published and freely accessible on the EOS website (http://www.edition-open-sources.org/sources/9/toc.html).

Following the conclusion of his EOS Postdoctoral Fellowship at the University of Oklahoma Libraries and at the Max Planck Institute in Berlin (2015-2016), in 2017 Francesco returned to Italy. From Janurary to July he was Affiliate Scholar at the Department of Theoretical and Applied Sciences of the University of Insubria (Varese), where he planned and coordinated the interdisciplinary conference series "I crocevia della scienza" ("Crossroads of Science", June 5 to July 4). From September to October he taught History of Early Modern Medicine at the University of East Piedmont (Novara), and in October he started a new Research Fellowship at the Museum of Sciences in Trento (MuSe), where he is currently working on a project on the scientific and cultural discovery of the Dolomites in the XIX century. More specifically, he is transcribing the first manuscript volume (1820-1875) of the guestbook of the Hotel Nave d'Oro in Predazzo (Italy), where many travelers (scholars, geologists, botanists, chemists, miners, engineers, public officials, physicians, artists, students, noblemen, clergymen, etc.) from all over Europe and the United States left their signatures and a number of historically significant notes concerning the exploration of the Dolomites.

In March 2017, Francesco was appointed History of Science Editor of the philosophical journal *Il Protagora* (http://mimesisedizioni.it/riviste/il-protagora.html). He is also still Scientific Manager of the Digital Archive of Vallisneri's Correspondence (http://www.vallisneri.it/inventario.shtml) and Affiliate

Scholar to the ISCH COST Action *Reassembling the Republic of Letters, 1500-1800* (http://www.republicofletters.net).

In March 2017 he ceased his activity as Column Editor for *Acque Sotterranee*, Italian Journal of Groundwater: (http://www.acquesotterranee.it/en/rivista/acquesotterranee/about-journal).

**Meetings, Lectures, Seminars**

**Seminar (March 8):** *Per una nuova armonia. Edizioni critiche e digital humanities: il progetto Edition Open Sources* (University of East Piedmont, Department of Humanities, Vercelli, Italy)

**Conference (April 6):** *Material Culture, Science and Technology* (Max Planck Institute for the History of Science, Department I, Berlin, Germany): **Talk:** *Notes from the Paleoanthropocene. Earth Sciences and Field Research in Early 18th Century Italy.*

**Seminar (April 11):** *Note dal Paleoantropocene. Montagna, scienze della Terra e ricerca sul campo tra XVII e XVIII secolo* (University of Insubria, Department of Theoretical and Applied Sciences, Varese, Italy).

**Conference (June 16):** *Il libro e la lente. Per un approccio interdisciplinare alle scienze naturali* (Conference series *I Crocevia della Scienza. Dialoghi tra natura, storia e cultura,* University of Insubria, Varese, Italy, June-July 2017).

**Meeting (July 28):** *25th International Congress of History of Science and Technology* (Rio de Janeiro, Brazil): **Paper:** *Antonio Vallisneri and the Rise of Naturalistic Experimentalism. A European Debate* (Symposyum S28 – *Multiple Spaces: Mapping Communication via Letters between Naturalists*).

**Meeting (September 9):** *Relazioni e conflitti nei secoli tra la Garfagnana, gli Stati e i territori confinanti* (Castelnuovo di Garfagnana, Italy): **Paper:** *Faelicissime floret. La descrizione della Garfagnana estense nel* Primi Itineris Specimen *di Antonio Vallisneri (1705).*

**Meeting (September 22):** *Mapping the Territory: Exploring People and Nature, 1700-1830* (University of Bern, Switzerland): **Paper:** *In Aspero Solo. Antonio Vallisneri's Manuscript Primi Itineris per Montes Specimen Physico-Medicum (1705).*

**Seminar (November 8):** *Notes from the Paleoanthropocene. Antonio Vallisneri's* Primi Itineris Specimen: *an Edition Open Sources book* (University of Vienna, Department of History)

**Publications**

Ad venandam veritatem. *Nuove ricerche sulle scienze della Terra nel «Giornale de' Letterati d'Italia»,* «Physis», Rivista Internazionale di Storia della Scienza, Volume LI, n. 1-2, 2016 (2017), pp. 129-140.

*Charon in the Intelvi Valley. The Gorge of Osteno/Caronte in Val d'Intelvi. L'Orrido di Osteno,* «Acque Sotterranee», Italian Journal of Groundwater, n. 1, March 2017, pp. 83-84.

*Agordo fu fatale. Le ricerche e l'ultimo viaggio di Friedrich Mohs (1773-1839),* «Natura Alpina», Rivista della Società di Scienze Naturali del Trentino, Volume 68, 2017, pp. 99-102.

**Stefano MARABINI** (University of Bologna) continued to study the history of geology and seismic activities in the Romagna region (central Italy), as well as geological heritage, and to collaborate with the Museum Capellini in Bologna.

**Publications:**

- Marabini, S. and Vai, G.B., 2018, *Christian Missionaries and Natural Things: The Italian-style Geological Collection of Cimatti's Museum at Chofu, Tokyo, Japan*. "Historia Scientiarum", 27, 3, pp. 334-352.
- Rovella, N., Marabini, S., Mirocle Crisci, G., La Russa, M., 2016, *Geology and conservation of cultural heritage: The study case of the Forty Martyrs rupestrian church in Şahinefendi area (Cappadocia, Turkey).* "Rendiconti Online della Società Geologica Italiana". 38, pp. 89-92.

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**Marco PANTALONI** (Geological Survey of Italy – ISPRA, Rome) continued his research on the history of geological sciences, with particular attention to historical geological maps, history of Geological Survey and biographies of geoscientists. In September he was nominated coordinator of the "History of Geoscience working group" of the Geological Survey of Italy and maintained the role of coordinator of the "History of Geoscience Section" of the Geological Society of Italy.
In June 2017 he presented the talk: "Walking and talking on the mountains of Saint Francis: geological field trips and meetings in Umbria between XIX and XX centuries" at the 13th Sedimentary Geology Meeting at University of Perugia (Italy). In June he started the curatorship of the special volume, *Three Centuries of Geology in Italy*, to be published in March 2018 on the "Rendiconti online della Società Geologica Italiana." In September he presented the talk "On the trail of Hermann Wilhelm Abich in Italy: a journey through the Italian volcanoes" at the 42nd International Commission on the History of Geological Sciences (INHIGEO) Symposium in Yerevan, Armenia.
He continued the digitizing, cataloging and archiving of the historic geological maps and archive maintained in the Library of the Geological Survey of Italy – ISPRA. He continued his collaboration with the *Treccani* Italian Enciclopedia for the redaction of biographies of Italian geologists.

**Publications:**

Argentieri, A., Pantaloni, M., 2017, *Walking and talking on the mountains of Saint Francis: geological field trips and meetings in Umbria between XIX and XX centuries*. "Journal of Mediterranean Earth Sciences", 9, pp. 75-79.

Console, F., Pantaloni, M., 2017, *La cartografia storica: dal cartaceo al digitale*. "Memorie Descrittive della Carta Geologica d'Italia", 100, pp. 56-60.

Console, F., Motti, A., Pantaloni, M., 2017, *L'intermittenza delle sorgenti del Torbidone nella Piana di Norcia: analisi delle fonti storiche a partire dal XIV secolo*. "Rendiconti Online della Società Geologica Italiana", 43, pp. 36-56. DOI:10.3301/ROL.2017.34

Console, F., Pantaloni, M., Tacchia, D. (Eds.), 2017, *La cartografia del Servizio Geologico d'Italia*. "Memorie Descrittive della Carta Geologica d'Italia", 100, 300 pp. (Roma, ISPRA).

Fabbi, S., Console, F., Pantaloni, M., 2017, *1876 -1881: Domenico Lovisato and the geology of Calabria (Southern Italy).* "Italian Journal of Geosciences", 136, pp. 471-484. DOI: 10.3301/IJG.2017.100.

Pantaloni, M., Console, F., Petti, F.M., 2018, *On the trail of Hermann Wilhelm Abich in Italy: a*

*journey through the Italian volcanoes*, "Italian Journal of Geosciences", 137, pp. 106-127. DOI:10.3301/IJG.2017.20

Pantaloni, M., 2017, *Sabatini, Venturino.* In *Dizionario Biografico degli Italiani*, Roma, Treccani, vol. 89, http://www.treccani.it/enciclopedia/venturino-sabatini_%28Dizionario-Biografico%29/

Pantaloni, M., Console, F., Petti, F.M., 2017, *La cartografia geologica delle Alpi meridionali tra XIX e XX secolo: un esempio di collaborazione italo-austriaca*. "L'Universo", 5/2016, pp. 910-931.

Pantaloni, M., Console, F., Lorusso, L., Petti, F.M., Romano, M., Franchini, A.F., Porro, A., 2017, *Italian Physicians' contribution to geosciences. In: Geology and Medicine: Historical Connections*. Geological Society of London, Special Publications. vol. 452, pp. 55-75 DOI: 10.1144/SP452.17

Pantaloni, M., 2017, *Portis, Alessandro*. In *Dizionario Biografico degli Italiani*, Roma, Treccani, vol. 85. http://www.treccani.it/enciclopedia/alessandro-portis_%28Dizionario-Biografico%29/

Pantaloni, M., Console, F., 2017, *The ephemeral Ferdinandea*. In: *Geology in History*. EuroGeoSurveys. 131 pp.

Pantaloni, M., Console, F., Petti, F.M., 2017, *1867: notizie geologiche dalle Province del Regno d'Italia*. "Memorie Descrittive della Carta Geologica d'Italia", 100, pp. 8-43.

Pantaloni, M., 2017, *La Carta geologica d'Italia alla scala di 1:1.000.000 dal 1881 al 2011*. "Memorie Descrittive della Carta Geologica d'Italia", 100, pp. 74-78.

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**Claudia PRINCIPE** (Istituto di Geoscienze e Georisorse – CNR National Research Council, Pisa) continued her researches in the history of volcanology and geo-archaeology, as well on the history of the earth sciences in the early meetings of Italian scientists.

**Publications:**

- Principe, C., Vezzoli, L.M., 2017, *Precedenti studi vulcanologici sul Monte Amiata*. In *Il Vulcano di Monte Amiata*, a cura di Claudia Principe, Guido Lavorini e Luigina M. Vezzoli, Nola, Edizioni Scientifiche e Artistiche, pp. 71-84 ISBN 978-88-99742-32-4
- Principe, C., La Felice, S., 2017, *I personaggi ed argomenti scientifici trattati nella Sezione di Geologia, Mineralogia e Geografia della Quinta Adunanza*. In *Atti della riunione sulla quinta Adunanza degli Scienziati Italiani tenutasi a Lucca nel 1843* (4 giugno 2016), Viareggio, Tipografia Ancora, pp. 77-92.
- Principe, C., 2017, *Pilla e la produzione di fiamme dai vulcani*. In *Atti della riunione sulla quinta Adunanza degli Scienziati Italiani tenutasi a Lucca nel 1843* (4 giugno 2016), Viareggio, Tipografia Ancora, pp. 93-105.

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**Ezio VACCARI** (University of Insubria, Varese) continued his research on the history of the geological sciences in 18th-19th century, with particular attention to the history of popular communication in geology. He also continued to teach history of geological sciences within his course of history of mountains at the University of Insubria in Varese and Como. From February to April 2016 as a visiting professor at Laboratoire Science, Philosophie, Humanités (SPH) of the Universities of Bordeaux and Bordeaux Montaigne (France) within the program IdEx - Initiative d'Excellence de l'Université de Bordeaux, he worked on a research project on "The role of the Environmental Sciences in the development of popular science in 19$^{th}$ century France and Italy: a comparative study in the history of scientific communication**".**

He was a member of the program committee of the International Symposium "IX Congress of mining and metallurgical history in the European SW" (Escuela Técnica Superior de Ingenieros de Minas de Madrid, Spagna), 23-26 June 2016. In September 2016 he was one of the convenors (with Marco Pantaloni, Alessio Agentieri, Gianbattista Vai e Marco Romano) of the session "Thee centuries of Geology in Italy" at the 88th Congress of the Italian Geological Society in Naples (7-9 September). He also organized a special session on "Institutions and communication of the Earth sciences in Italy from 18th to 20th century" at the meeting of the Italian Society of History of Science (Sasso Marconi, Bologna, 15-17 September 2016).

**Conferences:**

- 88° Congress of the Italian Geological Society, Napoli, Università degli Studi di Napoli Federico II, September 2016, Session 35, "Three centuries of geology in Italy"; paper "The history of Geology in Italy: origins, development and future".
- Meeting of the Italian Society for the History of Science "Scienza Innovazione Istituzioni", Sasso Marconi (Bologna), Fondazione Guglielmo Marconi, September 2016, paper "Istituzioni e geologia nell'Italia dell'Ottocento: una riflessione storiografica"
- GEOTOUR 2016. International Conference on Geotourism, Mining Tourism, Sustainable Development and Environmental Protection, Firenze, Università degli Studi di Firenze / CNR – IBIMET, October 2016: paper "When geology meets tourism: the historical routes of the geosciences in the Alps".
- 25th Internatonal Congress of History of Science and Technology, Universidade Federal, Rio de Janeiro (Brasile), July 2017: paper *Geological correspondences in an 18th century scientific journal: the Giornale d'Italia (1764-1796).*
- 42nd INHIGEO Symposium, Academy of Sciences, Yerevan (Armenia), September 2017: paper *Between insiders and outsiders: INHIGEO and the history of geology in Italy*.

**Publications:**

- Vaccari, E. 2016, *Da Rio, Nicolò*. In *Dizionario Biografico degli Italiani,* Roma, Treccani, vol. 87. (http://www.treccani.it/enciclopedia/nicolo-da-rio_(Dizionario-Biografico)/)
- Vaccari, E., 2016, *When geology meets tourism: the historical routes of the geosciences in the Alps*. In *Proceedings of the GEOTOUR 2016 International Conference on Geotourism, Mining Tourism, Sustainable Development and Environmental Protection*, edited by F. Ugolini, V. Marchi, S. Trampetti, D. Pearlmutter, A. Raschi, Firenze, IBIMET-CNR, pp. 174-177.
- Vaccari, E. 2016, *La cultura materiale come bene comune: idee per un progetto.* In *Contributi e riflessioni sui beni comuni*, a cura di G. Bottino, M. Cafagno, F. Minazzi, Milano-Udine, Mimesis, pp. 69-72.
- Vaccari, E., 2016, *Arduino (Giovanni)*. In *Dictionnaire thématique des Alpes*, sous la direction de Sylvain Jouty, Grenoble, Glénat, p. 589.
- Vaccari, E., 2016, *Allioni (Carlo).* In *Dictionnaire thématique des Alpes*, sous la direction de Sylvain Jouty, Grenoble, Glénat, p. 109.
- Vaccari, E., 2016, *Dolomieu (Déodat de Gratet de)*. In *Dictionnaire thématique des Alpes*, sous la direction de Sylvain Jouty, Grenoble, Glénat, p. 39.
- Vaccari, E., 2016, *Robilant (Spirito Benedetto Nicolis di)*. In *Dictionnaire thématique des Alpes*, sous la direction de Sylvain Jouty, Grenoble, Glénat, p. 85.

**Gian Battista VAI** (University of Bologna)**,** continued his research activity in history of geology and paleontology, as Director of the geological museum "Giovanni Capellini", Bologna University, organizing exhibitions and popular conferences also on the history of geology. Focus was devoted to the centennial anniversary of the dangerous earthquakes of Rimini 1916 and Santa Sofia 1917.
He has chaired the celebration of Raimondo Selli's birth Centennial in 2016 with four events in Bologna (June, Congress of the Italian Quaternary Association), Naples (September, Congress of the Italian Geological Society), Rome (October, Accademia dei Lincei), Bologna (November, Accademia delle Scienze dell'Istituto di Bologna).

**Publications:**

- Vai, G.B., 2015, *Geologia e archeologia preistorica: i pionieri europei prima del 1860*. In A. Guidi (ed.), *150 anni di Preistoria e Protostoria in Italia*, IIPP Roma 2011, ISBN 9788860450555, pp. 31–40.
- Vai, G.B., 2017, *L'opera scientifica di Raimondo Selli (1916-1983).* Seconda edizione, Società Geologica Italiana, Suppl. n.2 "Italian Journal of Geosciences", 137 n. 1, pp. 1-96.
- Vai, G.B. (editor), 2017, *Raimondo Selli (1916-1983) e la Società Geologica Italiana,* Suppl. n.2 "Italian Journal of Geosciences", 137 n. 1, pp. 97-133.
- Vai, G.B., 2015, *Leonardo e la geologia: la scienza indagata nel paesaggio*. In *Naturale e/o Artefatto*, collana Filosofie n. 348, Mimesis Edizioni Milano, pp. 31-39..
- Marabini, S., Vai, G.B., 2018, *Christian Missionaries and Natural Things: The Italian-style Geological Collection of Cimatti's Museum at Chofu, Tokyo, Japan*. "Historia Scientiarum", 27, 3, pp. 334-352.
- Romano, M., Vai, G.B., Cifelli R.L., 2016, *The first geological map: an Italian legacy*, "Italian Journal of Geosciences", 135, n.2, pp. 261-267.

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## LITHUANIA

Main events for historians of geology and natural sciences in Lithuania in 2017 were the INHIGEO 50-years Jubilee Symposium held in Yerevan, in September 2017, and the International Conference *There is no future without the past,* dedicated to 215$^{th}$ anniversary of the birth of famous XIX century world-wide scientist Ignacy Domeyko (1802-1889) who graduated from Vilnius University, became a great explorer of Andean geology and mineralogy. The Domeyko Conference was held 28–29 July 2017 in Vilnius, Lithuania, and continued 30 July to 1 August in Minsk, Belarus. This was followed with a two-day's excursion throughout homeland of Domeyko's noble family which settled in the former Grand Duchy of Lithuania, present western Belarus. The Conference was attended by ca. 80 participants, and some descendants of Ignacy Domeyko from Chile, USA, and Australia took part in it.

To this Conference in July 2017 a solid academic monograph was published by Vilnius University: *Ignacy Domeyko – geologist, mineralogist and mining engineer* = [in Lirhuanian language] *Ignotas Domeika: geologas, mineralogas, kalnų inžinierius*. – Vilniaus universitetas, Lietuvos Ignoto Domeikos draugija; compiler and scientific editor Algimantas Grigelis. Vilniaus universiteto leidykla, 2017, 726 pp., ca. 600 figures.

An extended summary as a Compendium of this book entitled *CHILE, A SECOND HOMELAND OF IGNACY DOMEYKO* is published in this volume.

As regards the Yerevan Synposium, two articles were written by A. Grigelis to INHIGEO 50-yėars Jubilee Volume no. 442, 2017, published by London Geological Society. However, a very successful INHIGEO Jubilee Symposium held in Yerevan in September 2017, was not attended by him due to personal reasons.

Another activity of Acad. Algimantas Grigelis was devoted to ongoing country and international issues. In 2017, A, Grigelis continuously edited *Baltica,* An International Journal on Earth Sciences (biannual; Web on Science rank, ISI Thomson Reuters). Several public papers were published by him in *The News of the Lithuanian Academy of Sciences* and in *The Journal of the Geological Society of Lithuania 'Horizons of Geology'* in Vilnius.

Important to note activity in the Working Group of the European Academies Science Advisory Council (EASAC), where Prof. A. Grigelis has been involved, and Joint Research Centre (JRC) of the European Commission have finalized in January 2017 the extended report on *Marine sustainability in an age of changing oceans and seas*.

Annual Vilnius' Conference *SCIENTIA ET HISTORIA-2017* that held on 30 March brought about 30 reports on different issues of history of philosophy, education, social, physical and natural sciences, few reports were devoted to jubilee dates of eminent Lithuanian scientists. Prof. A. Grigelis gave a presentation *Ignacy Domeyko (1802–1889) in thewhorls of his May years [in Lithuanian]*.

In 2017 **A. Grigelis** published farewell articles to memory of Dr. Sci. Pranas Misius (1929–2016), well-known Brachiopoda palaeontologist, and Professor Emelyan Emelyanov (1937-2017), the eminent scientist of the Baltic marine geology.

Several chapters have been written by A. Grigelis on the works and life of Ignacy Domeyko at website of the Lithuanian Society of historians of sciences and philosophers
http://www.moksloistorija.lt/zinynas/domeika-ignotas

Member of INHIGEO, **Dr. Gailė Žaludienė** in 2017 has published some articles on the history of geology in Lithuania.

**Main Publications (periodicals, books, papers)**

*Baltica*: an International Journal on Earth Sciences / Nature Research Centre, Institute of Geology and Geography; scientific editor A. Grigelis. – Vilnius, 2017. – ISSN 0067-3064. Vol. 30, No. 1–2, 139 p. *[ISI Web on Science list, 2016 IF 0,538]*.

**Book**

*Ignacy Domeyko – geologist, mineralogist and mining engineer* = [in Lirhuanian language] *Ignotas Domeika : geologas, mineralogas, kalnų inžinierius* / Vilniaus universitetas, Lietuvos Ignoto Domeikos draugija ; sudarytojas ir mokslinis redaktorius / compiler and scientific editor A. Grigelis ; authors: A. Grigelis, J. A. Krikštopaitis, Z. Wojcik, J. R. Jofre, Paz Domeyko, A. Česnulevičius, J. Banionis, A. Piročkinas, V. Skuodis, A. Gaigalas, M. Kabailienė, R. Šviedrys, A. Orentaitė, G. Motuza, V. Vitkauskas, V. Dvareckas, R. Griškaitė, Z. Mačionis, J. Satkūnas, E. szowska, A. Wolska, A. Paulo, Z. J. Ryn, V. Baltrūnas, B. Karmaza, B. Railienė, T. Makhnach, S.

Dagienė. – Vilnius: Vilniaus universiteto leidykla, 2017. – 726 pp.: ca. 600 ilustr. – ISBN 978-609-459-852-4.

The earliest geological observations in Lithuania: a historical viewpoint: // *History of Geosciences: celebrating 50 years of INHIGEO*. – London, 2017, 367–376. – (Geological Society, London, Special Publications; 442).

International Commission on the History of Geological Sciences: the earliest events / A. Grigelis, S. Czarniecki // *History of Geosciences: celebrating 50 years of INHIGEO*. – London, 2017, 21–27. – (Geological Society, London, Special Publications; 442).

Marine environment data management related to human activity in the south-eastern Baltic Sea (Lithuanian segment) / Grigelis A., Blažauskas N., Gelumbauskaitė L. Ž., Gulbinskas S., Suzdalev S., Ferrarin Ch. // Oceanographic and Marine Cross-Domain Data Management for Sustainable Development. Chapter 12. – Hershey, PA, 2017, 282–302 http://www.igi-global.com/book/oceanographic-marine-cross-domain-data/148510

Interview with A. Grigelis / author I. Darulienė // Žinių radijas = Radio News. – 2017 m. rugsėjo 2 d. **https://www.ziniuradijas.lt/laidos/istorija-gyvai/apie-isskirtine-xix-a-musu-krasto-asmenybe-kurios-vardu-pavadintas-mineralas?soundtrack=1**

**Lithuania 2017** - continued

Chile, a country of hapiness and distress of Ignacy Dometko = [Lith.] Čilė – Ignoto Domeikos laimės ir kančios šalis. Geologijos akiračiai, Vilnius, 2017, Nr. 3, 25–31.

The Ignacy Domeyko for Lithuania: a new book story // International conference "The is no future without the past": *Proceedings Book*, July 28–30, 2017, Vilnius, Lithuania, 2017, 30–32.

*Ignacy Domeyko – geologist, mineralogist and mining engineer*: a short compendium of the book / translated from Lithuanian by M. A. Piesinas // In: *Ignotas Domeika: geologas, mineralogas, kalnų inžinierius* / compiler and scientific editor A. Grigelis. – Vilnius, 2017, 637–645.

*Ignacy Domeyko – geolog, mineralog, inżyniero de minas*: un breve resumen del libro / traduccióne del ingles por P. Domeyko y C. Domeyko // In: *Ignotas Domeika: geologas, mineralogas, kalnų inžinierius* / compiler and scientific editor A. Grigelis. – Vilnius, 2017, 654–662. [In Spanish].

*Ignacio Domeyko – geólogo, minerólogo, ingenier górnictwa*: streszczenie książki / z hiszpańskiego tłumaczył Z. J. Ryn // *Ignotas Domeika: geologas, mineralogas, kalnų inžinierius* / compiler and scientific editor A. Grigelis. – Vilnius, 2017, 646–653.

Pranas Misius, 1929-06-10–2016-11-07 / A. Grigelis, V. Karatajūtė-Talimaa, D. Užpalis, V. Vienožinskis. – Portr. // Geologijos akiračiai. – Vilnius, 2017, Nr. 1, p. 63.

Polak z Litwy, bohater narodowy Chile : [interview z A. Grigelis / author] A. Stacewicz // L24.lt. – 2017 m. rugpjūčio 30 d. [In Polish]. http://l24.lt/pl/spoleczenstwo/item/206009-polak-z-litwy-bohater-narodowy-chile

Some thoughts on Ignacy Domeyko heritage in present Belarus and Lithuania. In: Геология и минерально-сырьевые ресурсы запада Восточно-Европейской платформы: проблемы изучения и рационального использования: Международная научная конференция, посвященная 215-летию со дня рождения И. Домейко, Минск, 31 июля–3 августа 2017, 363–365.

Weighty contribution to world marine geosciences knowledge: a review / A. Grigelis, H. Vallius. *Baltica*, Vilnius, vol. 30, No. 1 (2017), 61–62.

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Mūsų mokslo veidai: dienos nuotrauka [Faces of our sciences: dayjust] // Bernardinai.lt http://www.bernardinai.lt/straipsnis/2017-05-10-musu-mokslo-veidai/159224

Piročkinas A. Visais atžvilgiais įspūdingas leidinys. Recenzija kn.: Ignotas Domeika: geologas, mineralogas, kalnų inžinierius [Lith. Review of the book]. Vilnius: Vilniaus universiteto leidykla, 2017 // Lietuvos aidas, Vilnius, 2017, rugpj 26, p. 1–2.

Susipažinkite – nematomas Lietuvos elitas: geologas, paleontologas, mokslo istorikas prof. habil. dr. Algimantas Grigelis [Acquaintan with unseen Lithuanian elite ...] https://www.delfi.lt/mokslas/mokslas/susipazinkite-nematomas-lietuvos-elitas.d?id=74582196&page=3

Submitted by Algimantas Grigelis, Vilnius

**Prof. akad. Algimantas Grigelis**'achievements in 2017: geology, palaeontology, history of sciences.

Edited by S. Dagienė, LMAVB

Algimantas Grigelis, b. 1931.05.11 in medics family in Kaunas city, graduated gymnasium in Utena town (1949), geology in Vilnius University (1954), micropalaeontology in Minsk University (Belarus, 1957). In 1958, defended candidate degree and in 1981 doctor of geology and mineralogy degree dissertation, both on the Jurassic foraminifera and zonal stratigraphy methods of the Jurassic of the Baltic Region. In 1958, discovered first real planktonic foraminifera in the Oxfordian Stage of Jurassic in Lithuania. Since 1960, he has worked in the Institute of Geology and Geography of the Lithuanian Academy of Sciences, in 1963-1977 – Director of the Institute of Geology. After restoration of Independence of Lithuania, in 1992-2012 – Chairman of the Lithuanian National Committee of Geologists; participated in the International Geological Congresses. Professional work as micropalaeontologist in Lithuania, Poland, Russia, Siberia, Caucasus, Syrian Arab Republic, Sweden, and Canada. He worked also in history of geological sciences (since 1981).

Member of the Lithuanian Academy of Sciences (1992), Professor of geology at Vilnius University (1994), Member since 1972 and Honorary Senior Member of the INHIGEO (2014). Author of 32 books, ca. 400 sci. articles, chapters, essay. Record on the "ResearchGate" includes cz. 150 works, 455 followers, over 6500 reads, 193 citations, score 19.88, index "h" is 7 and 6.

Awards: Karol Bohdanowicz Medal (Poland, 1973), Golden Medal of economics Exhibition (Moscow, 1985), State Prize of Science and Technology (Moscow, 1986), Lithuanian State Science Prize (Vilnius, 1994), Academician Juozas Dalinkevičius Prize (2001).

## PROJECTS
## I. "Baltica"

1. *Baltica*: an International Journal on Geosciences / Nature Research Centre. Institute of Geology and Geography; scientific editor A. Grigelis. – Vilnius, 2017. – ISSN 0067-3064. Vol. 30, No. 1–2 (2017). – 139 p.

## II. "IGNACY DOMEYKO – FOR LITHUANIA AND CHILE"

2. Ignacy Domeyko – a great explorer of Andean geology and mineralogy. 2014-2017.

BOOK: Ignacy Domeyko – geologist, mineralogist and mining engineer / Vilnius University, Lithuanian Ignoto Domeika Society; compiler and science editor A. Grigelis; authors: A. Grigelis, J. A. Krikštopaitis, Z. Wojcik, J. R. Jofre, Pac Domeyko, A. Česnulevičius, J. Banionis, A. Piročkinas, V. Skuodis, A. Gaigalas, M. Kabailienė, R. Šviedrys, A. Orentaitė, G. Motuza, V. Vitkauskas, V. Dvareckas, R. Griškaitė, Z. Mačionis, J. Satkūnas, E. Koszowska, A. Wolska, A. Paulo, Z. J. Ryn, V. Baltrūnas, B. Karmaza, B. Railienė, T. Makhnach, S. Dagienė. – Vilnius: Vilnius University Publ., 2017. – 726 pp.: illustr., faks., portr., maps. – ISBN 978-609-459-852-
In Lithuanian, summaries English, Polish and Spanish.

## III. "Jurassic Micropalaeontology: The planktonic foraminifera of the Jurassic. 2016-2017."

3.1. The planktonic foraminifera of the Jurassic / F. Gradstein, A. Gale, L. Kopaevich, A. Waskowska, A. Grigelio, L. Glinskikh // North American Micropaleontology Section – SEPM: Microfossil IV Conference, Houston, USA, April 4–9, 2017.
<https://www.researchgate.net/profile/Felix_Gradstein/publication/312121161_The_Planktonic_Foraminifera_of_the_Jurassic/links/5870061408ae6eb871bf82b7/The-Planktonic-Foraminifera-ofthe-Jurassic.pdf>.

3.2. The planktonic foraminifera of the Jurassic. Part I: material and taxonomy / F. Gradstein, A. Gale, L. Kopaevich, A. Waskowska, A. Grigelis, L. Glinskikh // Swiss Journal of Palaeontology. – Heidelberg, vol. 136, iss. 2 (2017), p. 187–257.

3.3. The planktonic foraminifera of the Jurassic. Part II: stratigraphy, palaeoecology and palaeobiogeography / F. Gradstein, A. Gale, L. Kopaevich, A. Waskowska, A. Grigelis, L. Glinskikh. – Iliustr., schem. – Bibliogr.: 21 pavad. // Swiss Journal of Palaeontology. – Heidelberg, vol. 136, iss. 2 (2017), p. 259–271.

3.4. The planktonic foraminifera of the Jurassic. Part III: annotated historical review and references / F. Gradstein, A. Gale, L. Kopaevich, A. Waskowska, A. Grigelis, L. Glinskikh // Swiss Journal of Palaeontology. – Heidelberg, vol. 136, iss. 2 (2017), p. 273–285.

## IV. BOOKS

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5. The earliest geological observations in Lithuania: a historical viewpoint. – Iliustr. – Bibliogr.: 58 // History of Geoscience: celebrating 50 years of INHIGEO. – London, 2017. – P. 367–376. – (Geological Society, London, Special Publications; 442).

6. International Commission on the History of Geological Sciences: the earliest events / A. Grigelio, S. Czarniecki // History of Geoscience: celebrating 50 years of INHIGEO. – London, 2017. – P. 21–27. – (Geological Society, London, Special Publications; 442).

7. Marine environment data management related to human activity in the south-eastern Baltic Sea (Lithuanian segment) / Grigelis A., Blažauskas N., Gelumbauskaitė L. Ž., Gulbinskas S., Suzdalev S., Ferrarin Ch. // Oceanographic and Marine Cross-Domain Data Management for Sustainable Development. Chapter 12. – Hershey, PA, 2017. – P. 282–302 <http://www.igi-global.com/book/oceanographic-marine-cross-domain-data/148510>.

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3. Apie išskirtinę XIX a. mūsų krašto asmenybę [Ignotas Domeika], kurios vardu pavadintas mineralas : pokalbis su A. Grigelis / kalbino I. Darulienė [elektroninis išteklius] // Žinių radijas. – 2017 m. rugsėjo 2 d. <https://www.ziniuradijas.lt/laidos/istorija-gyvai/apieisskirtine-xix-a-musu-krasto-asmenybe-kurios-vardu-pavadintas-mineralas?soundtrack=1>.

4. Country reports: Lithuania / A. Grigelis, G. Žalūdienė // INHIGEO Annual Record. – Johnstown, Pennsylvania, USA, 2017, No. 49, p. 123–125 <http://www.inhigeo.com>.

5. Čilė – Ignoto Domeikos laimės ir kančios šalis / Chile, a country of happiness and distress of Ignacy Domeyko. – Iliustr., portr. // Geologijos akiračiai. – Vilnius, 2017, Nr. 3, p. 25– 31.

6. Didysis Čilės mokslo apaštalas: artėjant Ignoto Domeikos 215 metų gimimo jubiliejui. – Iliustr. // Indraja. – Utena, 2017, kovas (Nr. 1), p. 26–27.

7. Epilogas: [knygai “Ignotas Domeika: geologas, mineralogasa, kalnų inžinierius ...”]. – Iliustr. // Ignotas Domeika: geologas, mineralogas, kalnų inžinierius. – Vilnius, 2017. – P. 626–635.

8. The Ignacy Domeyko for Lithuania: a new book story. – Iliustr. – Bibliogr.: 5 // International conference “The is no future without the past”: proceedings book, July 28–30, 2017, Vilnius, Lithuania. – Vilnius, 2017. – P. 30–32.

9. Ignacy Domeyko – geologist, mineralogist and mining engineer: a short compendium of the book / translated from Lithuanian M. A. Piesinas // Ignotas Domeika: geologas, mineralogas, kalnų inžinierius. – Vilnius, 2017. – P. 637–645.

10. Ignacy Domeyko – geolog, mineralog, inżyniero de minas: un breve resumen del libro / traduccióne del ingles por P. Domeyko y C. Domeyko // Ignotas Domeika: geologas, mineralogas, kalnų inžinierius. – Vilnius, 2017. – P. 654–662.

11. Ignacio Domeyko – geólogo, minerólogo, ingenier górnictwa: streszczenie książki / z hiszpańskiego tłumaczył Z. J. Ryn // Ignotas Domeika : geologas, mineralogas, kalnų inžinierius. – Vilnius, 2017. – P. 646–653.

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13. Ignoto Domeikos 215-osioms gimimo metinėms / A. Grigelis, A. Kareiva. – Iliustr. // Lietuvos mokslų akademijos žinios. – Vilnius, 2017, Nr. 4, p. 6–7.

14. Ignoto Domeikos keliais nuo Haradzejos iki Žybartauščinos / A. Grigelis, B. Karmaza. – Iliustr., žml. – Paaišk. išnašose. – Bibliogr.: 13 pavad. // Ignotas Domeika: geologas, mineralogas, kalnų inžinierius – Vilnius, 2017. – P. 509–530.

15. Ignoto Domeikos mokslo ir praktikos kelias / J. Paškevičius, A. Grigelis, G. Motuza. – Iliustr. – Bibliogr.: 32 pavad. // Ignotas Domeika: geologas, mineralogas, kalnų inžinierius. – Vilnius, 2017. – P. 419–439.

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24. Paminklinės kapavietės LDK žemėse. – Iliustr. // Ignotas Domeika: geologas, mineralogas, kalnų inžinierius – Vilnius, 2017. – P. 577–587.

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26. Polak z Litwy, bohater narodowy Chile: [pokalbis su A. Grigeliu / kalbino] A. Stacewicz [elektroninis išteklius]. – Iliustr. // L24.lt. – 2017 m. rugpjūčio 30 d. < http://l24.lt/pl/spoleczenstwo/item/206009-polak-z-litwy-bohater-narodowy-chile>.

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## VII. MEMBER OF EDITORIAL BOARD

30. Geologija. Geografija = Geology. Geography / Lietuvos mokslų akademija; redakcinė kolegija: D. Veteikis (pirmininkas), D. Kaminskas (pirmininko pavaduotojas); nariai: V. Baltrūnas, G. Beconytė ... A. Grigelis ... [ir kt.]. – Vilnius, 2015. ISSN 2351-7549.

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32. Ignacy Domeyko for Lithuania: a new book story // The International Conference “There is no future without the past,” 28–29 July 2017, Vilnius.

33. Knygos “Ignotas Domeika. Geologas, mineralogas, kalnų inžinierius” aptarimas. 2017 m. lapkričio 10 d., Vilniaus universiteto Chemijos ir geomokslų fakulteto Geologijos ir mineralogijos katedra.

34. Knygos “Ignotas Domeika. Geologas, mineralogas, kalnų inžinierius” pristatymas Baltarusijos užsienio reikalų ministerijoje, 2017 m. liepos 31 d., Minskas.

35. Knygos “Ignotas Domeika. Geologas, mineralogas, kalnų inžinierius” pristatymas Lietuvos mokslų akademijos Vrublevskių bibliotekoje, 2017 m. liepos 28 d., Vilnius.

36. Knygos “Ignotas Domeika. Geologas, mineralogas, kalnų inžinierius” sutiktuvės. 2017 m. spalio 10 d., Lietuvos MA Mažoji konferencijų salė, Vilnius.

37. LRT laida: Specialus tyrimas: Gedimino pilies kalno šlaitų būklė ir jų tvarkymo problemos. 2017 m. lapkritis.

38. Some thoughts on Ignacy Domeyko heritage in present Belarus and Lithuania // Геология и минерально-сырьевые ресурсы запада Восточно-Европейской платформы: проблемы изучения и рационального использования: Международная научная конференция, посвященная 215-летию со дня рождения И. Домейко, г. Минск, 31 июля–3 августа 2017 г.

## IX. REFERENCES ON ALGIMANTAS GRIGELIS

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40. Geologijos mokslo ateitis Lietuvoje – Ar turime viziją? – Iliustr. // Geologijos akiračiai. – Vilnius, 2017, Nr. 4, p. 5.

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46. Mūsų mokslo veidai: dienos nuotrauka [elektroninis išteklius]. – Portr. // Bernardinai.lt: interneto dienraštis. – 2017, gegužės 10 d. <http://www.bernardinai.lt/straipsnis/2017-05-10-musu-moksloveidai/159224>.

47. Piročkinas A. Visais atžvilgiais įspūdingas leidinys. – Iliustr. – Rec. kn.: Ignotas Domeika: geologas, mineralogas, kalnų inžinierius. Vilnius: Vilniaus universiteto l-kla, 2017 // Lietuvos aidas. – Vilnius, 2017, rugpj 26, p. 1–2.

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## MEXICO

## 2017 ANUAL REPORT

### Scientific Conferences

Morelos-Rodríguez, L., "125 years of the History of Meteorites in the Palace of Mining", 38º Fair Book of Palace of Mining, March 2017.

González-Escamilla, F.O. & L. Morelos-Rodríguez, "Teaching Werner to the New World: Geognosy in the School of Mines of Mexico, 1795-1805", *Werner Symposium*, Technical University Freiberg, June 2017.

Morelos-Rodríguez, L., "Scientific Memory in the Mexican Historical Sciences: Geology in the Early 20th Century", *25th International Congress of History of Science* and *Technology*, Rio de Janeiro, July 2017.

Morelos- Rodríguez, L., "Professional Mining Education in Nineteenth-century Mexico", Celebration of the 10th Anniversary of the Museum of Metals, Met-Mex Peñoles, September 2017.

Morelos-Rodríguez, L., "Pioneer Women in the History of Earth Sciences in Mexico", *Conference Cycle of Research and Teaching 2017.* División de Ingeniería en Ciencias de la Tierra, Faculty of Engineering-UNAM, October 2017.

Morelos-Rodríguez, L., "Heroes, statues and monuments. The construction of the geological memory in Mexico", Colloquium *Science and Memory. The use of the historiography by the scientific disciplines in Mexico*, Faculty Faculty of Higher Studies Acatlan - UNAM, November 2017.

Uribe-Salas, José Alfredo, "Science and economics in copper exploitation of in Michoacán, XVI-XIXth Centuries", II Colloquium on Geographical and Naturalistic Research in Mexico, University of Guadalajara, University Center of the Lakes, Lagos de Moreno, Jalisco, Friday April 28, 2017.

Uribe-Salas, José Alfredo, "Geological-mining studies and innovation proposals for the use of metal resources in Tlalpujahua and Angangueo, nineteenth century", Regional Conference on Economic History of Western Mexico, El Colegio de Michoacán, September 21 and 22 of 2017.

Uribe-Salas, José Alfredo, "The mining landscape in the work of Mexican mine engineers, XIX century", XIII Meeting of Historians of Latin American Mining, Section of Ethnohistory, Faculty of Philosophy and Letters-UBA, Buenos Aires, Argentina, 4 and April 7, 2017.

Uribe-Salas, José Alfredo & Teresa Cortés-Zavala, "Science for Silver: Santiago Ramírez in *El Explorador Minero*, 1876-1877", VI La Plata International Congress in Latin America. Centuries XVI to XIX, Canary Islands, Tenerife, From 9 to 14 October 2017.

### Book Presentations

Uribe-Salas, José Alfredo, *Los albores de la geología en México. Mineros y hombres de ciencia*, [The Dawn of Geology in Mexico. Miners and Men of Science] by Alfredo Uribe-Salas, Autonomous Metropolitan University-Unit Iztapalapa, February 2, 2017.

Uribe-Salas, José Alfredo, *Economía, sociedad y cultura en la historia de la minería latinoamericana* [Economy, Society and Culture in the History of Latin American Mining] by Alfredo Uribe-Salas, Inés Herrera, Alma Parra, Omar González Escamilla & Lucero Morelos, XIIIth Meeting of Historians of Latin American Mining, Buenos Aires Argentina, April 7, 2017.

Uribe-Salas, José Alfredo, *Escuelas de Minas mexicanas. 225 años del Real Seminario de Minería* [Mexican Mining Schools. 225 years of the Real Seminary of Mining] by Omar Escamilla-González & Lucero Morelos-Rodríguez, International Book Fair of Guadalajara on December 1, 2017.

**Recent Bibliography**

**Books**

Escamilla-González, Omar & Lucero Morelos-Rodríguez, *Escuelas de Minas Mexicanas. 225 años del Real Seminario de Minería de México* [Mexican Mining Schools. 225 years of the Real Seminary of Mining], Facultad de Ingeniería-UNAM, 2017. ISBN: 978 607 02 9870 7.

Torres-Montúfar, Óscar, *Ciencia y especulación. El viaje de William More Gabb a Baja California en 1867* [Science and Speculation. William M. Gabb's Journey in Baja California in 1867], Historiadores de las Ciencias y las Humanidades, 2017.

**Articles and book chapters**

Morelos-Rodríguez, L. & Sabas-Silva A.L., "La familia Bustamante: Un linaje científico del siglo XIX" [The Bustamante Family: A Nineteenth-Century Scientific Lineage", in: Saladino-García, A. & Zamudio-Varela, G. (coords.), *Científicos y humanistas en la historia de México* [Scientists and humanists in the history of Mexico], 2017.

Morelos-Rodríguez, L. & O. Escamilla-González, "Minería, estado y empresarios. La Escuela Práctica de Minería y Metalurgia de Fresnillo (1854-1858)" [Mining, State and Entrepreneurs. Fresnillo's Mining and Metallurgical Practical School (1854-1858)], in L.M. Pérez-Castellanos & Z. Melchor-Barrera (coords.), *Pasado, presente y futuro de la ciencia en México*, [Past, Present and Future of Science Mexico], Universidad de Guadalajara, 2017, ISBN: 978 607 742 816 9.

Uribe-Salas, José Alfredo & Teresa Cortés-Zavala, "Geología y estadística del territorio de Michoacán, siglo XIX" [Geology and Statistics of Michoacan Territory, 19th century], *Ciencia Nicolaita*. *Revista científica de la Universidad Michoacana de San Nicolás de Hidalgo*, no. 72, December 2017, pp. 75-96. ISSN: 2007-7068.

Uribe-Salas, José Alfredo & Teresa Cortés-Zavala,"Biografía e historia de la ciencia mexicana en la obra de Santiago Ramírez (1836-1922)" [Biography and History of Mexican Science in the Works of Santiago Ramírez (1836-1922)], *Revista Inclusiones*, vol. 4, no. 3, July-September 2017, pp. 57-74. ISSN 0719-4706.

Uribe-Salas, José Alfredo, "Plata y tecnología en las minas de Angangueo, entre 1790 y 1840" [Silver and technology in the mines of Angangueo (Mexico) between 1790 and 1840], in Jesús Paniagua & Niria Salazar (Coords.), *El tesoro* del lugar florido. *Estudios* sobre la *plata iberoamericana. Siglos XVI-XIX* [Treasure from Flowery Place. Studies on Ibero-American Silver (XVI-XIXth Centuries), Univiersidad de León-Instituto Nacional de Antropología e Historia, España, 2017, pp. 317-339. (ISBN: 978-84-946559-3-7).

Uribe-Salas, José Alfredo, "Exploración y descripción del territorio minero mexicano" [Exploration and Description of Mexico's Mining Territory", in Luz F. Azuela & Rodrigo Vega (coords.), *Estudios geográficos y naturalistas, siglos XIX y XX* [Geographical and Naturalistic Studies, 19th and 20th Centuries], Instituto de Geografía, UNAM, 2017, pp. 15-30. (ISBN: 978-607-02-9674-1).

**Book reviews**

Uribe-Salas, José Alfredo, *El hombre prehistórico y los orígenes de la humanidad* [Prehistoric Man and the Origins of Humanity] by Hugo Obermaier. *Saberes. Revista de historia de las ciencias y las humanidades*, no. 1, enero-junio 2017, pp. 159-161. ISSN-2448-9166.

Uribe-Salas, José Alfredo, *Yammerschuner. Darwin y la darwinización en Europa y América Latina* [Yammerschuner. Darwin and Darwinization in Europe and Latin America, *Saberes. Revista de historia de las ciencias y las humanidades*, no. 2, junio-diciembre 2017, pp. 150-153. ISSN-2448-9166.

As a final note, we would like to add that members of our group continue teaching three different courses in the National Autonomous University (UNAM) and Universidad Michoacana de San Nicolás de Hidalgo (UMSNH), containing topics on the History of Geological Sciences, that contribute to raise the interest of young students in our subject matter.

Dr. Luz F. Azuela; lazuela@igg.unam.mx

## PORTUGAL

**Teresa Salomé Mota**

### Papers in International Journals

Mota, Teresa Salomé (2017) "Those knights in shining armor: public intervention on behalf of geology and geologists in Portugal during the dictatorship (1940-1960)", *Earth Sciences History*, 36, 142-159.

Mota, Teresa Salomé (2017), "Book Review: Irina Podgorny et al. Diccionario Histórico de las Ciencias de la Tierra en la Argentina", *Earth Sciences History*, 36, 165-167.

### Editor in International Books

Mayer, W.; Clary, R; Lazuela, L.; Mota; T. S. and Stanislaw; W. (eds.) (2017) *History of Geoscience: Celebrating 50 years of INHIGEO* (INHIGEO/Geological Society of London).

### Chapters in International Books

Mota, Teresa Salomé and Carneiro, Ana (2017) "The ups and downs of geology in Portugal; the Geological Survey, a historical perspective" in Mayer, W.; Clary, R; Lazuela, L.; Mota; T. S. and Stanislaw; W. (eds.) *History of Geoscience: Celebrating 50 years of INHIGEO*, Special Publications, 442, (INHIGEO/Geological Society of London).

### Oral Presentations in Scientific Meetings

Mota, T. S., "A geologia, esse lugar estranho", CIUHCT conference, Faculty of Sciences and Technology of the New University of Lisbon, 16 November 2017 (Invited Presentation).

Mota, T. S., "Francisco Luís Pereira de Sousa (1870—1931): the scientific life of an 'everyday man of science' in Portugal in the beginning of the 20th century", 42nd International Commission on the History of Geological Sciences (INHIGEO) Symposium, Yerevan, Armenia, 12 to 19 September 2017.

Callapez, M. E. and Mota, T. S., "Plastics, Anthropocene and Geological Time", 11th International Conference on the History of Chemistry, Trondheim, Norway, 29 August to 2 September 2017

Mota, T. S., "Francisco Luís Pereira de Sousa (1870—1931), a Portuguese 'everyday man of science' in the beginning of the 20th century", 25th International Congress of history of Science and Technology, Rio de Janeiro, Brazil, 23 to 29 July 2017.

Amador, F.; Bolacha, E. e Mota, T. S. "História da Ciência à deriva? A Teoria da Tectónica de Placas nos manuais de Geologia atuais (7º, 10º e 12º anos de escolaridade)", 2º Encontro de História da Ciência no Ensino, Coimbra, Portugal, 26 and 27 September 2017.

Faria, C.; Valente, B.; Chagas, I.; Amador, F.; Bolacha, E. Mota, T.S., "Que História da Ciência nos contam os manuais escolares antes e depois das Metas? Um estudo comparativo em manuais de Ciências Naturais do 5º ano", 2º Encontro de História da Ciência no Ensino, Coimbra, Portugal, 26 and 27 September 2017.

**Other Activities**

Member of Research Project's Team: "Visões de Lisboa. Ciência, tecnologia e medicina (CTM) e a construção de uma capital tecno-científica (1870-1940)" (PTDC/IVC-HFC/3122/2014), CIUHCT, sponsored by FCT.

Member of Research Project's Team: "O Triunfo da Baquelite — Contributos para uma história dos Plásticos em Portugal' (PTDC/IVC-HFC/5174/2014), CIUHCT, sponsored by FCT.

Presentation of the book: *History of Geoscience: Celebrating 50 years of INHIGEO* (INHIGEO/Geological Society of London), 42nd International Commission on the History of Geological Sciences (INHIGEO) Symposium, Yerevan, Armenia, 12 to 19 September 2017.

Organization of International Workshop "RE-PRESENTING THE BODY. Artifice, Realism, and Hyperrealism in the History and Aesthetics of Anatomic Modelling", 30 May and 1 June 2017, Lisbon, Portugal, Centre of Philosophy of the Faculty of Sciences of the University of Lisbon; Interuniversity Center of History of Science and Technology (CIUHCT); Department of History and Philosophy of Science; Faculty of Sciences of the University of Lisbon.

Organization and presentation of the Interuniversity Centre of History of Science and Technology Conferences, September 2016 to June 2017.

## RUSSIA

The main event of the year 2017 was the anniversary meeting of the INHIGEO in Yerevan. The group of Russian historians of geosciences, Zoya Bessudnova, Natalya Bryanchaninova, Leonid Kolbantsev, Irena Malakhova, and Ivan Vtorov, attended the 42nd INHIGEO Symposium in Yerevan (September 2017) with:

**Oral Presentations**:

*Bessudnova Z.* The heritage of the author of the first Russian monograph on the history of geology Grigory E. Shchurovsky in collections of the Vernadsky State Geological Museum.

*Bryanchaninova N., Vtorov I., Makeyev A.* Transcaucasian academic expedition (1927-1930) led by F. Loewinson-Lessing.

*Kolbantsev L.* Vladimir Lodochnikov and Russian Petrographic Schools.

*Malakhova I.* Some features of the history of geology in Russia.

**Posters:**

*Kolbantsev L., Bessudnova Z.* Personalities of INHIGEO: from Madrid (2010) to Cape Town (2016).

*Malakhova I., Vtorov I.* "It began with Yerevan": first INHIGEO members and photos from the first INHIGEO Symposium (Armenia, 1967).

**Social media information**

During the 42nd INHIGEO Symposium in Yerevan, we decided to open Facebook group for exchange ideas, links, papers, photos, events, etc. It is available now on facebook.com/groups/inhigeo for INHIGEO members and others to follow us. There are already 37 participants in a group at the end of 2017.

**Activities and publications of the Russian members of INHIGEO**

All-Russian Geological Research Institute (VSEGEI, St. Petersburg): **L. Kolbantsev** participated in the events dedicated to the 215th birth anniversary a famous geologist, mineralogist, and ethnologist Ignacy Domeyko (1802-1889): International conference "There is no future without the past. Science on the interface of 19th–21st centuries" in Vilnius (Lithuania), July 28-30, 2017. International scientific conference "Geology and Mineral Raw Materials of the West of Eastern European Platform" and memorial ceremony dedicated to I. Domeyko and A. Mickiewicz, around Minsk (Belarus), July 31 - August, 3, 2017. He made online news about it on vsegei.ru.

**Andrei V. Lapo** participated in the 63rd session of the Paleontological Society of Russia with the poster "Significance of the works of V. I. Vernadsky, A. G. Vologdin and B. S. Sokolov for the study of biosphere processes." For the Exhibition dedicated to the 80th anniversary of a Russian geoscientist, and INHIGEO member **S. I. Romanovsky** (1937-2005) at the Russian Geological Library in St. Petersburg.

N.M. Fedorovsky All-Russian Institute of Mineral Resources (VIMS, Moscow): **Igor G. Pechenkin** (Deputy Director of the Institute) organized in Moscow the Scientific and Practical Seminar "Wealth of the mineral resources for the good of Russia" (February, 21), and 32nd Scientific Conference dedicated to the 100th anniversary of the birth of Anatoly (Nathan) I. Ginzburg (1917–1984) (March, 3).

He took part in scientific meetings in Moscow (February, 21), and St. Petersburg (March, 1) with the next presentations:
History of the All-Russian Institute of Mineral Resources in its library stamps.
Wealth of the mineral resources for the good of Russia.
Creation of a domestic mineral raw material base: (virtual tour of the exhibition of industrial types of ores of VIMS).
Wealth of the mineral resources for the good of Russia: Seminar. Moscow. February 21.

Pechenkin continued his work as the head of the Geological Section of the Central House of Scientists of the Russian Academy of Sciences in Moscow. He organized monthly geological sessions.

Geological Institute Russian Academy of Sciences (Moscow)

**I. Malakhova** and **I. Vtorov** from the Department for the History of Geology, continued to collect data for the online Information System "History of Geology and Mining" (scirus.benran.ru/higeo, currently contains 715 persons, 615 documents, 584 bibliographies, 393 institutions, and 1060 photographs). Vtorov also made presentations: The role of P.S. Pallas expeditions in origin of geological sciences in Russia: IHST RAS with the History of Natural Science section of the Moscow Society of Naturalists, February 16.

**Serge V. Naugolnykh** worked on the brief historical overview of the paleo soils (fossil soils, FPS-profiles) studies, mostly developed by geologists. He prepared the paper and original 3D pictures for publication.

Geological Institute of the Kola Science Centre of the Russian Academy of Sciences (Apatity, Murmansk region)

**Yury L. Voytekhovsky** (Honorary member and Vice-president of the Russian Mineralogical Society) headed and co-headed the organizing committees of several scientific meetings held in Apatity and St. Petersburg, and he was the editor-in-chief and co-editor of the conference proceedings: 5th Conference of Association of Scientific Societies of Murmansk region to the Day of Russian Science. Apatity, February 8; 8th scientific session of Geological Institute of KSC RAS to the Day of Russian Science. Apatity, February 10; 14th Russian (with international participation) Fersman scientific session to the 100th anniversary of Academician A. V. Sidorenko and Dr. Sci. I. V. Bel'kov. Apatity, April 3-5; International scientific conference "200 years of the Russian Mineralogical Society." St. Petersburg, October 10-13. He also wrote to the 80th anniversary of the INHIGEO member **N. P. Yushkin**, and was the editor of the Russian geoscience and history journal *Tietta*, available in PDF.

V. I. Vernadsky State Geological Museum, RAS (Moscow)

**Zoya A. Bessudnova** and **Elena L. Minina** published papers and reviews listed below.

**Publications**

*Books and chapters:*


Malakhova I. G. 2017. The founding of INHIGEO: documents and letters, with comments. *Celebrating 50 Years of INHIGEO* / Eds. W. Mayer, R. M. Clary, L. F. Azuela, N. S. Mots & S. Wolkowicz. London: GSL. P. 9-19. (GSL Special Publication; 442). https://doi.org/10.1144/SP442.38

Naugolnykh S.V. 2017. Paleontology of Moscow and Moscow Region. Moscow: Nauka. 160 p. (In Russian).

Pechenkin I. G., Lyubimova I. E., Robustova G. V. *et al.*, 2017. Veniamin Arkadevich Zilbermints, in: I. G. Pechenkin ed. *Materials to the bibliography of scientists of the VIMS*. Vol. 2. Moscow, VIMS. 164. (In Russian).

Voytekhovsky Yu. L. 2017. Acad. N.P. Yushkin and entropy: to his 80th anniversary. *Russian Mineralogical Society through the eyes of contemporaries*. St. Petersburg: LEMA. P. 129-134. (in Russian).

Voytekhovsky Yu. L. 2017. To the 100th anniversary of Acad. A.V. Sidorenko – the founder and chairman of the Kola branch, honorary member and president of the Russian Mineralogical Society: rare photos from the private archives. Ibid. P. 125-128. (in Russian).

Voytekhovsky Yu. L. 2017. To the 100th anniversary of Dr. Sci. I.V. Bel'kov – chairman of the Kola branch and honorary member of the Russian Mineralogical Society. Ibid. P. 139-141. (in Russian).

Voytekhovsky Yu. L. 2017. An unknown letter of Acad. A. N. Zavaritsky – an example of civil courage. *200 years of the Russian Mineralogical Society: Collection of articles on the history of mineralogy*. St. Petersburg: VSEGEI. P. 163-167. (in Russian).

Voytekhovsky Yu. L. 2017. On the congress of the Russian Mineralogical Society in 1956. Ibid. P. 130-132. (in Russian).

Voytekhovsky Yu. L. 2017. On the history of "ontogeny of minerals": from the archive of Prof. D. P. Grigoriev. Ibid. P. 160-162. (in Russian).

Voytekhovsky Yu. L. 2017. The unknown letters of Acad. A. E. Fersman to Prof. P. N. Chirvinsky and Prof. D. D. Mordukhay-Boltovskoy from the private archive of Prof. D. P. Grigoriev. Ibid. P. 168-174. (in Russian).

*Journal articles:*

Andreeva I. P., Bessudnova Z. A. 2017. Alibert's graphite from Siberia. *Priroda,* 11, 73-81. (In Russian).

Kalenov N. E., Malakhova I. G. 2017. Integrated open access online information resource "History of Geology and Mining". *Information Resources of Russia*. 1. 19-23. (In Russian).

Naugolnykh S. V. 2017. How to exhibit paleontological collections. *Museum.* 4. 50-53 (In Russian).

Pechenkin I. G. 2107. A. F. Middendorf's son tells about the Turkestan expedition: (Flipping through the old pages). *Bulletin of Moscow Society of Naturalists. Geological series.* 92, 1. 71–81 (in Russian).

*Other conference papers:*

Andreeva I. P., Bessudnova Z. A., Nefedova I. V. et al. 2017. Historical collections in exhibition of the Vernadsky State Geological Museum of RAS. *Problems of paleoecology and historical geoecology*: Russian scientific conference dedicated to V.G. Ochev. Moscow, Saratov, 218-231. (In Russian).

Kalenov N. E., Malakhova I. G. 2017. Information system "History of Geology and Mining" as an example of the integration of heterogeneous resources. *Information support of science: new technologies*. Ekaterinburg: UB RAS. 125-131. (In Russian).

Kolbantsev L. R. 2017. The 7th International Geological Congress – the first meeting of geologists in Russia: field excursions and feedback from participants. *There is no future without the past: Science on the interface of 19-21 centuries*: Vilnius, July 28-30, 2017. Vilnius University. 63.

Kolbantsev L. R. 2017. The history of the Mosaic Map "The Industry of Socialism". *Science and technology: questions of history and theory*. 38th International Conference. 33. 151-153; Idem: conferences dedicated to the 100th anniversary of the 1917 Revolution in Russia: "Museum in the Revolution / Revolution in the Museum". (In Russian).

Pechenkin I. G. 2107. An outstanding mineralogist of the XX century – Ekaterina Vladimirovna Rozhkova (on the 120th anniversary of her birth). *The centenary of the Great Russian Revolution: women of Russian science – heritage*: International Scientific Conference: Moscow. November 7-8. Moscow, Janus-K, 272-278. (in Russian).

Pechenkin I. G. 2107. Becoming of the theory of infiltration uranium ore formation. *Uranium: Geology, Resources, Production*: 4th International Symposium: November 28-30. Moscow: VIMS. 89-91. (In Russian).

Pechenkin I. G. 2107. In memory of an outstanding mineralogist and geochemist: (on the 130th anniversary of Veniamin Arkadievich Zilbermints). IHST RAS annual scientific conference dedicated to the 85th anniversary of the IHST RAS. Moscow, Janus-K, 526–529 (in Russian).

Pechenkin I. G. 2107. On the history of the study of the Artic tuff deposit. 42nd INHIGEO Symposium. Yerevan. NAS RA. 130.

Pechenkin I. G., Kremkova E. V. 2017. Professor T. G. Ilyina contribution in formation of Medical Geology fundamentals. *Medical Geology*: 7th International Conference: Moscow, August 28 – September 1. Moscow: 1 MSMU. 46-47. (In Russian).

Pechenkin I. G., Volfson I. F., Petrov V.A. et al. 2017. To the 110th anniversary of the birth of F. I. Volfson. *New in the knowledge of the processes of ore formation*: 7th Russian Scientific and Practical School: Moscow, November 13-17. Moscow: IGEM RAS. 15–20. (in Russian).

Voytekhovsky Yu. L. 2017. Note by the Presidium of the USSR Academy of Sciences on additional allocation of young geologists: from the state archives. *200 years of the Russian Mineralogical Society*: Proceedings of the International scientific conference: St. Petersburg, October 10-13, 2017. St. Petersburg: Mining University. Vol. 2. P. 440-441. (in Russian).

Vtorov I. P., Malakhova I. G. 2017. Operation experience of the Information system “History of Geology and Mining”. *Information support of science: New technologies*: 21st scientific and practical seminar: Tarusa, Russia. July 3-7. Moscow, BAN RAS, 208-215. (in Russian).
Vtorov I. P. 2017. The role of geological research in the development of soil science. *Problems of history, methodology and sociology of soil science*: 3rd scientific conference, Pushchino, Russia November 15-17. Pushchino: KMK. 46-48. (in Russian).

*Reviews*

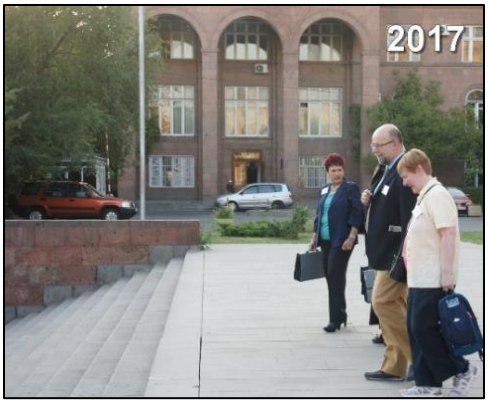
Bessudnova Z. A. 2017. A.A. Inostrantsev, Professor of St. Petersburg University. Compiler V. V. Arkadiev, comments V. A. Prozorovsky, I. L. Tikhonov, 2014. St. Petersburg, Superwave, 352 p. (In Russian).
*Voprosy istorii estestvoznaniya i tekhniki,* 2, 385-391. (In Russian).
Bessudnova Z. A. 2017. Zhamoida A. I., Alexeyev A. S., Rozanov A. Yu., Suyarkova A. A. 2016. The Centenary of the Russian Paleontological Society: A Historical Sketch. St. Petersburg, VSEGEI, 244 p. (In Russian). *INHIGEO Annual Record.* 49. 65-68.

**Photos** *Collages by I. Vtorov.*

Descendants of Ignacy Domeiko in his homeland, Velikaya Medviadka-village, Republic of Belarus, 2017. *Photo by L. Kolbantsev.*

The Constituent Assembly of INHIGEO and 42nd INHIGEO Symposium


(The same place in Yerevan, June 1967 and September 2017)




1967: W. Nieuwenkamp, W. van Leckwijck and others.

2017: L. Azuela, E. Vaccari and others.


INHIGEO field excursions (The same place in Echmiadzin, 1967 and 2017)
1967: N. Spjeldnaes, G. Regnéll and others; 2017: G. Good, S. Wołkowicz, K. Meliksetian, E. Vaccari, S. Master and others.

## SERBIA

The Serbian National Commission of INHIGEO (hereinafter: INHIGEO SRB) officially works as the History of Geology Division of the Serbian Geological Society (www.sgd.rs) and has the INHIGEO "Affiliated Association" status from June 2015.

During the 2017, the following activities were performed:

During 2017, members of the History of Geology Division did not have any significant activity. 2017 was a peaceful year after a very significant period from 2014–2016 when the very important activities in celebrating of the 125th Anniversary of the Serbian Geological Society (SGD) were successfully finished.

In the past year, during the election activities within SGD, there were no new proposals for the Board of the Division. It means that the same management continues in terms up to 2019.

At the end of 2017, we started with the initial activities for celebrating the great anniversary – 150 years since the birth of Prof. Vladimir Laskarev (1868–2018), the great name in both our and European geology (he introduced the term *Paratethys*, 1924). The activity is led by Academician **V. Jović** from the Serbian Academy of Science and Arts, INHIGEO SRB member and member of our Division.

**Prof. Aleksandar Grubić** (Honorary INHIGEO Member) was very active during the last year. In his paper entitled "Geology in *the Estestvoslovy* of Pavle Kendjelac, from 1811," Grubić (2017) provided a glimpse of the previous knowledge of the Earth that existed in the 18th century and is based predominantly on deist philosophy and the mixture of elements of neptunism, catastrophism and simple actualism. Pavle Kendjelac (1766-1834), archimandrite of the St. George Monastery in Brzava (near Timisoara, Romania), was the first doctor of theology among the Serbs and a doctor of philosophy (*i.e.* natural sciences). In his above-mentioned work, he was particularly genuine in explaining the Earth's formation of water, as well as in the order of events in the formation of "stony" mountains. In addition, he has in mind "thousands of centuries," thus a long history of the planet. Some interesting details from the geology of the Serbian

regions are also exposed. From a historical-geological point of view, it is an extremely important fact that P. Kendjelac has determined the bones of mammoth and thus made the first paleontological determination in the Serbian region ever recorded. Because of the archaic Church-Slavic language that it was written in, the book was neglected during the 19th century, and there are no traces of its existence in the history of Serbian geology (Grubić, 2017).

Second, very important paper concerning the beginning and historical development of one of the oldest geological libraries of Higher Schools in Balkan Peninsula, which was founded in 1880 was given by Grubić et al. (2017). The archive of the library has over 72,000 library units, with nearly 1000 journal titles from around the world and monographs printed in 18th century. All of this testifies to the significance of this institution which represents a jewel of cultural and historical heritage.

**Publications**

Grubić, A., 2017. Geology in "The Estestvoslovy" of Pavle Kandjelac, from 1811. *Phlogiston* 25, 155 –191 (in Serbian, English summary).

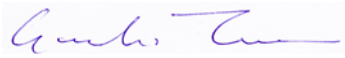
Grubić, A., Surla, M. and Bukavac, M., 2017. Old geological library of the Belgrade Higher School and University of Belgrade", Geološki anali Balkanskoga poluostrva, 78(1), 61–76. doi:https://doi.org/10.2298/GABP1778061G

Jović, V. (Јовић В.), 2017. Владимир К. Петковић (1873–1935) геолог, академик. Пројекат „Приче о времену", Програм „Велики српски научници", Завичајни музеј – Замак културе, Културни центар Врњачке Бање, стр. 15–16 (in Serbian).

Jović, V.(Јовић В.), 2017. Коста В. Петковић (1903–1987) геолог, академик. Пројекат „Приче о времену", Програм „Велики српски научници", Завичајни музеј – Замак културе, Културни центар Врњачке Бање,стр. 16–17 (in Serbian).

**Public lecture**

1. Grubić, A., 2017. "*Actuality and modern views in the works by N. Pantić*" (in Serbian). Symposium dedicated to Academician Nikola Pantić, entitled "Nikola Pantić – man and nature in a spiral of time (90 years since the birth of scientist)", December 15, 2017, Belgrade.



INHIGEO SRB Ljupko Rundić, President Tivadar Gaudenyi, Secretary General

## SPAIN

During 2017 the Spain INHIGEO members have participated in numerous activities.

The Geominero Museum of the Geological Survey of Spain (IGME), directed by Isabel Rábano (INHIGEO member), hosted the temporary exhibition: *Hydrocarbons in our daily life* (November 29, 2016 - December 10, 2017). The exhibition was organized and produced by IGME and ACIEP (Spanish Association of Hydrocarbons Research, Exploration and Production Companies), with the collaboration of AGGEP (Association of Spanish Geologists and Geophysicists of Petroleum).

**Ester Boixereu** is the new editor of *De Re Metallica*, the journal of the Spanish Society for the Defence of the Geological and Mining Heritage (SEDPGYM), directed by **Luis Felipe Mazadiego** (both INHIGEO members). There was published a special volume (nº 28, January-June 2017) dedicated to the *History of Salt*.

On the occasion of the King Carlos III (1716-1718) centenary, promoter of Spanish science in the Age of Enlightenment, **Rodolfo Gozalo** (INHIGEO member) gave a lecture in the University of Granada entitled: *From the Giants to the Flood to Geology and Palaeontology*.

**Isabel Rábano** (INHIGEO member) has been elected Director of the Department of Geoscientific Infrastructure and Services of the Geological Survey of Spain (April 2017).

**Rodolfo Gozalo** (INHIGEO member) has collaborated in the organization of *BIOGRAU 2017, VIII Congrés d'estudiants of Grau de Biología, VI Trobada de Joves Investigadors, Orientation Workshop of Grau de Biología*, Valencia, celebrated from May 16 to 18, 2017.

In the framework of the project of the Oviedo University: The conferences of the Archive of Indianos, **Jorge Ordaz** (INHIGEO member) gave the lecture: *The magnitude of the nature: Humboldt's journey through South America (1709-1804).*

**Rodolfo Gozalo** (INHIGEO member), along with José Ignacio Valenzuela Ríos, Miguel Pardo Alonso and Jau-Chyn Liao, organized the *IV International Congress of Conodonts*, held in Valencia, from June 23 to 26, 2017.

In September 2017, SEDPGYM awarded the *Francisco Javier Ayala Prize* to **Octavio Puche Riart** (INHIGEO member), for the paper: *Some historical data on the Pozo Rico silver mine and annexed exploitations (Guadalcanal, Seville)*, published in *De Re Metallica*, 25, 27-52 (July-December 2015).

In November 15, 2017, **Cándido García Cruz** (INHIGEO member) gave the lecture: *The rings of Liesegang of La Gomera*, as part of the series of conferences: *Some aspects of the nature of the island of La Gomera* (November- December 2017).

The *3rd International Symposium of Conservation of Natural History Collections* was held at the Restoration of Movable Properties of Catalonia Centre and the Higher School of Conservation and Restoration of Movables Properties of Catalonia, in Barcelona, from November 21 to 24, 2017.

**Isabel Rábano** (INHIGEO member) has participated in the following paper:

*Gutiérrez-Marco, J. C.; García-Bellido, D. C.; Rábano, I; Sá, A. A. (2017). Digestive and appendicular soft-parts, with behavioural implications, in a large Ordovician trilobite from the Fezouata Lagerstätte, *Morocco Scientific Reports*, 7, 7pp. DOI: 10.108/srep39728.

Only in a dozen places in the world are known fossils of trilobites that preserve the appendicular soft-parts of their internal anatomy, but now, thanks to this paper, a new reservoir comes to join the world of exceptional conservation; corresponding to the so-called Biota Fezouata, from the Ordovician of Southern

Morocco. The authors decipher the mystery of trilobite footprints, which have been written about since the beginning of Geology.

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OCTAVIO PUCHE RIART

## SWEDEN

**Björn Sundquist**, Uppsala, Sweden

My history of geology research covers the approximate period 1650–1850. It is concentrated on the development in Sweden and is set in context with developments in neighbouring countries and Europe in general.

I continue my research in studying the works by Sigfrid Aronus Forsius and Urban Hiärne in the 17th century, by Urban Hiärne, Emanuel Swedenborg, Magnus von Bromell, Carl von Linné (Linnaeus), Daniel Tilas, Anders Celsius, Johan Gotschalk Wallerius, Axel Fredric Cronstedt, Johan Browallius, Bengt Ferrner, Torbern Bergman, Samuel Gustaf Hermelin, Gustav von Engeström, Anders Jahan Retzius, and Wilhelm Hisinger in the 18th century, and those by Wilhelm Hisinger, Göran Wahlenberg, Jacob Berzelius, and Jacob Henrik af Forsselles in the 19th century.

In 2017 my paper “Early geological studies and mapping in Sweden” was published as a contribution to the INHIGEO 50 years anniversary volume *History of Geoscience. Celebrating 50 years of INHIGEO,* edited by W. Mayer, R.M. Azuela, L.F. Mota & S. Wołkowicz. *Geological Society, Special Publication 442, pp. 341–352* (first published in June, 2016 at the Lyell Collection).

## UNITED KINGDOM

INHIGEO REPORT FOR 2017

INHIGEO Member **Dr Trevor Ford** passed away in Leicester on 22 February 2017, just before the last issue went to print. Jan Baxter, Trevor's daughter, and Aftab Khan, emeritus professor in Trevor's old department at Leicester University, have kindly provided an obituary and details of his many publications, printed elsewhere in this issue.

The Friends of Hugh Miller and their collaborators across a wide range of geological and culture organizations in Scotland are repeating the Hugh Miller Writing Competition this year after the success of last year's first effort: a charmingly original idea. The Friends continue to produce a newsletter *Hugh's News* on matters relating to Miller; see http://www.thefriendsofhughmiller.org.uk. **Ralph O'Connor** and **Michael Taylor** attended the Friends' conference *The Old Red: Hugh Miller's Geological Legacy* in Miller's native burgh of Cromarty in northern Scotland on 9-10 September 2017 (Old Red referring, of course, to Old Red Sandstone) – a most successful mixture of modern geology and palaeontology with history and literary analysis.

**Chris Duffin** of the History of Geology Group reports: at HOGG, we had several very successful meetings last year. Cherry Lewis led a Field Meeting on the History of Geology and Mining in the Forest of Dean, Gloucestershire, in May 2017; there was a weekend meeting about the Geologists of Lyme Regis held at the Philpot Museum, Lyme Regis, during September, and in November there was a Joint Meeting with the William Shipley Group considering 'The Society of Arts and the encouragement of mineralogy and geology 1754-1900'. Several members have been helping the Pope's Grotto Preservation Trust with advice and provision of specimens for the conservation of the Grotto, now beneath a private school, in Twickenham. The Pope in question is the Georgian scholar and satirist Alexander Pope. Publications include abstracts books of the two meetings, and:

Duffin, C.J., Gardner-Thorpe, C. & Moody, R.T.J. (eds). (2017): Geology and medicine: historical connections. *Geological Society of London, Special Publication*, 452, 1-298.

While the following may also be of interest:

Polyakova, I.A., Duffin, C.J., & T. J. Suvorova, T.J. (eds) (2016) [2018]: *Amber in the history of medicine: Proceedings of the International Conference*. Kaliningrad: Kaliningrad Regional Amber Museum. 272 pp. ISBN 978-5-903920-43-3.

As for individual members, we have had some reports:

**Alan Bowden** – has not been able to spend much time in the history of geology field this year. But he has been doing a little bit of research into the history of marine sediment sampling with particular reference to marine chemistry and sediment distribution related to benthic foraminifera from the 17th century onwards.

**Richard Howarth** – 'I had my *Dictionary of Mathematical Geosciences* published last year in which I tried to include brief biographical details of all the people who introduced mathematical or statistical methods into geology and geophysics and who first used them in our subject areas. It was designed to be totally self-explanatory even for those with little maths, so it grew like topsy and has lots of terms in it. It has kept me occupies for the last four years!'

According to the Springer marketing leaflet: *This dictionary includes a number of mathematical, statistical and computing terms and their definitions to assist geoscientists and provide guidance on the methods and terminology encountered in the literature. Each technical term used in the explanations can be found in the dictionary which also includes explanations of basics, such as trigonometric functions and logarithms. There are also citations from the relevant literature to show the term's first use in mathematics, statistics, etc. and its subsequent usage in geosciences.*

Howarth, R.J. 2017. *Dictionary of Mathematical Geosciences with historical notes*. Springer International Publishing. 893pp. Hardcover ISBN 978-3-319-57314-4; xvi + 893 pp. (Also, in ebook format.).

**Cherry Lewis** – does not have a great deal to report this year, other than that she led the HOGG field trip to the Forest of Dean in May last year. Also, her book *The Enlightened Mr Parkinson* (Icon Books) came out in paperback this month.

**Ralph O'Connor** – and **Michael Taylor** are discussing their new edition of the first, 1841, edition of Hugh Miller's *The Old Red Sandstone* with a potential publisher. They lectured on their work at the Hugh Miller conference in Cromarty in September 2017.

**Martin Rudwick** – has published a pair of articles 'outside my usual early-C19 comfort zone, on my own and my students' research on palaeontology in the mid-C20, before I re-invented myself as a historian. I found it an intriguing exercise in semi-autobiography!' [as did Mike Taylor, whose own doctoral research on plesiosaurs in 1979-1984 was directly influenced by Martin's palaeontological publications]:

Rudwick, M.J.S. 2017. Functional morphology in paleobiology: origins of the method of "Paradigms". *Journal of the History of Biology*, 51, 135-178. DOI 10.1007/s10739-017-9478-7.

Rudwick, M.J.S. 2018. The fate of the method of "paradigms" in paleobiology. *Journal of the History of Biology.* doi: 10.1007/s10739-017-9501-z [Epub ahead of print]

**Michael Taylor** – worked with Lyall Anderson, Alison Morrison-Low and Sara Stevenson, and, very much posthumously, Ben Peach and Ramsay Traquair, to produce a special issue of *The Geological Curator* (volume 10, issue 7) dedicated to Hugh Miller (1802-1856). This issue explored the history of Hugh Miller's collections, museums, displays, and archives, as well as photographic portraits (Miller having a small, but important, place in the history of photography). Mike has continued to work on 19th century Liassic marine reptiles of south-west England. The chance find at Derby Museum of a Bristol Institution ichthyosaur cast prompted an investigation with Hugh Torrens on its donor Dr Henry Riley of Bristol – an Edinburgh and Paris-trained comparative anatomist working in a conservative milieu at Bristol. Amongst ongoing projects are papers on the relationship between Archibald Geikie (1835-1924) and his mentor Miller, and the Edinburgh Museum of Science and Art's Waterhouse Hawkins cast/reconstruction of *Hadrosaurus foulkii*.

Taylor, M. A. 2017. The Victorian Sunday, daylight and naturalists. *Newsletter of the Society for the History of Natural History*, 112, 21-22.

Taylor, M. A. and Anderson L. I. 2017. The museums of a local, national and supranational hero: Hugh Miller's collections over the decades. *The Geological Curator* 10, 285-368.

Taylor, M. A. and Anderson L. I. 2017. The appeal circular for the purchase of Hugh Miller's collection, 1858. *The Geological Curator*, 10, 369-373.

Peach, B. N., Traquair, R. H., Taylor, M. A. and Anderson L. I. 2017. Guide to the Hugh Miller Collection in the Royal Scottish Museum, Edinburgh, c. 1920. *The Geological Curator*, 10, 375-428.

Taylor, M. A. and Morrison-Low, A. D. 2017. The first known stereophotographs of Hugh Miller's Cottage, and the building of the Hugh Miller Monument, Cromarty, 1859. *The Geological Curator*, 10, 429-445.

Goodchild, J. G., Taylor, M. A. and Anderson, L. I. 2017. J. G. Goodchild's Guide to the Geological Collections in the Hugh Miller Cottage, Cromarty of 1902. *The Geological Curator*, 10, 447-454.

Taylor, M. A. and Torrens, H. S. 2017. 19th Century plaster casts of Lower Jurassic ichthyosaurs and plesiosaurs in the Bristol Institution for the Advancement of Science, Literature and the Arts, and the Academy of Natural Sciences, Philadelphia. *The Geological Curator* 10, 489-492.

Taylor, M. A. and Torrens, H. S. 2017 Henry Riley M.D. (1797-1848) of Bristol. *The Geological Curator*, 10, 493-498.

**Hugh Torrens** – has the following publications to report:

Howlett, E. A., Kennedy, W. J., Powell, H. P. and Torrens, H. S. 2017. New light on the history of *Megalosaurus*, the great lizard of Stonesfield. *Archives of Natural History*, 44, 82-102.

Taylor, M. A. and Torrens, H. S. 2017. 19th Century plaster casts of Lower Jurassic ichthyosaurs and plesiosaurs in the Bristol Institution for the Advancement of Science, Literature and the Arts, and the Academy of Natural Sciences, Philadelphia. *The Geological Curator*, 10, 489-492.

Taylor, M. A. and Torrens, H. S. 2017. Henry Riley M.D. (1797-1848) of Bristol. *The Geological Curator*, 10, 493-498.

Torrens, H. S. 2017. [Review of Z. Johanson, P. M. Barrett, M. Richter and M. Smith (eds) A*rthur Smith Woodward - his life and influence on modern vertebrate palaeontology*, Geological Society of London Special Publication 430.] https://www.geolsoc.org.uk/Geoscientist/Books-Arts/Geoscientist-book-reviews-online/2017-Book-reviews/Johanson-et-al

Torrens H. S. 2017. Delius and the two Agate brothers, James and Edward. *Delius Society Journal*, 162, 31-42.

Torrens H. S. 2018. Obituary: Ronald James Cleevely (1934-2017). *Archives of Natural History*, 45, 170-178.

Tchoumatchenco, P., Branagan, D., Torrens H. S., and Wiazemsky, M. 2017. The geologists of Russian origin in the British Isles. Pp. 172-189, in *The First International Science-to-Practice Conference: "Russian Heritage in the Contemporary World"*, Russian Heritage in the United Kingdom Committee, London, ISBN 978-5-9908705-4-3. Mike Taylor

## UNITED STATES OF AMERICA

**Kenneth R. Aalto** continues his investigations of pioneer geologists of California. In 2017 he published the following papers:

Aalto, K. R., 2017, Clarence Dutton's geology: in Mayer, W., Clary, R. M., Azuela, L. F., Mota, T. S. & Wołkowicz, S. (eds) *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London, Special Publications, 442, p. 229-238, http://doi.org/10.1144/SP442.18.

Aalto, K. R., 2017, Philip Tyson's 1849 study of California gold prospects: *Earth Sciences History*, v. 36, p. 30-40. doi: 10.17704/1944-6178-36.1.30.

Together with many INHIGEO members, Ken was saddened to hear of the passing of Bob Dott, his mentor in the history of geology, whose influence on Ken's career is much appreciated. [Editor's note – Ken Alto died shortly after submitting this report. His obituary will appear in the *Record No. 51* in 2019.]

**Victor R. Baker** presented an invited lecture to the Arizona Geological Society: "The Influence of the18th Century Enlightenment on the Natural Sciences." He also provided some historical perspectives in the following review paper:

Baker, V.R., 2017, Interdisciplinarity and the Earth sciences, *in* Frodeman, R., Klein, J.T., and Pacheco, R.C.S., editors, *The Oxford Handbook of Interdisciplinarity*, Second Edition: Oxford University Press, Oxford, p. 88-100.

Vic continues his work on a long-standing project to generate a book dealing with the history of (the mostly 19th Century) investigations into the origin of slaty cleavage.

**Kennard B. Bork** expresses his deep appreciation of his 2017 election to the status of INHIGEO Honorary Senior Member. It is most gratifying to receive such recognition from the Commission. In May, Ken and Kay were delighted to host Philippe Taquet and Geneviève Boulinier in Sedona, Arizona. Philippe gave a superb talk on "Time of the Earth, Time of Life, and Time of Mankind" to a local group organized by Ken to discuss "Science News" throughout the year.

**William R. Brice** continues as editor of the 2017 INHIGEO Record. In addition, he continues his research and work in the history of the oil and gas industry, primarily in Pennsylvania. He published and/or presented the following:

BRICE, William R., 2017, Petroleum History Institute Annual Meeting and Field Trip; Findlay, Ohio, July 13-15, 2017: *Oil-Industry History*, v. 18, no. 1, p. 1-12.

JONES, Sara and BRICE, William R., 2017, Abraham Gesner (1797-1864) revisited; putting oil history in the classroom: *Oil-Industry History*, v. 18, no. 1, p. 35-52.

BRICE, William R., 2017, The early oil industry and the first "Fracking" (Abst): Geological Society of America Annual Meeting, Seattle, Washington, 2017 *Abstracts with Programs*, v. 49, no. 6, doi: 10.1130/abs/2017AM-298010; (Invited Speaker).

_____, 2017, Maps of the early Pennsylvania region (Abst): Geological Society of America Annual Meeting, Seattle, Washington, 2017 *Abstracts with Programs*, v. 49, no. 6, doi: 10.1130/abs/2017AM-294649 (Invited Speaker).

_____, 2017, The early oil industry and the first "Fracking:" Annual Meeting, MENSA, Pittsburgh, Pennsylvania, September 2 (Invited Speaker).

_____, 2017, History of oil and gas in Pennsylvania, USA: The International Committee for the History of Technology (ICOHTEC) 44th symposium, Rio de Janeiro, Brazil, 23-29 July. (Paper read by Dr. Francesco Gerali).

_____, 2017, Abraham Gesner – A pioneer of the modern oil industry: Drake Well Museum Petroleum Lecture Series, Titusville, Pennsylvania, April 6 (Invited speaker – afternoon Titusville High School; evening adults at Drake Well Museum).

_____, 2017, The forgotten discoverer of kerosene – Abraham Gesner: Barbara Morgan Harvey Lecture Series, Venango College of Clarion University, Oil City, Pennsylvania, April 5 (Invited Speaker - morning middle school students; evening adults).

JONES, Sara and BRICE, William R., 2017, Abraham Gesner (1797-1864) revisited: putting oil history in the classroom (Abst): Petroleum History Institute Annual Meeting, Findlay, Ohio, July 14, *Program and Abstracts*, p. 13; *Oil-Industry History*, v. 18, no. 1, p. 197.

**Joanne (Jody) Bourgeois** continues to encourage colleagues and students to pursue the history of women in geosciences, in particular by improving and enhancing Wiki entries and by submitting manuscripts, *e.g.*, to the Rock Stars series of the Geological Society of America, in addition to more formal scholarship. This year she presented a poster at the GSA meeting in Seattle on "Historical challenges for women making geological maps, and the legacy of Florence Bascom." She hopes to honor the memory of her mentor, Robert H. Dott, Jr., in pursuing more historical topics in her retirement.

**Paul D. Brinkman** is currently serving on the editorial board of the history of science journal *Endeavour*, on an editorial panel for the journal *Archives of Natural History*, and he is the secretary of the History of Earth Sciences Society. He continues to work on a multitude of projects. He has one history of geology paper in press on the paleontological reconstructions of the Field Museum's John Conrad Hansen *(Archives of Natural History*). He has also written a chapter on the history of the Kansas University paleontological expedition of 1894 for a forthcoming book entitled *Naturalists in the Field*. He is also working on a book-length history of the Captain Marshall Field Paleontological Expedition to Argentina and Bolivia, 1922-1927. He published the following paper in 2017:

S. F. Vizcaíno, G. De Iuliis, R. F. Kay and D. L. Brinkman, 2017, On an album of photographs recording fossils in the 'Old collections' of the Museo de La Plata and Ameghino's private collection at the beginning of the XXth century." *Asociación Paleontológica Argentina Publicación Electrónica* 17(1): 14-23.

**Renee M. Clary** contributed two chapters to the 50th anniversary INHIGEO special volume. The manuscripts were first published online in 2016 within the Geological Society of London's Lyell Collection. She also co-authored a manuscript now accepted for publication on the history of the Dunn-Seiler Museum at Mississippi State University:

Clary, R.M., & Moe-Hoffman, A. (in press). The role of the Dunn-Seiler Museum, Mississippi State University, in promoting public geoliteracy. *Museums at the Forefront of the History and Philosophy of Geology: History Made, History in the Making*. GSA Special Papers.

Clary, R.M. (2017). Controversies in the history of geology and their educational importance for facilitating understanding of the nature of science. *In* W. Mayer, R. Clary, L. Azuela, T. Mota, & S. Wolkowicz (eds.) *History of Geoscience: Celebrating 50 Years of INHIGEO*.

Geological Society of London, Special Publication 442, 189-198. London: Geological Society of London. SP442.36.

Clary, R.M., & Sharpe, T. (2017). The farthest end of the Earth: The role of geological research in Antarctic exploration, 1895 – 1922. *In* W. Mayer, R. Clary, L. Azuela, T. Mota, & S. Wolkowicz (eds.) *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society of London, Special Publication 442, 387-399. London: Geological Society of London. SP442.36.

**RESEARCH PRESENTATIONS:**

Clary, R.M., & Sharpe, T. (2017, September). The furthest end of the Earth: The role of geological research in Antarctic exploration, 1895-1922. Research paper presented at the 42nd INHIGEO Symposium, Yerevan, Armenia (presented by Greg Good, as Renee was unable to travel to Armenia).

Clary, R.M. (2017, October). Recording the facts: Henry De la Beche's maps as data repositories. Research paper presented at the Geological Society of America Annual Meeting, Seattle, WA.

Clary, R.M. (2017, March). SCST session: Can the history of science facilitate climate change education and climate literacy? Lessons from Glacial Theory. Research paper presented at the National Science Teachers Association national conference on science education, Los Angeles, CA.

Clary, R. M. (2017, February). History of science: proven value and projected potential in science classrooms. Research presentation at the Mississippi Academy of Sciences Annual Conference, Hattiesburg, MS.

**INVITED LECTURES:**

Clary, R.M. (2017, February). Pioneering women in the HIS-tory of geology: More than sellers of seashells by the seashore: The early geological contributions of Mary Anning, Etheldred Benett, and Florence Bascom. Sunday at the Bluff, Columbus, MS. (invited)

Clary, R.M. (2017, March). Lessons from controversies in the history of geology: Can Agassiz's Glacial Theory inform geoscience education and public reception of climate change? Stout Lecture research presentation Department of Earth and Atmospheric Sciences University of Nebraska Lincoln. (invited)

Clary, R.M. (2017, November). An earlier climate change: Agassiz's glacial theory and how it can inform geoscience education and public reception of climate change. Research presentation at the Department of Geology and Geological Engineering Seminar Series, University of Mississippi, Oxford, MS. (invited)

Renee continued to serve as the Geological Society of America's History and Philosophy of Geology Division webmaster. She also serves as the permanent Joint Technical Program Committee representative for the Division. She was a 2017 member of the History of Earth Sciences Society Nominating Committee. She serves as an editor for the Rock Stars series published within *GSA Today*, and she is co-editor with Gary Rosenberg of a GSA Special Paper, Museums at the Forefront of the History and Philosophy of Geology: History Made, History in the Making.

For the GSA 2018 meeting in Indianapolis, she is convening a session on "Evolution of Paleontological Art," and she is a co-convener of a GSA Field Excursion in Indianapolis, "Among the Dinosaurs at the

Children's Museum: "The Lanzendorf Collection of Dinosaur Art, Cretaceous Dinosphere, and Polly Horton Hix Paleo Prep Lab.".

Renee was honored to receive the 2017 Geological Society of America History and Philosophy of Geology Division's Gerald M. and Sue T. Friedman Distinguished Service Award.

**Karen Cook** contributed a 200-word entry, "William Smith", and also a 4,000-word entry, "Geological Mapping", to *The History of Cartography, vol. 5, The Nineteenth Century*. This series is being published by the University of Chicago Press.

**John A. Diemer** continued to serve as editor of *Earth Sciences History*, editing two numbers of Volume 36 in 2017:

Diemer, J. A. 2017. *Earth Sciences History*. Volume 36, Number 1, pp. 1-174. Editor's Introduction, pp. iii–iv.

Diemer, J. A. 2017. *Earth Sciences History*. Volume 36, Number 2, pp. 175–394. Editor's Introduction, pp. iii–iv.

The second of these (36/2) was a special issue celebrating the 100th anniversary of the founding of the National Park Service. The issue contained papers that examined aspects of the history of National Park Service geology. The issue was facilitated by the efforts and support of Vincent Santucci, who serves as the National Park Service Paleontology Program Coordinator.

**Conference papers** that John presented during 2017 include the following:

Diemer, J. A. 2017. Fossils, maps, museums and collaboration: keys to success in Murchison's 1845 field campaign in Sweden, INHIGEO 50th Anniversary Meeting, Yerevan, Armenia, September 12–18, 2017.

Diemer, J. A. 2017. Plate 6 of The Geology of Russia (1845): a fine example of a hand-colored geologic map, GSA Abstracts with Programs, v. 49, no. 7, Seattle, Washington.

**Mott Greene** was awarded the Sue Tyler Friedman Medal in the History of Geology by the Geological Society of London in June 2017, for his biography of Alfred Wegener (*Alfred Wegener: Science, Exploration, and the Theory of Continental Drift*, Johns Hopkins, 2015). In November 2017 he was elected a Fellow of the Geological Society of America. He also gave a paper on the drafting of Wladimir Köppen's Climate Map of 1901, in a session on "Great Maps in the History of Geology" at the November GSA meeting. Mott continues as Affiliate Professor of Earth and Space Sciences at the University of Washington.

**Greg Good** attended the 50th Anniversary Meeting of INHIGEO in Yerevan, Armenia. During the year, since the previous INHIGEO meeting in Cape Town, Greg published an article, "John Herschel's Geology: The Cape of Good Hope in the 1830s," in *The Romance of Science: Essays in Honour of Trevor H. Levere*, Jed Buchwald and Larry Stewart, eds., (Cham, Switzerland: Springer, 2017, 135-150. DOI 10.1007/978-3-319-58436-2), and also a fieldtrip guide used at the Cape Town meeting, *On the Trail of Charles Darwin and John Herschel: The Cape in the 1830s*, 35th International Geological Congress Field Trip Guide, 2016, 16 p.

**Sandra Herbert**'s scholarly contribution for 2017 was a review in the December2-3, 2017 issue of *The Wall Street Journal* of a book by Brenda Maddox titled *Reading the Rocks: How Victorian geologists discovered the secret of life* (New York and London: Bloomsbury, 2017).

**Alan Leviton** reports that he is still recovering from the loss of his dearest colleague Michele Aldrich. Alan was the citationist for the presentation of the GSA History and Philosophy of Geology Division's Mary Rabbitt Award to honor Ali Mehmet Celâl Şengör, this at the GSA Seattle meeting on 24 Oct 2017.

**Publications**:

2017a. Aldrich, Mark T., and Alan E. Leviton. [Eloge] Michele La Clergue Aldrich, historian of geology, 1942-2016. *Earth Sciences History* 36(1):143-147, 1 fig.

2017b. Aldrich, Mark T., and Alan E. Leviton. [Eloge] Michele La Clergue Aldrich, historian of geology, 1942-2016. Geological Society of America, *History and Philosophy of Geology Newsletter*, April 2017, pp. 7–11, 1 fig.

2017c. Aldrich, Mark T., and Alan E. Leviton. [Eloge] Michele La Clergue Aldrich, historian of geology, 1942-2016. *INHIGEO Annual Record* No. 49 [Published in August 2017 and covering events generally in 2016), pp. 49–53, 1 fig.

2017d (in press). Leviton, Alan E., and Michele L. Aldrich. California Academy of Sciences: A museum center for public outreach and basic research in the geosciences. Geol. Soc. America, [symposium volume] *Museums at the Forefront of the History and Philosophy of Geology*, edited by Gary Rosenberg and Renee Clary.

**Kerry Magruder** provided an update of activity by the staff of the University of Oklahoma Libraries on several fronts in the history of geology:

First, we maintained a digital archive for INHIGEO at the ShareOK repository: https://shareok.org/handle/11244/44831. We invite submission of additional INHIGEO related documents for archiving in this repository, upon approval by INHIGEO officers.

Second, we digitized 40 geology books from the holdings of the History of Science Collections. These books are making their way into the OU Libraries digital library at repository.ou.edu. Not all appear there at present, but high-resolution images from all of them are currently available via contact by email. These books were digitized in their entirety, and the images are released into the public domain. The repository developers are working to make them available for immediate download in high resolution from the website, and we hope this feature may be implemented in the next year. Given the importance of high resolution images for work in the history of geology, Kerry welcomes suggestions for books to place in the digitization queue for this coming year owing to lack of online availability in high resolution in the public domain.

Third, we supported the completion of a volume in the history of geology by Francesco Luzzini, who completed a two-year post-doctoral fellowship in Norman and Berlin devoted to the project. His peer-reviewed edition of Antonio Vallisneri, Primi Itineris Specimen, will include a facsimile, transcription, English translation, critical notes and an introductory essay. As co-editor of the Edition Open Sources series, Kerry welcomes proposals to publish peer-reviewed, academic editions of primary sources in the history of geology in this series.

Below is a list of digitized books that are now available at: http://edition-open-sources.org/sources/9/index.html

Agassiz, Monographie des Poissons Fossiles, Neuchatel, 1844-45
Agricola, De re metallica, Basil, 1556
Beringer, Lithographiae Wirceburgensis, 1726
Becher, Opuscula chymica rariora, 1719
Buckland, Geology and Mineralogy considered, 1836
Buckland, Reliquiae diluvianae, 1823
Buckland, Vindiciae geologicae, 1824
Burnet, Theory of the Earth, 1684
Cesalpino, De metalliicus, 1596
Cuvier and Brogniart, Essai sur la geographie minéralogique des environs, 1810
Descartes, Principia philosophiae, Amsterdam, 1644
Dodwell, De Parma Equestri, Oxford, 1713
Geikie, Story of a Boulder, Edinburgh, 1858
Hutton, Theory of the Earth, 1795
Kepler, Strena, Frankfurt, 1611
Kircher, Mundus subterraneus, Amsterdam, 1665
Lyell, Principles of Geology, 1830-33, 3 volumes
Mantell, Wonders of Geology, 1839
Michell, Conjectures, 1760
Miller, Old Red Sandstone, Edinburgh, 1841
Palissy, Discours Admirables, Paris, 1580
Plato, Opera, Venice, 1491, edited by Marsilio Ficino
Pliny the Elder, Naturalis Historiae, English translation, 1601
Saussure, Voyages dans les Alpes, 1779, volume 1
Saussure, Voyages dans les Alpes, 1779, volume 2
Saussure, Voyages dans les Alpes, 1779, volume 3
Saussure, Voyages dans les Alpes, 1779, volume 4
Scheuchzer, Geestelijke natuurkunde (Physica sacra), 1728
Scheuchzer, Piscium querelae et vindiciae, 1708
Seneca, Natural Questions, 1522
Smith, Memoir to the Map and Delineation of the Strata of England and Wales, 1815
Smith, Map, 1815
Stelluti, Trattato del Legno Fossile Minerale, Rome, 1637
Steno, De solido intra, Florence, 1669
Steno, Elementorum myologi specimen…Canis carchariae dissectum caput, Florence 1667
Von Buch, Uber Ammoniten, 1832
Werner, Kurze Klassifikation und Beschreibung… Prague, 1787
Whiston, Astronomical Lectures, 1715
Whiston, New Theory of the Earth, 1696
Woodward, Natural History of the Earth, London, 1695

Kerry reports that the ShareOK *INHIGEO Newsletters* and *Annual Records* have been discovered by writers at the *New York Times* and the *Smithsonian Magazine*, who cited Ken Taylor's interview with Ursula Marvin in *INHIGEO Newsletter* no. 34 for 2001. The *Smithsonian* article about Ursula is available

at: https://www.smithsonianmag.com/ science-nature/smithsonians-rockstar-geologist-who-mapped-minerals-cosmos-180968640/

The link to the *INHIGEO Newsletter* is in the first paragraph, the third line, with the words "2001 interview." The ShareOK repository makes its items easily discoverable, and the example of Ken's interview illustrates how these archives provide much that is of real value for people who might not otherwise think to contact INHIGEO directly.

**Cliff Nelson** continues to prepare for publication his narrative analysis of the reform of federal mapping and science during America's Gilded Age, especially during the administration of President Rutherford B. Hayes (1877-1881).

**Sally Newcomb**'s article "Progression of instrument use and practice in mineralogy and petrology, 1750-1795" was published in the INHIGEO volume *History of Geoscience: Celebrating 50 Years of INHIGEO* (The Geol. Soc. London). And her paper "The Museums of Philadelphia" was accepted for the Geological Society of America volume *Museums at the Forefront of the History and Philosophy of Geology: History Made, History in the Making*, GSA Special Paper 535 (due to be published in June 2018).

**Antony Orme**'s chapter "Dynamic geomorphology: Historical convergence towards modern practice" was published was published in the INHIGEO volume *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London. Special Publications, 442, 141-154. Tony is also completing an article on "The Geomorphology of the Pacific Railroad Surveys of the 1850s," leading in part to a book on *The Science and Art of the Pacific Railroad Surveys of the 1850s*.

**Steve Rowland** continues as INHIGEO vice president for North America, and as an associate editor of *Earth Sciences History*. At the INHIGEO meeting in Yerevan he presented a paper titled "Mikhail Lomonosov's unusual mid-Eighteenth-Century view on the beneficent effect of earthquakes on human civilization."

**Dorothy Sack** served as chair of the History and Philosophy of Geology Division of the Geological Society of America during 2017. At the annual meeting in Seattle she represented the division at various functions and meetings, including hosting the division's awards luncheon, student reception, and management board meeting. With co-convener Renee Clary, Dorothy organized paper and poster sessions for the Seattle GSA on "Great Maps in the History of Geology," and she presented a paper on the history of mapping Lake Bonneville. She is organizing an edited volume on *Great Maps in the History of Geology* that grew out of the GSA sessions. Dorothy reports that contributors to the edited volume need not have contributed to the GSA sessions; she would be pleased to hear from others who might wish to contribute to the edited book.

Dorothy also continued as chair of the History of Geography Specialty Group of the American of Association Geographers. For the annual AAG meeting in Boston she organized three papers sessions focusing on women, maps, and individuals and institutions in the history of geography. Her presentation considered women in the history of geomorphology.

She participated in the INHIGEO meeting in Yerevan—her first INHIGEO meeting—where she presented a paper on C. A. M. King and chaired the meeting's poster session.

**David Spanagel:** The highlights of the past year in the history of geology were the following: In July 2017, the paperback reprint edition of his book *DeWitt Clinton and Amos Eaton: Geology and Power in Early New York* (Baltimore: John Hopkins University Press, 2017) was released. In October, he presented new research on "Harold N. Fisk's (1944) Maps of the Meandering Mississippi River" as part of the "Great Maps in the History of Geology" session at Geological Society of America annual meeting, held in Seattle, Washington. His "Review of *Field Life: Science in the American West During the Railroad Era*, by Jeremy Vetter …" was also published in the fall issue of *Earth Sciences History* 36 (2017): 386-388. The fall semester also saw the debut of a new Great Problems Seminar course for first year students at Worcester Polytechnic Institute (WPI) on the topic of "Extinction: Who Will Survive?", co-developed and co-taught by David and his biology colleague Marja Bakermans. David continues to serve as Treasurer of the History of Earth Sciences Society (HESS).

**Kenneth Taylor** contributed two articles to the 2017 celebratory volume for INHIGEO's 50th anniversary: "Historians of geology in the field: A half-century of INHIGEO excursions," written in collaboration with Mike Johnston; and "Before volcanoes became ordinary." He has been working on translations into English of N. Desmarest's articles for the Diderot / d'Alembert Encyclopédie, as part of the Encyclopedia Collaborative Translation Project.

**Roger D. K. Thomas** was most involved over the past year in work with two ichnologists—Dirk Knaust and H. Allen Curran—on the investigation of the site where a prominent Pennsylvania naturalist, Samuel Haldeman, first observed and described the iconic trace fossil *Skolithos linearis*. Their objective, in a manuscript just submitted, is to fully document the site adjacent to Haldeman's home on the Susquehanna River and to re-establish it as the legitimate type locality of the type species of this prolific vertical burrow. The full scope of Haldeman's accomplishments—including a comprehensive review and analysis of the 'Knight's Move' algorithm in chess—is not widely recognized today. Charles Darwin read Haldeman's (1843-44) observations on possible transformism of freshwater snail species, also along the Susquehanna, in 1844. Later, Darwin acknowledged this work in the 'Historical Sketch' he added to the Third and later editions of *The Origin of Species*.

**Davis Young** continues his work on a history of the earth sciences—primarily geology—at Princeton University from its beginning in 1746 up to World War I. Steve Rowland

## UZBEKISTAN

2017 year was fruitful in the field of research on the history of geological science. The 50th anniversary of INIGEO (September 13-15, Yerevan) coincided with the 15th anniversary of Uzbekistan's entry into its structure, the 80th anniversary of the Institute of Geology and Geophysics named after academician Kh. M. Abdullaev and the 105th anniversary of Academician Kh. M. Abdullaev as well. These important events are devoted to the publication of L. N. Lorkkipanidze "To the 50th anniversary of INHIGEO - the International Commission on the History of Geological Sciences" (edited by B. S. Nurtaev, Institute of Geology and Geophysics named after Kh. M. Abdullaev. - T.: Minitipography of the Academy of Sciences of Uzbekistan, 2017. - 92 p.), Abstracts (L. N. Lordkipanidze and O. G. Tsay), Republican Scientific and Technical Conference on "Actual Problems of the Geology of Geophysics and Metallogeny" (11-12 September) with the participation of specialists from the CIS countries - the Russian Federation, the

Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan and foreign countries - France and Canada).

The jubilee materials of the conference were published in 3 books (reviewer Kh. A. Akbarov and L. N. Lordkipanidze): Book. 1 Khabib Mukhamedovich Abdullaev (second, supplemented edition, A. A. Babadzhanov *et al.*) / Editor-in-chief D. Kh. Ishbaev, - 388 pp.); Book. 2 Institute of Geology and Geophysics named after academician Kh. M. Abdullaev, 80 years old (N. Sh. Shukurov, A. A. Babadzhanov and others), Ed. D. Kh. Ishbaev et al., -152 pp.); Book 3 Conference materials (Chief Editor B. F. Islamov, - 351 pp.) - 118 theses of the staff of many geological organizations of Uzbekistan and other countries, preceded by the articles which have of great interest for the history of geology: B. F.Islamov (Chairman of the State Committee for Geology and Mineral Resources of the Republic of Uzbekistan), M. U. Isokov (head of the sector of the Cabinet of Ministers of the Republic of Uzbekistan) and academician H. A. Akbarov.

**Among the theses, having an interest for the history of geology are the following:**

Quantitative forecasting based on the construction of structural and forecast maps at the Institute of Mineral Resources (to the history of SAIIGIMS-IMR) (V. Ya. Zimalina *et al.*);

Forecasting of gold mineralization by rational combination of geochemical, geophysical and cosmostructural methods (Mount Sangruntau) (M. M. Pirnazarov, *et al.*);

The main stages of the development of magmatic geology of the Western Tien Shan (Kh. D. Ishbaev);

Lithium of the world and Uzbekistan (spodumene-pegmatite and hydromineral ores) (Yu. B. Yezhkov *et al.*).

In this year, the 90th anniversary of the Geological service of the Republic of Uzbekistan and the 60th anniversary of the Institute of Mineral Resources of the State Committee for Geology of Uzbekistan were celebrated. For this event is devoted the book *The 60th Anniversary of the State Enterprise Institute of Mineral Resources* (Editor-in-Chief B. F. Islamov. - T.: State Enterprise "IMR", 2017. - 210 p.), in which is presented history of the Institute, the main milestones of its development, results of research in the main areas, memories of employees.

December 6, 2017 The State Committee of the Republic of Uzbekistan for Geology and Mineral Resources organized the X International Conference "Investment Potential of Solid Minerals of Uzbekistan UZGEOINVEST-2017" target to familiarize leading mining companies and a wide range of entrepreneurs from different countries with the investment opportunities for studying mineral resources and development of deposits, establishment of strong friendly and business contacts.

**Scientific articles related to the history of geology have been published in the Geology and Mineral Resources journal:**

Analysis of the schemes of Faults Catalogue of the Middle, Southern Tien Shan and Adjacent areas (L. N. Lordkipanidze and O. G. Tsay) (№ 1);

About the new paleontological findings in the Cretaceous sediments of the basin of the Aksak-Ata river (Chatkal Range) (P. S. Sultonov, A. D. Gonchar) (№ 1);

Mineralogical and geochemical criteria for forecasting, prospecting and evaluation of mineralization: historical review, methodological approaches. Regional criteria of gold content of the Chatkal-Kurama Mountains (Tien Shan) (E. A. Dunin-Barkovskaya *et al.*) (№ 1);

State and prospects for the development of remote sensing of the Earth in the field of geological production of the Republic of Uzbekistan (A. K. Nurkhodjaev) (№ 1);
Methodology of synoptic forecasting of places of expected seismic activation in the territory of Uzbekistan "(T. U. Artikov *et al.*) (№ 2);
Features of engineering-geological conditions and assessment of geological risk for urbanized areas of South-Western Uzbekistan (M. A. Tuychiyev et al.) (- № 3);
Experimental tectonics in applied geology (M. K. Turapov et al.) (- № 5);

**The author's abstracts of doctoral theses are published**:
1. Evseeva, G.B. Evolution and facial differentiation of Foraminifer complexes and their role in detailing the bio-stratigraphic schemes of the Jurassic basin of sedimentation of the Bukhara-Khiva oil and gas region (IGIRNIGM);
2. Alimov, Sh.P. Features of the formation and regularity of placement of natural types of ore deposits of Balpantau and Yangi-Davan (State Enterprise "IMR");
3. Isokov, M. U. Improvement of method of geological exploration and increase of reliability of estimation of reserves of gold deposits of Uzbekistan (State Enterprise "IMR");
4. Djuraev, M. R. Features of formation of promising accumulations of hydrogen sulfide waters in the Ferghana basin (State Enterprise "Institute GIDROINGOO");
5. Karabaev, M. S. Mineralogical and geochemical features of gold and gold-rare metal mineralization of the Auminzatau and Bukantau mountains and search and evaluation criteria (IGG);
6. Sultonov, P. S. Facies and paleogeographic features of Paleogene deposits of the Fergana basin and associated minerals (IGG).

**Jubilees**
105th anniversary of ***H. M. Abdullaev*** (1912-1962) – an outstanding scientist-geologist with a world-wide name, a talented organizer of science of Uzbekistan, candidate of geological and mineralogical sciences (1937), corresponding member (1943), full member of the Academy of Sciences of Uzbekistan (1947), Vice president, member The Presidium, the chairman of the department, the Doctor of geological and mineralogical sciences (1946), the president of the Academy of Sciences of Uzbekistan (1956-1962), the Corresponding Member of the All-Union Academy of Sciences (1958), the founder of new institutions - IGIRNIGM, GIDROINGEO, SAIGIMS (now State Enterprise "IMR"), the founder of Central Asia petrological and metallogenic school, the world's first Department of metallogeny, the Laureate of the All-Union Lenin Prize, Prize of Abu Rayhan Beruni (posthumously), who trained 12 doctors and 38 candidates of science (Geology and Mineral Resources - № 4).

The 100th anniversary of ***Kh. T. Tulyaganov*** – the first Minister of Geology of the Uzbek SSR, one of the bright and talented organizers of the production geological service of Uzbekistan, Honorary geological prospector of the USSR, Honored Geologist of the Uzbek SSR, Laureate of the State and Lenin Prize of the USSR, Doctor of Geological and Mineralogical Sciences, Professor, deputy of the Supreme Soviet of the Uzbek SSR V-X convocations, decorated with orders of the Patriotic War and Red Star, two Orders of the Badge of Honor and six USSR medals, the author of 140 scientific publications, including important monographs, 93 articles. Under his leadership, more than 850 fields (about 100 kinds of various minerals) have been explored, of which up to now more than 60 fields are being developed by the industry, among which the most significant are: Muruntau, Kokpatas, Mutenbai, Boilik, Amantaytau, Koitash, Lyangar, Ingichki, Sarytau- Sarybay group of ore occurrences, Khandiza, Kyzylalma, Kochbulak, Kalmakyr, Sarycheku, Shurtan, Mingbulak, Kokdumalak and others (- № 5).

The 85th anniversary of ***L. N. Lordkipanidze*** – the disciple of Kh. M. Abdullaev, Doctor of Geological and Mineralogical Sciences, full member of the International Commission for the History of Geological Sciences (INHIGEO), participants in International congresses, symposia and meetings: XIII International Congress on the History of Science (Moscow, 1971), bilateral symposia of the USSR-GDR (Berlin, 1975; Yerevan, 1979), USSR-Poland (Wroclaw, 1978), XXIII Annual Meeting of the Geological Society of the GDR (Halle, 1976 - delegate of the Academy of Sciences of the USSR), XXVI session of the IGC (1980), X International Symposium INHIGEO (Budapest, 1982), author, co-author and the editor of more than 200 works, including 30 monographs, books, reference books, Laureate of the fund's prize of academician Khabib Abdullaev (2003), awarded by medals "Veteran of Labor" and "50 years of the Academy of Sciences of Uzbekistan", diplomas of the Presidium of the Academy of Sciences of the Republic of Uzbekistan and the boards of the All-Union and Republican Societies "Knowledge" (- № 4);

***V. I. Troitsky*** – Professor of the Department of Geology of the Russian State University of Oil and Gas (2010), member of the Interdepartmental Lithological, Stratigraphic (1971-1991) and Tectonic (1971-1991) committees of the USSR, Chairman of the Central Asian Department of the Lithological Committee (1986-1991), Chairman of the Mesozoic and Cenozoic Section the Stratigraphic Committee of Uzbekistan (1993-2009), the consultant of the Institute of Geology and Geophysics of the Academy of Sciences of Uzbekistan, the Institute of Mineral Resources of the State Committee of Geology of Uzbekistan, the Institute of Geology and Exploration of Oil and Gas Deposits of the Uzneftegaz Holding, Deputy Chairman of the Academic Council for the Defense of Candidate and Doctoral Dissertations, Chairman of the Expert Council for Geology, Geophysics and Mining of the State Committee for Science and Technology of the Republic of Uzbekistan (1991-2001), member of the Scientific and Technical Council of the Ministry of Higher Education of the Republic of Uzbekistan, member of the Coordination Council for Science and Technology of the Cabinet of Ministers Republic of Uzbekistan (2000-2009), Laureate of the State Prize of the Republic of Uzbekistan of Abu Raikhon Beruni (1987), Honored Scientist of the Republic of Uzbekistan (1995), Academician of the Russian Academy of Natural Sciences (2008), Laureate of the State Prize of the Republic of Uzbekistan (2009), awarded the Mehnat Shuhrati Order (2008), the author of more than 250 scientific articles in republican and international publications on various problems of theoretical and practical geology, including those devoted to the issues of facial and formational analysis, the regularities in the formation of sedimentary-type minerals, tectonic and geodynamic zoning, stratigraphy and paleogeography, as well as various aspects of regional geology of Central, Central and South Asia (- № 5).

The 80th anniversary of ***V. F. Protsenko*** – the head of the mineralogical laboratory of the State Enterprise "Central Laboratory" of the State Committee of Geology of the Republic of Uzbekistan, the executor of 30 production reports, the author of 9 monographs, 60 articles, participants in meetings, conferences, symposia, seminars (Russia, Kyrgyzstan, and Kazakhstan) (- № 5);

***P. P. Nagevich*** – leading expert in hydrogeology in the field of studying and using resources and groundwater resources for drinking and technical water supply to the population and industry of the Republic of Uzbekistan, candidate of geological and mineralogical sciences, associate professor, author of methodical guides, author and co-author of more than 130 scientific works, participant of the 35th International Geological Congress (Cape Town, South Africa, 2016) (- №5);

***R. A. Khamidov*** – one of the famous experts in the field of nonmetallic minerals, an experienced mentor of youth, candidate of geological and mineralogical sciences, associate professor (1968), discoverer of the Tamchinsk deposit of quartz sand (1960), participant in a pedagogical trip to the Republic of Afghanistan (1975-1978), awarded with the Honorary Diplomas of the Presidium of the Union of Soviet Friendship Societies of USSR and Staff of the Adviser on Economic Issues and the Joint Committee of Trade Union Organizations at the Embassy of the USSR in the Democratic Republic of Afghanistan, the scientific secretary of the Specialized Council for the Defense of Candidate and Doctoral Dissertations, the member of the Scientific Council of the Geological Faculty of TashPI, the member of the Problem Council on the Geology of Ore Deposits and Metallogeny of the Department of Earth Sciences of the Academy of Sciences of Uzbekistan, a member of the editorial board for the publication of scientific works of the faculty, Deputy of dean for research works (1978-1990), lead engineer, head, Deputy of sector, the leading researcher in the sector of the Geology of industrial raw material of the State Enterprise "IMR" (1996), the author of 2 monographs and more than 135 scientific articles (- № 2);

***A. Musayev*** – a disciple of I. Kh. Khamrabaev, a leading scientist-petrograph, candidate of geological and mineralogical sciences of State Enterprise "Institute of Geology and Geophysics, Associate Professor of the Geological and Geographical Faculty of the National University named after Mirzo Ulugbek (1986), the participant of the International grant INTAS UZ-27 on creation of technology for obtaining high-quality steels from local raw materials, the compiler of cadastre of the most promising for mining and geological conditions deposits (metal and nonmetallic), the author of more than 100 works, including 4 collective monographs, awarded the medal "Veteran of Labor" (- № 2);

The 70th anniversary of ***I. V. Korolyova*** – a leading specialist in the field of mineralogy and geochemistry of solid mineral deposits, the main scientific employee of the State Enterprise "IMR", the continuer of the dynasty of famous scientists of the Korolev family, the candidate of geological and mineralogical sciences, the scientific secretary of the section "The methodology of exploration and forecasting deposits of minerals "of the Scientific Council of the State Enterprise" IMR "(- № 5);

60th anniversary of ***B. S. Nurtaev*** – a leading specialist in geophysics and geodynamics, Deputy director for science at the Institute of Geology and Geophysics, candidate of geological and mineralogical sciences, member of the American Geophysical Union, General secretary (1998), Vice-president of the National Committee of Geologists of Uzbekistan (2008), the executive secretary of the journal “Geology and Mineral Resources”, the participant of the international projects of UNIDR UN - Radius, INTAS, the German Committee of UNIDR, UN NATO, USAID, UNCRD, congresses (31st IGC, Rio de Janeiro, 32st IGC, Florence), symposiums and conferences (USA, France, Italy, Japan, Belgium, etc.), the author of 2 textbooks, more than 150 scientific works and monographs, awarded with the memorable sign "Uzbekiston Mustakilliging 25 yil" (- № 4);

***R. Kh. Mirkamalov*** – leading specialist in the field of geodynamics and tectonics of lithospheric plates, the head of the Department of Regional Geology and Metallogeny of the State Enterprise "IMR" (2009), the executor of 12 scientific reports, the author of more than 30 publications, including 3 monographs, whose leadership, based on geodynamic reconstructions, compiled the Atlas of Models of Ore Deposits in Uzbekistan, prepared a series of small- and medium-scale maps of the territory of Uzbekistan for special content, the coordinator and main executor of the “Atlas of Geological Maps Republic of Uzbekistan” (2016), issued in Russian, Uzbek and English languages (- № 3);

55th anniversary of ***O. G. Tsay*** – specialist in the field of creation of geological and geophysical databases and 3D models in ArcGIS environment, disciple and continuer of the Doctor of geological and mineralogical sciences of L. N. Lordkipanidze on the history of geology.

The loss to science:
***B. B. Vasilevsky*** (October 8, 1947 – February 23, 2017) - a prominent researcher and connoisseur of noble metal deposits in Western Uzbekistan, a hereditary geologist passed away (- №.6).

L. N. Lorkkipanidze, B. S. Nurtaev, and O. G. Tsay

# APPENDIX A

## INHIGEO VIRTUAL BIBLIOGRAPHY 2018

**China, Czech Republic, Germany, Hungary, Ireland**
*Compiled by Francesco Gerali, Project Curator*

### CHINA

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**Gordon L. Herries Davies**, Trinity College, Department of Geography (Emeritus), Dublin.

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**Patrick N. Wyse Jackson,** Trinity College, Department of Geology, Geological Museum, Dublin.

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# APPENDIX B

**INTERNATIONAL COMMISSION ON THE HISTORY OF GEOLOGICAL SCIENCES (INHIGEO)**

**TERMS OF REFERENCE**

## OBJECTIVES

The primary objective of the International Commission on the History of Geological Sciences (INHIGEO) involves the promotion of studies on the history of geological disciplines in an international context. In so doing, INHIGEO endeavours to promote and co-ordinate the activities of regional, national, and international organisations having shared purposes. INHIGEO also works to foster the publication of individual or collective works that illuminate the history of the geological sciences and to maintain an information-rich website.

## STRATEGIES

 Meet regularly, usually once a year, and every four years with the International Geological Congress (IGC), to conduct a major symposium on the history of geology. This typically includes a multi-day field component. Associated with these activities are the publication of abstract volumes and excursion or other guidebooks.

 Work with various publishing houses and journals, and where appropriate in co-ordination with the IUGS, to promote the publication of symposia proceedings and a variety of contributions relevant to the history of geological sciences.

 Publish the INHIGEO Annual Record that incorporates information from the Officers and Members, national reports, book reviews, conference reports, interviews, obituaries, short historical research papers, and a variety of news items and illustrations that promote the sharing of professional insights.

 Provide regular information by email circulars to the INHIGEO membership dealing with issues of immediate relevance to the Commission and to the study of the history of the geological sciences.

 Develop and maintain an internet website that provides up-to-date information on the Commission's activities as well as other information that will be of interest to INHIGEO Members and the wider public.

 Liaise with IUGS to enhance the recognition of outstanding geologists via its "Scientific Awards of Excellence", and specifically with the "Vladimir V. Tikhomirov History of Geology Award".

 Contribute to Episodes on historical matters, for example by recording the history of past IGC meetings and other IUGS activities, by promoting knowledge of classic works in geology, and by furnishing reviews of books on the history of geological sciences.

**BY-LAWS**

**1.** INHIGEO is a Commission of the International Union of Geological Sciences (IUGS). It is also affiliated with the International Union of the History and Philosophy of Sciences (IUHPS).

**2.** INHIGEO is therefore bound by the IUGS Statutes and the IUGS By-Laws for Commissions.

**3.** The task of INHIGEO is to promote studies in the history of geological sciences and to stimulate and co-ordinate the activities of national and regional organizations that have the same purpose. It does so by promoting the holding of national, regional, and international symposia, by the organisation of informative field trips, by the publication of individual and collective works on the history of geological sciences, and by the maintenance of an informative website.

**4.** Reports on the work performed by INHIGEO, and its Members, and its plans and budget for the following year are to be submitted annually to the IUGS at a date designated by the IUGS Secretary-General. Similar reports are submitted to the IUHPS.

**Structure**

**5a**. A primary objective of INHIGEO is to establish an international network of scholars with active representation from as many countries as possible, and where possible having a diverse age range amongst its Members. INHIGEO specifically encourages the formation of national and regional groups.

**5b.** INHIGEO Members consist of scientists, historians and other scholars known for their publications and/or other activities in the field of the history of geological sciences.

**5c.** INHIGEO Honorary Senior Members are proposed by the INHIGEO Board from amongst the extant INHIGEO membership, in recognition of their significant contributions to the field of the history of geological sciences and/or to INHIGEO. Proposals shall require the endorsement of the INHIGEO members present at a subsequent INHIGEO Business Meeting.

**5d.** Individuals, who have a bone fide interest in the work of the Commission, but are not otherwise qualified for membership, may be nominated for approval by the INHIGEO Board as Associate Members. Associate Members cannot hold office, make nominations or participate in ballots, but in other respects have the advantages of INHIGEO membership. Over time, Associate Members are encouraged to qualify for and convert to full INHIGEO membership. Applications for Associate Membership of INHIGEO are especially encouraged from countries with minor scholarly communities.

**5e.** The INHIGEO Board consists of the President, regional Vice Presidents, Secretary-General, Editor, and Past President, with the Past Secretary-General having an ex officio role. Board membership should circulate within regions and to different countries as much as possible. The major regions, to be represented, when possible, are: North America, Latin America (South America, Central America and the Caribbean), Europe, Asia, Australasia and Oceania, and Africa. Board candidates are proposed by current Board members and elected by INHIGEO Members, subject to their approval by the IUGS Executive

Committee and ratification by the IUGS Council. Any INHIGEO Member can also nominate another Member or other Members for membership of the INHIGEO Board when nominations are called by the Secretary-General. If there is more than one nomination for any position then the SecretaryGeneral will organise an email ballot to determine Board membership. The President and other members of the Board remain in office until the next session of the IUGS Council and are eligible for re-election once only (or twice if their initial appointment was made between the years of the installation of IUGS Councils). The maximum term of office is therefore eight years under normal circumstances. Any casual vacancies on the Board will be filled by the residual Board with ratification by the INHIGEO membership at the earliest opportunity.

**5f.** Prospective members of INHIGEO shall normally be nominated by at least one INHIGEO member and supported by one Member of the INHIGEO Board, or by a national committee of geology or history of science. Nominations will be reviewed by the INHIGEO Board, the decisions of which will be conveyed to the INHIGEO Members present at the subsequent INHIGEO Business Meeting and will be announced in the Commission's subsequent correspondence to Members. Where appropriate, Associate, rather than Full Membership, may be proposed by the Board. If a person wishing to join INHIGEO is not acquainted with any INHIGEO Board Member, a Membership application may be made directly to the Secretary-General who will determine Board support and reach a decision accordingly.

**5g.** INHIGEO membership is ongoing, provided that participation in INHIGEO activities continues. Every four years (during the term of an elected Board) all Members, other than Honorary Senior Members, shall be asked whether they wish to continue their INHIGEO membership. Failure to respond will normally result in cancellation of membership. Activities contrary to the Objectives and Strategies of INHIGEO may also result in termination of INHIGEO membership.

**5h.** An INHIGEO Affiliated Association or Affiliate is an organisation, with similar objectives to INHIGEO, which has been specifically approved by the INHIGEO Board to have the status of "INHIGEO Affiliated Association". National and regional history of geology groups are encouraged, in particular, to affiliate. The Secretary of Affiliated Associations shall receive routine communications from INHIGEO with the expectation that similar information will be provided in exchange to INHIGEO. A summary annual report of an Affiliate shall, where possible, be published in the INHIGEO Annual Record. Affiliates are encouraged to report on INHIGEO activities and to promote INHIGEO, its conferences and publications. Individual members of Affiliates shall receive no additional privileges from INHIGEO. Affiliated Associations will be permitted to state formally in their correspondence that they are "Affiliated with the International Commission on the History of Geological Sciences (INHIGEO)". The status of "INHIGEO Affiliation Association" is ongoing unless terminated by the INHIGEO Board on recommendation from the Secretary General.

**Functions**

**6.** The INHIGEO Board directs the activities of the Commission. The President may delegate his or her powers to one of the Vice Presidents by mutual agreement. The President and the Secretary-General divide the management of organisational and financial matters between themselves.

**7.** The INHIGEO Board distributes information to Members by means of regular emails and the INHIGEO Annual Record in English.

**8.** INHIGEO Business Meetings are held at the time of the meetings of the International Geological Congress, in order:

**a.** to discuss reports on the work of INHIGEO and to consider plans for the next term;

**b.** to finalise Board membership for confirmation by the IUGS Council; and

**c.** to carry on any other Commission business that may come before the meeting.

**9.** INHIGEO Business Meetings can also be convened at any other time by decision of the Board. They shall normally be held at the annual INHIGEO conferences.

**10.** INHIGEO Board Meetings may be convened at any time as decided by the Board. It is anticipated that day-to-day matters will be regularly discussed by the Board, via email correspondence, given the world-wide dispersion of Board Members.

**11.** At INHIGEO Business Meetings each Member present (but not including Associate Members), including members of the Board, has a vote. A motion is considered passed if it receives a simple majority of the affirmative votes cast at the meeting.

**12.** The INHIGEO Board is responsible for recommending to the IUGS a recipient for the "Vladimir V. Tikhomirov History of Geology Award" every four years, during the first quarter of the year corresponding to an IGC. At this time, the INHIGEO Board shall communicate its nomination to the IUGS Board, for presentation by the IUGS President during the opening ceremony of the IGC.

Approved by the INHIGEO Board …… 2 December 2015
Approved by the IUGS Executive Committee…….……January 2016
Approved by the IUGS Council ……..……31 August 2016

# APPENDIX C **Affiliated Association**

INHIGEO Affiliated Associations
(Current as of June 2017)

| | |
|---|---|
| International | History of Earth Sciences Society (HESS) |
| Argentina | Comisión Argentina de Historia de la Geología |
| Australia | Earth Sciences History Group, Geological Society of Australia (ESHG) |
| Austria | Austrian Working Group "History of Earth Sciences" (AWGHES) |
| China | Committee on the History of Geology, Geological Society of China |
| France | Comité Français d'histoire de la Géologie (COFRHIGEO) |
| Italy | History of Geoscience Section; Geological Society of Italy |
| Japan | Japanese Association for the History of Geosciences (JAHIGEO) |
| Poland | Section on the History of Geological Sciences; Polish Geological Society |
| Poland | Polish Geological Institute |
| Serbia | History of Geology Division<br>Serbian Geological Society (Srpsko geološko društvo - SGD) – |
| United Kingdom | History of Geology Group (HOGG), Geological Society of London |
| Venezuela | Sociedad Venezolana de Historia de las Geociencias |

Mailing addresses upon request: wbrice@pitt.edu

**APPENDIX D** **Honorary Senior Members** August 2018

Addresses are provided in the 'INHIGEO Members' listing, along with an asterisk (*) before the last name and the designation 'HonSrMbr.'

Professor Kennard B. Bork, USA
Professor David F. Branagan, Australia
Professor Gordon Herries Davies, Ireland
Dr Gabriel Gohau, France
Professor Algimantas Grigelis, Lithuania
Professor Aleksandar Grubic Serbia
Professor Martin Guntau, Germany
Professor Wolfhart Langer, Germany
Professor Léo F. Laporte, USA
Professor Wolf Mayer, Australia
Professor Wojciech Narębski, Poland
Professor Sally Newcomb, USA
Professor Martin J. S. Rudwick, United Kingdom
Professor Janusz Skoczylas
Professor Kanemori Suwa, Japan
Professor Philippe Taquet, France
Professor Hugh S. Torrens, United Kingdom
Professor Zbigniew Wójcik, Poland

**APPENDIX E**

**NEW MEMBERS FOR 2017**

Dr. William Birch
9 Gladstone Street, Windsor,
Victoria, 3181
AUSTRALIA
AUSTRALIA
**Tel:** 613 8344 5049
**E-mail:** bbirch@museum.vic.gov.au

Professor Dr. Dr. H. C. Friedrich F. Steininger
Neue Gasse 7; 3730 Eggenburg, Österreich
AUSTRIA
AUSTRIA
**Tel:** +43 6644182397
**E-mail:** fritz.steininger@senckeberg.de

Dr Drielli Peyerl
Department of Scientific and Technological Policy
João Pandiá Calógeras, 51
Campinas, São Paulo State, Brazil, 13083-870,
University of Campinas
BRAZIL
BRAZIL
**Tel:** +55 19 98147-7249
**E-mail:** driellipeyerl@gmail.com

Dr Liang Liu
Zhongguancun East Road NO.55,
Haidian District, Beijing
The Institute for the History of Natural Sciences
CHINA
CHINA
**Tel:** 86-010-57552578
**E-mail:** liuliang@ihns.ac.cn

Dr Nicolas Ginsburger
17, rue Félicien Rops
91100 CORBEIL ESSONNES
FRANCE
FRANCE
**Tel:** 06 84 76 55 67
**E-mail:** nicolas.ginsburger@wanadoo.fr

Dr Pierre Savaton
36 route de Bretagne,
14790 MOUEN,
FRANCE
FRANCE
**Tel:** +33(0)231268190
**E-mail:** pierre.savaton@unicaen.fr

Akira Yamamoto
Meteorological Research Institute
1-1 Nagamine, Tsukuba, Ibaraki
305-0052 JAPAN
JAPAN
**Tel:** +81-29-853-8615
**E-mail:** ayamamot@mri-jma.go.jp

Dr Serge V. Naugolnykh
Pyzhevsky per. 7, Moscow,
119017 RUSSIA
RUSSIA
**Tel:** 8(916)143-5107
**E-mail:** naugolnykh@list.ru

Cand. Dr Peter Konečný
MUDr. Jána Straku 7,
96901 Banská Štiavnica
SLOVAC REPUBLIC
SLOVAC REPUBLIC
**Tel:** 00421-948-342 632
**E-mail:** peter_konecny@hotmail.com /
/ peter.konecny.schemnitz@gmail.com

Prof Bruce Cairncross
Department of Geology,
University of Johannesburg, PO Box 524,
Auckland Park, Johannesburg,
SOUTH AFRICA
SOUTH AFRICA
**Telephone:** (+27) (0)11-559-4713
**E-mail:** brucec@uj.ac.za

Dr Sharad Master
EGRI, School of Geosciences,
University of the Witwatersrand, P. Bag 3,
WITS 2050, Johannesburg,
SOUTH AFRICA
SOUTH AFRICA
**Tel:** +27-82-8949479
**E-mail:** sharad.master@wits.ac.za;
sharadmaster@yahoo.co.uk

# APPENDIX F

**INHIGEO MEMBERSHIP**

(Current as of April 2018)

Country of domicile is shown on one line

Below this is the country of the member's national affiliation

Ouahiba Bouzidi (Associate)
Bt B n°2 Cité des Falaises,
Ain Taya. Alger,
ALGERIA
ALGERIA
**Tel**: +213 717 136 69
**Email**: Ouahiba.Bouzidi@angcm.mem.gov.dz; oubouzidi@yahoo.fr

Professor Ricardo N. Alonso
Casilla de Correo N° 362,
4400-Salta,
ARGENTINA
ARGENTINA
**Tel**: 54 387 431 8313
**Email**: rnalonso@gmail.com

Professor Florencio G. Aceñolaza
Bartolomé Hernández 66
Yerba Buena
Tucumán.
ARGENTINA
ARGENTINA
**Tel**: 54 381 435 2767
**Email**: Facenola@infovia.com.ar

Professor Eduardo g. Ottone
IDEAN
Instituto de Estudios Andinos Don
ARGENTINA
ARGENTINA
**Tel:** +54.11.4576.3400 int. 275 Pablo
**Email:** ottone@gl.fcen.uba.ar

Professor Alberto C. Riccardi
Facultad de Ciencias Naturales y Museo,
Paseo del Bosque s/n, 1900 La Plata,
ARGENTINA
ARGENTINA
**Tel**: 54 221 425 7744
**Email**: riccardi@fcnym.unlp.edu.ar

Dr Daniel G. Rubiolo
Secretaria de Mineria de la Nacion
Avenida Julio à Roca #651, 10 Piso
Buenos Aires
ARGENTINA
ARGENTINA
**Tel:** 54 1 349 3166
**Email**: darubiolo@yahoo.com

Dr Ricardo José Sureda Leston
General de División
Juan Carlos Sánchez Nº 737,
Salta
ARGENTINA
ARGENTINA
**Tel**: 54 387 425 1080
**Email**: sureda@sinectis.com.ar

Dr Georgy Khomizuri
Institute of Geological Sciences
of the NAS of RA
24A Marshal Baghramyan Avenue,
0019 Yerevan, ARMENIA
ARMENIA Tel: 374 10-26-11-15
Email: g.khomizuri@yandex.ru

Gourgen Malkhasyan
app. 31/4, Yeznik Koghbatci str.,
Yerevan,
ARMENIA
ARMENIA
**Tel**: 374 010 53 36 86
**Email** gmalkhas@mail.ru

Professor Dr. Khachatur Meliksetain
Institute of Geological Sciences
Armenian National Academy of Sciences
24a Marshal Baghramyan Ave.
Yerevan,

ARMENIA
ARMENIA
**Tel**: +37491-503175
**Email:** km@geology.am

Professor Ashot Piliposyan
Aygestan 7th St., № 6
0070 Yerevan
ARMENIA
ARMENIA
**Tel**: 374 1 553118
**Email**: piliposyan@yahoo.com

Carol Bacon
74 Summerleas Rd
Fern Tree
Tasmania 7054
AUSTRALIA
AUSTRALIA
**Tel:** 61 3 6239 1409
**Email:** gclota@trump.net.au

Dr. William Birch
9 Gladstone Street, Windsor,
Victoria, 3181
AUSTRALIA
AUSTRALIA
**Tel:** 613 8344 5049
**E-mail:** bbirch@museum.vic.gov.au

Professor David *Branagan HonSrMbr
9 Chiltern Road
Willoughby
New South Wales 2068
AUSTRALIA
AUSTRALIA
**Tel:** 61 2 9958 7127
**Email:** dbranaga@mail.usyd.edu.au

Professor Barry J. Cooper
20 Royal Avenue
Burnside
South Australia 5066
AUSTRALIA
AUSTRALIA
**Tel:** 61 8 8332 1846
**Email:** barry@ananian-cooper.com

Dr Thomas A. Darragh
Division of Natural History
Museum of Victoria
P.O. Box 666E
Melbourne, Victoria 3001
AUSTRALIA
AUSTRALIA
**Tel:** 61 3 9270 5040
**Email:** tdarragh@museum.vic.gov.au

Professor J. B. Jago
School of Natural and Built Environments
University of South Australia
Mawson Lakes
SA 5095
AUSTRALIA
AUSTRALIA
**Tel**: +61 8 8302 3113
**Email**: jim.jago@unisa.edu.au

Professor E. Bernard Joyce
School of Earth Sciences
University of Melbourne
Melbourne VIC 3010
AUSTRALIA
AUSTRALIA
**Tel:** 61 03 9347 2958
**Email:** ebj@unimelb.edu.au

Dr. C. R. Lawrence
School of Earth Sciences
University of Melbourne
Victoria 3010
AUSTRALIA
AUSTRALIA
**Tel** +61 3 9846 8486
**Email**: crl@unimelb.edu.au

Professor Homer Le Grand
Faculty of Arts
Monash University
Caulfield East
Victoria 3145
AUSTRALIA
AUSTRALIA
**Tel:** 61 3 9903 4632
**Email:** homer.legrand@monash.edu

Dr. Wolf *Mayer HonSrMbr
Research School of Earth Sciences
Australian National University
Canberra ACT 0200
AUSTRALIA
AUSTRALIA
**Tel:** 61 0 2 6258 2949 (Home)

**Email:** wolf.mayer@bigpond.com.au

Dr Doug McCann
28 Gibson Crescent Reservoir
VIC 307
AUSTRALIA
AUSTRALIA
**Tel:** 61 3 9442 3243
**Email:** damccann@unimelb.edu.au

Greg McNally
29A Grosvenor Street
Wahroonga, NSW 2076
AUSTRALIA
AUSTRALIA
**Tel:** 61 2 9928 2192
**Email:** gmcnally46@optusnet.com.au

Dr Ken G McQueen
Faculty of Applied Science
University of Canberra
ACT 2601
AUSTRALIA
AUSTRALIA
**Tel**: 61 (0)2 6201 2520
**Email**: Ken.McQueen@canberra.edu.au

Dr Susan Turner
Queensland Museum Geosciences
69 Kilkivan Avenue
Kenmore
Queensland 4069
AUSTRALIA
AUSTRALIA
**Tel:** 61 7 3406 8350 (w) and 61 7 3878 1066 (h)
Emails: sue.turner@qm.qld.gov.au
paleodeadfish@yahoo.com

Professor Charles Rowland (Rowl) Twidale
School of Earth and Environmental Sciences
University of Adelaide
Adelaide, South Australia 5005
AUSTRALIA
AUSTRALIA
**Tel:** 618 8313 5392
**Email:** rowl.twidale@adelaide.edu.au

Dr Daniela Angetter
Krottenbachstraße 69-73/4/3
1190 Wien
AUSTRIA
AUSTRIA
**Tel:** +43 66 4263 8793
**E-mail**: Daniela.angetter@oeaw.ac.at

Dr Tillfried Cernajsek
Geologische Bundesanstalt F.A. Bibliothek und Verlag
Geodatenzentrale u. Wiss. Archiv
Postfach 127 Rasumofskygasse 23
A-1031, Wien
AUSTRIA
AUSTRIA
**Tel:** 43 1 7125 67465
**Email:** tillfried.cernajsek@aon.at

Dr. Margaret Hamilton
Seyringer Straße 1/2/310
1210 Wein
Österreich – AUSTRIA
AUSTRIA
**Tel:** +43 664 524 26 45

Thomas Hofmann
Geological Survey of Austria
Neulinggasse 38
A-1030 Wien
AUSTRIA
AUSTRIA
**Tel**: + 43 1 712 56 74 500
**Email**:thomas.hofmann@geologie.ac.at

Dr Bernhard Hubmann
Institut für Geologie und Paläontologie
Karl-Franzens-Universität Graz
A-8010 Graz,
HeinrichstraBe 26
AUSTRIA
AUSTRIA
**Tel:** 43 316 380 5586
**Email:** bernhard.hubmann@uni-graz.at

Dr Karl Kadletz
Hans Wilczekstr. 5/7
2100 Leobendorf
AUSTRIA
AUSTRIA
**Tel:** +43 2262 66736
**Email:** h.kadletz@kabsi.at

Professor Dr. Marianne Klemun
Department of History

University of Vienna
1010 Wien, Dr. Karl Lueger-Ring 1
AUSTRIA
AUSTRIA
**Tel:** 43 1 4277 40832
**Email:** marianne.klemun@univie.ac.at

Dr Richard Lein
Horneckgasse 4/5
A-1170 Wien
AUSTRIA
AUSTRIA
**Tel**: +43 14277 53441
**Email**: richard.lein@univie.ac.at

Dr. Johannes Mattes
Florianigasse 37/9,
1080 Wien,
AUSTRIA
AUSTRIA
**Tel:** +43 650 3855103
**Email:** johannes.mattes@univie.ac.at

Dr Franz Pertlik
Institut für Mineralogie und Kristallographie
Universität Wien – Geocentrum
Althanstrasse 14,
A-1090 Wien
AUSTRIA
AUSTRIA
**Tel**: +43 4277 53267
**Email**: franz.pertlik@univie.ac.at

Dr Albert Schedl
Geologische Bundestanstalt
Rasumofskygasse 23
Postfach 127
A-1031 Wien
AUSTRIA
AUSTRIA
**Tel:** 43 1 7125 67428
**Email:** albert.schedl@geologie.ac.at

Dr Claudia Schweizer
Am Modenapark 13/11
A-1030, Vienna
AUSTRIA
AUSTRIA
43 1 7133883
**Email:** c.schweizer@gmx.at

Dr Johannes Seidl
Archives of the University of Vienna
Postgasse 9
A-1010 Wien
AUSTRIA
AUSTRIA
**Tel:** 43 1 4277 172/17
**Email:** johannes.seidl@univie.ac.at

Professor Dr. H. C. Friedrich F. Steininger
Neue Gasse 7; 3730 Eggenburg, Österreich
AUSTRIA
AUSTRIA
**Tel:** +43 6644182397
**E-mail:** fritz.steininger@senckeberg.de

Mag. Matthias Svojtka
Anton Baumgartnerstrasse 44/A4/092,
1230 Wien,
AUSTRIA
AUSTRIA
**Tel** +4369912489448
**Email** matthias.svojtka@univie.ac.at

Professor Valeri A. Ermolenko
ul. Russiyanova 24 – 399
20141 Minsk
BELARUS
BELARUS
**Tel:** 375 17 260 5312
**Email:** irkim@tut.by

Professor Eric Groessens
Rue Louis Marcelis 98
B-1970 Wezembeek-Oppem
BELGIUM
BELGIUM
**Tel:** 02/78.87.614
**Email:** eric.groessens@sciencesnaturelles.be

Dr-Ing. Carlos Serrano
Casilla 115
Calle Millares 21
Potosí
BOLIVIA
BOLIVIA
**Tel:** 591 62 22498
**Email:** carlos_sarah12@yahoo.es

Prof Silvia F.de M.Figueirôa

Departamento de Ensino e Práticas Culturais
(DEPRAC)
Faculdade de Educação (FE) - UNICAMP
Av. Bertrand Russell, 801
Cidade Universitária "Zeferino Vaz"
13083-865 Campinas-SP
BRAZIL
BRAZIL
**Tel**: +55 19 3521-4553
**Email**: silviamf@unicamp.br

Dr Pedro Wagner Gonçalves
Dept. of Geosciencias Applied to Education
Institute of Geosciences
State University of Campinas
P.O. Box 6152 13081-970 Campinas Sao Paulo
BRAZIL
BRAZIL
**Tel:** +55 19 3788 7352
**Email:** pedrog@ige.unicamp.br

Maria Margaret Lopes
PPG Interunidades em Museologia - PPGMUS
Museu de Arqueologia e Etnologia - MAE
Universidade de São Paulo - USP
Av. Prof. Almeida Prado, 1466 - Butantã,
São Paulo - SP, 05508-070, Brazil
BRAZIL
BRAZIL
**Tel:** 0055-11-3091-5070-8652
**Email:** mariamargaretlopes@gmail.com

Dr Rualdo Menegat
P.O. Box 15.065
91501-970 – PORTO ALEGRE – RS
BRAZIL
BRAZIL
**Tel**: +55 51 3308 6376
**Email**: rualdo.menegat@ufrgs.br

Dr Ermelinda Moutinho Pataca
R. Raul de Souza, 90
Vila São João
Campinas/SP
CEP: 13085-474
BRAZIL
BRAZIL
**Tel:** +55 19 32898183
**E-mail:** ermelinda.pataca@gmail.com

Dr Drielli Peyerl
Department of Scientific and Technological Policy
João Pandiá Calógeras, 51
Campinas, São Paulo State, Brazil, 13083-870,
University of Campinas
BRAZIL
BRAZIL
**Tel:** +55 19 98147-7249
**E-mail:** driellipeyerl@gmail.com

Dr Jeferson de Lima Picanço
R. Alcindo Soares, 310;
Campinas (sp) CEP 13083-320
BRAZIL
BRAZIL
**Tel.:** + 55 19 3521 4571
**E-mail:** jeffpicanco@ige.unicamp.br

Prof Bozhidar Dimitrov Mavrudchiev
Bul. Tsarigradsko Shose 91,
Block 113;
Sofia 1113
BULGARIA
BULGARIA
**Tel:** +359 2 872 50 01
**E-mail** : Use platon@lark.tu-sofia.bg

Professor Platon Vassilev Tchoumatchenco
Geological Institute
Bulgarian Academy of Sciences
Acad. G. Bonchev Str. Bl. 23
1113 Sofia
BULGARIA
BULGARIA
**Tel:** +359 2 855 02 94
**E-mail** platon@lark.tu-sofia.bg

Professor Keynyn Brysse
Science, Technology, and Society Program,
Office of Interdisciplinary Studies
University of Alberta
Edmonton, Alberta T6G 2R3
CANADA
CANADA
**Email**:keynyn@gmail.com

Professor Dr. Ernst Hamm
Science and Technology Studies
Bethune College 218
York University
4700 Keele St

Toronto, Ontario M3J 1P3
CANADA
CANADA
Tel: 416 736 2100 ext 20223
**Email**: ehamm@yorku.ca

Professor Randall Miller
Geology and Palaeontology Section
Department of Natural Science
New Brunswick Museum
277 Douglas Avenue
Saint John,
New Brunswick E2K 1E5
CANADA
CANADA
**Tel** 506 643-2361
**Email:** Randall.Miller@nbm-mnb.ca

Professor S. George Pemberton
Department of Earth & Atmospheric Sciences
University of Alberta
Edmonton T6G 2E3 Alberta
CANADA
CANADA
**Tel:** 780 492 2044
**Email:** George.Pemberton@ualberta.ca

David Spalding
1105 Ogden Road
RR No. 1 Pender Island
British Columbia V0N 2M1
CANADA
CANADA
**Tel:** 1 250 629 2047
**Email:** david@davidspalding.com

Darren Tanke
Royal Tyrrell Museum of Paleontology
Box 7500, Drumheller,
AB T0J 0Y0
CANADA
CANADA
**Tel:** (403) 823-7707 (ext. 3300).
**Email** darren.tanke@gov.ab.ca

Dr Clinton R. Tippett
72 Edgepark Road
N.W., Calgary,
Alberta, T3A 4P8
CANADA
CANADA
**Tel:** +1 403-208-3543 (home)
**E-mail:** clintontippett88@gmail.com

Professor Reynaldo Charrier
Departamento de Geología
Facultad de Ciencias Físicas y Matemáticas
Universidad de Chile
Plaza Ercilla 803
Casilla de Correo 13518
Santiago
CHILE
CHILE
**Tel:** + 56 2 9784533
**E-mail:** rcharrie@ing.uchile.cl

Professor Francisco Hervé
Escuela de Ciencias de la Tierra
Universidad Andrés Bello
Facultad de Ingeniería
Sazié 2212, 5º Piso
Santiago
CHILE
CHILE
**Tel :** +56 2 7703373
**E-mail:** fherve@unab.cl

Professor Baoguo CHEN
Institute for the History of Geology
China University of Geosciences
29 Xueyuan Road
Beijing 10083
CHINA
CHINA
**Tel**: 010-82321968
**Emails**: Chenbaoguo1954@126.com;
13811940485@163.com

Dr Zhang ERPING
National Geological Library of China
P.O.Box 8324
Beijing 100083
CHINA
CHINA
**Tel** +86-10-62348090
**E-mail:** epzhang@126.com

Dr Chuanmao JI
Senior Consulting Centre
Ministry of Land & Resources
64 Funei Street,
Beijing, 100812

CHINA
CHINA
**Tel:** 010 6831 5161
**Email:** jcmwzx2005@yahoo.com.cn

Dr Dai JINYE
No.31 Xueyuan Road,
Beijing,
CHINA
CHINA
**Tels**: +86 10 8231 2962; +86 139 1032 3175
**E-mail**: daijinye.syky@sinopec.com

Professor Cai KEQIN
Department of Earth Sciences and Resources,
China University of Geosciences(Beijing)
29, Xueyuan Road Haidian District,
Beijing, 100083
CHINA
CHINA
**Tel**: 8610-62306639
**Email**: caikeqin@cugb.edu.cn

Dr Wan LI
Department of Water Resources & Environmental Sciences,
China University of Geoscience (Beijing),
29 Xueyuan Road,
Haidian District, Beijing 100083,
CHINA
CHINA
**Tel**:+86-10-82323727
**Email:** wanli@cugb.edu.cn

Dr Liang LIU
Zhongguancun East Road NO.55,
Haidian District, Beijing
The Institute for the History of Natural Sciences
CHINA
CHINA
**Tel:** 86-010-57552578
**E-mail:** liuliang@ihns.ac.cn

Yang MENGMENG (Associate)
No. 263 Beisihnan Zhonglu
Haidian District
Beijing
CHINA
CHINA
Tele: +86 13811940485
E-mail: mandynvnv@163.com

Professor Liu RUIXUN
School of Earth and Space Sciences,
Peking University,
Beijing 100871
CHINA
CHINA
**Tel**: 86 10 6275 2946
**Email**: liuruixu@pku.edu.cn

Dr Hu XIAOJING
Institute for the History of Natural Sciences,
Chinese Academy of Sciences,
55 Zhongguancun East Road
Haidian,
Beijing 100190,
CHINA
CHINA
**Tel**: +86 10 57552535
**Email**: Huxiaoj@ihns.ac.cn

Dr Cao XIPING
Geological Museum of China, Xisi
Beijing 100034
CHINA
CHINA
**Tel**: 86 10 6655 7405
**Email**: xptsao@126.com

Dr (Mrs) Yuan XUEMEI
Institute of History of Geology,
China University of Geosciences,
29 Xueyuan Road, Haidian District,
100083 Beijing,
CHINA
CHINA
**Tel**: +86-10-82322440
**Email**: yunxuemei@sina.com

Professor Guangrong YANG
Research Section on History of Geology
China University of Geosciences (Beijing)
29 Xueyuan Road
Beijing 100083
CHINA
CHINA
Tel: 86 10 8232 6368

Dr Jian-Zhao YIN
9280 Kirkmond Crescent
Richmond, B.C.

V7E 1M8
CANADA
CHINA
**Tel:** 1 604 271-7987
**Email:** jimyin7@yahoo.ca

Professor Zhendong YOU
School of Earth Sciences & Mineral Resources
China University of Geosciences
Bldg. 28-162, Chengfu Road 20
Haidian District, Beijing 100083
CHINA
CHINA
**Tel:** 86 010 82322553
**Email**: zhendongyou@tom.com

Professor Yusheng ZHAI
China University of Geosciences (Beijing)
29 Xueyuan Road
Beijing 100083
CHINA
CHINA
**Tel:** 86 10 8232 2650
**Email:** yszhai@cugb.edu.cn

Professor Jiuchen ZHANG
Institute for the History of Natural Science
Chinese Academy of Sciences
No. 55 Zhongguancun East Road,
Beijing 100190
CHINA
CHINA
**Tel:** 86 10 5755 2538
**Email:** zjc@ihns.ac.cn.

Professor Armando Espinosa-Baquero
Universidad del Quindio
Faculted de Ingenieria
Armenia
COLOMBIA
COLOMBIA
**Tel:** 6745 2708
**Email:** armandoespinosa@uniquindio.edu.co

Sr Guillermo E. Alvarado
Oficina de Sismologia y Vulcanologia
Instituto Costarricense de Electricidad
P.O. Box 10032-1000
San José
COSTA RICA
COSTA RICA
**Tel:** 506 220 6394
**Email:** galvaradoi@ice.go.cr

Sr Gerardo J. Soto
Apartado 123-2050
San Pedro de Montes de Oca
COSTA RICA
COSTA RICA
**Tel:** 506-8369-3126
**Email:** katomirodriguez@yahoo.com

Professor Mladen Juračić
Faculty of Science,
Department of Geology,
University of Zagreb,
Horvatovac 102,
10000 Zagreb,
CROATIA
CROATIA
**Tel**: + 385 (1) 4606099
**Email**: mjuracic@geol.pmf.hr

Dr Alena Cejchanova
Czech Geological Survey
Klarov 3
118 21 Prague
CZECH REPUBLIC
CZECH REPUBLIC
**Tel:** 257 089 431
**Email:** alena.cejchanova@geology.cz

Dr Josef Haubelt
Svojsovickà 10/2834
Sporilov II
CZ-14100 Praha 4
CZECH REPUBLIC
CZECH REPUBLIC
**Tel:** 420 2 7276 2531
**Email:** haubelt@pohoda.com

Dr Jan Kozák
Geophysical Institute
Czech Academy of Science
Bocni 11/1401
14131 Prague 4
CZECH REPUBLIC
CZECH REPUBLIC
**Tel:** 420 2 6710 3018
**Email:** kozak@ig.cas.cz

Professor Rudolf Musil

Department of Geology and Palaeontology
Masaryk-University
Kotlarska Street 2
611 37 Brno
CZECH REPUBLIC
CZECH REPUBLIC
**Tel:** 420 5 4112 9255
**Email:** rudolf@sci.muni.cz

Dr Karel Posmourny
Praha 8,
Na Malem klinu 1785/20
CZECH REPUBLIC
CZECH REPUBLIC
**Tel:** +420 775 148 515
**Email:** karel.posmourny@seznam.cz

Professor Antonin Prichystal
Department of Geology and Palaeontology
Masaryk University, Kotlarska 2
CZ-611 37 Brno
CZECH REPUBLIC
CZECH REPUBLIC
**Tel:** 420 5 4112 9247
**Email:** prichy@sci.muni.cz

Dr Milos Zárybnicky
Za Chalupami 144
150 00 Prague 5
CZECH REPUBLIC
CZECH REPUBLIC
**Tel:** 420 2 5791 1514
**Email:** hornik@centrum.cz

Professor Jens Morten Hansen
Geological Survey of Denmark
Oster Voldgade 10
DK-1350
Copenhagen
DENMARK
DENMARK
**Tel:** 45 3544 6340
**Email:** jmh@geus.dk

Mr Tonu Pani
Institute of Geology
University of Tartu
Vanemuise 46
Tartu 51014
ESTONIA
ESTONIA
**Tel:** 372 7 375 839
**Email:** tpani@ut.ee

Professor Claudine Cohen
68 rue de Rivoli
75004 Paris
FRANCE
FRANCE
**Tel:** + 33 1 42 78 22 07 /
(cell) + 33 6 60 36 67 64
**Email**: claudine.cohen@ehess.fr

Dr Nicolas Ginsburger
17, rue Félicien Rops
91100 CORBEIL ESSONNES
FRANCE
FRANCE
**Tel:** 06 84 76 55 67
**E-mail:** nicolas.ginsburger@wanadoo.fr

Dr Gaston Godard
UFR de Sciences de Terre
Université de Paris 7
2 Place Jussieu
75251 Paris Cedex 05
FRANCE
FRANCE
**Tel:** 33 1 4427 5191
**Email:** godard@ipgp.fr

Dr Gabriel *Gohau, HonSrMbr
2 av. Bernard Palissy
92 210 Saint Cloud
FRANCE
FRANCE
**Tel:** 33 1 4602 0097
**Email:** ga.gohau@wanadoo.fr

M. Philippe Grandchamp
5 rue du Coteau
92370
Chaville
FRANCE
FRANCE
**Tel:** 33 1 4709 6465
**Email:** phgrandchamp@gmail.com

Dr Pascal Richet
Physique des Mineraux et des Magmas
Institut de Physique du Globe de Paris
4, place Jussieu

75252 Paris cedex 05
FRANCE
FRANCE
**Tel:** 33 1 44 27 38 10
**Email:** richet@ipgp.jussieu.fr

Dr Pierre Savaton
36 route de Bretagne,
14790 MOUEN,
FRANCE
FRANCE
**Tel:** +33(0)231268190
**E-mail:** pierre.savaton@unicaen.fr

Professor Philippe *Taquet HonSrMbr
Laboratoire de Paleontologie
8 rue Buffon
Paris
75005
FRANCE
FRANCE
**Tel:** 33 1 4079 3039
**Email:** taquet@cimrs1.mnhn.fr;
philippe.taquet@wanadoo.fr

Professor Dr Jacques Touret
121 Rue de la Reunion (Apt 59)
75020 Paris
FRANCE
NETHERLANDS
**Tel**. 33 1 43483276
**Tel:** 31 20 444 7270
**Email:** ljtouret@orange.fr

Professor Rudolf Daber
Humboldt-Universität
Naturkundemuseum
Invalidenstrasse 43
10115 Berlin
GERMANY
GERMANY
**Tel:** 49 30 2093 8576
**Email:** DrRudolfDaber@web.de

Professor Martin *Guntau HonSrMbr
Am Fasanenholz 14
D-18147
Rostock
GERMANY
GERMANY
**Tel:** 49 381 201 8810
**Email: c**/- lea.seeber@gmail.com

Dr Gottfried Hofbauer
Geowissensschaftliche Dokumentation
Anzengruberweg 2
D 91056
Erlangen
GERMANY
GERMANY
**Tel:** 49 9135 729 415
**Email:** geoldoku@gdgh.de

Dr Marita Huebner
972 E. California Blvd. # 310
Pasadena, CA 91106,
USA
GERMANY
**Tel:** +1-626-4216974
**Email:**mhuebner@caltech.edu

Professor Jörg Keller
Mineralogisch-geochemisches Institut
University of Freiburg
Albertstr. 23b
D-79104 Freiburg
GERMANY
GERMANY
**Tel:** 49-761-203-6396 (direct:6404)
**Email:** Joerg.Keller@minpet.uni-freiburg.de

Dr Martina Koelbl-Ebert
Jura-Museum
Burgstrasse 19
D-85072 Eichstätt
GERMANY
GERMANY
**Tel:** 49 (0) 8421 89609
**Email:** koelbl-ebert@jura-museum.de

Professor Wolfhart *Langer, HonSrMbr
Institut für Paläontologie, Rhein
Friedrich-Wilhelm-Univesität, Nussallee 8
D-53115
Bonn
GERMANY
GERMANY
**Email:** palaeo.longus@gmx.de

Profesor Dr. Cornelia Lüdecke
PD Dr. habil. rer. nat.
Fernpassstrasse 3

D-81373 Munich
GERMANY
GERMANY
**Tel:** 49 89 725 6 725
**Email:** c.luedecke@lrz.uni-muenchen.de

Dr Peter Schimkat
Postfach 10 35 25
34035 Kassel
GERMANY
GERMANY
**Tel:** +49 561 895284
**Email:** mail@pschimkat.de

Prof. Dr. Klaus Thalheim
Sektionsleiter Mineralogie
Kustos für Mineralogie
Senckenberg Naturhistorische Sammlungen Dresden
Museum für Mineralogie und Geologie
Königsbrücker Landstraße 159
D-01109 Dresden
GERMANY
GERMANY
**Tel**: 49 (0)351-795841-4410
**E-mail**: klaus.thalheim@senckenberg.de

Dr Harald Walter
Langenau, Kastanienallee 32
09618 Brand-Erbisdorf
GERMANY
GERMANY
**Tel:** +49-(0)37322 41781 (mit AB)
**E-mail**: hkwalter@aol.com

Dr George N. Vlahakis
Aristotelous 18,
26 335 Patras,
GREECE
GREECE
Tel:00306945542449
**Emails**: gvlahakis@yahoo.com
gvlachakis@eap.gr

Dr Irma Dobos
Margit krt 44
H-1027
Budapest
HUNGARY
HUNGARY
**Tel:** 36 1 202 2741
**Email:** irma.dobos@gmail.com

Dr Jósef Hála
Hungarian Geological Survey
Népstadion ut 14
Pf. 106
H 1442 Budapest XIV
HUNGARY
HUNGARY
**Email:** papp49peter@gmail.com

Dr Miklos Kazmer
Department of Palaeontology
Eotvos University
P.O. Box 120
H-1518 Budapest
HUNGARY
HUNGARY
**Tel:** 36 1 381 0555
**Email:** mkazmer@gmail.com

Dr Gabor Papp
Department of Mineralogy and Petrology
Hungarian Natural History Museum
Pf. 137
H-1431 Budapest
HUNGARY
HUNGARY
**Tel:** 36 1 333 0655/2209
**Email:** papp49peter@gmail.com

Dr Terez Póka
Laboratory for Geochemical Research
Hungarian Academy of Science
Budaörsi ut 45
H-1112 Budapest
HUNGARY
HUNGARY
**Tel:** 361 319 3119/1153
**Email:** poka@sparc.core.hu

Dr Peter Rozsa
Department of Geology and Mineralogy
University of Debrecen
H-4010
Debrecen Pf 4
HUNGARY
HUNGARY
**Tel:** 36 52 447 474 (ext. 2311)
**Email:** rozsap@tigris.klte.hu

Professor Istvan Viczian

Branyiszko u. 7. I.5
H-1026
Budapest
HUNGARY
HUNGARY
**Tel:** 36 1 275 3263
**Email:** viczianif@gmail.com

Dr Pratik Chakrabarti
School of History,
Rutherford College,
University of Kent,
Canterbury, CT27NX,
UNITED KINGDOM
INDIA
**Tel**: +44 (0)1227824865
**Email** p.chakrabarti@kent.ac.uk

Professor Kottapalli S. Murty
101 Sneh Chaya Apts
28 Hindustan Colony Amaravti Road
Nagpur 440-010
INDIA
INDIA
**Tel:** 91 712 557 984
**Email:** murtysk1931@yahoo.co.in

Professor Gordon *Herries Davies, HonSrMbr
2 Ahmor
Lochmaddy
ISLE OF NORTH UIST
HS6 5BW
UK
IRELAND

Dr Patrick N. Wyse Jackson
Geological Museum
Department of Geology
Trinity College
Dublin 2
IRELAND
IRELAND
**Tel:**353-1-896-1477
**Email:** wysjcknp@tcd.ie

Dr Dov Ginzburg
Geological Survey of Israel
30 Malchei Yisrael St.
95 501 Jerusalem
ISRAEL
ISRAEL
**Tel:** 972 2 14 251

Dr Libera Paola Arena
via A. Appiani 20,
21100, Varese
ITALY
ITALY
**Tel**: +39 3204443696
**Email**: libera.arena@gmail.com

Professor Andrea Candela
Dipartimento di Scienze Teoriche e Applicate
Università degli Studi dell'Insubria
Via Mazzini 5,
21100 Varese
ITALY
ITALY
Tel. +39 332.831861
**Email**: jamescandela@hotmail.com

Professor Pietro Corsi,
Linacre College, Oxford
The Wellcome Unit for the History of Medicine
45-47 Banbury Road
OX2 6P2 - Oxford
UK
ITALY
tel. 0044 1865 274 613
**Email** pietro.corsi@history.oxford.ox.ac.uk

Dr Luca Ciancio
Dipartimento di Arte, Archeologia, Storia e Società
Università di Verona
Via S. Francesco, 22
37129 Verona
ITALY
ITALY
**Tel**: 045-8028122
**Email**: luca.ciancio@univr.it

Fabiana Console
Library, ISPRA
Via Vitaliano Brancati
48-00144 Rome
ITALY
ITALY
**Tel:** +39.06.5007.2329
**E-mail:** fabiana.console@isprambiente.it

Dr. Francesco Gerali
Senior Research Associate

Oil & Gas, Natural Resources, and Energy
Center, College of Law
The University of Oklahoma
300 Timberdell Road
Norman, OK 73019
USA
ITALY
**Tel:** +1 405-325-4699
**Email:** fgerali@ou.edu
francesco.gerali@gmail.com

Dr Francesco Luzzini
Via Vittorio Veneto,
18 – 20021, Bollate (Milan)
ITALY
ITALY
**Tel:** + 39 340 002 7012
**E-mail** francesco_luzzini@yahoo.com

Dr Stefano Marabini
Via S. Martino 1
48018 Faenza (RA)
ITALY
ITALY
**Tel:** +39 054 628 067
**Email:** stemarabini@libero.it

Marco Pantaloni
Geological Survey of Italy, ISPRA
Via Vitaliano Brancati
48-00144 Rome
ITALY
ITALY
**Tel:** +39.06.5007.4872
**E-mail:** marco.pantaloni@isprambiente.it

Dr Claudia Principe
Istituto di Geoscienza e Georisorse
Area della Ricerca, CNR di Pisa San Cataldo
Via Giuseppe Moruzzi 1
56124 Pisa
ITALY
ITALY
**Tel:** +39 050 315 2335/6
**Email:** c.principe@igg.cnr.it

Professor Ezio Vaccari
Dipartimento di Scienze Teoriche e Applicate,
Università degli Studi dell'Insubria
Via Mazzini 5
21100 Varese
ITALY
ITALY
**Tel:** 39 332 218 940 (W) 39 332 994 628 (H)
**Email:** ezio.vaccari@uninsubria.it

Professor Gian Battista Vai
Dip Scienze della Terre e Geologiche-Ambientali
Universitá di Bologna, Via Zamboni 67
I-40127
Bologna
ITALY
ITALY
**Tel:** 39 051 209 4552
**Email:** giambattista.vai@unibo.it

Professor Nobuyuki Aida
Kichioka 1085-5
Narita City,
Chiba Prefecture 287-0225
JAPAN
JAPAN
**Tel**: +81-476-73-7453
**Email**: bk003769@ni.bekkoame.ne.jp

Dr Shigeyuki Aoki
Ikki-machi Tsuruga,
Aizu-Wakamatsu,
Fukushima, 965-8580
JAPAN
JAPAN
**Tel**: +81-(0)242-37-2647
**Email**: aoki@u-aizu.ac.jp

Professor Michiya Inomata
Godo 581
Isehara City,
Kanagawa Prefecture
259-1138 JAPAN
JAPAN
**Tel**. +81-3-5477-2517
**Email** inomata2@nodai.ac.jp

Dr Akira Ishiwatari
Center for Northeast Asian Studies,
Tohoku University,
Kawauchi 41,
Aoba-ku,
Sendai 980-8576
JAPAN
JAPAN
**Tel**: +81-22-795-3614
**Email**: geoishw@cneas.tohoku.ac.jp

Dr Hirokazu Kato
Central 7, 1-1-1 Higashi Tsukuba,
Ibaraki, 305-8567,
Geological Survey of Japan,
AIST(Advanced Industrial Science and Technology)
JAPAN
JAPAN
**Tel** 81-3-3772-9455
**Email** h.katou@aist.go.jp

Professor Shigeo Kato
Mikajima 2-579-15
Tokorozawa-shi,
Saitama Prefecture 359-1192
JAPAN
JAPAN
**Tel** 81-4-2947-6793
**Email** kato@waseda.jp

Kwang-Nam Kim
Shin-machi 1-2-23-201
Hino, Tokyo, 191-0002
JAPAN
JAPAN
**Tel** 81-90-3209-2577
**Email** gel@trevi.jp

Tomomi Nakagawa (Associate)
1318-2-509 Oba
Kasukabe, Saitama 344-0021
JAPAN
JAPAN
**Tel:** +81-48-734-5855/ +81-90-1542-3841
**E-mail:** peppermint-wind@ever.ocn.ne.jp

Professor Kanenori * Suwa, HonSrMbr
1-1020 Umemori-zaka
Meito-ku
Nagoya 465-0065
JAPAN
JAPAN
**Tel:** 81 52 701 0457
**Email:** ysuwa297@sf.starcat.ne.jp

Professor Fumihiko Tochinai
Takaodai 2-72-B201
Kanazawa,
Ishikawa Prefecture 921-8155
JAPAN
JAPAN
**Tel:** + 81-76-298-8006
**Email:** tochinai@neptune.kanazawa-it.ac.jp

Dr Michiko Yajima
#901
6-2-10, Hongo, Bunkyo-ku
Tokyo 113-0033
JAPAN
JAPAN
**Tel:** 81 3 3812 7039
**Email:** PXI02070@nifty.com

Dr Toshihiro Yamada
Yawata 525-13
Tateyama City, Chiba Prefecture
294-0047
JAPAN
JAPAN
**Tel:** +81 470 24 1851
**Email:** tosmak-yamada@muf.biglobe.ne.jp

Akira Yamamoto
Meteorological Research Institute
1-1 Nagamine, Tsukuba, Ibaraki
305-0052 JAPAN
JAPAN
**Tel:** +81-29-853-8615
**E-mail:** ayamamot@mri-jma.go.jp

Professor Toshifumi Yatsumimi
1-22-68, Omiya,
Suginami-ku
Tokyo, 168-0061
JAPAN
JAPAN
**Tel:** +81 3 5377 2027
**Email:** uptijg@coral.plala.or.jp

Dr Shigeo Yoshida
Department of Earth & Planetary Sciences,
Faculty of Sciences,
Kyushu University
6-10-1 Hakozaki,
Higashi-ku,
Fukuoka 812-8581
JAPAN
JAPAN
Tele:+81-92-642-2646
**Email**: yoshida.shigeo.305@m.kyushu-u.ac.jp

Dr Beneah Daniel Onyango Odhiambo (Associate)

Department of Geography
Moi University
P.O. Box 3900
Eldoret
KENYA
KENYA
**Tel:** +254 720 307 30
**Email:** odhiambobdo@gmail.com

Professor Rodney Grapes
45 Collier Avenue
Karori
Wellington
Korea
NEW ZEALAND
**Email:** grapes@korea.ac.kr

Dr Ervin Luksevics
Department of Geology
University of Latvia
Rainis Blvd 19
Riga LV-1586
LATVIA
LATVIA
**Tel:** 371 733 1766
**Email:** Ervins.Luksevics@lu.lv

Professor Algimantas *Grigelis HonSrMbr
13 Sevcenkos Street
2699
Vilnius
LITHUANIA
LITHUANIA
**Tel:** 370 5 210 47 15
**Email**: algimantas.grigelis@geo.lt

Dr Gailé Zaludiene
Institute of Geology & Geography
T. Sevcenkos g.13
03223 Vilnius
LITHUANIA
LITHUANIA
**Tel**: 370 5 210 47 10
**Email**: zaludiene@geo.lt

Dr (Mr) Lala Andrianaivo (Associate)
University of Antananarivo,
Ecole Supérieure Polytechnique (ESPA)
PO Box 1500, Antananarivo 101,
MADAGASCAR
MADAGASCAR
**Tel**: +261 33 73 421 07 (Mobile)
**Email**: andrianaivol@gmail.com;
andrianaivo@univ-antananarivo.mg

Chikondi Chisenga (Associate)
Ndata School of Climate & Earth Sciences
Malawi Univ. of Science & Technology
P. O. Box 5196, Limbe
MALAWI
MALAWI
**Tel:** +265 884 509 954
**E-mail:** cchisenga@must.ac.mw,
chicochise@gmail.com

Tamara Kamanga (Associate)
Geological Survey Department
P.O Box 27, Zomba
MALAWI
MALAWI
Tel: +265 888158814
**E-mail:** tamarakamanga@gmail.com

Professor Luis Espinosa Arrubarrena
Museo de Geología, UNAM
Jaime Torres Bodet N° 176
Col. Santa María la Ribera, 06400
México, D.F.
MEXICO
MEXICO
Tel.: **+52 55 47 39 00 ext. 102**
**E-mail**: luinosa19@yahoo.com.mx

Professor Luz Fernanda Azuela
Instituto de Geografía
Universidad Nacional Autónoma de México,
Circuito exterior s/n
Ciudad Universitaria
04510, México, D. F.
MEXICO
MEXICO
**Tel**: 52 (55) 56-22-43-30
**Email** : lazuelab@yahoo.com.mx

Professor Enrique Alejandro González-Torres
Instituto de Geología,
Universidad Nacional Autónoma de México
Circuito de la Investigación Científica, C.U.
Coyoacan, 04510,
México, D.F.
MEXICO
MEXICO
**Tel**: + 52 55 56 22 42 93 ext. 212

**E-mail**: eagtgaia@geologia.unam.mx

Dr José Lugo-Hubp
Instituto de Geografía
Circuito Investigación científica
Ciudad Universitaria
04510 México, D.F
MEXICO
MEXICO
**Tel**: + 52 55 56 22 43 55
**E-mail**: joselugoh@hotmail.com

Professor Dante Jaime Morán-Zenteno
Alba 48, depto 301
México, D.F.
MEXICO
MEXICO
**Tel**: +52 55 56 22 43 28
**E-mail**: dantez@unam.mx

Lucero Morelos
5-10 Xicoténcatl, Col. Centro,
Delegation Cuauhtémoc, Mexico, D.F.
MEXICO.
MEXICO
**Tel**: 01 (55) 55 12 43 73
**Email**: lunalucerom@yahoo.com.mx;
siren_moon@hotmail.com

Professor Luis Sánchez-Graillet
Pie de la Cuesta 225,
Ixtapa 101
Col. El Retoño
México D.F. CP 09440
MÉXICO.
MEXICO
**Tel:**+52 55 56 33 85 33
**E-mail:** gatoceniciento@yahoo.com.mx

Óscar M. Torres-Montúfar
178 14th Avenue,
Ignacio Zaragoza,
Mexico DF 15730
MEXICO
MEXICO
**Tel:** 01 (55) 55-71-31-25
**Email:** oscar84_2000@yahoo.com

Professor José Alfredo Uribe Salas
Faculty of History
Universidad Michoacana de San Nicolás de Hidalgo
Ciudad Universitaria Avenida
Universidad No. 1600.
Colonia. Villa Universidad, C.P. 58060
Morelia, Michoacán
MÉXICO
MEXICO
**Tel**: +52 443 326 3674
**E-mail:** jausalas@gmail.com

Dr Nasser Ennih (Associate)
Geology Department,
Faculty of Sciences,
El Jadida University,
BP.20, 24000 El Jadida
MOROCCO
MOROCCO
**Tel**: + 212 661683585
**Email**: ennih.n@ucd.ac.ma

Professor Nour-Eddine Jalil
Department of Earth Sciences
Faculty of Sciences Semlalia,
PO Box 2390
Marrakech 40 000
MOROCCO
MOROCCO
**Tel:** +212 1 5 24 30 56 05
**E-mail**: njalil@ucam.ac.ma

Dr Gabriele I. C. Schneider
Geological Survey of Namibia
PO Box 2168
Windhoek
NAMIBIA
NAMIBIA
**Tel:**264 61 208 5205
**Email:** gschneider@mme.gov.na

Willemjan F. Barzilay
Ameland 18
3524 AK UTRECHT
Netherlands
NETHERLANDS
NETHERLANDS
**Tel:** +31 61 737 0944
**E-mail:** wbarzilay@gmail.com

Dr T.J.A. Reijers,
Geo-Training & Travel
Gevelakkers 11,
9465 TV Anderen

NETHERLANDS
NETHERLANDS
**Tel:** 31 592-241411
**Email:** tjareijers@hetnet.nl

Prof. Dr N.A. Rupke
Institut fuer Wissenschaftsgeschichte
Goettingen University
Papendiek 16
D-37073 Goettingen
GERMANY
NETHERLANDS
**Tel:** 49 551 39 9467
**Email:** nrupke@gwdg.de

Professor A.J. (Tom) VAN LOON
Dillenburg 234
6865 HR Doorwerth
NETHERLANDS
NETHERLANDS
**Tel:** +31-26-339 0908
**E-mail** tom.van.loon@wxs.nl

Professor Emeritus Frederik R. van Veen
Dorpsstraat 2
9957 ND
Saaxumhuizen
NETHERLANDS
NETHERLANDS
**Tel:**0595 425265
**Email:** f.r.vanveen@gmail.com

Dr Michael Johnston
395 Trafalgar Street
Nelson
NEW ZEALAND
NEW ZEALAND
**Tel:** 64 3 546 7475
**Email:** mike.johnston@xtra.co.nz

Dr Simon Nathan
2a Moir Street
Mt. Victoria
Wellington
NEW ZEALAND
NEW ZEALAND
**Tel:** 64 4 384 5444
**Email:** s.nathan@xtra.co.nz

John Taylor
22 Munson Street
Reefton, 7830
NEW ZEALAND
NEW ZEALAND
**Tel:** +643 732 8160
+64 27 212 5309
**Email:** taylor.john.nz@gmail.com

Professor J. B. Waterhouse
25 Avon Street
Oamaru
NEW ZEALAND
NEW ZEALAND
**Email:** perma@xnet.co.nz

Dr Mayen E. Adiuku-Brown (Associate)
Department of Geology and Mining,
University of Jos,
P.M.B 2084 Jos
Plateau State
NIGERIA
NIGERIA
**Tel:** +234 8034419264
**Email**: mayenadiukubrown@yahoo.com

Professor Geir Hestmark
University of Oslo
Department of Biology
Blindern Postboks 1066
N-0315 Oslo
NORWAY
NORWAY
**Tel:** 47 2285 4581
**Email:** geir.hestmark@bio.uio.no

Professor Allan Krill
Department of Geology
Norwegian University of Science & Technology
Sem Selands v 1
7491 Trondheim
NORWAY
NORWAY
**Tel:** +47 73594803
**E-mail:** krill@ntnu.no

Dr Hugh Davies
Box 414, University Post Office NCD
PAPUA NEW GUINEA
PAPUA NEW GUINEA
**Tel:** 675 76999176
**Email**: hdavies@upng.ac.pg;

Professor Stefan W. Alexndrowicz
ul. Lobzowska 29/2
31-139 Krakow
POLAND
POLAND
**Tel:** 48 12 423 44 11 (Cell)
**Email:** sz.alex@vp.pl

Marek Graniczny
Polish Geological Institute – NRI
str. Rakowiecka 4
00-975 Warszawa
POLAND
POLAND
**Tel:** +48 500 162 002
**E-mail:** marek.graniczny@pgi.gov.pl

Professor Andrzej Grodzicki
50-374 Wroclaw, ul.
Norwida 15/6
POLAND
POLAND
**Tel:** 48 (0)71 328 33 36
**Email**: agrodz@ing.uni.wroc.pl

Dr Piotr Krzywiec
Institute of Geological Sciences
Polish Academy of Sciences
Twarda street, 51/55
00-818 Warsaw,
POLAND
POLAND
**Email**: piotr.krzywiec@twarda.pan.pl
**Tel**: +48-22-6978749

Jerzy Bartłomiej Miecznik
ul. Magellana 9/7
02-777 Warszawa
POLAND
POLAND
**Tel:** +48 505 631 388
**E-mail:** jerzybartm@gmail.com

Professor Wojciech *Narebski HonSrMem
Muzeum Ziemi PAN
ul Zelechowskiego 4/30
30-124 Krakow
POLAND
POLAND
**Email:** wnarebski@op.pl

Professor Janusz *Skoczylas HonSrMem
Inst. of Geology, Univerytet im. Adama Mickiewicza
ul. Maków Polnych 16
61-606 Poznan
POLAND
POLAND
**Tel:** 48 61 829 6019
**Email:** skocz@amu.edu.pl

Professor Radoslaw Tarkowski
Department of Geology
Pedagogical University (Cracow)
ul. Grota-Roweckiego 49/6
30-348 Krakow
POLAND
POLAND
**Tel:** 48 012 632 67 17 (Home)
**Email:** tarkowski@min-pan.krakow.pl

Dr Andrzej J. Wojcik
Institute of History of Sciences
Polish Academy of Sciences
ul. Dzialkowa 37
43-600 Jaworzno
POLAND
POLAND
**Tel:** 48 32 616 21 64
**Email:** anwoja@jawnet.pl

Professor Zibigniew *Wojcik HonSrMbr
Chlodna 15/1022
00391 Warszawa
POLAND
POLAND
None

Krystyna Wołkowicz
ul. M. Dąbrowskiej 23/56
02-903 Warszawa
POLAND
POLAND
**Tel:** +48 609 494 292
**E-mail:** krystyna.wolkowicz@pgi.gov.pl

Dr Stanisław Wołkowicz
Program Bezpieczeństwo Energetyczne
Państwowy Instytut Geologiczny – Państwowy Instytut Badawczy
Ul. Rakowiecka 4, 00-975 Warszawa
POLAND

POLAND
**Tel:** 22 45 92 584; fax: 22 45 92 001
**Email:** www.pgi.gov.pl

Professor Luis Aires-Barros
Laboratory of Mineralogy and Petrology
Instituto Superior Tecnico
Av. Rovisco Pais
1049-001 Lisbon
Also : Professor Luis Aires-Barros
Rua de Entrecampos, nr 36, 1 D
1700-159 Lisbon
PORTUGAL
PORTUGAL
**Tel:** 351 218 400 806
**Email:** airesbarros@popsrv.ist.utl.pt

Dr Filomena Amador
Departamento de Ciências Exactas e Tecnológicas
Unversidade Alberta
Rua da Escola Politécnica No. 147
1250 Lisboa
PORTUGAL
PORTUGAL
**Tel:** 351 214108531
**Email:** famad@uab.pt

Professor Dr João Luís Cardoso
Universidade Aberta
Palacio de Ceia
R. Escola Politecnica n. 147
1200-1000 Lisboa
PORTUGAL
PORTUGAL
**Email:** arqueolo@univ-ab.pt

Dr Ana Carneiro
SACSA, Faculdade de Ciencias e Tecnologia
Universidade Nova de Lisboa
2825-114 Monte de Caparica
PORTUGAL
PORTUGAL
**Tel:** 351 21 2948 533
**Email:** amoc@sapo.pt

Professor Antonio Augusto Soares de Andrade
Dept Geosciencias
Universidade de Aveiro
3810-Aveiro
PORTUGAL
PORTUGAL
**Tel:** 351 34 370 747
**Email:** asandrade@geo.ua.pt

Professor Martim Portugal e Vasconcelos Ferreira
Departamento de Ciências da Terra
Apartado 3014
Universidade de Coimbra
3049 Coimbra
PORTUGAL
PORTUGAL
**Tel:** 351 239 825 144
**Email**: None

Dr Teresa Salomé Alves da Mota
Centre for the History and Philosophy of Science,
New University of Lisbon,
Faculty of Sciences and Technology,
Monte da Caparica,
2829-516 Caparica
PORTUGAL
PORTUGAL
**Tel:**
**Email:** salome.teresa@gmail.com

Professor Miguel C. F. Telles Antunes
Departamento de Ciências de Terra
Centro de Estudos Geologitas
Universidade Nova de Lisboa
P-2825 Monte de Caparica
PORTUGAL
PORTUGAL
**Tel:** 351 21 2948537
**Email:** mtantunes@acad-ciencias.pt

Professor Nicolae Anastasiu
Department of Mineralogy
Bucharest University
1, Bd. N. Balcescu
Bucharest 70111
ROMANIA
ROMANIA
**Tel:** 0040 21 314 35 08 / 282
**Email:** nicanastasiu@gmail.com

Dr Alexander S. Alekseev
Department of Paleontology
Geological Faculty,
Lomonosov Moscow State University,
119991 Leninskie gory,
Moscow
RUSSIA

RUSSIA
**Tel:** +7 495 939 4924
**Email:** aaleks@geol.msu.ru

Dr Zoya Bessudnova
Vernadsky State Geological Museum
Nakhimovsky prospekt 50, ap. 90
Moscow 117292
RUSSIA
RUSSIA
**Tel:** 7 095 203 5117
**Emails:** zbessudnova@gmail.com ;
zoyaa@yandex.ru

Tatiana Feklova (Associate Member)
187323, Russia, Leningradsky region,
Kirovsky district, Leningradsky pr, 18-5
RUSSIA
RUSSIA
**Tel:** +79117546553
**E-mail:** tat-feklova@yandex.ru

Dr Tatiana Ivanova
Earth Science Museum,
Lomonosov Moscow State University
Leninsky Gory 119992
Moscow
RUSSIA
RUSSIA
**Tel:** 7 095 939 2227
**Emails:** tkivan@mes.msu.ru;
ivanova250@mail.ru

Dr Leonid R. Kolbantsev
74 Srednij prospect,
VO. 199106
St-Petersburg,
RUSSIA
RUSSIA
**Tel:** +7 812 328 87 87
**E-mail** Leonid_Kolbantsev@vsegei.ru

Dr Andrei V. Lapo
All-Russian Geological Research Institute
(VSEGEI)
Sredny pr. 74
199106
St Petersburg
RUSSIA
RUSSIA
**Tels:** 7 812 328 87 93, 7812 3216898
**Email:** andrei_lapo@vsegei.ru

Dr Irena G. Malakhova
Geological Institute
Russian Academy of Sciences
Pyzhevsky 7
119017 Moscow
RUSSIA
RUSSIA
**Email**: malakhova@sgm.ru; igm@ginras.ru

Dr Elena Minina,
Vernadsky State Geological Museum,
Russian Academy of Sciences
11 Mokhovaya str.
125009 Moscow
RUSSIA
RUSSIA
**Tel**: 7-495-629-77-08
**Email:** mel@sgm.ru

Dr Serge V. Naugolnykh
Pyzhevsky per. 7, Moscow,
119017 RUSSIA
RUSSIA
**Tel:** 8(916)143-5107
**E-mail:** naugolnykh@list.ru

Igor G. Pechenkin
31, Staromonetny per.
Moscow, 119017
RUSSIA
RUSSIA
**Tel:** +7 495 950 34 64
**E-mail:** pechenkin@vims-geo.ru

Professor Anatoly G. Ryabukhin
Faculty of Geology
Moscow State University
119899 Moscow
RUSSIA
RUSSIA
**Tel:** 7 095 939 2081
**Email:** ryabuhin@geol.msu.ru

Dr Yu. Ya. Soloviev
Vernadsky State Geological Museum
Mokhovaya 11
Building 2
103009 Moscow
RUSSIA

RUSSIA
**Tel:** 7 095 203 4796
**Email:** histgeo@sgm.ru

Professor Gennadiy Trifonov
Philosophy Department
Chuvash State University
Moskovskiy prospect, 15
428015, Cheboksary
RUSSIA
RUSSIA
**Tel:** (8352) 45-96-82
**Email:** gen-trifonov@yandex.ru

Dr Yury L Voytekhovsky
14, Fersman Street,
184209, Apatity,
Murmansk region
RUSSIA
RUSSIA
**Tel**: +7 (81555) 79656
**Email**: woyt@geoksc.apatity.ru

Ivan P. Vtorov (Associate)
Geological Institute
Russian Academy of Sciences
Pyzhevsky 7
119017 Moscow
RUSSIA
RUSSIA
**Tel**: +7 903-714-0718
**Email**: vip@ginras.ru

Dr Tivadar Gaudenyi
Geographical Institute "Jovan Cvijic" SASA;
Djure Jaksica 9.
11000 Belgrade
SERBIA
SERBIA
**Tel:** + 36 65 677 53 13
**Email:** t.gaudenyi@gi.sanu.ac.rs

Professor Aleksandar *Grubic HonSrMbr
Rudarsko-Geoloski Fakultet
Djusina 7
11000 Belgrade
SERBIA
SERBIA
**Tel:** 381 11 402 707
**Email:** aleksandar_grubic@yahoo.com

Professor Mladjen Jovanovic
Faculty of Sciences,
University of Novi Sad,
Trg Dositeja Obradovića 3,
21000 Novi Sad,
SERBIA
SERBIA
**Tel:** +381 65 677 5312
**Email**: mladjen.jovanovic@dgt.uns.ac.rs

Professor Vidojko Jovic
Rudarsko-Geoloski Fakultet
Djusina 7
11000 Belgrade
SERBIA
SERBIA
**Tel:** 381 11 3226 032

Professor Ljupko Rundić
University of Belgrade,
Faculty of Mining and Geology,
Department of Geology,
Kamenicka 6,
11000 Belgrade
SERBIA
SERBIA
**Tel:** +381 11 2632 166
**Email:**rundic@rgf.bg.ac.rs

Professor Mihael Brenčič
Department of Geology,
Natural Science and Technical Faculty,
University of Ljubljana,
Aškerčeva cesta 12,
SI-1000 Ljubljana
SLOVENIA
SLOVENIA
**Tel**: + 386 1 2445 414
**Email**: mihael.brencic@ntf.uni-lj.si

Cand. Dr Peter Konečný
MUDr. Jána Straku 7,
96901 Banská Štiavnica
SLOVAC REPUBLIC
SLOVAC REPUBLIC
**Tel:** 00421-948-342 632
**E-mail:** peter_konecny@hotmail.com /
/ peter.konecny.schemnitz@gmail.com

Prof Bruce Cairncross
Department of Geology,

University of Johannesburg, PO Box 524,
Auckland Park, Johannesburg,
SOUTH AFRICA
SOUTH AFRICA
**Telephone:** (+27) (0)11-559-4713
**E-mail:** brucec@uj.ac.za

Dr Sharad Master
EGRI, School of Geosciences,
University of the Witwatersrand, P. Bag 3,
WITS 2050, Johannesburg,
SOUTH AFRICA
SOUTH AFRICA
**Tel:** +27-82-8949479
**E-mail:** sharad.master@wits.ac.za;
sharadmaster@yahoo.co.uk

Professor José Luis Barrera
c /Isla Cristina, 7
28035-Madrid
SPAIN
SPAIN
**Email** biotita@arrakis.es

Ester Boixereu
Ríos Rosas, 23
28007 Madrid
SPAIN
SPAIN
**Tel :** +34 91 3495791
**Email :** e.boixereu@igme.es

Sr Candido Manuel Garcia Cruz
Urbanizacion Llombet, 29
38296 La Laguna
Santa Cruz de Tenerife
Canary Islands
SPAIN
SPAIN
**Email:** candidomgc@gmail.com

Dr Carlos Martin Escorza
National Museum of Natural History
José Gutiérrez Abascal, 2
28006 Madrid
SPAIN
SPAIN
**Tel:** 34 914 11328 ext 1167
**Email:** escorza@mncn.csic.es

Professor Luis F. Mazadiego
Escuela Técnica Superior de Ingenieros de Minas
Universidad Politécnica de Madrid
c/ Alenza 4
28.003 Madrid
SPAIN
SPAIN
**Tel** 34 91 336 7005
**Email:** luisfelipe.mazadiego@upm.es

Dr Jorge Ordaz
Universidad de Oviedo
Jesus Arias de Velasco s/n
33005
Oviedo
SPAIN
SPAIN
**Tel:** 34 98 5103 164
**Email:** jordaz@geol.uniovi.es

Dr Emilio Pedrinaci
Mirador, 8
41120 Gelves
Sevilla
SPAIN
SPAIN
**Tel:** 34 95 560 0651
**Email:** pedrinaci@telefonica.net

Dr Francisco Pelayo
Instituto de Historia
Centro de Ciencias Humanas y Sociales (CSIC)
C/ Albasanz 26-28
28037 Madrid
SPAIN
SPAIN
**Tel:** 96 386 4164
**Email:** francisco.pelayo@uv.es

Professor Dr Octavio Puche Riart
San Telesforo 39, 7°A
28017 Madrid
SPAIN
SPAIN
**Tel:** 34 91 3366 951
**Email:** Octavio.puche@upm.es

Dr Isabel Rabano
Instituto Geologico y Minero de Espana
Rios Rosas 23
E-28003 Madrid
SPAIN

SPAIN
**Tel:** 34 913 495819
**Email:** I.rabano@igme.es

Professor Leandro Sequeiros
Pintor El Greco 8, 5º
E-14004 Cordoba
SPAIN
SPAIN
**Tel:** +34 957 295369
**Email:** lsequeiros@probesi.org

Professor Dr Christer Nordlund
Department of Historical Studies
History of Science and Ideas
University of Umea
S-90187 Umea
SWEDEN
SWEDEN
**Tel:** 46 90 786 9733
**Email:** christer.nordlund@histstud.umu.se

Dr Björn Sundquist
Odensgatan 4A
SE-75315 Uppsala,
SWEDEN
SWEDEN
**Tel:** 46 18 694645
**Email:** bjorn.sundquist@comhem.se

Dominik Letsch
Guggerstrasse 39,
CH-8702 Zollikon,
SWITZERLAND
SWITZERLAND
**Tel:** +41 44 391 20 66
**Email**: dominikletsch@hotmail.com

Professor Henri Masson
Institut de Géologie
BFSH2 Université de Lausanne
CH-1015 Lausanne
SWITZERLAND
SWITZERLAND
**Tel:** 41 21 692 4305
**Email:** henri.masson@unil.ch

Dr Marc Weidmann
Sentier du Molard 3
CH-1085
Jongny
SWITZERLAND
SWITZERLAND
**Tel:** 41 21 922 9675
**Email**: weidmann-dutoit@bluewin.ch

Dr Andrea Westermann
Oberassistenz, Koordination Doktoratsstufe
Universität Zürich
Historisches Seminar
Karl Schmid-Strasse 4
CH-8006 Zürich
SWITZERLAND
SWITZERLAND
**Tel**: 41 44 63 43 858
**Email:** andrea.westermann@hist.uzh.ch

Professor A. M. C. Sengör
I.T.U. Maden Fakultasi
Jeoloji Muhendisligi Bolumu
Ayazaga 80 626 Istanbul
TURKEY
TURKEY
**Tel:** 90 216 332 0856
**Email:** sengor@itu.edu.tr

Stuart A. Baldwin
18 School Road,
Wickham Bishops,
Witham, Essex, CM8 3NU
UK
UK
**Tel:** +44 1621 891 526
**Email**: sbaldwin@fossilbooks.co.uk

Alan J. Bowden
Department of Earth & Physical Sciences,
World Museum (National Museums, Liverpool)
William Brown Street
Liverpool L3 8EN
UK
UK
**Tel**: 44151 478 4367
**Emails**: alan.bowden@liverpoolmuseums.org.uk;
alan.bowden5@googlemail.com

Professor Pietro Corsi,
Linacre College, Oxford
The Wellcome Unit for the History of Medicine
45-47 Banbury Road
OX2 6P2 - Oxford
UK

UK
tel. 0044 1865 274 613
**Email** pietro.corsi@history.oxford.ox.ac.uk

Dr Andrew Grout
Special Collections
Edinburgh University Library
George Square
Edinburgh EH8 9LJ
UK
UK
**Tel:** 44 131 651 1720
**Email:** andrew.grout@ed.ac.uk

C. John Henry (Associate)
71a Oxford Gardens,
London W10 5UJ,
UK
UK
**Tel**: +44 20 8968 8647
**Email**: geol.maps@virgin.net

Professor Richard Howarth
49 Selwyn Avenue
Richmond
Surrey
TW9 2HB
UK
UK
**Tel:** 44 20 8332 7835
**Email:** r.howarth@ucl.ac.uk

Professor Simon Knell
School of Museum Studies
University of Leicester
19 University Road
Leicester LE1 7RF
UK
UK
**Tel:** 44 116 252 3963
**Email:** sjk8@le.ac.uk

Dr. Cherry Lewis
Public Relations Office
Senate House, Tyndall Ave
University of Bristol
Bristol BS2 1TH
UK
UK
**Tel:** 44 117 928 8086
Email: cherry.lewis@bristol.ac.uk

Professor John D. Mather
4 Crockernwell Court
Crockernwell
Exeter EX6 6NA
UK
UK
**Tel**: 01647 24033
**Email**: mather@jjgeology.eclipse.co.uk

Dr Ralph O'Connor
Department of History
University of Aberdeen
Crombie Annexe
Meston Walk
Aberdeen AB24 3UB
UK
UK
**Tel**:
**Email**: ralph.j.oconnor@gmail.com

Professor Martin J. S. *Rudwick, HonSrMbr
2 Welsh Street,
BISHOP'S CASTLE,
Shropshire SY9 5BT
UK
UK
**Tel:** +44 1588 638 484
**Email:** mjsr100@cam.ac.uk

Professor James Secord
Department of History and Philosophy of Science
The University of Cambridge
Free School Lane
Cambridge CB2 3RH
UK
UK
**Tel:** 44 1223 334 544
**Email:** jas1010@cam.ac.uk

Dr Michael Taylor
Department of Geology and Zoology
National Museums of Scotland
Chambers Street
Edinburgh EH1 1JF
UK
UK
**Tel:** 44 131 220 4819
**Email:** mat22@le.ac.uk

Professor Hugh S. *Torrens, HonSrMbr
Lower Mill Cottage

Furnace Lane
Madeley, Crewe
CW3 9EU
UK
UK
**Tel:** 44 1782 750 689
**Email:** h.s.torrens@keele.ac.uk

Professor Victor Richard Baker
Department of Hydrology and Water Resources
The University of Arizona
Tucson
Arizona 85721 0011
USA
USA
**Tel:** +1 520 621 7875
**Email:** baker@hwr.arizona.edu

Professor Kennard B. *Bork HonSrMbr
35 Whitetail Lane
Sedona, AZ 86336-4501
USA
USA
**Tel** +1 928 554 4942
**Email**: bork@denison.edu

Professor Joanne Bourgeois
Dept.of Earth & Space Sciences
University of Washington
Seattle, WA 98195-1310
USA
USA
**Tel** +1206 525-8617
**Email** jbourgeo@uw.edu

Eric C. Brevik
291 Campus Drive
Dickinson State University
Dickinson, North Dakota, 58622
USA
USA
**Tel:** 1-701-483-2104
**E-mail:** Eric.Brevik@dickinsonstate.edu

Professor William R. Brice
116 Luna Lane
Johnstown,
Pennsylvania 15904-3068
USA
USA
**Tel** +1 814-269-3950
**Email** wbrice@pitt.ed

Dr Paul D. Brinkman
N. C. Museum of Natural Sciences
11 W. Jones St.
Raleigh, NC 27601
USA
USA
**Tel**: +1 919-707-9282
**Email**: paul.brinkman@naturalsciences.org

Joe Donald Burchfield
25 Windsong Drive
Fairview, North Carolina 28730-9700
USA
**USA**
**Tel:** 828-338-0443
**E-mail:** burchfield@niu.edu

Professor Renee M. Clary
Department of Geosciences
Mississippi State University,
P.O. Box 1705
MS 39762
USA
USA
**Tel**: +1-662-268-1032 extension 215 (office)
**Email** RClary@geosci.msstate.edu

Dr Karen S. Cook
914 W 27th Terrace
Lawrence, KS 66046
USA
USA
**Tel:** +1 785 864-3357 (Office weekdays)
**Email**: kscook@ku.edu

Professor John A. Diemer
Department of Geography & Earth Sciences
University of North Carolina at Charlotte
Charlotte, NC 28223
USA
USA
**Tel:** +1 704-687-5994
**Email** jadiemer@uncc.edu

Yildirim Dilek
Department of Earth and Environmental Science,
208 Shideler Hall,
Miami University,
Oxford, Ohio 45056

USA
USA
**Tel:** +1-513-529-2212
**E-mail:** dileky@miamioh.edu

Professor Henry Frankel
4800 West 66th Terrace
Prairie Village, KS 66208
USA
USA
**Tel:** +1 913-432-1862
**Email:** frankelh@umkc.edu

Dr. Francesco Gerali
Senior Research Associate
Oil & Gas, Natural Resources, and Energy
Center, College of Law
The University of Oklahoma
300 Timberdell Road
Norman, OK 73019
USA
ITALY
**Tel:** +1 405-325-4699
**Email:** fgerali@ou.edu
francesco.gerali@gmail.com

Professor Dr. Gregory A. Good
Director, Center for History of Physics
American Institute of Physics
1 Physics Ellipse
College Park, MD 20740-3843
USA
USA
**Email:** ggood@aip.org

Professor Mott Greene
University of Puget Sound
Tacoma, WA 98416
USA
USA
**Tel:** +1 253 879-3782
**Emails**:mottgreene@icloud.com;
mgreene@u.washington.edu

Dr. Sandra Herbert
Department of History
University of Maryland Baltimore County
1000 Hilltop Circle
Baltimore, MD 21250
USA
USA
**Tel**: +1 202 547 2073
**Email:** herbert@umbc.edu

Professor Léo F. *Laporte HonSrMbr
430 Nimitz Avenue
Redwood City CA 94061 4226
USA
USA
**Tel:** +1 650 364 3386
**Email:** laporte@ucsc.edu

Professor Alan E. Leviton
California Academy of Sciences
55 Music Concourse Drive
San Francisco, California 94118
USA
USA
**Tel** +1 650-380-2501
**Email** aleviton@calacademy.org

Dr Paul Lucier
35 Bethany Road
Wakefield, RI 02879
USA
USA
**Tel** +1 401-782-4262
**Email** plucier@cox.net

Dr. Kerry Magruder
History of Science Collections, University Libraries,
University of OK
401 W. Brooks Street, Room 521
Norman, OK 73019
USA
USA
**Tel:** +1 405 325 2741
**Email:** kmagruder@ou.edu

Dr. Clifford M. Nelson
2119 Russell Road
Berryville, VA 22611-2266
USA
USA
Tel: +1 540-955-2549
Email: clunydh@gmail.com

Professor Sally *Newcomb HonSrMbr
13120 Two Farm Drive
Silver Spring, MD 20904
USA

USA
**Tel: +1** 301 622 0177
**Email:** senewcomb@earthlink.net

Dr. Julie Newell
Social & International Studies Program, Southern Polytechnic
1100 South Marietta Parkway
Marietta, GA 30060
USA
USA
**Tel:** +1 770 528 7442
**Email:** jnewell@spsu.edu

Dr. John Norris
516, route de Thionville
L 5886 Alzingen
LUXEMBOURG
USA
**Tel** 00420 608 220 765
**Email:** norrisjohn1@gmail.com

Professor Antony Orme
Department of Geography
University of California, Los Angeles [UCLA]
Los Angeles,
CA 90095-1524
USA
USA
**Tel:** +1 310 825-1516; +1 825-1071
**Email:** orme@geog.ucla.edu

Professor Stephen Rowland
Department of Geoscience,
Box 454010
University of Nevada, Las Vegas
Las Vegas, NV 89154-4010
USA
USA
**Tel:** +1 702 895-3625
**Email:** steve.rowland@unlv.edu

Professor Dorothy Sack
Department of Geography
122 Clippinger Labs
Ohio University
Athens
Ohio, 45701
USA
USA
**Tel**: +1 740-593-9897 or +1 740-593-1149
**Email**: sack@ohio.edu

Dr. David Sepkoski
Max Planck Institute for the History of Science
Boltzmannstrasse 22,
14195 Berlin
GERMANY
USA
**Tel:** +4930 22667-232
**Email:** dsepkoski@mpiwg-berlin.mpg.de

Professor David I. Spanagel
Department of Humanities & Arts
Worcester Polytechnic Institute
100 Institute Road
Worcester, MA 01609-2280
USA
USA
**Tel**. +1 508-831-6403
**Email**: spanagel@wpi.edu

Professor Kenneth L. Taylor
Department of the History of Science
University of Oklahoma
Norman
OK 73019-0315
USA
USA
**Tel:** +1 405 325 5788
**Email:** ktaylor@ou.edu

Professor Roger D. K. Thomas
Department of Earth & Environment
Franklin & Marshall College,
P.O. Box 3003
Lancaster, Pennsylvania 17604-3003
USA.
USA
**Tel**: +1 (717) 291-4135
**Email**: roger.thomas@fandm.edu

Professor Leonard G. Wilson
797 Goodrich Avenue
Saint Paul, MN 55105
USA
USA
**Tel:** +1 651-224-7039
**Email**: wilso004@umn.edu

Professor Davis Young
2046 Treeridge Drive SE

Grand Rapids, Michigan 49508
USA
USA
**Tel:** +1 616-608-3216
**Email:** dotndave@comcast.net

Dr Lora N. Lordkipanidze
The Kh. M. Abdullaev Institute of Geology and Geophysics
Academy of Sciences of Uzbekistan
H. Khodzibaeva str., 700041
Tashkent
UZBEKISTAN
UZBEKISTAN
**Tel:** +998 71 1626381
**Email:** nurtaevb@gmail.com

Professor Rogelio Altez
Urb. La Lanada
Residencias De Mar, Torre 4, Apartamento 1-B
Caraballeda
Estado Vargas
VENEZUELA
VENEZUELA
**Tel:** +58 212 3129 934
**Email:** ryaltez@cantv.net

Dr Aníbal R. Martínez
Qta Maraní, Av Sur,
Urb Sta Sofía,
Caracas 1060
VENEZUELA
VENEZUELA
Tel +58 212 985 5724.
**Email:** anibalrmartinez@cantv.net

Ing. José Antonio Rodriguez-Arteaga
Venezuelan Foundation for Seismological Research
Urbanizacion El Llantino
Prolongacíon Calle Mara, Apartado Postal 76880
Caracas 1070-A
VENEZUELA
VENEZUELA
**Tel:** +58 212 257 5153/7672 ext 228
**Email:** rodriguez.arteaga@gmail.com

Dr Franco A. Urbani
Apartado 65693
Caracas 1061A
VENEZUELA
VENEZUELA
**Tel:** +58 212 272 0724
**Email:** urbanifranco@yahoo.com

Dr Khaled Mohammed Thabet Al-Selwi (Associate)
Department of Earth & Environmental Science,
Faculty of Science,
Sana'a University,
Republic of Yemen
YEMEN
YEMEN
**Tel**: +967-733617992 / +967-737657525
**Emails**: alselwi2001@hotmail.com;
alselwi2001@gmail.com

# Appendix G

## MEMBERSHIP NOMINATION FORM

| **NAME** |
| --- |
| Country |

**Birth date:**

**Address:**

**Telephone:**

**E-mail:**

**Education:**

(with dates)

**Positions held:**

(with dates)

**Areas of interest / expertise in geology (eg sedimentology, vulcanology):**

**Scientific Publications (summary in 1-3 lines):**

**Area of interest in the history of geosciences:**

**List of all publications in the history of geosciences:** (attach)

**Languages:**

**Indicate preference for either <u>Ordinary Membership</u> given demonstrated achievement in the history of geology or <u>Associate Membership</u>**
**Nominators:** (If available: Current INHIGEO member in same country or appropriate Government representative, another INHIGEO member, INHIGEO Board Member)

PLEASE SEND, PREFERABLY BY EMAIL TO THE INHIGEO SECRETARY GENERAL, To.- Prof. Marianne Klemun, Department for History, University of Vienna, Universitätsring 1, 1010 Vienna, Austria; EMAIL: marianne.klemun@univie.ac.at