International Commission on the History of Geological Sciences

INHIGEO

ANNUAL RECORD

No. 48
Covering activities generally in 2015
Issued in 2016

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 Wolf Mayer
INHIGEO Editor

Printed in Canberra on request
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PRESIDENT'S MESSAGE

Dear Members,

The fact that this is the 48th number of the *INHIGEO Annual Record* means, of course, that we are swiftly approaching INHIGEO's 50th anniversary. This has been on the minds of quite a few INHIGEO members during this past year, as they have worked on contributions to the historical volume in preparation under the leadership of Editor Wolf Mayer, assisted by Renee Clary and the volume editors Luz Azuela, Teresa Salomé Mota and Stanislaw Wolkowicz. *History of Geoscience: Celebrating 50 Years of INHIGEO* will appear in the Geological Society of London's Special Publications series, in time for the 2017 INHIGEO Conference to be held in Yerevan, where the Commission was born in 1967. As of the time I write (April 2016) over 40 articles and essays have been completed and submitted, approximately half of these having been already accepted while others remain under review or in revision. The book's components will begin to be posted online prior to its physical production, with the first of these expected to appear around the middle of 2016.

In 2015 INHIGEO returned to Beijing for its 40th Annual Conference (having met there previously in 1990 and 1996). Those attending enjoyed a highly successful conference under the overall theme "Geology and the Development of Economy and Society," with symposium topics devoted to geological science and technological development, mining development, conservation of geological relics, and biographies. Our hosts organized a mid-meeting field trip to visit the Peking Man Site and its Museum, and a post-meeting field trip lasting five days, in Shandong Province.

INHIGEO's 41st Annual Conference will be held within the framework of the 35th International Geological Congress, in late August and early September this year in Cape Town, South Africa. Secretary-General Barry Cooper has overseen the organization of several History of Geoscience sessions, addressing historical studies of Gondwana, history of geology in Africa, history of mineral and water resources, and early man and early geological ideas, as well as a session for general historical contributions. Greg Good has arranged a pre-conference historical excursion, "On the trail of Charles Darwin and John Herschel: The Cape in the 1830s."

In a few months' time my four-year term as INHIGEO's President will end. It has been a great privilege to serve as President of INHIGEO. I am very grateful for the confidence bestowed on me, in being chosen for the office, and I have truly enjoyed the experience. I wish to express again my gratitude to my American colleagues who contributed so much to the effort needed to organize the 2014 meeting in the United States. I thank all the members of the Board who have served so faithfully and constructively during the 2012–2016 period: Luz Azuela, Ken Bork, Karen Cook, Barry Cooper, Silvia Figueirôa, Greg Good, Mike Johnston, Martina Kölbl-Ebert, Wolf Mayer, and Jiuchen Zhang. I consider myself especially fortunate in the fact that the positions of Secretary-General and Editor have been held by two highly capable and dedicated persons, Barry Cooper and Wolf Mayer.

Ken Taylor

SECRETARY-GENERAL'S REPORT

Dear Members,

During 2015, INHIGEO has continued to flourish. By January 2016, we had a record 289 Members, including 8 Associate Members, from 57 countries, as well as 10 newly approved Affiliated Associations.

INHIGEO also held a highly successful 2015 conference, at the Geosciences International Conference Centre in Beijing, China. There were 120 participants from 14 countries. Thank you, Chen Baoguo, and our Chinese delegation for a superb effort. A full report on this event, including the wonderful field trips, is provided by Mike Johnston elsewhere in this Annual Record (p. 11).

During the year, our Editor has not only published a larger Annual Record totalling 212 pages, but has also been working prodigiously to compile and edit a special INHIGEO 50th anniversary volume for 2017, entitled, *History of Geoscience: Celebrating 50 Years of* INHIGEO. This will be published by the Geological Society of London. Many members have also spent much time writing papers and dealing with reviews as this significant effort approaches publication.

Sadly, 2015 also witnessed the loss of Ian Brooks (Canada) and Jean Gaudant (France). Jean was a long term stalwart of INHIGEO and the French Committee on the History of geology (COFRHIGEO).

In 2016 INHIGEO will meet again with the International Geological Congress, on this occasion in Cape Town, South Africa. As this Annual Record goes to press, 37 presentations have been offered on such wide ranging subject as the history of Gondwanaland, early man and early geological ideas, as well as the history of mineral resource development and Africa's contribution to the Earth sciences. A one-day pre-Congress historical field trip has been planned.

In 2017, INHIGEO members will journey to Yerevan, Armenia, the place of our first meeting in 1967, for our 50th anniversary. Our Armenian delegation is already working on the organisation of conference. Sessions are planned on:

- 50 years of INHIGEO
- 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
- General contributions and biographies of famous geologists

Both mid-conference and post-conference field trips are being organised to geological, historical and archaeological sites, to geological museums and to the Armenian Museum of Ancient Manuscripts (Matendaran).

As per INHIGEO practice I will step down, after two terms, as INHIGEO Secretary-General in Cape Town, in August 2016, in order that another member can undertake this enjoyable responsibility.

Last, but certainly not least, my thanks go to the full INHIGEO Board and especially President Ken Taylor, who are always ready to provide advice and support to the Secretary-General when it is needed.

My best wishes and thanks to all INHIGEO members,

Barry Cooper

EDITOR'S MESSAGE

Dear Members,

This volume of the *INHIGEO Annual Record* will be the fourth and the last under my editorship. It is with a feeling of both sadness and relief that I relinquish this important task. The last four years have given me the opportunity to meet and to correspond with a large number of our members from many countries and to learn about their varied interests and their work. I have formed good friendships with many members and hope that these will endure and continue to prosper. I shall miss the close interaction with scholars from different backgrounds, which my editorial responsibilities have enabled me to engage in. However, changing family circumstances have required a re-ordering of my priorities and have led to a reduction in the time available for professional activities.

It is very pleasing to know that Emeritus Professor William R. (Bill) Brice, of Johnstown, Pennsylvania in the USA, has agreed to nominate for the position of INHIGEO Editor for the period 2016-2020. Bill is a noted historian of geology and has published in this field. Our members can look forward to the continued publication of the Annual Record, and can be assured that its production will be in good and capable hands.

I would like to thank all those members who have sent in contributions for publication in this year's volume. As in previous years, a very special thank you must go to Mike Johnston, who prepared a detailed report of the 40th INHIGEO Meeting, held in Beijing last year, and of the associated excursions.

The low number of submissions of 'obligatory' activity reports continues to be a source of concern. This year, reports have been received from fewer than half of our member countries. It may be that members in some of the non-reporting countries have not carried out activities relating to the history of geology during the past year. The editor would nevertheless have appreciated receiving a note to this effect.

Volume 48 of the Annual Record again contains contributions on a range of topics of interest to INHIGEO members. In addition to the valuable record of our annual meeting in 2015, it features a number of articles, book reviews and obituaries, as well as the informative accounts of activities relating to the history of geology, carried out by many of our members.

Articles by our Japanese colleagues discuss the palaeobotanical work of Marie Stopes and Japanese research on the history of the geosciences in China. David Branagan has contributed an article on an 'exposition' of the mineral wealth of New South Wales in1906, and Karel Pošmourný discusses early European geological maps.

Obituaries in this volume pay tribute to INHIGEO members Ian Brooks (Canada) and Jean Gaudant (France), as well as to non-members Charles Gillispie (USA) and Larry Harrington (Australia), both of whom have made noted contributions to the history of science. In a separate piece Algimantas Grigelis remembers David Oldroyd.

The photos used in this volume have not been separately acknowledged, as the name of the photographer of some of the images is not known. However, most illustrations were supplied by Barry Cooper, Mike Johnston and Algimantas Grigelis and by the authors of the various articles.

The editor hopes to meet up again with friends and colleagues at the INHIGEO Meeting in Cape Town. Unfortunately, his attendance there is still uncertain.

Very best wishes to all INHIGEO members,

Wolf Mayer

THE INHIGEO ANNIVERSARY VOLUME

History of Geosience: Celebrating 50 Years of INHIGEO

We are making good progress in the preparation and production of our anniversary publication, *History of Geoscience: Celebrating 50 Years of INHIGEO*. It has been most pleasing to note the willingness of members to contribute to the important task of recording and analysing INHIGEO's history and to provide accounts of their current research on topics related to the history of geology.

A total of forty-three articles, most with informative illustrations, have been accepted for inclusion in this volume. They cover a wide range of topics across the spectrum of our sub-discipline, and promise to generate considerable interest following the publication of the book.

Members will be aware that it is our intention to divide the volume's contents into three parts. The first of these, which will feature contributions on aspects of the history of INHIGEO itself, has attracted six articles. The second part consisting of 14 papers does, in a broad sense, provide space to authors to reflect on the significance and relevance the history of geology and its importance in geological education. The final part, with 23 essays on geological history and on biographical studies of geologists in many countries, occupies the largest number of pages.

About half of the submitted articles have now reached the production stage. The publisher will publish print-ready papers online, possibly starting in July. We can expect that this mode of publication of contributions will continue to the end of the year. Copies of articles appearing online can be purchased from the publisher. The hardcopy of the book will most likely appear early in 2017, well ahead of the 50th anniversary meeting of INHIGEO in Yerevan, in September.

The publisher initially specified that the number of pages in the book should be limited to 400. We have been informed that a greater length would make the book financially unviable. It is clear now, that the enthusiastic and generous support of our members for this project, as evidenced by their many and often lengthy contributions, will result in a volume that exceeds the page limit set by the publisher.

Communications received from staff in the publisher's office have indicated that pages over the set limit of 400 will have to be paid for, at a rate of £85 per page.

The editor has returned a considerable number of manuscripts with more than the recommended limit of 8,000 words (10 pages), for further revision. A few authors have decided to pay page charges rather than shorten their respective articles. However, as we have received more contributions than originally expected, and as some articles have exceeded the set limit, many by only a modest amount, we will still end up with a volume of more than 400 pages. The editor, who will be ultimately responsible for any liability to the publisher, will receive an estimate of the page overrun in the near future.

One thought that now occupies the editor's mind, concerns the cover that should adorn the volume when published in hardback. It should, in some form or other, encapsulate and illustrate the broad theme of the book. Members are invited to send in their ideas and suggestions, if possible accompanied by suitable images.

The editor would like to thank all who have contributed to bringing this project to fruition. In particular Renee Clary (USA) for her advice, the volume editors, Luz Azuela (Mexico), Teresa Salomé Mota (Portugal) and Stanislaw Wolkowicz (Poland), for their valuable work, and the many INHIGEO members who have reviewed articles.

Wolf Mayer

CONFERENCE AND EXURSION REPORTS

40th INHIGEO Symposium, Beijing, China, 24 to 27 June 2015, with intra and post-meeting field trips to the Peking Man Site, 26 June, and the Shandong Province, 28 June to 2 July 2015

INHIGEO returned to Beijing, for the third time, for its 40th Symposium and business meeting, held in the International Conference Centre of the China University of Geosciences (Beijing), in the northwest of the teeming city. The meeting was superbly organised by Chinese colleagues, assisted by a large team of enthusiastic students and, at the meeting sessions, by translators. The outcome was that all were made welcome and any potential for language difficulties was avoided. In all there were 120 participants and it was pleasing to see the presence of a significant number of students or recent graduates.

The conference venue at the China University of Geosciences, Beijing

Wednesday, 24 June

Session 1

Session 1a: Chair Li Wan

The symposium opened with a welcome from Jun Deng, President of the China University of Geosciences (Beijing), and the Commission of the History of Geology, followed by a response from Barry Cooper, Secretary-General of INHIGEO. Mengmeng Yang, secretary of the 40th INHIGEO committee then read a message in support of the symposium from the President of INHIGEO, Ken Taylor, who was recuperating from recent surgery.

A celebratory and well-prepared documentary film, compiled for the meeting by the China University of Geosciences and titled "The Earth Sciences in Historical Review", was shown to the participants, before the opening ceremony concluded with a group photograph

(see below). This was taken in close proximity to a large slab of marble commemorating the holding of the 30th International Geological Congress in Beijing, in August 1996.

Participants at the 40th INHIGEO Meeting in Beijing, China

Session 1b: Chair Mengmeng Yang & Barry Cooper

GuangYu & Xuemei Yun – *The study on the history of geology, between China and the world exchange.*
Tatiana Feklova – *Russian scientists in China in the first half of the XIX century*.
Yalin Lei – *Study on the sustainable development of mining cities in China*.
Barry J. Cooper – *Geologists and the development of opal mining in Australia*.
Fengming Wu – *Achievements and contributions of V. V. Tikhomirov on the History of Geological Research: In commemoration of the centenary of the birth of V. V. Tikhomirov, geological historian of the Soviet Union.*
JiuchenZhang – *The historical circumstances of Western geologists in China: The sessment in different historical periods and the reasons.*

Session 2

Session 2a: Chair Xiping Cao & Wolf Mayer

Zhendong You and Longkang Sang – *The development of metamorphic geology in China: As viewed from the academic interchange between Chinese and foreign geologists.*
Martina Kölbl-Ebert – *Reinhold Seemann – a gentle uniformitarian in a catastrophists' world.*
Qingyu Pu – *The historical origin of global change research in China*.
Luz F. Azuela – *Towards a national geological survey in nineteenth century Mexico.*

Lifei Zhang, Zeng Lü and Chunjing Wei – *The study of metamorphic petrology in China.*
Wolf Mayer – *Early French contributions to Australian geology, 1788-1840.*

Session 2b: Chair Xiping Cao & Wolf Mayer

Genhou Wang & Dingyi Liang – *Century-old history of the geological sciences in Zhoukoudian.*
Shuyin Niu, Chao Chen, Aiqun Sun, Fuxiang Zhang and Baojun Ma – *Establishment of the mantle branch structure and its role in mineralization.*
Daoyi Xu – *The century changes of the main ways of geological thinking in respect of the correlation*.
Kolbantsev, L. R. – *On the history of geological studies of the tundra zone in Russia*.
Zhaoqian Wu – *Anhui geosciences in the last 2,600 years*.
Yufeng Zhou – *The inheritance and innovation of the geology curriculum system during the War of Resistance against Japan.*

The Editor, Wolf Mayer, chairing one of the sessions at the Beijing INHIGEO Symposium

Thursday, 25 June

Session 3

Session 3a: Chair Chuanmao Ji & Khachatur Meliksetian

Claudine Cohen – *Franz Weidenreich and the study of* Sinanthropus pekinensis *at Zhoukoudian.*
Qiang Liu – *Maps that changed the world – first geological maps in the world and in China.*
Stanisław Wołkowicz, Marek Graniczny, Krystyna Wołkowicz and Halina Urban – *Professor Józef Morozewicz (1865–1941) – outstanding petrographer and*

creator of the leading Polish geological research centres: the Polish Geological Survey and the Academy of Mines in Cracow, on the 150th anniversary of his birth.

Jinye Dai – *The poet geologist, Academician Zhu Xia*.

Session 3b:10: Chair Chuanmao Ji & Khachatur Meliksetian

Chengsheng Sun – *Amadeus W. Grabau's pulsation theory and polar control theory.*

Qi Han – *From mining adviser and fossil collector to archaeologist—Johan Gunnar Andersson (1870–1960) and his scientific activities in China.*

Zoya Bessudnova – *Maria Pavlowa (1854–1938) – the first Russian women paleontologist.*

Hao sheng Huang – *The ups and downs of an official career.*

Session 4

Session 4a: Chair Jiuchen Zhang & Michiko Yajima

Yuntang Pan, Xiaoyun Chen and Kai Tan – *Amadeus William Grabau—A Good Teacher and Helpful Friend of Chinese Geologists and Palaeontologist.*

Susan Turner – *Who is Erik Stensio?*

Liping Liao – *Travel numbers of mountains to find treasure–China's "significant contributions to geological prospecting geologists" Mr. Liao Shifan.*

Michiko Yajima – *Edmund Naumann (1854–1927) and Ogai Mori (1862–1922): geologist vs writer.*

Xiaojing Hu – *Research on the Chinese contemporary geologists group.*

Qingyn Pu, Baoguo Chen and Xuemei Yun – *The contributions of Huang Gi-qing academician for Chinese Geological Study History*.

Xiang Long – *A Brief on Mr. Shao Yizhou: the pioneer of modern metallurgy and the late stage of the Revolution in 1911, in China*.

Yiyi Zhang and Wenw Sun – *Geopark protection versus the protection of geological relics – An example from the Yangtze River Gorges National Gepark.*

INHIGEO 40th Annual Business Meeting (see separate report in INHIGEO Circular 2015/3).

Friday, 26 June:

Intra-symposium Field Trip to the Fangshan Pluton, the Peking Man Site Museum and the Peking Man Site, at Zhoukoudian.

Leaders: Weihua Sun, Jiuchen Zhang, Baoguo Chen, Yu Guang, Xuemei Yun, Sun Huijun and Mengmeng Yang.

Departing the meeting venue in light rain we were bussed southwest of Beijing where, as we approached the Taihang Mountains, the weather changed to hot and humid. The object of the trip was to show participants the regional geology and how this had been exploited from the time of Peking Man (*Homo erectus pekinensis*) to the present day. The excursion nicely complimented a number of the papers delivered during the meeting. The first stop was a small quarry in the granitc rocks of the Early Cretaceous Fangshan Pluton, part of the East

China Mesozoic Igneous Province. As the rock was quarried in relatively large cubes, the cut faces in the quarry gave excellent 3D exposures of the various magmatic features, including evidence of multiple intrusions, xenoliths with doleritic margins, pegmatitic veins rich in tourmaline and mafic dikes or enclaves (see photos below). The stop was enhanced by the assistance of a group of graduate geology students from the China University of Geosciences (Beijing).

After a traditional lunch in Fangshan, we visited the Peking Man Museum, officially known as the Zhoukoudian Anthropologic Museum. It is housed in a building designed to resemble in profile a huge stone adze, and gave a comprehensive overview of the importance of the Zhoukoudian site. On display were numerous artefacts, many forming parts of dioramas and interactive displays. Some of the material, discovered in the 1920s and 1930s is now only represented by facsimiles, the originals having been lost during the Second World War. Their whereabouts is an ongoing mystery.

The nearby Peking Man site, recognised by UNESCO, comprises rugged karst developed in Middle Ordovician limestone, not far from the intrusive Fangshan Pluton. The archaeological finds have been in small caves, clefts and fissures in the limestone and comprise human and other remains dating from the middle Pleistocene. These have been preserved by burial in sand and loess that infiltrated the karst during successive climatic changes, and aided by rock falls and the deposition of travertine. Excavation of the material, which is ongoing, must be a challenge. Many paths wind their way through the rugged karst connecting the individual sites. They are well exposed and provided with excellent explanatory panels in Chinese and English. From Fangshan we were bussed directly back to Beijing.

Excursion participant examine the granitic rocks of the Fangshan Pluton, near Zhoukoudian

INHIGEO members and Chinese geology students at a quarry exposing the Early Cretaceous Fangsham Pluton

Excursion participants at the Peking Man Museum

Saturday 27 June

Session 5

Session 5a: Chair Jinye Dai and Martina Kölbl-Ebert

Khachatur Meliksetian – *Prehistoric use of copper ores and the spread of early metallurgy in the southern Caucasus*.

Chuanmao Ji – *A brief history of the investigation and utilization of thermal mineral water in the Peoples Republic of China*.

AdiukuBrown & Mayen Ekaete – *History of discoveries of minerals and petroleum in the West African sub-region.*

Keqin Cai, Baoguo Chen, Xuemei Yun, Shanyuan Lin, Wensheng Ge and Xingtong Mu – *The study of the Emei Mountain Basalt and theory of Mantle plume*.

Session 5b: Chair Jinye Dai and Martina Kölbl-Ebert

Zhiqiang Xuan – *The Beijing city development and its relationship to water resources.*

Stanisław Wołkowicz, Marek Graniczny, Krystyna Wołkowicz and Halina Urban – *Tradition and role of SE Poland as the cradle of the world oil industry*.

Huihua Lu & Xiuping Li – *On the metallogenesis of the Miyun iron formation*.

Ezio Vaccari – *Mining, popular geology and images of the 'subterranean world' in the second half of the 19th century*.

Yicheng Zhang – *There should be a Pottery Age before the Bronze Age*.

Session 6

Session 6a: Chair Keqin Cai & Luz F. Azuela.

Anze Chen – *The future development of tourism geology in terms of geological history*.

Xiping Cao, Gengshen Zhan and Erping Zhang – *The collection and exhibition of geological specimens in China, before 1916.*

Naoki Yamaguchi – *Historical research on curatorial studies in the Central Museum in Manchukuo and multilateral academic exchange*.

Qi Jiao – *Cai Yuanpei and the Geological Survey of China*.

Yin Zhang & Menghua Xu – *Preliminary study on the status of the foreign Earth science cultural industry.*

Xuemei Yun, Keqin Cai, Baoguo Chen and Guang Yang – *A preliminary study on the history of raw materials for jade in the Neolithic Age.*

Mengmeng Yang – *The history of exploration for oil and gas in Ordos.*

KuiLi Jin – *A review of research and progress on organic petrology (in a broad sense in China).*

Xiaoyan Yan – *Xu Xiake and tourism geology*.

Poster Session 24–27 June

Throughout the meeting the following posters were displayed:

Comprehensive panel prepared by our Chinese hosts – *History of INHIGEO*.

Xingtong Mu and Baoguao Chen – *The social origin of the evolution of geological education in China in recent times*.

Toshihiro Yamada, Toshifumi and Michiko Yajima – *A brief sketch of recent studies of the History of Chinese Geosciences in Japan, 1996-2015*.

Xiaohong Liu and Qingfeng – *Regarding history as a mirror, making archives play the role of preserving history and aiding governance – China University of Geosciences (Beijing), an example.*

Lizhi An – *Try to say Chi Ji Shang academician of academic achievement*.

Haiyan Du, Lizhi An and Lan Liu – *Study on the academic thoughts of Academician Feng Jinglan*.

Kenneth L. Taylor – *When volcanoes became ordinary*.

Lan Liu – *Protection of geological heritage resources and their popular science.*

Oleg V. Petrov, Alexey R. Sokolov and Leonid R. Kolbantsev – *Collections made by discoverers of ore deposit in the Central Research Geological Prospecting Museum of the Russian Geological Research Institute (VSEGEI).*

Session 6b: Chair Keqin Cai

The chair read a closing address from Vice-President Li Wan of the China University of Geosciences, Beijing, and Commission of the History of Geology. This was responded to by the Secretary-General of INHIGEO, Barry Cooper, who thanked our Chinese hosts and singled out praise for the excellent facilities, student help and the translators.

28 June–3 July:

Post-congress fieldtrip to Qufu, Tai Mountain and Zhaoyuan.

Leaders: Chengsheng Sun, Baoguo Chen, Xuemei Yun, Mengmeng Yang, Xiaoyan Yan, Luo Yao, Dahu Meng & Jiuchen Zhang

The post-meeting fieldtrip departed on 28 June from the Geosciences International Centre soon after day break, with much of the morning in a very comfortable train cruising at speeds of up to 303 km/hour. Alighting at Qufu, the hometown of Confucius, it was a short bus ride to a lunch venue, before spending the afternoon visiting the Confucius temple complex, encompassed within high walls, and then the Confucius mansion with its library. In the late afternoon it was a 1.5 hour bus ride north to Tai'an city at the foot of rugged mountains of Mesozoic granite intruding Archean migmatites.

These rocks were seen at close quarters the next day when we drove to the foot of Mount Tai, the national mountain of China (it appears on the 5 yuan Chinese banknote). It is one of five sacred mountains in that country and is variously known as the "holy mountain" or "mountain of good fortune". From both a geological and cultural perspective it has been granted UNESCO status. While it is possible to climb the mountain by way of several thousand steps we took the easy way in the Taohuayun aerial gondola, which did allow us to peer down on the extremely rugged mountainsides. At the head of the gondola it was a relatively short walk up about 800 steps flanked by shops, restaurants and temples and included passing along Heaven Street, the longest alpine thoroughfare in China. Carved stones explained the significance of what we saw, including detailed summaries of the various rock types along the way. As we approached the summit of Jade Emperor Peak (1532 m) the weather changed dramatically from a leaden overcast sky to swirling mist and driving rain making the shelter of the lunch stop even more welcome. The rain eased during the afternoon but not the wind. Our party was the last to descend the mountain by gondola before conditions forced its closure. From the gondola we made a leisurely journey, partly by bus

and partly walking, down a river where the migmatites and associated intrusions were spectacularly, and almost continuously, exposed. Like on Mt Tai, numerous carved stones explained the geology in both English and Chinese.

INHIGEO participants descending an almost dry riverbed of spectacularly layered Pre-Cambrian migmatites on the flanks of Mount Tai, the national mountain of China, Shangdong Province.

On 30 June it was a long bus ride of 350 km through low-lying, intensely cultivated land interspersed with small granitic mountains, to Zhaoyuan in the Jiaodong peninsula. Zhaoyuan yields about 25% of the gold mined in China and that country is now the world's biggest gold producer. While gold was initially extracted from alluvial workings, Zhaoyuan it is now obtained exclusively won from hard rock mines, made up of five super large deposits, 30 medium to large ones and hundreds of smaller ones. With over 900 tonnes of proven gold reserves it will remain a significant gold region for years to come. Scattered through the hills encompassing the city are poppet heads, mullock heaps and tailings dams. In the afternoon of our arrival we wandered enviously around the shopping areas where gold and other jewellery were for sale.

The following morning, the first visit of the day was to the city's gold museum, which is built in an old mine and treatment plant. In sympathy with this the museum's main building is designed to resemble a giant cyanide tank. The museum displayed the various stages of gold production and the way it was mined from the early days to the present. No doubt under strict surveillance, we were allowed to handle a 25 kg bar of pure gold. A short trip underground, in a modified ore train, allowed the host rocks of the gold mineralisation to be seen in three dimensions. This was followed by a stop at the Gold Town Museum that recreates a village and mine during the time of the Song Dynasty. There was also impromptu theatre and for the more talented a karaoke session. While our Chinese hosts gave us some very spirited renditions of several of their national songs, the prize for the best performance went, arguably, to the INHIGEO Secretary-General for his singing of Waltzing Matilda. Others lacking ability in musical matters, tried their hand panning for gold in a nearby pond

using rectangular wooden receptacles rather than the round tin dishes that were commonly used on the Californian, Australian and New Zealand goldfields.

INHIGEO Secretary-General, Barry Copper, giving a rousing rendition of "Waltzing Matilda", at the Zhaoyuan's Gold Town Museum

In the afternoon there was a short visit to the control room of the Jinchiling Gold Mine and its treatment plant. The various parts of the treatment plant that we saw were scrupulously clean and all walkway areas were paved in slabs of polished granite. With time to spare, we were bussed out to the coast near Dong Liang Zhang, on the edge of the Bohai Sea. While a number paddled their feet in the water, no one was game enough to go swimming. The evening was pleasantly spent at a farewell dinner prior to the next day a long bus ride to Yantai and then a high speed train to Beijing (with a taped rendition of Barry Cooper's interpretation of Waltzing Matilda filling the carriage).

The 40th INHIGEO meeting and its two field trips were well planned and implemented and all participants were well looked after. Of particular note was the effort put in by the organisers to ensure that language, both for Chinese and for those from other countries, was not a barrier and this contributed greatly to the meetings success. The use of professional translators during the meeting was probably a first for INHIGEO. Of the large number who made the meeting so memorable, the two with whom participants from overseas had probably the most contact were Jiuchen Zhang, who is also the INHIGEO Vice-President for Asia, and Mengmeng Yang, the very efficient meeting secretary. Those on the field trips came to know our guides very well.

The organising committee was chaired by Jun Deng aided by his deputy being Li Wan, and with contributions from Keqin Cai, Jiuchen Zhang, Yujun Wang, Xunlian Wang, Kongzhang Bi, Lixin Zhu, Shousheng Li, Jishun Ren, Shu Sun, Lifei Zhang, Xianlai Meng,

Pengda Zhao, Dongheng Hao, Xuanxue Mo, Yinfo Chang, Yalin Lei, Yusheng Zhai. Others who helped in a number of ways were Li Wan, Keqin Cai, Baoguo Chen, Jie Li, Xuemei Yun, Xuankui Hu, Guang Yu, Qingyu Pu, Ruixun Liu, Zhendong You, Chuanmao Ji, Jiuchen Zhang, Mengmeng Yang, Jinye Dai, Ande Zou, Yuquan Yang and Qingsheng Shan.

In overall command of the Peking Man field trip was Weihua Sun and guides for the post meeting trips were Baoguo Chen, Xuemei Yun, Chengsheny Sun, Mengmeng Yang, Xiaoyan Yan, Yao Luo, Dahu Meng and Jiuchen Zhang.

The writer gratefully acknowledges the help willing provided by Jiuchen Zhang and Mengmeng Yang in compiling this report.

Mike Johnston, Nelson, New Zealand

A group of participants on the post-meeting field trip, posing on some of the many steps that lead to the summit of Mount Tai, Shangdong Province.

INHIGEO visitors about to be escorted into the Gold Town Museum, Zhaoyuan

FORTHCOMING INHIGEO CONFERENCES

41st INHIGEO Symposium - Cape Town, South Africa, 27 August-4 September

The 41st INHIGEO Symposium will be part of 35th International Geological Congress scheduled at the Cape Town International Convention Centre (CTICC) in Cape Town, South Africa, 27 August–4 September 2016.

At the time of writing, 37 presentations have been accepted for the INHIGEO symposium on the "History of Geoscience".

Early Bird Registration has opened and will close on 31 May 2016.

Symposia

After reviewing the offered presentations the "History of Geoscience" theme organised by INHIGEO, is likely to be grouped into the following sessions:

1. General contributions on the history of geology
2. Historical studies of Gondwana
3. History of geology in Africa
4. History of resource development
5. Early man and early understanding of geology

Field Trip

A one day pre-Congress field trip entitled "On the trail of Charles Darwin and John Herschel: the Cape in the 1830s", around Cape Town, will be led by INHIGEO Vice-President North America, Greg Good, on Saturday 27 August 2016. The conference website is www.35igc.org.

42nd INHIGEO Symposium - Yerevan, Armenia, 12-18 September 2017

This conference is being planned as the 50th Anniversary INHIGEO conference. It will be organised by the Armenian Institute of Geological Sciences and Armenian National Academy of Sciences.

A website has alr eady been established at http://inhigeo2017.geology.am/

The first meeting of INHIGEO was held in Yerevan in 1967 and this conference will be held at the Armenian National Academy of Sciences in Yerevan, the same venue as the 1967 meeting.

Current conference themes being considered are:

1. 50 years of INHIGEO
2. Development of geological ideas and concepts
3. History of geology in Armenia
4. Ancient knowledge of stone and metals
5. Studies of historic and prehistoric evidences of seismic and volcanic activity
6. General contributions and biographies of famous geologists

Both mid-conference and post-conference field trips are being planned to geological sites, historical, and archaeological sites and to geological museums and the Armenian Museum of Ancient Manuscripts (Matendaran).

For any questions please contact the organising committee by e-mail at inhigeo2017@geology.am or Khachatur Meliksetian at km@geology.am .

43rd INHIGEO Conference, Mexico City, 4-14 November 2018

This meeting 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 to the ancient library and archives will be organized.

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

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 travelling along a representative section of the central Mexico stratigraphy, from Quaternary volcanic successions to Proterozoic 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 colorful Jurassic units of Oaxaca.

For further information, please contact our Vice-President Latin America, Professor Luz Azuela, Instituto de Geografía, Universidad Nacional Autónoma de México, Circuito

Exterior s/n Ciudad Universitaria, 04510, México, D. F. MEXICO. Email: lazuelab@yahoo.com.mx .

SCHEDULED FUTURE INHIGEO CONFERENCES 2019-2021

INHIGEO Annual Conferences for this period are currently planned as follows:

2019 – 44th INHIGEO Symposium Como/Varese, Italy
2020 – 45th INHIGEO Symposium New Delhi, India (in association with the 36th International Geological Congress)
2021 – 46th INHIGEO Symposium, Poland

OTHER CONFERENCE REPORTS

The Bicentenary of William Smith's 1815 Map

2015 marked the 200th anniversary of the first geological map of an entire nation, William Smith's (1769-1839) *A Delineation of the Strata of England and Wales with part of Scotland*. Smith and his great map were celebrated by memorials, an international conference, museum exhibitions and numerous publications, public lectures and walks organised by History of Geology Group, the Geological Society, and the Geologists' Association – nationally and regionally – and local societies. In addition, the History of Geology Group published a facsimile bicentenary limited edition of William Smith's memoir that accompanied his 1815 map.

The following collation of events is intended to be complete, but inevitably there may be omissions which I ask be notified to me at john@geolmaps.com .

Events

Plaque at location of Smith's childhood home in Churchill, Oxfordshire – unveiled by Hugh Torrens 22 March 2015.

Plaque at 15 Buckingham Street, London, Smith's home from 1804-1819 – unveiled by Sir David Attenborough 23 March 2015 (Smith's birthday).

Launch of Bicentenary of Smith's 1815 map at Geological Society of London with demonstration by Peter Wigley of www.strata-smith.com website which provides a comprehensive background of Smith's maps with fly-throughs, comparative overlays and the creation of the 'map that might have been' had Smith's *County Geological Atlas* been completed and assembled.

History of Geology Conference 23-24 April – 'William Smith, 200 Years of the Map at the Geological Society'. The April 2016 edition *Earth Sciences History* will publish selected conference papers. The conference was preceded by a behind –the-scenes visit at the Natural History Museum, to view Smith's maps and his surviving collection of rocks and fossils including figured fossils together with their illustrations by Sowerby. The conference was followed by a field trip on 25 April to Churchill and the Oxford University Museum of Natural History archive of Smith's documentary and map record.

A field trip to Bath and environs in Wiltshire, on 6 June, led by Hugh Torrens for the Geologists' Association, to visit locations where Smith lived in Bath, Tucking Mill, Combe Down and Rugbourne Farm,.

A field trip to Northampton led by Diana Sutherland, on 6 September, to visit Hazelrigg House, the place of Smith's death and, nearby, his solitary barely decipherable gravestone in St. Peter's grave yard and the impressive marble bust and memorial plaque inside the church.

HOGG visit to Bristol University, on 21st October, to see the Victor and Joan Eyles Collection of early geological maps, reports and documents on geology in the early 19th century including William Smith. Hugh Torrens spoke about the Eyles' and their pioneering research on Smith and his map. The evening was followed by the third in Bristol University's William Smith evening lecture series, presented by John Grotzinger of the California Institute of Technology (Caltech) and the Chief Scientific Officer of NASA's Mars Curiosity Project, about applying Smithian techniques to the geological mapping of Mars.

Exhibitions

Oxford University Museum of Natural History, 'Handwritten in Stone: the Life and Legacy of William Smith', October 2015 to January 2016.

National Museum of Wales, Cathays Park, Cardiff, 'Reading the Rocks: the Remarkable Maps', from September to December 2015.

Combe Down, Ralph Allen Corner Stone Museum in May 2015, a display regarding William Smith's early canal career and later quarrying venture in the vicinity of Combe Down.

Public Lectures

York

Yorkshire Philosophical Society, 3rd March, 'William Smith in Yorkshire', by John Henry.
British Cartographic Society, 8th September, 'William Smith', Mapping Yorkshire, by John Henry.

Bristol University – William Smith Bicentenary Lecture Series.

7 October, Iain Stewart, 'Underground Britain: the Story of What's Under Our Feet and Why it Matters',
14 October, Simon Winchester, 'William Smith and his Map that Changed the World',
21 October, John Grotzinger, 'Geological Mapping of Mars with Orbiters and the Curiosity Rover',
28 October, Richard Fortey, 'William Smith, fossils and the British Landscape'.

London, Geological Society

The Geologists' House – the Remarkable Work of William Smith, the 'Father of English Geology' organised by archivist Caroline Lam. Visitors were lead in groups through four 'rooms' – of Fossils, of Books, of Minerals, and of Maps – where 'experts' Jill Darrell and Diana Clements, Tom Sharpe, Duncan Hawley and John Henry, respectively, exhibited aspects of Smith's work.

Publications for the Bicentenary

Memoir to accompany *A Delineation of the Strata of England and Wales with Part of Scotland.*

Facsimile limited edition published by HOGG, edited by Cherry Lewis with 'Introduction ', pp 1-26, by Tom Sharpe and Hugh Torrens.

Facsimile paperback edition published by the British Geological Survey.

A Delineation of the Strata of England and Wales with Part of Scotland, folded half size edition, published by the British Geological Survey.

Journal articles

Hawley, D. 2015. William Smith's Geological Map of 1815: 'A Delineation of the Strata of England and Wales, with Part of Scotland'. *Geograph*y, 101 (1), 35-41.

Henry, J, 2014. The First Geological Map of a Country; William Smith's 'A Delineation of the Strata of England and Wales'. *International Map Collectors' Society (IMCoS) Journal*, Winter, 16-30.

Henry, J. 2015. William Smith, 'Father of English Geology: his Maps. *Yorkshire Philosophical Society, Annual Report 2014*, 70-77.

Henry, J. 2015 in press. William Smith: his mapping and the Yorkshire Connection. *Journal of the British Cartographic Society*.

Sharpe, T. 2015. The Birth of the Geological Map. *Science*, 347 (6279), 30-32.

Witze, A. 2015. Q&A: Geological Historian – preview of William Smith Meeting 2015, 200 Years of Smith's Map. *Nature*, 520 (7547).

Earth Sciences History, April 2016 issue forthcoming: nine papers and three shorter articles from the HOGG William Smith Conference.

Map Conservation

The following issues of '*Delineation of the Strata*' have been conserved with funds generated by the interest created by the bicentenary.

Geological Society of London, early un-numbered copy
Sedgwick Museum, Cambridge, copy A16
Bristol University copy

Yorkshire Geological Map Mosaic

The Yorkshire Museum and the Yorkshire Philosophical Society together commissioned artist, Jeannette Ireland to create a mosaic map of Yorkshire based on William Smith's 'Geological Map of Yorkshire' from the his uncompleted Geological County Atlas with reference to his 1815 and 1820 maps, for the purpose of cartographic generalisation. Measuring 4x4m, it is located in Museum Gardens.

John Henry, London, UK

New edition of William Smith's Memoir

To further commemorate the William Smith bicentenary, the Geological Society of London's History of Geology Group (HOGG), reproduced a limited edition of the Memoir that accompanied Smith's 1815 map: *A Memoir to the Map and Delineation of the Strata of England and Wales, with part of Scotland*.

In true Smithian tradition, subscribers were sought for this edition and, as in the original copies now contain the names of all subscribers, with their affiliations. Each copy was also hand-numbered. Only 200 copies were produced in this limited edition – one for each year since its original publication – and 200 subscribers were quickly found.

The volume was further enhanced by an introduction written by Tom Sharpe, an expert on the many editions of Smith's map, and Professor Hugh Torrens, the authority on Smith's life and works. This luxury case-bound edition with marbled end-papers exactly replicates the content of the first issue of the *Memoir* and thus contains a copy of the hand-

coloured Table II, an *Explanation of the Colours on the Map of Strata*. A copy of the more comprehensive *Geological Table of British Organized Fossils* from a later issue was also included in a pocket at the back.

The *Memoir* was published on 1 August 2015, exactly 200 years to the date given on the maps for publication of the original. Copies were sent worldwide to 21 different countries. A number of these were purchased to accompany an original Smith map which had subsequently become parted from its *Memoir*.

Cherry Lewis, Bristol, UK

AWARDS

David Branagan – 2015 SUE TYLER FRIEDMAN AWARD

The Geological Society, London, 2015 Sue Tyler Friedman Medal for distinguished contributions to the recording of the history of geology has been awarded to Dr David Branigan (University of Sydney, Australia). He was presented with the award at the Geological Society President's Day, on June 3rd.

Citation for David Branagan (Sue Tyler Friedman Medal)

The Sue Tyler Friedman Medal, awarded for excellence in research into the history of geology, goes this year to Dr David Branagan of the University of Sydney. David approaches the history of geology and mining from the point of view of one who graduated in geology from the University of Sydney in 1950. He then joined the Geological Survey of New South Wales and mapped Permian Coal Measures, as well as Lower Palaeozoic and Precambrian sequences. During this stage of his career, he also became involved in engineering geology and while subsequently working as a Research Fellow at Sydney, specialising in coal and its utilisation, David was awarded his PhD in 1963 and went on to teach mining engineering geology, photogeology and field mapping for about 30 years, retiring in 1989 as Associate Professor of Geology. He thereafter continued his association with the University, becoming an Honorary Research Associate of Geology, History, and History & Philosophy of Science. He was foundation editor of The Australian Geologist (1974–1984), President of INHIGEO (1992–1996), and was awarded an Honorary DSc by the University in 2007. Of his 20 or so books and 230-odd papers and articles, about 130 have been dedicated to the history of geology and related sciences. This work includes numerous papers and books on famous Australian geologists and explorers—J W Gregory, S Stutchbury, and many others. His book on T W Edgeworth David, published in 2005, recounting the life and career of this legendary Welsh-Australian geologist, Antarctic explorer, cofounder of the Australian Army Tunnelling Corps in World War One and inveterate campaigner for science on a global scale, has enjoyed a thoroughly deserved success, worldwide. David Branagan, please accept with our deep respect and gratitude, the Sue Tyler Friedman Medal of The Geological Society of London.

David Branagan's response

I am honoured to be the 2015 recipient of the Sue Tyler Friedman Award. Today, I am joining the ranks of numerous more distinguished historians of geology than myself, and to whom I owe much for their advice and friendship. I am the fourth Australian to have received this award, preceded by Tom Vallance, David Oldroyd and Homer le Grand, so the former colony has yielded perhaps unexpected value(s)! It was my good fortune to have known Sue

Tyler Friedman through her husband Gerald Friedman, to note their dedication to the history of geology, and to have enjoyed their company at history conferences and excursions. This award is a tribute to their joint memory. Gerald will be remembered for his fine texts on sedimentary geology, and by the founding and, I suspect, their joint funding of the journal Earth Sciences History of which he was the original editor; a journal which has built up an international reputation for its quality, through the continuing enthusiasm of its editors.

I have been lucky to have worked largely on Australian material, starting my interests when there were few researchers in the field, finding much basic information in Europe and the Americas. Through Tom Vallance, I met the pioneer couple Joan and Victor Eyles, and became a contributor to the Australian Dictionary of Biography. It was Tom whose criticism ensured that the scientists who contributed considerably to Australia's development received due recognition in its pages. There is still much history to be researched and sadly, for many, it can only be a part-time effort. In recent years, numerous superb publications tell us about the latest in geology and geophysics. But the general reader might almost assume that the knowledge of the Earth came out of thin air. While some pioneers are relatively familiar names, other important, but less-remembered persons deserve to be honoured. Again, Mr President, I thank you and those who nominated me for this considerable honour.

Martin Rudwick – THE 2015 DINGLE PRIZE AND THE WATSON DAVIS AND HELEN MILES DAVIS PRIZE

Martin Rudwick was doubly honoured for his book, *Earth's Deep History: How it was Discovered and Why it Matters*, University of Chicago Press, 2014 (see review p. 78). He was awarded the Dingle Prize by the British Society for the History of Science for a book "on the history of science accessible to a popular audience". The award was conferred at a meeting of the Society in Swansea in Wales.

At the annual meeting of the History of Science Society, held in San Francisco, California, he received the Watson Davis and Helen Miles Davis Prize for a book "useful in undergraduate teaching or which promotes public understanding of the history of science".

It has recently been announced by IUGS that Martin Rudwick has also been awarded the **V.V. Tikhomirov Award for History of Geology 2016**. The presentation will take place at the 35th ICG Congress and the 41st INHIGEO Meeting, in Cape Town, in August/September. The award recognises outstanding original contributions or achievements that mark a major advance or contribution to the Earth Sciences. It was first awarded to Hugh Torrens at the Brisbane IGC, in 2012. Congratulations, Martin (ed.)

OBITUARIES

Ian A. Brookes (1940-2015)

Ian Brookes died on February 13, 2015, after suffering a stroke six days earlier. He was appointed to the Department of Geography, at York University, in Toronto, Canada, in 1965 to teach physical geography, the first specialist in that area and the fourth member of the Department. He retired from York in 1996, following a serious stroke. After his retirement he continued to carry on with most of his normal social and research activities, including going out into the field. He found walking difficult, but he let that hold him back as little as possible.

Ian was born in Torquay, Devon, England, and attended King's College, University of London, where he received his B.Sc. in geography in 1962. He went on to McGill University for his M.Sc. (1964) and Ph.D. (1970). His graduate work concerned the upland surfaces and glaciation of western Newfoundland. His first visit to Newfoundland was in 1964, and in January 2015, 51 years later, he was still planning further research in August in the Gros Morne area. When he arrived at York, Ian first taught introductory physical geography and lectured in the Division of Natural Science. As the Department grew he developed courses in his specialty, geomorphology and glacial landforms, and in Canadian landscapes and the regional geomorphology of Canada, and taught surveying and field studies. He was a co-founder of the undergraduate journal and its faculty adviser. He was active in the York Faculty geography club and for many years was Association and served as Geography YUFA steward from 1977 to 1995.

Through his research, Ian's heart became rooted in Newfoundland, but he carried out field research in other and more distant parts of the world. In the 1970s he did post-doc fieldwork in New Zealand, near Canterbury. In the 1970s to '90s, in collaboration with scholars from the Royal Ontario Museum, he spent some field seasons in Iran, in Egypt, in the Daklah Oasis area in the Sahara Desert, 350 km west of Luxor, and also in Jordan. Most of Ian's research publications are on Newfoundland, where he made important original contributions to our understanding of the surface geology and glacial history of the western part of the island. The results of his geoarchaeological investigations in Egypt and Iran were published in research articles, and also in more general form as background physical geography chapters in archaeological studies of particular ancient sites, by other scholars. He was founder and editor from 1985 to 1993 of "Canadian Landform Examples," a regular series in the professional quarterly journal, *The Canadian Geographer*.

Following his fieldwork in the Middle East, Ian became interested in T. E. Lawrence (Lawrence of Arabia), and formed a fine collection of books by and on Lawrence. He wrote a massive manuscript (unpublished) analyzing in detail the topography of the areas traversed by Lawrence in his desert raids. Ian also had a profound interest in the history of Canadian geological exploration. He published articles on particular research contributions of two of Canada's pioneer geologists, Robert Bell and George M. Dawson, and he wrote a biography of Bell that remains unpublished. He also transcribed and annotated pioneer Canadian glacial geologist A. P. Coleman's field journal of journeys in Norway and Labrador. To the despair

of possible publishers, Ian was unsparing in technical geological background, and in the need for detailed maps and illustrations in these biographical manuscripts. In recent years he worked hard to make his manuscripts more reader friendly, but at his death only a few general essays on Bell and Lawrence had been published.

Ian moved to Kingston, in part to be closer to the archives in Ottawa, and yet still have ready access to both Toronto and Montreal. A lover of jazz, good singing, landscape art and avant garde movies, he returned often to Toronto to attend concerts, go to art galleries and catch up on movies. Ian was friendly, even gregarious, and enjoyed meeting people. Ian read widely, and liked to converse about art, science and particularly the history of geology. He had a combative critical temperament, and he could become quickly heated in conversation, but that would be followed by as quick a return to his usual stimulating genial self. Ian had a thorough knowledge of Canadian landscapes and Canadian landscape art, and was generous in sharing what he knew. His great joy was fieldwork, and quite appropriately his ashes will be scattered in Newfoundland, probably in the Gros Morne area in western Newfoundland.

John Warkentin, York University, Ontario, Canada.
Reprinted from *Geolog*, 2015, 44/2, 27-28.

Jean Gaudant (1939–2015)

Jean Gaudant on a Cofrhigéo field trip, in September 2010

Jean Gaudant (1939–2015), Secretary of the French *Comité français d'Histoire de la Géologie* (COFRHIGEO) and paleoichthyologist, passed away abruptly on December 6, 2015. He will be greatly missed by his friends and those working in both paleoichthyology and history of geology.

Jean Gaudant, a former professor of palaeontology at Paris-Diderot University, was a specialist of fossil fishes and a highly esteemed paleoichthyologist. His international reputation in this community is primarily due to his original and innovative research on the faunas of Europe freshwater fish, a topic once considered as trivial, but that has enjoyed a revival of interest because of its concern with the impact of the global environmental change on continental faunas.

After early work on marine Jurassic and Cretaceous actinopterygianfish between 1968 and 1978, Jean quickly reoriented his research to Tertiary freshwater teleost fish, especially those from Western Europe, abundant but formerly mentioned only occasionally. He therefore had to proceed with a thorough inventory (ca. 125 publications!) of these faunas in France and many other countries in Europe. These studies have gradually allowed the evolutionary history of European freshwater fish faunas during the Tertiary to be understood, as well as their dynamics during climate evolution or major environmental crises, such as the Messinian crisis. Moreover, Jean has always been interested in the paleoecological aspect of

fossil fish faunas and in their significance as markers of paleobathymetry. For all paleoichthyologists, he was a great explorer of neglected or forgotten sites that bear crucial information on past freshwater ecosystems. He managed to make them talk again, with discoveries that are feeding the current research on the evolution of continental ecosystems through geological time.

Jean's death leaves a great void in COFRHIGEO, of which he had been Secretary for 40 years, from its inception in June 1976, by François Ellenberger (1915–2000). He was the linchpin of our committee, combining during the last six years the positions of editor, secretary and treasurer. He organized many activities, scheduled meetings, and dealt with the edition of the annual periodical (*Travaux du Cofrhigéo*: //annales.org/archives/cofrhigeo/travaux.html). He even organized the session of December 16, informing us a few days before the meeting that his health did not allow him to attend it. Jean was also very active within the *Société géologique de France*, where he acted as the archivist in 2003 and 2004, and for which he devised several special issues of the periodical *Géochronique*.

His work as an historian of geology is important: He wrote tributes to Franck Bourdier, Jacques Roger and, of course, François Ellenberger, as well as to some prominent palaeontologists of the past. We may also recall his papers at the occasion of the 150-year anniversary of the geological map of France, on the pioneers of the geology of the Paris Basin, his remarkable investigations on the history of the continental drift theory and on the short-lived uprising crater theory... In addition to these works, he organized meetings and edited tributes to Wegmann (*SGF*, 1995), Dolomieu for the bicentenary of his death (*ENSM*, 2005), and François Ellenberger for his 80th birthday celebration (*CTHS*, 1997). In recent years, while he felt the need to leave a more personal mark, he undertook the edition of a book series published by *Presses des Mines*, editing compendia on geologists and palaeontologists (2008), on the development of geology (2009), as well as a translation by G. Bouillet of Scheuchzer's "*Piscium querelae et vindiciae*" and "*Homo diluvii testis*" (2008), and a superb book by Michel Durand-Delga on Marcel Bertrand (2010). Finally, he brought out a history of the French geological survey, editing volumes devoted to the Franco-Italian Alps (2011), Provence (2012), Armorican Massif (2014) and Rhodanian Corridor (2014); the volume on the Jura will be released shortly.

For these achievements, Jean Gaudant would have widely deserved to receive the Wegmann prize of the *Société géologique de France*, the highest French award in the field of the history of geology. However, he always declined honours that he knew how to seek for others, thereby showing his independence of mind. COFRHIGEO believes that the best way to honour his memory is to keep going on the path he showed us.

Gabriel Gohau, Philippe Janvier and Gaston Godard.

Remembering Jean Gaudant

The death of Jean Gaudant in December of 2015 marks the end of an era for everyone connected with the history of geology in France. Jean was a mainstay of the Comité Français d'Histoire de la Géologie (COFRHIGÉO). From the Comité's founding (1976), under the leadership of François Ellenberger, he played crucial roles in its direction. For a very long time he was its Secretary, and in addition he took on the duties of Treasurer upon the death of Goulven Laurent (2008). He labored tirelessly over a great many years in producing the annual volumes of COFRHIGÉO's *Travaux*.

In addition to his research in paleoichthyology, conducted through posts with the University of Paris and the Muséum National d'Histoire Naturelle, Jean was a prodigiously active researcher over a wide range of topics in the history of geological science. And he served as editor, not only of the annual *Travaux*, but also of many other important and useful historical volumes and collections.

I am personally indebted to Jean Gaudant for his friendly and judicious editorial assistance on several occasions. For his kind willingness to spend many hours patiently helping to correct the most egregious errors in my efforts at historical writing in his native language—while wisely not attempting to purge altogether the milder and less offensive proofs of my imperfect understanding—I am deeply grateful. We shall all miss this passionately dedicated and hard-working colleague, who was an animating spirit in the French community of historians of geology.

Kenneth L. Taylor, Norman, Oklahoma

Charles Coulston Gillispie, 1918─2015: A Tribute

Charles Gillispie died on 6 October 2015 at the age of 97. He was a part of the generation of scholars and teachers who first established the history of science as an academic discipline in American universities and colleges. (And I think he is the last of them: Leading figures in that category, as I see it, include I. Bernard Cohen, Henry Guerlac, Marshall Clagett, A. Rupert Hall and Marie Boas Hall, along with others like Derek Price, Harry Woolf, John Greene, Duane Roller, Robert Siegfried, Robert Schofield, Richard S. Westfall and Thomas Kuhn—none of whom are still living.) As founder of Princeton University's graduate program in the history of science, and the author of numerous books, Gillispie exercised a considerable influence in shaping the way scholarship is done in this field.

Among historians of geology Gillispie may be remembered especially for his classic book *Genesis and Geology: A Study in the Relations of Scientific Thought, Natural Theology, and Social Opinion in Great Britain, 1790─1850*. This book, first published in 1951, was adapted from his 1949 doctoral dissertation at Harvard University. It may well be argued that it is the first book in the general domain of history of geology to have been written in accord with the scholarly standards of modern historians of science. Such a contention may be seen in the retrospective essay by Nicolaas A. Rupke (*Isis*, 1994, 85:261─270), which also appears as the Foreword in the 1996 reissue of Gillispie's book.

Gillispie moved on from history of geology, and from British History, to focus his research to a considerable extent on science in France during the late 18th and early 19th centuries. Among the results are two volumes on *Science and Polity in France*—one covering the end of the old regime, the other the revolutionary and Napoleonic years (1980 and 2004, respectively)—and books about Lazare Carnot (1971), the Montgolfier brothers and ballooning (1983), and P.─S. Laplace (1997). Another one of Gillispie's major commitments was as Editor-in-Chief of the monumental *Dictionary of Scientific Biography* (16 volumes, 1970─1980).

When I first began to study the history of science, during the early 1960s, two of the books that made a big impression on me were *Genesis and Geology*, and the stirringly-written *The Edge of Objectivity*. The latter (published in 1960, and subtitled *An Essay in the History of Scientific Ideas*) grew out of an undergraduate course of lectures Gillispie gave during the late 1950s on the development of scientific thought from Galileo to Einstein. My copies of both books are filled with my marginal notes and comments. There were things in these books I did not agree with (this was especially true for *Genesis and Geology*), but all the same I found them both enormously stimulating and exciting. This probably was not the

first time I realized how much can be learned by reading authors who are provocative even if they are sometimes wrong, but it was certainly a vivid and lasting lesson in my case.

Kenneth L. Taylor, Norman, Oklahoma

HILARY ('LARRY') JAMES HARRINGTON (1924-2015)

Larry Harrington died on Saturday, August 1, 2015. He was ninety-one.

Born at Wellington, New Zealand, in 1924, he graduated from the University of New Zealand (Auckland, aged just 18), obtained an M.Sc from the same university and a doctorate from Oxford University, later joining the New Zealand Geological Survey, mapping the Kaitangata Coalfield (published 1958).

A keen mountaineer, Larry led an Oxford University mountaineering expedition to Nepal in 1954, and later led two NZ Geological Survey Antarctic expeditions (1957-58 and 1958-59 (Mc Murdo Sound)). He was also (with Russell Korsch) a member of the U.S. Antarctic Research Progress (McMurdo Sound) Investigation (1968-69).

He is commemorated by Mt. Harrington, a 2610m high eminence on the west side of the Whitehall Glacier, in the Victory Mountains, Victoria Land, Antarctica, named for him in 1960 by the New Zealand Place Names Commission. His interest in Antarctic matters remained strong, naming the Ferrar Supergroup (?Cretaceous) for an early English-born Geologist who worked in both Antarctica and New Zealand.

Between 1959 and 1985 he was on the staff of the Geology Department at the University of New England, Armidale. An admirer of Alan Voisey's teaching methods to beginning geology students he edited Alan's autobiography *'60 years on the rocks*'. Larry contributed considerably to the Armidale community during his time there, particularly on the board of one of the residential colleges, but received little acknowledgement by the then 'powers that were'. I and others believed that he should have been awarded an Honorary Doctorate for this work.

Apart from his Antarctic work, recognised in Beau Riffenburgh's *Encyclopeadia of the Antarctic,* Larry was one of the compilers and editors of the volume on *Basement Tectonics of Australia and other Regions* (Rickard, Harrington and Williams (1990). Larry was joint editor with C.R. Ward, C.W, Mallett and J.W. Beeston of the *Geology of Australian Coal Basins,* the Special Publication No. 1 of the Geological Society of Australia's Coal Geology Group (1995), and earlier was Chief Editor of *Permian Coals of Eastern Australia*, written between 1989 and 1991 (three editions) However he was rather unhappy at the high price put on it by the Commonwealth publishers, which saw him, for some time, with a very large stack 'in storage' at his weekender!

It was thanks to Larry's persistence that the history, *Rocks to Riches'* by Rick Wilkinson, of the Australian Commonwealth's then named Bureau of Mineral Resources, was written and published.

Larry was the second Chairman of the Geological Society of Australia's Earth Sciences History Group. At this time he also made the National Portrait Gallery in Canberra aware of the significant visual records available of geological pioneers and endeavoured to have an exhibition of these people set up by the gallery.

Photos of Larry abound, and there are few which do not show his famous smile and sheer enjoyment of life. His photographic abilities were not so bad either, as can be noted in the many close-up photos by him, which adorn the November 2005 NZ Geology Society's Newsletter 138**.**

A firm believer in continental drift in the days when it was unfashionable, in 1964 he supported South African resident geologist Lester King, when he was being derided by an American audience. Larry and family at the time were at the University of Illinois, when he was on study leave, and I was privileged to travel with him to Cincinnati for that meeting.

His time in America proved important to Larry, as attending the annual meeting of the Geological Society of America in Miami, at an informal gathering of mostly southern hemisphere colleagues, he proposed the formation of an International Correlation Project concerning Continental Drift (Harrington 1994). With encouragement from IUGS the rest is history. The IGCP was the first of many Geological Research projects supported by the IUGS in the following years. It was particularly significant, as it was in the days before sea-floor spreading became accepted.

Larry and family moved to Canberra in 1980, joining the Bureau of Mineral Resources.

He was a great one for writing short notes and useful attachments about historical and geological matters, of which I find I have many! He was a generous friend to many younger colleagues. He recognised the importance of the completion of the Quarter million-scale mapping of the Australian continent: *A national scientific and economic masterstroke: the quarter-million geological mapping of Australia*. Harrington in *ESHG News* 2010 wrote: "After the war young and very energetic geologists, such as Reg Sprigg in South Australia, could see that their States could and should be mapped in manageable time. They started to do it, with permission and without it. That adventure started at the grassroots level". Reg had gained his enthusiasm for change during a 'study' tour overseas to the USA and Europe.

Not long after Larry's retirement from his last formal position at 'The Bureau' he commented on a newly typewritten note from an administrator, which incorporated the newly acquired 'language' of the internet, noting how rapidly language had changed. 'Newspeak' would have been sheer 'unintelligible' only a year or two earlier!

He was, inter alia, a Fellow of the Geological Societies of Australia and America, and of the Royal Society of Victoria, and contributed to the GSA's now out-dated History, *Rock me hard, Rock me Soft*, and recorded the Archives of the Society stored in the Academy of Science building in Canberra, storage which is now under considerable threat. He was the second Chairman of the GSA's Earth Sciences History Group. The Society's history reveals how much Larry contributed quietly to many aspects of the Society's activities.

Larry's wife, Shirley-Ann (Rose), died several years earlier.

A fine tribute, written by Ian Hodgson appeared in the *Canberra Times* (25 September, 2015). However there is much more about this remarkable character. He deserves a biography, such as the one telling Reg Sprigg's life!

David Branagan, University of Sydney, Australia (and including some material from Ian Hodgson's obituary, Barry Cooper and Sue Turner).

OTHER LOSSES

Octavio Puche has informed us of the death of INHIGEO member **Emilio Pedrinaci Rodriguez.**
Our Belgian INHIGEO member, Eric Groessens, has reported the death **Professor André Delmer (1916-2015)**, one of the most influential and eminent geologists on his country during the second half of the 20th century.

IN MEMORIAM

Memories of Professor David Oldroyd (1936–2014)

Algimantas Grigelis, Lithuanian Academy of Sciences, Vilnius

David Oldroyd at Lake Rantapuisto, Helsinki environs, Finland, 2008

This essay is devoted to the remembrance of Professor David Oldroyd an eminent historian of the Earth sciences. The acquaintance with this wonderful man has left a vivid mark on my own scientific activities. The collaboration with him and with other colleagues in INHIGEO has made me realise that the study of the history of science is an attractive sphere for curious and ingenious people, as it offers a wide field for investigation to pathfinders and philosophers. I had not thought about this subject when, in 1960, I started work at the Lithuanian Institute of Geology and Geography (LIGG), in Vilnius. There the then director of this institute, Academician Kazimieras Bieliukas, asked me to prepare a bibliography of the history of geological research in Lithuania.

Work within KOGI and the establishment of INHIGEO
Thus, I started to work on a highly ambitious project covering the entire Soviet Union, implemented by the Geological Institute (GIN, Moscow) of the USSR Academy of Sciences, together with the Ministry of Geology of the USSR. The project had been led by the Corresponding Member of the Academy of Sciences Vladimir Tikhomirov (1915–1994) who headed the Laboratory of the History of Geology. He was a legend, a pilot who lost his sight in the war, an individual with a phenomenal memory, a great organiser and a very warm person. I started this work by analysing the publications on Lithuania's geology from the year of 1800. LIGG researchers contributed to these activities. By 1978, we had compiled and issued nine books about the state of geological research in Lithuania. Thus, beside my micropalaeontological studies, the history of Earth sciences became the second scientific field of research that occupied my time. As a first result of this work, a book *The History of Geology of the Lithuania* (in Lithuanian) appeared in 1981, in Vilnius.

The Moscow project was lead by Professor Tikhomirov, and the Commission of the Geological Exploration (KOGI) of the USSR was established. International relations also began at that time. Thus, in 1964, at the International Geological Congress in Delhi, Professor Tikhomirov, on behalf of the USSR Academy of Sciences, proposed to found the International Commission on the History of Geology. Highly supported by the international geological community, after three years of preparations, in 1967 in Yerevan, Armenia, the Constituent Assembly established the International Commission on the History of Geological Sciences (INHGEO). Professor Tikhomirov was elected its President, served during nine years (1967-1978) and left a vivid trace on the activities of the history of geological sciences.

Some outstanding geologists from around the world were among the founders of the Commission that consisted of both full and corresponding members. I became its Corresponding Member in 1972, Full Member in 2002 and Honorary Member in 2014. In 2017, in Yerevan, INHIGEO will celebrate its 50th anniversary.

INHIGEO, as one of the commissions of the International Union of Geological Sciences (IUGS), organises symposia as part of the International Geological Congresses and holds annual meetings between the congresses, each time in different country. In Soviet times, I had only rare opportunities to go abroad. Moreover, after the presidency of Professor Tikhomirov, the activities of INHIGEO diminished and my contacts with the organisation were partly lost.

David Oldroyd – the eminent historian of science

The situation changed in 1992, after the Lithuanian National Geological Committee, chaired by Professor A. Grigelis, had been established, and Lithuanian researchers began their independent participation in the international activities of geologists. Delegations of Lithuanian geologists took part in the 31st (Beijing, 1996) and 32nd (Rio de Janeiro, 2000) IUGS Congresses, where useful scientific contacts had been established with international organisations. In 2000, at the IUGS Congress, I presented a poster report "*Mineralogy and Werner's Ideas in the Old Vilnius University"*, and took part in the INHIGEO section meetings. It was at this meeting when I first met Professor David Oldroyd, then the INHIGEO General Secretary (1996–2004) and INHIGEO Vice-President (2004–2012). Later, after the INHIGEO conference in Vilnius in 2006, he became interested in old geological maps and devoted much of the time of his last years to their collection and scientific analysis.

David Oldroyd was born in 1936 in Luton, England, studied chemistry and geology at the Emmanuel College at Cambridge University, where he received a BA in Natural Sciences in 1958. After graduating form the university he was a schoolteacher in north London and in 1964 he immigrated to New Zealand. Here, he again taught at schools, but was more interested in geological field studies. Therefore he chose University College in London for Master studies, and in 1967 he was awarded an MSc for his work *Geology in New Zealand prior 1900*. Thus, it became clear that his vocation lay in the field of the history of geology. His entire later carrier is connected to the School of History and Philosophy of Science at University of New South Wales (Australia). In 1974 he was awarded a PhD for his work *From Paracelsus to Haüy: the development of mineralogy in relation to chemistry*. Subsequently he became the head and professor of this School, and in 1993 he was awarded Doctor of Letters, D.Litt. In 1996, David Oldroyd became Honorary Visiting Professor of UNSW.

Professor Oldroyd was a Fellow of the Geological Society, London, and Australian Academy of the Humanities, a Corresponding Member of the International Academy of History of Science, a Councillor of the History of Earth Sciences Society, as well as President of the Australasian Association for the History, Philosophy, and Social Studies of Science.

However, the IUGS community knew him better as Secretary-General of INHIGEO (1996–2004) and Vice-President of this Commission for Australasia and Oceania (2004–2012). David was also an INHIGEO Honorary Member and Editor of the journal *Earth Sciences History* (2008–2013).

INHIGEO relations with Lithuania

My contacts with Professor Oldroyd began in 2002, during the international symposium held on July 1–7 in Paris, to commemorate the 200th anniversary of the famous palaeontologist Alcide d'Orbigny. The symposium, *Alcide d'Orbigny 1802-1857, his life and work. Stratigraphy: from d'Orbigny until today*, had been organised by INHIGEO together with the Museum of Natural History in Paris (*Musée d'Histoire Naturelle de Paris*), at 2 Rue Buffon, within the space of *Le Palais du Jardin*. The Symposium was chaired by the Museum's Director, Academician and INHIGEO President Phillipe Taquet, who is an outstanding scholar in vertebrate palaeontology and discoverer of the Nigerian *Ouranosaurus*. He led the Symposium together with the INHIGEO Secretary-General David Oldroyd. Moreover, the year of 2002 was also an UNESCO year celbrating the 200th anniversary of famous Chilean scholar Ignacy Domeyko, who was born in Great Lithuania, remembered by World geologists in September of 2002. In Paris I presented an exhaustive report *History* of *Stratigraphy* in *Lithuania* (Grigelis, 2002 a). I also had the opportunity to acquaint myself with the d'Orbigny collections in the Museum of Natural History and found there a collection of Chilean Jurassic fossils, once sent here by Domeyko (Grigelis, 2002 b). This experience made it possible to produce a publication about two men of the same age but different fate (Grigelis, 2002 c).

After my INHIGEO membership was restored and scientific contacts were renewed, I was invited to take part in annual INHIGEO conferences with presentations in Dublin (2003), Florence (2004), Prague (2005), Eichstätt (2007) and Madrid (2010). I did not participate in conferences held in faraway countries.

In 2006, Lithuanian geologists had been entrusted to organise the INHIGEO conference in Vilnius, Lithuania, with excursions to Latvia and Estonia. Regular participants of annual INHIGEO meetings and other scholars from European countries took part in the Conference (see Grapes, R.H., Oldroyd, D.R. and Grigelis, A. (eds.), 2008). At that time, Professor Oldroyd had finished his book "*Geological Cycles: A Historical Perspective*, (2006). On this occasion I told him the unique life story of Vilnius-born geophysicist Józef Łukaszewicz (1863–1928), for 18 years a prisoner in the Schlisselburg fortress, and of his historical treatise "*Неорганическая жизнь Земли*" (*Inorganic Life of the Earth*, 1908–1911), describing the cycles of Earth's evolution; I had even given him a copy of a corresponding chart. Unfortunately, these data by Łukaszewicz were not available to him due to language barrier.

Former INHIGEO president Phillipe Taquet, David Oldroyd and the author in Mestre by Venice, at the 32nd International Geological Congress (August 31, 2004)

All these activities owed much to Professor Oldroyd, to his participation, encouragement, correspondence, professional support, and advice (especially on English language issues). As an editor of the *Classic Papers* column in the IUGC international journal *Episodes*, he provided his assistance in preparing the paper *"Ignacy Domeyko – an early investigator of Andean geology"* (Grigelis, 2005). Due to representations by Professor Oldroyd, INHIGEO, in 2003, provided financial support for the publication of the book *Geology at Vilnius University in 1579–1803* (in Lithuanian), devoted to the 200th anniversary of the Mineralogy Department of Vilnius University.

David Oldroyd was a talented science historian and prolific author with a broad knowledge of the subject, and was notable for his critical thinking on a global scale. He was the author of several fundamental books on science history and a science editor. He has written numerous critical reviews of books and journal articles, essay reviews, book chapters and articles for encyclopaedias. He also edited encyclopaedias and dictionaries. He was awarded the Sue Tyler Friedman Medal of the Geological Society, London, for "distinguished contributions to the recording of the history of geology" (1994), the History of Geology Award of the Geological Society of America for "contributions of fundamental importance to our understanding of the history of the geological sciences" (1999) and the Tom Vallance Medal of the Geological Society of Australia (2014). The Australian Commonwealth Government deservedly awarded him a Centenary Medal, "for services to Australian society and the humanities in the study of the history of science" (2003).

David was a frank true Westerner. When he was seriously ill, on November 2, 2013, he wrote me in his letter:

> *... I am no longer in good health. I have been afflicted with two cancerous tumours in my brain. The larger one has been removed by surgery but the other one is inaccessible and has therefore been treated by radiation therapy and now chemotherapy. In general I am all right but have a good deal of my cognitive ability and suffer from memory loss. But my physical strength is slowly improving. Even so I feel that I have aged a lot in the last 3 months*[1].

[1] Prof. Oldroyd's letter, 02-11-2013. [Author's archive].

This letter caused me great concern and I immediately called him in Sydney to provide encouragement.

Despite his illness, Professor Oldroyd concerned himself with preparations for INHIGEO's 50th anniversary, which will be celebrated in 2017. In the above-mentioned e-mail he asked me to write down some of my reminiscences about the activities of KOGI, of Vladimir Tikhomirov and the establishment of INHIGEO. I replied that I would write a chapter for the forthcoming INHIGEO publication, edited by Wolf Mayer. We exchanged a few letters, the last on November 15, 2013. Unfortunately, by then only a year was left to him. David Oldroyd passed away on November 7, 2014.

The earliest geological maps

After the INHIGEO conference held in Vilnius in 2006, Professor Jan Kozak (Czech Republic) put forward the idea to explore the earliest 19th century geological maps of Central and Eastern Europe and assess their significance for European geology and geological cartography. The innovative and informal, but unfunded, *Staszic Project* (2007–2009)[2] been established. It involved teams from the Academies of Sciences of Lithuania, Poland and the Czech Republic. David Oldroyd became very interested in this project, as he had studied the earliest maps in the form of diagrams or pictures which, in his opinion, had been influenced by aesthetic perception of Chinese art. A general account of our investigations had been presented in several papers (Grigelis et al., 2008, 2011). At the same time Oldroyd was collecting material about the period of the great geographical voyages and discoveries (15th–17thcenturies) and presented the results in 2009, at the 23rd International Congress of the History of Science and Technology, in Budapest. After this Congress a working team met in Cracow and Prague, where a plan for a future atlas of geological maps was proposed. A new project, the *Višegrad Fund* was formed (2010–2012).

By 2010, the participants in the Višegrad project had already collected 58 early geological maps in digital format, from the period 1726 to 1840. After the material of Professor Oldroyd was added, the collection made up more than 60 maps. Only Professor Oldroyd was qualified to describe and assess the development of geological thought in a global context. In 2011, the author of the present paper had a pleasure to assess the stratigraphic legends of these maps, together with the Czech team members, Karel Pošmourný, Zdenek Kukal and Alena Čejchanová[3]. The project of the Czech Geological Survey had been prepared over a couple of years, in order to get funding from the Višegrad countries and to publish the collection of the earliest geological maps with an explanatory text[4].

However, due to a lack of funding, the project could not be carried out. Therefore, Professor Oldroyd published this material separately (Oldroyd, 2012, 2013), and presented

[2] S. Czarniecki (Kraków), L. Ž. Gelumbauskaitė (Vilnius), A. Grigelis (Vilnius), J. Kozák (Prague), W. Narębski (Kraków), Z. Wójcik (Warsaw), 2007-2009. The earliest late 18th c. and early 19th c. geological maps of Central and East Europe and their significance for European geology and geological cartography: a joint project of the Science Academies of Lithuania, Poland and Czech Republic (Staszic Project) [Author's archive].

[3] Algimantas Grigelis. Some sight on early geosciences maps. Manuscript, Prague, 12-16 October 2011, pp. 1-6 [Author's archive].

[4] The earliest geological maps of Central Europe and their significance for development of European geological cartography from late 18th c. to early 19th c. / the project co-ordinated by Geological Survey o Czech Republic; project participants: J. Kozák, A. Čejchanova (Prague), P. Krzywiec, Z. Wójcik (Warsaw), L. Ž. Gelumbauskaitė, A. Grigelis ... [et al.]. – (Višegrad Fund Project, 2010-2012) [Author's archive].

the digital versions of these geological maps to the Czech Geological Survey, to hold in storage[5]. I am presenting here some examples from this collection, in order to illustrate the development of the ideas, as shown in pictures and drawings of natural features, to the early maps.

Bird's-eye view of Imola town in Italy (by Leonardo da Vinci, 1502 [Pianta di Imola; http://en.wikipedia.org/wiki/File:Leonardo_da_vinci,_Town_plan_of_Imola.jpg (Wikipedia Commons; original at Windsor Castle). In Oldroyd, 2013, Fig. 2, p. 44.

D. Oldroyd's comment: *Such works exemplified the Renaissance use of graphical representations for the purpose of imparting technical or military information. No geomaps are known from this period, though, earlier, Leonardo da Vinci (1452–1519) had drawn bird's-eye topographic maps, as for example the one of the town of Imola near Bologna in Italy (1502). This depicted walls and surrounding fields, houses and gardens, and the Santerno River meandering in its bed of river gravels. It is unclear what da Vinci's purpose was in drawing this map. He may have done just as an intellectual exercise*.

[5] Višegrad Fund 2010. Map list: geological mapping in Central Europe in the 18th and early 19th centuries, 147 pp., with an accompanying DVD of the maps analysed in the list; participants: A. Cejchanova, J. Kozak, P. Krzywiec, Z. Kukal, K. Pošmourny, F. Sikhegyi, I. Tunyi, A. Wolkowicz, K. Wolkowicz, B. Fritscher and T. Cernajcek. [Author's archive].

Map of salt wells, Southern Yunnan, ca. 1707. From: An Atlas of Ancient Maps in China, Vol. 3, Cultural Relics Publishing House, Beijing. D. Oldroyd's hand entry: Other than showing the locations of wells, the maps are largely concerned with depicting of cultural life. From: David Oldroyd. History of geological maps. Presentation, Cracow, 2011-09-18, 60 p. [Author's archive].

David Oldroyd's comment: *This picture could be treated as one of earliest „geological maps" of China, however it should be noted, according to F.S.C.Northrop (1946), that East mostly studied things from the aesthetic positions, and West did it from the theoretical positions. Traditional in Western opinion geological maps appeared in China only at early years of the twentieth century.*

Buache/Guettard, min/geognostical. map, with English and French strata linked. 1751

Mineralogical map of France and parts of Britain compiled by cartographer Phillipe Buache for a treatise of Jean-Étienne Guettard in 1746 (Memoir ..., 1751). From: David Oldroyd. History of geological maps. Presentation, Cracow, 2011-09-18, 60 p. [Author's archive].

D. Oldroyd's comment: *This map shows the symbolized location of various mineral deposits, as in other Guettard maps (e.g. Switzerland and Poland) but also has differentiated sandy, clay and schistose "bandes" or zones. Guettard seemingly had some notion of a general order of strata, but judging by his maps it appeared more as an idea than an empirically based concept (Oldroyd, 2013, p. 50).*

Unforgettable meetings

One meeting with David, I would say an exclusive one, took place on his initiative in Helsinki on August 16–19, 2008, just after the 33rd International Geological Congress in Oslo (I didn't take part in ithis meeting), from where David planned to return to Australia via Helsinki. He wanted to consult with me on the Staczic project that had already begun. David, in his capacity as INHIGEO Vice-President, sent the invitation to meet me to the Academy of Sciences of Lithuania, who agreed to send me to Helsinki on a business trip. David was

staying in the city centre, while I was at the Hotel Rantapuisto, out of town, where he came to meet me next morning. We discussed the main theses of a new project, *Development of Geological Cartography in Central and Eastern Europe* and created a plan for a monograph and catalogue of 25 maps of geological content. Its authors would be INHIGEO members – representatives of the Lithuanian, Polish and Czech Academies of Sciences and the University New South Wales. Prof. Oldroyd showed an interest in the geology and nature of the environs of the Rantapuisto, where Precambrian crystalline rocks are exposed and where the terrain is interspersed with large boulders. It was a wonderful August-day. A lively conversation touched on scholars as the carriers and ideas and on art and history; we admired the forest and the waters of the Finnish Gulf beyond it. On the next day we met in the Senate Square and visited the nearby Jakob Johannes Sederholm (1863–1934) Mineralogy Museum, at Helsinki University. Then we went to the legendary Sveaborg Fortress, a reminder of Tsarist times; its purpose was to defend Helsinki on the side facing the Finnish Gulf. We inspected its impressive defencive structures. It was my first visit to Helsinki, and everything I saw was interesting and new.

Australian researchers willingly travel to Europe in summer, when they have winter at home, and when here in Europe a great variety of congresses, conferences, symposia and meetings are held. In 2009 from July to October, there were several of these, including the International Congress of the History of Science and Technology in Budapest and later, a meeting of the working group of the Staszic Project, in Cracow and Prague. At that time, Professor Oldroyd had already done a good deal of work in collecting old geological pictures and in preparing the atlas of maps; he also gave interesting presentations. On July 5–10, 2010, we met once more in Spain, at the INHIGEO annual conference in Madrid and Almaden, taking part in a geological excursion from the Iberian pyrite belt to the historic Rio Tinto mercury open pit mine and Las Cruces copper mine, in the Seville region. I have taken my last photo of David Oldroyd in the village where Don Quijote, the famous hero of Miguel de Cervantes, was born. I was unable to attend the INHIGEO annual conferences in Japan (2011), Australia (2012), England (2013), and California in USA (2014).

David can already be regarded as classical scholar in the history of science. It was always very interesting to talk with him. He was a man with a great sense of humour and a very kind heart.

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Photographs by Algimantas Grigelis

Centenary of the birth of Gábor Csíky (1915-2001), founder and president of the History of Science Section of the Hungarian Geological Society

Gábor Csíky was born 1915 in Kiskapus, in a district inhabited by ethnic Hungarians in Central Transylvania. He obtained a truly inter-ethnic education in various parts of Central Eastern Europe. He attended German schools in Segesvár (Sighişoara) and Brassó (Braşov) and studied at the Universities of Bucharest and Kolozsvár (Cluj). In 1941 he was awarded a doctor's degree at the Technical University of Budapest. He worked in petroleum exploration in various parts of Hungary, first in the western Zala Basin, later in the southern and northern margin of the Pannonian Basin.

From the age of 50 years, he became increasingly interested in the history of the geosciences. In 1970, together with the geologist Leontin Fejér, he proposed the founding of a Group of the History of Science within the Hungarian Geological Society. The group was formed in the same year, and later became the Section of the History of Science. He served as president for several years and was later elected as perpetual honorary president. He became one of the first Hungarian members of INHIGEO. He died 2001 in Budapest. In his works he always stressed the interrelation of the development of the geosciences with the general historical and cultural background of the nation.

He was commemorated by the secretary of the section, Péter Papp, first in Budapest, December 7, 2015, in a session of the Hungarian Section of History of Science, then in Kolozsvár, December 12, 2015, at the Marosi Pál – Ferenczi István Memorial Conference of the Hungarian Society of Science and Technology, in Tran.

Péter Papp, Budapest, Hungary

Relations of a prince and a professor with our science in the mid-17th century in Transylvania (Prince Ákos Barcsay and Professor János Apáczai Csere)

János Apáczai Csere (1625-1659) is known in the Hungarian history of science as the first encyclopaedist. He studied in the Netherlands and received the title „doctor doctus" at the

University of Harderwijk. In 1655 he edited the first “Hungarian Encyclopaedia”, in the Hungarian language. Its aim was to embrace everything in the world, in a clear, logical system, at the scientific level of his age. Among others, the Encyclopaedia has chapters relating to the Earth sciences, such as on precious minerals, on different rock types, on minerals and on water, etc.

Returned to his homeland, after several difficulties, he became a teacher at the reformed College in Kolozsvár, he developed it to a high-level school, where the knowledge, collected in the Encyclopaedia was taught. In the last years of his life Apáczai enjoyed the support of the reigning prince.

Ákos Barcsay (1619-1661) was the Prince of Transylvania between 1658 and 1661. In 1658 Apáczai wrote a detailed proposal to establish an academy and outlined its pedagogical program. The academy had to be the first one in the country. He presented his program personally to the prince, who accepted it with much goodwill. Unfortunately, his early death in 1659 and the quickly changing political situation of Transylvania did not permit him to realize these plans. However, this short period of understanding between scientific and political leaders is worth mentioning.

Péter Papp, Budapest, Hungary

ARTICLES

Marie Stopes (1880–1958) -Early female paleobotanist in Japan

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In Japan, in the mid-eighteenth century, there were a number of naturalists who collected fossils and minerals and were part of a network for the exchange of samples.The naturalists were all men, and no accounts exist of either women naturalists or of the wives and daughters of naturalists.

Japan began to import modern science after the Meiji restoration of 1868. Teaching of geology started at the University of Tokyo in 1877 and the Geological Survey of Japan was established in 1878. But it was not until 1943 that women attended a meeting of the Geological Society of Japan, held in Hokkaido University.

There are two reasons for the late appearance of women in the geological world, compared with other natural sciences. One is that the Japanese thought that geology was men's work, just like soldiering, the former emphasizing a nation's resources and the latter a nation's safety. Both required demanding field work and, by-in-large, Japanese women did not want to be geologists at that time.The second reason was the nature of the education system for women. After the Meiji Restoration, a national education system was established. The Tokyo Women's College was established in 1875 as a teacher-training institute for women. Nara Women's College was established in 1908, also with the aim of training women teachers for ordinary schools. In those colleges, physics, chemistry, botany, and zoology were taught, but not geology.

Marie Stopes

In 1907, the English birth-control pioneer, Marie Stopes (1880–1958) (Fig 1) came to Japan. After the First World War, she became famous for her book "Married Love" (published in 1918), which dealt with the conduct and the language of sexual intercourse. Her name and her influence would further the cause of birth control all over the world. However when she came to Japan, her aim was to study plant fossils.

Figure 1. Marie Stopes in her laboratory.
https://upload.wikimedia.org/wikipedia/commons/2/2d/Marie_Stopes_in_her_laboratory,_1904.jpg

When she was a girl, she helped her father, who was an 'amateur' archaeologist. She was educated at home by her mother, and did not start conventional schooling until the age of 12 (Chaloner, 2005). She wanted to study chemistry, but was accepted into a botany course at the University College London (UCL). In 1902 she was awarded a Doctoral degree of Science from UCL and, in 1903, a PhD from Munich University. In Munich she met Dr Kenjiro Fujii (1866-1952) who had came from Japan to study the fossil plant Gingo. He was Associate Professor at the Imperial University of Tokyo and 14 years older than Stopes. He had already been married but had just been divorced. They fell in love. In 1904 Stopes was assistant lecturer in botany at Manchester University.

Stopes in Japan

In 1907 Stopes came to Japan. She spent eighteen months, at the Imperial University of Tokyo and explored the coal mines on Hokkaido for fossilized plants. There, accompanied by thirty men, she collected fossils, wearing blue Japanese trousers and jackets, cloth leggings and stiff socks worn with straw sandals. A lone young white woman traveller was a figure of great curiosity at that time. There were always crowds of men gathering at stops on her travels. For Japanese men, she was the first woman working along the rock cliffs and in the coal mines. The found herself in a difficult situation due in part to the harassment she experienced. She could not act as a scientist. Fujii's daughter could not understand Stopes' behaviour.

Stopes' contribution to paleobotany

She returned to the UK soon after, but in 1910, Stopes and Fujii wrote an article on Cretaceous plants from Japan. The paper described the structure and the affinities of Cretaceous plants in Japan. It included the first description of thin sections of mineralized plants. Her major contributions were her additions to the knowledge of the earliest

angiosperms, the formation of coal balls and the nature of coal macerals. The classification scheme and terminology she devised for coal are still being used. She also wrote a popular book on paleobotany (1910), to introduce the subject to non-scientists.

After the publication of 1910 paper, Stopes continued to study plants for several years and married a Canadian botanist. They wanted to have children but were unable to. She studied infertility using material from the 'prohibited' part of the British Library. She had the privilege of its use because she was a Doctor of Science. She later divorced and discovered that women around her were woefully educated with regard to fertility and family planning. She changed from being a paleobotanist to a birth control activist.

An indirect influence on Kono YASUI

Kono Yasui (1880-1971) (Fig 2) was awarded her doctoral degree in science from the Imperial University of Tokyo in 1927, the first such degree in Japan conferred on a woman, by studying lignite and coal also in Hokkaido (Yasui, 1928). She was born in the same year as Marie Stopes. Yasui very much liked the study of biology. She graduated from Tokyo Women's College in 1902. After three years teaching biology, she entered the same College again for further studies in zoology. But her teachers recommended that she study botany instead, as no good teacher of zoology were present in the Tokyo Women's College at that time. In 1913 she went to America to attend Harvard University. She was advised to study plant fossils such as those found in coal for her doctoral degree. After returning to Japan, she continued to study plant fossils under Professor Fujii at the Imperial University of Tokyo.

Figure 2. Kono Yasui. http://www.um.u-tokyo.ac.jp/japanese/museum/ouroboros/08_01/images/top.jpg

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A BRIEF SKETCH OF RECENT JAPANESE RESEARCH ON THE HISTORY OF THE GEOSCIENCES IN CHINA, 1996-2015

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Introduction

The Chigakushi Kenkyukai (a study group conducted by members of JAHIGEO, Japanese Association for the History of Geological Sciences) held a meeting on the history of geology in China on 29 March 2015, where two papers were read (Yatsumimi 2015) and (Takegami 2015a). Discussion at the meeting stressed the importance of the study of Chinese geology from its emergence, and in its international contexts. We decided therefore to present a review of recent studies on topics related to this subject, to the INHIGEO meeting in Beijing.

We have examined articles published in journals and talks presented at meetings over the past two decades. We have found that research in a range of fields related to the history of Chinese geosciences has increased markedly in the twenty-first century. Themes and approaches focusing upon socio-cultural contexts in particular, have attracted the attention of researchers.

General interest in the history of geology of China

When the 30th IGC was held in Beijing in 1996, INHIGEO organized three symposia, but without any Japanese presentations. As Inomata (2003) stated, after the academic exchanges between China and Japan began at around 1982, the year the Geological Society of China celebrated the 60th anniversary of its founding, geological collaborations and interest in historical studies were established. In 1992, the committee of the Tokyo Geographical Society started publishing a series on the History of Geosciences in Japan and, following the 100th anniversary of the Geological Society of Japan, in 1994, JAHIGEO was founded. From that time on, Japanese researchers have gradually concentrated their attention on the history of geological sciences, including that of China.

Aida (2004) introduced the Chinese historiography of geology using the work of Wang and others (H. Wang, et al., *A brief history of geology in China*) published in 1989, which was in part translated by Aida and Omori (2013). Already in 1991, the *magnum opus* of Joseph Needham, including his volume on Earth studies, was translated into Japanese. Yajima (2008) consulted this volume in *Zhongguo Kexuejishushi* (History of Science and Technology in China), published in 2000, when she wrote her history of palaeontology. When we research the pre-modern geological sciences of Japan, we usually find Chinese

influences which reflect a wide interest in the history of the science in China. When we consider the introduction of Western science, including geology, into China, the work and activity of the famous intellectual Lu Xun has been symbolized as a sort of important 'indicator' (Cf. Yatsumimi, 2010).

Christian missionaries and early geology

Since 1993, Yatsumimi has carried out a series of studies on Christian missionaries and their role in diffusing science in China. He discussed the cases of the American, Daniel Macgowan (Yatsumimi, 2000, 2015), and Benjamin Hobson, from Britain (Yatsumimi, 2003). The work of the latter has not yet been fully investigated even by English-speaking people. While Macgowan, with his colleague Hua Hengfang, published *Dixueqianshi* (1871), Hobson wrote *Bowuxinbian* (1854). Lastly, Yatsumimi pointed to the Chinese translation books which cultivated scientific literacy among the Chinese reading public, including in Korea and Japan.

In the meantime, Takegami (2014) re-examined the process of making the *Dixueqianshi*, the translation of Lyell's Elements (Takegami, 2014) and the survey of the American geologist Raphael Pumpelly in China (Takegami, 2015a, 2015b). She analyzed the international settings and attempted to give a new narrative to the topics, which seem to imply the presence of an intellectual 'public sphere' of scientific activities, as Yatsumimi had suggested.

Chinese students in Japan

Early in the twentieth century Chinese students came to Japan to study science and technology, including geology. While Lu Xun took a course of medicine in Sendai, some were studying geology in Tokyo. Among them, Zhang Ziping (1893-1959) became a writer and popularizer of science, utilizing his knowledge of geology (Kiyochi, 2010, 2011). Kiyochi's study was remarkable in that it dealt with the topic in a cultural context. But generally speaking, the roles of Chinese students who studied geology in Japan have not yet been thoroughly investigated.

War and the geosciences

Entering into the 1930s, we cannot fail to note the relationship between war and the geosciences. Studies on this theme have been conducted from a more general perspective, such as the social function of science: 'science and the modern state,' 'science and war,' etc. The recent trend in historiography of the study of 'colonial science' and 'science and imperialism' has attracted historians. Yamaguchi (2003) and Yajima (2006a, 2006b) investigated the cases in Manchuria; Osada (2006, 2014) made a survey of institutions in Taiwan and Kim (2007) focused on the seismic network, including Taiwan; Kato (1997, 2003, 2005), Yatsumimi and Yamada (2008), and Yatsumimi (2009) have written about the original planning and the researchers of the Shanghai Science Institute. They did not carry out these studies as part of just one integrated 'program' but from various perspectives, such as scientific museums in a colony, resources exploration, earthquakes, and international relations in the scientific community.

Post-war period

Unfortunately, although few attempts have been made at historical studies of the post-WWII period, Inomata talked of his recollection about academic exchanges between the continent, peninsula and archipelago in East Asia (Inomata, 2003) and referred to the geologist who contributed to the exploration for mineral resources and was rewarded by the Chinese Government (Inomata, 2004). On the other hand, Onishi (2002) and Takahashi et al. (2002)

provided overviews on the history of natural hazards and earthquake prediction in China. Onodera's review of Chinese geography (2012) is very useful. In general, the study for the Cold War Era is likely to be the future subject for geohistorians.

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THE MINERAL WEALTH OF NEW SOUTH WALES, AUSTRALIA, 1906
A mainly outdoor 'Exposition', recorded in photos

A Review

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Four photographs, rescued when the School of Geology and Geophysics moved from its original quarters, which then became known as 'Old Geology' at the University of Sydney (since renamed the Edgeworth David Building, thanks to the suggestion by David's grand-daughter (Anne Edgeworth, aka Anne Godfrey-Smith)), are of the former Royal Exchange Building in Sydney's Bridge Street. The photographs show four views, three exterior and one interior, being used in a rather spectacular public relations 'exercise'. They were almost certainly taken by photographers from the then Government Printing Office.

These photographs mark a period when such building 'decorations' were, perhaps, much commoner than today, except perhaps in the Christmas season! The decorations rejoicing in the State's *Mineral Wealth* adorned the former Exchange Building, now sadly

demolished, despite its nature as one of the iconic group of 'classical' buildings in Bridge Street. It was designed by architect J.F. Hilly and built between 1853 and 1857.

Although the photographs are of fine quality, some detail might be lost in their reproduction, so some information shown in the photographs is set out below.

Photo 1 – The front view of the building, facing Bridge Street, was marked by six Corinthian columns extending two floors, topped by two upper floors with stone pilasters capped by Corinthian 'corbels'. Only the lower of the two upper floors is exposed in this photo, with seven flags and shields (possibly of the separate states and territory, although flag experts can probably set this aright), placed in front of the seven windows at this level. Below are shown six large maps of the state, three on each side of a central ornamental plaque consisting of three figures, one female (left) and one male (right), both kneeling facing in towards a standing female figure. The male appears to be a bearded miner with a simple winder behind him.

Text above and below the picture states:

UPON THE UNION OF CAPITAL AND LABOUR IN THE DEVELOPMENT OF OUR RESOURCES
THE PROSPERITY OF AUSTRALIA DEPENDS

The maps, reading from the left depict, as described below each map:

1. Ironstone and Limestone sites within the State.
2. A more expansive text, most of which is not legible, but includes 'Opal, Coal, Antimony and Mercury'. The three letters at the right hand end read down: M.P.R.
3. Gold within the State.
4. Silver.
5. The text is not legible, but the map indicates a large area south from the Darling River

near Bourke (? possibly indicating underground water).

6. The text is not legible, but the map indicates much of the Sydney Basin at street level there are five ‘plaques’, three left of the entry stairs and one to the right.

The first listed (and probably displayed) is Iron Ore [from] Cadia, near Orange.
The second listed (and probably displayed) is Iron Ore from Coombing Park, Carcoar.
The third listed (and probably displayed) is Limestone: Commonwealth Cement Co. Portland.
The fourth listed (and probably displayed) is Gold, True Blue Mining Co. Ltd (surely not a ‘real nugget’?)

The sole list of this type on the right of the entrance is partly obscured by a white lamp post; it states ‘Copper Ore … Cobar, Limited.

Nearer to the steps and in front of the alcove to the right of the steps there is a large pile labelled ‘Ores’

Towards the right end there is a tall pyramid of blocks (probably ingots) labelled ‘SILVER LEAD BULLION,’ products from the Broken Hill Mines. To the right of the steps is a small mineral ‘pile’ labelled ‘GOLD’.

Between the street-level ‘plaques’ there are taller white ornamental ‘pedestal’ stands, two on the left of the entrance steps and one on the right, each with an ornamental shield and with text below, but these texts are not legible.

The display is almost completed on the right (corner position) by a ‘hut-like’ structure, showing to Bridge Street a set of eight dark ‘plaques’, of differing sizes, on two levels. These were probably photographs, not text, each in a white frame, the whole surmounted by plants.

Plants are also placed between and behind the various mineral items mentioned above.

On both sides of the steps are two, possibly ornamental pillars, capped by balls, which might be lights.

Photo 2 – This shows the full height of the building along two facades, Gresham Street (left) and Bridge Street (right). Some of the maps can be seen more clearly than in Photo 1, and the written ‘posters’ along the Gresham Street façade are clear. One feature of interest is the extraordinary telegraph pole on the corner of Bridge and Gresham Streets, and the variety of street lighting.

Photo 3 – This shows the Gresham Street facade of the building more fully, and indicates also that there were several items in the ‘garden’ fronting the Corinthian pillars (right side of photo 3, but partly obscured by the well-dressed locals) and part of the Bridge Street ‘story’, being of similar designs. That on the left reads ‘Products of the Moore Hesketh Iron and Steel’ [several words not legible]. That on the left reads ‘Kerosene Shale, Commonwealth Oil Corporation Ltd’.

There are five shields hanging in the lower portion of five of the seven ground-floor Gresham Street windows, two on the left, three on the right of the entrance. They record specific mining localities. From the left they read Hillgrove, --gah, then Mount Boppy, Cobar and Burragorang.

Above are eight easily-read placards (four on the left, one over the entrance door, and three on the right) extolling the state’s productivity.

From the left they read:

(1) over
39, 000 persons
are directly
Engaged Mining
New South Wales
The
Metalliferous Mines
Over 25, 000
And the Coal & Shale Mines
14,000

(2) in six years
the
Dredging Industry
has added
£691, 000
to the Wealth
of New South Wales
the area under
Mineral occupation
is over
269 000 Acres

(3) The Capital
invested in
Mining Machinery
And Plant
In
New South Wales
Exceeds
£2,021, 000

(4) Value of
Minerals
won during 1905
£7, 085, 893
per head of Population
£4.15.0
per head of Persons
employed in mining
£180

(5, over doorway) Diamonds
and
Noble Opal
to the
Total Value
of
£1, 035, 000
have been
obtained in
New South Wales

(6) The Mount Boppy
Gold Mine
During the past five years
has contributed GOLD
valued at £331,000
and paid
£150,000 in Dividends
or £29,000
Over and above the Capital
Subscribed by
the Shareholders

(7) The
GREAT COBAR
COPPER
MINE
has produced
COPPER
Valued at
£3,400,000

(8) The Value
of the output of
COPPER MINES
of New South Wales
Totals £7,683,000
High Water Mark
Was reached during 1905
with a production
valued at
£ 527,403

Photo 4 – The exterior information documented above was perhaps a mere shadow of what was presented inside the Exchange Building. Here were at least three large separate displays of rocks, minerals and ingots with photographs (doubtless of mines and mining towns), together with a little more 'purple prose' warning that:

BARRIERS AGAINST LEGITIMATE ENTERPRISE IN THE DEVELOPMENT OF OUR RESOURCES ARE A MENACE TO LABOUR

A smaller plaque sadly is partly obscured by a palm, so that only the words: THE NOBLEST … AND PUB LIC GOOD are readable.

The Display seems to have been the idea of the Royal Exchange Director, C.H. Hayes, but with some help from E.F. Pittman (Government Geologist, 1891-- 1916) and his staff. It was opened by the then Minister (Secretary) for Mines and Agriculture, Mr Samuel Wilkinson Moore (1854-1935), on Monday 10 September 1906. The *Sydney Morning Herald* wrote enthusiastically next day on "*Our Mineral Wealth, Royal Exchange Exhibition - A splendid Display* … better than Aladdin's ... with blue and gold drapery and flags … and … carefully prepared statistics".

The exhibition enthused Joseph Earle Hermann (Letter to the *Sydney Morning Herald*) to write that the exhibition should go to Exhibitions in Christchurch, New Zealand, then to England.

Accompanying the exhibition, the state's Department of Mines, which had participated enthusiastically in the exhibition, arranged for talks by its experts. Joseph E. Carne, Assistant Government Geologist, thus found himself the first speaker on 13 September at a meeting, which was "packed to the rafters".

Possibly taking advantage of the publicity for mining, there were strikes at coal mines in the Hunter Valley, and in the Southern (South Coast) coalfield, where the strike meant night work needed to be better paid. An article on the Maitland field led with a brief note of Edgeworth David's 'discovery' of the field, and suggested that a suitable alternative name would have included 'David'. At this time Professor David was just *en route* back to Australia from an international meeting in Mexico, seeing, in transit, the devastation of San Francisco caused by the 1906 earthquake (on the San Andreas Fault).

Always seeking the chance for profit, Frank Critchley Parker (1862 – 1944), proprietor of the *Australian Mining Standard*, produced a two-hundred page A5-sized volume, entitled *The Mines and Minerals of New South Wales: the Royal Exchange Exhibition, held September 1906,* some articles being written by the prolific author, mining engineer, Frederick Danvers Power (1861-1985). This book is well–illustrated, with photos of various mines and some pages of advertisements by mining companies. However, its publication apparently preceded the Exhibition, as it contains no photos of the actual event.

Were there other similar exhibitions in other Australian cities at other times? I have yet to find out.

A note of some little known maps and their authors discussed in the Atlas of Early Geological Maps of Europe

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During work on *the Atlas of the early geological maps of Europe, Central Europe, 1750 to 1840*, we, the Atlas' authors, discovered several little-known geological maps and learned more about their authors. Besides the well-known celebrities and creators of geology as a science, e.g., Johann Friedrich Wilhelm von Charpentier, Leopold von Buch, Ami Boué, Abraham Gottlieb Werner, Roderick Impey Murchison, Adam Sedgwick, etc., we also discovered several authors who were virtually unknown. Some of the maps' author-geologists may have prepared only one or two maps, but their methods of map-making, and the locations on which they were based, were often unique and are worth of mentioning.

The valuable contribution of these early geologists to the advancement of geological cartography lies in the originality of their approach to map-making, which can be fully appreciated only by experts in the field. In their time, these authors were known to a small group of specialists only, and the maps they produced gradually fell into oblivion. We would like to recall here at least three of them, namely Johann Jirasek, August Kaluža and Franz Xaver Riepl. They should be appreciated for their remarkable contribution to the history of geology and for their detailed knowledge of the diversity in the geological context of the Central European territory.

1. Johann Jirasek, 1791. *Petrographische Charte eines Theils des Böhmischen Riesengebirges an der Schlesischen Gränze. (Petrographic map of part of the Bohemian Giant Mountains (Krkonoše Mountains), along the Silesian border.)*

It is the first geological map of the Krkonoše Mountains/Riesengebirge, created during one of the first geological surveying expedition. The geology is described in one chapter of the above named book, which deals also with botany, physical geography, meteorology, climatology and ethnology. The expedition was organized and sponsored by the Royal Bohemian Society for Sciences and Arts, and by the nobility and landowners, as well as by local managers, with the aim to find and register the potential human, biological, and mineral resources of the area. The data on old mine workings and settlements are still valuable at present. Equally, some geological observations, such as determining the boundaries between the Krkonoše Granite and metamorphic rocks, are valid to the present. Jirasek's map contains an unusual amount of research data.

2. August Kaluža, 1818. *Mineralogische Karte von Schlesien* (*Mineralogical map of Silesia).*

Kaluža's map, consisting of four separate sheets, is a supplement to his book, *Overview of Silesian and Klodsko minerals, with their localities and with new data on topographic elevations*. The set of maps is based on lithology and simple topography. On this map he attempts to distinguish between "older and younger" geological formations. In the legend we can see the influence of the Wernerian school. However tectonic concepts are not presented on the map. The mapping area includes part of Bohemian and Polish Silesia, the Klodsko region of the Czech Republic and Poland.

The map demonstrates the work and enthusiasm of a Catholic priest, who was born in Kouty (a Moravian town). Kaluža was an autodidact who specialized in the study of the

natural sciences. His mineralogical map is comparatively simple and it mirrors the general geological knowledge at the beginning of the nineteenth century. It is not known who sponsored the map and the publication of the book. It is possible that the author's membership in the Society for Patriotic Culture enabled him to gain some funds. Until recently this map was unknown to specialists in the history of the geosciences. The set of Kaluža's maps was discovered in the Warsaw National Library, during work on the VISEGRAD project, in 2010. It is interesting to compare the geological approach of Kaluža, in 1818, to that of von Buch, in 1802, in the same area of the southwestern parts of Poland.

3) Franz Xaver Riepl, 1819. Geognostische Charte von Böhmen bearbeited von Franz Riepl. *Geognostic map of Bohemia, by Franz Riepl*.

The map is based on the occurence of lithological units. The NE–SW trend of geological bodies and formations can be considered as a first tectonic interpretation of the geological structure of the Bohemian Massif (Figures 1 and 2).

Riedel's interest was focused on mineral deposits, mainly coal and iron. His "black coal formation", which includes both black and brown coal basins, covers nearly half of the map. Iron ores are subdivided into four types, whereas "shales" of different ages are grouped in one stratigraphic unit. Porphyry, basaltic trap, and magnetite rocks are shown separately. As a whole, the map shows two major units: a northern one, grouped together as the black coal formation, and a southern one, consisting of crystalline rocks. Franz Riepl was a keen supporter of *the* Neptunistic concept, and the impact of this approach is clearly recognizable in his map.

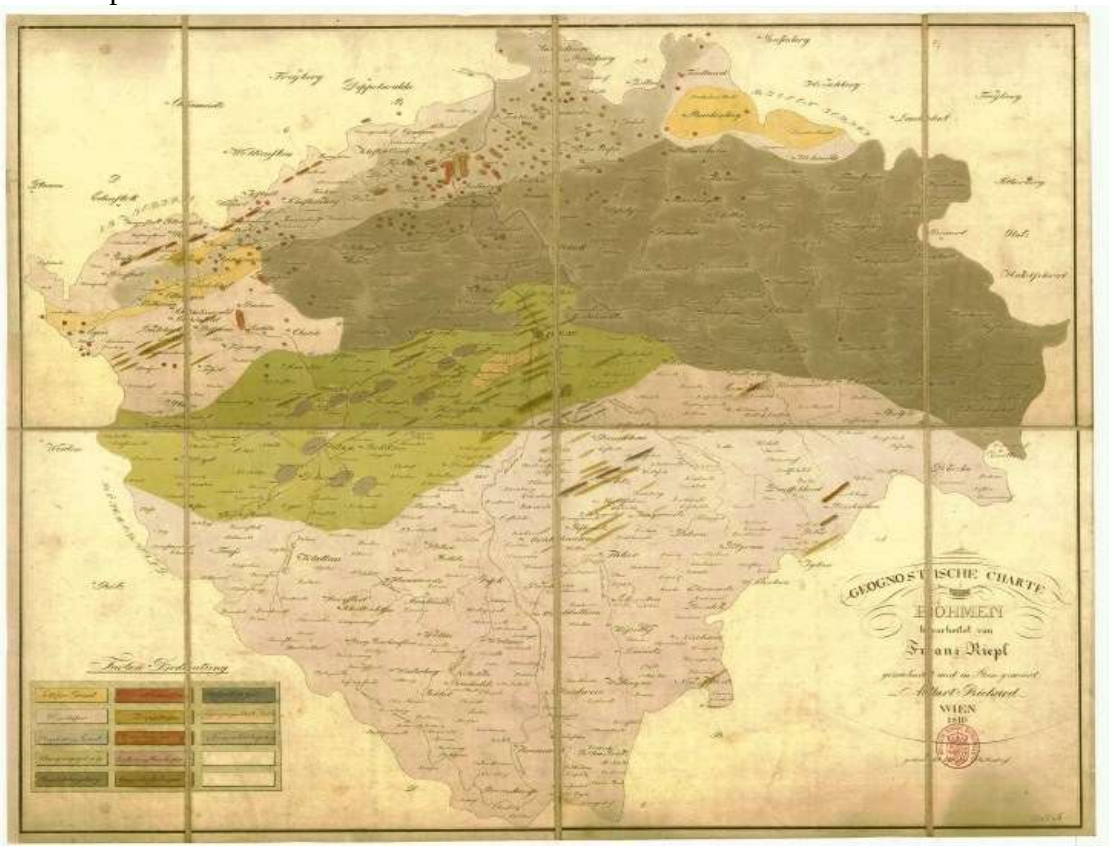

Figure 1. F. X. Riepl: Geognostische Charte von Böhmen (Geognostic map of Bohemia). Source: Archives of CGS

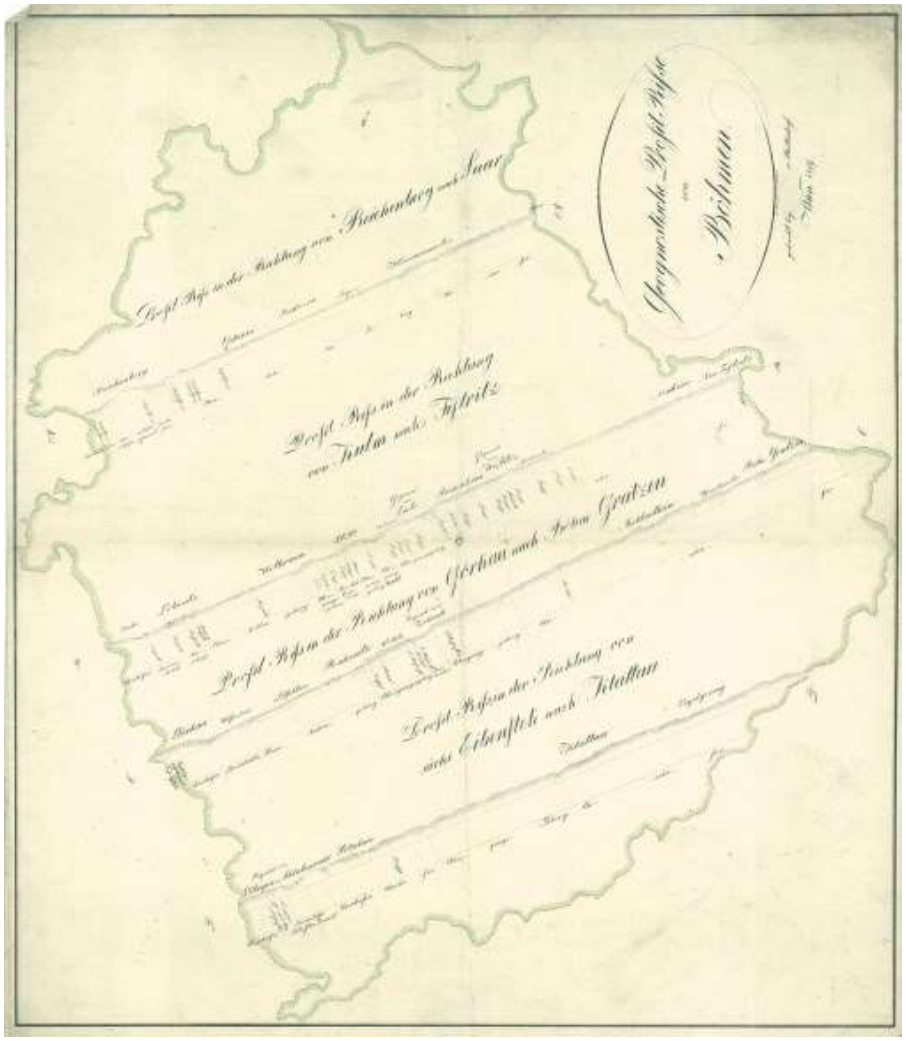

Figure 2. F. X. Riepl - Cross sections: Geognostische Profil-Risse von Böhmen. Source: Archives of CGS

BOOK REVIEWS

Köppen, W. and Wegener, A. 2015. *The Climates of the Geological Past / Die Klimate der Geologischen Vorzeit.* Borntraeger Science Publishers, Stuttgart, edited by J. Thiede, K. Lochte and A. Dummermuth. ISBN 978-3-443-01088-1 http://borntraeger-cramer.com/9783443010881

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All geologists will have heard of Alfred Wegener, definer of the theory of continental drift. Few will have heard of his father-in-law, Wladimir Köppen, one of the founders of modern climatology. In his early work Wegener used indicators of past climates to confirm the likely relative positions of the continents. Meeting Köppen, whose climate classification system matches temperature and precipitation to patterns of vegetation and soils, and who was much taken with Wegener's ideas, he found an ideal collaborator to help him take his ideas forward. Their magnum opus was completed in 1923, when Köppen was 77 and Wegener 43, and published in German in 1924. The central feature of this tour de force by a pair of experts from different disciplines was their application of the principle of the primacy of climatic zones as aids to reconstructing continental positions through time. It featured reconstructions for the Carboniferous, Permian, Triassic, Jurassic, Cretaceous, Eocene, Miocene, and Pliocene + Early Quaternary, all made without the benefit of palaeomagnetic observations. This first comprehensive suite of global palaeoclimatic maps displayed the distributions of climate sensitive indicators, and selected geographic features – the positions of the North and South Poles, the equator and the 30° and 60° lines of latitude. Other maps showed the flora of the Carboniferous and Permian, the flooded areas of the continents in the Jurassic, and the corals of the Cretaceous.

Confirming the application of the principle of the primacy of climatic zones, salt and gypsum deposits occurred, where such evaporites are found today, in the arid belts north and south of the equator. Cretaceous corals occurred in the equatorial zone between the 30th parallels, more or less as they do today. Glacial indications occurred around the poles. And coals formed under temperate humid conditions, as well as in the humid tropics. Their findings vindicated Lyell's notion that a shifting of the continents across climate zones through time might explain the global distribution of fossils and the location of past climate-sensitive deposits (Lyell, 1830-33).

One of the first to enthuse about Köppen and Wegener's concepts was Alexander Du Toit (1937). Their concepts provided him with a testable means of predicting where past climate zones were. But widespread influence was handicapped by the lack of an English translation, only now remedied. As one reflection of that lack of influence, Köppen's name does not appear in the index to the magisterial Principles of Physical Geology, published in 1965 by Arthur Holmes, although Holmes did include Köppen and Wegener's palaeoclimate map of the late Carboniferous (Holmes, 1965). We would have to wait until the 1970s to see the widespread production of maps of continental distribution based on palaeomagnetic evidence, which enabled Pamela Robinson to apply Köppen's climatic zonations to palaeoclimatological studies in a thoroughly modern manner (Robinson, 1973).

Things might have been different if Alfred Wegener had lived beyond the age of 50 to produce further editions, but, sadly, like Captain Scott, he died on a polar plateau – though at the opposite end of the Earth – in Greenland. All that Köppen could do was to publish, again in German, a set of supplements and corrections, just before he died in 1940, aged 93. The

current publication reproduces the original German version from 1924, plus Köppen's 1940 'after-note', together with both in their English translation. Wegener's participation in a further edition would have been critical, as he was largely responsible for the first six chapters dealing with the Palaeozoic through to the Pliocene, while Köppen was mostly responsible for the chapter dealing with the Quaternary.

For their Quaternary chapter Köppen invited a contribution from Milutin Milankovitch, who had recently risen to fame by using calculations of celestial mechanics to demonstrate that geologically recent past climate change was most probably the result of changes affecting the Earth's orbit, the precession of the equinoxes and the tilt of the Earth's axis (Milankovitch, 1920). Köppen realised that there was a link between what Milankovitch had found and the sequence of 4 glacial and 3 interglacial events determined by geologists in the Alps (Penck and Brückner1901-1909). Milankovitch allowed the authors to use his published calculations, and added some new features not present in his published papers.

This made it possible for the first time "to establish a precisely defined time scale of Late Cenozoic glacial-interglacial history", which "is probably the most important scientific contribution of this book" (Thiede et al., 2015). However, Köppen and Wegener did not simply take Milankovitch's data at face value, believing that differences in the positions of the fronts of past ice sheets in Europe might also reflect the wandering of the Quaternary pole. They disagreed with Penck (1913), who thought the differences reflected constriction of the humid equatorial region during the last glaciation. Nevertheless, Köppen and Wegener confessed that "… the complication of the problem stands in a much greater opposition to the scarcity of the observed facts, and one must leave it to the future to decide how much these phenomena are caused by the migration of the poles or by the climate belts moving closer together…" Later, palaeomagnetic data would prove that the positions of the North Pole for the Quaternary were tightly clustered around its present position (e.g. see Holmes, 1965), proving Köppen and Wegener wrong.

Relying on Milankovitch's data, Köppen and Wegener were able to make clear for the first time that the peak of the last Ice Age - the Last Glacial Maximum – occurred about 20,000 years ago. It was a lot younger than James Croll had suggested from his analyses of celestial mechanical data in 1875. Köppen, the great climatologist, was convinced, and convinced Milankovitch, that the crucial factor in creating a glaciation was the duration of summer warmth, not winter cold. Milankovitch's data showed that the last peak in insolation and summer warmth would have occurred about 10,000 years ago, since when orbital change would have cooled northern hemisphere summers – a process that is still going on today. Even so, Köppen and Wegener realised that although the summers were warmer, winters were colder then and have warmed over time. Finally, in his notes added in 1940, Köppen pointed to the close similarity of the insolation curves for 75°N and 75°S, which would help to explain the similar patterns of glaciation in both hemispheres.

Köppen and Wegener did not think much of the notion that past changes in climate might result from changes in the abundance of CO_2 in the atmosphere. As far as their own reconstructions of continental position were concerned, they realised that the dating of many of their palaeoclimatic indicators was itself not very specific, and that "… time-related differences ….. often obscure the climate-related differences". Furthermore "… even the minutest error in age-determination will become a factor of great influence, and climate indicators will be almost without any relevance whatsoever, if only their allocation to the Tertiary and not to its subdivisions can be determined". Yet another limitation applied to the Phanerozoic periods prior to the Carboniferous, for which Wegener was not confident enough to reconstruct continental positions.

But, all in all, this book, by the same press that published the original edition in 1924, is a historical masterpiece and well worth the purchase.

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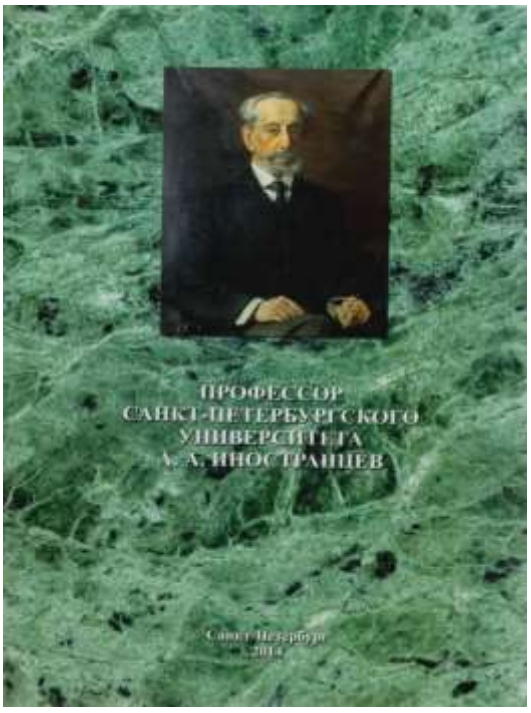


This second edition of the memoirs of Alexander Aleksandrovich Inostrantsev (1843-1919), an eminent Russian geologist and corresponding member of the Imperial St.-Petersburg Academy of Sciences (since 1917 of the Russian Academy of Sciences), was prepared on the 170th anniversary of his birth. The first edition was published in 1998 and entitled *Inostrantsev A.A., Memoirs* (Autobiography). In 1998, Professor Vladimir Anatol'evich Prozorovsky (1932-2007), at that time the head of Department of Historical Geology of the St.-Petersburg State University, together with the Director of the Museum of History at St.-Petersburg State University, Igor L'vovich Tikhonov, prepared the text for this publication and wrote an introductory article and comments on the text. They were supported in this work by employees of the Museum of History of St.-Petersburg State University and byGalina Mikhailovna Gataulina, keeper of the Geological Museum of the Department of Historical Geology (nowadays – the Paleontological-Stratigraphical Museum of the Department of Dynamic and Historical Geology), who transcribed and typed Inostrantsev's the manuscript into the computer.

In October 1998, during a conference at St.-Petersburg State University, we visited Prozorovsky in his small office and discussed the history of geology, to which he devoted much attention at that time. Prozorovsky presented me with some brochures of essays about geologists of St.-Petersburg State University. He also gave me the book of Inostrantsev's memoirs. He spent much time and energy on preparing this publication. Prozorovsky asked me to give this book to the director of the Vernadsky State Geological Museum of the Russian Academy of Sciences, Academician Dmitry V. Rundqvist. He said that after the Great Patriotic War, he and Rundqvist had studied together at the same school in Leningrad. This book was popular and soon became a rare.

Therefore the fact of the publication of its second edition has pleased, I hope, not only experts in the history of geology and the history of science and higher education, but also a readership interested in the history of our country. The book covers a wide time-range including the second half of the 19th century and the first two decades of the 20th century. It presents extensive accounts of the geography of many places of our own and of foreign countries, visited by Inostrantsev, and of various events in which he participated.

The book consists of 13 chapters. The first three are devoted to Inostrantsev's childhood, his studies in a grammar school and at the University. Inostrantsev was born into a large family of an officer in the courier service of Emperor Nikolay I. therefore all eight children received a good education. In the grammar school, Sasha Inostrantsev was a boarder supported by Nikolay I. Five of his sisters studied in the Smolny, the Pavlovsky and the Elizabethan Institutes for Noble Maidens, exclusive educational institutions for daughters of the nobility, between the ages of 10 and 18.

Inostrantsev made many interesting observations about the atmosphere that prevailed at the University, about the professors, about his friends and about fellow students. At the University, he attended the lectures of Dmitry I. Mendeleyev and worked as his assistant in the laboratory. During his first geological excursion to "Valamo" (Valaam Island) Inostrantsev met and became a friend of the landscape painter Ivan I. Shishkin (1832-1898), with whom he remained on friendly terms to the end of the artist's life. When under the Charter of 1863, the universities formed the institute of post-graduate studies, designed to prepare graduate students for the professorate, Inostrantsev was one of the first to enrol. He participated in the First Congress of Russian Naturalists and Doctors in 1867, where he presented a report on the results of his geological study of Valaam Island.

The fourth and longest chapter "Professorate" (34 pages), is devoted not only to the teaching activity of Inostrantsev. It also includes details of the establishment, in 1868, of the St.-Petersburg Society of Naturalists. He was the first secretary of its mineralogy and geology branch and, later, in 1890, became the Society's President. Also in these pages, Inostrantsev described in detail his first journey abroad, in 1871-1872. Over a period of 17 month he visited, among other cities, Warsaw, Vienna, Munich, Prague, Venice, Milan, Zurich, Geneva and Lausanne. He examined geological and mineralogical collections in museums and he made a number of excursions to famous localities, on the advice of local researchers. He met and communicated with European geologists, including Edmund Mojsisovics, Gustav Tschermak, Eduard Suess, Emil Tietze and Oswald Heer, who showed him generous hospitably. Due to illness, Inostrantsev and his wife had to spend some of their time in Rome and Naples. He managed to assemble a collection of specimens from the lavas of Vesuvius and to observe its eruption. He also became acquainted with to Luigi Palmieri (1807-1896), the Director of the Observatory on the slopes of Vesuvius, which for many years conducted seismic observations of the mountains volcano activity.

Inostrantsev presented a thesis for his doctor's degree at St. Vladimir University, in Kiev, where he became the first Russian to be awarded the degree of doctor of mineralogy and geology, instead of geognosy.

The fifth chapter "The organization of a geological Cabinet and the work involved in maintaining it" narrates Inostrantsev's methods of equipping a Cabinet (museum) with cupboards and showcases, for the replenishment of its collections. He worked as keeper and then as the head of the Geological Cabinet from 1868, from the start of its creation. The description of Professor Inostrantsev's activities relating to the organization of the Cabinet are inseparably connected with his teaching activities. He gave lectures on geology during half a century, not only at the University, but also as part of the Bestuzhev Highest Female Courses, at the Technological Institute, in Military Medical and Military Engineering academies and in the General Staff Academy. He remembered the names of many of his students who obtained work in the Geological Cabinet, which at that time was a centre scientific activity. He also remembered assistants who had researched the museum's collections and geologists from universities of other cities who defended their master thesis in the Cabinet. Inostrantsev authoritative manner and his rigorous adherence to principles, led at times, to resentment and misunderstanding among his co-workers and students.

The following chapter "Public Services" is devoted to Inostrantsev's activities as an expert-geologist. Inostrantsev sought advice and recommendations from individuals, as well as from government agencies, from various societies and from the councils of Russian districts and cities. He described the most interesting jorneys with staff of the expert Commission: with Nicholas P. Barbot-de-Marni to the Crimea, concerning the water supply of the Imperial Residence in Livadia, and with the well-known chemist Dmitri I. Mendeleev to the Oryol province, to evaluate the prospectivity of an iron-ore deposit. On the return trip with Dmitri Mendeleev, they missed the train, which crashed after leaving Oryol. By their lateness they had avoided certain death, as "the carriges of the 1st and 2nd class have most suffered the greatest damage as a result of the derailment" (Inostrantsev, 2014, pp. 151).

The chapter, "My Participation in the Formation of the Geological Committee and of the Geological Section of the Cabinet of His Majesty", occupies five pages only. Inostrantsev wrote one of the versions of the Charter of Geological Committee – the first State Geological Survey in Russia. For some years, he headed the Geological Section of the Cabinet of His Imperial Majesty. In particular, in 1894, he conducted a study of the Altay mountain district. Under his management, eight volumes of works of the Geological Section of the Cabinet of His Imperial Majesty have been prepared and published.

The chapter "Service to Petrograd" is also a short one. In his native city, Inostrantsev was a deputy of the Duma for 12 years. He had to deal with the problems of the urban economy: such as searching for sources for the city's water supply, and choosing a suitable location for a cemetery. He suggested paving sidewalks with Shoksha granite, rather than with cobblestones.

In the chapter "About publishing my Works", the memoirs' author briefly narrated about the destiny of some his printed works. His "The Geological Essay of Povenetsky District of Olonetsky Province and its Ore Deposits" (1877), was printed in the seventh volume of "Materials for the Geology of Russia", and was illustrated "by three tables of colored microscopic images of rocks, for the first time in Russia" (drawings of microsections – Z.B.). His book "Prehistoric humans of the Stone Age at the coast of Lake Ladoga" (1882), contained a description of the unique collection assembled by him during the construction of the New-Ladoga canals. The book was censored and removed from all public libraries by within a month after its publication, as the author had included calculation of the lifespan of prehistoric man in the book.

The tenth chapter, "Journeys to International Geological Congresses (IGC)" contains many interesting facts about congress sessions and about his personal impressions of meetings with known foreign geologists. For example, he became acquainted in France with the petrographer Auguste Michel Lévy and the paleontologist Albert Gaudry, in Belgium with the paleontologist Louis Dollo, in England with the geologist Archibald Geikie and in Italy with the geologist and paleontologist Giovanni Capellini. During excursions, he was greatly impressed by the open pits for marble extraction in Carrara and for roofing slate in Northern Wales. Inostrantsev participated in sessions of the IGC in Paris (1878), Bologna (1881), Berlin (1885) and London (1888), mainly in the role of session vice-president. He took a part in the organization of the 7th session of IGC in St.-Petersburg (1897) and was also the vice-president of this forum. He was engaged in the preparation of a geological-mineralogical exhibition in St.-Petersburg, was the organizer of excursions for delegates of the Russian session of IGC, to Imatra and to the Crimea. The 9th session of IGC in Vienna (1903) was the last in which he participated.

In the following chapter "Concern about the expansion of the Department of Geology at our University", Inostrantsev gave his opinion on the differences of courses of Geology at the University and in the Mining Institute. According to him "the pure science in Geology should be reserved for universities" (Inostrantsev, 2014, pp. 186), and that students entering the Mining Institute should "be provided with information on mining and ore theory and practice" (ibid, p.185).

The chapter "The dangers and inconveniences of excursions" described the difficulties and dangers of geological excursions in which he participated across all Russia, for about forty years. He mentioned absence of good local maps, difficulties with supply of provitions, bad roads or hardly visible tracks, an abundance of blood-sucking insects. The bathhouse was the considered the best way at that time of a fast recovery from biting insects. Mountain rivers presented a big danger. Inostrantsev had himself experienced this on several occasions, when only a miracle saved him from drowing.

In the final chapter, "About Private life", Inostrantsev briefly listed the contemporaries whom he met during special dinners. Among them were not only professors of the University and Institutes, but also military men, officials, writers, artists and actors. He also invited acquaintances to his home. Inostrantsev listed the national science societies, which elected him as an honorary member. He was also a corresponding member of the Academy of Natural Sciences of Philadelphia and of the Geological Institute of Vienna. According to Inostrantsev, "during the last revolution and the persecution of intellectuals" his natural optimism and employment "have substantially disengaged me from the passing events and the sad thoughts generated by them" (Inostrantsev, 2014, pp. 204-205).

Inostrantsev finished his manuscript at the age of 75, shortly before his death. (He committed suicide on December 31, 1919).

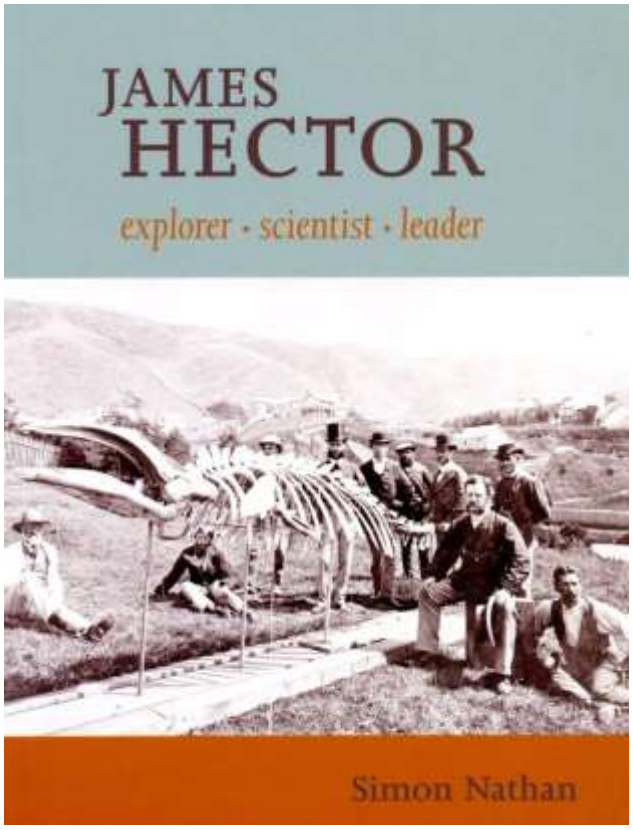
It should be noted that this well prepared book, as compared with the first edition, includes documents and, in particular, reports of University Council sessions, which relate to Inostrantsev's activities. It includes a letter from teachers of the city schools to Inostrantsev and an "Open letter to the Geological Committee" (1891) from Inostrantsev, in reply to criticism of his work by the geologist Sergey N. Nikitin. A separate part presents illustrations, including his portraits and many interesting photos, which have show Inostrantsev in his Cabinet, during lessons with students and during field works, as well as diplomas, inventories of collections, copies of official and award documents.

Comments to the text, compiled by Vladimir A. Prozorovsky and Igor L. Tikhonov, for the first edition of the book, occupy 54 pages and were included in the second edition, unfortunately, without changes. The huge amount of work by the compilers of comments did

inevitably result in some errors. It would be good if the incorrect comments and some the errors and discrepancies in the second edition, could be corrected in the preparation of the third edition of this remarkable book.

Zoya Bessudnova, Moscow, Russia

Nathan, S. 2015. James Hector: Explorer, scientist, leader.Geoscience Society of New Zealand, Miscellaneous Publication, 140, 264p. ISBN: 978-1-877480-46-1, NZ$45. Distributed by Potton and Burdon.



Marking the 150th Anniversary of the founding of the New Zealand Geological Survey (now GNS Science), along with what was then the Colonial Museum and Colonial Laboratory, INHIGEO member Simon Nathan has written a biography of its first director, Sir James Hector (1832-1906). Even at 265 pages, including many illustrations, this is a relatively short account of the multitude of achievements of the most outstanding 19th century scientist in New Zealand and an equal internationally.

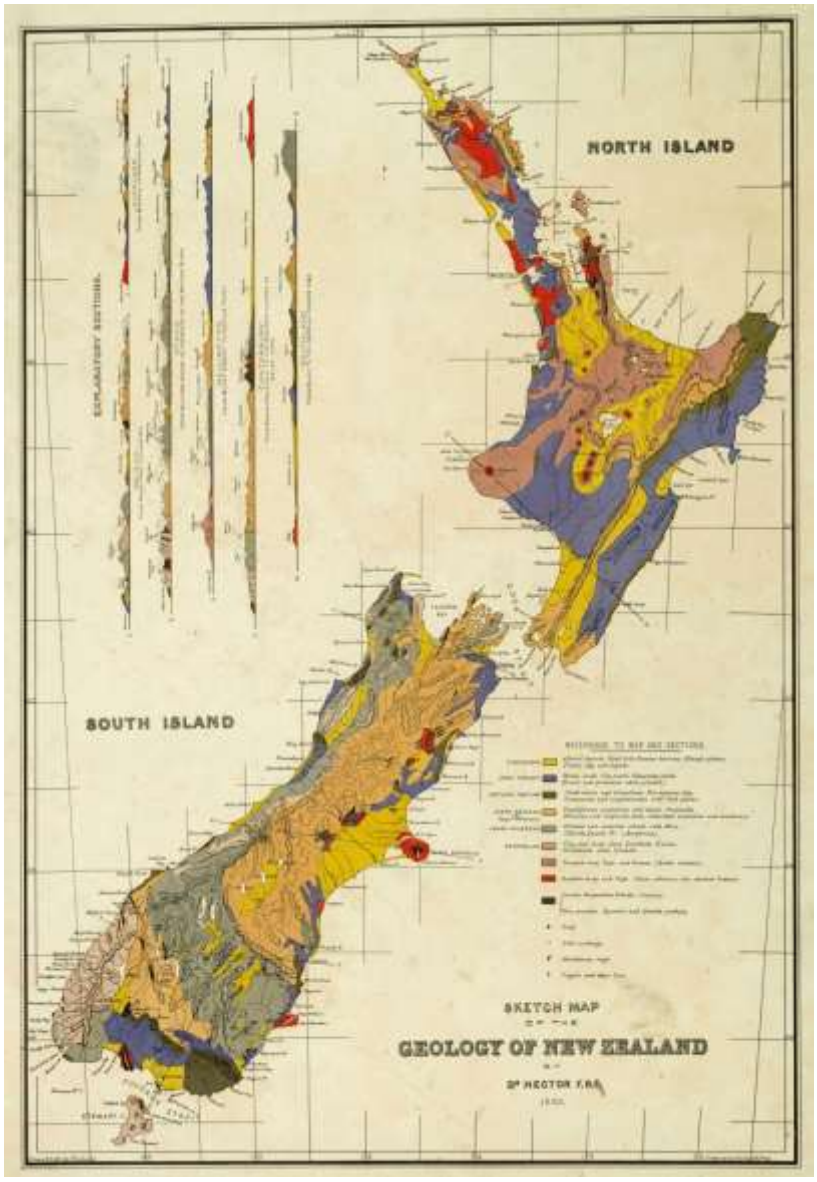
Although born in Edinburgh, Hector spent the last 45 years of his life in New Zealand. His scientific career began when, after qualifying with a degree in medicine and geology from Edinburgh University, he was appointed to the Palliser Expedition that traversed western Canada from 1857 to 1860 and where his dual professional skills were put to good use. Also coming to the fore were his powers of observation and an ability to quickly and rationally synthesize data, traits that were to serve him and science well in the coming decades. In 1861 Hector was appointed geologist to Otago, a province in southern New Zealand that was benefiting from a rapid expansion of alluvial gold mining. Although he was expected to further enhance the province's mineral wealth, Hector took a much broader view and produced a geological map of the province, the third such regional map of New Zealand (the first were by Ferdinand von Hochstetter, assisted by Julius von Haast, of parts of the Auckland and Nelson provinces). However, it was Hector's organising, almost single handed, of the New Zealand Exhibition in 1865 in Dunedin, Otago, that confirmed his great administrative talents. For the exhibition Hector compiled the first geological map of New Zealand.

As Nathan states, it was Hector who persuaded New Zealand's leading politicians, many of whom were what could be termed "gentlemen scientists", of the value of an integrated New Zealand-wide geological survey, museum, analytical laboratory and metrological service, as well as of the benefits of keeping uniform time throughout New Zealand. The latter was put to good use in analysing earthquake records. In 1865 Hector was appointed in charge of these and other organisations. An illustration of a letterhead lists ten

organisations of which Hector was director. In addition, he oversaw the compilation of the *Reports of Geological Exploration*, which developed into an annual publication, and compiled several more geological maps of New Zealand. As well as being involved in the establishment of these government scientific organisations, Hector was instrumental in the formation of the New Zealand Institute, now the Royal Society of New Zealand, of which he was manager. The institute under Hector's editorship also published annual *Proceedings* (now *Journal of the Royal Society of New Zealand*). Hector took a leading role in the founding of the University of New Zealand, of which he was chancellor from 1885-1903.

The great strength of this well-written and illustrated biography is that it evenly handles all aspects of Hector's multifaceted life, treating him – as the subtitle confirms – as a highly talented scientist, explorer and organiser. There are also details of his domestic life, after he married Georgiana Monro, in 1868. Her father had much in common with Hector in that he had also trained in Edinburgh as a doctor, but on arriving in New Zealand had, like his son-in-law, largely forgone medicine and, in his case, had taken up farming and politics.

Hector is remembered in a number of ways. The highest peak in the Tararua Range near Wellington, along with another in the Canadian Rockies, is named for him. Hector is a small town adjacent to the Buller Coalfield on the West Coast of New Zealand and the Hector Mountains are in southern New Zealand. Reflecting his broad scientific interests, the world's rarest dolphin *Cephalorhynchus hectori*, along with numerous fossils, are named after him. The Royal Society of New Zealand's Hector Medal is awarded annually in rotation to recipients for outstanding work in the major scientific disciplines. However, as Nathan convincingly demonstrates, Hector's greatest and previously largely overlooked legacy, is found in his work as an administrator. Through his skills he put scientific research in New Zealand, in its broadest sense, on a firm footing that has endured to the present day. This was achieved by ensuring that politicians controlling public expenditure appreciated the value of science, particularly during times that were economically challenging. That the major institutions that Hector was in charge of have survived, albeit in modified forms and with different names, is a lasting testimony to him. Although accorded many accolades, including a knighthood in 1887, perhaps the greatest tribute to Hector was that, if a difficulty arose in 19th century New Zealand, the invariable response was "what would Dr Hector think".



Hector's geological map of 1869, which was one of the earliest of national geological maps published.

Mike Johnston, Nelson, New Zealand

Onopriyenko. V.I. 2015. *Yakov Vladimirovich Samoilov: 1870-1925* / Ed. A.Y. Mitropolsky. Kiev: Inform.-Analytical Agency. 335 p., (Series of RAS, Scientific-biographical literature).

Yakov Samoilov (Jacob Samojlov, or Samoylov) was an outstanding biogeochemist, mineralogist, geologist and naturalist of the early 20th century in Russia. His scientific activities, extending over 32 years, resulted in some remarkable discoveries. He published more than 125 works on the results of his scientific in a variety of fields, including:

- The boggy lacustrine hypotheses of the origin of sedimentary iron ores
- The hydrothermal sedimentary sulfide deposits of the Nagol'ny Ridge (Dotents Basin, Ukraine)
- The geochemistry of phosphorites
- The mineralogy and petrography of Russia and of Northern Africa (Tunisia)

- The organic hypothesis in geochemistry
- The biosphere and geological processes
- Actualismus in sedimentology

Samojlov's initiatives have resulted in the foundation of the State Scientific Research Institute of Mining and Chemical Materials and the Floating Marine Scientific Institute (now – the Knipovich Polar Research Institute of Marine Fisheries and Oceanography, in Murmansk) using the scientific research vessel *Persey* as a floating hydro-chemical and lithological laboratory.

The few publications about the life and work of Samojlov were mostly written by contemporaries who knew him personally and had a high regard for his talents –Vladimir Vernadsky, Andrew Arkhangelsky, Alexander Rossolimo, George Bushinsky and Simeon Volfkovich. Unfortunately there are no writings about Samojlov by his famous disciples – Leonid Pustovalov, Maria Klenova, Alexander Kazakov and others.

For this reason, I welcomed the detailed biography of Samojlov compiled by Valentine Onopriyenko. The book seems to be the best publication about the thoughts, motivations, various activities and the rough life journey of Samojlov. The lost pages in the life of such a great worker, thinker and martyr for the science have been restored.

I agree with Onopriyenko that many Russian geoscientists have influenced Samojlov's scientific outlook, including, Nickolay Andrussov, Vladimir Vernadsky and his team, Vasily Dokuchaev, Nickolay Kryschtofovich, Andrew Arkhangelsky, Dmitry Pryanishnikov and Edgard Britzke.

However, Onopriyenko, in parts of his work, followed his own ideas and presented a great variety of relevant facts. These included details of the history of the University of Novorossiysk. Another example is the detailed description of the history of the Donbass explorations by Roderick Murchison, Édouard de Verneuil, Nikolay Koksharov, Nickolay Barbot-de-Marni, Ivan Mushketov, Theodosy Tschernyschew, Alexander Karpinsky and others, which explains the collaborative geological work of Leonid Lutougin and Samojlov. There are 15 pages on phosphorite deposits in the book. Information on this topic is also available in recent publications, e.g. *Phosphates at the turn of the 21st century* (1996).

The chapter "Samojlov's brothers: scientific activity" is not comprehensive, while some potentially very interesting information about other relatives is lacking.

Despite of these minor critical remarks, the work of Valentine Onopriyenko represents a great contribution to the historiography of sedimentology and economy geology.

Vladimir N. Kholodov, Geological Institute, Russian Academy of Sciences

English annotation summary at the back of the book

Onopriyenko V.I.
Yakov V. Samoilov: 1870-1925 / Valentin Onopriyenko / Managing editor A. Yu. Mitropol'skii. K., 2015. 335 p., il. (Series of RAS "Scientific – biographical literature").

Ya.V. Samoilov (1870-1925) is a prominent and distinctive mineralogist, geologist, paleobiogeochemist of the early 20th century, one of the first students of V.I.Vernadsky at Moscow University, a talented pedagogue, and professor at Moscow University, Moscow Agricultural Institute, Novoaleksandriysk Institute of Agriculture and Forestry. It is told about the work of mineralogist in the Urals, in central Russia and the Donets Basin. The head of a large-scale program on study of phosphorites of European Russia, founder and the first director of the Scientific Fertilizers Institute, an active member of several international geological congresses. He worked up the doctrine about bioliths and agronomic ores, and made a specific contribution to the study of palaeobiochemistry, sedimentology and lithology. All his life he closely communicated with V.I. Vernadsky.

For a wide readership who is interested in the history of science.

Some additional comments by Irena Malkhova
Onopriyenko has dedicated his book to Vladimir V. Tikhomirov, and I'm very thankful for this.

Памяти

Владимира Владимировича Тихомирова
(1915-1994),

выдающегося историка геологии,
члена-корреспондента АН СССР,
общение с которым многое значило
для автора этой книги,
в связи со столетием со дня его рождения

In commemoration of
Vladimir Vladimirovich Tikhomirov
(1915-1994),
an outstanding historian of geosciences,
a corresponding member of the USSR Academy of Sciences,
personal contacts with whom were so valuable to the author of this book,
to the 100th anniversary of his birth

The relationship of Samojlov's work to the activity of the International Geological Congress (IGC) seems to me to be of sufficient interest to justify the addition of some comments to the review of Kholodov.

1. One of the first Russian initiatives at one of the IGC congresses was the proposal on international cooperation in marine geology, announced by Nickolay I. Andrussov (1861-1924), at the 7th IGC in Saint-Petersburg in 1897. The proposal to found "un Institut flottant international" was discussed at the third meeting of the General Assembly and was supported with Barrois, Bertrand, Capellini, Geikie, Walther and many others[1].

The Floating Marine Scientific Institute was founded in 1921 in Petrograd. Onopriyenko mentioned the work of Samojlov in this Institute and his lithological and sedimentological researches. His classic paper "On the lithology of the Barents Sea" (co-author M. Klenova) and published in the Instituite's *Transactions* (1929), is mentioned. Some space in the book is given over to a discussion between Kholodov and Onoprienko. Kholodov as the author of an article on the history of lithology, written to commemorate the 125th anniversary of the birth of Samojlov (*Lithology and Mineral Resources*. 1996, 6, 563-571), considers that marine researches at Andrussov, on the Black Sea, have much influenced Samojlov's concepts. According to Onopriyenko, Somojlov came to generalizations in lithology and sedimentology in another way.

2. A book by Onopriyenko includes a chapter, "Estimation of the world's reserves of phosphorites". International cooperation in the evaluation of deposits started with iron ore resources, and the results were reported at the 11th IGC, in Stockholm, in 1910. "The coal resources of the world" appeared at the time of the 12th IGC (Toronto, 1913). Samojlov was a member of the Russian delegation in Toronto and proposed the continued collective work on phosphorites. Samoijlov's recommendation was accepted ahead of those by Termier (oil) and Renier (copper).

The decision was made at the 13th IGC in Brussels (1922). This congress took place after the World War I, and the countries which had been involved in the conflict had not received official invitation. Two geoscientists from the Soviet Union attended the meeting by personal invitations – Samojlov and Mushketov.

Samojlov was very active preparing instructions and regulations for a collective work. He died in 1925, not long before the 14th IGC in Spain (1926).

Onoprienko describes the story very briefly and didn't name the results of international researches published by the 14th IGC in Madrid:

Les reserves mondiales en phosphates: 2 vols. 1928

Les reserves mondiales en pyrites: 2 vols. 1927

I should like to congratulate Valentine Onopriyenko on writing this book, which is of great interest. We are waiting for new biographies of remarkable geoscientists.

[1]Congrès géologique international. Compte rendu de la VII session, St. Pétersbourg, 1897. St.-Ptb.: Imp. de M. Stassulewitsch, 1899. p. clii-cliii

Irena G. Malakhova, Moscow, Russia

Gurka, D. (ed.) 2015. ***Deutsche und ungarische Mineralogen in Jena. Wissenstransfer an der Wende des 18-19. Jahrhunderts im Rahmen der „Societät für die gesammte Mineralogie zu Jena”.*** **(German and Hungarian mineralogists in Jena. Transfer of knowledge at the turn of 18/19th centuries within the framework of the Society of all mineralogy). Gondolat, Budapest, 181 p.**

The book is a collection of articles in German, discussing the role of Hungarian students and scientists in the “Societät für die gesammte Mineralogie“ (Society of all Mineralogy) founded in 1797, in Jena, Saxony. The editor of the book is **Dezső Gurka**, historian of philosophy, who has already published a series of books in Hungarian dealing with the period of the German enlightenment and early romanticism at the turn of the 18/19th centuries. The authors of the present work are German and Hungarian.

Klaus Heide, professor emeritus of mineralogy at the Jena University describes the role and activity of the society. He stresses the importance of great personalities such as the founder-director, Professor Lenz, and the later president, Goethe. The society included the leading scientists of the age but also had a large number of young members, students of the university. The society had international influence, first of all in the Kingdom of Hungary, but also to the east, in Russia and far-eastern Asia.

Birgit Kreher-Hartman, custodian of the mineralogical museum in Jena, describes details of the importance of the participation of Hungarian students and external honorary members. The society elected as its first president the Hungarian Count, Domokos Teleki, and also elected a Hungarian secretary alongside a German one. It is of scientific value that many contemporary lists of the collected minerals and a very extensive correspondence of the society are preserved in the archives.

Viczián, I. and Deé Nagy, A., describe the tragically short but successful life of the first president, Domokos Teleki. In spite of the great distance between Jena and Vienna, later between Jena and Transylvania, he was able to play an active role in the life of the society.

Gurka, D., pointed to the importance of the natural sciences, especially mineralogy in the development of the philosophy of nature at that time. The influence of Kant can be demonstrated, and the philosophers Fichte and Schelling and the poets Goethe and Novalis, had close connections with the members and the ideas of the society. In the first years of the activity of the society a quarter of the scientific presentations were given by Hungarian authors. The most important lectures were given by Sámuel Bodó, who discussed the question of whether mineralogy fulfills the philosophical criteria of a true science.

Concerning the reflection of Hungarian Protestantism on the rapid development of the natural sciences, **Viczián, I.** examines the religious ideas of members of the society. One type of the Christian response was to refer to “physical theology”, which tried to incorporate the new knowledge about nature into the doctrine of an almighty and wise Creator. These views were represented by the founding member and the first Hungarian lecturer of the society, Sámuel Nagy. The other type of response was the so-called “two books” theory. In this sense

Ferenc Benkő, honorary member of the society and author of the first Hungarian textbook on mineralogy (1786), suggested the complete separation of the validity of realms of the Bible and Nature.

According to the description of **Gurka, D**., a typical character of the social scene in Jena was the Hungarian, Baron Károly Podmaniczky. Being employed in the Hungarian mining administration, he went to study in Jena and Freiberg. He was part of the personal circle of Schelling, frequently met with Goethe, Hegel and Schiller, and became a friend of Novalis, a poet whose works were strongly inspired by mineralogy. He married Julie Charpentier, former fiancée of Novalis, and the daughter of a professor in Freiberg. He returned with her to Hungary. Their house in Aszód became the center of German-speaking and Lutheran intellectuals. After his death, his rich collection of minerals was sold to the Hungarian National Museum.

Perhaps the greatest Hungarian scientist of the age was Pál Kitaibel who published, together with Count Franz Waldstein, the monumental botanical work *Descriptiones et Icones plantarum rariorum Hungariae.* In the present book, **Both, M**. points to the importance of the introduction, *Praefatio* of this work, in which Kitaibel describes the main rock types, mineral waters, fossils and geological phenomena of the country. In the year 1800 Kitaibel was elected a member of the Jena Mineralogical Society. The mineralogical introduction of the monograph was translated from Latin to German and published in the journal of the Society in 1806 by Károly György Rumy, another Hungarian member of the society.

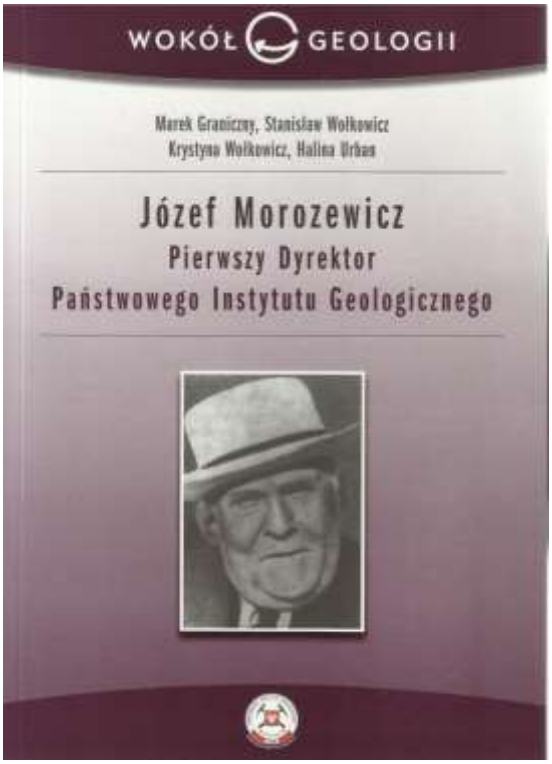
This period of Earth sciences was characterized by the debate between neptunism and volcanism (or plutonism). **Rózsa, P.** describes the essence of these scientific theories, their history of formulation and the chief authors, Werner and Hutton. He follows how these theories were applied to interpret the genesis of rocks found in Hungary. Scientists born there and having long field experience in the country, such as Fichtel and Ignatz von Born, were more realistic in the recognition of igneous rocks, whereas foreign traveller, e.g. Townson and Esmark were much more impressed by the Wernerian theory and in most cases denied their volcanic origin. This period of controversy ended in the more balanced approach of the French traveller Beudant (published 1822).

A typical participant of this debate was a teacher in the town Eperjes, and member of the Jena Mineralogical Society, Matthias Sennowitz. As **Papp, G.** describes, he organised study trips for the collection of minerals in the Eperjes-Tokaj Mountain Range, which we consider today as volcanic. Originally he also considered these rocks to be volcanic but later, on an excursion, he collected fossil plants from the supposed volcanic rocks which probably happened to be tuffaceous sediments. As a result of this observation he ‘converted’ from Volcanism to the Neptunian ‘faith’. This is reflected on the legend of his geological map (1813), which contains the Wernerian terms for rocks like ‘Thonporphyr’ instead of ‘lava’.

The book contains several contemporary illustrations, portraits, landscapes, pictures of minerals and maps. All this recalls for us the youth of our science, a period full of ambition, talent and optimism.

István Viczián, Budapest, Hungary

Marek Graniczny, Stanisław Wołkowicz, Krystyna Wołkowicz & Halina Urban: *Józef Morozewicz. The First Director of the Polish Geological Institute.* Wyd. Państw. Inst. Geol., 2016, 213 p.



At the end of 2015 an interesting publication of the PGI-PIB appeared that presented a biography of the organizer and first director of the Polish Geological Institute (PGI). Although many articles, websites and even books have been dedicated to the life of Morozewicz, this work is not only a reiteration of previously presented information, but primarily based on a very careful selection of documents as well as several works and recollections of Morozewicz from various periods of his life, together with photographs and maps of which many have been published for the first time. This is an important strong point of this book, which recounts the life of this outstanding academician and organizer of sciences on the occasion of the 150th anniversary of his birth (27 March 1865). These recollections are all the more important in light of the impending 100th anniversary of the founding of the PGI, in the organization and guidance of which Józef Morozewicz had extraordinary achievements. Perhaps he would be alarmed today when seeing the current state of the PGI in Polish geology to which he dedicated the best years of his life.

The first part of the book is a typical biography in which more or less known episodes of Józef Morozewicz life are presented together with sets of interesting illustrations. These are episodes from various periods of his life, from his early years to the time of geological expeditions to the edge of Siberia, in the 1930s, and the start of the Nazi occupation. Józef Morozewicz was director of the Institute for nearly 18 years. This record will surely not be beaten. Above all, he was without doubt an academician – distinguished petrographer of his time, a teacher, excellent organizer and, above all, someone who, as the authors write, was a great "humanist with great affection for the Polish language and the nature of his homeland".

Not many people know that during his work at Warsaw University, in 1891, Morozewicz dealt with mineralogical and the petrographic syntheses of magmatic rocks. He conducted experiments at the Kijewski, Scholtze & Ska glassworks, in Targówek in Siemens-type ovens, which produced alloys up to 50 kg in weight, which for experiments at the time was an event on a global scale. During these unique experiments Morozewicz obtained synthetic basalt, rhyolite as well as biotite, quartz and sanidine crystals. Unfortunately, he did not have the opportunity in later years to return to experiments on such a scale.

Travels and incidental meetings often affect the future fate of many. This was the case with Morozewicz. During the Geological Congress in Zürich in 1894 he met the well-known Russian geologist Fiedosiej Czernyszew, who invited him to join a scientific expedition to Novaya Zemlya. The proposal led to him becoming a staff member on the Mining Committee in St. Petersburg after two years.

Certainly, the most interesting fragments of this part of the book are obviously brief descriptions of his scientific expeditions during the St. Petersburg stage of his life (1897–

1904). Exceptionally interesting are his recollections from an expedition to the Commander Islands located in the Bering Sea. In addition to scientific documentation, Morozewicz drew two beautiful geological maps of two of the largest islands on the archipelago – Copper Island and Bering Island. On the first island he discovered a new zeolite mineral, which he called stellerite, and on the second - a hitherto unknown volcanic rock, which he named beringite. Also fascinating are his notes on the local population. Morozewicz expressed the interesting view that the Commander Islands belong to the North American and not Asiatic petrographic province. If Alfred Wegener had known about this, he certainly would have included this view in his arguments supporting continental drift. Perhaps it was Morozewicz himself, in publishing this book who was under the impression of this hypothesis, since his book appeared 10 years after the publication of *Die Entstehung der Kontinente und Ozeane*.

Józef Morozewicz's book, *The Commanders. A geographic-nature stud*y, published in 1925, can at this point be recommended to readers of this revie. Lively language, broad subject theme, and interesting descriptions are the strong points of this book. A proposal to head a faculty of geology at Jagiellonian University, in 1904, interrupted Morozewicz's travels, thus depriving readers of descriptions of future geological expeditions. However Morozewicz himself, was happy that he could work among Poles and teach Polish youth.

The second part of the book is a reprint of his lecture "Poland's nature in light of economic tasks faced by the Polish state", which he presented at a public session of the Academy of Skills, on 18 May 1918, in Krakow. In it he presented his view of the role of raw materials in the Polish economy, which after the long period of partition and the First World War, had to recover from economic stagnation. He outlined the role of coal, ironworks and the steel industry and valued zinc ore and lead in Upper Silesia, as well as Holy Cross copper deposits, rock salts and crude oil. He placed great hope in coal. Morozewicz stated that,

> Polish coal is capable of attracting and reviving such areas of production that involve the processing of plant and animal raw materials, such as the fibre industry and leather and other industries so immensely developed in the Polish Kingdom and so completely destroyed by the war.

In appreciating the role of agriculture in the economy, he felt that a revived iron and iron-wood industry would provide machinery to agriculture, while negatively assessing the ability to produce artificial fertilizers in the country. He saw a great future for river transport which rendered it necessary for the state to regulate the waters of the Vistula, but also saw equal importance in exploiting rivers to generate power, thus contributing to electrification of the country. He advocated the principle "national independence through enrichment".

Two topics covered in subsequent parts of the book are already well known to the reader. They concern the founding of the PGI in 1919 and its organization, including the program speech on the occasion of its opening, on 7 May 1919. The subsequent part entitled "Oceanic Holidays" is more personal, as it includes recollections of a sea voyage to South Africa in 1929, to attend the XV International Geological Congress in Pretoria. It makes no mention of geology, but rather of monotonous ocean travel and recreation to help "kill" time. It also mentions the relief when "the first step was made on to European soil and entry into an express train travelling directly to Warsaw".

The next part of the book can be recommended to those who prefer autobiographies. This is a reprint from a 1938 publication of Morozewicz's booklet entitled, *Polish life under partitions and the reclaiming of the homeland*, in which he describes his life with its ups and downs, recollections from geological expeditions, as well as activities during the interwar

period. The book ends with a memoir of Józef Morozewicz's daughter, Zofia Różycka, written in 1947.

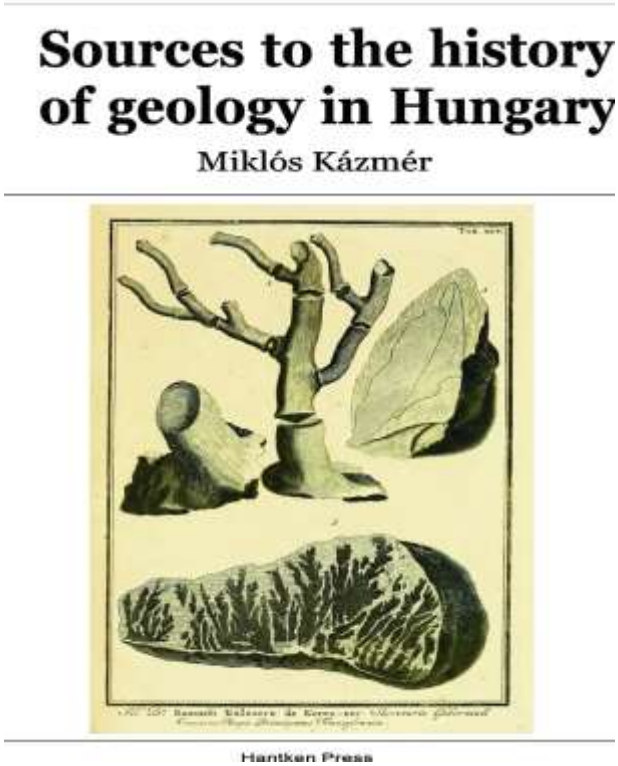
I believe that this is an important work, particularly for employees of the PGI. Recollection of Józef Morozewicz's life story is vital, not only due to the approaching 100th anniversary of the PGI. On the last page of its cover the authors write:

In today's somewhat chaotic world, devoid of authoritative figures, that of the professor may be an excellent example to imitate, particularly by young people and subsequent generations of geologists.

I fully agree with this statement.

Włodzimierz Mizerski

Kázmér, Miklós 2015. Sources to the history of geology in Hungary, 1153-1850. Hantken Press, Budapest, 221 p.



The author of the bibliography is Miklós Kázmér, professor of palaeontology of the Eötvös University, Budapest. He describes his work in the following way:

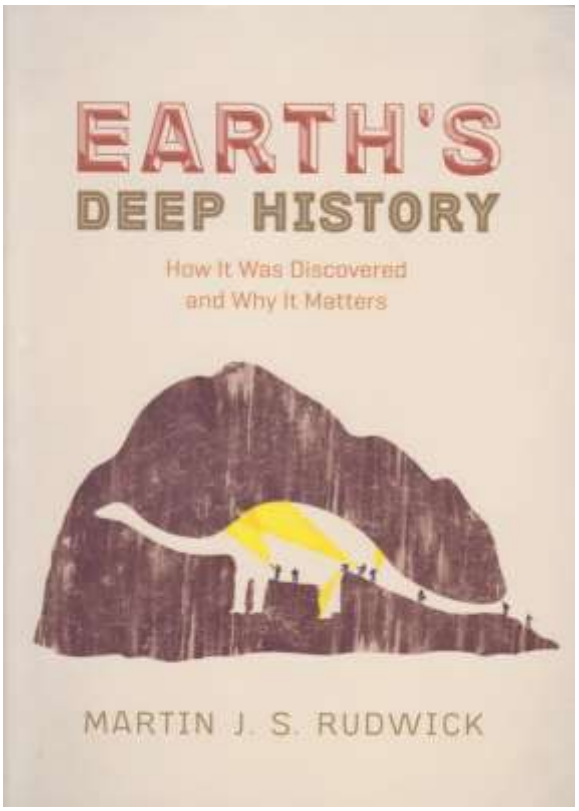
"The retrospective bibliography, *Sources to the history of geology in Hungary, 1150-1850*, lists printed documents on the geological investigation of the Carpathian Basin, and the Carpathian mountain chain itself, including external flysch and molasse zones. Data on the Balkan Peninsula are mentioned, too. From Al-Garnáti's (1150s) claim of the bones of Adite giants, i.e. Pleistocene mammals until Zeuschner's (1850) description of the Nerineen-Kalk of Inwald, about two thousand items are listed and described in various detail. The last year of the bibliography is 1850, when major scientific institutions came onto the scene (esp. the Geologische Reichsanstalt), and specialization reached unprecedented levels."

The book is illustrated with pictures of the *Herbarium Diluvianum* by Scheuchzer, J. J. (1723), the first handbook of palaeobotany.

In to the opinion of the present reviewer it is a highly valuable source of bibliographic data for every scientist who deals with any of the periods included in the time span of the collected items.

István Viczián, Budapest, Hungary

Martin Rudwick, *Earth's deep history. How it was discovered and why it matters.* Chicago and London, The University of Chicago Press, 2014, 360 p. ISBN: 978-0-226-20393-5



Martin Rudwick's historical work has constantly and widely explored the meaning and the development of the fundamental concept of time in the modern history of geological sciences: from his early books *The Meaning of Fossils* (1972) and *The Great Devonian Controversy* (1985), through the fascinating iconography of *Scenes from Deep Time* (1992) and the important studies on Cuvier, Lyell and Darwin, up to the more recent and detailed reconstruction of the 'geohistory', in *Bursting the Limits of Time* (2005) and *Worlds before Adam* (2008). Now, with the publication of *Earth's deep history*, Rudwick offers not only to geologists and scholars in the history of science, but in particular to the general reader, an impressive and effective synthetic account of the results of a life-long research in the history of the Earth sciences.

The book covers a period from the 17th to the 20th century, following the contributions of various authors to the development of a new concept of "historicity" of nature, which was gradually transferred from a cultural - human context to a new scientific mentality and practice. It is significant, for example, to consider the revaluation of the role of the Biblical chronologists ("chronology fully deserved its status as a historical science", p. 12) in the 17th century, beside the fundamental contribution provided by well known scholars and scientific figures such as Steno, Hooke, Kircher, Scheuchzer, Woodward and others. Rudwick recalls that the relationship between science and religion, too often simplified or even mystified in several general accounts, should instead be considered in a more constructive way, although always rigorously based on historical evidences, as in the case of the Genesis narrative, which was not a real obstacle to the development of a modern idea of Earth's history, but "*pre-adapted* European culture to find it easy and congenial to think about the Earth and its life in a similarly *historical way*." (p. 20).

The study and the interpretation of fossils in the field and in the laboratory (chapter 2) are then considered "complementary" to the drawing of "big pictures" on the causes of events which marked the Earth's history, included in the early systems or "theories" of the Earth, from Descartes to Buffon, Deluc and Hutton (chapter 3). And the concept of strata "as Nature's archive", the classification of rocks and formations provided by the "geognosts", together with the impact of an increasing fieldwork in volcanic regions during the 18th century and the finding of new kinds of fossil bones, greatly contributed to expanding the sense of a longer time within this particular history of Nature (chapter 4). As Rudwick rightly points out, "by the later 18th century, then, the field evidence was convincing enough for many naturalists to assume some kind of extremely long timescale as a matter of course in all their reasoning about the Earth" (p. 99).

Consequently, in the central decades between the end of the 18th and the first half of the 19th century, geologists were able to burst the limits of time, understanding the reality and the extent of extinction and the Earth's revolutions (Cuvier), as well as the role of the unchanging laws of nature, later called "actualism" (Deluc, Hutton) and to scientifically redefine a recent "Deluge event" in geological terms (chapter 5). Thus, "the Earth's deepest history *long* before the geological Deluge" (p. 127) was investigated and unraveled by the new stratigraphy, which used paleontological indicators and named geological periods and formations, but also by Lyell's concept of "absolute uniformity" of geological process (p. 170) and by the discovery of a "great ice Age" (Charpentier, Agassiz), which "disturbed" the predominant idea of a slow cooling of the Earth as well as Lyell's "steady state" theory.

In the second part of the book Rudwick examines several important questions which contributed to strenghten the sense of Earth's deep time in the second half of the 19th and in the following century: the increasing evidences of a prehistoric human past, the question of evolution, the dissociation between Genesis and Geology, the new data on the origin of life and the globalization of a newly established science of geology (chapters 8-9); but also the development of a scientific dating of the Earth's history (Kelvin, Holmes), Wegener's theory on the the origin of continents and oceans, the controversy over the continental "drift" and the birth of a global tectonics (chapter 10). Finally, also the 20th century researches on the planetary history of the Earth and geochronology made possible by radiometric dating are considered and summarized (chapter 11).

The aim of this book is not to provide another general or popular short history of geological sciences, but to gradually take the reader to fully understand and re-evaluate some crucial methodological questions related to the main subject of the Earth's deep history: that is to say, not only the long discussed relationship between Geology and Genesis, which also lead to a short but effective appendix on the question of Creationism up to the early 21st century, but above all the fundamental role of an "historical" approach in the science of geology. In fact, Rudwick recalls that, in a crucial moment of the path toward the adoption of the "geohistory" in the 19th century, "to reconstruct the Earth's history, a geologist needed to think like an historian, and in retrospect to expect the unexpected." (p. 180).

This is an excellent book, very well written, based on rigorous historical research and fully accessible to the general public: Rudwick has chosen not to use footnotes or endnotes, but simply refer to some further reading and to a basic bibliography. Non-specialist readers will be also helped by an useful and comprehensive glossary of scientific, technical and historiographical terms. As stated by the author in the *Introduction*, the book is based also on the research of "many other historians of many nationalities": but, Rudwick recalls, it is a matter of fact that "all this modern research by historians of the sciences is too often blithely ignored, or at best under-utilized – with a few honorable exceptions – by the authors of popular science books, by the makers of TV science programs, and, most seriously, by scientists who pronounce on the history of their own sciences. They all seem to prefer to stay in a cozy comfort zone of recycling myths about the past, often myths with an unattractively chauvinistic (and sexist) flavor, singling out "The Father" of this or that" (p. 6). In fully embracing these words, one can only wish for *Earth's deep history* to reach the success it deserves.

Ezio Vaccari, Varese, Italy

COUNTRY REPORTS

AUSTRALIA

David Branagan – Several publications on historical matters were published, including *Sydney Sandstone: proposed* '*Global Heritage Stone Resource' from Australia* by Cooper, Branagan, Franklin and Ray, in *Episodes*, June 2015 (Vol. 38, No 2, 124-131).

Work was completed on a joint paper for *Episodes* (Cooper and Branagan), documenting the first Australian meeting of the International Geological Congress, in Sydney (1976). Work was begun on my nearly fifty-year association with INHIGEO, to be published in its anniversary volume.

Several short book reviews were published in issues of TAG (*The Australian Geologist*), during 2015.

A paper on aspects of my association with the search for radioactive mineral deposits in Australia was presented at the Darwin meeting of the Australasian Mining Heritage Association, in June 2015.

Barry Cooper – had another busy year as Secretary-General of INHIGEO and of the Heritage Stone Task Group.

He attended the annual INHIGEO conference in Beijing, China and presented a paper entitled "Geologists and the development of opal mining in Australia". The topic was encouraged by the fact that 2015 was the centenary of the opal discovery of Coober Pedy, in South Australia. After the conference and associated field trips, Barry was also guided to visit the Gaozhuang White Marble Quarry and the associated Museum.

A paper, jointly prepared with David Branagan and dealing with the 25th International Geological Congress, was published in *Episodes.*

Two contributions were prepared for the planned INHIGEO History volume one entitled "Changing Reflections on the History of Geology" and another, in collaboration with Ken Bork, entitled "INHIGEO in recent times".

A small chapter dealing with the "South Australian Technological Museum (1889-1963)" was prepared for a planned book dealing with the *South Australian 50th Jubilee Exhibition 1887 and its legacy*.

With the Heritage Stone Task Group, Barry has been involved in compiling and editing two volumes of papers as well as contributing to some of the papers. These compilations are:

Global Heritage Stone: Toward international recognition of Building and Ornamental Stones. Special Paper, Geological Society of London 407 (edited in collaboration with D. Pereira, B. Marker, S. Kramer and B. Schouenborg.

Special Global Heritage Stone issue of *Episodes* 38 (2) (edited in collaboration with D. Pereira and S. Kramar).

In November Barry was delighted to take part in the Annual Meeting of the History and Philosophy of Geology Division of the Geological Society of America in Baltimore, USA. Included was an excursion to Philadelphia to visit the Library Company, Academy of Sciences, Drexel University to see William Smith's original map and the American Philosophical Society, to see the Benjamin Smith Lyman archives.

Publications:

Book Review: Hofmann, T., Blöschl, G., Lammerhuber, L. Piller, W.E. and Șengör, A.M.C. 2014. *The Face of the Earth: The Legacy of Eduard Suess*. L Edition Lammerhuber 104 pp., 60 images. *INHIGEO Annual Record* 47, 96 (2015).

The "Global Heritage Stone Resource' designation: past, present and future. *Special Paper, Geological Society of London* 407: 11-20.

Podpeč Limestone: a heritage stone from Slovenia. Special Paper, Geological Society of London 407: 219-231 (with S. Kramar and others).

Geologists and the development of opal mining in Australia. 40th INHIGEO Symposium, Chinese University of Geosciences, Beijing 2015. Collections of Abstracts of papers, p.4.

Sydney sandstone: Proposed 'Global Heritage Stone Resource' from Australia. *Episodes* 38 (2):124-131 (with D.F. Branagan, B. Franklin, H. Ray).

The Dala (Älvaden) porphyries from Sweden. *Episodes* 38 (2): 79-84 (with A. Wikstrom, D. Pereira, T. Lundqvist).

The 25th International Geological Congress, Sydney, Australia (1976). *Episodes* 38: 208-217 (with D.F. Branagan).

Jim Jago – Although a couple of things are in the pipeline, my main activity for the year was to present a joint talk with Barry Cooper entitled "Robert Bedford: The Scientist". This was presented at the Bedford family reunion at Kyancutta, central Eyre Peninsula on October 3, 2015. This marked the centenary of the arrival of Robert Bedford and his family at Kyancutta. Robert Bedford is best known in Australia for his five papers on lower Cambrian archaeocyatha from the Ajax Mine area of the Flinders Ranges. These were published in the 1930s in the *Memoirs of the Kyancutta Museum*, a journal established and funded by Bedford.

I also gave a joint talk with Mark Pharaoh at the Annual General Meeting of the Friends of Mawson group at the South Australian Museum in June 2015. The talk was entitled "Pre-Antarctic Mawson". This is currently being developed into a journal article.

Ken McQueen – was engaged in geological heritage activities within the Australian Capital Territory, particularly through his continuing membership of the Steering Committee for the National Rock Garden and the Heritage Committee of the ACT Branch of the Geological Society of Australia. He also contributed to 'Connected Environments and Changing Landscapes - Ngunawal Walks and Talks' a new series of explanatory lectures and walks, funded by an ACT Government Heritage Grant.

In April Ken participated in two field trips in Colorado and Arizona, visiting historic mining sites at Leadville, Creede and Bisbee. These trips were part of the 27th International Applied Geochemistry Symposium held in Tuscon, Arizona.

Ken completed notes on the mining history of the Broken Hill area for the new Broken Hill 1:250 000 metallogenic map published by the Geological Survey of New South Wales. He attended the launch of this map at the Resources and Investment Symposium in Broken Hill from the 24-27th May and contributed to a one-day field trip to sites around Broken Hill.

He also attended the 21st Australasian Mining History Conference in Darwin from 21-25 June where he presented a paper on the mining history of the Bathurst region in New South Wales. As part of this conference he participated in a field trip to the historic gold mining centre of Pine Creek, south of Darwin.

In September, Ken joined the pre-conference field trip for the Mines and Wines Conference held in Queanbeyan. This trip visited Captains Flat and Majors Creek and Ken provided the lunch time entertainment with a talk on the history of Dargue's Reef at Majors Creek.

Publications:

McQueen, K.G., 2015. Early Mining History (back sheet notes) Broken Hill 1:250 000 Scale Metallogenic Map (1st Edition). Geological Survey of New South Wales, Maitland, NSW, Australia.

McQueen, K.G., 2015. The Bathurst region: Cradle of metal mining in New South Wales. *Australasian Mining History Association 21st Annual Conference*, 21-25 June 2015, Darwin, Northern Territory, Abstracts p. 18.

McQueen, K.G. and Christie, A.B., 2015. 27th IAGS Colorado Field Trip, *Explore*, No. 168, pp. 10-12.

Christie, A.B. and McQueen, K.G., 2015. 27th IAGS Bisbee Tour, *Explore*, No. 168, pp 12-13.

McQueen, K.G., 2015. Australia's Unique National Rock Garden. *AIG News*, No. 119, pp. 17-18.

McQueen, K.G., 2015. National Rock Garden Geotechnical Survey. *AIG News*, No. 121, p. 26.

McQueen, K.G., 2016. The landscape evolution of the Clarence River Catchment: Weird rivers and wild ideas. *Fourth Australian Regolith Geoscientists Association Conference*, 7-11 February 2016, Thredbo, New South Wales, Proceedings pp. 55-59.

Forthcoming Event:

The 22nd Australasian Mining History Conference will be held in Cobar, N.S.W. from 17th-21st October 2016. Details can be found on the Australasian Mining History Association website at http://www.mininghistory.asn.au/ under Conferences or contact Ken McQueen at Ken.McQueen@canberra.edu.au

Wolf Mayer – attended the INHIGEO Meeting in Beijing where he presented a talk titled, "Early French contributions to Australian Geology".

He continued to edit the INHIGEO Annual Record and is the Corresponding Editor, of the INHIGEO anniversary volume: *History of Geoscience: Celbrating 50 years of INHIGEO.*

Publication:

Mayer, W. Early attempts by François Péron and Louis Depuch to measure the temperature at various depths in the ocean, and their thoughts about a hot versus a cold interior of the Earth. *Earth Sciences History*, 34, 2, 190-203.

Susan Turner – has continued her research on the work of various geoscientists, both men and women. Her research on the Australian work of Sir Arthur Smith Woodward, begun in 2012, came to fruition with the help of Professor John Long (Flinders University); they published a paper in a forthcoming Geological Society, London Special Publication.

The passing of Larry Harrington (1924-2015) marked the end of an important phase in my working on UNESCO and IGCP history; Larry and I worked together for more than a decade delving into UNESCO archives, both here in Australia and in Paris, to bring the Australian contributions to light. With the help of his family I sent a short notice to the

UNESCO Earth Sciences Division, which they put on their website to mark Larry's contribution to the origins of the IGCP.

Presentations:

At the 1st HOGG meeting in April at the Geological Society, London, for the Bicentennary of William Smith's 1815 Map, Sue presented a poster on Thomas Sopwith's links with William Smith, notably at the Harrogate Sulphur Wells Trial in York Assizes, where both gave evidence in favour of the plaintiff, the proprietor of The Crown Hotel. Prior to this Sue made a visit to Harrogate and met the current owner of The Crown and gained much insight into the background of the sulphur wells geology. Despite a new search there was no sign of the missing model that Sopwith presented at the trial.

At the 40th INHIGEO Meeting in Beijing, June 25-27th 2015, Sue talked about "Who is Erik Stensiö, founder of a palaeontological dynasty", work she is doing with Roger Miles (London). They have submitted an essay of Stensiö to a forthcoming Planet Earth book edited by John Talent. Professor Stensiö was a doyen of vertebrate palaeontology for over six decades operating mainly from his base as the Director of the Natural History Museum, Stockholm.

With colleague Martina Koelbl-Ebert she is preparing an essay on the history of Women in Geosciences for the INHIGEO 50th anniversary volume. She has been talking with and writing down biographical details from colleagues in China and the former Soviet Union. She met with Professor Meemann Zhang, Academician, in Beijing to this effect in June and September.

Research via Social Media:

Work on the Facebook page for the Thomas Sopwith Appreciation Society continues with some100 likers: https://www.facebook.com/ThomasSopwithAppreciationSociety.

Friedrich & Erika von Huene (a Facebook page for people interested in this family at https://www.facebook.com/FriedrichErikaVonHuene

Women in Geoscience, being prompted by the lack of any event on October 17th, supposedly International Day for Women in Geoscience.
https://www.facebook.com/WomeninGeoscience

These venues allow her to continue research, particularly on women.

Sue has again been English editor for the *JHOST*, chief editor Ana Carneiro.

In August she also edited an interesting book by Canadian Rick Antonson on the history of Armenia/Kurdistan/Turkey/Iraq/Iran, entitled, *Full Moon Over Noah's Ark; An Odyssey to Mount Ararat*, New York, due to be published in the spring of 2016. This book looks at the history of the Middle Eastern mountain ranges as well as the links to the flooding in the region, as a result of the Mediterranean overflowing into the Bosphorus, and inevitable compares the Noah's Ark Flood stories in their various guises from the Epic of Gilgamesh through to the Qu'ran.

Publications:

Turner, S. 2015. William Smith meets Thomas Sopwith: the 1837 Harrogate Sulphur Wells case. In: Henry, J., Lewis, C. & Williams, D. convenors, *William Smith Meeting. 200 years of Smith's Map*. HOGG April 23-24, Geological Society, Burlington House, London, Poster presentation, Abstracts, p. 45.

Turner, S. 2015. Who is Erik Stensiö? *40th INHIGEO Symposium, China Univesity of Geosciences, Beijing*, June, p. 34.

Turner, S. and Long, J.A. 2015. The Woodward factor: Arthur Smith Woodward's legacy to

geology in Australia and Antarctica. In: Johanson, Z., Barrett, P. M., Richter, M. & Smith, M. (eds) *Arthur Smith Woodward: His Life and Influence on Modern Vertebrate Palaeontology*. Geological Society, London, Special Publications, 430. First published online [October] [30th], [2015], http://doi.org/10.1144/SP430.15

AUSTRIA

Austrian Working Group "History of Earth Sciences" (AWGHES)

On December, 4th 2015, the annual meeting of the AWGHES was held in the so-called Billrothhaus in Vienna, in cooperation with the Medical Society, on the topic "Geology and Medicine". The very early common roots of the connection between geology and medicine can certainly be found in ancient crystal healing. From the mysticism of Hildegard von Bingen and, later, the Entia-conceptions of Paracelsus – especially concerning the basic body substances Sulphur, Mercurius and Sal - natural and naturopathic ideas can be followed to the esoteric 'Hildegard Medicine'. Up to the middle of the 19th century, the 'pioneers' in the geological sciences in Austria were physicians who had acquired geological knowledge autodidacticly. They established a connection between the geological subsurface and its healing effect on people. Based on their work the science of medical balneology (therapeutic use of thermal baths) developed during the second half of the 19th century.

The lectures of the meeting dealt, for example, with fossils in folk medicine, with bogs in Austria, with spas and sanatoriums in Galicia, with military water supply, with doctors and their contribution to the history of the Earth sciences or bookplate for doctors.

The next meeting of the AWGHES will be held in the autumn in Vienna with the theme, "Geology and Theology".

Some members of the AWGHES participated in the 13th International ERBE-Symposium, which was held from the 15th to the 20th of June 2015, in Banská Štiavnica (Slovakia). The Slovak Mining Museum (Head Dr. Jozef Labuda) organized the symposium in which international montanists, geoscientists and historians participated. In recent history this prestigious event was held in Germany, Austria, Russia, Slovakia, USA, Slovenia, Netherlands, Canada, Mexico and Italy. At the 13th International ERBE-Symposium lectures were given by international experts in the subjects of geology, mining, archeology, history and metallurgy. A diverse cultural program - musical performances and presentations in historic mining robes, as well as excursions to former mining areas - completed the program.
Some members of the AWGHES participated in the conference "In guerra con le aquile", which was held from the 17th to the 20th of September 2015, in Trento. The lectures dealt with Austrian geologist on the southern front during World War I and with engineering geological aspects in warfare.

Publications:

Angetter, D., Hubmann, B. 2015. Bedeutende österreichische Kriegsgeologen im Einsatz an der Südfront des Ersten Weltkrieges. *Geo.Alp*, 117-133, Innsbruck-Bozen.

Angetter, D., Hubmann, B. (2015) Important Austrian war geologists and their tasks at the outhern front of World War I. Guerra con le Aquile, *Rendiconti Online della Società Geologica Italiana* 36, 7-9.

Angetter, D., Hubmann, B. 2015. The front in high alpine rock and ice regions: World War I from an engineering geological point of view. Guerra con le Aquile, *Rendiconti Online della Società Geologica Italiana* 36, 10-13.

Angetter, D., Hubmann, B. 2015. Geologie und Medizin, 14. Wissenschaftshistorische

Symposium der Österreichischen Arbeitsgruppe, Geschichte der Erdwissenschaften, *Berichte der Geologischen Bundesanstalt*, 113, 107 pp, Wien.

Angetter, D., Schramm, J-M. 2015. Über den Minierkrieg in hochalpinen Fels- und Eisregionen (1. Weltkrieg, SW-Front, Tirol 1915-1918) aus ingenieurgeologischer Sicht. *Geo.Alp*, 135-160, Innsbruck-Bozen.

Angetter, D., Hubmann, B., Seidl, J. 2015. Mediziner und ihr Beitrag zur frühen Geschichte der Erdwissenschaften in Österreich. Geologie und Medizin, hrsg. Daniela Angetter, Bernhard Hubmann, 14. Wissenschaftshistorische Symposium der Österreichischen Arbeitsgruppe „Geschichte der Erdwissenschaften". *Berichte der Geologischen Bundesanstalt* 113, 6-8, Wien.

Angetter, D., Hubmann, B., Seidl, J. 2015. Hundert Grazer Geologen. Ein bio-bibliographisches Handbuch (19. bis 21. Jahrhundert). Geologie und Medizin, hrsg. Daniela Angetter, Bernhard Hubmann, 14. Wissenschaftshistorische Symposium der Österreichischen Arbeitsgruppe, Geschichte der Erdwissenschaften. *Berichte der Geologischen Bundesanstalt* 113), 91-92, Wien.

Cernajsek, T. 2015. In memoriam David Roger Oldroyd (1936-2014). *Geo.Alp*, 205-208, Innsbruck-Bozen.

Cernajsek, T. 2015. David Roger Oldroyd (1936-2014). *ÖGW Res Novae*, 7, 26-31, wissenschaftsgeschichte.ac.at/files/resnovae/07_2015.pdf, Wien.

Cernajsek, T. 2015. Tschebull, Anton, Montanist, Hydrologe und Politiker. *Österreichisches Biographisches Lexikon 1815-1950*, 66. Lieferung, 483-484, Wien.

Cernajsek, T. 2015. Spurensuche nach Dokumenten stützt die Bewahrung des kulturellen Erbes in Geowissenschaften = 180 rokov Geologickey služby v Rakúsku: Hl'adanie stóp podl'a dokumentov. *13th Int. Symposium cultural heritage in geosciences, mining and metallurgy libraries – archives – museums*. Bansk Stiavnica, 15.-20. June 2015, 145-146, Banska Stiavnica.

Cernajsek, T. 2015. 180 Jahre Geologischer Staatsdienst in Österreich. Spurensuche nach Dokumenten stützt die Bewahrung des kulturellen Erbes in den Geowissenschaften. Ein Gedenken, in: Geologie und Medizin, hrsg. Daniela Angetter, Bernhard Hubmann, 14. Wissenschaftshistorische Symposium der Österreichischen Arbeitsgruppe, Geschichte der Erdwissenschaften. *Berichte der Geologischen Bundesanstalt* 113, 9, Wien.

Cernajsek, T. 2015. Eduard Suess (1831-1914) und seine geologische Erforschung des Bodens der Stadt Wien: Ein Nachtrag zur Ausstellung 2014, in: Geologie und Medizin, hrsg. Daniela Angetter, Bernhard Hubmann, 14. Wissenschaftshistorische Symposium der Österreichischen Arbeitsgruppe Geschichte der Erdwissenschaften. *Berichte der Geologischen Bundesanstalt* 113, 10-13, Wien.

Cernajsek, T. 2015. Exlibris für Ärzte: ein kurzer Gang durch die Sammlung von Tillfried Cernajsek, Perchtoldsdorf, in: Geologie und Medizin, hrsg. Daniela Angetter, Bernhard Hubmann, 14. Wissenschaftshistorische Symposium der Österreichischen Arbeitsgruppe Geschichte der Erdwissenschaften. *Berichte der Geologischen Bundesanstalt* 113, 14-16, Wien.

Hamilton, M. 2015. Die persönlichen und handschriftlichen Aufzeichnungen des Mineralogen und Petrographen Friedrich Becke (1855-1931) im westlichen Tauernfenster zwischen 1894-1903. Bansca Stiavnica, Slowakai. 13. *ERBE Symposium*, 72-74, Banská Štiavnica.

Hamilton, M. 2015. Der Weg von der praktischen Erkenntnis zur theoretischen Deutung im Zusammenhang mit den Notizbüchern des Mineralogen und Petrographen Friedrich (Johann Karl) Becke (1855-1931). Doctoral thesis at the University of Vienna.

Hamilton, M. 2015. Prodromus Crystalgraphiae de Crystallis. Der Mediziner Moritz Anton Cappeller (1685-1769) mit der ersten kistallographischen Dokumentation in der Geschichte der Kristallgraphie. Geologie und Medizin, hrsg. Daniela Angetter, Bernhard Hubmann, 14. Wissenschaftshistorische Symposium der Österreichischen Arbeitsgruppe, Geschichte der Erdwissenschaften. *Berichte der Geologischen Bundesanstalt* 113), 17-22, Wien.

Hubmann, B. 2015. Die erste systematische geologische Kartierung der Karpaten durch die k.k. Geologische Reichsanstalt 1850 - 1870. In: Heppner, H. (ed.): Die Erschließung der Karpaten. Danubiana Carpathica. *Jahrbuch für die Geschichte und Kultur in den deutschen Siedlungsgebieten Südosteuropas*, 8 (55), 29-59, 3 figs., München.

Hubmann, B. 2015. Tornquist Alexander. *Österreichisches Biographisches Lexikon*, 66. Lief., p. 411, Wien (Österreichische Akademie der Wissenschaften).

Seidl, J. 2015. Eduard (Carl Adolph) Suess. Geologe, Techniker, Kommunal-, Regional- und Staatspolitiker, Akademiepräsident. In: Mitchell G. Ash, Josef Ehmer (Hrsg.), Universität – Politik – Gesellschaft. *650 Jahre Universität Wien – Aufbruch ins neue Jahrhundert* , Bd. 2, 217-223, Wien.

Seidl, J. 2015. Eduard Suess und die Anfänge des Frauenstudiums an der Universität Wien. *Europäische Wissenschaftsbeziehungen*, Bd. 9, hrsg. v. Dietrich von Engelhardt, Ingrid Kästner, Jürgen Kiefer, Karin Reich (Aachen 2015), S. 179-202. (gem. mit Richard Lein).

Seidl, J. 2015. Ami Boué (1794-1881). Ein Naturforscher und Mediziner des Vormärz. Festschrift für Georg Heilingsetzer zum 70. Geburtstag. *Jahrbuch für Landeskunde von Oberösterreich* 160, 511-523, Linz.

Svojtka, M. 2015. Burgerstein Leo.- *Österreichisches Biographisches Lexikon ab 1815*, 2. überarbeitete Auflage – online, Lfg. 4, 30.11.2015, Wien.

Svojtka, M. 2015. Eocenische Periode. Aquarell von Joseph Kuwasseg (1799-1859), Graz um 1858, für *Die Urwelt in ihren verschiedenen Bildungsperioden" von Franz Unger (1800-1870*. Die Sammlungen an der Universität Wien, Objekt des Monats Februar 2015 [http://bibliothek.univie.ac.at/sammlungen/objekt_des_monats/009928.html]

Svojtka, M. 2015. Tschernich Franz Rudolf. *Österreichisches Biographisches Lexikon 1815-1950*, 66. Lieferung , 485-486, Wien.

Marianne Klemun –

Books:

Klemun, M. (ed.) 2016. *Einheit und Vielfalt. Franz Ungers (1800–1870) Konzepte der Naturforschung im internationalen Kontext* (Göttingen).

Klemun, M., with Szemethy, H., Blakolmer F. and Fuchs, M. (eds.) 2015. *Etwas andere Geschichten der Universität Wien*,Wien.

Klemun, M.,with Szemethy, H., Blakolmer F. and Fuchs, M. (eds.) 2015. Translated from the German by Bryan Jenner: 1365 – 2015 – 2065. *Once there was a Student*: *Other Stories of the University of Vienna*, Vienna.

Articles:

Klemun, M. 2016. Ausrichtung des Bandes. In: Klemun, M. (ed.): *Einheit und Vielfalt. Franz Ungers (1800–1870) Konzepte der Naturforschung im internationalen Kontext*, 4-19, Göttingen.

Klemun, M. 2016. Franz Unger (1800-1870): multiperspektivische wissenschaftshistorische Annäherungen. In: Klemun, M. (ed.) *Einheit und Vielfalt. Franz Ungers (1800–1870)*

Konzepte der Naturforschung im internationalen Kontext, 15–92, Göttingen.

Klemun, M. 2015. Geognosie versus Geologie: Nationale Denkstile und kulturelle Praktiken bezüglich Raum und Zeit im Widerstreit. *Berichte zur Wissenschaftsgeschichte. Organ der Deutschen Gesellschaft für Wissenschaftsgeschichte*, 38/3, 227–242.

Klemun, M. 2015. Kulturwissenschaften und Instrumentengeschichte. Der Geologenhammer. Tagungsbericht des 26. Österreichischen Historikertages Krems/Stein, 24. bis 28. September 2012. *Veröffentlichungen des Verbandes Österreichischer Historiker und Geschichtsvereine* 325, St. Pölten 415–424.

Klemun, M. 2015. Historismus/Historismen - Geschichtliches und Naturkundliches: Identität Episteme - Praktiken, In: Ottner, C., Holzer, G. und Svatek, P. (Eds.): *Wissenschaftliche Forschung in Österreich 1800–1900. Spezialisierung, Organisation, Praxis. Schriften des Archivs der Universität Wien, Fortsetzung der Schriftenreihe des Universitätsarchivs der Universität*, Wien, Bd. 21, Göttingen 17–41.

Klemun, M. 2014. Administering science: the paper form of scientific practice and geological fieldwork. *Earth Sciences History* 33, 279–293.

Klemun, M. 2014. Erkennt nisinstrument Reisen: Reflexionen zu komplexen wissens- und wissenshistorischen Phänomen der Frühen Neuzeit. In: Ingrid Kästner, et al. (Hrsg.): *Erkunden, Sammeln, Notieren und Vermitteln – Wissenschaft im Gepäck von Handelsleuten, Diplomaten und Missionaren*. Europäische Wissenschaftsbeziehungen, hg. von Dietrich von Engelhardt et al, Bd. 7, Aachen, 21–36.

Klemun, M. 2014. Hammerkult und Geologie. In: *Visualisierungen von Kult*, hg. von Marion Meyer und Deborah Klimburg-Salter (Wien/Köln/Weimar 2014) 16–39.

Klemun, M. Natur/Geschichte und das Kärntner Landesmuseum Rudolfinum. In: *Spuren-suche: 130 Jahre Rudolfinum* (Klagenfurt) 73–82.

Conferences and panels:

Addressing the Dynamics of Museums, at Science and Technology in the European Periphery, 9th STEP Meeting, Centro interuniversitário de História das Ciências e da Tecnologia, Lisbon, 1-3 September 2014, (with 4 papers: Schmutzer, Török, Mattes, Klemun).

Conference in honour of Eduard Suess (1831–1914). *Politik – Wissenschaft – Verantwortung*, organized by Marianne Klemun, Vienna University, 25 April 2014.

Session organised together with Marita Hübner. Antiquarism – crossing regions, oceans, and fields of knowledge, at Scientiae 2014, *Disciplines of Knowing in the Early Modern World*; 23 – 25 April 2014, Juridicum, Vienna.

Conference talks

Klemun, M. 2015. Ludwig Salvator Wissenslandschaften. Ludwig Salvator (1847–1915). Erzherzog von Österreich-Toskana. Kerner von Marilaun Symposium 2015 at the Austrian Academy of Sciences, Festsaal, 26 November, Vienna. (invited)

Marianne Klemun, Entangled Functionalities between Empire and Natural History in the Habsburg Monarchy, at: Wissenschaft und Imperium im östlichen Europa des 19. Jahrhundert, organised by Collegium Carolinum. Forschungsinstitut für die Geschichte Tschechiens und der Slowakei, Munic/Bad Wiessee, 5 – 8 November 2015. (invited)

Marianne Klemun, Fieldwork within the Austrian Geological Survey: negotiating cultures,

politics and epistemes, at: Understanding Field Science Institutions, org. by Royal Swedish Academy of sciences and Umeå Studies in Science, Technology and Environment, 26 - 27 August 2015, University of Umeå (Sweden) (invited).

Klemun, M. 2014. The Investigation and Musealization of the Alpine Region in Klagenfurt 1911–1923/42. *Science and Technology in the European Periphery*, 9th STEP Meeting, Lisbon 1–3 September.

Klemun, M. 2014. Contextualizing 'Context' – Plastic-Word or Methodological Concept in the History of Earth Sciences? *39th INHIGEO Symposium* (International Commission on the History of Geological Sciences, 6 – 10 July, at Asilomar Conference Grounds, Pacific Grove, California, USA.

Klemun, M. 2014, with Karl Kadletz. Editing: Method and Potential, at *39th INHIGEO Symposium* (International Commission on the History of Geological Sciences, 6 – 10 July 2014, at Asilomar Conference Grounds, Pacific Grove, California, USA.

Klemun, M. Geognosie versus /und Gologie: unterschiedliche Denkstile, kulturelle Praktiken und differente Wahrnehmungskonzepte im Widerstreit? *Begriffsbildung – Begriffsgeschichte: Entstehung und Entwicklung wissenschaftlicher Konzepte*. LI. Symposium of the Society for the History of Sciences, University of Heidelberg, 29 – 31 Mai.

Johannes Mattes - was co-editor of the peer reviewed Journal *Die Höhle. Zeitschrift für Karst- und Höhlenkunde* (Journal on Karst Studies and Speleology), and has supported the publication of two articles on the history of geology.

Book:

Mattes, J. 2015. *Reisen ins Unterirdische. Eine Geschichte der Höhlenforschung in Österreich bis in die Zwischenkriegszeit*. (Travelling in the Underground. A Cultural History of Speleology in Austria till the Interwar Period). Vienna, Cologne, Weimar: Böhlau, 418 pp.

Articles:

Mattes , J. 2015. Underground Fieldwork – a Cultural and Social History of Cave Cartography and Surveying Instruments in the Nineteenth and at the Beginning of the Twentieth Century. *International Journal of Speleology*, 44, 3, 251–266.

Mattes, J. 2015. Disciplinary Identities and Crossing Boundaries. The Function of History for the Academization of Speleology in the first half of the 20th Century. *Earth Sciences History*, 35, 2, 275–295.

Mattes, J. 2015. Early Efforts in the Musealization of Cave Research. Exemplified by the Speleological Museum in Linz (1912–1917). – Le recenti realizzazioni museali delle scoperte e delle ricerche nel campo della speleologia mondiale viste analizzando lo storico esempio del Museo Speleologico di Linz (1912–1917). *Atti e Memorie della Commissione Grotte "E. Boegan"*, 46, 71–88.

Mattes, J. 2015. Touristen vom Fach und Männer der Wissenschaft. Franz Kraus als Mittler zwischen akademischer Forschung und Alpinismus. (Professional Tourists and Men of Science. Franz Kraus as a Mediator between Public Interest and Academic Research). *Die Höhle*, 66, 43–62.

Mattes, J. 2015. Grenzgang zwischen Erkenntnisinteresse und der Gefahr des Abgrunds. Ein soziologisches Essay zum Verhältnis von Speläologie und Extremsport. (Walking the Borderline between Cognitive Interest and the Abyss. A Sociological Essay on the

Relationship between Speleology and Extreme Sports). *Mitteilungen des Verbands deutscher Höhlen- und Karstforscher e.V.*, 61, 3-4, 80–82.

Mattes J. 2016. Coming from Abroad. The Discourse on Scientific Centralism and Jovan Cvijić's Studies in Vienna. *Journal of the Geographical Institute "Jovan Cvijić*", 66, (in print).

Lectures at meetings and conference talks:

Lecture Series "History on Wednesday", University of Vienna (AU), 3rd June 2015.Eine Kartierung des „Unsichtbaren". Inszenierung von Wissens- und Raumkonzepten in historischen Höhlenkarten (16.-20. Jh.). [Mapping the "Unseen". The Representation of Concepts of Knowledge and Space in Historical Cave Maps (16th to 20th Century).]

Keynote Speaker: „Giving Meaning to Darkness". Approaches to a Cultural and Social History of Caves and Speleology. International Conference of the International Union of Speleology on the occasion of its 50th anniversary, organized by the Slovenian Academy of Sciences and the International Union of Speleology, Postojna (SLO), 19th June 2015.

Invited Lecture: Coming from Abroad. The Discourse on Scientific Centralism and Jovan Cvijić's Studies in Vienna. International Congress on the occasion of the 150th birthday of the geographer Jovan Cvijić, organized by the Serbian Academy of Sciences, Belgrade (SRB), 13th October 2015.

Invited Lecture and Session Convenor: Frühe Musealisierung der Höhlenkunde. Am Beispiel des Reichshöhlenmuseums in Linz (1912-1917). [Early Efforts in the Musealization of Cave Research. Exemplified by the Speleological Museum in Linz (1912-1917)]. Annual conference of the Austrian Speleological Association, Mitterbach (AU), 22nd August 2015.

Presentation of the book "Travelling in the underground. A cultural history of speleology in Austria till the interwar period" with a subsequent panel discussion, organized by the Department of History, Library of the University of Vienna (AU), 19th October 2015.

Vermessung des Unterirdischen. Historische Entwicklung von Höhlenkarten (16.-20. Jh.). [Surveying the Underground. The History of Cave Mapping since the 16th Century.] Speleological Lectures, Natural History Museum, Vienna (AU), 1st December 2015.

Matthias Svojtka – In 2015 Matthias authored seven biographies of natural scientists for part 66 of the Austrian Biographical Dictionary and 12 biographies for the (online published) second edition of the Austrian Biographical Dictionary (part 4, November 30th), which including the palaeobotanist Franz Tschernich (1852-1929) and the geologist Leo Burgerstein (1853-1928). He presented watercolours of Joseph Kuwasseg (1799-1859) for Franz Unger's famous „*Die Urwelt in ihren verschiedenen Bildungsperioden*" and wrote an obituary on the famous zoologist and science historian Luitfried Salvini-Plawen (1939-2014).

Publications:

Svojtka, M. 2015. Tschernich Franz Rudolph. Österreichisches Biographisches Lexikon 1815-1950, 66. Lfg., 485-486 (ISBN 978-3-7001-7793-7).

Svojtka, M. 2015. Burgerstein Leo. *Österreichisches Biographisches Lexikon ab 1815* (2nd ed. – online), Lfg. 4, 30.11.2015 (ISBN 978-3-7001-3213-4).

Svojtka, M. 2015. Eocenische Periode. Aquarell von Joseph Kuwasseg (1799-1859), Graz um 1858. *Die Urwelt in ihren verschiedenen Bildungsperioden von Franz Unger (1800-*

1870). Die Sammlungen an der Universität Wien, Objekt des Monats Februar 2015 [http://bibliothek.univie.ac.at/sammlungen/objekt_des_monats/009928.html]
Svojtka, M. 2015. Luitfried Salvini-Plawen zum Abschied. *ÖGW Res Novae* 7, pp. 19-23.

BULGARIA

Platon Tchoumatchenco - I continued geological heritage activities within the Bulgarian Geological Society. I was flattered by the invitation of the President of BGS Prof. D. Sinyovski, who proposed me, as an Honorary Member of the BGS, to give a presentation connected with the 90 years of the foundation of the Geological Society, to the Jubilee Annual meeting, which took place in Sofia in 2015. This presentation was later re-worked as a paper, submitted for publication to the Review of the Bulg. Geol. Society.

During 2015, I collected, together with acad. T. Nikolov, information about the geological activity and the heroic death of Dr Rostislav Beregov – Bulgarian Geologist of Russian origin, connected with the 70th anniversary of his heroic death when he passed away trying to save a miner. This material has been submitted for publication in 2016, to the Review of BGS. Together with acad. T. Nikolov, I also collected information for a compendium connected with Bulgarian palaeontologists (42 persons), who passed away bewtween 1896 and the end of 2015. This information will be published in the Review of the BGS in 2 parts, in 2016. I also submitted to the Review of BGS a paper, dedicated to the life of the palaeontologist Dr Vladimir Shopov. Together with Dr M. Wiazemsky, I submitted a paper about the life and the professional activity of a geologists of Russian origin who worked in the USA, published in Serbia. The publication had been sponsored by Nish Gasprom Neft. Together with Dr M. Wiazemsky, prof. M. Durand Delga and Jean Ricour, I prepared a paper about the life and the geological activity of the geologists of Russian origin, who worked in francophone countries, which will be published in Spain, in 2016.

I sent to the libraries of The Geological Society of London, the Geologist's Association, the British Library, the Library of Congress, etc. exemplars of our book on *The fate and the activity of the geologists of Russian origin all over the world*.

Publications:

Tchoumatchenco P. 2015. Engineer geologist Andrei Janichevsky (1904-18949) – life and scientifique activity. - *Review of the Bulgarian Geol. Society,* 76, 1, 145-156 (in Bulgarian).
Tchoumatchenco P. 2015. 80th Anniversary of Prof. Dr. Vladimir Shopov (1935-2000). – *Review of the Bulgarian Geol. Society,* 76, 1, 169 (in Bulgarian).
Tchoumatchenco P. 2015. 90 th Anniversary of the Bulgarian Geological Society. - *Review of the Bulgarian Geol. Society,* 76 ,2-3, 1-35 (in Bulgarian).
Tchoumatchenco P. and Wiazemsky M. 2015. Geologists of Russian origin in the US. *Ann. Geol. Peninsule Balkanique*. 76; 115-150.

Presentation:

Tchoumatchenco P. 2015. 90th Anniversary of the Bulgarian Geological Society. Ann. Meeting of the Bulgarian Geological Society.

Forthcoming publications:

Tchoumatchenco, P., T. Nikolov. 2016. Dr Rostislav Beregov (1908-1946). *Rev. Bulg. Geol. Soc*., 77, 1, 27-42.
Tchoumatchenco, P., T. Nikolov. 2016. Compendium of Bulgarian palaeontologists (1986-

31.12. 2015). Part I. A-K. *Rev. Bulg. Geol. Soc*., 77, 1, 43-60.

CANADA

We sadly note the death of Canadian INHIGEO member Ian Brookes (see obituary on page 29).

Ernst Hamm –In the past year I had the pleasure of presenting some of my research on Arthur Philemon Coleman at the annual meeting of the Canadian Science and Technology Historical Association, 6-8 November 2015, at York University, Toronto, Ontario. My paper, "Disappointment on the Great Divide: Geology, Its History and A. P. Coleman", considered some of the ways Coleman's career tied together themes of exploration, geology, indigenous knowledge and nation building (in Canada).

Randall Miller – Geologists from across Atlantic Canada, and beyond gathered for the 41st Colloquium of the Atlantic Geoscience Society in Sackville, New Brunswick in February 2015. Sessions of interest to INHIGEO include a special session on 'Palaeontology in Atlantic Canada, a session in recognition of the work of Laing Ferguson', a long-time professor at Mount Allison University, who contributed much to the knowledge of the Joggins locality in Nova Scotia. As always the Society also highlighted activities related to public outreach in a session titled 'Geoscience Education and Outreach: Past Successes and New Initiatives'. Abstracts for the conference are published in *Atlantic Geology*, the Society's journal and are available as open access. (https://journals.lib.unb.ca/index.php/AG)

In November of 2015, the Global Geoparks Network became a program of UNESCO, so that Stonehammer Global Geopark in southern New Brunswick, Canada is now officially recognized as Stonehammer UNESCO Global Geopark. The decision was taken by Member States at UNESCO's General Conference, the governing body of the Organization, which met in Paris from 3 to 18 November. The 195 Member States of UNESCO ratified the creation of a new label, the UNESCO Global Geoparks, on 17 November 2015. This expresses governmental recognition of the importance of managing outstanding geological sites and landscapes in a holistic manner.

UNESCO Global Geoparks strive to raise awareness of geodiversity and promote protection, education and tourism best practices. Together with World Heritage sites and Biosphere Reserves, UNESCO Global Geoparks form a complete range of sustainable development tools and make an invaluable contribution to the realization of the 2030 Sustainable Development Goals by combining global and local perspectives.

This new branding formalizes a relationship with Geoparks first established in 2001. Since then, Geoparks through the Global Geoparks Network have grown to include 120 sites all over the world. They have become an increasingly important tool for UNESCO to engage Member States and their communities in the Earth Sciences and geological heritage. Canada (and North America) now has two geoparks, the other being Tumbler Ridge UNESCO Global Geopark in British Columbia.

During the 38th session of UNESCO's General Conference, Member States also decided to endorse the statutes of a new international programme: the International Geoscience and Geoparks Programme (IGGP). This allows the Organization to more closely reflect the societal challenges of Earth Science today and provides an international status to a former network of sites of geological significance.

For more information about Stonehammer UNESCO Global Geopark visit: http://www.stonehammergeopark.com/main.html

Publications with geoheritage content in 2015 included:

Rygel, M.C., Lally, C., Gibling, M.R., Ielpi, A., Calder, J.H., and Bashforth, A.R. 2015. Sedimentology and stratigraphy of the type section of the Pennsylvanian Boss Point Formation, Joggins Fossil Cliffs, Nova Scotia, Canada. *Atlantic Geology*, 51:1-43.

Donovan, S.K. 2015. Ron K. Pickerill and the genesis of ichnology in the Antilles (Jamaica and Carriacou). *Atlantic Geology* 51:287-297.

Miller, R.F. and Buhay, D.N. 2015. 19th to early 20th century geology lectures in Saint John, New Brunswick, Canada. *Atlantic Geology* 51:311-331.

David A. E. Spalding – On January 27th-28th 2015, the 68th Executive Meeting of the IUGS (International Union of Geological Sciences) was held in the Vancouver Convention Centre. Since I live on a small island a mere 50 km away from Vancouver (but several hours away by ferry and road travel), I was the nearest resident INHIGEO member. Accordingly, I had the pleasure of representing one international organization at a meeting of another for a couple of days, meeting colleagues from various parts of the world, and learning about the great variety of projects of the IUGS and its related organizations. I spoke briefly about the current activities of INHIGEO, and subsequently reported back to the secretariat on various matters of interest that were on the agenda.

In my 2014 report I mentioned that I had been approached about my role in the history of the Provincial Museum of Alberta (more recently the Royal Alberta Museum) in Edmonton, Alberta. This led to a visit on 12th February 2015 from retired curator and historian Jane Ross, who is writing a history of the institution. She interviewed me at length on my background in natural sciences and museums in England, and my professional career at the Provincial Museum from 1967 to 1982 as Head Curator of Natural History, Acting Director, and interpretive planner for what became the Royal Tyrrell Museum of Palaeontology. The interview was recorded, and the recording will in due course be placed in the Provincial Archives of Alberta. Subsequently I have answered a number of questions and forwarded other information.

The original Provincial Museum building (built in 1967 at a cost of $10 million) housed research programs and exhibits relating to all the earth sciences within the province. Its paleontology program became the core of The Tyrrell Museum (now the Royal Tyrrell Museum of Palaeontology). This opened in Drumheller in 1985 and featured all aspects of paleontology; at that time earth science programs at the Provincial Museum were refocussed to rocks and minerals, Quaternary environments and Quaternary palaeontology.

The original Provincial Museum building was closed in December 2015, when some 36,000 people attended the final two-day party. No firm plan has been announced for reuse of the existing building, and at this point it seems possible that it will be demolished when the collections and staff have all moved out. The total budget for rehousing the museum is $375 million, around two thirds of which is coming from the Provincial Government, and one third from the Federal Government. A new museum building with twice as much exhibit space is being constructed in downtown Edmonton; current expectations are that the building will be completed in 2016, and occupied and opened with new exhibits in 2017 or early 2018. It is planned that the museum history will be published about the same time.

This opportunity for revisiting an earlier part of my career has led to an expansion of previous notes made on my early years in Alberta, with the intention of eventually producing a publishable memoir of the early museum years.

During 2015 I reviewed a paper for Earth Sciences History on the Kimmswick mastodon bone bed in Missouri. (This followed an earlier paper I had reviewed by the same

author). A notable feature of this work was the use of newly available files of newspapers, now being digitized and made available on the web.

I also had the pleasure of reviewing a book length MS on Alberta amateur palaeontologist Hope Johnson, written by my fellow INHIGEO member Darren H. Tanke.

Darren H. Tanke - This was a bit of a more tightly focussed year for me, working mainly towards the completion of one large historical project.

On April 15, 2015, I penned a posting for the Trowelblazers website dedicated to women past and present involved in the Earth sciences. I wrote a piece on Jane Colwell-Danis (1941-), Canada's first formally trained woman vertebrate paleontologist (Tanke, 2016a).

On July 10 and August 21, 2015 I gave two talks to the public and staff at Dinosaur Provincial Park in southern Alberta one on the 1916 sinking of the *SS Mount Temple* and her Albertan dinosaur cargo and one on amateur Albertan paleontologist, naturalist, and artist Hope Johnson (1916-2010). An audience member at the latter provided me with more of her personal papers which allowed enhancement of the biography being written on her (see below). On March 19, 2016, I gave a talk at the 20th Annual Alberta Palaeontological Society meetings in Calgary on the recovery of a partial plesiosaur quarry from an ammolite mine (Tanke, 2016c). This talk included a historical discussion on the successful three decades old working relationship between the ammolite mine owned by Korite and the Royal Tyrrell Museum of Palaeontology.

A 1915 American Museum of Natural History dinosaur quarry I relocated some years ago in Dinosaur Provincial Park in southern Alberta was revisited on August 18th and many broken and abandoned fossil skull pieces were collected in the hopes of some eventual reassembly. It appears much of the eroded skull pieces down the hill were abandoned at time of discovery. The quarry produced the type specimen of the ceratopsian dinosaur *Styracosaurus parksi*. There are some doubts that *S. parksi* is a valid species due to the fragmentary nature of its skull, and is actually a junior synonym of *S. albertensis*. A reassembled frill might shed light on this issue. The site is still producing bone so at least one more visit to the site will be needed to secure additional bone fragments.

My main historical work this year involved completing the massive biography on amateur naturalist, botanist, artist, historian and paleontologist Hope Johnson (1916-2010). It will be published as a coil-bound book by the Alberta Palaeontological Society in Calgary, AB. It is currently in the final editing and revision stages. Canadian INHIGEO member Dr. David A.E. Spalding was one of several individuals who kindly reviewed the manuscript. A 245-page single-spaced manuscript was submitted January 25, 2016. The coil-bound book will be sold through the Alberta Paleontological Society (http://www.albertapaleo.org/). This was another contribution to my "Remember Me……" series of lesser known men and women involved in Albertan vertebrate paleontology. I have been busy with other manuscripts in that series lately.

Though not an INHIGEO member, nor a big player in Earth science history preservation, I wish to note here the passing of Drumheller, Alberta-born resident Maurice Stefanuk (May 22, 1924-January 12, 2016), an amateur fossil collector, oil rig worker, amateur lapidarist, and former Royal Tyrrell Museum vertebrate paleontology technician during the 1980's. He was also interested in Alberta's paleontological heritage and its preservation. In the mid to late 1980's, Maurice assisted the late Dr. Loris S. Russell relocate old (mostly early 20th Century) dinosaur quarries in the Drumheller Valley for an eventually published biostratigraphic study (Eberth et al., 2013). Maurice spent many hours, first on his own initiative, then in direct support of Russell, searching for and relocating old dinosaur

sites using copies of archival photographs taken by Barnum Brown and the Sternberg's, and then lead Russell to the sites for study. Maurice was also involved in several centenary or commemorative events in the Drumheller area related to the early explorers and fossil collectors. One event commemorated Thomas Chesmer Weston's fossil hunting explorations on the Red Deer River in the 1880's and the other celebrated the 101st anniversary of the Joseph B. Tyrrell *Albertosaurus* skull discovery in 1884. Maurice tried a number of times to relocate the 1884 Tyrrell site without success and the whereabouts of that still remains elusive. I have resurrected a biography manuscript on Maurice, another one of my ongoing "Remember Me…" series. I interviewed him at length about five years ago for his biography before he moved away and married his long-lost WWII sweetheart. He provided more information and he agreed that after his passing his photograph collection related to his amateur paleontological activities in Alberta would be sent to me for archiving into Royal Tyrrell Museum of Palaeontology collections. Our final agreement was for me to scatter his ashes in the Late Cretaceous badlands upstream from Drumheller and that is to happen likely this spring with some of his family present. Related to Mr. Stefanuk, I also contributed the text (edited slightly by our museum's staff) for a Royal Tyrrell Museum of Palaeontology historical blogpost on him which went online February 9, 2016 (Tanke, 2016b).

I've resumed a proactive approach to write up for my "Remember Me……" series on another person important in Alberta vertebrate paleontology history in the mid to later 20th Century. For privacy reasons, they cannot be named here. They have been quite unwell of late, in hospital and it is unlikely, given their age and illness, that they will return home. The family has graciously allowed me advance access to that person's home to salvage whatever I can related to the history of their work in Alberta and work they did at other institutions,but still involved fossils recovered from our province. This information has already been incorporated into an ongoing detailed biographical treatment (21,500 word manuscript done so far) of their life and other information gleaned, worked into other ongoing historical projects. That person also conducted over 5 hours of cassette tape interviews in the summer of 1981 with people who knew the old-time dinosaur collectors from the early 20th Century in Alberta, or who were themselves active in the collection of Late Cretaceous vertebrate fossils in our province during the 1950s-1970s. The quality of the recordings are poor to excellent and should be transcribed at some point and copies sent to various archives province-wide.

My past work on the 1916 sinking of the Canadian transport ship SS *Mount Temple*, by the German surface raider SMS *Moewe*, was to be featured in a Canadian history magazine this spring but fell through at the last moment. For this project, in 2015 I was involved in several phone and two one-on-one interviews, one of which involved fieldwork to Dinosaur Provincial Park where I took the reporter to the 1916 cf. *Parasaurolophus* dinosaur quarry; that specimen now lies on the bottom of the North Atlantic. The reporter now is trying to find another publication to run the story.

A renewed floating of a 1:1 scale replica of the American Museum of Natural History's scow *Mary Jane* will be conducted on the Red Deer River up and downstream of Drumheller, Alberta late May-mid June, 2016, water levels permitting. This is a project of the Dinosaur Research Institute in Calgary, of which I have been a board member since 2007. Two such craft (the "*Mary Jane*" and the smaller "*Mary Ann*") were used by Barnum Brown in Albertan dinosaur field collecting in 1910-1914 and George F. Sternberg of the Geological Survey of Canada had two of his own scows during 1915-1916. The author spearheaded an earlier attempt in 2010 to float the replica (named the *Peter C. Kaisen* after an American Museum technician), but fell ill during that trip and a shortened trip was completed without him. Such craft were used as a floating base camp. They travelled with the current, but were on occasion towed back upstream by small powerboats during explorations of the badlands.

The scow was inspected early in the spring of 2015, and then several days were spent in late March, 2016 getting the scow "ship shape". Once the planned 2016 trip is over, current plans are for the scow to end up as a tourist educational stop along the bus tour road within the preserve area of Dinosaur Provincial Park, Alberta. A scale model of the AMNH scow "*Mary Jane*" was shown at the 20th Annual conference of the Alberta Palaeontological Society meetings in Calgary, Alberta on March 19th.

More minor projects and activities related to Earth science history preservation are identifying old archival imagery of early 20th Century, answering museum and public questions about early dinosaur collecting history in Alberta, and helping to try and locate lost fossil specimens collected a Century ago. Recently several hundred unidentified Royal Tyrrell Museum of Palaeontology scanned 35 mm slides were found in our museums hard drive. As the oldest serving museum employee who has any idea about these images, it now falls on me to identify who is in the picture, where it was taken, when, and the fossil specimen being uncovered/collected. Lots of old memories from the early 1980's……

Publications:

Eberth, D.E., Evans, D.C., Brinkman, D.B., Therrien, F., Tanke, D.H. and Russell, L.S. 2013. Dinosaur biostratigraphy of the Edmonton Group (Upper Cretaceous), Alberta, Canada: Evidence for climate influence. *Can. Jour. Earth Sci*., 50(7):701-726.

Tanke, D.H. 2016a. Jane Colwell-Danis - Appreciating the smaller things in life. http://trowelblazers.com/jane-colwell-danis/

Tanke, D.H. (though uncredited on website posting). 2016b. Lasting Legacy: Albertosaurus on display in Canada House. https://royaltyrrellmuseum.wordpress.com/2016/02/09/lasting-legacy-albertosaurus-on-display-in-canada-house/

Tanke, D.H. 2016c. Collection of a cf. Al-brrr-tonectes (Albertonectes) plesiosaur skeleton from an ammolite mine during early winter conditions in southern Alberta. pp. 8-10. In: *Alberta Palaeontological Society, 20th Annual Symposium*. Abstracts and Short Papers. Mount Royal University, March 19-20, 2016. Edited by H. Allen.

Clinton Tippett – My focus on historical geology matters over the past year continues to be primarily through the Calgary-based Petroleum History Society of which I am both President and Editor of our 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 P.H.S. 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 in 2015 ran a one day trip, in conjunction with the Canadian Society of Petroleum Geologists, to the Leduc #1 Energy Discovery Centre near Devon, Alberta. The Society also ran, as a part of Historic Calgary Week, a walking tour of downtown Calgary, Alberta featuring buildings that were significant in the evolution of the petroleum industry. This was preceded by a televised news feature about this tour that featured this member.

A major initiative over the last number of years has been a revival of our Petroleum Industry Oral History Project in the form of the Oil Sands Oral History Project, for which the interviews were completed late in 2013. Preservation of its records is at the Glenbow

Archives and Museum in Calgary was finalized in 2014. A number of the interviewees were geologists who brought their own unique perspectives to the records of this vibrant industry sector. Authors began to access these resources for their research in 2015.

During 2015, the P.H.S. continued its co-operation with the Turner Valley Oilfield Society, which is working with the Government of Alberta to establish an interpretive program, including guided walking tours, at the Turner Valley Gas Plant, which is both a provincial and a federal historic site. These tours will feature all aspects of petroleum exploration and production including the interpretation of the geological framework of this oil and gas field.

During 2014, I was elected to a three-year term as the Canada Region representative on the Advisory Council of the American Association of Petroleum Geologists (A.A.P.G.). One of the responsibilities of this body is the selection of winners for a range of major awards. Making appropriate recommendations for some of these honours requires knowledge of their historical context and of the candidates. I am Chair of the Advisory Council's Honors and Awards Subcommittee for the 2016-2017 cycle, for which award winners will be selected in the Fall of 2016. Those awards will be presented at the A.A.P.G. Annual Meeting in Houston in 2017, on the occasion of the 100th anniversary of the Association.

I have been involved in the preparations for the 2016 A.A.P.G. Annual Convention and Exhibition that will take place in Calgary in June 2016. I am one of the Chairs of the History of Petroleum Geology technical session and also leader of a one-day convention field trip to Turner Valley.

I am the History and Archives Chair of the Canadian Society of Petroleum Geologists. As well, I am the Chair of the C.S.P.G. 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.

I am a member of the History of Petroleum Geology Division of the A.A.P.G. whose meeting I attended in Denver in June 2015, at which, amongst other things, plans for the 100th Anniversary of the A.A.P.G. in 2017 were discussed.

I am also a member of the History and Philosophy of Geology Division of the Geological Society of America.

Darren H. Tanke, INHIGEO editor, Canada)

CHILE

The Chilean activity in subjects related to INHIGEO, were mainly the organization of the VI Simposio Chileno de Historia de la Geología (VI Chilean Symposium on History of Geology), which took place at La Serena/Coquimbo, October 5 to 9 2015, during the XIV Chilean Geological Congress.

The Symposium had 40 to 50 attendees during the day in which 11 talks were delivered. Interestingly enough, 40 years after of the military coup in Chile, for the first time events relating to the violation of human rights of geologists by governmental actions, were presented by E. Polanco and Charrier & Hervé. The development of Chilean geoscience institutions were presented by Jorge Muñoz, in respect to the present Servicio Nacional de Geología y Minería, formerly Institute of Geological Research, and by E. Polanco on the Sociedad Quimica y Minera de Chile SOQUIMICH, which exploits nitrates and lithium. Victor Ramos dealt with the development of the geological sciences during the 150 years of Universidad de Buenos Aires, Argentina. Carolina Silva explained the geological views of

Mary Graham, an English lady living in Chile contemporarily with Charles Darwin, about seisms and modifications of the landscape by the same 1835 earthquake which Darwin experienced. J.C. Marquardt recalled the history of the big porphyry copper deposits in Chile during the period 1960 to 1990, and I. Barton considered 100 years of the theory of stratabound deposits in Chile and Central Africa. Dr Marcos Zentilli, Dalhousie University, presented a wonderful talk about an expedition to the Taitao Peninsula, in southern Chile in 1962, and showed slides of situations arising during the field trip, that are inconceivable nowadays. Local farmers built wooden boats for the expedition to continue down the Baker River, a hydroplane came to pick up one member of the expedition that needed suddenly to travel to USA, and brought him back after some days, etc. Ian Dalziel, University of Texas, and Richard Dott presented a detailed history of the development of the concept of the Rocas Verdes Basin, located in southernmost South America, which was developed by themselves and students in the early seventies, and has been strengthened by new information during more than 40 years.

The abstracts of this Symposium can be found at the web page of Colegio de Geólogos de Chile, www.congresogeologicochileno.cl

Forthcoming Meetings:
The History of Geology Group of the Sociedad Geológica de Chile (www.sociedadgeologica.cl) is calling for expression of interest in the VII Symposium on the History of Geology in Chile, to be held in October 2016 (date and venue to be announced very soon, and published on the above web page).

The IV Congresso Argentino de Historia de la Geologia, la Geologia en el Bicentenario, will be held in La Plata, Argentina, 15 – 16 September, 2016.
Reynaldo Charrier, Francisco Hervé, Santiago de Chile

CHINA

Study of the history of geological science in China, in 2015.
In 2015 the study of geological science in China can be summed up as follows:

1) Organization and holding the 40th INHIGEO symposium.

With the active participation of the China University of Geosciences, the Geological Society of China and INHIGEO, the 40th INHIGEO symposium was held at China University of Geosciences in Beijing, from 24 to 27 June, 2015. Some 120 participants from Australia, Russia, Germany, Italy, Austria, Poland, Armenia, Japan, Mexico, Brazil, Nigeria and China attended the symposium. 82 papers were received and 59 of the participants gave oral presentation at the symposium.

The holding of the symposium provided insights into the history and the present situation in the study of the history of geological science in China, and greatly advanced the international academic exchange on the study of the history of geological sciences.

2) The edititing and publishing of 'Papers on the History of Geology', 6.

The study of the history of geological science in China is mainly conducted by the Committee on the History of Geology and its scholarly circle. Traditionally there is one meeting every year, for the academic exchange of research results, which can be published separately by the authors. Beside this, The Committee on the History of Geology will occasionally publish a collection of 'Papers on the History of Geology'.

In association with the holding of the 40th INHIGEO Symposium, The Committee of the History of Geology has edited and published by the Geological Publishing House in

Beijing, 'Papers on the History of Geology', 6, which includes 57 papers reflecting on the history and present status of the study of the history of geological sciences in China, on the following topics: the history of geological enterprise, the history of geological disciplines, the history of geological personages and the history of geological education.

3) Organised a team for the study of 'the evolution of the history of geological science in China'. Since 2010, and following the compilation of 'The History of Geological Disciplines in China', in 2013, The Committee of the History of Geology in China has facilitated the study of 'the evolution of the history of geological science in China.

The program is aimed at the collection of ideas, and the analyzing and summarizing of the history of geological science from its birth, together with its social effects. This program is planned to be completed in 2017.

Besides the above mentioned, the papers and works on the history of geological sciences, written by Chinese authors in the last 2 years, are listed below.

Cai K. *et al*. 2014. The initiation of research on the history of geological disciplines in China. *Papers on the History of Geology*, 6.

Cai K. *et al*. 2014. The study of the history of geological personages and the boundaries that should be kept. *Papers on the History of Geology*, 6.

Cai K., Ge W. and Lin S. 2014. The historic opportunity of geological education in China. *Papers on the History of Geology*, 6.

Chen A. 2014. On tourism geology, the geological park as the benchmark in the history of development of the geosciences in China. *Papers on the History of Geology*, 6.

Chen B. *et al*. 2014. The history of regional geological surveys in China and their economical, social and cultural effects. *Papers on the History of Geology*, 6.

Chen B. 2015. *Popular history of the Geosciences*. Shandong science and technology Press.

Chen J. 2014. Talking about a library collection – on the compilation of 'The documentation of the rare editions collected by the China Library of Geology'. *Papers on the History of Geology*, 6.

Chen M. 2014.The historical development and good traditions of the late Geological Survey of China, before 1949. *Papers on the History of Geology*, Vol.6,

Du H., Shi J. and An L. 2014. Professor Feng Jinglan and the Danxia geomorphology in China. *Papers on the History of Geology*, 6.

Du R., Niu S. and Sun A. 2014. The contribution of early Chinese geologists to the geological survey in Hebei, during the founding stage of Geology in China. *Papers on the History of Geology*, 6.

Hao Y. 2014. The interpretation of Dian Zi, Tu Jue yu and Bi Zhen Zi (Turquoise minerals) of the Yuan dynasty. *Papers on the History of Geology*, 6.

Hao Y. 2014. "Taking the pulse" for the world cultural heritage—a record on the protection from thunder damage of Jinding of Wudangshan Hubei. *Papers on the History of Geology*, 6.

Hao Y. 2014. The origin of the nomenclature of turquoise. *Papers on the History of Geology*, 6.

Hao Y. 2014. The five prose on the turquoise culture in Han dynasty. *Papers on the History of Geology*, 6.

Hou J. 2015. The history of the seismic station of the central exploration institute of geology. *Earthquake research in Sichuan*, 4, 41-45.

Hou J. 2014. The seismic survey of the Diexi Earthquake conducted by the late Academy of Science of Western China and its report. The survey report on the Sichuan Diexi Earthquake. *Papers on the History of Geology*, 6.

Hou J. 2014. The geological and mineralogical museums in the period before 1949. *Papers on the History of Geology*, 6.
Hu X. 2014. The inspection of groups of geologists in the early days of the establishment of new China. *Papers on the History of Geology*, 6.
Jiao Q. *et al*. 2014. The development and characteristics of the geological survey in China during the 1950s. *Papers on the History of Geology*, 6.
Jing C. *et al*. 2014. On the history of Quaternary Glaciation research in East China. *Papers on the History of Geology*, 6.
Jing C. 2014. Memories on the occasion of the 100th anniversary of the birth of Professor Chen Yuqi. *Papers on the History of Geology*, 6.
Li D. 2014. Professor Li Siguan's systematic view on science. *Papers on the History of Geology*, 6.
Li D. 2014. The examplar in respecting the teacher and revering his teachings—in memory of Professor Sun Dianqing on the 100th anniversary of his birthday. *Papers on the History of Geology*, 6.
Li H. 2014. The results of earthquake studies, compiled by the founder of geology in China , Weng Wenhao, and seven other academicians. *Papers on the History of Geology*, 6.
Lu H. and Qian P. 2014. The breakthrough results of the application of geophysical-geochemical prospecting methods in Beijing. *Papers on the History of Geology*, 6.
Lu H. and Qian P. 2014. A retrospective on the administrative affairs of the Geology and Mineral Resource Bureau, in Beijing. *Papers on the History of Geology*, 6.
Ma S. 2014. J. S. Lee and the Institute of Geology – a brief history of the Institute of Geology in the period of the Central Academy of Science China (1928-1950). *Papers on the History of Geology*, 6.
Ma S. 2014. The start of the exploitation of geothermal energy by Professor Li Siguan (J. S. Lee). *Papers on the History of Geology*, 6.
Ma S. 2014. J. S. Lee and the Revolution of 1911. *Papers on the History of Geology*, 6.
Niu S., Hao D. *et al*., 2014. A retrospective on development of the study of the Quaternary Nihewan Formation, in Northern China. *Papers on the History of Geology*, 6.
Niu S. 2014. The master manner, be tireless in teaching: as viewed by Professor Wang Hongzhen in the writing of the preface for 'The crustal evolution and the regulation of mineralization in Taihangshan Region'. *Papers on the History of Geology*, 6.
Ouyan H., Hou J. *et a*l., 2014. The historical facts of the move of the Central Geological Survey of China to Beibei
Pan Y. In memory of Academician Yin Zanxun on 110th anniversary of his birthday. *Papers on the History of Geology*, 6.
Pan Y. 2014. Fragrant recall, memory lives on—in memory of Academician Huang Jiqing on the 106th anniversary of his birthday. *Papers on the History of Geology*, 6.
Peng S. 2014. Professor Chen Guoda and the hypothesis on Geo-depression (Diwa). *Papers on the History of Geology*, 6.
Pu Q. 2014. A review on the 'All China Quaternary glaciology and Quaternary geology conference' held by GSA in 1978. *Papers on the History of Geology*, 6.
Pu Q. 2014. Regarding the history as a mirror, carry forward the cause and forge ahead into the future – a brief retrospective, at the 90th anniversary of GSA. *Papers on the History of Geology*, 6.
Pu Q. 2014. A preliminary study on the formation and development of the geotectonic schools in China. *Papers on the History of Geology*, 6.
Pu Q. 2014. Ye Liangfu: The celebrated scholar on the geomorphology of China. *Papers on the History of Geology*, 6.

Ren J. 2014. On Professor He Zuolin. *Papers on the History of Geology*, 6.
Sun C. 2015. Amadeus W. Grabau and the Peking Society of Natural History. *Studies in the History of Natural Sciences*, 34, 2, 182-200.
Sun C. 2015. The Vicissitudes of the Earth in the Light of Transgression and Regression and the Sial-crust Shifting: Amadeus W. Grabau's Pulsation and Polar Control Theories. *Studies in the History of Natural Sciences*. 344, 470-486.
Wang P. 2014. The new minerals found in China. *Papers on the History of Geology*, 6.
Wang Y. 2014. A brief on the mountain climbing athletics in China University of Geosciences. *Papers on the History of Geology*, 6.
Wang Y., You H., Chen X., Xu J., Zhang S., Pan Y., and Mu X. 2015. *History of Palaeontology in China*. Beijing, Chinese Scientific and Technological Press,1-328.
Wei L. and Zhou S. 2014. Mr.Sun Daguan and the initiation of the reform and opening of the geological cause during the new period of China. *Papers on the History of Geology*, 6.
Wu Z. 2014. A retrospective on the last hundred-year history of the geology of Anhui province. *Papers on the History of Geology*, 6.
Wu F. 2014. My sentimental bond with the Committee of geological science in China. *Papers on the History of Geology*, 6.
Wu F. 2014. In memory of the 10 geologists who died in the past hundred years for the cause of the development of Geology in China. *Papers on the History of Geology*, 6.
Xu D. 2014. The eta(η)type structural system proposed by late academician Li Siguan in related with the 2011 super-large earthquake in Japan. *Papers on the History of Geology*, 6.
Xu D., 2014. Wang Mingtai, GaoJianguo, Wang Weilin: The distinguished contribution made by Academician Weng Wenbo to the prediction of natural disasters. *Papers on the History of Geology*, 6.
Xuan Z. 2014. Revelations on the secret of the discovery of Qarhan- Lop Nor Salt ore in China. *Papers on the History of Geology*, 6.
Yang G. and Wang H. 2014. A re-understanding of the major academic achievements and the meticulous scholarship of Professor Wang Hongzhen. *Papers on the History of Geology*, 6.
You Z.: 2014. A retrospective on the development of metamorphic petrology in the past 60 years. *Papers on the History of Geology*, 6.
You Z. 2014. The new advancement in metamorphic petrology in China. *Papers on the History of Geology*, 6.
Yu G. 2014. 30 years of the study of the History of Geological Science in China. *Papers on the History of Geology*, 6.
Yu G. 2014. Professor Wang Hongzhen and the study of History of the Geological Sciences in China. *Papers on the History of Geology*, 6.
Yu J. 2014. The opportunity, challenge and development of geological education in China. *Papers on the History of Geology*, 6.
Zhang J. 2014. The Compilation of the Chronology of Chinese Seismic Data and its International Repercussions. In Jin R. (ed.) *The Internationalization of Chinese Historical Geography*. Chinese Social Science Press.
Zhang J. 2014. The current situation and trend of research on the history of geology in the world. *Papers on the History of Geology*, 6.
Zhang J. 2014. The Exploring and Research by Chinese Scholars of the Geology of Xinjiang,

during the First Half of twentieth Century. In: Rong, X. and Zhu Y. (eds.) *Proceedings of the International Symposium on Huang Wenbi and Sino-Sweden Scientific Exploration Group in West China*, Science Press.
Zhang J. 2015. Contemporary Interpretations of Events in Science: Several Case Studies of he History of Chinese Geology. *Studies in the History of Natural Sciences*, 34, 1.
Zhang J. 2015, The awkward position of the Soviet scientists in China during the period of the 'Great leap'. *China Science Daily*, Feb.2, 6.
Zhao L. *et al*. 2014. Looking back 60 years of geochemical exploration in China. *Papers on the History of Geology*, 6.
Zhou B. 2014. The history of excavation of potassium salt in China *Papers on the History of Geology*, 6.
Zhou S. and Wei L. 2014. The He Changgong Spirit during his leadership in the geological cause in China. *Papers on the History of Geology*, 6.
Zhou Y. 2014. The formation of the tradition on field work practice in the geological education of China. *Papers on the History of Geology*, 6.
Zhu X. 2014. Wu Chonjun—the woman sedimentologist. *Papers on the History of Geology*, 6.

Chen Baoguo, Beijing, China, e-mail: chenbaoguo1954@126.com)

COSTA RICA

Gerardo J. Soto – participated in the *Jornadas de investigación "Raíces de Limón"* [Research working days "Limón Roots"] (October 27-30), on the knowledge of the Caribbean side of Costa Rica, held in San José, where he was invited to present a paper entitled "*Las más profundas raíces de Limón: su geología y cómo se llegó a conocer*" (The deepest roots of Limón: Its geology and how it became known). The theme of the development of the geological knowledge about the Caribbean region of the country was widely treated.

Soto was also invited to participate in the *12th Geological Congress of Central America* in Managua, Nicaragua (November 17-19), where he was a key lecturer in the inauguration, delivering a speech related to the 50th anniversary of geological congresses in the region, and their history. The main topic of the congress was "the celebration of half a century of such kind of congresses in Central America".

Publications:

Alvarado, G.E. 2015ª. A un siglo de la deriva cotinental de Alfred Lothar Wegener. *Geo-Network of Latinaamerican-German Alumni (GOAL), Newsletter March 2015* (digital, Spanish).
Alvarado, G.E. 2015b. A un siglo de la deriva continental y su transformación en la tectónica de placas. El desarrollo de una revolución científica. *Crisol, Suplemento Ciencia y Tecnología*, Nº 288, March 2015 (in Spanish).
Alvarado, G.E. 2015c. Continentes inquietos (Alfred Wegener, genio de la deriva continental). *La Nación*, April 5, 2015, *Áncora*, p. 7, San José,http://www.nacion.com/ocio/artes/Cien-anos-teoria-deriva-continental_0_1479652045.html (in Spanish)
Alvarado, G.E. 2015d. A un siglo de la deriva continental de Alfred Lothar Wegener y su derivar en la tectónica de placas. *Geonoticias* 12 (38): 22-24, 26-27; Santo Domingo, Dominican Republic (in Spanish).

Soto, G.J. 2015. Medio siglo de congresos geológicos en América Central y su incidencia en el desarrollo de la geología centroamericana, *XII Congreso Geológico de América Central, Managua, Nicaragua, 17-19 de noviembre del 2015, Resúmenes*: 145 [http://congresogeologico2015.ineter.gob.ni/index.html].
Soto, G.J. 2015. Los Plinios, la Campania romana y las erupciones plinianas, *Revista Humanidades*, 5 (2): 1-58.
Vargas, A. & Kussmaul, S. 2015. Consideraciones sobre el primer libro de fuentes termales en Costa Rica, *Revista Geológica de América Central*, 53, 47-59.

Gerardo J. Soto, San José, Costa Rica

CZECH REPUBLIC

In 2015 the members of Czech INHIGEO group in Prague concentrated their efforts on the process of publishing the manuscript of an atlas with Springer Publishing House (J. Kozák, A. Čejchanová, Z. Kukal and K. Pošmourný: *Early Geological Maps of Europe. Central Europe 1750 to 1840).*

The Springer editorial office announced the publication of the above mentioned manuscript in 2015; however the launch of the book was several times postponed, due to several technical difficulties. Now all of these difficulties seem to have been overcome and the Atlas was scheduled to appear in April or in May of 2016.

Jan Kozák –

Publications:

B. Guterch and J, Kozák 2015. *Historical Earthquakes in Southern Poland*, 179 p., Springer Verlag, ISBN 978-3-319-15445-9.

The southern part of Poland (Silesia) is one of the Polish territories that often experiences weak to medium-strength earthquakes. In the above monograph this territory is subjected to a detailed seismological and seismic study. It is demonstrated that in the pre-instrumental period – besides the verbal reports on microseismic damage prepared by local inhabitants – also the microseismic maps that have been plotted, based on verbal reports, may help to specify or correct the earthquake determinations based on later studies and, in some cases, can help to revise their catalogue classification (all the 18 macroseismic maps of the 19th century reproduced and utilized in the monograph are deposited in the private collection "NKC" (New Kozak Collection) in Prague.

At the world Congress of the IUGG in Prague in June/July 2015 Jan Kozák presented in the association IASPEI a paper entitled, Macroseismic intensity data detectable in historical pictorial and cartographic materials. He also presented two posters:

J. Kozák and V. Čermák: *Series of pre-photo images of strong historical earthquakes and volcanic eruptions.*

Approximately four dozens blown-up images with comments, from the private collection NKC, Prague, were exhibited in the entrance Congress hall on 6 large tables.

J. Kozák and P. Jedlička: New sensor for monitoring seismic rotational ground displacements of the bedrock during seismic wave propagation. *IUGG-2168*

Kozák, J. and R. Kontowiczová 2015. Účelová kartografie - První makroseismické mapy (in Czech) (Purpose cartography - First macroseismic maps. In: Švejda, P. (ed.) *Proc. History of Geodesy and Cartographia,* National Technical Museum.

One of the aims of constructing and utilizing macroseismic maps in the pre-instrumental period was to obtain new information on the experienced earthquake by means of the evaluation of verbal macroseismic reports provided by the inhabitants of the affected territory. Therefore the macroseismic intensity maps are utilized at present to supplement the data obtained by means of modern methods.

Alena Čejchanová -

Čejchanová, A. and Kondová, L. 2015. Research on a set of field maps, scale 1:28 800 from the second half of the 19th century. A reconstruction of the geological structure of the area of Bohemia, Moravia and Silesia. *Slovenské banské múzeum:Banská Štiavnica,* 214-220. ISBN: 978-80-89304-17-2

Karel Pošmourný -

Cernajsek, T. and Pošmourný, K. 2015. Work and Life of Johann Jokély (1826-1862), an Alumnus of the Banska Stiavnica Mining Academy. *Slovenské banské múzeum Banská Štiavnica,* 229-236. ISBN: 978-80-89304-17-2

Both of the above articles are based on presentations to the 13. 'Erbe' - Symposium on Cultural Heritage in the Geosciences, Mining and Metallurgy. Libraries, Archives and Museums and form part of the book of proceedings of an international symposium held in Banská Štiavnica, in 2015.

The first article includes the results of the processing of a set of digitized manuscript geological maps from the second half of the 19th century, which were based on topography copied from the Second Military Mapping Survey of the Austrian Empire, on a scale of 1:28 800. The main aim of the project was to merge individual scans into one integral geological map layer, with new information added. It was created using the method of georeferencing of the Geographic information system (GIS).

The second article provides information on the former bilateral cooperation of the Geological Institute, in Vienna, and Czech Geological Survey, in Prague. It gives the results of the study of one of the most efficient and knowledgeable geologists of the Imperial Geological Institute in Vienna, Johann Jokély (1826-1862). The authors of the article analysed the life and work and the untimely death of this geologist, which merits admiration, even in the modern times.

FRANCE

The French Committee on the History of Geology (Cofrhigéo) has met three times in 2015. The following talks were given:

C. Moreau, L'étude géologique des Charentes au XIXe siècle : du terrain aux cartes Géologiques.

Coutelle, Peut-on appliquer les concepts de la tectonique des plaques aux chaines de la Méditerranée occidentale?

J.-P. Suc, Quarante-cinq ans de débats autour des évaporites messiniennes de Méditerranée.

R. Médioni, Georges Lecointre (1888-1972): entre Touraine et Maroc, les itinéraires d'un

géologue.
H. Guérin, Le Mont Aimé à la limite Crétacé-Tertiaire dans le Bassin parisien.
J. Gaudant, L'éphémère théorie des 'cratères de soulèvement'.
Ph. Grandchamp, Sur la tectonique de la Savoie.

The 28th volume of the *Travaux du Cofrhigéo* (ISSN 1156-2919) has been edited and includes the following contributions:
F. Dreyer, La controverse sur la limite Crétacé-Tertiaire au Danemark (1825-1835).
J. Mascle, 1975-1995, vingt ans de recherches sur les marges continentales '*transformantes*'.
T. G. Nijland & J. Touret, Un naturaliste aux multiples facettes: Jean Lavalle (1820-1880) et la notion de pression de cristallisation.
A.Poisson. Les voyages d'Ernest Chaput (1882-1943) en Turquie centrale: de Kayseri à Sivas, Malatya et vers la frontière syrienne.
J.-P. Valet, L'essor et l'apport du paléomagnétisme.
J. Mergoil & J. Mergoil-Daniel, Regards croisés sur le puy de Dôme au milieu du XVIIIe siècle: Garmage, Guettard et les autres…
J. Gaudant, Ami Boué (1794-1881), fondateur de la Société géologique de France?
G. Godard, Le *Discours sur les coquilles de mer qu'on trouve en terre ferme, particulièrement en Champagne*, adressé par le jésuite Jacques Vignier à Peiresc en 1635: entre Déluge et «'*inondation'* de la mer.
F. Amedro, L'historique du tunnel sous la Manche: une brève revue des contributions les plus marquantes.

Jean Gaudant has edited a new volume of a book series devoted to the history of the geological survey of the main regions of France: L. David & N. Mongereau, L'exploration géologique du Fossé rhodanien. Paris, Mines ParisTech, 373 p.

Jean Gaudant, the secretary and treasurer of our committee, sadly passed away in 2015. This has much disrupted the activities of Cofrhigéo, which shall, however, continue.
G. Godard, Paris, France (see obituary pp. 30-31)

Gaston Godard, Paris, France

GERMANY

A number of German participants attended the 13th 'Erbe'-Symposium in Banská Štiavnica, Slovakia, from 15–20 June 2015. A volume with abstracts was published by colleagues from Slovakia:

13th International Symposium/ 13. 'Erbe'- Cultural Heritage in Geosciences, Mining and Metallurgy. Libraries - Archives - Museums. 15th-20th June 2015 Banská Štiavnica, Slovakia. Abstracts, Banská Štiavnica (2015). The proceedings volume is in preparation. The following talks were presented by German participants:

HAMMER, P. 2015. Zug der Bergleute und die im Jahre 1719 in Dresden/Freital geprägten Medaillen. (The Mining Parade and the minted Jetons (medals) of 1719 in Dresden/Freital). – Abstracts volume p. 131.
KUGLER, J. 2015. Sammlungen historischer Fotographien zum Freiberger Montanwesen. (Collections of the historical photos concerning to the Freiberg mining). - Abstracts volume pp. 121-125.
KUGLER-KIESSLING, A. 2015. Vergessene Kostbarkeiten - die Fotosammlung der

Universitätsbibliothek der Bergakademie Freiberg. (Forgetten treasures – the collection of photos of the University Library). - Abstracts volume pp. 86-88.

KUGLER-KIESSLING, A.; MEISSNER, G. 2015. Frauen im Bergbau in der Sowjetischen Besatzungszone (SBZ)/DDR - Archivrecherchen. (Archival summary about women in the mining of the German Democratic Republic). - Abstracts volume p. 101.

SCHOLZ, V. 2015. Das Auffinden mittelalterlichen Bergbaus des 12. und 13. Jahrhunderts bei der Sanierung von Bergschäden in Dippoldiswalde/Sachsen. (Disclosure of the medieval mining of the 12th and 13th century within the remedy of the mining damages in Dippoldiswalde/Saxony). - Abstracts volume p. 15.

THALHEIM, K. 2015. Die mineralogische Sammlung des Museums für Mineralogie und Geologie in Dresden als Referenzsammlung für Schmuck- und Edelsteine in Kunstobjekten. (The mineral collection of the Museum of Mineralogy and Geology in Dresden as reference collection for semi-precious stones and gemstones in art objects). - Abstracts volume p. 19-21.

The symposium with lectures, field trips and social events was well organized by Jozef Labuda and his colleagues from the Slovenské Banské Múzeum in Banská Štiavnica.

The 14th "Erbe"-Symposium will be held in Ravnena Koroškem, Slovenia from 4th to 9th June 2018.

Martina Kölbl-Ebert -

Publications:

Kölbl-Ebert, M. 2015. *From Local Patriotism to a Planetary Perspective. Impact Crater Research in Germany, 1930s–1970s*. Ashgate Publishing Ltd. xxii + 380 pp.

Kölbl-Ebert, M. 2015. Steine fallen nicht vom Himmel – oder doch? Chladni und die Anfänge der Meteoritenkunde. *Nachrichtenblatt Freundeskreis der Geologischen Staatssammlung München e. V.*, 16, 31–37.

Lectures:

Sponsored by the EU adult education programme *Grundtvig*, Martina Kölbl-Ebert presented a lecture series on the history of palaeontology within the Geovillages-project's winter academy at the Bishop's Seminary in Eichstätt. The lectures in winter 2014/15 were about "Ladies with Hammers: Women in the History of Geology".

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

Martina Kölbl-Ebert attended the INHIGEO meeting in Beijing with a talk on "Reinhold Seemann – a gentle uniformitarian in a catastrophists' world".

A new volume (26) in two issues of the journal *Geohistorische Blätter* has been edited by Ulrich Wutzke (Berlin).

Cornelia Lüdecke – organized the following conferences:

20-23 May 2015: 9th SCAR History Expert Group and Social Sciences Action Group Workshop, Colorado State University, Fort Collins, USA.

6 February 2015 (150th anniversary of the German geographer and polar researcher Erich von Drygalski): Polare Welten. Zum 150. Geburtstag von Erich von Drygalski, Bayerische Akademie der Wissenschaften, München.

And presented the following talks:

Georg von Neumayer – Direktor der Deutschen Seewarte und Wissenschaftsorganisator Vortragsreihe „Eine Hansestadt und ihre Kulturen“, University of Hamburg (12 January 2015).

Gletscher in Bewegung - Erich von Drygalskis Grönlandexpeditionen 1891, 1892-1893. // Erich von Drygalskis Expedition zum Kontinent des eisigen Südens (1901-1903). Both at the conference: „Polare Welten. Zum 150. Geburtstag von Erich von Drygalski“, Bayerische Akademie der Wissenschaften, Munich (6 February 2015).

Expeditionsgeschichte(n) der Arktis. Grönlandveranstaltung der Herrligkofferstiftung, Rottach-Egern (7 March 2015).

Der Beitrag der Schlagintweits zur Meteorologie. Symposium: “Die Expedition der Brüder Schlagintweit im Spiegel der aktuellen Forschung. Bayerische Akademie der Wissenschaften, Munich (23 April 2015).

Magnetism as trigger of German Antarctic research. 9th SCAR History Expert Group and Social Sciences Action Group Workshop, Colorado State University, Fort Collins, USA (21 May 2015).

Aussichten: heiter bis wolkig. Eine Wissenschaftsgeschichte der Wolken seit 1800. Wissenschaftszentrum Umwelt, Universität Augsburg, Vortragsreihe „Das Wetter. Eine Kulturgeschichte“ (15 June 2015).

München als Ausgangspunkt für die deutsche Antarktisforschung. Keynote, 26. Internationale Polartagung, München (7 September 2015).

„Das oberste Prinzip der grönländischen Natur ist das Eis“. Über Erich von Drygalskis Grönlandexpeditionen in den Jahren 1891 und 1892-1893. Geographische Gesellschaft München (12 November 2015).

Publications:

Lüdecke, C. (ed.), 2015. *Verborgene Eiswelten. Erich von Drygalskis Bericht über seine Grönlandexpeditionen 1891, 1892-1983*. August Dreesbach Verlag, München, 480 S.

Lüdecke, C., 2015. *Deutsche in der Antarktis. Expeditionen und Forschungen. Vom Kaiserreich bis heute*. Ch. Links Verlag, Berlin, 221 S.

Lüdecke, C., 2015. Pinguinragout und Robbensteak – Leben und Überleben während der heroischen Ära der Antarktisforschung (1897-1916). in: Becker, Karin; Moriniaux, Vincent et Martine Tabeaud (eds), *L'alimentation et le temps qu'il fait*. [Essen und Wetter – Food and Weather]. Collection Météos, Edition Hermann, Paris, 169-185.

Lüdecke, C., 2015. „Indian heat and storm to the south, and the deserts of Central Asia to the north“. Die meteorologischen Untersuchungen der Schlagintweits im Himalaya (1854-1857). In: Brescius, von M., F. Kaiser und S. Kleidt (eds), *Über den Himalaya. Die Expedition der Brüder Schlagintweit nach Indien und Zentralasien 1854 bis 1858*. Böhlau, Köln, Weimar Wien, 209-218.

Lüdecke, C., 2015. Für Humboldt ins Hochgebirge. Der schulische und universitäre Hintergrund der Brüder Schlagintweit. In: Brescius, von M., F. Kaiser und S. Kleidt (eds), *Über den Himalaya. Die Expedition der Brüder Schlagintweit nach Indien und Zentralasien 1854 bis 1858*. Böhlau, Köln, Weimar Wien, 273-186.

Lectures:

Cornelia Lüdecke presented the following courses at the University of Hamburg:

Winter Semester 2014/15: Ideen und Forschungsprogramme - Beispiele aus der Entwicklung der Geowissenschaften.

Summer Semester 2015: Forscher oder Abenteurer - Bedeutende Personen und ihre Leistungen im Rahmen der Geowissenschaften.

Winter Semester 2015/16: Einführung in die Geschichte der Polarforschung.

Martina Kölbl-Ebert, Eichstätt (Germany)

GREECE

We are happy to communicate with you all. We would like to inform you that the new website of the 'Commission of Science and Literature' has been launched at the following link: http://coscilit.eap.gr . Please visit it and send us any ideas and suggestions to improve it. The members' list will be updated shortly. In a few cases members may not yet see their name on this list.

The big event organised by Commission in 2016, is the 2nd International Conference on Science and Literature, to be held in Poellau, Austria, 7-9 September, hosted kindly by Dr. Peter Schuster, President of the Echophysics and History of Physics Group/ European Physical Society.

Registration and submission of abstracts is now open and all are invited to use the relevant platform http://coscilit.eap.gr/index.php/registration to register and submit proposals.

The Proceedings of the 1st Conference will have been published in time to be circulated at the 2nd Conference.

In case you are interest please note that just before our Conference another very important event will take place in the same venue, the 2nd Conference on History of Physics http://www.historyofphysics.org

In July 2016 a two days workshop on Science and Literature will be organized on Syros Island, Greece. The particular theme and the exact dates will be annnounced in early March.

George N. Vlahakis, Patras, Greece

HUNGARY

Activity of the History of Science Section of the Hungarian Geological Society.

Election of new Council
In 2015 a new council of the History of Science Section of the Hungarian Geological Society was elected for the period 2015 to 2018.
President: József Hála– jozsefhala@gmail.com
Secretary: Éva Zsadányi– eva.zsadanyi@mbfh.hu
Members of the Council: Tibor Kecskeméti, István Viczián, Teréz Póka, Péter Papp, György Vitális.
Alternate members: Béla Csath, Irma Dobos.

Presentations in sessions in 2015:
January 19.
Tóth, Á. – Legal action of István Velty against Ministry of Industry – a bauxite case in the 50's of the 20th century.

February 16.
Session devoted to the memory of Éva Saáry (1929-2014), geologist, artist and poet, with contributions by B. Csath, J. Tóth, J. Kubassek, K. Varga and T. Póka.

March 9.
Molnár, Zs. – The geology of salt-affected soils of the Hortobágy area – as reflected in the folklore.
Papp, G. and Weiszburg, T. – presentation of the book by Ignatz von Born, *1770:Úti levelek ásványtani témákról*. First translation into Hungarian, published in 2014, together with the original German text, *Briefe über mineralogische Gegenstände* (Letters on mineralogical subjects). (A review of the book appeared in the INHIGEO Annual Record No. 47, p. 102.)

April 24.
Bauxite meeting on Saint George's Day – historical accounts on the Hungarian bauxite mining.
Tóth, Á. – The memory of Elemér Vadász and György Bárdossy.
Kelemen, P. – Bauxite pebbles at Vörösberény and Tótvázsony (Balaton Highlands).
Kovacsics, Á. – Subjective causes of liquidation of bauxite mining.
Nyerges, L. – A selection of the practice of bauxite geophysics in Hungary.
Pataki, A. – Archive colour photographs on palaeokarst areas underlying bauxite in Hungary.
Vizy, B. – The golden age of Hungarian bauxite exploration.

May 18.
Vitális, Gy. – 150 years of the book by János Hunfalvy: *A Magyar Birodalom természeti viszonyainak leírása* (Description of natural conditions of the Hungarian Empire), vol. 2
Dobos, I. – Memorial plaques commemorating persons and results related to geosciences in the 2nd district of Budapest
Síkhegyi, F. – "Expeditio" of József Szabó to the Mátra Mts. in 1869.

June 8.
Magyari, G. – Albania – part 2
Bohn-Havas, M., Detre, Cs. – Memory of Department of Palaeontology in the Hungarian Institute of Geology.

June 11.
Celebration of the 80th birthday of Árpád Juhász, geologist and popular TV editor.

September 21.
Vitális, Gy. – The memory of Benő Kőszegi Winkler, professor of geology in Selmecbánya on the 100th anniversary of his death.
Presentation of new book by József Hála: *Tudósok, kutatók, gyűjtők* (Scientists, researchers, collectors).
Zsadányi, É. – Report on the geological and historical excursion of the Hungarian Geological Society to Slovakia.

October 9.
Dudich, E. –The 125th anniversary of birth of Mária Dudich-Vendl, the scientist lady of precious stones and meteorites.

October 19.
Csath, B. –Conditions encouraging the writing of the book "Bányatan" (Science of Mining) by Vilmos Zsigmondy (1865).

Brezsnyánszky, K. – 200 years of the geological map of William Smith.

November 16.
A walk visiting the graves of famous geologists in Farkasrét cemetery, Budapest.

December 7.
Memorial session on the occasion of the 100th anniversary of the birth of Gábor Csíky, with contributions by Zsadányi, É., Dobos, I. and Papp, P.
Póka, T. – Remembrance of a Christmas greeting by the late Éva Saáry.
Hála, J. – Love and mineralogy – minerals in amorous poetry and the folklore of love.

Publications:

Brezsnyánszky, K. 2014. Preliminary geological exploration the works of the Royal Hungarian Geological Institute in the Balkan. *Hungarian Technical Scientific Society of Transylvania, 7th Meeting on History of Science and Technology*. Szilágysomlyó (Şomleu Silvaniei, Romania), 2014, 54 – 55. (in Hungarian)

Brezsnyánszky, K. 2014. In memoriam, Dr. Cserna Zoltán/Dr. Zoltan de Cserna de Gömbös. Földtani Közlöny, 144. 3. 205 – 210. Budapest. (in Hungarian) – Prof. de Cserna (1928-2014) was born in Budapest, Hungary, later he became a professor of geology in Mexico City, Mexico.

Brezsnyánszky, K. 2014. Preliminary geological exploration works of the Royal Hungarian Geological Institute in the Balkan, 1916 – 1918. – Honismeret 42. 6. 66-68. Budapest. (in Hungarian)

Brezsnyánszky, K. 2015. William Smith's 1815 Geological Map. – *Földtani Közlöny* 145. 4. 411. Budapest. (in Hungarian) – Review of the new, digital edition.

Dobos, I. 2015 – The course of life of the mineralogist Béla Mauritz and his relations to Hódmezővásárhely. *Annals of the Szeremlei Society of Hódmezővásárhely*, 27-38. (in Hungarian)

Dobos, I. 2015. The first thermal water well in Hódmezővásárhely. *Annals of the Szeremlei Society of Hódmezővásárhely*, 163-172. (in Hungarian)

Dobos, I. 2015. Fifty years old memories from Cuba.*Vásárhelyi Látóhatár* (Horizon of Vásárhely). 6/21-22,/1-2. 21-28, Hódmezővásárhely. (in Hungarian)

Dobos, I. and Scheuer, Gy. 2015. Analysis of macro- and micro-elements in carbonated springs and wells at Parádsasvár and in the vicinity of Parád. *Hidrológiai Közlöny* (Journal of the Hungarian Hydrological Society), 95, 1, 53-62, Budapest. (in Hungarian)

Dobos, I. 2015. How did Révfülöp become a pleasure resort? *Hidrológiai Tájékoztató* (Hydrological Information), 34-36, Budapest. (in Hungarian)

Dobos, I. 2015. The first thermal water well in Hódmezővásárhely. *Hidrológiai Tájékoztató* (Hydrological Information), 42-46, Budapest. (in Hungarian)

Dobos, I. 2015. Discoverer and vendor of the Hunyadi János aperient water. Homage to András Saxlehner. *Természet Világa*, 12, 548-552, Budapest. (in Hungarian)

Evelpidou, N., Karkani, A., Kázmér, M., Pirazzoli, P.A. 2014. Late Holocene shorelines deduced from tidal notches on both sides of the Ionian Thrust (Greece): Fiscardo Peninsula (Cephalonia) and Ithaca Island. *Geologica* Acta,14, 13-24.

Kázmér M. 2015. *Sources to the history of geology in Hungary, 1153-1850*. Források a magyarországi geológia történetéhez. Hantken Press, Budapest, 221 p. [download] [reprint]

Papp, G. 2014. 'Gross-Divina on demand' – the making of a meteorite replica by 3D printing

(with a brief history of the meteorite fall and the specimen). *Annales historico-naturales Musei nationalis Hungarici*, 106, 53–70, Budapest. (in Hungarian)

Papp, G. 2015. Der mineralogische Gesinnungswechsel von Matthias Sennowitz: Eine Episode der Vulkanist–Neptunist Kontroverse. In: Gurka, D. (ed.): *Deutsche und ungarische Mineralogen in Jena. Wissenstransfer an der Wende des 18–19. Jahrhunderts im Rahmen der ‚Societät für die gesammte Mineralogie zu Jena'*. Gondolat, Budapest, pp. 147–159. (in German)

Papp, P. 2015. Some words and pictures for the centennary of Csíky, Gábor (1915 Kiskapus 2001 Budapest). Marosi Pál – *Ferenczi István Memorial Conference of the Hungarian Society of Science and Technology in Transylvania, Cluj-Napoca* (Kolozsvár), December 12, 2015. (in Hungarian)

Viczián, I. 2015. Letters to Domokos Teleki, written by Freiherr zu Racknitz, a mineral collector in Dresden. *17th Geologist's Meeting of Székely Land, Székelykeresztúr* (Cristuru Secuiesc). (in Hungarian)

Viczián, I. 2015. Theology of nature in the book of Heinrich Sander und Sámuel Nagy (1794). *Sola Scriptura*, 17, 3, 20-31, Budapest. (in Hungarian)

Viczián, I. And Deé Nagy, A. 2015. Domokos Teleki, der erste Präsident der ‚Societät für die gesammte Mineralogie zu Jena'. – In: Gurka, D. (ed.): *Deutsche und ungarische Mineralogen in Jena. Wissenstransfer an der Wende des 18–19. Jahrhunderts im Rahmen der ‚Societät für die gesammte Mineralogie zu Jena'*. Gondolat, Budapest, pp. 31-48. (in German)

Viczián, I. 2015. ‚Mineral theologia' – das Verhältnis der Glaube und Naturwissenschaft in den Schriften der ungarischen Mitglieder der ‚Jenaer Mineralogischen Gesellschaft'. – In: Gurka, D. (ed.): *Deutsche und ungarische Mineralogen in Jena. Wissenstransfer an der Wende des 18–19. Jahrhunderts im Rahmen der ‚Societät für die gesammte Mineralogie zu Jena'*. Gondolat, Budapest, pp. 77–97. (in German)

Vitális, Gy. 2014. Archive photographs on the metasomatic dolomitisation in Triassic limestone of Mt. Nagyszál at Vác, N. Hungary. *Bányászattörténeti Közlemények* (Contributions to Mining History), 18, 9/2, 86-88, Rudabánya. (in Hungarian)

Vitális, Gy. 2014. My memories of Professor István Miháltz. Talk given at the memorial meeting honouring István Miháltz, Szeged, September 28, 3 p. (in Hungarian)

Vitális, Gy. 2015. Relations of my grandfather, István Vitális to Szarvas. *Szarvasi Krónika* 29, 96-104. (in Hungarian)

Vitális, Gy. 2015. Description of mining conditions in the Hungarian provinces in the 3rd volume of the book by János Hunfalvy: *A Magyar birodalom természeti viszonyainak leírása* (Description of the natural conditions of the Hungarian Empire, 1865). *Bányászattörténeti Közlemények* (Contributions to Mining History), 19, 10/1, 58-67, Rudabánya. (in Hungarian)

Vitális, Gy. 2015. Description of hydrologic conditions of the Hungarian provinces in the 3rd volume of the book by János Hunfalvy: *A Magyar birodalom természeti viszonyainak leírása* (Description of the natural conditions of the Hungarian Empire, 1865), published 150 years ago. *Hidrológiai Tájékoztató* (Hydrological Information), 6-10, Budapest. (in Hungarian)

Vitális, Gy. 2015. On the supposedly lost geography book of Sámuel Chovan (1803). *Hidrológiai Tájékoztató* (Hydrological Information), 71-73, Budapest. (in Hungarian)

Vitális, Gy. 2015. To the memory of dr. Ödön Hittrich, teacher and director. *Evangélikus Élet* (Evangelic Life), August 9, p. 13, Budapest. (in Hungarian)

Vitális, Gy. 2015. To the memory of Benő Kőszegi Winkler, Professor of geology in Selmec,

born 180 years ago and deceased 100 years ago. *Bányászati és Kohászati Lapok – Bányászat* (Journal of Mining and Metallurgy – Mining), 148, 5, 33-34, Budapest. (in Hungarian)

Vitális, Gy. 2015. 100th anniversary of the book by Károly Papp: *A Magyar Birodalom vasérc- és kőszénkészlete* (Iron ore and coal resources of the Hungarian Empire, 1915). *Bányászattörténeti Közlemények* (Contributions to Mining History), 20, 10/2, 67-77, Rudabánya. (in Hungarian)

Éva Zsadányi and István Viczián, Budapest, Hungary

Gábor, Papp - Published a bilingual (Hungarian and English) paper in 2015, dated to 2014, on the occasion of the *first 3D printing of a meteorite replica* in Hungary, in which the history of the 'Gross Divina meteorite' fall and the collection and research history of the recovered specimen was reviewed.

The neptunist-to-vulcanist "conversion" of Matthias Sennowitz (1763–1823), a German-speaking Hungarian naturalist, was discussed in a paper published in a book devoted to the Hungarian aspects of the early years of the 'Societät für die gesammte Mineralogie zu Jena'.

Several popular presentations were given on the occasion of the publication of the first Hungarian translation of Ignaz von Born's Mineralogical letters from his travels in the historical Hungary ('Briefe über mineralogische Gegenstände, auf seiner Reise durch das Temeswarer Bannat, Siebenbürgen, Ober- und Nieder-Hungarn'), included in a recently published bilingual (Hungarian and German) volume. A small temporary exhibition, held during the Miskolc Mineral Show, 6–9 March, 2015, also commemorated this event.

ITALY

The activities of the Italian members included publications, participation at 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.

Libera P. Arena (University of Insubria, Varese) – worked within a research project between the Department of Theoretical and Applied Sciences of the University of Insubria and the Comunità Montana del Piambello (Varese, Italy) on the making of the new website of Monte San Giorgio, one of the most important fossil deposits in the world for the Middle Triassic and recognized as UNESCO World Heritage site between 2003 and 2010 (http://www.montesangiorgio.org/). Monte San Giorgio is located in the Prealps of northern Lombardy at the border with Switzerland and the research project concerns the detailed reconstruction of the history of the geological and paleontological fieldwork in the area, as well as the proposal of some new geo-historical routes.

Andrea Candela (University of Insubria, Varese) – carried on his researches on the history of uranium in the 20th century. From June to mid August 2015, he spent more than two months at the Niels Bohr Library & Archives of the American Institute of Physics (Maryland, College Park, USA), where he focused his studies on the relationship between the establishment of the U.S. Atomic Energy Commission and the rise of the American uranium industry, especially from the early Fifties to Seventies. He placed particular emphasis on the *Uranium Prospector's guides* and handbooks which, since the early fifties, the USAEC had published in order to foster uranium mining. Not only are these booklets interesting primary

sources that make more clear the cultural as well as social backdrop which involved the well-known 'uranium rush', but they are also meaningful samples of the popularization of the Earth Sciences. Indeed, along with some instructions on how to use a Geiger counter or stake claims on mining discoveries, they included easy explanations about radioactivity and physical processes of ore deposit formation. They, certainly, epitomized that 'entrepreneurial atom' which particularly distinguished the American nuclear culture. From August to the end of December 2015, he was in Canberra and then in Sydney (Australia) where he completed some preliminary researches on the international background of the uranium industry and nuclear energy in the second half of the 20th century. Carrying out his studies on Australia's 'uranium debate' between the sixties and early eighties, he was completely fascinated by the mostly unknown history of Synthetic Rock (SYNROC), which was patented by the Australian geochemist Alfred Edward 'Ted' Ringwood (1930–1993) in the late Seventies and was announced as the geochemical way to safe disposal of high level nuclear reactor wastes. Lastly, in April 2015, he presented the main outcomes of the education project *Geohazards' storytelling: between reality and representation* at the *European Geosciences Union General Assembly* (Wien, 12–17 April, Poster Session: *Geoethics for society: general aspects and case studies in geosciences*). The project was launched in cooperation with the *Istituto Nazionale di Geofisica e Vulcanologia* (*National Institute of Geophysics and Volcanology*, Rome), and aimed at establishing some communication strategies to provide proper information on geohazards. It also involved some primary and secondary schools in Lombardy (Italy).

Luca Ciancio (University of Verona) – continued his research on the 18th century history of geology and natural history, with particular attention to the figure of Pietro Mattioli, as well as on the relationship between natural sciences and antiquarian studies.

Pietro Corsi (University of Oxford) – continued his research on 19th century Italian geology, with particular attention for the history of geological institutions, geological archives and correspondences, as well as national projects, such as the Italian Geological Survey and the geological map of Italy. He has also been awarded of the 2015 Chair of Excellence at the Universidad Carlos III de Madrid (Spain), Department of Humanities, with a project on the European and Western dimension of the debates on evolutionary theories during the 19th century.

Francesco Gerali – On January 2015 Francesco was Mellon Visiting Fellow at the History of Science collections, University of Oklahoma, to complete research for editorial projects on the early oil explorations in Mexico.

From February to August 2015, Francesco worked at the School of Humanities of the University of Western Australia, Perth, in the capacity of Endeavour Research Fellow (Commonwealth Endeavour Program, Secretary of Education). Under the supervision of Professor Jenny Gregory, Director of the Centre for Western Australian History, Francesco developed the project "Preliminary study on the inception of the modern Australian oil industry." Francesco's research focused chiefly on the development of the modern oil industry in Australia, with special attention on oil explorations in Western Australia. The purpose was to process exhaustive an historical analysis on the most significant episodes that contributed to the shaping of the Australian oil industry between 1860s–1920s. The outcomes of the research have been presented in public lectures and are included in forthcoming publications. The project opened new avenues of research never explored by scholars so far, and gained interest from academy, industry and learned societies. After this experience,

Francesco was appointed Honorary Research Fellow and collaborates online with Jenny Gregory to outline new research addresses for the History of Energy in Australia.

On September 2015, Francesco joined the School of Library and Information Studies at the University of Oklahoma to work as researcher and content manager for the digital humanities project 'The Digital Latin Library', founded by the Mellon Foundation.

Conferences and Lectures:

May 1st, Australian Studies Seminar, Arts Building, University of Western Australia. *Without oil in the age of mechanization. Notes on the inception of the modern oil industry in Western Australia*;

May 27th, State Records Office Seminar at the Western Australia State Library. *Oil and archives. What sources reveal the history of the petroleum industry in Australia?*

2015 Annual Conference of the International Alliance of the Digital Humanities, Sydney, Australia, June 29 – July 3. Presented the project *The Western Australia mining heritage in the Encyclopedia of Australian Science* at the meeting of the Commission of Bibliography and Documentation;

July 30th, Energy History Seminar organized by the Centre for Western Australia History and the Energy and Minerals Institute, Webb lecture theatre, The University of Western Australia. *Harsh Oil: Efforts and feats of endurance to find petroleum in Western Australia in early 20th century*.

42th ICOHTEC Symposium, Tel Aviv (Israel), 16-20 August 2015. *Squeezing coal to fulfill the tank. The German scientific endeavor for synthetic fuel production during the Second World War*. In absentia, read by Ciro Paoletti.

Learned Societies and partnership

March 2015, Francesco was elected member of the Executive Committee of the International Committee on the History of Technology (ICOHTEC);

May 2015, Francesco joined the Australasian Association for Digital Humanities.

July 2015, Beginning of the collaboration with the eScholarship Research Centre of The University of Melbourne to provide historical materials on the Australian petroleum industry.

Awards

March 2015, Francesco was admitted to the 2016 Fellowship Program of the Chemical Heritage Foundation of Philadelphia;

August 2015, Francesco was awarded the 2016 Moran Award for History of Science Research by the Australian Academy of Science, Canberra.

Francesco Luzzini – Since January 2015, Francesco has been Edition Open Sources Postdoctoral Fellow at the University of Oklahoma Libraries. He is working towards a critical edition in the EOS platform http://www.edition-open-sources.org/ of Antonio Vallisneri's *Primi itineris per montes Specimen physico-medicum*, a 60-folios, unpublished Latin manuscript, containing a wide array of geological, biological, technical, and anthropological data.
(https://www.academia.edu/16894254/Maxima_parvo_tempore_molimur._A_critical_edition_of_Antonio_Vallisneri_s_manuscript_A_Physico-Medical_Example_of_a_First_Journey_Through_the_Mountains_1705_

During the first year of the fellowship, Francesco completed a transcription of the manuscript (including the author's marginalia, autograph alterations, and original notes) and

a critical apparatus with philological, historical, and scientific notes. He also started the editing process for the online publication of the document, which will be accomplished by means of a modified version of the professional LaTeX typesetting coding system. Currently, he is making an English translation of the manuscript, which will be completed by May 2016.

In compliance with the rules of the EOS Program, in July 2016 Francesco will move to the Max Planck Institute for the History of Science in Berlin (MPIWG), where he will spend the last six months of the fellowship as Visiting Scholar. The main goal of this exchange program is contributing to strengthen the relationship between the partner institutions (OU-MPIWG) and their respective fellows, by promoting reciprocal understanding and collaboration.

In October 2015, Francesco was awarded a one-year Senior Research Fellowship at the Department of Theoretical and Applied Sciences (DISTA) at the University of Insubria (Varese, Italy). The aims of this new research project (*Sharing sparks of truth. Towards a critical edition of Antonio Vallisneri's 'Primi Itineris Specimen'*) are closely connected with the goals of the EOS Postdoctoral Fellowship: the Edition Open Sources publication will be complemented with a printed, 'traditional' edition of the manuscript, which will be published for the National Edition of Antonio Vallisneri's Works (Olschki, Florence).

In 2015, Francesco continued his collaboration as Scientific Manager of the Electronic Inventory of Vallisneri's Correspondence http://www.vallisneri.it/inventario.shtml. As such, he became an affiliate to the ISCH COST Action IS1310 – *Reassembling the Republic of Letters, 1500-1800,* a digital framework for multi-lateral collaboration on Europe's Intellectial History (http://www.republicofletters.net/). He also continued his activity as Column Editor for *Acque Sotterranee*, an Italian Journal for groundwater research. http://www.acquesotterranee.it/en/rivista/acquesotterranee/about-journal

In January 2016, Francesco has been appointed Councilor (2016-2017) for *Earth Sciences History*, the Journal of the History of Earth Sciences Society. (http://www.historyearthscience.org/officers.html

Meetings, Lectures, and Seminars:
THAT Camp OU-OSU 2015 (Conference, University of Oklahoma, Bizzell Memorial Library, Norman, OK, USA, June 12-13).
Paper presented: Primi itineris Specimen physico-medicum. A critical edition.

Maxima parvo tempore molimur. A critical edition of Antonio Vallisneri's manuscript *A Physico-Medical Example of a First Journey Through the Mountains (1705)*. (Seminar, University of Oklahoma, Gaylord College of Journalism & Mass Communications, Norman, OK, USA, October 16).

2015 GSA Annual Meeting (Baltimore, MD, USA, November 1-4)
Paper presented: Description, analogy, symbolism, faith. Jesuit science and iconography in the early modern debate on the origin of springs (Session T98 – The Great Images in Geology I).
https://www.academia.edu/17841660/Description_analogy_symbolism_faith._Jesuit_science_and_iconography_in_the_early_modern_debate_on_the_origin_of_springs

Stefano Marabini (University of Bologna) – continued to study the history of geology and seismic activities in the Romagna region (central Italy), the history of the "vena del gesso" in the northern Apennines and to collaborate with the Museum Capellini in Bologna.

Claudia Principe (Istituto di Geoscienze e Georisorse – CNR, National Research Council Pisa) – continued her researches in the history of volcanology and geo-archaeology.

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 scientific communication in geology. In April he took part to a the "William Smith Meeting 2015: 200 years of Smith's map" at the Geological Society of London (UK) with a paper on *The 'practical' roots of stratigraphy and geological mapping in Italy during the early decades of the 19th century*. In July Vaccari attended the 40th INHIGEO Symposium in Beijing (China) where he presented a paper on *Mining, popular geology and images of the 'subterranean world' in the second half of the 19th century*. In November he attended the GSA Annual Meeting in Baltimore (USA) and gave a paper at the session T98 "The great images in geology" on the topic *Giovanni Arduino's 1758 cross-section revisited: a classic image for the origins of lithostratigraphy*. In Varese he also gave some popular lectures in history of geology, on the figure of Mary Anning in the history of paleontology and on the role of 'rumors' in the history of Earth sciences. He also continued to teach history of geological sciences within some of his courses of history of sciences at the University of Insubria in Varese and Como.

Gian Battista Vai (University of Bologna) – continued his research activity in history of geology and paleontology, as Director of the geological museum "Giovanni Capellini" in Bologna, organizing exhibitions and popular conferences also on the history of geology.

Publications:

Ciancio, L. 2015. Innovation through mobility: the scientific diaspora in a historical perspective. In: M. Bucchi, L. Ciancio, A. Dröscher (eds.) *L'esperimento della storia. Saggi in onore di Renato G. Mazzolini*, Trento, Fondazione Museo Storico, 125-135.

Ciancio, L. 2015. Pietro Andrea Mattioli's many gardens. In: B. Aikema and J. Ferdinand (eds.) *From Art to Science*, Treviso, Zel Edizioni, 34-45.

Ciancio, L. 2015. *"*Per questa via s'ascende a magior seggio". Pietro Andrea Mattioli e le scienze mediche e naturali alla corte di Bernardo Cles, *Studi Trentini di scienze storiche. Storia*, 94, 1, 159-184.

Ciancio, L. 2015. Il "Tempio di Serapide" a Pozzuoli: la storia delle interpretazioni e il suo uso pubblico nella didattica e nella divulgazione. In: Ghiara, Maria Rosaria (ed.) *Lo stupore e la meraviglia. Un secolo di scienze della natura nel Mezzogiorno,* Roma, CNR edizioni, 43-52.

Corsi, P. 2014. Five questions on Thomas Kuhn. *Galilaeana. Studies in Renaissance and Early Modern Science*, 11, 3-9.

Galkin, A. I., Gerali, F., Malakhova, I. G. 2015. Oil for Life: Russian Pioneers Chose Wisely. *Explorer – Journal of the American Association of Petroleum Geologists*, 1, 44 – 45.

Gerali, F. 2015. Review of Curzio Cipriani, Luciana Fantoni, Luisa Poggi and Alba Scarpellini, 'Le Collezioni Mineralogiche del Museo di Storia Naturale dell'Universita di Firenze dalle Origini a Oggi.' Florence: Leo S. Olschki, 2011. Pp. 236. *ISIS*, the Journal of the History of Science Society, vol. 106, No° 1, pp. 163-164;

Gerali, F. 2015. INHIGEO Virtual Bibliography.The first instalment: Australia, *INHIGEO Annual Record*, 47, 174-175.

Gerali, F. 2015. Without oil in the age of mechanization. On the inception of the modern oil industry in Australia. *Petroleum Exploration Society of Australia News*, 138, 60 – 63.

Gerali, F. and Riguzzi, P. 2015. Entender la naturaleza para crear una industria. El petróleo en la exploración de John McLeod Murphy en el istmo de Tehuantepec en 1865. *Asclepio*, 67, 2, 1 – 17.

Luzzini, F. 2015. Il tesoro umile, il tesoro ignorato. I fontanili della Pianura Padana. *Acque Sotterranee*, Italian Journal of Groundwater, 2, 79-80.

Luzzini, F. 2015. Through dark and mysterious paths. Early modern science and the search for the origin of springs from the 16th to the 18th centuries. *Earth Sciences History*, 34, 169-189.

Luzzini, F. 2015. Il mistero e la bellezza. La Fonte Aretusa tra mito, storia e scienza. *Acque Sotterranee*, Italian Journal of Groundwater, 3, 79-80.

Luzzini, F. 2015. Per infera ad astra. O del contributo gesuitico al dibattito sull'origine delle sorgenti nel XVII secolo. In: Generali, D. (ed.) *Le Radici della Razionalità Critica: Saperi, Pratiche, Teleologie. Studi offerti a Fabio Minazzi,* II, 755-767, Milan-Udine, Mimesis.

Marabini, S. 2015. Brisighella…prima di Brisighella: appunti per la geologia urbana di un abitato sul gesso. In: P. Lucci & S. Piastra (eds.) *I gessi di Brisighella e Rontana. Studio multidiscilpinare di un'area carsica nella vena del gesso romagnola*, "Memorie dell'Istituto Italiano di Speleologia" ser. 2, 28, 27-38.

Riguzzi, P., Gerali, F. 2015. Los veneros del emperador. Impulso petrolero global, intereses y política del petróleo en México durante el Segundo Imperio, 1863-1867. *Historia Mexicana*, 65, 2, 747-808.

Romano, M., Vai, G.B., Cifelli R.L. 2015. Natural History: first museologist's legacy. *Nature*, 517, 15 January: 271.

Vaccari, E. 2015. Geology. In: M.G. Spencer (ed.) *The Bloomsbury Encyclopedia of the American Enlightenment*, New York, Bloomsbury Academic, 481-484.

Vaccari, E. 2015. Narrazione storica, riflessione metodologica e uso delle fonti negli scritti storico-scientifici di Giulio Preti. In: F. Minazzi (ed.) *Sul Bios Theoretikós di Giulio Preti*, Milano-Udine, Mimesis, 617-627.

Vaccari, E. 2015. Abraham Gottlob Werner e l'Italia. Contributo allo studio della circolazione di teorie geo-mineralogiche tra Settecento ed Ottocento In: D. Generali (ed.) *Le radici della razionalità critica: saperi, pratiche, teleologie*. *Studi offerti a Fabio Minazzi*, Milano-Udine, Mimesis, 769-803.

Vai, G.B. 2015. Michele Gortani: la corte marziale e le trincee dal Pal Piccolo, al Sentiero Spinotti, al Costone Lambertenghi. *Rendiconti della Società Geologica Italiana*, 36, 115-117.

Ezio Vaccari, Varese, Italy

IRELAND

Patrick Wyse Jackson – Since the last report (Annual Record 46 (2012), p. 120-1) Patrick spoke at meetings in Galway to celebrate the 150th anniversary of the naming of *Homo neanderthalensis* by William King, and in London to mark the 200th anniversary of the publication of William Smith's large geological map. **Gordon L. Herries Davies** also attended the London meeting. In September 2015 a commemorative plaque was unveiled by Patrick at Hollywood House, Bracknagh, County Offaly, the birthplace of the Irish geologist and polymath John Joly (1857-1933). **Paul Mohr** spoke at the 2014 Galway 'City of Stars'

event on, “The genius of the Greek naked-eye astronomers: Measuring the Cosmos with dioptra and trigonometry”.

Recent publications relating to the history of geology in Ireland by INHIGEO members and others

Adelman, J. 2012. An insight into commercial natural history: William Hinchy, Richard Glennon and the trade in giant Irish deer remains. *Archives of Natural History* 39, 16-26.

Bazley, T. 2014. Blue Plaque to Robert Bell. *Earth Science Ireland* 15, 36.

DeArce, M. and Wyse Jackson, P. N. 2014 - date of imprint 2015. The Alternative Geologist: William King (1809-1886) and his scientific controversies. *Journal of the Galway Archaeological and Historical Society* 66, 100-124.

DeArce, M., Wyse Jackson, P. N. and McMillan, N. D. 2015. Patriotism, pedagogy and profit: Galbraith and Haughton’s Mathematical Series (1851-91). *History Ireland* 23(2), 26–29.

d’Hondt, J.-L., Bange, C., Wyse Jackson, P. N. and Spencer Jones, M. E. 2015. Biographical Index to the Bryozoologists, pp. 1–138. In P.N. Wyse Jackson & M.E. Spencer Jones (eds) *Annals of Bryozoology 5: aspects of the history of research on bryozoans.* International Bryozoology Association, Dublin.

James, K. 2013. Julius Hanna: Belfast industrialist and discerning mineral collector. *Earth Science Ireland* 14, 4-5.

Lings, A. 2015. Ballycloghan borehole & the coal question. *Earth Science Ireland* 17, 24-27.

McArdle, P. 2012. Thomas Weaver: an early geologist at Avoca, Co. Wicklow. *Earth Science Ireland* 12, 14-16.

Roycroft, P. 2014. Julius Hanna, mineral collector - a little more is known. *Earth Science Ireland* 16, 24-25.

Roycroft, P. 2014. Julius Hanna: a genealogical sketch of an important Belfast amateur mineralogist. *Journal of the Genealogical Society of Ireland* 15, pp.14.

Wyse Jackson, P. N. 2014. Irish ‘Rock Stars’ Alexander Nimmo (1783–1832). *Earth Science Ireland* 15, 14.

Wyse Jackson, P. N. 2014. Irish ‘Rock Stars’: Raymond Keary (1937–2003). *Earth Science Ireland* 16, 10.

Wyse Jackson, P. N. 2015. 86. Clair Cameron Patterson (1922–1995). In: Michael L. Gross and Richard M. Caprioli, editors-in-chief, Keith A. Nier, Alfred L. Yergey, and P. Jane Gale, volume editors. *The Encyclopedia of Mass Spectrometry*, 9B, 170-171. San Diego: Elsevier.

Wyse Jackson, P. N. 2015. Irish ‘Rock Stars’: Doris Livesey Reynolds 1899–1985. *Earth Science Ireland* 17, 11.

Wyse Jackson, P. N. and Maderson, P. D.F. 2014. James Edwin Duerden 1865–1937: zoological polymath, pp. 231–265. In P.N. Wyse Jackson & M.E. Spencer Jones (eds) *Annals of Bryozoology 4: aspects of the history of research on bryozoans*. International Bryozoology Association, Dublin.

Wyse Jackson, P. N. and Spencer Jones, M. E. (eds) 2014. *Annals of Bryozoology 4: aspects of the history of research on bryozoans.* International Bryozoology Association, Dublin, pp. viii+265.

Wyse Jackson, P. N. and Spencer Jones, M. E. (eds) 2015. *Annals of Bryozoology 5: aspects of the history of research on bryozoans.* International Bryozoology Association, Dublin, pp. 138.

Patrick Wyse Jackson, Dublin

JAPAN

JAHIGEO (the Japanese Association for the History of Geological Sciences) held as usual three meetings in 2015. The first was held at the Hokutopia, Tokyo, on 20 June; the second at Shinshu University, Nagano, on 12 September, and the third, serving as the annual meeting, at the Hokutopia on 23 December.

The presentations at the first meeting were: "Landform cognition of 'Ki' and 'Maik [in Korean]' seen in topographical records and old maps in Chosun Period, Korea", by Shizuaki Shibuya and "Dr. Tayama Risaburo's achievements on submarine geology", by Takao Nakajin.

The second formed a session of the annual meeting of the Geological Society of Japan (GSJ), two lectures being given: "*Gomusai*, A Founder of geology in Shinshu (Hoshina Hyakusuke, a geologist who was out of the academic community in Meiji period)", by Tomotaka Tanabe and "Geological heritage of Shinshu area and its best use", by Hitoshi Togashi.

At the third meeting, Hirokazu Kato gaveA talk on, "A brief view of geology and seismicity in Nepal" and Fumio Akiba presented a paper titled, "From the birth to consummation of stratigraphy based on diatom fossils: Searching for key species". At the annual general meeting of GSJ, Michiko Yajima presented "Paleontological Study of Edmund Naumann (1854-1927)" in the session on the history of geoscience.

The Study Group for the History of Geosciences (*Chigaku-shi Kenkyu-kai*) conducted by JAHIGEO members started in 2000 and has covered broader themes and topics on the history of the sciences. By the end of 2015, it had met 60 times. This year four were held at the Waseda Service Garden, Tokyo, on 24 January, 29 March, 11 July, and 21 November.

At the January meeting, Kooiti Masuda talked about "How do people apprehend anthropogenic climate change and intentional climate modification? - An historical account".

In March, after the short talk of "A brief biography of Daniel Jerome Macgowan", by Toshifumi Yatsumimi, Mariko Takegami presented "An enquiry into the origins of Chinese geology – Focusing on D. Macgowan and R. Pumpelly". Daniel Macgowan (1815-193) was an American missionary, who translated Lyell's *Elements* into Chinese and visited Japan three times, being celebrated on the occasion of the two hundred year anniversary of his birth, here in Japan.

In July, Yuji Kanaori gave the lecture of "Painter Takashima Hokkai and geology (Dream on his young day)". Takashima Hokkai (1850-1931) once studied geology and forestry in Nancy, France, where he became famous for his talent as an artist.

And in November, Kangnam Kim gave a talk about "John Milne's thinking on avoiding the effects of disasters in Japan". John Milne (1850-1913) was an important figure in the history of Japanese seismology, who married a Japanese lady named Toné.

At the 62nd annual meeting of the History of Science Society of Japan (HSSJ, held at Osaka City University, Osaka, 30-31 May, six papers were read on the history of Earth and Planetary sciences:

Shigeo Kato, "Mineral resources surveys in China by Japanese geologists in the Meiji Period";
Jun-ichi Chiba, "The vacillation of the paradigm of the geosyncline and the effort to accept the Plate Tectonics Theory: The internal history of the geologists";
Toshihiro Yamada, "Toward a 'Seamless Earth Science': Professor Yasuo Shimazu and the trans-disciplinarity 1966-1983";

Tomoko Fukukawa, “The geography books to which K. Kume referred for editing *Bei-o kairan jikki* (Part VIII, the volume on the voyage home)”;
Michiko Yajima, “History of geoscience history in Japan from the viewpoint of books”; and
Takahito Hatsuyama, “The argument of a physicist, Kusakabe Shirota, on disaster prevention”.

A week before the HSSJ sessions, on 24 May, at the Makuhari Messe, Chiba, the Japan Geoscience Union (JpGU) provided sessions for geoscience studies: historical, philosophical and STS studies, in which nine papers were read and three posters presented.

The nine oral papers were:
Michiko Yajima, “Paleontological study of Edmund Naumann (1854-1927)”;
Jiro Tomari, “The history of the Japanese earthquake prediction study is a series of repetitions”;
Fumihiko Tochnai, “Seitaro Tsuboi and the National Museum of Nature and Science”;
Akira Yamamoto, “The origin of “Fujiwhara effect” which describes interaction between two close tropical cyclones”;
Nobumichi Ariga, “The beginnings of the numerical prediction of typhoons in Japan”;
Sho Morishita’s “Living with a non-spherical earths: Co-construction of geodesists and the concept of the shape and the size of the Earth”;
Fuki Ueno, Mineo Kumuzama, Minao Kukita and Takahiro Otani, “The science of science communication: Technical method and mind climate to be linked together”;
Yoshinari Hayashi, “Interdisciplinary research initiative in earth science during 1960’s and 70’s based on oral history”; and
Toshihiro Yamada, “From an enlarged conception of earth science to the trans-science: Professor Yasuo SHIMAZU and the history of science”.
The three posters were:
Shigeyuki Aoki, “Our place in the Universe - Reply to Smart’s question”;
Mao Fujii, “Motivation of Science selection from the Earth Science approach-The effect of science class wonder of the jewel”; and
Hidehisa Mashima, “The Sea of Japan as a *trompe l’oeil*: A brief review of the debate of the opening tectonics of the Sea of Japan”.

In 2015, JAHIGEO issued its *Bulletin*, Numbers 44 and 45 (in Japanese), and the *JAHIGEO Newsletter*, Number 17 (in English). The JAHIGEO Newsletter features an article titled, “The Japanese Petrologist Seitaro Tsuboi: his Presence in the Japanese Geological Community” written by Fumihiko Tochinai.

The following are recently published books on the history of the geosciences:

Kanenori Suwa, *Chikyu kagaku no kaitaku-sha tachi: Baku-matsu kara Higashi-nippon Dai-shinsai made* [The pioneers of Earth Science: From the end of the Edo Period to the Great East Japan Earthquake], Iwanami, Tokyo, 2015, 288 pp. Professor Suwa describes the lives and works of 24 Japanese Earth scientists over a 150 year period. This is a timely publication because the Japanese people want to re-establish interest in the science and technology to avoid another disaster, such as that on 3/11 in 2011.

Jiro Tomari, *Nihon no jishin yochi kenkyu 130 nen shi: Meiji-ki kara Higashi-nippon Dai-shinsai made* [The 130 year history of earthquake prediction research in Japan: From the Meiji Era to the Great East Japan Earthquake], University of Tokyo Press, Tokyo, 2015, 671

pp. This is is thorough and complete study of the history of this problematic field of seismological science and technology. But it is too voluminous for easy reading.

Hiro Hirai supervised the translation of Anthony Grafton's *Defenders of the text: The traditions of scholarship in an age of science 1450-1800* (1994) into Japanese, by Ryosuke Fukunishi (Keiso, Tokyo, 2015, 470 pp.), one of the series named 'bibliotheca hermetica' The translation has given Japanese readers access Grafton's significant book, which consists of important essays on humanism and early modern chronology or antiquarian achievements related to the geological sciences.

Hirokazu Kato and others edited a colourful and enjoyable book on stone heritage: H. Kato, A. H. Reedman, Y. Shimazaki, T. Uchida, Nguyen Thi Minh Ngoc and A. Surinkum (eds.), *Stone Heritage of East and Southeast Asia*, GSJ, AIST and CCOP, 2016, 234 pp. It covers Cambodia, Indonesia, Japan, Korea, Malaysia, Papua New Guinea, the Philippines, Thailand and Vietnam. The electronic version (a PDF file) will be uploaded on the CCOP website soon.

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

LITHUANIA

The annual Vilnius Conference, *SCIENTIA ET HISTORIA-2015*, was held on 26-27 March. Some 30 contributions were offered on subjects such as the history of philosophy, education and on the social, physical and natural sciences. No presentations on history of geological sciences were made.

In 2015, Prof. A. Grigelis continued to edit *Baltica*, An International Journal on the Earth Sciences (biannual; Web on Science rank, ISI Thomson Reuters). He published several papers in *The News of the Lithuanian Academy of Sciences* and in *The Journal of the Geological Society of Lithuania 'Horizons of Geology'* in Vilnius.

In March 2015, A. Grigelis published an extended article in memory of Professor David Oldroyd (1936-2014), the late Vice-President of INHIGEO, in *The Journal of the Geological Society of Lithuania*. The full text in English is reprinted in this volume (pages 34-41).

In 2015, Dr. Gailė Žaludienė published an extended article on the famous Polish geographer and traveller Jan Chersky (1845-1892), a well-known explorer of Siberian geology. Another article deals with the geologist and physician Karl Eduard Eichwald (1795-1876), professor of zoology and comparative anatomy at Vilnius University, organizer of a large and complex research expedition on geognosy, mineralogy, botany and zoology in Lithuania, Volynia and the territory of Podolia.

In October 22, 2015, A. Grigelis gave an interview on Polish TV [Polska TV1 „Edynka"] in connection with the film „Ignacy Domeyko, jako humanista i filozof, racjonalizator i młody student w kontekscie „etapu Wileńskiego" jego życia", which deals with the period of Ignacy Domeyko's life spent in Vilnius, between 1816 and 1829. [In Polish].

In December 2015, two articles '*First geological observations in Lithuania : a historical viewpoint'* and '*International Commission on History of Geological Sciences : the earliest events'* were submitted by A. Grigelis for inclusion in a forthcoming book titled, *History of Geoscience: Celebrating 50 Years of INHIGEO* (Geological Society London, Special Publication 442).

Main publications (periodicals, papers)
Baltica: *an International Journal on Earth Sciences* / Nature Research Centre, Institute of

Geology and Geography ; scientific editor A. Grigelis. – Vilnius, 2015. – ISSN 0067-3064. Vol. 28, 1, 1–64; Vol. 28, 2, 65–199. [ISI Web on Science list, 2014 IF 0,529].
Grigelis, A. 2015. David Oldroyd – eminent historian of the geological sciences. *Geological Horizons* [Geologijos akiračiai], 1, 25-32. [In Lithuanian].
Grigelis, A. 2015. Prussian Origin of Lithuanian Amber. *Geological Horizons* [Geologijos akiračiai], 3, 23-32. [In Lithuanian].
Žalūdienė, G. 2015. Palaeontologist and zoologist Karl Eichwald – 220. *Geological Horizons* (Geologijos akiračiai), 2, 1-17. [In Lithuanian].
Žalūdienė, G. 2015. Siberian explorer Jan Czersky. *Geological Horizons* [Geologijos akiračiai], 4, 16-18. [In Lithuanian].

Algimantas Grigelis, Gailė Žalūdienė, Vilnius, Lithuania

MEXICO

During 2015 the following papers relating to the History of Geological Sciences were read at Scientific Conferences:

Azuela, L. F., Towards a National Geological Survey in Nineteenth Century Mexico. *Annual Conference of the International Commission on the History of Geological Sciences* (INHIGEO), Beijing, China, 24-27 June 2015.

Espinosa-Arrubarrena L., Presentation of the General Electronic Guide of the Historical Archive of the Geological Institute. Instituto de Geología, Museo de Geología, INAH, Facultad de Ingeniería, UNAM y Palacio de Minería, UNAM, February 10, 2015.

Espinosa-Arrubarrena, L., Keynote address at the *80° Encuentro de Ciencias, Artes y Humanidades*, and *Third Geological Festival on the International Day of the Earth*, Instituto de Geología, Museo de Geología, UNAM, April 26, 2015.

Espinosa-Arrubarrena, L. and Mendoza-Vargas, U., "Historia Evolutiva de los Condrictios: En realidad los tiburones son fósiles vivientes?" [Evolutionary history of chondrichthyans: Are sharks living fossils?], *55º Anniversario de la Unión Geofísica Mexicana*, Puerto Vallarta, Jalisco, November 2-7, 2015.

Martha Yanez-Hernandez and LUIS Espinosa- Arraburrena, L., Piedras Calizas de Tlayúa. [Limestone rocks from Tlayua], *Primer Encuentro Nacional de Ilustradores Científicos y de la Naturaleza* [First Meeting of Nature Scientific Illustrators], Puebla, November 25-28, 2015.

Morelos Rodríguez, L., Historical Aspects of Paleontology in Nineteenth-Century Mexico. Facultad de Ciencias [Science Faculty], UNAM, February 20, 2015.

Morelos Rodríguez, L., The Origins of modern Earth Sciences in Mexico. *Dirección General de Divulgación de la Ciencia* [General Direction for the Popularizing of Science], UNAM, April 17, 2015.

Morelos Rodríguez, L., The Development of the Earth Sciences and the Geological Institute of Mexico. Ciclo de conferencias Las ciencias en México durante el Porfiriato [The Sciences in Mexico during President Porfirio Díaz' Presidential Period], Escuela Nacional Preparatoria, UNAM, May 19, 2015.

Morelos Rodríguez, L., The importance of Institutional Historical Archives. Memory and Cultural Heritage of the Geological Institute of Mexico. *CXXIV Aniversario del Archivo General e Histórico del Poder Ejecutivo del Estado de Michoacán*, Morelia, Michoacán, December 1st, 2015.

Morelos Rodríguez, L., Geological and mining-metallurgical contents of two periodicals: *Anales Mexicanos de Ciencias* and *Anales de la Minería Mexicana* (1860-1861).

Coloquio Internacional de Comerico y Minería en la Historia de América Latina. Tributo a Inés Herrera Canales, Mexico, INAH UMSNH, December 3, 2015.

Corona Chávez Pedro, José Alfredo Uribe Salas, Edith Moreno Sanchez, Ramiro Angelina Baths, Geopark in the mining district of Tlalpujahua and Gold: A proposal for community participation. Workshop, *Perspectives on Geoparks in Mexico*, Instituto de Geografía, UNAM-Universidad Michoacana de San Nicolás de Hidalgo, March 26, 2015.

Uribe Salas J. A., Land and natural resources in the basin of the Balsas River Mezcal-michoacano. *III Simposio de Geografía y Ciencias Naturales en algunas ciudades y regions de México, 1787-1940*, Universidad de Guadalajara, April 17, 2015.

URIBE Salas José Alfredo, Keynote Address, The role of mining engineers in the creation of productive spaces in nineteenth century Mexico, *Seminario Nacional de Procesos de Industrialización, INAH*, Tlalpujahua, Michoacan, 27 and November 28, 2015.

Uribe Salas José Alfredo, Territory, space and social identity in Geopark debate, *III Coloquio de Geoconservación y Geoparques*, Tlalpujahua Mining District and El Oro, November 26-27, 2015.

Uribe Salas José Alfredo, The prehistoric man in Mexican literature of the nineteenth century, *VI Simposio Internacional sobre Darwinismo en Europa y América* [Sixth International Symposium on Darwinism in Europe and America], Galapagos Islands, Ecuador, May 20-23, 2015.

Uribe Salas José Alfredo, Silver and technology in the mines of Angangueo, Mexico, *5th International Congress of Silver in Latin America, XVIth-XIXth Centuries*, La Antigua Guatemala, Guatemala 14 to 17 September 2015.

Uribe Salas José Alfredo, Biography as identity and memory in the work of mining engineer Santiago Ramirez, *Coloquio Internacional de Comerico y Minería en la Historia de América Latina. Tributo a Inés Herrera Canales*, Mexico, INAH UMSNH, December 3, 2015.

Uribe Salas José Alfredo, History and Science: The Mexican debate on divine creation, the age of the Earth and the evolution of species, *Seminario de Investigación "Historia, pasado y presente"*, Universidad Michoacana de San Nicolás de Hidalgo, Research seminar History, past and present, Faculty of History, UMSNH, March 9-10, 2015.

Uribe Salas José Alfredo, Andrés del Rio's contributions to Earth Sciences in the Era of the Industrial Revolution, *Embassy of Mexico in Quito*, Ecuador, May 26, 2015.

Uribe Salas José Alfredo, Geopark Tlalpujahua, El Oro, Angangueo, *Tacámbaro Institute of Technology*, Tacambaro, Michoacan, 2015.

Recent Bibliography:

Azuela, L. F. and Vega R. (coords.), *Actores y espacios de la geografía y la historia natural en México [Actors and Spaces of Geography and Natural History in Mexico, siglos XVIII-XX]*, Instituto de Geografía-Dirección General de Asuntos del Personal Académico. (ISBN 978-607-02-6966-0)

Azuela, L. F. 2015. La investigación geológica en la Comisión Científica de México. [The French Scientific Commission's on Geological Research], Dossier: Geología, historia y cultura. Las ciencias de la tierra y la historia de la geología en México [Geology, history and culture. Earth Sciences and the History of Geology in Mexico], *Asclepio. Revista de Historia de la Medicina y de la Ciencia*, Consejo Superior de la Investigación Científica, Madrid. 67(2). (ISSN-L: 0210-4466)

Azuela, L. F. and Gómez Rey, P. El papel de la Sociedad Mexicana de Geografía y Estadística en el Imperio de Maximiliano de Habsburgo. [The role of the Mexican Society of Geography and Statistics], in Azuela, L. F. and Vega, R. (coordinadores),

Actores y espacios de la geografía y la historia natural en México, Instituto de Geografía-Dirección General de Asuntos del Personal Académico, p. 31-54. (ISBN 978-607-02-6966-0)

Azuela, L. F. and Vega, R. La Academia Imperial de Ciencias y Literatura de México, 1865-1866. [Mexico's Imperial Academy of Sciences and Literature, 1865-1866]. In:

Azuela, L. F. and Vega, R. (coordinadores), *Actores y espacios de la geografía y la historia natural en México*, Instituto de Geografía-Dirección General de Asuntos del Personal Académico, p. 55-81. (ISBN 978-607-02-6966-0)

Morelos Rodriguez, L. and Espinosa-Arrubarrena, L., 2015. December-March, 2016. A 150 años del Museo Público de Historia Natural, Arqueología e Historia" [The Public Museum of Natural History, Archeology and History 150 years], *Revista Gaceta de Museos*, Instituto Nacional de Antropología e Historia.

Morelos Rodríguez, L. & Espinosa Arrubarrena, L., 2015. 150 Years of Public Museum of Natural History, Archeology and History. *Revista Gaceta de Museos*, Mexico, National Institute of Anthropology and History (INAH), 63, 1, 3.

Morelos Rodríguez, L. and Moncada Maya, J., 2015. The Origins and Foundation of the Geological Institute of Mexico. *Asclepio. Journal of the History of Medicine and Science*, 67 2, CSIC, Madrid, p. 103 doi: 10.3989/asclepio. 2015.21.

Morelos Rodríguez, L., 2015. Geological and mining-metallurgical contents of two periodicals: *Anales Mexicanos de Ciencias* and *Anales de la Minería Mexicana* (1860-1861). In: Uribe Salas, J. and Flores Clair. E. (coords.), *Commerce and Mining in the history of Latin America*, UMSNH-INAH, 483-506 (ISBN: 978-607-424-551-6).

Morelos Rodríguez, L. and Moncada Maya, J. (2015). The geological map of Mexico. The emergence a new discipline in Nineteenth-Century Mexico. In: Roque Oliveira F., *Cartographers for all the Earth. Production and Circulation of Latin American Cartographic Knowledge: Agents and Contexts*, Lisbon, pp. 1077-1104 (ISBN: 9789725655290).

Uribe Salas J. A., 2015. *The Dawn of Geology in Mexico. Miners and scientists*, Universidad Michoacana de San Nicolás de Hidalgo-Historiadores de las Ciencias y las Humanidades-Fundación Vueltabajo, 202 pp (ISBN: 978-607-424-550-9).

Uribe Salas J. A. and Flores, E. Clair (Coordinators), 2015. *Trade and Mining in the history of Latin America. Tribute to Inés Herrera Canales*, Universidad Michoacana de San Nicolás de Hidalgo-Instituto Nacional de Antropología e Historia, 644 pp. (ISBN: 978-607-424-551-6).

Uribe Salas J. A. (coordinator), 2015. Dossier: Geology, history and culture. The Earth sciences and the history of geology in Mexico, *Asclepio*, CSIC, Spain, July-December (ISSN 0210-4466 and 1988-3102 eISSN).

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Uribe Salas J. A. 2015. Scenarios of Mexican Palaeontology in the late nineteenth century, *INHIGEO Annual Record*, 47, 68-75 (ISSN 1028-1533).

Uribe Salas J. A. 2015. The technical and scientific contributions of Andrés Manuel del Río,

copy or innovation? *Journal C + TEC*, State Council for Science, Technology and Innovation, Year 4, no. 16, pp. 10/08 (ISSN: 2007-2279).

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Uribe Salas J. A. 2015. Geology and technological change in Mexican mining. The case of Tlalpujahua and Angangueo mines in the nineteenth centur. In: Azuela, L. F. and Vega, R. (coordinadores), *Actores y espacios de la geografía y la historia natural en México*, Instituto de Geografía-Dirección General de Asuntos del Personal Académico, 105-130. (ISBN 978-607-02-6966-0)

Uribe Salas J. A., Biography as identity and memory in the works of mining engineer Santiago Ramirez. In: Uribe Salas, J. A. and Flores, E. Clair (Coordinators). 2015.*Trade and Mining in the history of Latin America*, UMSNH-INAH. (ISBN: 978-607-424-551-6).

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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 the Universidad Michoacana de San Nicolás de Hidalgo (UMSNH), containing topics on the History of the Geological Sciences, which contribute to raise the interest of young students in our subject matter.

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NEW ZEALAND

2015 was the 150th anniversary of the appointment of James Hector as the first government scientist in New Zealand. In 1865 he set up the New Zealand Geological Survey (now GNS Science) and the Colonial Museum (now Te Papa Tongarewa, the Museum of New Zealand), and he was subsequently involved with several other scientific organisations.

The anniversary was marked by three events. One was a History of Science conference that was held in Wellington on 23-24 November 2015. At about the same time INHIGEO member Simon Nathan's biography of Hector was published (see p. 67). In addition the Geoscience Society of New Zealand marked the anniversary by publishing a revised edition of the award winning, *A Continent on the Move*, which first appeared in 2008. This lavishly illustrated, coffeetable, book describing all aspects of the continent of Zealandia contains a section by Mike Johnston and Graeme Stevens on the history of Earth science research in New Zealand.

The year also saw the publication under the editorship of Rodney Grapes, another member of INHIGEO, of issues 49, 50 and 51, in March, July and November respectively, of the *Journal of the Historical Studies Group* of the Geoscience Society of New Zealand. Issue 51 includes an obituary by Simon Nathan of Hilary James (Larry) Harrington (1924-2015), who, in mid-career, transferred from the New Zealand Survey to the University of New England, in Australian and then to the Bureau of Mineral Resources. (See also obituary in this volume, p. 33) Although not an INHIGEO member Larry, whose knowledge of South Pacific geology and its history was outstanding, was co-leader with David Branagan of a field trip in New South Wales, as part of the 1994 INHIGEO meeting in Sydney. Also in Issue 51

are articles on Hector's appointment to the Geological Survey in 1865 and on New Zealand's pre-historic earthquakes, by Nathan and Grapes respectively. Issue 49 contains another Grapes article on the discovery of Moa bones in the northeast of the South Island. The remainder of the issue contains a short account of New Zealand by Georg Boehm, written in 1900, and annotated by Monika Smith and Simon Nathan.

The Geoscience Society of New Zealand has continued to publish online reports relating to the history of geology, in particular, *Processing gold-bearing quartz ore in the early twentieth century: an illustrated case history from the Snowy River battery, Waiuta, New Zealand*, by Simon Nathan and Les Wright, available as a PDF file at http://tinyurl.com/waiuta

Current research by New Zealand INHIGEO members include New Zealand earthquakes (Grapes), an account of Lloyd Homer, a pioneer aerial photographer of landforms (Nathan), and the west Nelson goldfields (Johnston).
Mike Johnston, Nelson, New Zealand

POLAND

Several years of growth of interest in the history of the geological sciences has resulted in the creation, in January 2015, of the Commission on the History of Geological Sciences, as part of the Geological Society of Poland. The Commission was established on the initiative of Polish members of INHIGEO.

The main aims of the Commission are:
• To bring together people with an interest in the history of the geological sciences, those with a professional background as well as hobbyists.
• To create a center for the exchange of ideas, information and the presentation of research results.
• To promote the achievements of Polish geologists world-wide, through English language publications in international journals.
• To preserve and conserve the substantial holdings of antique books, manuscripts, old maps and nineteenth century literature.
• To preserve the memory of geologists of previous generations and their achievements,
• To initiate activities aimed at protecting geological and mining heritage.

At the inaugural meeting, in addition to organizational issues, Piotr Krzywiec introduced the outstanding geologist Ludwik Zejszner (1805-1871), the precursor of modern geological mapping and consultant to Sir Roderick Impey Murchison in preparinging his work on the geology of Russia and Central Europe. Krystyna and Stanisław Wołkowicz presented the unknown private correspondence (12 letters) of L. Zejszner to count Edmund F. Wodziński (more: http://www.pgi.gov.pl/strona-glowna/aktualnosci/wydarzenia-krajowe/5536-inauguracyjne-spotkanie-sekcji-historii-nauk-geologicznych-ptg.html).

The next meeting was dedicated to the theme: SE Poland as the cradle of the world oil industry. A comprehensive introductory report was prepared by S. Wołkowicz, M. Graniczny, K. Wołkowicz and H. Urban. The meeting was attended by representatives of local authorities, from areas where installations for oil exploitation, date back to the nineteenth century.The preservation and upkeep of the old mining installations will require much organizational work and funding. These aspects were presented by K. Moskwa and R. Tarka from the Wrocław University.

The third meeting of the Commission was an international meeting. Special guests were a group of scientists from Japan, led by Dr Michiko Yajima, who presented a talk on

Edmund Naumann (1854-1927) and his geological research in Japan, with special emphasis on Mount Fuji. The hosts, in turn, presented the Polish geologists, who investigated areas of Siberia and the Far East in the years 1865-1920. Extensive access to the presentations is available at: https://www.pgi.gov.pl/en/home1/all-events/wspolpraca-miedzynarodowa/6682-polish-japan-session-on-the-history-of-geological-sciences-in-siberia-and-east-asia.html
A research center, linked to the Institute of History of Sciences of the Polish Academy of Sciences and to the Municipal Museum "Sztygarka" in Dąbrowa Górnicza, is very active in historical research at the boundary between geology and mining. Particularly noteworthy are the works of Andrzej J. Wójcik, author of numerous important publications on this subject. He wrote a large number of biographies of naturalist (mainly geologists) and miners. A. J.

Wójcik, together with A. Rybak published a monograph entitled, *Józef Cieszkowski: Head of the mines in Western Mining District of the Polish Kingdom in the first half of the nineteenth century*. A.J. Wójcik is the author of several chapters in the monograph, *Bartholdi and Gravier*: *French contexts in works of art related to the industry of the century in the Silesian province*, published by the Society of Friends of the Dąbrowa Górnicza, Municipal Museum "Sztygarka" in Dąbrowa Górnicza.

As usual, Professor Zbigniew Wójcik – a Polish honoray senior member of INHIGEO – was very active. He continued research on the contribution of Polish scientists to exploration in Siberia. Therefore, he participated in international conferences in Russia in Omsk (Siberia) and in Moscow. Z. Wójcik published in Russia, four important articles on this subject: (1) Bronislaw Rejchman - forgotten nineteenth-century tourist to Eastern Siberia; (2) The participants of the January Uprising - researchers of Siberian nature; (3) Despot-Zenowicz in the eyes of Polish Exiles and (4) Karol Lubicz Chojecki - Bar Confederate in exile (co-author A. Kuczynski). He also published an obituary of Stanisław Czarniecki, who died at the end of 2013: Dr. Stanisław Czarniecki (1921-2013): Geologist, historian of science and voluntary worker for Causes. Also worth noting is the article Wojcik published in *Polish Science*: Can the History of Geology in Poland develop? In this the author discusses the problems, faced by scientists in Poland, who study the history of the geological sciences. These scientists are treated by historians as non-serious hobbyists and amateurs, in turn, geologists, often regard them as people who, for various reasons, cannot continue to carry out geological studies, despite the fact that historical research also leads to the publications of their work. Pursuing research on the history of geology is often seen as an obstacle in obtaining further academic degrees and titles. Is this problem confined to Poland?

The year 2015 saw the publication of many articles devoted to hard coal and the Upper Silesian Coal Basin. These articles were mostly published in the *Mining Review*, whose chief editor is Dr. Eng. Albin Zdanowski - member of the Commission on the History of Geological Sciences of the Polish Geological Society. It is also worth noting the paper of Radosław Tarkowski, "Geological overview of the Vilnius region, by J. E. Gilibert (1741-1814)", the first Professor of Natural History at the University of Vilnius.

In 2015, the Lithuanian Geological Survey celebrated its 75th anniversary. Professor Marek Graniczny gave a lecture title, "Geo-mapping of the Polish and Lithuania territories, from the past to the end of XIX century", prepared by the Polish-Lithuanian team (M. Graniczny, J. Satkunas, S. Wołkowicz, H. Urban, K. Wołkowicz, Z. Kowalski).

Other works of note are the published books prepared by M. Graniczny, S. Wołkowicz, K. Wołkowicz, H. Urban on *Józef Morozewicz - the first director of the Polish Geological Institute* (see book review, p.?), and the work of R. Molenda, M. August and R. Tarkowski, titled, *Porphyry and Diabase Mines Ltd. Krzeszowice*, presenting the history of exploitation of the igneous rocks in the area of Krzeszowice (S Poland).

The achievements and contributions of Polish scientists in the progress of science feature in a lexicon prepared by the Institute of the History of Science of Polish Academy of Sciences: *Polish contributions to natural science and technology*. It has some 1,200 entries, 150 of which are biographies of geologists. The authors are Radosław Tarkowski, Andrzej J. Wójcik and Zbigniew Wójcik.

An important way to disseminate knowledge about the history of the geological sciences is the presentation of lectures at various meetings and conferences. Polish INHIGEO members gave dozens of lectures devoted to this subject, both at the national and international level.

Stanisław Wołkowicz, Warsaw, Poland

PORTUGAL

Book chapter:

Mota, T. S. (2015). From the museum to the field: Geology teaching in the Faculty of Sciences of the University of Lisbon. In: Simões, Ana; Diogo; Maria Paula and Gavroglu, Kostas (eds.) *Academic Landscapes. Sciences in the Universities of Europe, Nineteenth and Twentieth Centuries*, Boston Studies in the Philosophy and History of Science, Springer, 309, 345-360.

Oral Presentations at Scientific Meetings:

Carneiro, A.; Mota, T. S. and Amaral, I. 2015. "The Portuguese medical press (1880-1926)", *4th International Conference of the European Society for Periodical Research* (ESPRit) Politics and Periodicals, The Nordic Museum, Stockholm, Sweden.

Carneiro, A.; Amaral, I. and Mota, T. S. 2015. "Shaping Doctors and Society: the Portuguese Medical Press (1880-1926)", Workshop: *Working with Nineteenth-Century Medical and Health Periodicals*, St Anne's College, Oxford, United Kingdom.

Other Activites:

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.

Co-supervision of the PhD thesis "O Ensino e a Investigação em Zoologia e Botânica na Escola Politécnica de Lisboa (1837-1911)" by Daniel Marques [grant by the Foundation for Science and Technology (SFRH/BD/65741/2009)] which was concluded on 30 January 2015 in the New University of Lisbon.

Organization and presentation of Interuniversity Centre of History of Science and Technology Conferences, September 2014 to July 2015

Invited reviewer of the international journal *Comptes Rendus Geosciences*, French Academy of Sciences, August 2015

Invited reviewer of the international journal *Earth Sciences History*, History of Earth Sciences Society, March 2015

RUSSIA

All-Russian Geological Research Institute (VSEGEI) (Saint-Petersburg):

Leonid R. Kolbantsev – participated in the *40th INHIGEO Symposium* in Beijing (China) with two presentations: "Geological studies of the history of the tundra zone in Russia" and "Collections of ore minerals and rocks made on journeys of exploration, at the Central Research Geological Prospecting Museum of the Russian Geological Research Institute (VSEGEI)".

He also presented two papers at the *13th International "Erbe" Symposium* (Banská Štiavnica, Slovakia. June 2015): "Geological and mining symbols in the heraldry (phaleristics aspects) of Russian cities" and "Collections of ore minerals made on journeys of exploration, at the Central Research Geological Prospecting Museum of Russian Geological Research Institute (VSEGEI)".

The presentation "Anatoliy Ryabinin: biographical notes" was prepared for the A.N. Ryabinin memorial session: *On the 100th anniversary of the beginning of the study of dinosaurs in the Amur region*.

Andrei V. Lapo – gave a lecture, "The Karpinsky's phenomenon", at the plenary session of the *6th International conference of young scientists and experts dedicated to academician A.P. Karpinsky* (February, 2015).

Vernadsky State Geological Museum, Russian Academy of Sciences (Moscow):

Elena L. Minina – took part in the *Annual meeting of the Institute for Science and Technology* RAS, in Moscow, with the presentation "Lidiya P. Prokhorova and Alexander E. Fersman".

Elena was a participant of the *13th International "Erbe" Symposium* (Banská Štiavnica, Slovakia. June 2015) and was the co-author of two presentations (see the list of publications).

Participants at the 'Erbe Symposium' in Banská Štiavnica, Slovakia, 2015

In 2015, Elena described 17 minerals named by geoscientists, for the Digital Library *Scientific Heritage of Russia* (the project of the Department for the History of Geology, Geological Institute RAS – see below).

Geological Institute of Kola Science Centre (Apatity), Russian Academy of Sciences:
Yuri L. Voytekhovsky – Director of the Geological Institute, was involved in the organization of several scientific events.

Meetings:
The joint meeting of the *Association of Scientific Societies of the Murmansk region* and the *6th session of the Geological Institute (Kola Centre)* (February, 2015), was devoted to the "Day of Russian Science". Articles on the history of science and culture appear in the volume of Proceedings.

The *12th Fersman All-Russian Scientific Session* (with International participation), took place in Apatity (April, 2015), with a special meeting on the occasion of the 80th birthday of academician F.P. Mitrofanov, and a session on the history of the geosciences. The Proceedings of this meeting have been published.

Yuri Voytekhovsky also participated in the Conference, *The Development of the Kola North in 19th – 21st centuries* (Murmansk, November, 2015), with an invited paper on the history of the geological exploration of the region.

Publications:
As the head of the History Commission of the Russian Mineralogical Society Yuri Voytekhovsky participated in the publication of the volume of veterans memoirs, *We have entered History forever…* The book was published and timed for the *Day of a Geologist* and *Victory Day*. Another publication of the History Commission was a collection of works, "*The Russian Mineralogical Society in the eyes of contemporaries*.

Voytekhovsky, as the editor-in-chief, has published new volumes (31-34) of the magazine *Tietta* http://geoksc.apatity.ru/publications/tietta/2015 All issues were distributed among the libraries of the Kola region and even sent to the ice-breaker *Lenin*.

Under the aegis of the Apapity Mayor, Voytekhovsky organized the Saturday lecturing bureau, and many qualified specialists of the Kola Centre give regular lectures on the history, culture and development of the region.

Department for the History of Geology, Geological Institute, Russian Academy of Sciences:
The year 2015 was marked by two events. We celebrated the 100th anniversary of the department's founder and the leader of the history of geosciences – a corresponding member of the Russian Academy of Sciences, Vladimir V. Tikhomirov (1915-1994), with publications and conference papers in Russia and abroad (see the list of publications).

Our our return to the Institute's place of origin (Geological Institute of the Russian Academy of Sciences) we successfully finished the year 2015.

George P. Khomizuri, Irena G. Malakhova, and Ivan P. Vtorov – have changed their affiilation (see the list of member / Russia) but our work continued non-stop.

Two papers were presented at the 2015 *Annual meeting of the Institute for Science and Technology* RAS: "The Dokuchaev scientific school in soil science: origin & development" (Vtorov), and "The 100th anniversary of a corresponding member Vladimir V. Tikhomirov" (Malakhova).

Malakhova and Vtorov visited the 'mining capital' of Europe to participate in the *13th International "Erbe" Symposium on the Cultural Heritage in Geosciences, Mining and Metallurgy: Libraries – Archives – Museums*. It took place in Banská Štiavnica (Schemnitz), Slovakia in June 2015. Three of their presentations and one poster were discussed at the meeting (see the list of publications).

Visit to a mine as part of the 'Erbe Symposiun' in Banská Štiavnica, Slovakia, 2015

About 2 000 original geological publications are available now in the "Digital Library *Scientific Heritage of Russia*". http://e-heritage.ru The Information System History of Geology & Mining has an English interface and free access at http://scirus.benran.ru/higeo/

Publications:

Journal articles:

Kolbantsev, L.R. 2015. On the history of the first Russian geological map. *Earth Sciences History*. 34, 2, 333-347.

Lapo, A.V. *et al.* 2015. Memory Iltezar I. Abramovich. *Regional Geology and Metallogeny*. 64, 121. (in Russian).

Laverov, N.P., Malakhova, I.G. 2015. Martial fortitude and civic: to the 100th anniversary of V.V. Tikhomirov, a corresponding member of the Russian Academy of Sciences. *Herald of the Russian Academy of Sciences*, 10, 937-939. (in Russian)

Galkin, A.I., Gerali, F., and Malakhova, I.G. 2015. Oil for life: Russian pioneers chose wisely. *Explorer*, 1, 44-45.

Trifonov, G.F. 2015. Discussions and their role in the development of the geological sciences. *Mordovia University Bulletin*, 25, 2, 107-113. (in Russian)

Articles in Collected works

Kolbantsev, L.R. 2015. Kolbantsev Ruslan Viktorovich. (1931-1976). In: *Researchers of the Central Siberia subsoil*. 9, 153, Krasnoyarsk. (in Russian).

Lapo, A.V. 2015. V.P. Nekhoroshev. In: *Memories of the years of the Great Patriotic War*. Moscow: RosGeo, 483-490. (in Russian)

Trifonov, G.F. 2015. Formation and development of methodological principles in geological knowledge. In: *Problems of scientific and non-scientific knowledge: a collection of scientific papers of the department of philosophy and methodology of science*, 9, 60-81. Cheboksary: Chuvash. Univ. Press. (in Russian)

Voytekhovsky, Yu.L. 2015. On the pre-history of the ontogeny of minerals: documents of the Dmitry P. Grigoriev's archive. In: *The Russian Mineralogical Society in contemporaries' eyes*, 54-57. Saint-Petersburg. (in Russian).

Voytekhovsky, Yu.L. 2015. On the 250th anniversary of V.M. Severguine. Ibid, 6-12. (in Russian)

Voytekhovsky, Yu.L. 2015. Rare books in the library of academician Alexander E. Fersman. Ibid, 35-47. (in Russian)

Voytekhovsky, Yu.L. 2015. The unpublished manuscript from the archive of Dmitry P. Grigoriev. Ibid, 48-53. (in Russian)

Voytekhovsky, Yu.L. 2015. The unpublished manuscript from the archive of Dmitry P. Grigoriev: "On the teaching of mineralogy in universities: brief notes of P.N. Tschirwinsky. In: *Geology and strategic minerals of the Kola region: Proc. of the 12th Fersman scientific session*, dedicated to 80th anniversary of academician F.P. Mitrofanov. Apapity: K & M Publ. House, 13-18. (in Russian)

Voytekhovsky, Yu.L. et al. 2015. The calcic factory: the history. Ibid, 35-38. (in Russian)

Voytekhovsky, Yu.L. 2015. The 2015 important dates. Ibid. (in Russian)

Voytekhovsky, Yu.L. 2015. Manuscripts of P.N. Tschirwinsky in the archive of D.P. Grigoriev. In: *Scientific Readings "Problems of mineralogy, petrography and metallogeny" in the memory of P.N. Tschirwinsky*. Perm, 3-13. (in Russian)

Voytekhovsky, Yu.L. 2015. On the matemathical principles of petrography. In: *Proceedings of the 12th All-Russian (with intern. participation) Scientific School "Mathematical research in natural sciences", dedicated to the 100 anniversary of birth of A.B. Vistelius.* Apapity: K & M Publ. House, 11-25. (in Russian)

Vtorov, I.P. 2015. The expeditions of Roderick Murchison in Russia, and the theory of the origin of chernozem. In: *British and Russian people of the Russian South: the problem of interference*. Krasnodar: Ekoinvest, 160-165. (in Russian)

Papers presented at meetings & conferences:

Malakhova, I.G., Vtorov, I.P. The history of geology and mining: information resources. (paper presented at the *Conference of the Federal Agency of Scientific Institutions*: Moscow. Oct. 2015). http://ckp-fano.ru/index.php/ru/ (in Russian)

Malakhova, I.G., Minina E.L., Bryanchaninova N.I. F.Yu. Loewinson-Lessing and E. Jérémine: few letters from the St.-Petersburg Archive. (paper presented at the *13. Medzinárodné Erbe Sympóziu*m: Banská Štíavnica, Slovakia. June 2015).

Malakhova, I.G. The history of geology in the USSR: on the 100th anniversary of the birth of Vladimir V. Tikhomirov (1915-1994). Ibid.

Malakhova, I.G. The jubilee of the leader: on the 100th anniversary of the birth of Valdimir V. Tikhomirov (1915-1994). (paper presented at the *Annual conference of the Institute of Science and Technology*, RAS. Moscow. 2015). http://ihst.ru/files/pdfs/year-k-2015-2.pdf (in Russian)

Malakhova I.G., Vtorov I.P. Two systems – one goal. (paper presented at the *13. Medzinárodné Erbe Sympózium*: Banská Štíavnica, Slovakia. June 2015).

Pechenkin, I.G., Minina, E.L. The early collections of the All-Russian Scientific Research Institute of Mineral Resources (VIMS). Ibid.

Minina, E., Valizer, P., Shcherbakova, E. Geoheritage and geoparks of Russia: Ilmen State Reserve. (paper presented at the Conference *Geoheritage inventories: challenges, achievement and perspectives*. Toulouse, 2015).

Minina, E.L. Lidiya P. Prokhorova and Alexander E. Fersman. (paper presented at the *Annual conference of the Institute of Science and Technology*, RAS. Moscow. 2015). http://ihst.ru/files/pdfs/year-k-2015-2.pdf (in Russian)

Voytekhovsky, Yu.L. On contiguity and paragenesis of minerals: on the 250th anniversary of V.M. Severguine. (paper presented at the All-Russian scientific conference *Ontogenesis, phylogeny, the system of mineralogy*. Miass, the Urals. Oct. 2015). (in Russian)

Vtorov, I. Soil as a museum exhibit in Russia. (paper presented at the *13. Medzinárodné Erbe Sympózium*: Banská Štíavnica, Slovakia. June 2015).

Encyclopedia:

Khomizuri, G.P. Nine short biographies of geoscientists. In: *Great Russian Encyclopedia*. 28, 29. (in Russian).

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SERBIA

The Serbian National Commission of INHIGEO (hereinafter: INHIGEO SRB) officially work as the History of Geology Division (http://sigsgd.blogspot.com) of the Serbian Geological Society (www.sgd.rs). At this time, there are six ordinary members of INHIGEO.

During 2015, the following activities were performed:

We continued to prepare the monograph on the 125th Anniversary of the Serbian Geological Society (printing date: first half of 2016). A very large aount of initial material was collected (original manuscripts, letters, the first regulations, minutes from the SGS sessions, numerous illustrations, etc.). During the triage process, the book of about 300 pages will be prepared for printing. All INHIGEO members are involved in this activity both as authors and as contributors of individual chapters. The book will be edited by Lj. Rundić & A. Grubić.

The Serbian National Commission of INHIGEO obtained INHIGEO "Affiliated Association" status in June 2015.

Prof. A. Grubić was elected INHIGEO Honorary Senior Member (Beijing, June 2015).

On the initiative of Lj. Rundić, on the occasion of 125 years of SGS, the Serbian Geological Society has been proposed for the highest State medal that is awarded by the President of the Republic of Serbia, at the celebration of the 'Statehood Day'. The combined proposal on behalf of the Geological Institute of Serbia, the Academy of Engineering Science of Serbia and the Faculty of Mining and Geology, was sent during the late autumn. Some time later, the department of mathematics, physics and geosciences of the Serbian Academy of Science and Arts also submitted a letter supporting the proposal. Finally, last month, February 15, 2016, the great day arrived. The President of Serbia Mr. Tomislav Nikolić handed the 'Sretenje Order of the Second Degree' to the Serbian Geological Society for „special merits and outstanding achievements and contributions to the development of scientific and technical thought and practice in the field of the geological sciences". All

members of SGS. as well as the Division are very proud. Past-presidents of SGS, Prof. A. Grubić and Prof. Lj. Rundić, attended the ceremony.

On the same occasion, the Division members, together with the President of SGS, started the process of obtaining permits and approvals for a memorial plaque, at the Belgrade University building where the Society was founded, in 1891.

In addition, a request to the Post of Serbia was submitted, for the printing of a commemorative postage stamp, with the images of our founder, Jovan Žujović, and the main building of the University of Belgrade.

INHIGEO Virtual Bibliography Project. We have done the INHIGEO references list from Serbia. By the end of 2015, 180 references of INHIGEO members had been collected. The list will be available on the SGS website.

Publication & Public Lectures:

Marković S. B., Jović V., Obreht I., Lehmkuhl F., Hambach U., Bačević N., Vasiljević Dj. A., Gavrilov M. B. 2015. Following Cvijić's research: Data for the Ibar catchment. *International Scientific Conference 150TH ANNIVERSARY OF JOVAN CVIJIĆ'S BIRTH,* Book of Abstracts, p. 53, Serbian Academy of Sciences and Arts.

Јовић В., Станић М. 2015. Преписка Јована Цвијића. У књ.: Јовић В., Костић А. (уредници), *Јован Цвијић: живот, дело, време*. САНУ, Географски институт „Јован Цвијић" , Београд, стр. 213–231/

Jović V., Stanić M. (2015): Jovan Cvijić's correspondence. In: Jović V., Kostić A. (Editors): *Jovan Cvijić: Life, Work, Times*. Serbian Academy of Sciences and Arts, Geographical Institute „Jovan Cvijić", Belgrade, 213–231.

Јовић В. 2015. Значај Јосифа Панчића за развоје геологије у Србији. У књ.: Стевановић В. (уредник), *Двеста година од рођења Јосифа Панчића*. САНУ, Институт за проучавање лековитог биља „Јосиф Панчић", стр. 165–178./

Jović V. 2015. The importance of Josif Pancic for the development of geology in Serbia. In: Stevanović V. (Editor) ,Two hundred years after the birth of Joseph Pancic. SANU, Institute for Medicinal Plant Research "Josif Pančić", p. 165-178

Јовић В. 2015. Три века Јована Цвијића. *Даница: српски народни илустровани календар за 2016. годину*, Вукова задужбина, Београд. /.

Jović V. 2015. Three Centuries of Jovan Cvijić. Danica: Serbian National illustrated calendar for 2016, Vuk Karadzic's endowment in Belgrade.

Предавања: Циклус „Великани српске науке" – Врњачка Бања, август 2015./ Public Lectures: Cycle "The Giants of Serbian science" - Vrnjačka Banja, August 2015.

Јовић В./ Јовић V 2015. Јован Цвијић / Jovan Cvijić (1865-1927)

Јовић В. /Јовић V 2015. Светолик Радовановић/ Svetolik Radovanović (1863-1928)

Ljupko Rundić, Belgrade, Serbia

SPAIN

On March 13, a conference was held at the Museo de la Ciencia y el Cosmos (Museum of Science and the Cosmos) of Cabildo of Tenerife Island, organised by INHIGEO member Cándido Manuel García Cruz, titled, *Alfred Wegener (1880-1930) and his theory of continental drift*, on the occasion of the centenary (1915-2015) of the publication of, *Die Entstehung und der Kontinente Ozeane* (The Origin of Continents and oceans), by the German meteorologist Alfred L. Wegener (1880-1930).

In April, Octavio Puche Riart (INHIGEO member) gave a lecture at the Municipal School of Ceramics in Madrid, on the: *Real Factory of Porcelain of La Moncloa.*

On May 15, the *Association of Biologist of La Rioja* (Sapin), held a conference,organised by Carlos Martín Escorza (INHIGEO member) titled: *José Longinos Martínez Garrido. Un naturalista calagurritano ante la historia*. José Longinos Martinez Garrido was a naturalist of the eighteenth century (born in Calahorra, La Rioja, Spain, and died in Campeche, México).

Isabel Rábano is the president of the Commission on History of Geology of the Spanish Geological Society. Isabel Rábano, in colaboration with Ester Boixereu and others, curated an exhibition produced by the Geological Survey of Spain, on the history of geological maps: *Hispaniae Geologica Chartographia. The geological representation of Spain through History*. (Segovia, October 6 to December 31, 2015).
More information: www.igme.es/divulgacion/exposiciones/HisGeoCarto/expo.htm

An expedition of paleontologists from different Spanish universities dated a fossil found in La Rinconada de la Sierra (Aragón, Spain) at 520 million years at least. It may be the oldest trilobite fossil so far discovered. It was found during the work carried out by several geologists, including Eladio Griñán, paleontologist at the University of Zaragoza and Rodolfo Gozalo, Professor of Geology at the University of Valencia (a member of INHIGEO).

Rodolfo Gozalo (University of Valencia) participated in a training course for guides of the paleontological site of Murero. The Cambrian Murero deposits were discovered in 1862 by the French paleontologist Édouard de Verneuil and declared a 'Spanish Cultural Heritage' (Bien de Interés Cultural), in 1997, as was the Geological Site in Aragón, in 2001, and as an 'International Geological Site', in 2008. It is one of the most studied sites in the World and contains many different kinds of well-preserved fossils, of late Lower to Mid-Cambrian age. So far, 30 different genera and seventy species, many trilobites, have been found.

José María de Luxán, Isabel Rábado and Ester Boixereu have participated in the Seminar: "A policy for science in the reign of Elizabeth II: The contribution of Luxán Francisco". Isabel Rábano delivered the lecture: "Commission on geological maps, between 1849-1854: The presidency of Francisco de Luxán". Ester Boixareu gave a lecture titled: "Scientific contribution of Francisco Luxán". (December 3, 2015).

Publications:

Aragon, S. and Rábano, I. 2015. El elefante es mío! Mariano de la Paz Graells (1809-1898) y Casiano de Prado (1797-1866): dos vocaciones distintas confrontadas por unos cuantos restos fósiles. In: Cervantes Ruiz de la Torre, E. (ed.). *Naturalistas en debate*. Arbor, Anejos 9. Ed. CSIC, Madrid, 135-159. ISBN*:* 978-84-00-09954-1

Barreda, J.L. 2015. Hace 200 años, el geólogo von Buch acuñó el término caldera volcánica. *Tierra y Tecnología*, 46, 55-59. ISSN: 1131-5016

Boixereu, E. 2015. *Hispaniae Geologica Chartographia. La representación geológica de España a través de la Historia* (Rábano, I., Coord.). Ed. Instituto Geológico y Minero de España, Madrid, 87 pp.

Carcavilla, L., Rábano, I., Casado, S. and Velasco, J.P. 2015. El descubrimiento científico de la Sierra de Guadarrama: origen del desarrollo de la Geología en España. En: MEJÍAS, M. (Ed.). *El Parque Nacional de la Sierra de Guadarrama: cumbres, paisajes y gente*. Instituto Geológico y Minero de España y Organismo Autónomo de Parques Nacionales, Madrid, 111-147. ISSN: *1103-5897,*

Chirivella Martorell, J.B., Liñián, E., Ahlberg, P.; Gozalo, R. (2015). *A blind trilobite with*

Baltic affinities from Cambrian Series 3 of the Iberian Chains, Spain, and its stratigraphical and palaeobiogeographical significance GFF**,** 137, 3, 175-180.

Garcia Cruz, C.M. 2015. Ideas cosmológicas de Isaac Newton en relación con la *Telluris Theoria Sacra* (1680–1681) de Thomas Burnet. *Biblio 3W Revista bibliográfica de Geografía y Ciencia*, 20 (1110). ISSN 1138-9796 http://www.ub.es/geocrit/b3w-1110.htm

León Garrido, M. 2015. *El estudio de los fósiles en la América colonial. Desde los "restos de gigantes" hasta el nacimiento de las ciencias paleontológicas*. Trabajo Fin de Grado UNED. Madrid

Liñián E., Gámez Vintaned, J.A., Gozalo, R. 2015. The middle lower Cambrian (Ovetian) Lunagraulos n. gen. from Spain and the oldest trilobite records. *Geological Magazine*, 2 (06), 1123-1136. ISSN: 0016-7568

Martin Escorza, C. 2015. La cartografía del río Cidacos en el siglo XVIII (La Rioja, España). *Kalakorikos*, 20, 235-242.

Martin Escorza C. 2015. Eduardo Hernández-Pacheco (1872-1965) visto a través de las *Cruzianas*. In: Cervantes Ruiz de la Torre, E. (ed.). *Naturalistas en Debate*. Ed. CSIC. Madrid. 339-368.

Pedrinaci Rodriguez, E. and Gil, C. 2015. *Biología y Geología, Brezo. 1º ESO*. Savia. Ed. SM. Madrid. ISBN: 8467575999

Pedrinaci Rodriguez, E. and Gil, C. 2015. *Biología y Geología, Brezo. 3º ESO*. Savia. Ed. SM. Madrid. ISBN: 8467576006

Pelayo Lopez, F. 2015. Falseando la investigación: Las malas prácticas científicas en España, *Revista de Occidente*, 410-411,153-172. ISSN: 0034-8635

Pelayo Lopez, F. (2015*). La mirada de medusa*. Ed. La Catarata (Asociación los Libros de la Catarata). ISBN: 978-84-00-09909-1

Puche Riart, O. 2015. Algunos datos sobre los primeros usos del carbón en España/Some facts about the first uses of coal in Spain. En: Brandao, J.M. (ed.), *Memorias do Carvao*. Portugal.

Puche Riart, O. 2015. Algunos datos para la historia de la minería en la provincia de Soria. *Revista de Soria* (Otoño, 2015). ISSN: 0213-9731.

Puche Riart, O. 2015. Algunos datos históricos sobre las minas de plata de Pozo Rico y anexas (Guadalcanal, Sevilla). *De Re Metallica*, 25, 1-16. ISSN: 1888-8615.

Puche Riart, O. and Boixereu, E. 2015. Obituary of Carmina Virgili i Rodón (Spanish INHIGEO member). INHIGEO Annual Record 46, Canberra (Australia). ISSN: 1028-1533.

Rábano, I. 2015. *Los Cimientos de la Geología. La Comisión del Mapa Geológico de España (1849-1910).* Instituto Geológico y Minero de España, Madrid, 329, pp. ISBN: 978-84-7840-963-1

Rábano, I. (Coord.) 2015. *Hispaniae Geologica Chartographia. La representación geológica de España a través de la Historia*. Instituto Geológico y Minero de España, Madrid, 87 pp.

Octavio Puche-Riart, Madrid, Spain

UNITED KINGDOM

Trevor Ford – was regrettably unable to submit a report as he was in hospital recovering from an operation.

John Mather – In 2015 the geological community in the UK celebrated 200 years since the publication of William Smith's geological map. Although Smith's contribution to the search for mineral deposits has been well documented, the application of his work to the search for underground water supplies is not as widely recognised. The object of my paper at the Anniversary Conference held in London in April tried to rectify that position. As early as 1799 Smith's developing knowledge of stratigraphy enabled him to predict the position of water-bearing formations and in 1807 his ideas were used by John Farey to explain the source of deep groundwaters beneath London. Examples of Smith's consultancy work show that he was able to accurately predict the depth at which water would be found. His estimates of yield were less successful, resulting from a lack of understanding of how water was stored and released from aquifers under confined conditions. A paper, entitled "William Smith, the natural order of strata and the search for underground water supplies", has been accepted for publication in the 2016 volume of *Earth Science History*.

A number of contributions were made to the Geological Society of London's Year of Mud. These included curating two exhibitions in the library, on Working with Clay and Building with Clay which incorporated historic ceramic vessels, bricks and tiles dating back to the 17th century. The former exhibition was supported by an article in *Geoscientist*. Work continued on spas and mineral springs and on the early history of hydrogeology.

Publications:

Mather, J.D. and Prudden, H.C. 2014. With the odour of a cesspool and bad horseradish: the mineral waters of Daviesville Spa, Burnham on Sea, Somerset. *Geoscience in South-West England*, 13, 267-273.

Mather, J.D. 2015. Working with clay. *Geoscientist*, 25 (5), 10-15.

Michael Taylor – has coauthored, with Richard Bull of Lyme Regis Museum and Sarah Levitt of Leicester Museums respectively, two papers on recent 'finds' relating to Mary Anning (1799-1847) of Lyme Regis – a child's named token which is probably hers, and a photograph of c. 1843 showing fieldwork in Chudleigh, Devon, which probably isn't her. As Sarah Levitt is a specialist costume historian, this paper has proved interesting to anyone seeking to interpret Victorian attitudes to dress and fieldwork.

With Lyall Anderson, like Mike a visiting fellow at the School of Museum Studies at the University of Leicester, Mike has been working on Charles Peach (1800-1886) and on the poet Alfred, Lord Tennyson and his geological interests – some papers now out, others in print. Their additional findings on Charles Peach explore the realisation that Peach was a Unitarian, with its geological implications – but also looks at the interrelationship of natural history with the 19th century Sabbatarian movement in the UK: something which, rather surprisingly, seems to have been ignored.

Mike continues to work with Ralph O'Connor on a reprintof the first edition (1841) of Hugh Miller's *The Old Red Sandstone*, and with Lyall Anderson and others on a set of papers on Miller's fossil (and other) collections and the history of their curation and display in museums. He is also looking at ichthyosaurs formerly in the Bristol Institution collection (mostly destroyed in 1940, but recorded as plaster casts in other museums).

Publications:

Anderson, L.I. and Taylor, M.A. 2015. Tennyson and the geologists. Part 1. The early years and Charles Peach. *Tennyson Research Bulletin*, 10.4, 340-356.

Taylor, M.A. 2014. Rediscovery of an *Ichthyosaurus breviceps* Owen, 1881 sold by Mary Anning (1799-1847) to the surgeon Astley Cooper (1768-1841) and published by William Buckland (1784-1856) in his Bridgewater Treatise. *Geoscience in south-west England*, 13, 321-327.

Taylor, M.A. 2015. Mrs Alicia Moore, dedicatee of Henry Rowland Brown's 1859 guidebook *Beauties of Lyme Regis. Proceedings of the Dorset Natural History and Archaeological Society*, 136, 57-62.

Taylor, M.A. 2016. Keith Leask and his biography of Hugh Miller. *Hugh's News. Newsletter of the Friends of Hugh Miller*, 27, 13-15.

Taylor, M.A. 2016. 'Where is the damned collection?' Charles Davies Sherborn's listing of named collections and its successors. In Michel, E. (ed). *Anchoring biodiversity information. From Sherborn to the 21st century and beyond. ZooKeys*, 550, 83-106. doi: 10.3897/zookeys.550.10073

Taylor, M.A. and Anderson, L. I. 2016. Additional information on Charles W. Peach (1800-1886). *The Geological Curator*, 10, 159-182.

Taylor, M.A. and Bull, R. 2015. A token found at Lyme Regis, Dorset, England, apparently associated with Mary Anning (1799-1847), fossil collector. *Proceedings of the Dorset Natural History and Archaeological Society*, 136, 63-67.

Taylor, M.A. and Bull, R. 2015. A token found at Lyme Regis, Dorset, apparently associated with the fossil collector Mary Anning. *Token Corresponding Society Bulletin*, 11 (9), 354-355.

Taylor, M.A. and Levitt, S. 2016. Mary Anning (1799-1847) and the photograph 'The Geologists' taken at Chudleigh in 1843 and ascribed to William Henry Fox Talbot (1800–1877). *Geoscience in south-west England*, 13, 419-427.

Hugh Torrens – has, unsurprisingly, been kept busy with William Smith in the bicentenary year of 2015.

Publications:

Torrens, H.S. 2015. David Roger Oldroyd (1936-2014). Obituary. *Geoscientist*, 25, no. 3, 28, April 2015; also online.

Torrens, H.S. 2015. 'Gone for a Burton': Thomas Arthur Burton (1842-1936), musician and composer, and his family (from Leicestershire, Derbyshire, Cotswolds, Hampshire and Dorset). Proceedings of the Dorset Natural History and Archaeological Society, 136, 38-56. [though not primarily geological!]

Torrens, H.S. 2015. Rockstars: William "Strata" Smith. *GSA Geology Today*, September 2015, 38-40.

Torrens, H.S. 2015. William Smith's never published County Map of Somerset, from an original topographic map, with engraved geological lines and boxes, owned by me and digitally revamped by Peter Wigley. Online at <www strata-smith.com>.

Torrens, H.S. 2015. "1815 and all that" [on 3 pioneers of the Industrial Revolution, including William Smith]. *The Times*, 17 June 2015, p. x.

Torrens, H.S. and Sharpe, T. 2015. Introduction (pp. 1-26) to the facsimile reprint of A Memoir to the Map and Delineation of the Strata of England and Wales with part of Scotland, by William Smith, Engineer and Mineral Surveyor, 1815. London, History of Geology Group of the Geological Society. ISBN 978-1-943277-36-0

John Henry's report on the Smith anniversary appears elsewhere, including his papers on that topic (see pages 23-25).

Mike Taylor, Edinburgh, UK

UNITED STATES

Kenneth R. Aalto – (Professor Emeritus, Humboldt State University, Arcata, CA) presented a paper at the Geological Society of America (GSA) 2015 national meeting: "Ferdinand Zirkel (1838–1912) and the Introduction of Microscopical Petrography to North America": *GSA Abstracts*, 2015, 47(7):409. He also published: "Hermann Karsten, pioneer of geologic mapping in northwestern South America," *History of Geo- and Spaces Sciences,* 2015, 6:57-63.

Michele Aldrich and **Alan Leviton –** presented a paper at the GSA 2015 meeting in the Great Images in Geology symposium: "Geological Landscapes of the Abyssinian, Persian, and Indian Geological Surveys (1870s) as a Challenge to Gradualism." *GSA Abstracts*, 47(7):158. They also promoted the history of geology in the History of Science Society and GSA.

Victor R. Baker – presented two invited papers at the 2015 GSA meeting: (1) "Mapping as Thinking: Geology as the Premier Science of Synthetic Reasoning" in the special Pardee Session "Celebrating the Genius of William Smith," and (2) "Pathological Geology: Percival Lowell's Martian Canals" in the Great Images in Geology symposium. He presented "Gradualism and Catastrophism in Landscape Evolution" (Altai State University, Baranul, Russia) at the International Association of Geomorphologists Regional Conference and the invited keynote paper "Extreme Events and Catastrophism in Geomorphology: Some Historical and Philosophical Perspectives." Baker published: "Planetary geomorphology: Some historical/analytical perspectives," *Geomorphology*, 2015, 240:8-17; and "Extreme Events and Catastrophism in Geomorphology: Some Historical and Philosophical Perspectives," in *Gradualism and Catastrophism in Landscape Evolution*, Publishing House of the Altai State University, Baranul, Russia, p. 9-11.

Kennard B. Bork – received the Gerald M. and Sue T. Friedman Distinguished Service Award (2015) from the Geological Society of America's History and Philosophy of Geology Division. Continued service on the INHIGEO Board, in his eleventh year, was enjoyable, as the Commission evolved in a positive manner. Ken Bork and Ken Taylor wrote an éloge for Albert V. Carozzi, published in INHIGEO *Annual Record No. 47* and in *Earth Sciences History*. Through 2015, Ken worked with Czech colleagues on writing an introduction and editing articles and supplements for a major atlas on geological maps produced in Central Europe in the period of 1750 to 1820. Ken and Barry Cooper generated an article on INHIGEO's recent history (1996–2014) for the upcoming Special Publication of the Geological Society of London. The anniversary volume is designed to celebrate fifty years of INHIGEO and evolution of our discipline of the history of geosciences. Reviewing articles for the GSL publication was a rewarding experience.

William R. Brice – continued his activity with the Petroleum History Institute, serving as Second Vice-President and an Associate Editor of *Oil-Industry History*, PHI's peer-reviewed journal devoted exclusively to the history of the international oil and gas industry. In addition he served as an Associate Editor of *Earth Sciences History*, the journal of the

History of Earth Sciences Society. He was the Symposium Coordinator for the annual meeting of the Petroleum History Institute held in Tulsa, Oklahoma, April 30-May 2, 2015. He has one paper in-press for 2015:

Brice, R., 2015. P. C. Boyle (1846-1920); *The Voice of Early Oil*: *Oil-Industry History*, 16, 1, in Press.

In addition to presenting talks at the campus of University of Pittsburgh at Johnstown, he presented the following papers during the year:
Brice W. R., 2015. A Photograph of the Beginning of the Industry that Changed the World: Geological Society of America Annual Meeting, Baltimore, Maryland, *2015 Abstracts with Programs*, v. 47, no. 7, p. 409 (Invited Speaker).
Brice W. R., 2015. Fracking – The Early Days: 2015 Shell Producers' Conference
May 20-22, Lake Charles, Louisiana (Invited Speaker).
Brice W. R., 2015, P. C. Boyle and *The Oil Echo*: Petroleum History Institute Annual Meeting, May 1, Tulsa, Oklahoma, *Program and Abstracts*, p. 7.

Renee M. Clary – was very active in service, publishing, and conference presentations in 2015. *Service:* In 2015, she served as the Chair of the History and Philosophy of Geology Division of the Geological Society of America, which co-sponsored the bicentennial celebration for William Smith's 1815 Map. She served on the GSA William Smith bicentennial planning committee. With George Davis and Suzanne O'Connell, she convened three sessions of special Pardee presentations at GSA's annual conference, "Celebrating the Genius of William 'Strata' Smith: Bicentennial Anniversary of Smith's Revolutionary Map." She and Joanne Bourgeois convened the symposium "Great Images of Geology" at the annual GSA meeting. The symposium included two session days (Great Images Parts I and II) because of the large number of quality submissions. As the GSA HPGD Chair, she also organized the History and Philosophy of Geology Division Luncheon and Business Meeting, and the Evening/Student Reception. In October 2015, she assumed the role of Webmaster for HPGD's Connected Community website. She also served as Councillor for the History of Earth Sciences Society.

Publications:
Clary, R.M. and Wandersee, J.H. 2015. The evolution of non-quantitative geological graphics in texts during the formative years of geology (1788-1840). *Earth Sciences History*, 54, 1, 59-91.
Clary, R.M., & Wandersee, J.H. 2015. The history of science in the science classroom: The past is the key to the future in science education. *Earth Sciences History,* 34, 2, 310-332.
Clary, R.M. 2015. William Smith's mapping milestone: an Interactive Historical Vignette celebrating the bicentennial of the first national geologic map. *The Science Teacher*, 82, 7, 36-42.
Clary, R.M., & Wandersee, J.H. 2015. Using controversy and argumentation to develop students' critical thinking skills. In: S. Latourelle (ed.), *Innovations in College Science Teaching.* Society for College Science Teachers, (Chapter 3, 115-130).

She presented two papers at the annual GSA meeting: "Lyell's *Elements of Geology* (1838) and the origins of the classic rock cycle diagram." And "Historical impact and

philosophical projections for William Smith's 1815 map." The first was in the Great Images symposium and the second in the Pardee Symposium on William Smith.

Lastly, Clary was honored by the Mississippi Academy of Sciences as the 2016 Science Teacher of the Year.
(http://www.msstate.edu/newsroom/article/2016/02/ren%C3%A9e-clary-msu-selected-top-state-teaching-honor/)

Karen Cook – presented a paper, "Cartographic Innovation and Tradition in William Smith's Maps," at the "200 Years of Smith's Map" conference held at the Geological Society of London.

Robert Dott – Together with my co-author Ian W.D. Dalziel, I have been writing a manuscript about Charles Darwin's geological work in South America from 1831 to 1834. At that time, he was more a geologist than biologist and he became an active participant in the Geological Society of London. We are just now completing revisions of our manuscript. The paper will be published in *Earth Sciences History* either late 2016 or early 2017. Dalziel and I have done research in southern South America over several decades and have had the opportunity to visit many of the same localities studied by Darwin during the cruise of HMS *Beagle*. We compare what he reported and our present knowledge of the same localities. Darwin developed a theory for uplift of the continent and the formation of the Andean Cordillera, which we contrast with the modern plate tectonic theory. Although his theory had little impact, his observations were accurate and have stood the test of time. We believe that we have succeeded in illuminating some subtlties in his inferences. The title of our paper is *Darwin the Geologist in Southern South America.*

Greg Good – completed his term as Treasurer of the History of the Earth Sciences Society. He also began his last year as Vice-President for North America for INHIGEO. He presented "John Herschel's Alpine Geology: Mountain Landscapes 20 Years Before Photography" at the GSA annual meeting. He reviewed manuscripts for *Earth Sciences History* and for *History of the Geo- and Space Sciences.*

Sandra Herbert – attended the annual GSA meeting. She also published an article stemming from the 2014 INHIGEO meeting: "Creation and extinction: The geological background to the initial American reception of Charles Darwin's *Origin of Species". Earth Sciences History*, 2015, 34, 2, 243-262.

Cliff Nelson – The USGS issued in April 2015 *Volume 4* (1939-1961) of its history, by the late Mary Rabbitt and Cliff; see the full citation in INHIGEO's *Annual Report* for 2104 (v. 47, p. 169). The new volume (available online only) can be accessed at http://dx.doi.org/10.3133/70142267 Its introductory page includes live links to Volumes 1-3, Circular 1050 (Mary's brief history of the USGS to 1989), and Circular 1179 (with Circular 1050 and Renee Juassaud's inventory of Record Group 57 [USGS] at the National Archives and Records Administration's II facility in College Park, Maryland). Cliff retired in July; his outline and narrative chronology for Volume 5 (1961-1982) is in the Museum at the USGS National Center in Reston, Virginia. He continues to prepare an analysis of the reform of federal mapping and science in the early years of America's Gilded Age.

Sally Newcomb –thoroughly enjoyed 2015. She attended the annual GSA meeting. Following their exploratory trip to Philadelphia in June, Sally and Gary Rosenberg, aided by

Hugh Torrens, led a busload of colleagues to the National Academy of Sciences, The Library Company, and the museum and library of the American Philosophical Society. Each place had something special to show, including an original of William Smith's map. We were accompanied by William Smith himself, in the person of Roger Thomas, who remained as Smith for the entire meeting. Sally's paper at the meeting, titled "Science in the Revolution: Benjamin Franklin (1706-1790) and Friends," followed up on the resources of Philadelphia for the history of geology and science in general. Sally's paper, "With a Little Help from Friends: Pierre-Louis-Antoine Cordier (1777-1861): 50 Years of Experimental Work on Basalt," was published in *Earth Sciences History*.

Julie Newell – published "Myth 9. That Nineteenth-Century Geologists Were Divided into Opposing Camps of Catastrophists and Uniformitarians," in *Newton's Apple and Other Myths about Science.* Eds. R. L. Numbers & K. Kampourakis. Cambridge, MA: Harvard University Press, 2015, 74-79.

Julie also notes that her institution has changed names (Southern Polytechnic State University is now the Marietta campus of Kennesaw State University. She happily serves as the Special Assistant to the Provost and is finishing up a Master's Degree in Conflict Management.

David Spanagel – was awarded tenure and promotion to Associate Professor of History at the Worcester Polytechnic Institute. He published "Utility of Cartographic History to Historical Studies of the Earth Sciences," *Earth Sciences History* 2015, 34, 2, 263-274.

Kenneth Taylor – At certain times when he was not attending to repairs necessitated by osteoarthritic degeneration, Ken worked on contributions to INHIGEO's 50th anniversary volume. At the GSA annual meeting he presented a paper for a session on *The Great Images in Geology*: "Susanna Drury's 'Prospects' of the Giant's Causeway, Northern Ireland: Views of columnar basalt made famous through engravings by François Vivarès (1743)." It was his pleasure at that meeting to make the presentation citation for Ken Bork's receipt of the Friedman Distinguished Service Award, conferred by GSA's History and Philosophy of Geology Division. Ken was also the subject of a published interview conducted by Prof. Haiyan Yang, of Peking University, Department of Medical Humanities: "American Anecdotes of History of Science," in *Science and Culture Review* (Beijing), 11, 6, 104–113 (in Chinese).

Roger Thomas – acted the role of William Smith throughout the year, in costume and makeup. His performance was especially sustained and convincing at the annual GSA meeting.

Davis A. Young – completed the editing of Joseph Paxson Iddings' marvelous autobiography. Iddings (1857-1920) was arguably the greatest American igneous petrologist in the late 19th and early 20th centuries, and his memoir is a delight to read. Look for Iddings, Joseph P., 2015, Recollections of a Petrologist, ed. by Davis A. Young: Geological Society of America Special Paper 512, 219 p. With that project out of the way he has begun working on a history of the first century of development of the geology program at Princeton.

UZBEKISTAN

In the year 2015, six conferences were held in Tashkent: four international and two national conferences. On May 5-6, the scientific conference "Actual problems of geology, geophysics and metallogeny" was dedicated to the 95th anniversary of the birth of academician I.Kh.Khamrabaev and the 80th anniversary of academician F.A.Usmanov. The conference volume was preceded by article of A.U.Mirzaev "The contribution of the Institute of Geology and Geophysics in geological science and practice" (335 p.).

The 19th International Exhibition and Conference on Petroleum Geology was dedicated to the 50th anniversary of the 'Research Design Institute of Oil and Gas', the 85th anniversary of the 'Russian State University', named after I.Gubkin, which operates a branch in Tashkent, the 130th anniversary of the commercial production of oil and gas in Uzbekistan (since 1870 in Fergana valley). The prodeedings were published in a special issue of the journal *Oil and Gas*, 4, (225 pp.).

The 20th anniversary of the 'Innovation' conferences was celebrated on 22-24 October (356 pp.) and was attended by a number of researchers. Also at this time the 8th International Conference "Investment potential of raw minerals" (157 pp.) was held. The resulting publication provides information on the opening of mining developments, listing their names, reserves, and including geological maps. The listing for Uzbekistan includes 1,838 sites, including 235 for hydrocarbons, 151 for ore minersls and 620 for fresh and mineral-bearing underground waters. By gold reserves Uzbekistan takes 10th place, and it mining - 11 th.

A conference on seismology a conference was held on the theme, "Problems of seismic hazard and risk in Uzbekistan, ensuring public safety during earthquakes", with a guided tour in the museum "History of earthquakes" (November, 17-18).The Institute of Seismology published a special issue titled, "Problems of seismology",12, 123 pp.

A hydrogeology conference was titled: "Modern problems of hydrogeology, engineering geology, geo-ecology and ways of solving them" (390 pp.). Its reports provided information on history, on comparisons of predicted compositional changes of groundwater, and on groundwater regimes in connection with business activities over time spans of 10, 30 and 50 years. In the theses of A.A. Kadyrhodzhaev, B.I.Tulyaganov presented a world map of Al-Khwarizmi and other historical information.

In a number of issues of the journal *Geology and Mineral Resources* the following articles by L. N. Lordkipanidze were published: 1) historical-critical analysis of the tectonic-geodynamic problems of the Middle and Southern Tien Shan (paleooceans, median masses, terranes, transform faults, ophiolites), dedicated to the 85th anniversary of the birth of O.M.Borisov - an outstanding scientist and geologist of Central Asia, No. 3; 2) a collective review of the major monograph of former Minister of Geology N.A.Akhmedov on geological and industrial types of deposits of gold, tungsten and iron, which deals with the history of the discovery, exploration of fields, patterns of their accommodation from the point of view of plate tectonics No.4 and 3) on the 100th anniversary of V.V.Tikhomirov - the patriarch of the history of geology No.6.

In volume 4, the following articles were published: E.A.Dunin-Barkovskaya, A.Z.Umarov, B.S.Nurtaev, F.S.Burhanov, "In memory of our colleagues - teachers, geologists, scientists", referring to 11 war veteran-geologists, G.A.Mavlyanov, M.P.Baskakov, B.F.Vasilevsky, M.R.Enikeev, P.D.Kupchenko, A.Kh.Khalmatov, S.T. Badalov, Sh.D.Davlyatov, S.N.Nurtaev, A.S.Khasanov, I.M.Mirhodjaev, with brief biographies, including their portraits and military awards.

In 2015, a bibliography of the works of professor S.T.Badalov (1919-2014) was published with the title, *Selected Works of S.T.Badalov in the field of Geochemistry,*

Mineralogy and Biogeochemistry, Moscow, 436pp. He worked in these fields, in the Institute of geology and geophysics, and created the table of elements on the isotopic level.

L.N.Lordkipanidze and O.G Tsay prepared an alphabetical catalog of the Middle and Southern Tien Shan faults, which includes 600 names. P. P. Nagevich, in the Institute Hydroengeo reviewed work on the faults from the 1960s to the 20th century. M.V.Stovas, V.P.Voronov, G.N.Katterfeld wrote on the fixed network of these faults (*Oil and Gas Geology*, 2015 No. 4), and published an article titled, "The solution of future problems of modern geology and the universal hypothesis of a grid of planetary deep faults of the Earth", in the International conference proceedings.

This year we celebrated the following anniversaries:

The 80th anniversary of the birth of Professor Z.M.Abduazimova - eminent geologist, doctor of the geological-mineralogical sciences, a specialist on the Precambrian, editor of the published *Stratigraphic dictionary of Uzbekistan*;

The 80th anniversary of the birth of R.G.Yusupov - honored head of the department, an outstanding mineralogist, geochemist, former director of the Geological Museum of Uzbekistan, discoverer of the new minerals (Khamrabaevit, Mavlyanovit, Yusupovit, etc.).

L.N.Lordkipanidze, B.S.Nurtaev, O.G.Tsay, Tashkent, Uzbekistan

APPENDIX A

BIOGRAPHICAL INFORMATION SUPPLIED BY MEMBERS WHO HAVE JOINED INHIGEO IN RECENT YEARS

Claudine Cohen
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After a triple education in Biology-Earth Sciences, in philosophy of Science and in literature[6], I focused my research on the history and epistemology of the Earth and Life sciences, and particularly on the history of geology, paleontology, prehistoric archaeology and Evolutionary biology.

I have been a professor and researcher at the Ecole des Hautes Etudes en Sciences Sociales (Institute for Advanced Studies in the Social Sciences) in Paris (France) since 1990. I now hold a double professorship, one in the Humanities at the Ecole des Hautes Etudes en Sciences Sociales (history and philosophy of science), and the other at the Ecole Pratique des Hautes Etudes (3rd Section, Life and Earth Sciences) where I am the Directeur d'Etudes of the Chair "Biology and Society"

My research and teaching mainly concentrates on the history of Life and Earth Sciences, from Renaissance to contemporary times. I have investigated in my teachings, seminars and publications different aspects of these disciplines, focusing in four main directions:

- the epistemology and history of these disciplines, through the study of their concepts, their methods and problems, in relationship with their intellectual contexts.
- the exploration of the historical development of their procedures for authentication, validation and presentation of proofs;
- the investigation of their social, religious, and cultural contexts
- the study of scientific imagination, both in the development of scientific knowledge and in its diffusion in art, literature, and popular culture.

I have thus explored these discipline "from the inside", following the methodological paths of Gaston Bachelard and Georges Canguilhem – and "from the outside"[7], to understand their social contexts and implications, and their impacts at different levels of society, institutions and cultural expression : such approach, inspired by the methodology of *Science Studies*, has become familiar to me through connections with anglo-American historians and sociologists of science. I have also studied the way geological knowledge, paleontology and ideas on the evolution of life have made their way into the public through displays in museums, through popular books and the media, through art and literature.

[6] I hold an Habilitation in the History and philosophy of Science (Paris VII, 2004), a PhD from the University of Paris III (1989) and the agrégation of Lettres Modernes (1980), a DEA (Master) in Biology and Earth Sciences (Option Vertebrate Paleontology) (Paris VI, 1977) , a Master and CAPES of Philosophy (1975).

[7] Bearing a particular interest in methodological issues concerning the history of sciences, I published several papers on the question, *e. g.* « De l'histoire de l'objectivité scientifique à l'histoire des objets de science ", in *Des Sciences et des Techniques : un débat*, *Cahiers des Annales 45*, sous la dir. de R. Guesnerie et F. Hartog, Paris, Ed. de l'EHESS, 1998, pp. 149-156 ; "Rhétoriques du discours scientifique" in *La Rhétorique, enjeux de ses résurgences*, sous la dir. de J. Gayon et J. Poirier, ed. Ousia, Bruxelles, 1998, p. 131-141. *In addition, I organized for* several years a course on methodologies of science history at the Centre Koyré.

My works and publications focus on three main questions :

1 – T*he birth of ideas on Earth history in Europe at the turn of the 18th century.*
I have thoroughly explored the scientific and intellectual climate of the years 1680-1720, when "Theories of the Earth" inspired by Descartes (*Principia*, III & IV) started to be produced. These years were throughout Europe an extraordinary moment of profusion of hypotheses, observations and controversy about the Earth, its origin, the duration of its history, and its destiny. The challenge was to assign to the Earth, to living beings and even humans a history and a new temporality, denying the religious representation of a world created by a divine "fiat".

I studied in particular the clandestine work of an amateur naturalist, Benoît de Maillet's *Telliamed* (written 1692-1720, published 1748). Telliamed (the name of a wise "Indian philosopher" is an anagram of the book's author), offers a mechanistic system of the formation of the Earth and a cosmology based on the observation of the "diminishing of the sea" on the shores and of fossil marine animal remains found within the layers of the Earth. The idea behind the system is that the sea once covered the whole earth, and that, decreasing gradually it uncovered the mountains and the lands that were formed in its depths, and that we now see. However, this general inundation of the world should not be identified with the biblical Flood, and the "Indian philosopher"'s thought contains in all its aspects, a strong criticism of religious dogma, rejecting in particular miraculous cataclysmisc episodes so widely exploited by diluvialists of his time.

Through his geological thesis Maillet asserts, probably for the first time in modern scientific writing, the idea of an immense duration of the history of the world, estimated in some manuscripts "more two billion years." In its final section, the system widens into a general theory of the universe, generation and fate of living beings and man. All life comes from the sea, and, as its decrease, plants, animals, and the same men came out of the water to suit the air and land life. My study of *Telliamed* (initially my Ph D dissertaion) was published as *Science, Libertinage et clandestinité à l'aube des Lumières, Le Transformisme de Telliamed*, Paris, Presses Universitaires de France 2011.

This study was extended with work on Leibniz's *Protogaea* (written 1693-4, published 1749) another "Theory of the Earth" written during the same period, which I translated from Latin into English and published in 2008 with an introduction in collaboration with André Wakefield[8]. This project was supported by an NEH collaborative grant, and the book was published by the University of Chicago Press in 2008 (paperback 2010).
Leibniz was also interested in the formation of the Earth, and in fossil and mineral objects found within it. His treatise offers an account of the formation of the Earth, and hypotheses about the origin of mountains, volcanoes and sources; in it he reflects on the classification of minerals; he demonstrates the organic origin of fossils; he tries to explain their presence in the layers of the Earth or on mountain tops, and draws a series of plates showing the minerals and fossils he collected and cross sections of the caves in which they were discovered. *Protogaea* is one of many works from this period that offer a conjectural history of the world. Leibniz's interest in the history of the Earth is both philosophical and scientific, but it is also designed in accordance with the emerging ideals of the Enlightenment, to make scientific knowledge useful to men.

[8] Claudine Cohen and André Wakefield,

My works deals with the intellectual content of these treatises, but also with the philosophical, religious, institutional and socio-political contexts of the "theories of the Earth" during a crucial period of the "prehistory" of Earth sciences.

2- History of Paleontology

Another part of my work concentrates on the history and epistemology of paleontological sciences, from Early Modern age to the present. My book *The Fate of the Mammoth* (published in 1994, paperback 2004), translated into English in 2002 with a preface by S. J. Gould)[9] aimed to throw a new light on the development of Vertebrate paleontology. Focusing on one of the canonical objects of this discipline (the Mammoth), this study follows the changes in the scientific vision and the developments of knowledge, the questions and controversies, the different modes of discourse, the interpretation, and meanings that these remains produced at different times and places, within Western culture and science.

More recently, *La method de Zadig. La trace, le fossile la preuve* (2011)[10] systematically addressed the question of proof and evidence in paleontology and prehistoric archaeology, and beyond, the problem of their scientific status. I thus wished to confront on epistemological grounds questions and criticisms raised by Creationists regarding the scientific status of these disciplines. This book focuses on the methods, practices and theories that have determined the various ways for reconstructing extinct life, and their articulations with different aspects of Evolutionary Theory. It insists on the methodological specifics of these disciplines by discussing fossil remains, footprints and traces as evidence for a prehistory of life and man. It explores the practical devices and theoretical frameworks through which paleontologists, biologists and archeologist have tried to revive the past. It also studies how such evidence and demonstrations were presented to the public, particularly through three dimensional reconstructions and through the iconography of extinct animals and lost worlds. I also published several papers and book chapters on particular aspects of the history of evolutionary paleontology, in particular on the history of morphology[11].

*3 - H*istory of paleoanthropology and of Prehistoric archaeology

I have devoted several books and lengthy papers to the history of paleoanthropology and prehistoric archaeology from the birth of these disciplines in the mid-19th century to the present, dealing in particular with the introduction of evolutionary ideas into their scientific elaborations. I wrote in particular a long survey on the history of the notion of race in science[12], another one on the history of paleoanthropology[13], and several studies on different aspects of Neandertal studies[14]. In collaboration with paleoanthropologist Jean-Jacques

[9] *Le Destin du Mammouth*, Paris, Seuil 1994, rééd. 1999, new ed. paperback with a preface by S.J. Gould, Points-Seuil 2004. Translated into Japanese (Shin Hyoron, 2003) and English (The University of Chicago Press, 2002, with Gould's preface)

[10] Claudine Cohen, *La Méthode de Zadig, La trace, le fossile, la preuve*, Paris, Seuil 2011

[11] E. g. Richard Owen : paléontologie, embryologie et morphologie transcendantale vers 1840" *Actes du colloque "les philosophies de la nature"*, sous la dir. d'O. Bloch, Presses de la Sorbonne, 2000 ; « Gould et D'Arcy Thompson » in *Palevol* (*Comptes rendus de l'Académie des Sciences*) 3 (2004) pp. 421-431

[12] Claudine Cohen « La Notion de race en histoire des sciences » in Jean-Jacques Hublin and Anne-Marie Tillier eds. *Aux origines de la diversité humaine*, Paris, PUF, 1991

[13] Claudine Cohen, « Histoire de la paléoanthropologie » in Jean-Jacques Hublin and Bernard Vandermeersch eds.*Traité de Paleantropologie*, ed. du CTHS, Paris 2002

[14] « Néandertal : histoire des idées et des découvertes », in *Les Néandertaliens, Biologie et Cultures* sous la direction de Bruno Maureille et Bernard Vandermeersch, Paris, ed. du CTHS, 2007 pp. 15-31 ; « Sépultures, religions, rituels » in *Sépultures néandertaliennes* sous la dir. de Bernard Vandermeersch, (catalogue de l'exposition au Musée National de Préhistoire, Les Eyzies de Tayac), ed. de la RMN Paris 2008.

Hublin, I have explored the circumstances of the birth of prehistoric archaeology and **p**aleoanthropology in France in the nineteenth century through the biography of its founder, Jacques Boucher de Perthes[15]. This work was extended by questioning the place of imagination and fiction in these sciences, in scientific as well as in popular discourse. In a book entitled *L'Homme des origines, Savoirs et fictions en préhistoire*[16] I have examined the inscription of myth, fiction and imagination in the production of scientific knowledge, and reciprocally the inscription of science in works of fiction. This book presents several case studies in literary expressions of prehistoric knowledge (Prehistoric novels, Victor Hugo, Flaubert…), and I have later produced further studies in literary expressions related to paleontology or prehistoric archeology[17]. I have also worked on iconic reconstructions of prehistoric worlds, and devoted a book to the study of the representations and iconography of Neandertals in connection with the history of scientific ideas for 150 years[18]. Exploring the interactions of scientific knowledge, visual representations and imaginary constructions in evolutionary paleoanthropology will be the focus of a new book in preparation (Nos ancêtres dans les arbres, penser l'évolution humaine), also to be published at Editions du Seuil.

4 - Gender Studies and the place of women in evolutionary studies

Another work studied the place of women in prehistoric sciences, connected to different scientific, ideological, political and social configurations[19]. This work analyzed the changing representations of prehistoric women in evolutionary science, from Darwinian sexual selection[20] to contemporary feminist perspectives. Focusing in particular of iconic representations of women in palaeolithic art and their interpretations, I reviewed the various approaches that contributed to "see" and understand the place of women in prehistory, often deemed "invisible" by archaeologists.

International Collaborations

All through my career, I have cultivated international scientific connections through participation to, and organization of international conferences and congress, lecturing in foreign universities and research centers, memberships to international scientific and learned societies, and invitations, every year, of foreign scholars as visiting professors or lecturers at EHESS.

Living for several semesters and two full academic years in the United States, I have episodically been a member of the New York Academy of Science, of HSS (History of Science Society) and of the Geological Society of America. I am a member of ISSSHPB (International Society for the Social Study, History and Philosophy of Biology), and an

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[15] Claudine Cohen and Jean-Jacques Hublin, *Boucher de Perthes, les origines romantiques de la préhistoire,* Paris, Belin 1989

[16] Claudine Cohen, *L'Homme des origines. Savoirs et fictions en préhistoire*, Paris, Seuil 1999

[17] *E.g.* « Balzac et l'invention du concept de milieu », in *Balzac géographe : Territoires*, sous la dir. de Philippe Dufour et Nicole Mozet, Paris, Christian Pirot, 2004, pp. 25-32

[18] Claudine Cohen *Un Néandertalien dans le métro*, Paris ed. du Seuil 2007. On visual reconstructions in paleontology, see also « Die Anatomische Rekonstruktion in der Paläontologie. Prinzipien, Modelle, Bilder », *Ikones*, Basel 2011

[19] Claudine Cohen, *La Femme des origines, Images de la Femme dans la Préhistoire occidentale*, Paris, Belin Herscher 2003, new ed. 2006

[20] See also my paper on "*Darwin on Woman",* in *Palevol* (*Comptes rendus de l'Académie des Sciences*) 2009

elected member of INHIGEO (International Society for the History of Geology), whose congresses I regularly attend.

I have been invited in the United States as a member of the Institute for Advanced Study in Princeton (fall semester, 2003), and as a visiting scholar at Princeton University (Spring semester, 1994), at MIT Cambridge (Massachusetts) as a Senior fellow of the Dibner Institute for the History of Science and Technology (1999-2000), as a fellow of the New York Center for Scholars and Writers of the New York Public Library (2001-2002), of the Getty Research Institute in Los Angeles (2006-2007) and of the Clark Institute for the History of Art in Williamstown (Massachusetts) in 2009. I taught as a visiting professor at Stevens Institute of Technology, Hoboken, NJ (USA) (Spring Semester, 2005).

I lectured in a number of universities in Europe and in the United States (departments of science history at Harvard, Yale, Princeton, UCLA, Johns Hopkins, the University of Chicago, Caltech, of philosophy at Columbia), and I entertain regular connections with scientists, archaeologists and science historian in St Petersburg, Russia : starting in 1999 I gave several lectures at the Institute for the History of Material Culture, and at the History of Science Institute of the Academy of Sciences in St. Petersburg. In 2009, I was invited to give a keynote lecture at the "International Darwin Symposium" organized by the St Petersburg Academy of Science. I was a senior fellow of the Zentrum fur Literaturforschung in Berlin (Germany) in the Spring of 2013.

I was invited in China in April 2008, for a series of lectures to the Elite Classes of the Consulate of France in Shanghai and to the Academy of Fine Arts in Hangzhou,.

Interdisciplinary Collaborations

In the past, and until today, I have continuously collaborated with scientists through the writing of books[21], the organizations of courses and seminars[22], workshops and conferences[23], participation to interdisciplinary societies[24], visits and lectures to scientific laboratories in several countries. I now have the privilege of belonging to two distinct institutions one specialized in the natural sciences and the other one in the humanities. This has convinced me of the importance of interdisciplinary (science/humanities) collaborations, and strongly encouraged me to pursue, develop and deepen them.

Claudine Cohen
January 2015

[21] Cf. collaboration with Jean-Jacques Hublin for the writing of *Boucher de Perthes, les origines romantiques de la préhistoire*, Paris, Belin 1989 ; with Pascal Tassy for the writing of several entries for the *Dictionnaire du XIXe siècle* ed. by Madeleine Ambrière ;

[22] Cf. the organization of a Master/Doctorate EPHE/EHESS course on *Evolution, Epistemology and History* with Michel Veuille, from 2010; my participation in a joint course/seminar on the History of GEOSCIENCES in the framework of the Earth Sciences Doctoral School (IPGP-Paris Diderot-ENS) in 2011/2012.

[23] Cf. the International conference organized in 1999 at the College de France with Armand de Ricqlès and Jean Gayon, *Paléontologie et évolution en France, 1840-1950* ; my participation to the conference « Hommage à Stephen Jay Gould », Académie des Science and AMNH, Paris January 2003 ; my participation to the conference in honor of A. de Ricqlès, Collège de France june 2010.

Aleksandar M. Grubić
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Full Member of the Academy of Engineering Science of Serbia from 2004**,** Emeritus Professor of the Faculty of Mining and Geology, University of Belgrade.

He was born on November 19, 1929 at Čalma near Sremska Mitrovica (Serbia). Graduated from the Faculty of Mathematics and Natural Sciences in Belgrade, Department of Geology and Paleontology, in 1952. He earned his Ph.D. degree at the Faculty of Natural Sciences in Ljubljana (Slovenia) in 1958. He worked with Geozavod, Belgrade from 1953 to 1958 as a regional geologist. He joined the Faculty of Mining and Geology in Belgrade in 1958, to work as teaching assistant, then as assistant professor (1960-1967), associate professor (1967-1973) and full professor, from 1973 to his retirement in 1995. At the Faculty of Mining and Geology he was director of the Institute of Geology and Paleontology (1974-1976) and the head of the Chair of Historical Geology (1992-1995). From 1997 on, he has been the visiting professor of the Technology Faculty of Banja Luka (Republic of Srpska, Bosnia and Herzegovina), Mining Department in Prijedor.

He was also professional associate and scientific adviser in Geological Survey of Serbia (1958-1961) and Geoinstitute (1973-1995).

He received advanced training at Sorbonne (Laboratory of Geology) and at the Great National Mining School in Paris (1958), as well as at the Institute of Paleontology of the University in Vienna (1959). He carried out extensive field and expert works in the central and north Tunisia (1965 and 1970), Turkey (1973), the Lybian central part of the Sahara desert (as a chief geologist of the great project „West Fezan", 1981-1985).

Professor Grubić is a member of the Serbian Geological Society, Geological Society of France, Carpatho-Balkan Geological Association (president 2002-2006), Union of Geological Societies of the SFR of Yugoslavia, International Committee for History of Geological Sciences (INHIGEO), Committee for Geodynamics, Committee of the life and work of Serbian scientists of the Serbian Academy of Sciences and Arts, the foreign member of the Academy of the Republika Srpska. Honorary member of Geological Society of Slovakia.

Professor Grubić is a laureate of the numerous awards, letters of thanks, medals, plaques, etc. He has published more than 420 papers, 126 scientific papers in the domestic journals and at many meetings, 84 abroad and on international gatherings, about two hundred of supplements and professional papers and nine books (seven monographs and two textbooks). He took part in the realization of 31 scientific and 27 economic projects and 30 studies in the country and about ten projects abroad.

In his scientific papers Professor Grubić has dealt with four groups of problems: regional-geological, paleontological-biostratigraphic, bauxite and theoretical problems.

Abroad, his most recognized papers are those concerning the Yugoslav geology, Yugoslav bauxite, Rudists and Sphaeractinides. His theoretical papers on the geological formations are of particular significance. He has devoted a great deal of his work to the application of actual geological science in practice.

He took part in about sixty scientific gatherings (congresses, symposia, colloquia, and other types of meetings) in the country and thirty abroad. He was also the organizer and the president of the International Symposium on Geology of the Iron Gate on the Danube (Donji Milanovac and Baja Herkulane, 1997) and XVIII Congress of Carpatho-Balkan Geological Association (Belgrade, 2006).

Amongs the numerous scientific papers, his contribution to the history of geology, geological terminology as well as life and work of Serbian scientists is particularly recognized.

The reference list of A. Grubic relating to INHIGEO topics includes about 90 short notes, reports, in memoriams, review articles and original research articles during the period from 1975 to 2015. English translations of all references can be made available.

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APPENDIX B

INHIGEO VIRTUAL BIBLIOGRAPHY 2016:

Argentina, Australia, Austria, Brazil and Bulgaria

Compiled by Francesco Gerali, Project Curator

ARGENTINA

Florencio Aceñolaza, Universidad Nacional de Tucumán, San Miguel de Tucumán, Argentina

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APPENDIX C

INHIGEO Honorary SeniorMembers

April 2016

Addresses are provided in the 'INHIGEO Members' listing, along with an asterisk (*) before the last name and the designation 'HonSrMbr.'

Professor David F. Branagan, Australia
Professor Robert H. Dott, Jr., USA
Professor Endre Dudich, Hungary
Dr Gabriel Gohau, France
Professor Algimantas Grigelis, Lithuania
Professor Aleksandar Grubic (Serbia)
Professor Martin Guntau, Germany
Professor Gordon Herries Davies, Ireland
Professor Wolfhart Langer, Germany
Dr Ursula B. Marvin, USA
Professor Martin J.S. Rudwick, United Kingdom
Professor Cecil Schneer, USA
Professor Kanemori Suwa, Japan
Professor Philippe Taquet, France
Professor Hugh S. Torrens, United Kingdom

APPENDIX D

INHIGEO MEMBERSHIP

(Current as of April 2016)

Country of domicile is shown on one line

Below this is the country of the member's national affiliation

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