

International Commission on the History of Geological Sciences

INHIGEO ANNUAL RECORD

No. 49

Covering Activities generally in 2016
Issued in 2017

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

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

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PRESIDENT'S MESSAGE

(April 2017)

2017 is INHIGEO's 50th anniversary year and it is indeed a great honour for me to be INHIGEO's President at this special time. INHIGEO is the first and oldest IUGS Commission and we have been remarkably successful since Vladimir Tikhomirov (USSR, then including Russia and Armenia) initiated INHIGEO as our first President in 1967.

From a personal perspective, my first involvement with INHIGEO came in about 1983 with election to full INHIGEO membership in 1989. Subsequently I have been Secretary General over 8 years (2008-2016) before you have entrusted me with the role of President for the period 2016-2020 at our 2016 meeting in Cape Town.

For our 50th anniversary Wolf Mayer and his team have already been working diligently with the Geological Society of London to produce a special commemorative volume entitled "History of Geoscience: Celebrating 50 Years of INHIGEO". This should be available by the time that you are receiving this Annual Record. It represents a magnificent effort involving many INHIGEO members, which is greatly pleasing. All of us should seek a copy.

Later this year INHIGEO will also gather in Yerevan, Armenia at the same venue where INHIGEO first met 50 years ago in 1967. So, it is a very appropriate place to meet. Field visits to the same sites, such as the Matenadaran (State Repository of Ancient Manuscripts), the Echmiatsin Cathedral (4th Century), and the Hellenistic temple of Garni (1st century) are already planned. I look forward to seeing many of you in Yerevan.

Over the past few years INHIGEO has continued to grow from strength to strength and it is my earnest desire that this prosperity is maintained. In this respect, the contribution of all INHIGEO Board Members is greatly valued.

In conclusion, I am delighted that Marianne Klemun and Bill Brice have agreed to shoulder the major responsibilities of Secretary General and Editor respectively for the period, 2016-2020. I appreciate already seeing the fruits of their efforts in this publication, for example, and the revamped INHIGEO website, www.inhigeo.com. Finally, INHIGEO needs to acknowledge the distinguished service from members leaving the INHIGEO Board in 2016 including Silvia Figueirôa, Greg Good, Martina Kölbl-Ebert, Jiuchen Zhang and Ken Bork.

Barry Cooper
Adelaide, SA, Australia



SECRETARY-GENERAL'S REPORT

Dear Members,

It is a pleasure to report that 2016 has been a busy and productive year for INHIGEO. The progress made on various fronts during this year has been made possible, in part, thanks to the meeting held in Cape Town in August 2016. The associated business meeting also approved the INHIGEO Board (2016-2020) with several new members. Besides the usual tasks of liaising with members and linking to other commissions or societies, new global connections were created and membership continues to increase. Currently INHIGEO has 291 members from 58 countries (including 13 Associate members). This is an increase from 289 members from 57 countries in January 2016). The annual membership ballot took place in early 2016 and 14 new members were elected. As a consequence, Malawi has become a new country with INHIGEO Members. Sadly, 2016 also witnessed the loss of many members. The following deaths have been reported: Emilio Pedrinaci Rodriguez (Spain), Endre Dudich (Hungary) and Michele Aldrich (USA), Trevor Ford (UK), and Cecil Schneer (USA).

The “INHIGEO Affiliated Association” category was introduced in 2015, and during 2016 the “Section on History of Geological Sciences – Polish Geological Society” was accepted as a new “INHIGEO Affiliated Association.” The Annual Conference took place with 38 contributions within the 35th International Geological Congress in Cape Town, South Africa. The presentations were offered on subjects ranging from early geological ideas, the history of Gondwanaland to Africa's contribution to the earth history. Thank you goes to Barry Cooper as main organizer for the superb meeting organisation. An interesting fieldtrip, entitled “On the trail of Charles Darwin and John Herschel: the Cape in the 1830s” was provided by Greg Good (see the report elsewhere in the *Record* 2016).

A new INHIGEO website is online which facilitates easy communication for members and the public at www.inhigeo.com. Johannes Mattes, the newly appointed INHIGEO Webmaster, updates the site regularly. All historic issues of the Newsletter/ Annual Record dating back to 1967 are now provided at the website. The quarterly *INHIGEO Circular* continues to be very successful with issues in March, June, September and December of each year prepared by the Secretary-General.

For INHIGEO's 50th anniversary it was decided to produce a publication that will consider the history of INHIGEO including its founding and development. A second part of this publication will place the study of the history of geology into a wider context. Together with other colleagues (R. M. Clary, L. F. Azuela, T. S. Mota, and S. Wolkowicz), Wolf Mayer has edited this volume, entitled the *History of Geoscience: Celebrating 50 Years of INHIGEO* (Geological Society, London, Special Publication 442). The book will be launched within a symposium “Celebrating 50 Years of INHIGEO” in 2017 at the anniversary conference to be held in Yerevan, Armenia. Twenty-seven articles for this volume have already appeared in “Online First” at the Geological Society (London) Lyell Collection, website, as of November 2016.

The INHIGEO Board recommended and IUGS has honoured Professor Martin Rudwick (Cambridge) with its “Vladimir V. Tikhomirov History of Geology Award” for 2016 at the International Geological Congress in Cape Town.

Another important development has been the signing of a formal agreement between INHIGEO and the University of Oklahoma Library by which all separate INHIGEO publications will be stored there and made available to the general public on the internet. This initiative has originated from our past-President Ken Taylor and his INHIGEO colleague Kerry Magruder.

In September 2017, INHIGEO members will travel to Yerevan, Armenia, for the Annual Meeting. This symposium is the 50th Anniversary INHIGEO conference and is organized by the Institute of Geological Sciences and the Armenian National Academy of Sciences. The gathering will be held at the Armenian Academy of Sciences in Yerevan, the same venue as the 1967 founding meeting. Conference themes are: 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; and General Contributions and Biographies of Famous Geologists. Both mid- and post-conference field trips are also planned to visit geological sites, historical sites, churches and cathedrals, archaeological sites, geological museums, and the famous Museum of Ancient Manuscripts (Matendaran). A conference website has been established at <http://inhigeo2017.geology.am/>. The First Circular has been distributed to the full INHIGEO membership, and the second was sent out in August 2017.

INHIGEO will also hold two symposia at the 25th International Congress on the History of Science and Technology (25ICHST) – Rio de Janeiro (Brazil), 23-29 July, 2017: “History of Petroleum (origins, exploration and exploitation)” with the Convenor Silvia F. de M Figueirôa; and “Multiple Spaces: Mapping Communication via Letters between Naturalists and Geologists” with Convenors Marianne Klemun and Johannes Mattes.

It's pleasing to report that INHIGEO has been quite successful during 2016, and it's a pleasure to thank all of you, all active members, the full INHIGEO Board (especially the Past-President Ken Taylor), the Past-Editor Wolf Mayer, all Co-Editors of the Celebrating Volume, all Convenors of Symposia, including Silvia F. de M Figueirôa and Johannes Mattes, William Brice our New Editor, Johannes Mattes, the new Web Master and last, but certainly not least, President Barry Cooper, for all the support.



Marianne Klemun, June 2017

A PERSONAL NOTE FROM THE SECRETARY-GENERAL INHIGEO's 50th Anniversary

It is a special occasion for members when a committee is able to look back over 50 years of life and fruitful work. It is not only the history of geology, but also the history of science, its umbrella discipline which in recent decades has changed as never before. Many different aspects have provided a stimulus for this: historical epistemology, the concentration on practices, the material culture of science, and also cultural sciences. The relationship of the history of geology to individual disciplines has become all the more important in that the study has abandoned the kind of internal disciplinary history that was practiced in the 19th century, and it has established new links between social, cultural, political, and epistemic questions, as well as other disciplines.

It is a truism that science should always be as situated in and be of local origin. The routes it follows between differing spatial orders of magnitude, and the transformations that it makes in the process – these are the perspectives with which we are concerned today. We refer to this as “circulation of knowledge” (Raj) or “knowledge in transit” (Secord) and we move between these various zones of both spatial and temporal connections. Our Board and Members also serve the goal of networking local activities and reflecting the communicative structures of the past in the present day. INHIGEO constitutes a communicative space of a particular nature which is reflected in the breadth of its geographical origin and distribution of its membership; both of which indicates this perspective.

Many important researchers have left their mark on the work of INHIGEO and of our Board. They have attracted young and/or interested historians (such as myself) to the discipline. They have encouraged and supported them. Let us thank them for building a foundation which we treasure as their bequest and which we wish to remember on the occasion of this 50th anniversary jubilee. Even though the media landscape has only begun to change rapidly in the last 3 decades, the world of historians of geology was already bonding more closely in 1967. The annual personal meetings are both the evidence and the cement of the vitality that we wish to maintain.

Marianne Klemun, April 2017

EDITOR'S MESSAGE

Dear INHIGEO Members:



This was sent to the membership earlier, but as I am new to this position, I thought I would repeat some of the things from that previous communication for those of you who do not know me and may have missed the earlier note.

I was born in Florida, but now live in Johnstown, Pennsylvania (USA) where I taught at the University of Pittsburgh at Johnstown from 1971 until I retired in December 2005. I hold degrees from the University of Florida (B.S. Physics-1958); University of Tasmania (Australia) (Dip. Ed.-1965), and Cornell University (M.S.T. Earth Science Education-1968, Ph.D. Geochemistry-1971). I was a member of the Summer Faculty at Cornell University from 1976 until 2002.

For many years I did research in and published papers about the history of geology and geologists; especially about the academic side of geology. I served as Chair of the History & Philosophy of Geology Division of the Geological Society of America, and was Secretary-Treasurer-Editor of the Division for about ten years. I have been a long-time Associate Editor with *Earth Sciences History*, the publication of the History of Earth Sciences Society. A few years before retirement from active teaching, I began to explore the history of the oil and gas industry; especially in Pennsylvania where the modern industry got a real boost with the Drake Well in 1859. One result of those studies was *Myth, Legend, Reality: Edward Laurentine Drake and the Early Oil Industry*, published in 2009 by the Oil Region Alliance of Oil City, Pennsylvania. I served as editor of *Oil-Industry History*, the official journal of the Petroleum History Institute (Oil City, Pennsylvania), from 2003-2013, and continue to be a member of the PHI Board of Directors and hold the office of 2nd Vice-President. For more information, please contact me, or go to my website: www.williamrbrice.com. If anyone has any questions for me, please feel free to contact me at: wbrice@pitt.edu.

I want to thank everyone who submitted items for the 2016 INHIGEO *Record*, your contributions are what make the *Record* what it is. My special thanks go to Mike Johnston for covering the Cape Town meeting, and for his photographs of the activities.

Our sympathies go out to the families and colleagues of those we lost in 2016; Michele Aldrich (USA), Rober McNab (Australia), Endre Dudich (Hungary), Dan Yaalon (2014-Israel), and Emilio Rodríguez (Spain).

In Appendix D is a list of the new members for 2016. I hope you will take a few minutes and send a note to each of them welcoming them to INHEGIO.

And finally, please accept my apologies for the lateness in getting the Record 2016 to you. As you can tell, I am new in this position and it has been an interesting learning curve. I promise to do better next year.

I look forward to working with all the members of INHIGEO, and thank you for entrusting me with this position. And I want to thank the out-going Editor, Wolf Mayer, for the outstanding work he has done and for the help he has given me as I assume this new position. His editorship will be a hard act to follow, but I will do my best.

Cheers to all,

A handwritten signature in black ink that reads "Bill Brice". The signature is written in a cursive, slightly slanted style.

CONFERENCE REPORTS

The International Commission on the History of Geological Sciences (INHIGEO) Meeting, Cape Town, 29 August to 2 September 2016; with a one-day History of Geology Field Trip to the Cape Town area on 27 August 2016

The 41st INHIGEO Meeting was held as part of the four-yearly International Geological Congress, which took place in the imposing and spacious Cape Town Convention Centre. The history of geology sessions commenced after the opening session and finished two days later. They were so arranged that one session flowed smoothly to the next. As at all INHIGEO meetings, there was a wide range of papers. The Congress, along with the field trip, as well as several unofficial ones organised by INHIGEO members to such places as Table Mountain, Cape of Good Hope, Kirstenbosch Gardens and various museums and art galleries, were favoured with fine weather.

Saturday 27 August Pre-meeting (“INHIGEO”) Field Trip

The field trip, organised by INHIGEO Vice-President North America, Greg Good, paid tribute to the impact of two great men of science on the geology of the Cape — Sir John Herschel (1791-1872) and Charles Darwin (1809-1882). Darwin was greatly influenced by Herschel and fittingly the two are buried side by side in Westminster Abbey.

Although Herschel is better known as an astronomer, he made many other scientific observations, including of landforms and the rocks that constitute them, and of which the Cape has many spectacular examples. Darwin, on board HMS *Beagle*, arrived at Simons Bay on 31 May 1836. After basing himself at Cape Town, Darwin had a little over three weeks to explore the city and its environs as well as meeting leading personalities, including Herschel. The two men spent some time together and visited several sites of scientific interest. The one-day INHIGEO trip attempted to visit five of these sites, no mean feat as it was some years since Greg was in South Africa and the Cape Town area has changed considerably since then and even more so from Herschel and Darwin's time. Furthermore, the well-written, trip guide book, liberally illustrated with appropriate sketches by Herschel, had been compiled in Maryland, some 14,000 km from Cape Town.

Under blue skies the ten participants were taken to the first stop (see the full road-log and fieldguide elsewhere in this volume), the Herschel Obelisk on the site of The Grove Primary School, formerly Herschel's Feldhausen (Fig. 1). This important monument marks the location of Herschel's 20 foot [6 m] reflector telescope, which was, at the time, the largest in the world. With this instrument Herschel painstakingly recorded thousands of observations of the southern night sky. In Herschel's time it was open farmland at the foot of Table Mountain and the Twelve Apostles range composed of Cape Supergroup sedimentary rocks. It would have been an ideal observation site with none of the light pollution that now emanates from the vast area of suburbia that extends from Cape Town southwards towards False Bay.



Figure 1. Greg Good leading field trip participants after viewing Herschel obelisk at Grove Primary School. On Greg's left are Renee Clary (USA) and Ernie Hamm (Canada) with Michiko Yajima (Japan) and John Diemer (USA) in the background. Rocks of the Cape Supergroup in the background. Photo: Barry Cooper

The next stop was only a few kilometres further south, where several prominent granite outcrops, of the late Pre-Cambrian

Cape Granite Suite, were described and illustrated by Herschel. This included “Mr Hare’s Rock” and others named from local landowners but are now difficult to locate within the midst of suburbia Wynberg. Herschel, from his own observations, deduced that the granite would continue under Table Mountain. From the granites participants went west into the mountains to the pass of Constantia Nek, which leads to Hout Bay and the Atlantic Ocean. The pass also provided Herschel access to Table Mountain but Darwin is not known to have gone this far west. In the other direction, Herschel and Darwin ventured as far as Paarl Mountain some 65 kilometers northeast of Constantia Nek. The mountain is an impressive granite massif and participants more or less followed in their footsteps through vineyards to its foot, where lunch was enjoyed. Some participants even shadowed Herschel and Darwin to the summit of the mountain.

The fifth, and final, stop was at Sea Point on the Atlantic Coast (Fig. 2a,b), not far to the southwest of the Convention Centre, and overlooked by Lion’s Head. The point is famous for its well exposed intrusive contact between Cape Granite and steeply dipping, and contact metamorphosed, sedimentary rocks of the Pre-Cambrian Malmsbury Supergroup. The contact had been described early in the 19th century and Darwin was well aware of it before he arrived in Cape Colony. Although Herschel had examined the contact, Darwin’s guide was Dr Andrew Smith. In the tour guide are extensive quotes from Darwin’s notebook, which are largely descriptive —the interpretation of what he saw was published a decade later.



Figure 2a. Happy field trip participants at the Sea Point contact. Photo: Barry Cooper.



Figure 2b. The group standing on the rocks at Sea Point. Photo: Michiko Yajima.

In all, a very enjoyable and instructive day. Those wishing to find out more about Herschel and Darwin in Cape Province are referred to: Good, Gregory A. (compiler): *On the Trail of Charles Darwin and John Herschel: The Cape in the 1830s*. Field trip Guide ODPRE11 27 August 2016; which follows in this *Annual Record*.



Figure 3. 35th IGC opening ceremony, miners dance troupe. Photo: Mike Johnston

35TH INTERNATIONAL GEOLOGICAL CONGRESS, History of the Geosciences Theme and 41st INHIGEO Symposium



Figure 4. IUGS stand at the Congress with INHIGEO panel on right. Photo: Mike Johnston

Oral presentations (Underlined names are the speakers).

Monday afternoon 29 August 2016

Symposium T10.1 Session 1 – General contributions on the history of geology

Chair: B.J. Cooper *Keynote Presentation:* K.L. Taylor (Presented by E.P. Hamm)

An empire of water, islands of fire.



Figure 5. *Ernie Hamm (Canada) presenting Ken Taylor's keynote address at the start of the INHIGEO session. Photo: Mike Johnston*

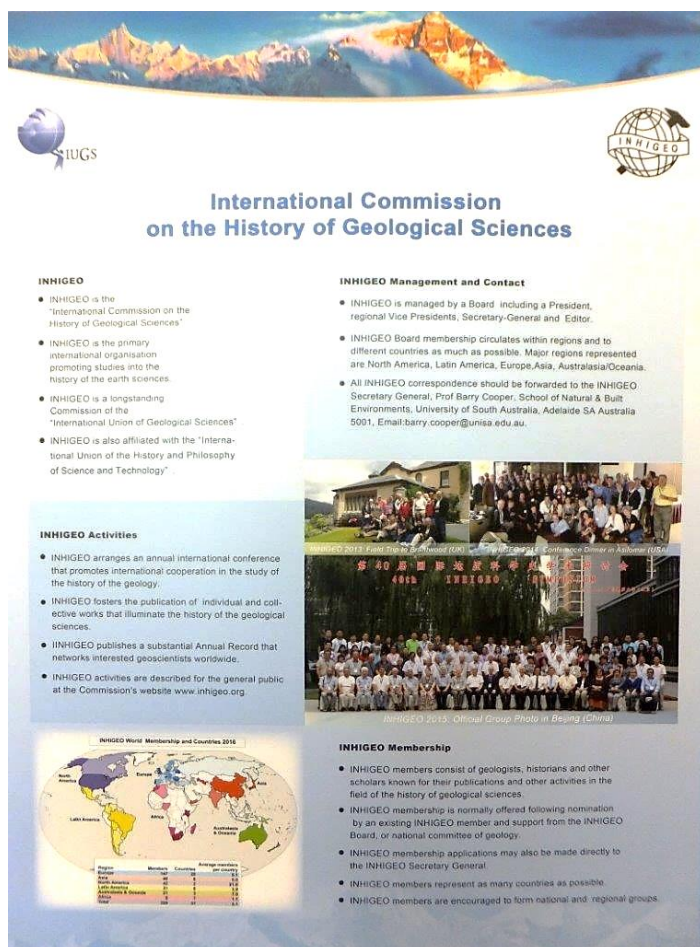


Figure 6. *INHIGEO panel. Photo: Mike Johnston*

- K. McNamara – *Dr Woodward's Cabinet of Dangerous Dreams: Geology in the Age of Enlightenment.*
- M. Graniczny, S. Wołkowicz, K. Wołkowicz, H. Urban
Contribution of Ignacy Domeyko (1802 – 1889) for geology of Poland, Lithuania and Chile.
- P. Krzywiec, S. Wołkowicz and K. Wołkowicz - *Development of geological and geophysical Cartography in Poland (XVIII – XXI centuries).*
- A. Z. Konikov, L.R. Kolbantsev – *Cambrian System in Siberia – discovery ‘at a desk’.*

Symposium T10.2 Session 2 – General contributions on the history of geology

Chair: M. Klemun

- A. Müller – *Viktor Moritz Goldschmidt (1888–1947) and Vladimir Ivanovich Vernadsky (1863–1945): The father and grandfather of geochemistry.*
- G.F. Trifonov, E.D. Kholopov – *Discussions and their role in the development of geological sciences.*
- J. Mattes – *Claims on the Past: Cave Excavations by the SS Research and Teaching Community ‘Ahnenerbe’ (1935–1945).*
- M. Yajima – *The Naumann elephant.*
- P. Taquet – *When I was hunting dinosaurs in Africa (1965-2015).*

INHIGEO Business Meeting 6.00- 7.15 pm

Tuesday morning 30 August

Symposium T10.3 Session 3 – History of geology in Africa

Chair: P. Taquet

- R. N. Scoon – *Three Pioneering Geologists of the Bushveld Complex, South Africa: Hall, Merensky, and Wagner”.*
- D. M. Lievaart – *Resources of geoscientific information in Africa.*
- G. I. C. Schneider – *The History of the Geological Survey of Namibia.*
- T. Kamanga, C. Chisenga – *History of Geology in Malawi.*
- R. P. Viljoen, M.J. Viljoen – *Discovery of Komatiite.*
- M. Pickford – *How closing the Sperrgebiet affected geological research: a brief history.*
- G. A. Good – *John Herschel’s Landscapes and Geology: The Cape Colony in the 1830s.*

Symposium T10.4 Session 4 – History of mineral and water resources

Chair: G.I.C. Schneider

- Keynote presentation:* C.R. Lawrence – *A history of hydrogeology in Australia from pre-European to the 21st Century.*
- B. Cairncross – *The Okiep copper mines – the most historic mining district in South Africa.*
- G. I. C. Schneider – *The History of Diamond Mining in Namibia.*
- K. G. McQueen – *Early theories and practicalities on gold occurrence in Australia.*
- S. Wołkowicz, M. Graniczny, K. Wołkowicz, H Urban – *Outline of the mining history in the Polish Lands.*

Tuesday afternoon 30 August

Symposium T10.5 Session 5 – Early man and early geological ideas

Chair: G. Good

Keynote presentation: M.J. Viljoen – Utilisation of Geology and Geomorphology by Early Hominids and the Indigenous People of Southern Africa.

B. Senut, M. Pickford, L. Ségalen – The role of Southern Africa in understanding Human origins.

B. Aguirre-Urreta – Searching for our ancestors: a time ripe for forgeries.

C. Chisenga, T. Kamanga – Indigenous Knowledge of Exploration Geology: A Malawian Perspective.

B. J. Cooper, J. McEntee – Indigenous Understanding of Geology: The Australian perspective.

Symposium T10.6 Session 6 – General contributions on the history of geology

Chair: B. Cooper

E.P. Hamm – Goethe, geology and polemics on a new science.

K. El Ghalbi – Arab-Islamic scientific heritage, an early episode in the history of volcanology.

K. El Ghalbi – Measuring the Specific weight of minerals in Arab-Islamic scientific heritage.

M. Hamilton – An unexpected treasure – the personal and handwritten notes of the Austrian mineralogist and petrographer Friedrich (Johann Karl) Becke (1855-1931).

K. Jarmołowicz-Szulc – Past, present and future status of the National Geological Archives in Poland.

Wednesday morning 30 August

Symposium T10.7 Session 7 – Historical Studies of Gondwana

Chair: M. Johnston

Keynote presentation: G.A. Good – Before Plate Tectonics: The Long Exchange between Physics and Geology from 1600 to the 20th Century”.

M. Klemun – Ancient Terms and New Concepts: “The Face of the Earth” and “Gondwana-Land”.

K. Aalto – Pioneering geologic mapping in northwestern South America.

R. M. Clary, T. Sharpe – A History of Early Antarctic Fossil Discoveries in Support of the Supercontinent Gondwana.

V. A. Ramos – Early correlations between the Cape Belt and Ventania Systems: Keidel’s pioneer work and his influence on Wegener’s Continental drift and Du Toit’s ideas.

S. Master – The reception of “Our Wandering Continents” (1937), from the correspondence of its author, South Africa geologist A.L. du Toit.

Wednesday 30 August

Posters T10.P3 – History of geosciences

Figure 7. INHIGEO posters prepared by J. A. Diemer (left); F.M. Petti, M. Pantaloni, F. Console and S. Fabb (centre) and L.R. Kolbantsev, O.V. Petrov, A.R. Sokolov (right). Photo: Mike Johnston.

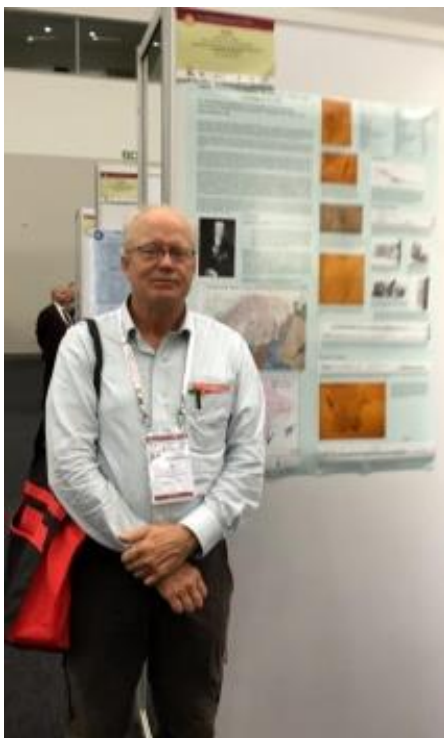


Figure 8. John Diemer (USA) with his poster. Photo: Barry Cooper

- J. A. Diemer – *Verifying the Silurian: Murchison's 1845 field campaign in Sweden.*
 F. M. Petti, M. Pantaloni, F. Console, S. Fabb – *The Italian geological expeditions to Tripolitania and Cyrenaic regions (Libya N-Africa) between 1911 and 1914.*
 L.R. Kolbantsev, O.V. Petrov, A.R. Sokolov – *Materials on South Africa geology in The Academician Th. N. Tschernyschew Central Research Geological Prospecting Museum, St. Petersburg, Russia.*



Figure 9. Leonid Kolbantsev (Russia) explains his poster to a relaxed Ken McQueen (Australia). Photo: Barry Cooper.

A well organised congress, with the time table being strictly enforced. The history of geology sessions were in the same room in the convention centre and, conveniently for historians of geology, ran sequentially starting after the conference opening and finishing mid-morning two days later. Barry Cooper, as 35IGC co-ordinator of the History of the Geosciences theme, and retiring Secretary General, is to be thanked for ensuring that there were a good variety of sessions and papers and posters within them. The “INHIGEO field trip” was memorable and the thanks of all those who participated in it go to Greg Good.

Finally, I am grateful to Barry Cooper (Australia) and Greg Good (USA) for reading this review.

Mike Johnston, Nelson, New Zealand

Editor’s Note: My thanks to Mike for his reports on the Cape Town meeting. Bill Brice

On the Trail of Charles Darwin and John Herschel: The Cape in the 1830s

35th International Geological Congress

Field Trip Guide

Compiled by

Dr. Gregory A. Good

AIP History Center

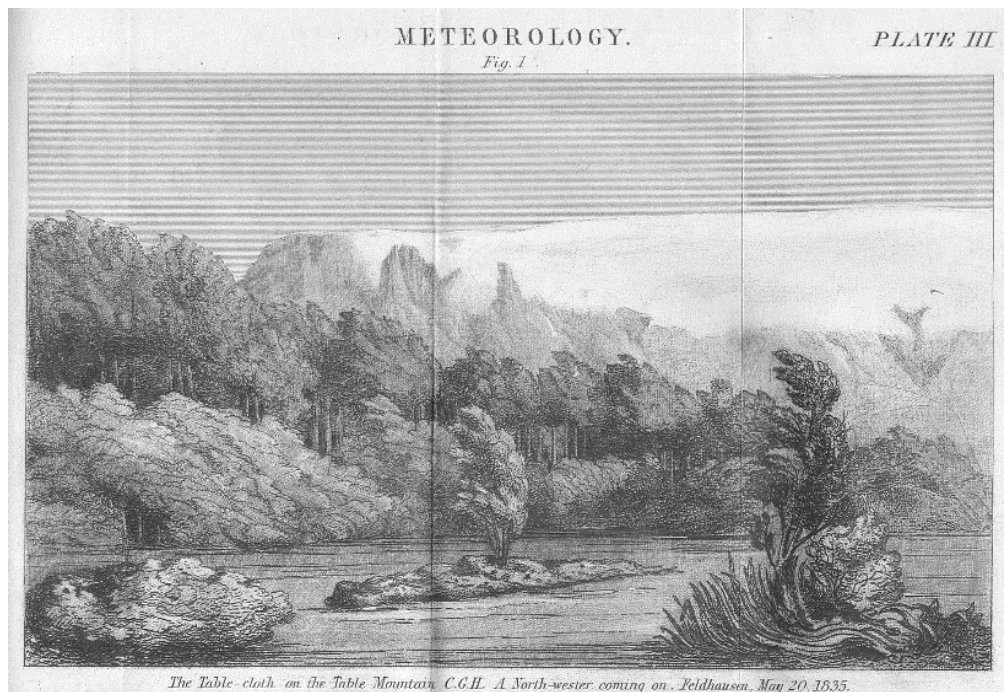
American Institute of Physics

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Field Trip Guide ODPRe11

27 August 2016



John Herschel, The Table-cloth on the Table Mountain, 1835

On the Trail of Charles Darwin and John Herschel: The Cape in the 1830s

by Dr. Gregory A. Good

American Institute of Physics

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27 August 2016



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1. Time table

Seekers after Herschel and Darwin shall gather at the pick-up area at the CTICC (Convention Center), the appointed place where the journey shall begin and end. We meet on Saturday, 27 August 2016, at 0800 (8 am). Lunch will be at stop 4, Paarl Rock, or en route. The itinerary is:

Site 1: The Herschel Obelisk: on site of The Grove Primary School, formerly Herschel's Feldhausen

Site 2: Mr Hare's Rock? A remnant of Wynberg Hill's outcrops

Site 3: Constantia Nek: Herschel's jumping off point for Table Mountain, and Hout Bay

Site 4: Paarl Rock and Diamond Rock: our farthest point, visited by both Herschel and Darwin

Site 5: Sea Point, the equally messy processes of geology and history. What did Darwin do here?

Drop off at CTICC

2. Geological map of the area

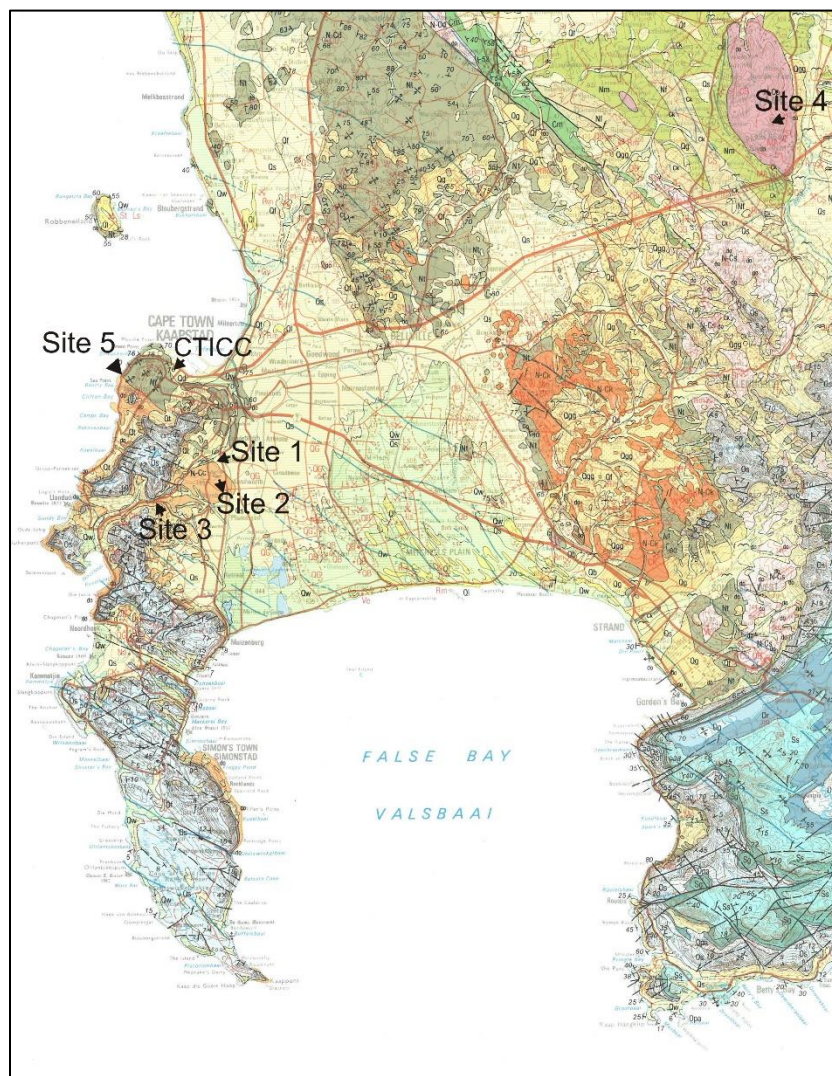


Figure 1. Five sites visited by John Herschel and Charles Darwin in the 1830s (map prepared by Council for Geoscience, South Africa).

3. Introduction – How John Herschel and Charles Darwin Happened to Meet in Cape Town

The early history of geology in South Africa involves the most famous scientists of the time: John Herschel (1791-1872) and Charles Darwin (1809-1882). Herschel, best known as an astronomer, lived at the Cape in the 1830s. When not at the telescope, Herschel was a keen observer of landscapes, strata, and rocks. He visited Table Mountain, Paarl Rock, Franschhoek, and beyond, making geological observations like those he made in the Alps in the 1820s. This day tour visits several of Herschel's geological sites and a famous one, visited by the young Charles Darwin in 1836, the "Sea-Point Contact." The site was described by Basil Hall in 1813 and again by Clark Abel in

1818. This tour follows the footsteps of Herschel and Darwin.

When John Herschel arrived in Cape Town in 1834, he was already famous as an astronomer and natural philosopher. He had nearly been elected president of the Royal Society of London in 1830. He had applied immense energy to discovering and mapping double stars, star clusters, and nebulae in the English skies in the 1820s. He was anxious to carry this work through personally in the southern hemisphere, to assure uniformity and completeness. Herschel came to Cape Town mainly to observe deep-sky objects. But he still had the daylight hours and a span of days around full moons when he could not observe deep space. He went afield at every chance he got, sometimes for geology, sometimes botany, and sometimes just for the joy of drawing landscapes.

Darwin, 17 years younger than Herschel, was nearing the end of his famous voyage on the *Beagle*. He spent only a short few weeks (31 May to 18 June 1836) in the Cape region, but he covered much of the same territory as Herschel and in much greater geological detail. Darwin greatly admired Herschel's general scientific accomplishments and he looked forward to the chance to visit Herschel while at the Cape. Darwin first met Herschel on 4 June, when he and Captain Robert Fitzroy (1805-1865) went to Feldhausen, Herschel house near

Wynberg, about 10 km from Cape Town. Darwin wrote to his sister Catherine in anticipation: “I have heard so much about his eccentric but very amiable manners, that I have a high curiosity to see the great Man.” (Darwin to Catherine Darwin, 3 June 1836, DCP-LETT-302, Darwin Online).[1]

Darwin and Herschel met again more formally on the 15th of June, when Darwin, Fitzroy, and others dined at Feldhausen. Darwin wrote about Herschel to J.S. Henslow on 9 July: “At the Cape Captain Fitz-Roy and myself enjoyed a memorable piece of good fortune in meeting Sir J. Herschel. We dined at his house and saw him a few times besides. He was exceedingly good-natured, but his manners at first appeared to me rather awful.” Unfortunately, any discussion of geology is only minimally recorded.

The goal of this field trip is to visit a few of the sites visited by Herschel and Darwin, put the geology in the context of their time, and try to see it with their eyes. More importantly, we will place these two important scientists in more historical perspective.

4. Stops on the Trail of Herschel and Darwin

Site 1: The Herschel Obelisk: on site of The Grove Primary School, formerly Herschel’s Feldhausen

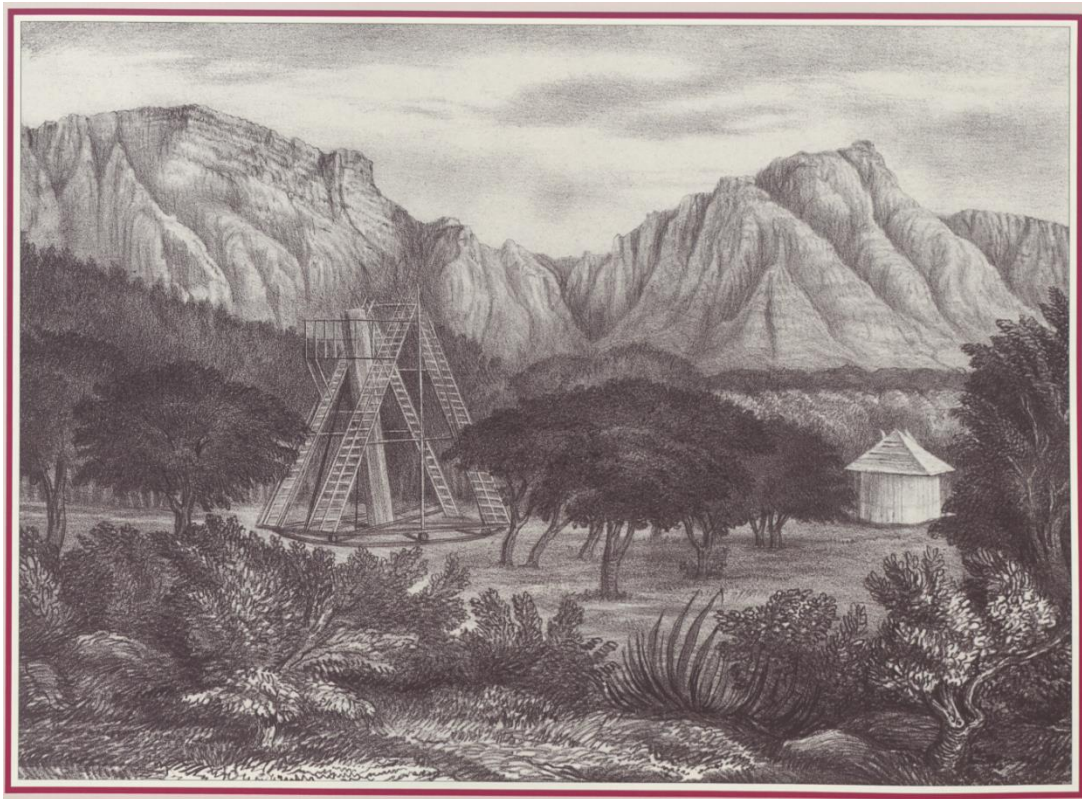


Figure 2: John Herschel’s camera lucida drawing of Table Mountain at Feldhausen, with his 20-foot telescope and refractor building in the foreground (National Library of South Africa).

Here stands an obelisk, on the site where John Herschel erected his 20-foot reflector telescope. With a mirror 18-inches in diameter, it was the largest telescope anywhere in the world at the time. From 1834 to 1838 he swept the skies, searching out and painstakingly mapping over ten thousand double stars, nebulae, and star clusters.

During the day, Table Mountain and Devil's Mountain shaped Herschel's reflections on the Earth and its place in the Cosmos. Herschel investigated the rocks, their crystals and minerals, and he thought about the large forces continuously reshaping Earth's surface. He also measured solar insolation and organized meteorological and tidal collaborations. He carefully measured the atmosphere. This period of intense astronomical observing was also critical in the development of Herschel's ideas about the Earth and about terrestrial phenomena.

Herschel's first geological experience after landing at Cape Town in January 1834 was a visit to a local slate quarry. [I am trying to identify this quarry, but I need more information.] Brian Warner tells of Herschel's landing: "Almost the first scientific comment in his diary after reaching Cape Town was to note the absence of fossils in the local slate quarry. The immediate vicinity of Cape Town is largely devoid of fossils, which Herschel cleverly found out by consulting a well-digger..." [2] Herschel's words on 22 January 1834 were:

"In the Evening walked out to a quarry on the side of Lion Hill just out of Town. It is Slate (or at least blue hard stone) in nearly vertical and very well defined Strata, with a cross stratification extremely distinct, & breaks into very regular blocks almost exactly like the rhomboid of Carbonate of Lime. Saw no traces of organic remains in any part of this quarry." [3]

Herschel often walked or rode his horse around the area, exploring the geology and mineralogy. He started developing a network to channel minerals and fossils back to researchers in England. He sent trilobites to Sir Roderick Murchison (1792-1871), thus establishing a Silurian foothold in Africa. He climbed Table Mountain twice for atmospheric and actinometric observations. He helped Thomas Maclear (1794-1879), the Cape Astronomer, with critical geodetic triangulation points. He coordinated meteorological and tidal observations at the Cape and in India. Geology was an integral part of a broader, more diverse set of Earth sciences for Herschel. Foremost in Herschel's mind were questions about physical and chemical processes that sustain Earth's geological dynamism, from forces directing crystallization to those that cause crustal uplift.

Herschel sold Feldhausen when he and his family returned to England in 1838. The last of the buildings was removed in the 1950s for the construction of Grove Primary School.

Site 2: Mr Hare's Rock? A remnant of Wynberg Hill's outcrops

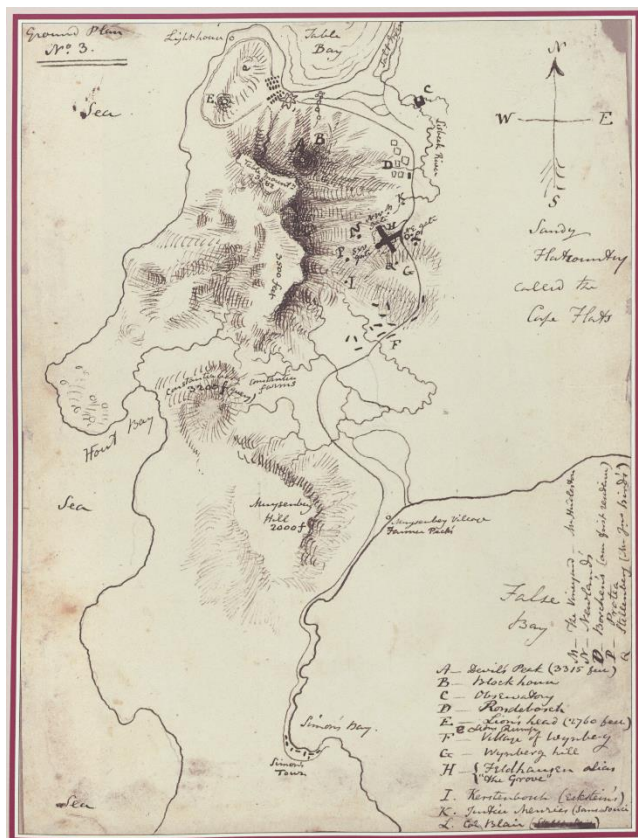


Figure 3: John Herschel's camera lucida drawing of Table Mountain, from Wynberg Rock (National Library of South Africa).

On an April Sunday, Herschel rode over to Wynberg Church, but found there was no service. So to put the morning to good use, he examined a local outcropping:

"Returning, examined the great granite block in Mr Hare's grounds. It is a single stone without a flaw 16 paces long & 10 broad of an irregular oval form and rounded surface

projecting about 6 feet above the soil, & nearly smooth. The granite is chiefly White Felspar (sic) in large crystals with some black mica and quartz in small quantity. Very hard & little appearance of weathering. It is accompanied by much other granite in loosely scattered masses similarly projecting & is doubtless only a projection of a great outcropping Granite Rock. Taking a course out of the Road towards the Table Hill I observed the outcrop of Granite masses (of similar nature) in several other parts so that doubtless the substratum of Wynberg Hill is Granite."



A few days later in May, Herschel returned to Wynberg Hill to examine some of the other granite outcrops. Again he saw white granite crowded with feldspar and black mica, but with little quartz. He convinced himself that Wynberg Hill's granite continued to the west under the Table Mountain rocks.

[Herschel mentioned several specific granite rocks around Wynberg, usually by the name of the property owner. These rocks acquired names like "the Rifle Butts" and "Hen and Chickens Rock." I have made no exact correlations. GG]

Figure 4: John Herschel's sketch-map of the Cape Town area (National Library of South Africa).

In Herschel's sketch map above, Table Mountain stands out, as do the X for Feldhausen, the Lion's Head, and Signal Hill. Hout Pass is just south of Table Mountain.

When Darwin visited the Cape in 1836, he did not write anything specifically about Wynberg Hill, but he would have travelled very close to the rock Herschel described on the road from Simon Town to Cape Town. Instead, Darwin made general comments about the Cape granite, its properties, and its position in different places. Because Darwin's notes were made hurriedly and because he alternated between detailed, site-specific descriptions and broader regional conjectures, it is not always possible to be certain of the locality of a description. Nevertheless, we find him starting his Cape diary with an overview of Cape granite:

"The lower platform of the country consists of Granite. This generally raises to some hundred feet above the level of the sea, but in some parts does not at all appear. The granite is coarse grained & contains very large crystals of felspar; it is in many parts traversed by veins of ferruginous-siliceous granite; it contains balls of a dark colour, which consist of an aggregation of minute scales of black mica imbedded in some tough basis; I saw in some blocks of decomposed granite, crystals of black schorl [a tourmaline variety], which were placed, so as to radiate from a centre.... The granite is subject to extreme decomposition, & hence when protected, is covered by a great thickness of rock, reduced into the state of soil."

Darwin had much more to say about the distribution of granite and its relation to the other rock formations, but it is better to hold that until the discussion of Sea Point.

Site 3: Constantia Nek: Herschel's jumping off point for Table Mountain, and Hout Bay

In February 1834, only a month after arriving at the Cape, Herschel made his first foray near Table Mountain. "In the afternoon Rode out with M. [his wife, Margaret] and D.S. [Duncan Stewart, Margaret's brother] towards Hout's Bay and from the Hill which flanks the pass leading into it got a most beautiful view."



Figure 5: The view toward Simonsberg, Stellenbosch, and the Hottentots Holland Mountains, a camera lucida drawing by Herschel, taken on 31 July 1834 from Constantia Nek near Hout Pass. (National Library of South Africa).

In late July that first year, Herschel wrote: "Rode with Mr Stewart [Steuart] (High Sheriff) to Hout's Pass, and climbed Constantia Berg, whence took a semi-Panorama". From this pass he saw the view to Hout Bay in the west and more mountains beyond the flats to the

east. He could see the climb to the summit of Table Mountain. He saved it for another day and returned home that night.

Darwin is not known to have visited Hout Pass.

Site 4: Paarl Rock and Diamond Rock: our farthest point, visited by both Herschel and Darwin

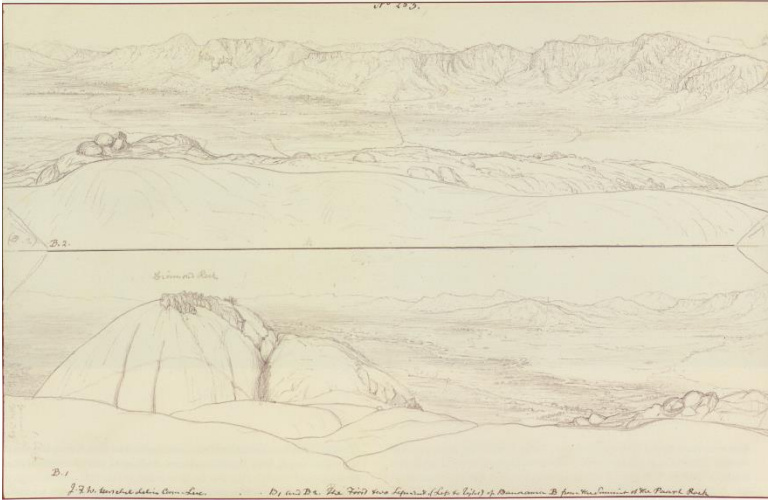


Figure 6: John Herschel's panorama (two panels) made atop Paarl Rock (National Library of South Africa).

Herschel visited Paarl during his first year at the Cape, in November 1834, as part of a two-week excursion. It started with an ascent of Table Mountain, a stop at home to gather up family, and a “waggon and 8” ox-powered trip through Stellenbosch, to Paarl, and to Wellington in the north and “French Hook” (Franschhoek) in the south east.



Figure 7: John Herschel's camera lucida drawing of Diamond Rock, with its cave at the base (National Library of South Africa).

On 12 November Herschel, with a Rev. G. Withers, went to the top of “Paarl Hill” via the cleft between it and Diamond rock. Herschel wrote: “A most remarkable Dike cuts across it like the top of a brick wall.” He noted its direction and its width (12 to 14 inches), and that it thinned and divided in two. From here he climbed Paarl Rock, summing by 8:45am and noted: “Summit of Paarl a Desperate

scramble on bare round granite a noble view”. He roughly measured angles between various distant mountains and was back in the hotel by 10:05: “After a Desperate broil and scramble”.

Despite the hardship, Herschel returned to Paarl in January 1836, accompanied by Thomas Maclear, the director of the Royal Observatory at Cape Town. Starting early in the morning, in two hours they were atop Paarl Rock, having removed socks and shoes for better grip. Herschel observed a stream two thirds of the way up, and described the soil as “where not granite, very hard baked pot clay...”. He merely noted the dike he saw on the first visit, and then he and Maclear turned their attention to barometric readings (for altitude), temperature, Beaufort scale estimates of wind speed, and precise sightings for a geodetic survey connection of Paarl Rock to Wynberg Hill and the Royal Observatory. They climbed down via Diamond Rock and ate dinner in its cave, and indulged in “long draughts & a plentiful ablution of feet & hands” in the brook on the way to town. Herschel described a granite flake 28 paces long and 7 broad, and another “remarkable specimen of granite exfoliation in

a block of vast size almost exactly spherical on a highly inclined slope. Took a sketch of it. Situation most romantic."

Six months later, Darwin also visited Paarl. He made more extensive geological observations. He focused on the granite and its decomposition. Darwin recorded his descriptions in his *Geological Diary*.

"At the village of the Paarl, there are some extraordinary fine examples of loose balls of an enormous size, lying on the summits of the base mammiform hills of granite. Parallel & vertical fissures cross the mountains in directions at right angles to each other. These may now be seen of various widths, & it would appear that the great balls are only the remnants of original cubical masses. Besides the general description circumscribed patches of the granite yield to the weather, much more readily than the adjoining parts. As we see in some granites sphaerical masses projecting outwards some possessing a harder & slightly different structure, so here cavities exist on the sides of steep rocks section [see sketch on Darwin's page]; From the thinness of the overhanging lip, or front it appears certain, that no other cause than the quiet action of the weather has removed the central parts. A very large hollow, forming a cave, exists in the lower surface of one of the great balls on the Paarl. — This globular mass [see sketch] is perhaps about 30 ft high, it rests on several points, within

the which is a smooth arched cave, frequented by cattle. On the sides of some steep masses, the granite is worn away, into extensive shallow cavities of irregular forms, which resemble the defective parts, of any mass of cast metal."

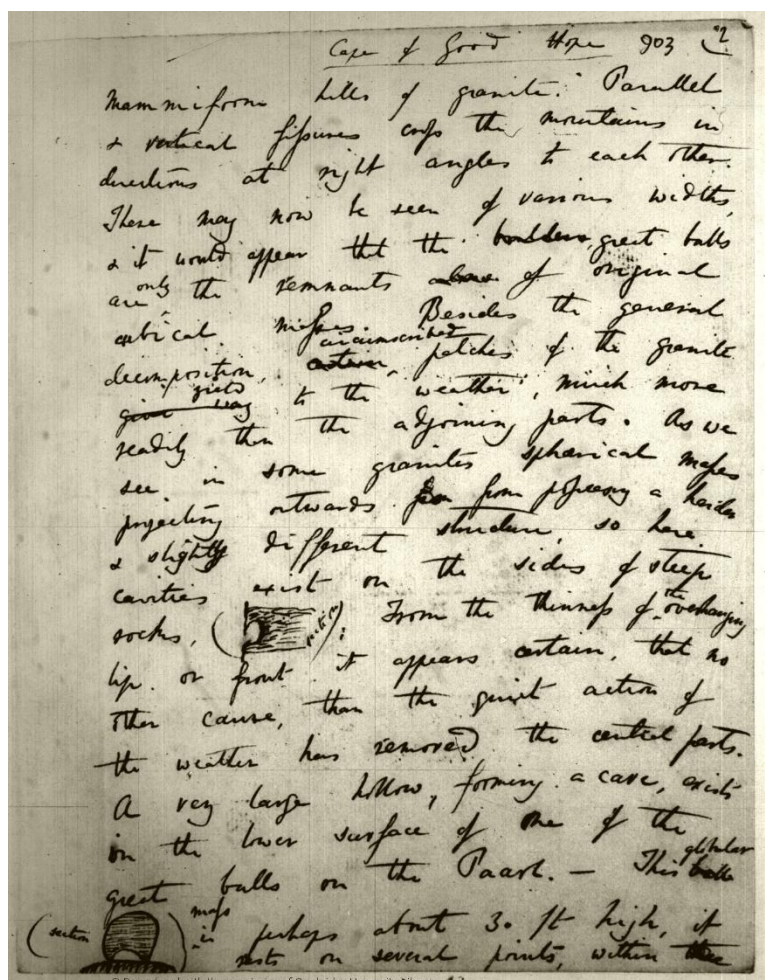


Figure 8: A page in Darwin's *Geological Diary*, in which he describes the "mammiform hills" of Paarl, described below. (Darwin Online).

Site 5: Sea Point, the equally messy processes of geology and history. What did Darwin do here?

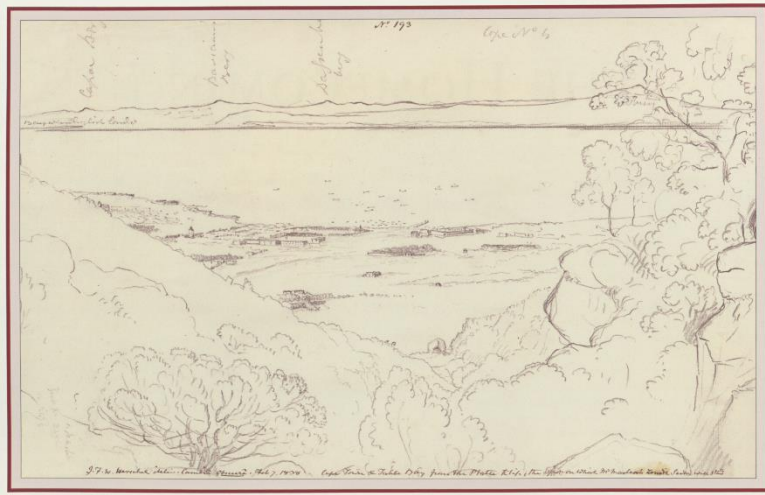


Figure 9: Herschel drew this view of Cape Town from Platteklip Gorge on 7 February 1838, a month before he sailed home to England. Just beyond the left edge of the view are Green Point and Sea Point. (National Library of South Africa).

As the ship *Mountstuart Elphinstone* approached Cape Town Harbor on 15 January

1834, John Herschel wrote in his diary: “Rounded Green Point & cast anchor in the nearest anchorage, by advice of the Port Captain.” This was as close Herschel got to the well-known contact between what is now called the Malmesbury Shale and the Cape Granite. The next day he began supervising the vast job of transferring his family, their furniture and such, and his telescopes, library, and other apparatus ashore for a four-year stay. As far as I currently know, Herschel did not mention Green Point again until sailing home: The ship *Windsor* weighed anchor on 11 March 1838 and “in less than half an hour was rounding Green Point ... and fairly off the land with the noblest view of the T. Mountain ... imaginable.” Perhaps there is more to discover in the archives.

Not very much has been written about Darwin’s time in Cape Town, but what little has been written concerns the now well-known “Sea-Point Contact.” Most of this secondary literature has concerned whether Darwin was the first to write about the contact at this location between the Malmesbury Slate and the Cape Granite. Some writers claim that Darwin went on purpose to see for himself if the contact could be used to test the question of the origin of granite. Did it settle from an ancient sea or was it the product of Earth’s internal heat? Although these questions may have been foremost in Darwin’s mind when he wrote his *Geological Observations on the Volcanic Islands visited during the Voyage of the H.M.S. Beagle, together with some brief notices of the Geology of Australia and the Cape of Good Hope* (1844), in 1836 Darwin was most concerned to describe the contact carefully. One of the more recent authors to examine this episode, Sharad Master, makes just these points. [4] Below I select passages from Darwin’s field notes, now known as his *Geological Diary*, and transcriptions of Darwin’s letters, both from *Darwin Online*, which take us as close to the events as we can go.

When Darwin landed, it was at Simon’s Bay, off of False Bay, an overland journey of 40 km to Cape Town on roads made for ox carts. As he travelled to Cape Town, probably on horseback, he watched highlands rising to Table Mountain on his left during the journey. He also saw, far off on the right across False Bay and the Salt Flats, the Hottentots Holland and other mountains. Beyond them lay the Cape Fold Belt Mountains, and beyond that the Great Escarpment and the Karoo Plateau, none of which did he visit.

It is worth noting that Darwin knew about Sea Point (which he conflated with and called Green Point) from the literature, long before he arrived at Cape Town. He had an enviable scientific library on board the *Beagle*. His guide to Sea Point was Dr. Andrew Smith, M.D., who had led expeditions deep into the interior of South Africa. Herschel may have introduced them, since he was not only Smith’s friend but he was also the chair of the oversight committee for one of Smith’s expeditions.

"D' [Andrew] Smith kindly conducted me to the junction of the clay slate & Granite, which is well known as described by Capt. B. [Basil] Hall (Trans. Edinburgh R. Soc:) & Clark Abel." [4] [5]

Hall published his account in 1813, co-authored with John Playfair (1748-1819). Note that this was the Playfair who wrote *Illustrations of the Huttonian Theory of the Earth* (1802) and Basil Hall was the son of Sir James Hall, known for his high temperature experiments to test Hutton's ideas. Herschel had known Basil Hall for years. Herschel, by the way, provided no evidence that he investigated the Sea-Point area himself, but he said in his diary that he had abstracted Clark Abel's chapter on the geology of the Cape in his book *Narrative of a Journey in the Interior of China*. Abel (1780-1826) was a botanist who served on a mission to China. Herschel, however, did not read Abel until April 1837, ten months after Darwin's visit.

Darwin extensively described the "Sea-Point Contact," a phrase he never used, in his diary:

"The layers of the clay slate are everywhere directed in a NW & SE direction, the general dip is at an angle of 45° to the NE. In parts, however not far distant the dip is sometimes vertical & sometimes to the opposite point or SW. — according to [Basil] Hall in high part very vertical

"The line of junction of the Granite appears to cross the country in a line parallel to the cleavage of the slate. The clay slate to the distance of a quarter of a mile is slightly affected...following the beach the slate is first observed to become of a compact nature & to possess an even, or slightly conchoidal fracture; parts of it are semicrystalline & full of most minute particles of mica...

"Within a hundred yards of the nearest Granite, the clay slate is changed into dark colored (felspathic?) compact rock full of minute scales of glittering mica in some varieties small collections of a soft white mineral, perhaps are preparatory to the formation of crystals of felspar; another variety has a pale brown homogeneous base with the same granular collection of white matter, which in this case has been washed out, by the action of the sea, & has left curious honeycombed rocks. Close to the junction, the clay slate continues much in the same state, as a dark (felspathic?) rock (with a tinge of purple), with a compact or irregular fracture, & abounding with minute glittering scales of mica. The whole is full of small circular black spots, which gives to the rock a specido[pseudo?]-granular appearance. — I have hitherto mentioned the junction, as if it existed as a defined line [my emphasis, GG]. It is really spread over a considerable space of nearly 200 yards. — The first appearance in the Granite is shown by small patches & short thin layers of the altered slate, imbedded at wide intervals in the coarse matrix.

"These gradually become more numerous, & although contorted & isolated generally retain traces of their original NW & SE direction. Presently the altered clay slate, yet traversed by veins & including irregular masses, of granite, becomes the prevalent rock, & finally no trace of the injected matter is to be found & then the clay-slate by degrees assumes its proper character. Nearly in the midst of the junction there is a large irregular dike of a white granite different from the ordinary kind & full of quartz veins. — I can only compare this curious junction to the appearance of the union of two fluids of very different degrees of specific gravity, which although they may penetrate each other, for the time keep distinct. The forms of curvature are however different from what would happen in such a case."

A critical point should be made here. Darwin restricts himself almost completely to description in this passage. The only theoretical statement relates to the mixing of two fluids as a possible, but problematic, explanation of this complex junction. Darwin does not discuss Neptunists or Vulcanists until his 1844 book, *Volcanic Islands*.

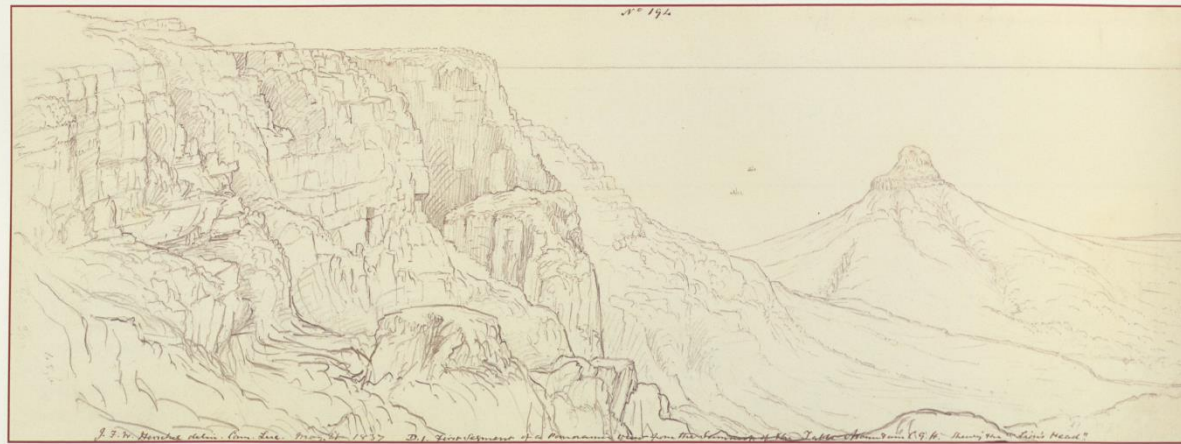


Fig. 10. First segment of a panorama view by John Herschel, from the summit of Table Mountain, looking down on Lion's Head. Green Point and Sea Point lie beyond Lion's Head. (National Library of South Africa).

Smith also led Darwin up the Lion's Head, to examine the contact discussed by Basil Hall.

"By following the ridge of the hill from the Lions rump to the Head, a beautiful contact of the clay, slate & granite may be seen (pointed out to me by D^r Smith). The clay slate is here changed into a thinly laminated rock, composed of small brilliant scales of mica separated by layers of yellowish granular mineral, which I do not know whether it is quartz or felspar; the laminae are undulating."

That is all Darwin said about the Sea-Point Contact in his notes at the time. He enquired about the granite-slate contact further afield from Herschel and other informants.

"I did not see any of the clay slate formation far South of Cape town, but near Simons Bay, M^r Sullivan discovered in the granite angular fragments of a blackish finely laminated rock which probably originally proceeded from the clay slate formation. Sir J. Herschel showed me a curious specimen of a somewhat similar nature, which he obtained from Hout's Bay."

Table Mountain and Concluding Thoughts:

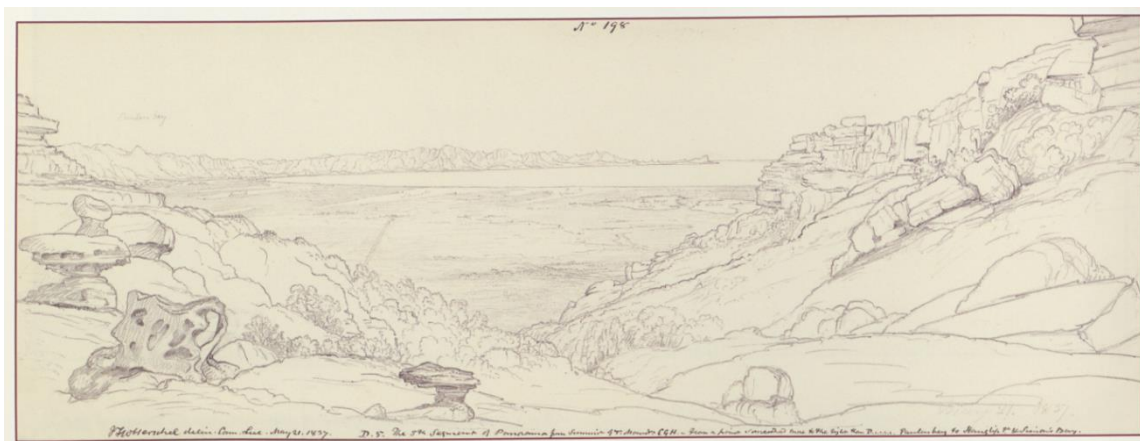
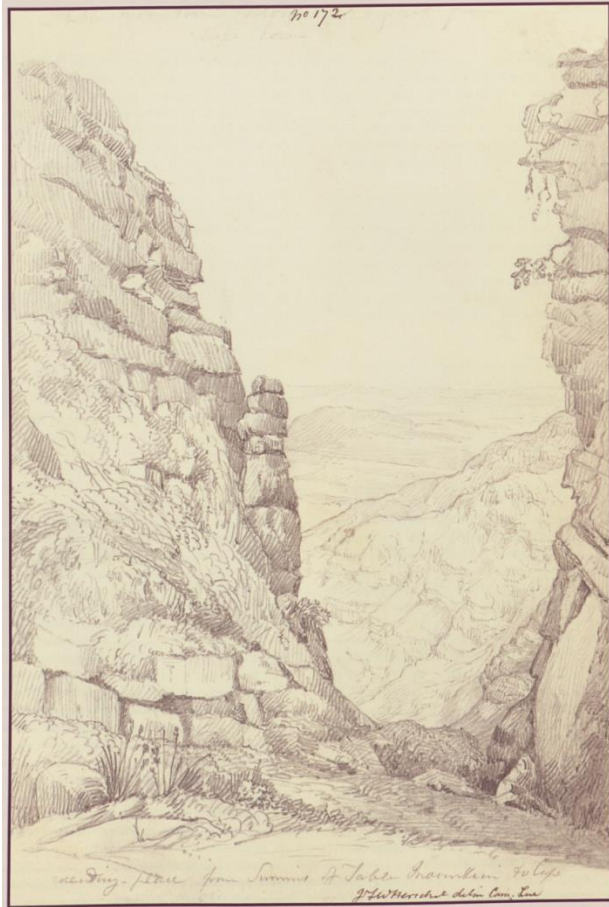


Figure 11. Herschel's drawing near the Table Mountain summit of some oddly weathered sandstone boulders (National Museum of South Africa).

Of course, no matter where one is in this region, Table Mountain is visible and presents geological questions. Herschel proclaimed at the beginning of the Cape visit: “Nothing can be finer than the towering Mass & graceful slope of the Table Mountain & Devil-berg.” Herschel climbed to the summit of the mountain at least two times, in 1834 and in 1837. On both climbs, Herschel sketched a great many oddly shaped sandstone outcrops, sculpted by the wind. More archival research is needed to find out how he described these rocks and the mountain’s geological structure.



On the 1837 climb, done almost entirely on horses via Hout Pass, Herschel was joined by his wife, Margaret, some friends, and several porters. (Margaret Herschel to her mother, Mary Stewart, 29 May 1837).[7] He also climbed part way up several times on rock and plant collecting trips. One of Herschel’s interests was to use Table Mountain to study the atmosphere. He retrieved a maximum-minimum thermometer he had left in a protected place on the summit in 1834, and noted the temperature had ranged between 31.2° and 96.2°F during that time. Two days later Herschel wrote in his Diary: “Rode round Kloof, a geological examination.”

Figure 12. Herschel’s drawing at the top of Platteklip Gorge, 1837. (National Library of South Africa).

Herschel was also interested in the geology of the mountain. He assisted Maclear in determining the gravitational attraction of the mountain using a zenith sector. He observed in a defile part way up the mountain

“granite veins penetrating the Schistose black rock which here protrudes under the sandstone & above the granite. Noticed also a cavern where there are Dikes...” (7 February 1838)

Darwin saw Table Mountain as a key to understanding the region’s geology. He wrote in his diary:

“Far the most conspicuous feature in this country is a great formation of sandstone; This stratified mass attains a thickness, which I should suppose must be about 2000 ft. — The varieties of the stone are numerous; generally speaking it is tolerably fine grained, white or stained with ferruginous matter, composed of quartzose patches, which not infrequently are blended together by a siliceous cement. The degree of hardness varies much, but in the last named varieties is very great. — Some strata are coloured dark red & even black by the quantity of ferruginous matter. Occasionally in all parts a few quartz pebbles are found, but these would appear to be far more abundant in the superior series: — near Simons bay on the summit of the mountain there were sandstones which passed into a quartzose breccia. We may imagine that the increased coarseness in the materials of the sandstones in the upper strata, to be the result of the shoaling of the water & consequent

greater power of transport in the currents of the former sea. — The sandstone, where the white quartz pebbles were abundant, resembled, excepting in being more siliceous & harder, that of the Blue Mountains near Sydney. — The sandstone is commonly traversed by large white quartz veins, & there are large surfaces coated with regular crystals of that substance. — all aqueous action. The strata are occasionally separated by layers of ferruginous shales. — I did not see a trace of any organic remains. — Besides the regular planes of stratification which are numerous, there are others nearly vertical of cleavage; they are far from universal, & I do not think any one direction is prevalent. Frequently in a single stratum, there are oblique seams or layers; this was particularly conspicuous in a snow white & rather soft variety of sandstone. — The sandstone reposes in an undisturbed manner on the granite, & as naturally might be expected, according to D^r Smith, on the clay slate. — At the Lions Head, the rounded massive outline of the granite is singularly contrasted with the horizontal strata of the cap of sandstone. — We did not find any actual junction, but at the distance of a few feet the sandstone & red shales were in an weathered state. Near Simons Bay, a beautiful junction is displayed, on the side of one of the mountains. The Granite forms a steep sloping talus of about 700 ft high, which is capped by a great & almost perpendicular wall of about 1500 ft of sandstone. — It is interesting to observe the junction of two great & distinct formations; one beholds the state in which the bottom of a deep sea once existed & one is led to reflect on the change of circumstances which first commenced the accumulation of the new & superior mass of matter. — The line of junction appeared straight; the granite was quite decomposed, but every crystal in its proper place — on it was superimposed a layer, an inch thick, of the recemented constituents of the granite above this about 6 inches of a granite sandstone, & then commenced the pure fine grained siliceous sandstone, which with the small variations already mentioned, is continued upwards to a thickness of at least 1500 ft. In another spot close by, the disintegrated crystals of granite were united & mixed in a thin layer of a dark red indurated shale, on which lay the common sandstone. — A structure of this shale appears general, close to the base of the sandstone, for it likewise occurred near Cape town. —

With respect to the elevations of the mountains, inspection of a map, shows that the general line which has formed the Peninsula, ran nearly N & S. & therefore intersected at a considerable angle the old line of the clay slate & Granite. Near Cape Town, an extensive mass of strata retain their horizontal position, & give rise to the well-known form of the Table Mountain (3500 ft). Further south towards Simon's Bay, a small westerly dip is common. — In some parts of the line, the granite instead of rising several hundred ft above the level of the sea, is entirely concealed, in those parts the mountains are lower & I noticed in one spot [small sketch in margin], the strata of sandstone bent downwards from the higher to the lower portion. We may hence infer that the granite & superincumbent ~~Lava~~ sandstone have been together elevated into mountain chains, & subsequently together have suffered degradation; Hence arises the form as if hills (indeed of a platform) of granite had originally been capped with the sandstone. — The chain of mountains which terminates at C. Hanglip, runs parallel to this first described line; when entering False Bay, the hills nearest the coast showed a very considerable dip to the East. At Sir Lowry Cole's pass, which crosses a continuation of the same line, planes of division which I believe to be those of stratification, were nearly vertical. The sandstone was here based on a fine grained granite of a very different variety from that near Cape Town." [Strikethrough in the original].

To tell stories of how geologists worked, what they thought, and how they associated with others, requires equal attention to the geology and the history. We have to try our best to get both right, and not to take anything on faith just because it's in print or on the internet. I will in another venue review (historically) recent literature on both Darwin's and Herschel's geological work. For now, there is much to ponder in Darwin's long quote above.

Acknowledgement: Useful recent popular accounts of the geology of the Cape region have supplemented the historical material. [8] [9] All of Herschel's camera lucida sketches in this guide are from [10].

5. References:

- [1] John van Wyhe, ed., *The Complete Work of Charles Darwin Online*. (<http://darwin-online.org.uk/>), 2002 forward. Note that the transcription of Darwin's *Geological Diary* contains small errors due to the challenges of Darwin's handwriting. I have silently corrected these and also cleaned Darwin's corrections to produce a readable but accurate text. All quotes from Darwin's *Geological Diary* and Darwin's correspondence come from this valuable website.
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43rd INHIGEO Conference, Mexico City, 4-14 November 2018

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

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

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

A post-meeting five-day field trip to Oaxaca, with the goal of traveling along a representative section of the central Mexico stratigraphy, from Quaternary volcanic succession 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 Juárez Range, and the colourful Jurassic units of Oaxaca.

For additional information, please contact our Vice-President Latin America, Profesor Luz Azuela, Instituto de Geografía, Universidad Nacional Autónoma de México, Circuito Exterior s/n Ciudad Universitaria, 04510, México, D. F. MEXICO. His e-mail is: lazuelab@yahoo.com.mx. Also check the INHIGEO web site: www.inhigeo.org.

SCHEDULED FUTURE INHIGEO CONFERENCES 2019-2021

Those currently planned:

2019 – 44th INHIGEO Symposium – Como/Varese, Italy.

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

2021 – 46th INHIGEO Symposium – Poland.

OTHER CONFERENCE REPORTS

4th Argentinean Congress on the History of Geology

The 4th Argentinean Congress on the History of Geology (ivcahgeo) was held in the city of La Plata, between September 15 and 16th. It was the most important activity on the history of geology that took place in Argentina during 2016, and was dedicated to commemorate the Bicentennial of Argentina as an independent country.

This meeting was one of a series which began with the 1st, 2nd and 3rd Congresses organized respectively at Tucumán University (2007) by G. Aceñolaza, Buenos Aires University (2010) by G. Ottone, and R. N. Alonso, Salta University (2013). Works presented at these meetings were published in three special volumes by the “Instituto Superior de Correlación Geológica (INSUGEO)” (2008: Miscelánea 16), the “Revista de la Asociación Geológica Argentina” (2010; vol. 68, 3) and Alonso, R.N., ed., 2013, III Congreso Argentino de Historia de la Geología, Mundo Gráfico Salta Editorial, Salta. These congresses were initiated to offer the opportunity for specialists from Argentina,

neighbouring countries and from around the world to discuss the results of their research into various historical aspects of the history of geology. The next Congress will take place in Córdoba (2019).

The ivcahgeo Opening Ceremony was held on Thursday, September 15th at the Museum of La Plata with the presence of authorities of the Faculty of Natural Sciences, La Plata National University. Scientific sessions continued there and on September 16th. The Congress had about 60 participants, mostly from Argentina, but including a few representatives from Chile and Uruguay. Communications delivered during the sessions amounted to a total of 43. To view the Abstracts, please visit the web site: <https://publicaciones.fcnym.unlp.edu.ar/rmlp/issue/view/5>. Proceedings of the meeting were published as two special volumes of the Revista del Museo de La Plata: the Proceedings entitled *History of Geology in the Bicentennial of Argentina* (Riccardi, A.C., ed., 2016; Revista del Museo de La Plata Vol. 1, Número Especial, pp. 1-333; <https://publicaciones.fcnym.unlp.edu.ar/rmlp/>), include 25 papers by 34 authors. The Congress was sponsored by the La Plata National University, the National Research Council of Argentina, the Argentine Geological Society, Argentine Paleontological Society, Argentine Society of Sedimentologists, and the La Plata Museum Foundation.

Presentations included a number of biographical accounts focused on contributions by explorers/naturalists/geologists/palaeontologists: *e.g.* Luis de la Cruz y Goyeneche and the first fossils mentioned from west-central Argentina (by B. Aguirre Urreta & V.A. Ramos); Johannes Brüggén and his input to the geological knowledge of Chile (by R. Charrier, F. R. Hervé and P. Aceituno); I. Domeyko and geology and science in Chile (by F. R. Hervé & R. Charrier); José M. Sobral on his oil explorations in the Ñirihuau Basin (by E.G. Ottone); Handel T. Martin and the objectives and results of his paleontological expedition of 1903-1904 to the Santa Cruz Formation in southern Patagonia (by S.F. Vizcaino, P. D. Brinkman and R. F. Kay); Enrique Sparn and the bibliography of geology (by E. del V. Silva and R. N. Alonso), and the geological contributions of Carlos F. Stubbe (by R. N. Alonso, N. G. Solis and E. del V. Silva), Roberto Caminos (by E. J. Llambias, C. A. Cingolani and A. M. Sato), E. Fossa Mancini (by A. C. Riccardi); and M. E. Teruggi (by L. Spalletti).

History of geological institutions was considered in relation to: the contributions of Swiss naturalists from the La Plata Museum (by S. O. Carrasquero); the La Plata Museum between 1906 and 1966 (by A. C. Riccardi); the beginning and development of geology in Buenos Aires University (by V. A. Ramos) and of its reorganization after 1955 (by R. J. Cucchi).

Historical aspects of specific fields and/or topics were described or discussed for: Charles Darwin ideas on the sedimentary infilling of Andean valleys (by J. F. Mescua); the presentation of paleontological papers in 1910 at the American International Scientific Congress (by A. R. Prieto); the contributions of the first oil geologists of the state oil company in the Comodoro Rivadavia region (by J. J. Hechem); M. Doello Jurado and the history of El Toba meteorite (by J. M. Selles-Martínez); oil exploratory activities in the central region of Santa Fe province (by R. Calejari and S. Reinante); the publication of a journal by the students of Natural Sciences in Buenos Aires University (by R. J. Cucchi); the production of geological-military maps for north-eastern Argentina (by F. G. Aceñolaza); A. V. Borrello and the history of Rb-Sr geochronology in La Plata (by C. Cingolani); the participation of women in Argentine palaeontology since 1947 (by R. Herbst and L. M. Anzotegui).

Information submitted by A. C. Riccardi on behalf of the Argentinean Commission on the History of Geology.

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

During May, 19th to 21st, 2016, the 13th Symposium on History of Science and Technology of the Academy of Sciences of Erfurt (Germany) took place in Vienna. The event was entitled “German and Austrian expeditions to the Balkans and the Middle East”. From the Austrian side the meeting was supported by the Department of Lithospheric Research, the Austrian Academy of Sciences, the Archives of the University of Vienna, the Austrian Society for the History of Science, and the Botanical Garden of the University of Vienna. After a guided tour of the pharmacy-historical as well as the zoological collections of the University of Vienna, the Symposium started with oral presentations of the participants on May 20th. In addition to topics relating to medicine and botany, the symposium also focused on the history of the earth sciences, *i.e.* Heinz Peter Brogiato (Leibniz-Institut für Länderkunde, Leipzig) “Geographers and geologists traveling between Vienna and Constantinople”, Daniela Angetter and Johannes Seidl, “Ferdinand von Hochstetter (1829-1884) and Franz von Toula (1845-1920) - two Austrian pioneers of geological Balkan research,” and Richard Lein “Adventure Hejaz Expedition 1910.” In the meantime, the papers of the meeting are to be published in a proceeding volume entitled “German and Austrian research trips to the Balkans and to the Middle East” (= European scientific relations, Vol. 13; Shaker Publishing. Aachen 2017), edited by Johannes Seidl, Ingrid Kästner, Jürgen Kiefer, Michael Kiehn.

On November, 18th, 2016 the annual meeting of the AWGHES was held in the Cistercian monastery Heiligenkreuz in Lower Austria, with its topic “Geology and Faith”. Already in the middle Ages, the term geology as “Geologia” was used in contrast to theology, in order to compare the earthly order to the divine ones. During the modern era, geology became more and more a field of tension with the revelation of the Bible as the work of discovery began to contradict the biblical statements. In his “Theory of the Earth” (1795), James Hutton pointed out that the earth is much older than it was calculated from biblical data. In 1809, Jean Baptiste Lamarck published, for the first time, a consistent theory of evolution in his “Philosophie zoologique,” which denied the constancy of biological species. Fifty years later, Charles Darwin's publication “On the origin of species”, was published which explained the evolution of organisms through gradual variation and natural selection as a result of adapting to changing life-spaces. The development of geological sciences, which came especially into conflict with the Church at the turn of the twentieth century, represented the core theme of the symposium.

Fifteen lectures were held, and two guided tours completed the program; one visited building stones of the monastery, and during the other tour books on Earth sciences of the 16th to 18th century of the library were presented.

Presentations at the meeting:

Tillfried Cernajsek “Saint Barbara, patroness of the miners, geologists, artillerymen, *etc.*, depicted in ex-libris and miniature graphics;” Wolfgang Frank “The return of the fundamental debate between earth science and religion;” Georg Gangl “Faith without miracles;” Bertraud Hable “The Abbey of Admont and Gagat mining in the 15th and 16th centuries. Example of Styrian-Swabian trade relations;” Magret Hamilton & Franz Pertlik “Chronological documentation of the terms ‘molecular volume, volume law, volume rule’;” Hermann Häusler “Humanity as a geological factor: from anthropogeology to environmental research in the Anthropocene,” Simone Huber & Peter Huber “Bibliophile geoscientific literature in Austrian monastic libraries;” Simone Huber & Peter Huber “Historical geoscientific

collections in Austrian monasteries;” Bernhard Hubmann “Religion and science in conflict: The public controversy between Johannes Ude and Rudolf Hoernes in 1908;” Richard Lein “Leopold Kober and metaphysics;” Franz Pertlik “Franz Lorenz Hohenauer, provost, dechant, and pastor of Friesach. His contribution to the documentation of the earth science research of Carinthia;” Wolfgang Riedl “Nature - the creation is not perfect;” Matthias Svojtka “Natural history and its professional representatives at the University of Prague from 1749 to 1849”; Meinrad Josef Tomann “Litany in stone - faith lived on applied geology”; Ulrich Wutzke “Wilhelm Gabriel Wegener und the edict of religion.”

The next meeting of the AWGHES will be held in autumn 2017 in Vienna themed “Geology and Women”.

History of Geoscience Section – Geological Society of Italy.

88th National Congress: Session “Three centuries of Geology in Italy”.

On September 7-9, 2016, in Naples (Italy) was held the 88th Congress of the Geological Society of Italy. The History of Geoscience Section of the Geological Society of Italy organized the Session S35 “Three centuries of Geology in Italy.” Included in the session were 20 oral papers and 15 poster presentations. About 40-50 people attended each time slot. The abstracts of the session have been collected into the “Rendiconti online della Società Geologica Italiana”, vol. 40, supplement n.1 (DOI: 10.3301/ROL.2016.79). During the sessions, there was one of the four separate events organized in Italy to celebrate the birth centenary of Raimondo Selli, organized by Giambattista Vai to remember the memory of this great Italian geologist.

Exhibitions

In cooperation with the MUSE Museo delle Scienze di Trento, Marco Pantaloni and Fabiana Console, members of INHIGEO, developed and mounted the exposition “Montagne in guerra: uomini, scienza, natura sul fronte dolomitico 1915-1918. Berge im Krieg: Menschen, Wissenschaft und Natur an der Dolomitenfront 1915-1918.” The exposition, shown at the Geological Museum in Predazzo (Trento, Dolomites), represent the role of geologists, cartographer, naturalists, engineers and technicians on the Dolomites war front during the First World War.

Petroleum History Institute Annual Symposium and Field Trip Casper, Wyoming, July 28-30, 2016

The Petroleum History Institute (PHI) held it first ever meeting and field trip in Rocky Mountain Region at Casper Wyoming July 28-30, 2016 (Silverman 2016).



The PHI group, with Teapot Rock in the background. (Photo by Ann Mauer).

The site was chosen for its proximity to the area of the Teapot Dome which was at the center of one of the greatest scandals involving government officials in the Warren G. Harding Administration in the 1920s. The Teapot Rock, which marks the site of Teapot Dome oil field, one of three oil fields in the Naval Petroleum Reserves, and was at the center of the scandal (for details of the scandal please see: Silverman 2015; Trabish 2005; Yergin 1991/1992; and Stratton 1998).

The meeting began with a welcome reception on Thursday evening, followed by an all-day symposium on Friday. The symposium included 21 oral and 7 poster presentations; with subjects, and geographical areas, ranging from the history of the Salt Creek Oil Field in Wyoming (Tom Rea) and the development of the natural gas industry in Wyoming (Ann C. Noble), to exploration for oil in Brazil in the 20th century (Drielli Peyerl, Silvia Fernanda de Mendonça Figueirôa and Brian Frehner)) and Romania (Jeff Spencer and Marius Furcuta). For a complete list of the papers and abstracts refer to *Oil-Industry History*, v. 17, no. 1, 2016, p. 149-164; and the PHI web site: www.petroleumhistory.org.

At the Friday evening Awards Banquet, PHI made the following awards: The *Colonel Edwin L. Drake Legendary Oilman Award*, honoring a lifetime achievement within the oil and gas industry, was presented to two well-known oil pioneering families, the H. A. (Dave) and Jean True Family and the W. N. (Neil) McMurtry Family of Wyoming; the *Samuel T. Pees Keeper of the Flame Award*, recognizing individuals who have devoted their efforts to preserving and publicizing the heritage of the oil and gas industries, was presented to Everett De Witt, curator of the Salt Creek Museum, and Tom Rea, Project Director, editor, and co-founder of WyoHistory.org; and the PHI *Distinguished Service Award*, for outstanding service to PHI, went to Matt Silverman, chair of the Casper meeting. PHI has two awards for presentations given at the meeting: the *Gerald M. Friedman Award for Excellence in an Oil History Presentation* went to Gary A. Shigenaka for his paper on the history of oil spills; and the *Ellsworth "Pete" Sparks for Excellence in Oil History Poster Presentation* was awarded to Mike Bingle-Davis, Marron bingle-Davis and Julia Lemaster for their poster on the history of the Wyoming Geological Association.

The Saturday field trip included stops at the Salt Creek Oil Field, where oil was first discovered in Wyoming in 1889; a look at the site of the former Amoco/BP Refinery (now the Three Crown Golf course and the home of the Wyoming Oil and Gas Conservation Commission); the Salt Creek Museum, including a look at the original oil seep and the site of the first well; and a quick stop near Teapot Rock for the group photo (above). The meeting concluded at the end of the field trip. The 2017 PHI meeting will be held in Findlay, Ohio, July 13-15, 2017.

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William R. Brice.



125 YEARS OF THE SERBIAN GEOLOGICAL SOCIETY (1891 – 2016)

At the beginning of the last decade of 19th Century, on 10 February 1891 (according to the old Julian calendar) in the Mansion of Miša Anastasijević (today the Rectorate of the University of Belgrade) the Serbian Geological Society was founded. At that time, this was the third scientific society in Serbia, a few years before the Serbian Medical Society and the Serbian Archeological Society had started their activities. In that time in Europe just a few geological societies existed, while the Serbian geologists were the first in the Balkan Peninsula who established their formal organization.

At the time of the establishment of the Society by Jovan Žujović, the future of Serbian geology, a name that was to later become famous, was not actively planned. That actually came as a result of the work performed at the scientific geological seminary at the Belgrade Higher School, led by Žujović and a group of his closest associates. When a group of Higher School graduates joined the seminary and began reporting on the results of geological studies carried out in the Serbian territories, talking about the developments in the geological science in the world and exchanging literature, this gradually shaped

not only the organization but also the form of work of our Society. The Society received its official name thanks to our great scientist, chemist Simo Lozanić, and the first written Rules were drafted in 1897. Yet, things did not go that spontaneously; there was also a desire to show that "Serbia is not *terra incognita* in terms of geology and other natural sciences, and that it should not dwell under the umbrella of other countries' scientific interests", as described by Jelenko Mihajlović, one of the participants at the first Assembly of 10 February 1891. Thus was drafted the mission of the Society, which even today remains the first Article of our Statute: "To geologically study Serbian and other lands of the Balkan Peninsula and inform members and other interested parties about the developments in geology and the related sciences".

Over time, members of the Society included many naturalists, chemists, geographers, mining engineers, officers, teachers, amateurs, but primarily geologists; many of whom made significant contributions to Serbian natural sciences, as well as to international science. Along with Jovan Žujović, who was the founder, Ministers in several Serbian governments, the Rector of the University, the President of the Serbian Royal Academy, the active members included Jovan Cvijić, the founder of karstology and President of the Serbian Royal Academy, Sava Urošević, the Rector of the Belgrade University, Milutin Milanković, the international authority in climatology and planetary mechanics and one of the most cited Serbian scientists, Vladimir Laskarev one of the most famous European geologists. Out of the first eight by decree appointed professors of the re-established Belgrade University in 1905, three were members of the Serbian Geological Society (SGS). Also among them were also Svetolik Radovanović, the first Serbian to be awarded a doctor in geology and "father" of Serbian hydrogeology, Petar Pavlović long-term Director of the Serbian Natural History Museum, Dimitrije Antula, Jelenko Mihajlović, Vladimir Petković.

The SGS had initiated and supported the foundation of several other important national institutions such as the Seismological Institute, the Natural History Museum, the Royal Geological Survey, but also brotherhood scientific societies such as the Serbian Chemical Society and the Serbian Mining Society.

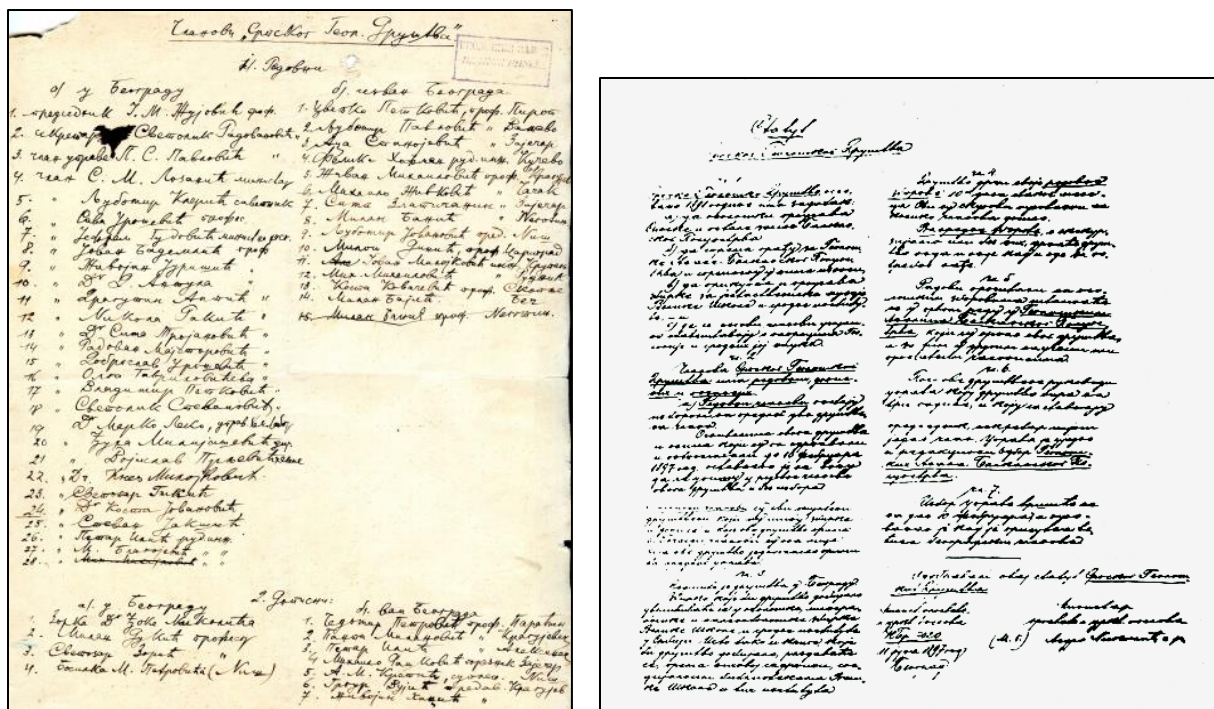


Fig. 1. The list of members of the Serbian Geological Society in 1897, written by Svetolik Radovanović (left) and, a facsimile of the original 'Statute' from 1897, stored at the National Library of Serbia (right). Source: Rundić Lj. & Grubić A. (Eds.), 2016 – "125 Years of the Serbian Geological Society". Serbian Geological Society, Belgrade.



Fig. 2. Jovan Žujović (framed) at an excursion to Mt. Ural held as part of the VIIth International Geological Congress (St. Petersburg, 1897). Source: Rundić Lj. & Grubić A. (Eds.), 2016 – "125 Years of the Serbian Geological Society". Serbian Geological Society, Belgrade.

Almost from its foundation the SGS started to publish its own journal “*Zapisnici SGD*” (“Reports of the SGS”). During the first half of the 20th century, the founders of the Society continued to lead, create and develop Serbian geology, while the joint activities of the school of geology and our scientific association continued through all the long years of the existence of both institutions.

However, the SGS has had a troubled history which it has shared with the Serbian nation. During the Balkan Wars (1912-13), and then during World Wars I and II, most of the Society’s members performed military duties, while some, such as Jovan Žujović and Jovan Cvijić, were sent abroad on diplomatic missions to promote ideas of Serbia and, later, in post-war Yugoslavia. For these reasons, the Society became inactive during these periods.

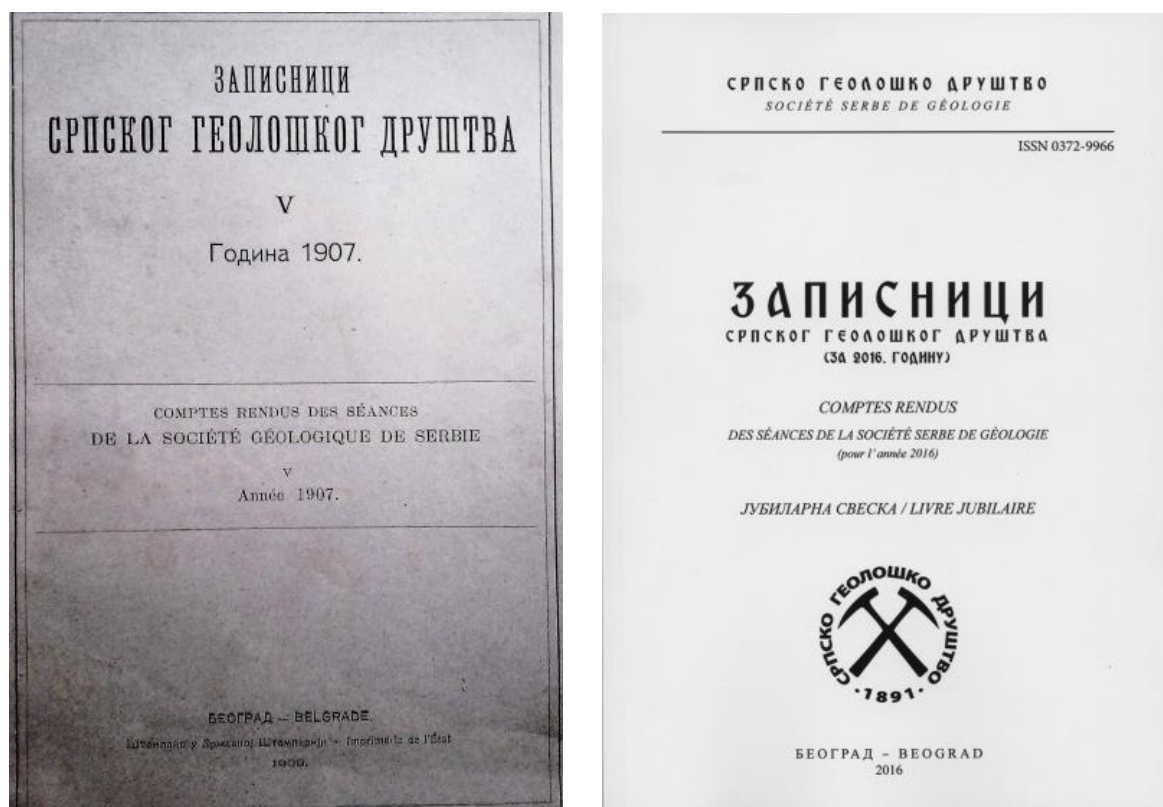


Fig. 3. The journal “Zapisnici SGD for the year 1907” published in 1909 (left) and the last edition from 2016 (right).

Source: www.sgd.rs

After World War II, the Serbian Geological Society supported the establishment of new geological societies in all the Yugoslav republics and was the initiator of the formation of the Union of Geological Societies of Yugoslavia, as well as one of its active members. During this period, members of the Society organized two geological congresses and several scientific events on various geological topics. Members of the SGS also proposed the enactment of the first Law on Geological Research (1972), which – in our country – represents a unique example of active participation of the scientific community in the creation of regulations governing a field of science and the research activity itself. By the initiative of the SGS the largest geological project had also started after WW II: Preparation of the Basic Geological Map of Yugoslavia in scale 1: 100.000. The project was completed 40 years later and still represents the essential pillar for field work of geologists of Serbia and former Yugoslav republics.

In the first decades after the World War II there was an increase not only in the number of geology graduates, but also in Society membership; those whose activities particularly stand out are the academicians Vladimir Laskarev, Kosta Petković, Stojan Pavlović, Milan Luković and Petar Stevanović. Their students, and soon after the new leaders in national geology, were Nikola Pantić, Aleksandar Grubić, Stevan Karamata, Nadežda Krstić, Mileva Sladić-Trifunović.



Fig. 4. The SGS members Petar Stevanović (left) and Milutin Milankovitch (right) at the 4th INQUA Congress (Rome, 1953). Source: Rundić Lj. & Grubić A. (Eds.), 2016 – “125 Years of the Serbian Geological Society.”

At the end of the 1980s there was an evident decline in the Society's activities and the attendance of members at regular meetings; however, the SGS experienced a major crisis after the celebration of the first century of its existence (1991). It certainly cannot be compared to the war years, especially not with the year 1915 when most of the able-bodied members put on the uniform of the Serbian army or went into exile, and when

the archive of the Society in Niš was destroyed. But we, the living witnesses of events in the years of the change of the centuries, view as particularly dramatic the loss of facilities of the seat of the Society in Kamenička Street (1999), the forced relocation of the library to the inadequate premises of the Geological Survey, and above all the lack of understanding and interest of the wider community for the problems we were facing.

The beginning of the new millennium also marked the beginning of the Society's re-birth. An especially productive period occurred in 2004, and from then until the present day we have organized three geological congresses as well as numerous seminars and expert excursions. We have managed to maintain the continuity of our spring and autumn meetings, regularly published the journal '*Zapisinici SGD* (Reports of SGS)', established some new thematic commissions and increased the number of members. A website was created during this period as well, as a sort of main information point for the members; old issues of the journal 'Reports' and special SGS editions were also scanned and posted on the website. In 2014, the Society launched several initiatives to amend the legislation in the field of geology, the licensing procedure and the awards granted to best young geologists. Active international cooperation contributed to the Society's membership in most significant international geological associations: the International Union of Geological Sciences (IUGS), the European Federation of Geologists (EFG) and the European Association of Geological Societies (AEGS). The Society organized and hosted the 18th Congress of the Carpathian-Balkan Geological Association (CBGA) in Belgrade (2006) and the 17th Meeting of the Association of European Geological Societies AEGS (2011). Thanks to the knowledge and experience of some of its members, the Society is currently

participating in the implementation of four international projects within the European Union's Horizon2020 program, under the auspices of EFG.

By accepting the EFG statute, the members of the SGS automatically accepted the Code of Ethics and the responsibility to apply it to their everyday work. The active international cooperation also resulted from the signing of a Memorandum of Understanding with geological societies from the region – Hungarian in 2015, and Romanian and Bulgarian in 2016.

The Society's one great happiness for its members is that in 2014 we finally moved to our new premises at the Faculty of Mining and Geology, which provides optimal conditions for the Society's work and a suitable place to keep the archive materials and the library.

Several events have marked the year of the great jubilee of the SGS – 2016. The first was the most important one: On February 15, the Serbia's Statehood Day, in the Presidency of Serbia building, the President of the Republic of Serbia, Mr. Tomislav Nikolić, awarded the SGS the *Sretenje Order of the Second Degree*. The recognition was issued to the SGS *For special merits and outstanding achievements and contribution to the development of scientific and technical thought and practice in the field of geological sciences, on the occasion of 125 years of existence and successful work*. The SGS was nominated for the award by the Geological Survey of Serbia, the Faculty of Mining and Geology and the Academy of Engineering Sciences of Serbia, and the nomination was supported by the Department of Mathematics, Physics and Geosciences of the Serbian Academy of Science and Arts.

Fig. 5. The President of Serbia, Mr. T. Nikolić (right) presented the Sretenje Order to Z. Stevanovic, the President of SGS (February 15, 2016).



On Friday, February 23, 2016, on the occasion of the exact birthday of the Serbian Geological Society, a musical-theater performance "125 Years Together" took place at the Faculty of Mining & Geology. Among the performers were current and past-presidents of the Society, as well as the artists; all of which was enjoyed by many SGS members and special guests.

The Postal Service of Serbia issued a jubilee stamp with the portrait of Jovan Žujović, the founder of the Society.



Fig. 6. Jubilee postage stamp with the portrait of Jovan Žujović

On occasion of the jubilee of the 70th Anniversary of the Faculty of Mining & Geology, on March, 11 of 2016, the Faculty organised special ceremony during which the *Professor Branislav A. Milovanović Award* was given to the Serbian Geological Society, for 125 years of active work. The award was named after one of the most prominent Serbian geologists Branislav Milovanović (1908-1977), professor in geology and paleontology, corresponding member of the Viennese and French geological societies, laureate of many awards and medals. Also, the Department of Mining, Geological and System Sciences of the Academy of Engineering Sciences of Serbia (AESS) has awarded the Serbian Geological Society the *Charter Academician Prof. Dr Ljubomir Klerić*. The charter was awarded "...on the occasion of 125 years of existence, for scientific, engineering and educational contribution to geology and mining." Ljubomir Klerić (1844-1910) was one of very first members of the SGS. And the Hungarian Geological Society awarded the SGS with a Gold Medal on the occasion of 125 years of the SGS activities.

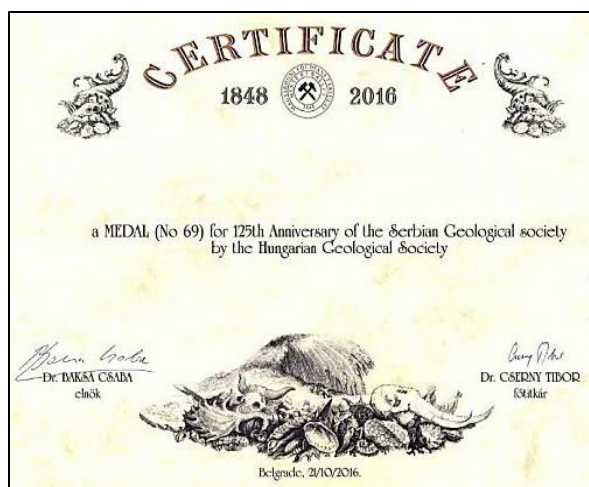


Fig. 7. The Hungarian Geological Society Awards a Medal to the Serbian Geological Society (October 21, 2016) (www.sgd.rs)

Finally, on October 21, 2016, in the Ceremony Hall of the Rectorate, the place where the Society had been established, a celebratory event was held. This event was attended by numerous guests: representatives of the EFG and presidents of geological societies from the region, geologists from Serbia, Bosnia and Herzegovina, Montenegro, Slovenia, Croatia, Hungary, Greece, Romania as well as SGS members and colleagues. The publication of the monograph "125 Years of the Serbian Geological Society," also presented at that event, was certainly the key moment of the jubilee year, and this written legacy will allow future generations of geologists an easier insight into the road travelled and the historical development of our science. The monograph is edited by Ljupko Rundić and

Aleksandar Grubić (INHIGEO members), while contributions are also written by Nenad Banjac and Milan Sudar. On this occasion, also, a memorial plaque was unveiled in the courtyard of the Rectorate located in the Miša Anastasijević's Mansion, where the Society was established and where it had operated until 1952. And in addition, a scientific conference was held on October 21, with four plenary papers on the theme: "Achievements and Perspectives of Serbian Geology."



Fig. 8. The Solemn Ceremony and Scientific Conference Commemorating 125 years of the founding of SGS (Rectorate of the University of Belgrade, 21/10/2016)

The SGS, at the end of year 2016, has 320 active members. During its long history SGS has acknowledged 54 foreign members. It is important to note that every year more and more young geologists and students have actively participated in the SGS activities, and we hope that this trend will continue and that a new generation of SGS enthusiasts will become involved in the organization of future national geological congresses (the next one will be in 2018).

We should keep in mind the words of our founder, Jovan Žujović, spoken at an SGS ceremony celebrating 30 years since its foundation (1921), but which are still relevant today: "... we have reason to be completely satisfied with it [the SGS]. It kept us together, maintained the unity and solidarity among us, and sometimes served to divide the labour among us in a useful way. Without the Society, the sum of our work would have been smaller. That is why I say: **Long live the Serbian Geological Society!**"

Ljupko Rundić,
President of the SGS' History of Geology Division
Past-President of the SGS (2004-2008)

Zoran Stevanović,
President of SGS (2012-2016)

OBITUARIES

MICHELE LA CLERGUE ALDRICH, HISTORIAN OF GEOLOGY, 1942–2016

Michele La Clergue Aldrich, historian of geology, died 23 November 2016, after a short illness.



Michele was born in Seattle, Washington on 6 October 1942, the daughter of Marion and Jean La Clergue. She was educated at Tustin High School, received her BA in Geology in 1964 from the University of California at Berkeley, where she met her future husband, Mark, whom she married in 1965. She was awarded a National Science Foundation fellowship and received her Ph.D. in the history of science from the University of Texas at Austin in 1974. In 1989, she was certified by the American Society of Archivists.

At Texas, Michele matured as a scholar under the guidance of William H Goetzmann, a winner of the Pulitzer Prize and her advisor, mentor and lifelong friend; under his guidance, she blossomed. As a first-year graduate student she jotted down “Ideas for Research–1964.” There were 77 ideas, many of which would define her scholarship throughout her life. They led her to a term paper on the New York Survey that became her thesis.

First employed as a research assistant at the Smithsonian Institution and the United State Geological Survey in 1965–1966, she was then a Lecturer in the Smith College History Department from 1969–1970. She became Assistant Editor for the Joseph Henry Papers at the Smithsonian in 1974, and a consultant for the Aaron Burr Papers of the New York Historical Society. Michele also was a field worker for the Women’s History Sources Survey in 1976–1977. She then became Project Director of the Women in Science Program of the American Association for the Advancement of Science (AAAS), and later the Archivist and Director of Information Services at that institution, all together working at AAAS from 1977–1995. She was a visiting Fellow at Cornell University, Book Review Editor for the History of Science Society journal *Isis*, from 1996–2003, and from 1998–2003, Archivist of Otis Elevator Company, and a Research Associate and a Consulting Editor for Scientific Publications at the California Academy of Sciences from 1995–2016.

Michele completed her study of the *New York Natural History Survey, 1836–1845*, which emphasized the geology of the state, in early 1970, but it was not published until 2000 by the Paleontological Research Institution, Ithaca, New York. In the meantime, she coauthored and/or coedited several other books, among them Theodore Henry Hittell’s 19th century history of the California Academy of Sciences, 1853–1907 (1997), which includes a substantial amount of essential documentation added to support Hittell’s original manuscript, and which even well before its publication led to the publication of more detailed biographical sketches of several of the principals devoted to geology, namely physician/geologist John Boardman Trask (1982), James Blake (1986), and Grove Karl Gilbert (2006), as well as a history of the Academy’s 19th century contributions to geology (2010). Michele also co-

organized, coedited, and was a contributor to several volumes with strong geological overtones, for example, *Frontiers of Geological Exploration of Western North America* (1982), and *Museums and Other Institutions of Natural History: Past, Present, and Future* (2004).

Michele's expertise acquired during her New York Survey studies led her to produce a series of biographical sketches for the *Dictionary of American Biography* and the *Dictionary of Scientific Biography* in the 1970s, not the least of which were articles on William Foshag, Edward Hitchcock, Grove Karl Gilbert, Ferdinand Hayden, Josiah Whitney, among others.

Michele called herself a feminist. Her feminism derived not only from personal experiences; it also reflected her discovery as a scholar that women geologists had been marginalized and she worked all of her life to right this wrong. Michele combined her feminism with a wry sense of humor. A letter in her files from 1980 is addressed to a woman whose title is "Co-Chair" Michele signed with her own title "Division Chairman" and an editorial "(sic—this is no title for a feminist like me but I have to live with the GSA bylaws!)." She published contributions and gave oral presentations at meetings, notably the Geological Society of America and the AAAS, emphasizing women's activities in geology, among them Eleanor Knopf (1980), Winifred Goldring (2005), and Mignon Talbot (2016). She authored or coauthored such contributions as the two-volume "Report on the Participation of Women in Scientific Research" (1978), "Women in Science: A Review Essay" (1978), "Women in Paleontology in the United States, 1840–1960," (1982), and the chapter on "Women in Geology" in volume 4 of *Women of Science: Righting the Record* (1990).

Michele also helped a generation of younger women scholars in any way she could, many of whom will be nodding their heads as they read this eulogy. As someone who was partially blind and deaf from birth, she was a tireless advocate for handicapped scientists as well.

As an intellectual, Michele was a tireless worker who combined intellectual integrity, bloodhound-like research, critical skills, fine writing, and imagination. These are attested to by her numerous articles relating to the history of geology in the United States. They include her collaboration with others, for example the 19th century activities of the Geological Survey of India (2000, 2004) and the Survey's contribution to the origin of the notion of Gondwanaland (2012), the 1868 Hayward's Fault earthquake in California (1986), and many additional articles and numerous presentations at scholarly society meetings. Michele either organized or worked with colleagues to organize a variety of historically-oriented programs such as a GSA workshop on how to do historical studies (1987), the AAAS 1986 symposium titled Plate Tectonics and Biogeography, the results of which were published in *Earth Sciences History* (1986), and others including the more recent GSA symposia Great Books in Geology (2013) and Great Ideas in Geology (2014).

Michele was a generous donor to charities and she was devoted to her family and friends, including two cats. She loved to travel, read mystery stories, and was an avid gardener who especially enjoyed roses and loud, red zinnias. She was a bright star to all who passed within her orbit. Michele did not hold a long-term academic position, which remunerates individuals for their ongoing scholarship across the

years through salary adjustments and promotions. She was instead a scholar's scholar who engaged in the activity because of her innate love for knowledge and dedication to helping others.

Michele was a member of the Geological Society of America, the History of Science Society, the History of Earth Sciences Society, and the Forum for the History of Geology in America (founding member). She held numerous offices in several of these societies including the Chair of the Geological Society of America's History of Geology Division (1979–1980), for which she also served as Secretary-Treasurer of the Division (1984–1992) and editor of its Newsletter (1984–1992, and on occasion thereafter filling in for others). She twice received honorary awards from that organization, including the prestigious Mary C. Rabbitt Award for Scholarly Achievements in the History of Geology and the Division's Gerald & Sue Friedman Award for distinguished service. She was a Senior Fellow of the Geological Society of America, a Fellow of the California Academy of Sciences, a life-member of the Petroleum History Institute, and a Fellow of the American Association for the Advancement of Science. She was one of the founders of the Northampton Valley Women's Center, and also was a member of the Academy of Certified Archivists, the New England Archivists, the Organization of American Historians, as well as INHIGEO (the International Commission on the History of the Geological Sciences).

Michele leaves her husband of 51 years, Mark Aldrich, her sister Marijean Piorkowski, and brothers, Richard and Ronald La Clergue, along with two nieces and one nephew, and many friends and colleagues.

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Mark Aldrich and Alan E. Leviton

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Robert Peter Macnab (1942-2015)

Peter Macnab, a forever-young Australian geologist, carved a unique and remarkable path through the upstream stages of the mineral industry in Papua New Guinea and other countries over the last fifty years. He was directly involved in the start-up of two major mines in PNG and others that may be in train. He died in early December at age 73 after a four-and-a-half-year battle with illness.



Robert Peter Macnab was born in Tamworth NSW on 26 March 1942, the second of the four sons of Keith and Olive Macnab. The boys received their early education in one-teacher schools as their father was given a succession of postings to small rural towns in his role as stationmaster with NSW Greater Rail. The boys made their own recreation rabbiting and camping in bushland, and developed an ease with the bush life that was to remain with them over the years. The family relocated to Katoomba when the older boys reached high school age.

Peter did well at high school and was accepted into his first choice of occupation, the Australian Navy fleet air arm. However, this option became untenable after the carrier, HMAS Melbourne, was withdrawn from service. Second choice was to attend the University of New England in Armidale on a NSW Government teaching bursary. He enrolled in mathematics and geology but switched to geology only in the second year, and graduated BSc with major in geology in 1964. He had been offered a position with Mount Isa Mines but this too was withdrawn because of a major strike by the MIM workforce. He then accepted an offer from the Australian Bureau of Mineral Resources, the forerunner of Geoscience Australia. He was given the option of postings in Canberra or Port Moresby and chose the latter – and so the die was cast.

In 1965 he joined the Port Moresby Resident Geological Staff, a small and efficient part of the Territory Administration, which, under the guidance of Alexander Renwick, was soon to become the Geological Survey of Papua New Guinea. In 1966 he spent six weeks with the BMR South Sepik Party, led by Duncan Dow, in the remote mountain region south of the Sepik River valley, and in September 1967 returned for four weeks, this time with helicopter support. I recall seeing plots of one or more epic traverses that he made from the Sepik foothills to the highlands. It was during the 1967 field season that Dow and members of the field party made a significant mineral discovery – the Frieda River porphyry copper and gold deposit.

In May 1966 Macnab spent three weeks in the Keveri area, 100 km east of Port Moresby, to follow up on reports of nickel sulfide mineralisation that had been discovered in 1965, but his first major survey was in the first half of 1967 when he undertook the mapping of Baining Mountains in the remote central part of the Gazelle Peninsula of New Britain. This occupied five months, and resulted in a comprehensive report which was sufficiently detailed to form the basis of the Gazelle 1:250,000 geological map and explanatory notes published by BMR in 1973.

There had been little prior knowledge of the geology of the Bainings and, given the size of the area and difficulties of access, this was a truly remarkable achievement. Another distinguished regional study followed in 1968 when he completed a three-week traverse in the valley of the Auga river in 1968, in the western foothills of the main range about 60 km north of Port Moresby. Being relatively close to the city this is an area that had been mapped by others, but Macnab completely revised the picture. His report, published as BMR Record 1969/126, still stands as the best account of the geology of this area.

In the early months of 1969 Macnab joined a BMR field party led by Rod Ryburn that was to complete the geological mapping of New Britain. Their work was made easier because the stratigraphy that he had developed for the Gazelle Peninsula could be applied across the board and to much of the remainder of the island.

In 1970 he switched from regional geological mapping to the search for minerals. Some must have wondered about this change of focus. Why had a doyen of the geological mapping community, “gone wrong”?

In an article by Damon Frith published in Business Review Weekly on 21 April 2011, under the heading “PNG gold king a ‘barefoot whitey’”, Macnab explained that in 1970 he “realised that he was a prospector at heart, which he says is quite different to being the geologist he was trained as” and

explained further that “To make discoveries you have to have the prospector’s mentality. A lot of the best finds are not by geologists. . . . It’s a combination of enjoying the bush and enjoying the challenge. At Lihir I saw two geologists arguing over the name of a rock type shortly after discovery. I wasn’t interested. [The argument] should be is it \$2 a tonne or \$10 a tonne.”

Macnab raised venture capital and set up exploration programs in sites that were widely scattered around PNG, including April River (gold), Maramp, Huon, Wanum (copper), Ambunti, Salumei, and in the 1990s Strickland Gorge-Kopiago, New Hanoveer, Gazelle, and Kairiru Island (information from a list of quarterly and annual reports provided by J. Baibune, MRA librarian).

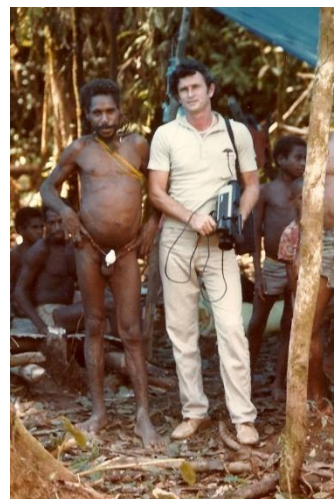
The first breakthrough came in the mid-1970s, when he secured temporary title to the known mineralised area on Misima Island in Milne Bay Province. Cuthberts Misima had operated a small underground gold mine on the Umuna Lode at the eastern end of Misima Island in the pre-war years, until forced to close in 1941. There was a chance that the same could be developed as an open-pit operation. U. S. Steel carried out some drill testing but withdrew because of a change in company policy. Macnab applied for the now vacant licence and was given temporary rights for three months to find an investor. In 1977 he introduced the project to Placer (PNG) Limited, the operators of the Porgera mine. Placer geologist Geoffrey Loudon spent a week with Macnab examining the old workings, then made a positive recommendation to management. By 1987 Placer had concluded an agreement with the PNG Government and, by May 1989, had poured first gold. Macnab and Loudon were the same age and shared the same vision and enthusiasm and were to go on to bigger things.

In 1982 Loudon quit Placer and floated his own company, Niugini Mining Limited. Macnab accepted the position of Exploration Manager with the task of putting together a portfolio of bulk low-grade gold properties, while Loudon was to bring in a major investor to grubstake the operation. Approaches to every major investor in Australia were unsuccessful. As a last resort Loudon approached Kennecott Copper, a company that had pulled out of PNG in 1973 after failure to reach agreement with Government on the Ok Tedi project. The concept struck a chord with management in Australia and was passed on to head office in Salt Lake City where it was supported by CEO Frank Joklik; Joklik had been impressed by Peter Macnab when they interacted in the Bainings in the late 1960s.

Kennecott Explorations (Australia) Limited and Niugini Mining Limited entered into an agreement in 1982 to explore jointly for gold deposits in PNG. Macnab had come up with 19 targets of bulk low-grade gold deposits but the joint venture could not get any titles because there was a prospecting moratorium in place. Only on Siimberi Island, in the Tabar Group, at the northwestern end of the Tabar-Lihir-Tanga-Feni (TLTF) island chain, was a title available for farm-in with Nord Resources. Macnab inspected Simberi and the joint venture went ahead with a drilling program that eventually proved up about two million ounces of low grade gold.

At the April River in 1983

At a joint venture planning meeting, it was then agreed that the initial exploration targets would be the islands of the TLTF chain. Because they could not get title the work would need to be shrouded in secrecy. Macnab and experienced prospector Ken Rehder carried out a



speed boat reconnaissance, in the course of which, at Luise Harbour on the coast of Lihir Island, they discovered and sampled a 450 m length of silicified, pyritic volcanic breccia that averaged 1.79 g/t gold (Moyle et al., 1990). Eight months later, when the moratorium was lifted, they were able to get tenure. This was the beginnings of what was to become one of the world's richest gold mines, developed by CRA and now owned and operated by Newcrest.

In the 1980s Peter struck out as an entrepreneur. On 5 June 1986, in association with Ken Rehder and Brisbane businessman, Eddie Stoye, he realised the listing of PNG incorporated Pacific Arc Exploration NL on the Australian Stock Exchange with Peter as Managing Director. Pacific Arc's initial portfolio of PNG exploration interests was quickly expanded with the acquisition of exploration interests identified by Peter in Indonesia, Philippines, Malaysia, Thailand, Fiji, New Zealand, including very extensive seafloor diamond tenements in WA and NT, and extending as far as Guyana in South America.

On 14 September 1987 the sale of Pacific Arc's exploration interests in PNG, Indonesia and Philippines (plus Pacific Arc/Peter's ongoing management of the exploration programs for two years) to Kerry Packer's mining company Muswellbrook Energy and Minerals Limited (MEM) was finalized in exchange for 32 million shares in MEM which were trading at \$1.60 on that day. From these acquisitions, the Packer group developed the Co-O gold mine in Philippines.

In 1988 Pacific Arc moved into petroleum exploration with the acquisition of an interest in PPL 82 and participation in the Pandora gas discovery in the Gulf of Papua. In 1989 Pacific Arc acquired a 100% interest in PPL 93 and listed oil explorer Pacarc Niugini NL on the ASX with PPL 93 as its sole asset; this was PNG's first oil company listing on the ASX since Oil Search in the 1920s. Pacarc went on to participate in on/offshore oil/gas exploration wells in PNG, Australia, Turkey, Philippines and New Zealand. All of this resulting from Peter's initial entrepreneurial drive and his vision.

The year 2002 found Macnab searching for diamonds in Sierra Leone with experienced PNG geologists Kassy Akiro and Jerry Gary. In 2015, as a small part of a retrospective tribute to Macnab, Jerry Gary told how they discovered no diamonds but did "stumble upon" an iron ore deposit at Tonkolili that is now the largest iron ore mine in the country.

In recent years Peter was focused on the gold mineralisation at Crater Mountain, a partly eroded large volcanic complex on the southern slopes of the main range 400 km northwest of Port Moresby. Crater is now producing gold on a small scale and may well be a sleeping giant. Jerry Gary's last time to see Macnab was on joint fieldwork at Crater. He wrote that as they relaxed at the end of the day it was clear that Macnab was fighting with illness, but he made no complaint, talking only of his determination to see Crater become a mine. Gary wrote glowingly of Macnab as mentor and friend, a person who gave respect, encouragement, motivation and opportunities for growth to many indigenous professionals including Papua New Guineans and Africans, and always proudly called PNG his home.

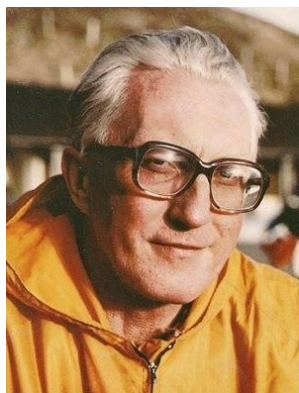
Peter Macnab was a quiet person who avoided the limelight. He had special skills and spirit, and was universally respected and admired by those who knew him. He is survived by Maureen, his wife of 37 years, and by former wives Renata and Mary and their children.

Acknowledgements. I thank Athol Macnab who generously helped with information, Geoff Loudon for his account of the founding of Niugini Mining Limited, Kerry Doble for the paragraphs on Peter

Macnab as entrepreneur, Greg Anderson for recollections, and the insightful papers written by Damon Frith and Jerry Gary. I apologise for the shortcomings in this account brought on by my ignorance and hope that others will seize the opportunity to fill in the gaps.

Compiled by Hugh Davies

IN MEMORIAM



To the memory of Professor Endre Dudich

Endre Dudich was a geologist with very wide interests. He was elected a member of INHIGEO in 1976, and few years later, in 1982, he was involved in organization of the 10th INHIGEO Symposium in Budapest. This event was the first experience of INHIGEO meetings for many Soviet historians of geosciences, a group which, at that time, was headed by the INHIGEO Past-President Vladimir V. Tikhomirov (1915-1994).

Tikhomirov and Dudich met personally few times and were in active correspondence (mostly in Russian). At the beginning, the Soviet delegation to Hungary was planned to be 5-6 members, but the topic of the meeting – the history of geological mapping – provoked such high interest of the Soviet geoscientists that the number has been rapidly increasing. I was in close contacts with Dudich as the secretary of the Soviet organizing committee and well remember his great work. After the passing of a few decades, I can evaluate his efforts to welcome the extraordinary group of Soviet people. It was the record of our participation at INHIGEO meetings as a total of 26 geologists from the USSR reached Hungary by plane and two trains.

Moreover, Tikhomirov could not take part in the meeting as he was recovering from a very serious illness. Six persons were delegated by the USSR Academy of Sciences or invited by the Hungarian Organizing Committee. Academician Alexander L. Yanshin (1911-1999) headed the Soviet delegation with assistance of a corresponding member Eugene E. Milanovsky (1923-2011).



Figure 1. At the meeting in Budapest, 1982. 1st row from the left – Eugene Milanovsky (3), Alexander Yanshin (4)

Soviet geoscientists presented 19 papers (18 read) out of a total of 42 at the Symposium. The geography of Soviet representatives was wide – Armenia, Azerbaijan, Belorussia, Russian Federation, Ukraine, Uzbekistan. Unfortunately, for the most part, the papers were given in Russian, and a normal discussion was impossible. As he spoke Russian, Dudich did his best to make

participation of Soviet geologists more comfortable during the sessions and excursions along the Danube valley.

Figure 2. Endre Dudich (left) at the Symposium party.



The Hungarian experience was used in organization of the international meeting of historians of geosciences in the USSR under the program of the 27th International Geological Congress, which was held in Moscow in 1984. Dudich was welcomed in Moscow where he read a paper 'From alchemy through geochemistry to cosmochemistry' at the Section 21 'History of Geology,' and he was elected the General Secretary of INHIGEO in Moscow for the term 1984-1989. Also at the Moscow meeting, Dudich presented the proceedings of the 10th INHIGEO Symposium 'Contributions to the history of geologic mapping' (Budapest, 1984).



Figure 3. 27th IGC. Moscow, 1984. E. Dudich presents the book. Stand from the left – E. Dudich (1), G. Craig (2), I. Malakhova (3).

Figure 4. The book was signed in Russian: To Professor Tikhomirov, a corresponding member of the USSR Academy of Sciences, the Past-President of INHIGEO with deep respect and sincere thanks. E. Dudich. Budapest. July 3, 1984.

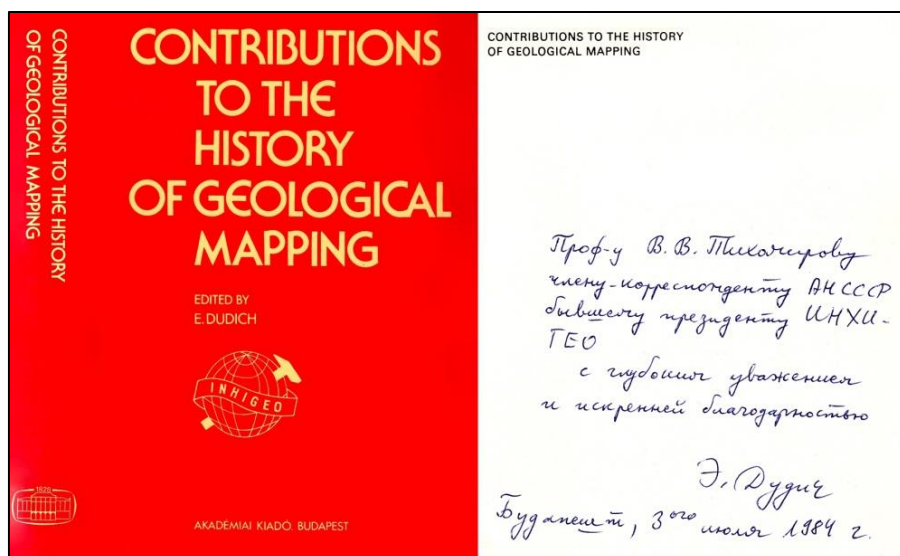




Figure 5. E. Dudich (l) and V. Tikhomirov (r) in Edinburgh (12th INHIGEO Symposium, 1985) E. Dudich and V. Tikhomirov in Edinburgh (12th INHIGEO Symposium, 1985) E. Dudich and V. Tikhomirov in Edinburgh (12th INHIGEO Symposium, 1985). The close relations of two historians of geosciences have been kept.

My meetings with Endre Dudich, a brilliant geoscientist and a handsome man from a beautiful country, are unforgettable.

Dr. Irena G. Malakhova, Department for the History of Geology, Geological Institute, Russian Academy of Sciences



Catena tribute to **Dr. Dan H. Yaalon**

Dr. Dan H. Yaalon, a staunch advocate for the study of soil science history and a member of INHIGEO, passed away 29 January 2014 at the age of 89. Following his death, a symposium was held in his honor in Vienna, Austria from 8-11 April, 2015, and now a special issue of *Catena*



(<http://www.sciencedirect.com/science/journal/03418162/146>) edited by Karl Stahr (University of Hohenheim, Stuttgart), Danny Itkin (Ben-Gurion University of the Negev, Beer Sheva), Franz Ottner (University of Natural Resources and Life Sciences, Vienna), and Eric P. Verrecchia (University of Lausanne, Lausanne) has been published in his honor. Dr. Yaalon was an expert in soil genesis and geomorphology in arid environments and was also interested in human influences on soil properties and processes. The 14 papers in the special issue cover these topics with entries on loess, the influence of nanomaterials on pedogenesis, investigations into calcrete formation, and paleosols. There are also two papers that focus on soil science history, and a paper in which several scientists describe Yaalon's influence on their own careers, including stories on how he encouraged others to pursue soil science history. The special issue is a fitting tribute to a highly respected and admired scientist.

Photo courtesy of Uri Yaalon

Brevik, Eric <eric.brevik@dickinsonstate.edu>

ARTICLE

My Earth Science educator story – Leandro Sequeiros What I did, why I did it, and what happened*

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Figure 1. Leandro Sequeiros.

Figure 2. Beside the monument to ammonites in Sierra de Cabra, Córdoba, 2012.



After forty years of Earth Science teaching, I am 73 years old now and retired, but I have devoted a very important part of my life to the teaching of many different aspects of Earth Science. It has been a fascinating adventure. Here I will describe my career in a very superficial way, just in case it might be useful to other people, and especially to encourage the development of new scientific and educational vocations.

I studied Geological Science at the University of Granada between 1965 and 1970; those were days of youth, energy and enthusiasm. I specialized in Palaeontology, and, in 1974, I passed my Ph.D. in Jurassic marine molluscs.



Figure 3. Field trip to Sierra Elvira, Granada; curse of geological cartography, 1966.

Then I became a teacher at the university, first at the University of Granada, then at the University of Zaragoza, and finally at the University of Huelva.



Figure 4. Field trip with students of the Faculty of Geology of Zaragoza, Sierra de Ricla, Zaragoza, 1977.

Figure 5. In Algeciras with geology students of the University of Zaragoza, across the Campo de Gibraltar, 1979.



My interest in Earth Science teaching began in 1976.

A work-group on the History of Geology was created at the University of Zaragoza, through which I learned to teach Earth Science through different epistemological and didactical approaches. In 1980, the first Symposium on Geology Teaching took place, organized by Professor Francisco Anguita, at which I made two presentations. Those symposia were the starting point of what became later the Spanish Earth Science Teachers' Association (AEPECT).



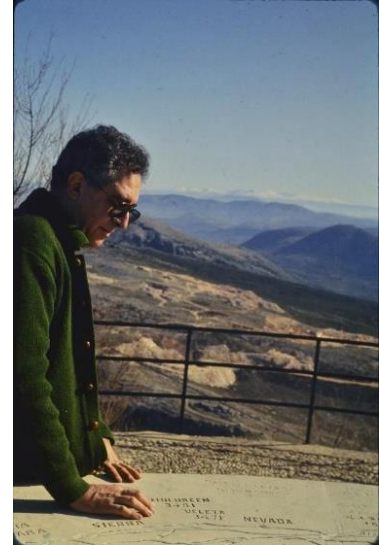
Figure 6. Field trip with Dr. Henri Tintant in the Iberian Range in Aragón, 1980.

In the 1980s, in collaboration with the Regional Administration, I was invited to participate in projects of the Regional Administration (Junta de Andalucía) to design the Natural Science curricula for secondary education, particularly the geological section. This was an unforgettable experience because of the high human and scientific quality of the members of the team. We developed shared understandings of developing student ideas and of the epistemological, historical and constructivist aspects of teaching and learning Earth science.

Between 1986 and 1996, I devoted most of my time to teacher training. I was appointed Professor of Methodology of Investigation. Part of the school failure in science education can be attributed to the poor training of teachers. Often at that time, teachers did not have accurate understanding of teaching and learning, and their teaching was guided by intuition alone.

Over those years, I invested many hours in training the next generation of trainers. However, the focus of my task was changing: I began as a general teacher trainer; I then became an environmental education trainer; and from this, I moved to education for development and education in values, but always from an Earth Science perspective.

Figure 7. Field trip to the Balcony of Andalucía, Cabra in Córdoba, 1992.



The next step in my personal development was related to philosophical reflection about the nature of scientific knowledge. A series of very complex circumstance led me to become a philosophy teacher. I had the opportunity to teach three subjects that helped me to think through my approach to Earth Science education. From 1966 to 2009, I was a teacher of Philosophy of the Nature and Philosophy of Science, of Philosophical Anthropology, and of the Theory of Knowledge. This forced me to study different aspects of knowledge that were not familiar to me.

Since then I have discovered the magic of interdisciplinary knowledge, and through this perspective, I have compared my ideas with the ideas of other teachers. This has helped my progress towards the integration of different sorts of knowledge beyond the narrow limits of “subjects.” Now I am at retirement age, my experiences of almost half a century of work in the field of teacher training in Earth Science has matured into an integrated interdisciplinary knowledge. And this is the place where I am now.

As the great poet Thomas Eliot said,

*We shall not cease from exploration.
And the end of all our exploring,
Will be to arrive where we started,
And know the place for the first time.*

Bibliography: Sequeiros, L. (2012) Mi jubilación virtual. Memoria agradecida al cumplir 70 años. Bubok ediciones, Córdoba. Accesible en: <http://www.bubok.es/libros/210907/MIJUBILACION-VIRTUAL-Memoriaagradecida-al-cumplir-70-anos-SEGUNDAEDICION>.

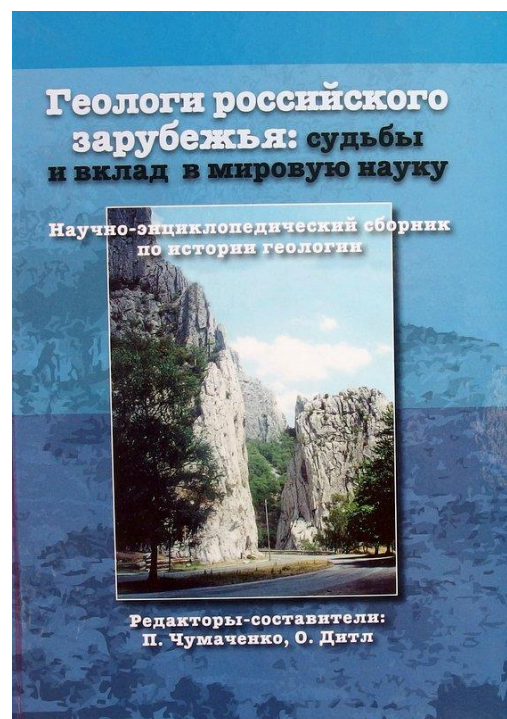
Leandro Sequeiros, aged 73, Córdoba, Andalucía, Spain, March 2016, lsequeiros@probesi.org
<http://metanexus.bubok.es>.

NOTE FROM THE EDITOR: Leandro Sequeiros was awarded the prestigious 2015 Steno Medal by the Science Academy of Florence, Italy.

BOOK REVIEWS

Tchoumatchenco, P. and Dietl, O. (eds.-compilers). 2014. *Geologists of the Russian abroad: fate and contribution in the world science. Scientific- encyclopedic proceedings in the area of the history of geology.* – Geological non-profit limited, London and Russian Academic Union in Bulgaria, Sofia, 477 p. (in Russian).

In 2016 Prof. Kosik (Moscow, Russian Federation) published in USA the following review of this book:



Kosik V.I. 2016. *Geologists of the Russian abroad: fate and contribution in the world science. Scientific- encyclopedic proceedings in the area of the history of geology. Editor-compilers Platon Tchoumatchenco, Olga Dietl, Sofia, 2014. - 477 p. – Transactions of the Association of Russian-American scholars in the U.S.A., New York, 39; 453-463 (in Russian)(Abridged version).*

During the last few years there have been many, perhaps hundreds of thousands of different publications on the topic of the Russian emigration. There are in the academic world experts on the history of Russian-speaking territories beyond its borders. The history of Russia "grows" with the history of the foreign countries, where the Russian people have become an integral part of the local countries and to enrich our knowledge and understanding of the Russian people, we must study them and their affairs away from the homeland.

On the palette of the research, perhaps, the most representative are the regional geographic research with their "Russian cities": Athens, Belgrade, Berlin, Paris, Prague, Riga, Sofia, Harbin and other places of residence of the Russian people. Much more difficult is the case with reference to the subject of Russian contribution to the field of natural sciences, but there are articles, essays, and other publications on the various outstanding representatives in this sphere. Information directly related to the geologists, can be found in the article by P. Tchoumatchenco, S. Petrusenko, and I. Lysenko-Chehlarova, "Bulgarian geologists of White emigre origin", included in the book "White emigres in Bulgaria. Memoirs"(Moscow, 2013).

Prof. DSc. Platon Tchoumatchenco, who was one of the authors and compilers of the book, is the object of our review. This book happily combines several advantages: encyclopedic (as stated in the title); it provides a connection of the past and the present; and the breadth, for it encompasses the whole

world. To this add the originality of the text: the dry lines of information in it, combined with the time, not only geological time, but also the times in which they lived, and live. His personality is what gives the words vitality, reality, and describes the fate of subjects. At the same time the main character of this book is time itself.

The book is dedicated to the memory of one of the authors, namely to the recently passed away Professor DSc. Michel-Paul-Adrien Durand Delga (1923-2012), Corresponding Member of the French Academy Sciences. The book, published by the Geological non-profit limited, London and Russian Academic Union in Bulgaria, included more than 400 curriculum vitae of Russian researchers involved in their specialty in the area of the Earth sciences and related fields; for example, paleontology, volcanology, geophysics, soil science etc. In general, the work contains more than a thousand names.

The life of the geologist abroad is so diverse and rich that even the "Introduction", referred somehow to the "chapters", which is usually quite boring, is of a genuine interest in their appeals to the art, or more precisely, reflected in the pictures, sculptures, medals, coins and stamps dedicated to the people mentioned in the book. Likewise, noted studies, works, trips of Russian men of science and practice outside of the Fatherland, are important for understanding the relationships of the Russian and the foreign science. The Russian geologists were people of different nationalities: Russians, Ukrainians, Belarusians, Poles, Jews, Germans, Georgians, who fled Russia before and during the First World War, were expelled for revolutionary activities; people, who fled after the 1917 October Revolution and the Civil War; the so-called defectors after the Second World War, who decided to not return to the USSR; our contemporaries, going in different countries for a number of reasons - from the marriage with foreigners, to the search for adventure. It is possible that the inclusion in the book of people born outside their parents' homeland, who had no relation to geology, is somewhat artificial. However, there is always the blood bond, Russian roots which allow them a link to Russia, and their geology to be classified with Russian science and its history.

The biographies presented here, rich and diverse, and often with very colorful information about the lives, the careers, and more. Included in the biographies is information which allows the reader to recreate the life of Russia itself. Some biographies could serve as the basis for an adventure novel, or for book, or series of books, on the "Life of Remarkable People". The book itself is built largely on the temporary and territorial characteristics, reflecting periods of departure from Russia. Its contents are divided into eight chapters: "Introduction", "Migrants of the Russian Empire (1800-1916)", "Stormy years during the Civil War (1917-1923)," the period of the New Economic Politic (NEP), the Second World War and post-war period (1924-1953)"; "The Russian geologists of the peace time abroad (1954-2012)"; "Additional list of the Russian specialists abroad"; "Contributions to the geology and the mining"; "History of the creation of the book."

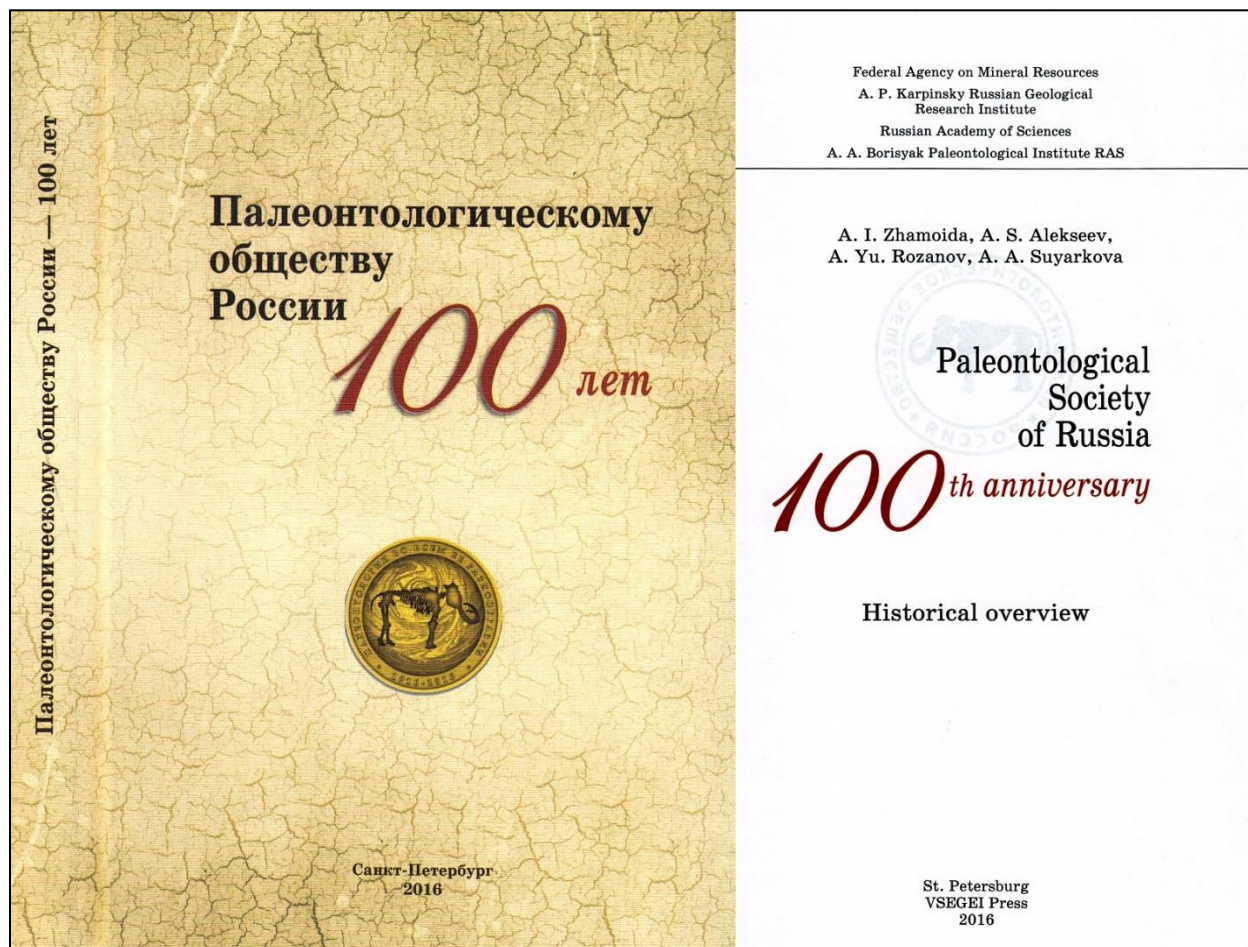
The final chapter describes the history of the creation of this book, the preparation of which has involved a large number of geologists from different countries and different geological organizations. And, of course, it is necessary to express the deepest gratitude to the editors and compilers of the book – Platon Tchoumatchenco and Olga Dietl for their titanic, but generous work, as well as to all those who helped them with information.

Concluding my impressions about the book, I will say that it is unique for many reasons. First of all, it is the wealth of new information, *i.e.*, additions to the knowledge about the geological scholars, their achievements, their discoveries, their everyday, but favorite, work of self-realization in the new

environments. The book should serve as an example and a model for professionals to publish books on the "Russian chemists ...", "Russian electronics ...", etc.”

Prof. Kosik (Moscow, Russian Federation)

Zhamoida, A.I., Alexeyev, A.S., Rozanov, A-Yu., Suyarkova, A.A. 2016. *The Centenary of the Russian Paleontological Society. A Historical Sketch* Saint-Petersburg., VSEGEI Publishing House, 244 p. ISBN 978-5-93761-240-3 (In Russian)



The 62nd annual session of the Paleontological Society at the Russian Academy of Sciences devoted to its centenary was held on April 4-8, 2016, in St. Petersburg. 195 experts from Russia, Kazakhstan, Uzbekistan, Germany, Mongolia, Poland, and the USA participated in meetings of the session and presented 103 oral and 36 poster reports.

The jubilee medal was issued and the publication of the above book – a sketch on the history of foundation, formation and activities of the Paleontological Society – were timed for the solemn event. The book is largely based on the study of the annual reports and various publications of the Paleontological Society, as well as articles containing information about the Society and its members. The book consists of preface, seven chapters, conclusion, and 11 applications.

Professor of Moscow University Alexander S. Alekseev has noted in Chapter 1 “Paleontology in Russia before the formation of the Paleontological Society. 18th-19th century and the beginning of 20th century” that works of Vasily Tatischev (1686-1750), Michael Lomonosov (1711-1765) and Peter Simon Pallas (1741-1811), “...could only be considered as a background of the Russian paleontology, which appearance should be attributed to the beginning of the 19th century.” (p. 14). Paleontology in Russia as a science starts with works of G. I. Fischer von Waldheim published in 1808-1809. About 1000 monographs and articles on paleontology of Russia were published by Russian and foreign researchers by the beginning of the 20th century. They have treated issues of phylogeny, paleoecology, paleobiogeography, and evolution. The most important works and authors are listed in the book. Such known Russian scientists as Ch. H. Pander, D. I. Sokolov, K. E. Eichwald, and K. F. Rouille are considered as predecessors of Charles Darwin.

The Vice-President of the Paleontological Society, Alexander I. Zhamoida, prepared the following chapters: from the second to the sixth, the preface, and the conclusion; he has also developed the information reflected in chapter titles, the periodization of the Paleontological Society history. The second chapter “Formation of the Russian Paleontological Society. 1916” describes the solemn public opening of the Russian Paleontological Society on May 5, 1916, in the Mineralogical Society at the Mining School in Petrograd (nowadays St.-Petersburg), and preceding events. Founding members of the Society were paleontologists, geologists, zoologists, botanist; numbering 51 person including 49 men, but only 2 women. These women were; Maria V. Pavlova, who worked as a volunteer in the Geological office (museum) of the University since 1886 and lectured at Shanyavsky Public University; and Anna B. Missuna who lectured at the Moscow Higher Female Courses. M. Pavlova was the first woman in Russia who, in March 1916, received, at the Moscow University, the rank of the Doctor of Zoology *Honoris Causa*. The elected Council of the Society included M. V. Pavlova and 8 men.

The Chapter “First years of the Russian Paleontological Society. 1917-1933” stresses that the Councilors of the Society worked with extraordinary energy. In 1917, the first volume of the “Russian Paleontological Society Yearbook” was published, which included the charter, a list of founder members, and information on Society meetings, in addition to scientific articles. In 1930, the “Yearbook” circulation had reached 1000 copies. Its editions continued until 1991, but collections were not published every year. The Society, as well as all the country, experienced many events during these years which affected the publication: revolutions in February and October, 1917; civil war; change of political system and of lifestyle. Inflation and shortage of foodstuff concerned almost all members of the Society. Financial and bureaucratic difficulties quite often interfered with the organization of field researches and trips abroad, in particular the 16th session of WGC (Washington, 1933). The chapter author narrates the intent attention and control of scientific organization activities by the state during these years. For example, the new Charter of the Paleontological Society was approved in 1924 by the People's Commissariat of Internal Affairs. Formulations of the Charter of 1933, approved by the National Commissariat of Education, reflected “...features of political and ideological situations” of 1930s, “...assistance to strengthening of country defense by studying of fauna, maintenance of proletarian control over Society's activities, political activity of Society members, and work under the flag of dialectic materialism, struggle against bourgeois theories and religious prejudices.” (p. 56).

The Chapter “All-Russia – All-Union Paleontological Society and the beginning of regular geological researches in the country. 1934-1954” contains many interesting facts from reports and Society's Yearbooks. In 1934, the International Paleontological Association was established and the Society

became its member. The next years the Society "...joins regular geological researches, which began in the country." (p. 65). During these years, the number of women among paleontologists had grown considerably. In 1938, at the initiative of the Society, the Journal *Paleontological Review* was founded with the participation of the Paleontological Institute. Members of the Society participated in large scientific conferences, including the All-Union Paleontological Conference of 1939 in Leningrad. During the Great Patriotic War, "...the Paleontological Society suffered irreplaceable losses at the front, in the blockade of Leningrad [St. Petersburg], in evacuation." (p. 66). A. I. Zhamoida has noted that in 1949, the Society became the All-Union Society and the first regional branch (first as a peripheral group) in Alma-Ata was established. Now, 2016, the Society has 19 regional branches in Russia.

Members of the Society helped to create various geological organizations which are active in: consulting, giving popular lectures on paleontology and biostratigraphy, defining collections of flora and fauna of various ages. "As it was accepted at that time, all this work was carried out on public principles, without any payment." (p. 75).

The fifth chapter "Gold decades of the All-Union Paleontological Society. Its role in the development of national paleontology, biology, stratigraphy and related geological sciences. 1955-1991" (pp. 81-123) – has the greatest number of pages in the book. It narrates to story of the organization of Society meetings, some with participation of 300-400 paleontologists from all regions of the USSR and many foreign visitors. Since 1980, meetings were held not only in Leningrad, but also in other cities; Tashkent, Lvov, Tallinn, Baku, or Syktyvkar. It presents in detail the agendas of meetings and discussed issues and problems, *e.g.*; the importance of paleontology for detailed stratigraphic correlations (1982, 1990), the reconstruction of geological history (1983), the phylogenetic aspects of paleontology (1989), and ecosystem reorganizations and evolution (1991). Outstanding scientists I. I. Gorsky (1954-1973) and B.S. Sokolov (1974-2013) supervised the Society at this time.

The Society activities were closely related to the activities of the Interdepartmental Stratigraphical Committee created in 1955. The Committee has prepared three "Stratigraphical Codes." By 1973, the Society had 1100 full-time members and 17 regional branches, and in the early 1980s, the number had grown to almost 1,500 members. The Society started to publish *Paleontological Journal*. In 1982 the Honorable Diploma of the Society was issued, which is awarded to valid members of the Society for outstanding researches and active long-term service for the benefit of the Society. The first diploma was presented to B. S. Sokolov.

The sixth chapter "Quarter of century of the Paleontological Society of Russia. 1992-2015" is devoted to the hard times in life of the Society after the disintegration of the USSR. In 1994, the Society became the Paleontological Society at the Russian Academy of Sciences. From 100 to 160 participants from cities of Russia and the former Soviet Republics came to meetings. Rates of evolution of organic world and biostratigraphy, importance of systematization of organisms for biostratigraphy and paleobiogeography, issues on paleontology place in the system of natural sciences, its relation to wildlife management, and modern problems of paleontology were discussed. The reported subjects also included many other issues, such as creation of paleontological database, information and computer systems, collections of the Paleontological Institute of the Russian Academy of Sciences and different museums. The resolution of the meeting of 1997, stated that the Society should begin: "To pay special attention... to inadmissibility of loss, plunder and deliberate destruction of collections, especially of holotypes and reference samples from basic sections." (p. 133). This concern of the Society was caused

by the fact that a “paleontologic business” – the illegal sale of unique samples abroad – had started to develop in early 1990s. As a result the control over collection keeping and over export of paleontological objects has been strengthened. The importance of the edition of the book *Names of national geologists in paleontological names* (Krymholts, G.Ja., Krymholts, N.G., 2000) was underlined. A lot of space in the book is given activities of the outstanding President of the Paleontological Society, Academician B. S. Sokolov, who held this post longer than other heads – almost for four decades. His speeches at meetings of the Society and his salutatory letters to members of the Society are quoted. A. I. Zhamoida has also described the difficulties of last years related to the reform of the Russian Academy of Sciences and disregard of Academy of scientific societies at the Russian Academy of Sciences.

In the chapter “Second century of the Paleontological Society of Russia” (5 pages), the President of the Paleontological Society of Russia, A. Ju. Rozanov, addresses the further destiny of the Society. He writes about complications accompanying paleontology development in Russia, including: development of relations with museums; expansion of publishing activities including preparation of a special textbook for school students; and how the attraction of new younger members to the Society demands special attention. A. Rozanov considers the development of new directions in researches of biosphere evolution with application of methods of electronic microscopy and tomography as an important problem of the Society.

The Scientific Secretary, Anna A. Suyarkova, has made tables for the publication with basic indicators of activity of the Society for various periods of the last century (20th) and has prepared 11 appendices (59 pages). The book is beautifully illustrated with numerous interesting photos: portraits of members of the Society and group pictures. It also includes the summary in English on three pages. The book is perfectly printed, but, unfortunately, its circulation is of only 300 copies.

Zoya Bessudnova

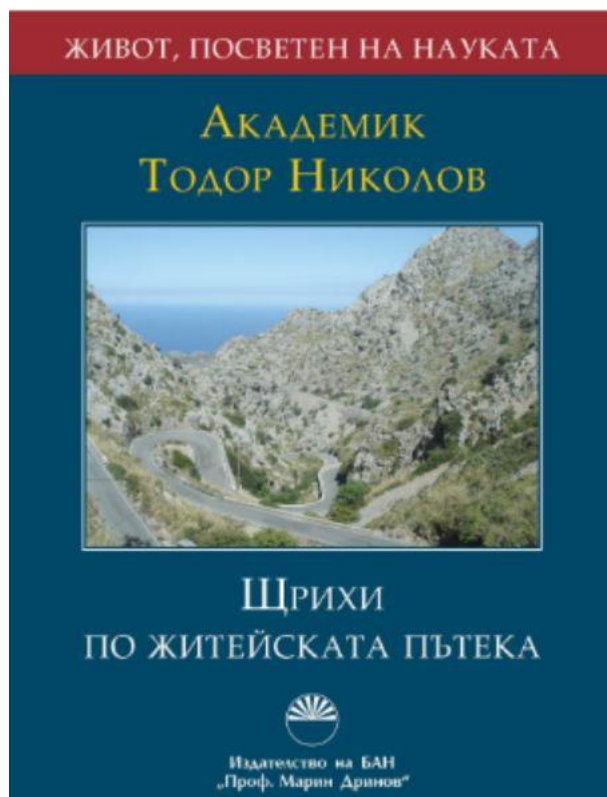
Review of the biography of an eminent Bulgarian geologist. The autobiographical book about the life of the most eminent present day Bulgarian geologist – Todor Nikolov, professor, PhD, DSc:

Nikolov T. 2016. *Outlines of a life's path*. – Prof. Marin Drinov Publishing House of Bulgarian Academy of Sciences, Sofia, 431 p. (in Bulgarian).

This book was reviewed by Professor M. Videnov:

To the readers. *In: Outlines of a life's path*. – Prof. Marin Drinov Publishing House of Bulgarian Academy of Sciences, Sofia; 9-11 (in Bulgarian)(Abridged version).

I am privileged to be a first reader of this superb book in which a scientist tells us about himself and his research on the fate of the planet on which we live. Prof. Todor Nikolov, at the age of 80, had a happy idea to describe his life to show the hard way in his scientific career and a hint of interesting scientific problems of their activities. To this end he has honestly transmitted the events in life's destiny as they were.



Born in 1931 to an industrious and united family in the small village of Varana, Pavlikeni District, North Bulgaria. Todor Nikolov studied four years in the merged classes in the school of his native village, and then - three years of the Middle School in the neighboring village Gradishte: every day more than 3 km by foot to school and then another 3 km back home! For a spoiled child that is sufficient reason not to prepare well his lessons, but the future scientist was an excellent schoolboy.

Now he writes with affection and respect for his teachers, especially those from the high school in the city of Levski. His memory has not kept souvenirs of the difficulties. I will pay attention to the small details. Todor Nikolov graduated from high school with honors, but his father refused to enter into cooperative farm and the local authorities did not receive the signed the document which was absolutely necessary during this time in Bulgaria (in 1949) for admission to the university examinations. Todor lost a year, but here in

the book he warns the reader to not have him wear the halo of a martyr, for the following year his father entered into the cooperative farm, things got better, and Todor entered in the university.

In his memoirs Todor Nikolov repeatedly emphasized his luck to fall in with excellent professors who created in him an incentive to start a career in scientific research. The reader will seamlessly follow the atmosphere of bygone years in fortunes of Bulgarian geology during the second half of the twentieth century. The author of the book is a skilled and eloquent narrator. Matter, which deals are special and full of terms, but he casually explains everything so that the reader becomes involved in the scientific intrigue of theses and antitheses. The university gives the young person the starting speed, but two specializations are most important to his researches; one in the Soviet Union and the other - in France. And here are expressed feelings of gratitude. The described stories read like an artistic description of a journey. Prof. Nikolov is a world-class specialist with in-depth studies published in different languages - at home and abroad. In his audience as a university professor passed hundreds of students. A number of our modern scholars, with admiration, consider him their teacher.

Geologists will remain amazed by the fresh and pedantic memory of the author, which has documented events in Bulgarian and European scientific life, in which he is one of the renowned leaders. His text shows his great culture. The author speaks for himself, but with innate modesty, without bragging, and without grandstanding. The book tells about the events of his life, but from the point of view of standing somewhere behind them, skillfully hidden behind others. Nowhere in the text will you read negative evaluations of colleagues. On the contrary, there are highlighted foreign contributions and the adoration talk about eminent predecessors.

Prof. T. Nikolov is the best connoisseur of the stratigraphy and the ammonite paleontology and paleogeography of Lower Cretaceous in Bulgaria and the Balkan Peninsula. He works successfully in the theory of stratigraphy, paleogeography and paleoclimatology, the global changes of the climates in the Earth's history, on theory of evolution, and the field petroleum geology. He has authored more than 270 scientific articles, including more than 25 papers in the area of the history of the geology – obituaries, memorials, compendium of the Bulgarian paleontologists, etc., and numerous monographic books:

- Nikolov, T. 1977. *Biostratigraphy*. - Ed. Nauka & Izkustvo, Sofia, 314 pp., 87 figs. (in Bulgarian).
Nikolov, T. 1982. *Les ammonites de la famille Berriasellidae Spath 1922 (Tithonique supérieur-Berriasien)*. - Ed. Acad. bulg. Sci., Sofia, 245 pp., 14 figs., 86 paleont. pls.
Nikolov, T. 1987. *The Mediterranean Lower Cretaceous*. - Ed. Bulg. Acad. Sc., Sofia, 264 pp.
Nikolov, T. 1991. *Continents and Oceans - Perpetual Motion*. - Ed. Sofia University Press "St Kliment Ohridski", Sofia. 222 pp, 151 figs. (in Bulgarian).
Nikolov, T. 1996. *Principles of Paleontology and Historical Geology* (1st and 2nd edition). - St Kliment Ohridski University Press, Sofia. 376 p., 172 figs. (in Bulgarian).
Nikolov, T., M. Ivanov. 2000. *Guide of field research works in Paleontology and Stratigraphy*. - St Kliment Ohridski University Press, Sofia, 164 pp., 68 figs., 18 pls. (in Bulgarian).
Nikolov, T. 2006. *Global Challenges before Mankind*. (Academic lectures). - Prof. Marin Drinov Academic Publishing House, Sofia, 61 pp., 16 figs. (in Bulgarian).

For his merits and accomplishments Professor T. Nikolov was awarded by many Honors and memberships to professional societies:

- Member, Société Géologique de France (since 1968); Member, Association des géologues du bassin de Paris (since 1968); Associés étrangers de la Société Géologique de France (since 1978); Honorary Member, Serbian Geological Society (2001); Honorary Member, Bulgarian Geological Society (2005); Member of the National Geographic Society (2007). State Order "St. St. Cyril and Method "(1982); Medal of Sofia University "St. Kliment Ohridski "(1988), Golden medal of Paul Sabatier University of Toulouse, France (1994); Doctor Honoris Causa, Paul Sabatier University, Toulouse, France (1994); Golden medal with blue band, Sofia University (1996); Chevalier de l'Ordre des Palmes Académiques (France, 1998); Honorary Medal "Marin Drinov", Bulg. Acad. Sciences (2001); Honorary Sign of Merit of the Bulgarian Academy of Sciences (2006).

Professor D.Sc. Mikhail Videnov

Simon, Nathan 2016. *Through the Eyes of a Miner - The photography of Joseph Divis*. The Friends of Waiuta, Greymouth, New Zealand (Distributed by Potton & Burton info@pottonandburton.co.nz), pp. 120.

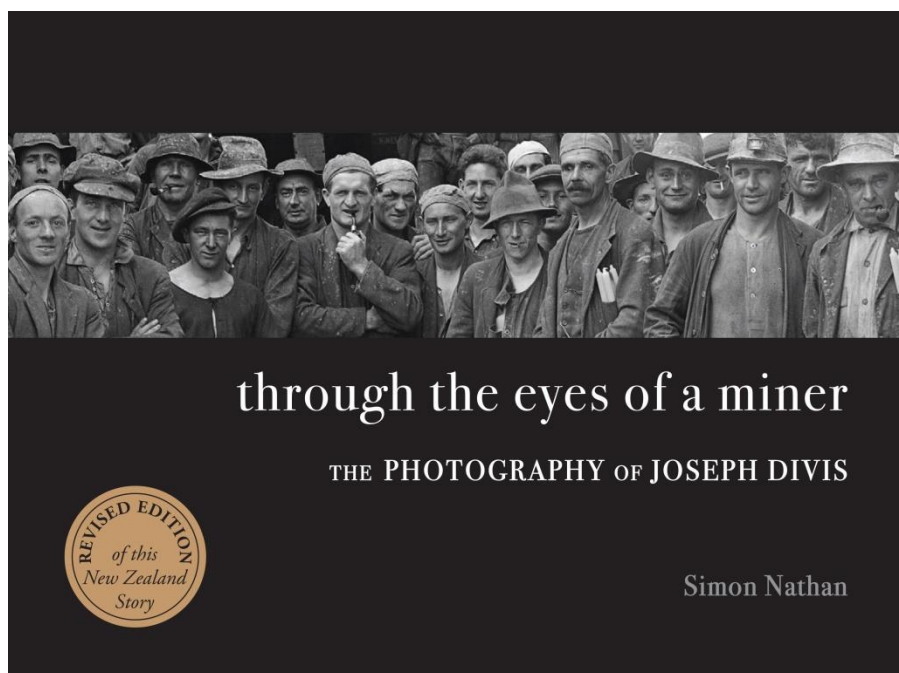


Figure 1. Cover of Through the eyes of a miner.

This publication (Fig. 1) is a revised edition of what first appeared in 2011. From this it can be inferred that the previous edition was a best seller and has been reprinted to accommodate demand, which has also provided the opportunity to revise it. Nevertheless, while there have been some important additions, these have not materially altered the major and most important facet of the

book, which are the superb photographs of Joseph Divis. Before delving into the changes, it is worth recounting who Divis was and the historical importance of his unique photographs, which are dominated by mining images of the West Coast gold mines taken in the five decades after his arrival in New Zealand in 1909.

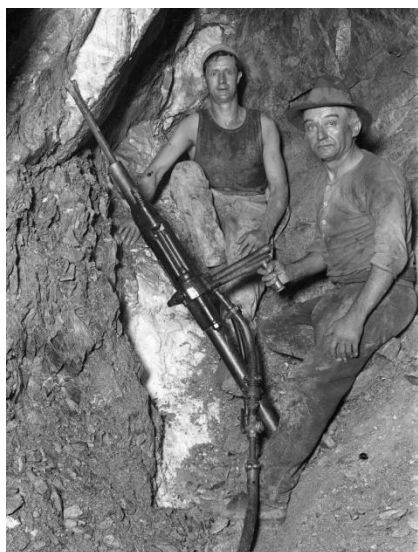
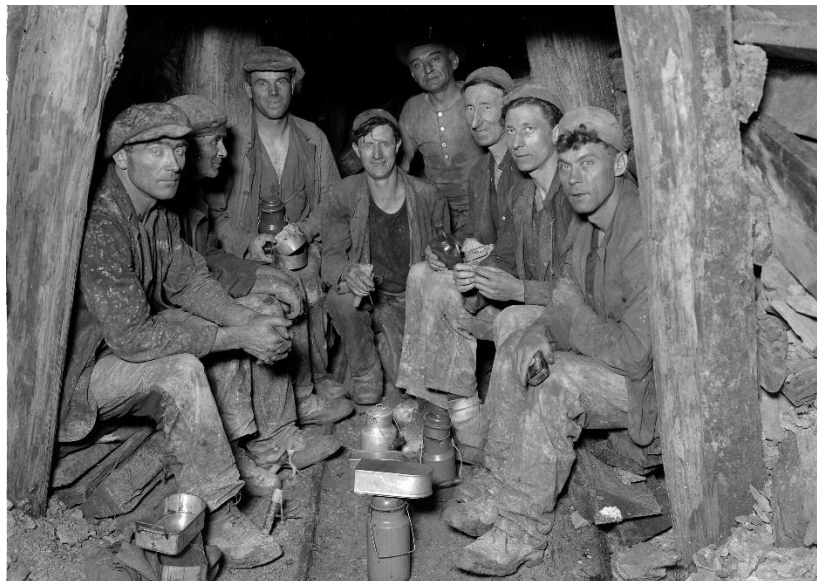


Figure 2. A self-portrait of Joseph Divis (right) and a companion deep in the Blackwater mine.

Divis (Fig. 2) was born in what is now the Czech Republic in 1885 and worked in the Silesian coal mines, in present day Poland, before arriving in New Zealand. Being an experienced miner he, perhaps not unexpectedly, gravitated to the West Coast. Although initially he worked in the coal mines near Greymouth he was to spend most of the remainder of his long life at Waiuta, much of it deep underground in the Blackwater gold mine. He was so enamoured with Waiuta that after in closed in 1951—because of a major rock fall underground and not due to a lack of gold—he stayed on in what rapidly became one of the West Coast’s many ghost towns. Apart from a spell convalescing in Rotorua, he only left the town for permanent care in Reefton in 1965 and died two years later in Greymouth Hospital. However, not all of his working life between 1912 and 1965 was at Waiuta as he returned to Europe on two occasions to visit relatives and also worked briefly at Waihi, as well as a spell attempting to earn a living as a professional photographer. While an exceptional photographer, he found it impossible to survive

financially in what was undoubtedly his true vocation. He was also interned from 1941 to 1943 on Somes Island as an enemy alien. This is somewhat surprising, as he was not so classified during World War One despite having visited Germany the year before its outbreak. Perhaps this was a reflection of a shrinking world. In the first war Waiuta was a lot more removed from officialdom than most of New Zealand was in the second.

Figure 3. Crib time in the Blackwater mine, where the miners could take a short lunch break. As usual, Divis is in his own picture, at the back.



In the new edition the font has been changed to a more modern one although this is of little moment as, like the first edition, the book is attractively set out and produced. The change from sepia prints to black and white has certainly improved the contrast and has, as a consequence, made almost all of the photographs not only more aesthetically pleasing but has enhanced the tremendous amount of detail in them. In a very few exceptions the reverse is true, the most obvious being a ghostly Statute of Liberty forming a backdrop to a photograph of Divis and a companion, but such imperfections are of little moment. The fact that Divis is in this, and other photographs that are self-portraits, has allowed Simon to fill in some of the gaps in Divis life of which there is scant written record. In the first edition, sections where it is stated that no photographs of Divis had been found have been amended by the addition of newly acquired images, such as the period 1912-1918. In all, new images account for about five extra pages, the remainder being modern colour photographs with explanatory text showing Waiuta today. This latter section allows a useful comparison between what little now remains of what was a bustling town centred around, and indeed owed its existence to, a large industrial complex, namely the Blackwater Mine (Fig. 3). In places the photographs have been rearranged within the text, sometimes enlarged and elsewhere reduced in size. The new edition contains few blemishes, only the occasional typo.

Apart from where new information, mainly photographs, has come to hand, the text has not changed greatly. This can be primarily attributed to the excellence of the original text, Simon being a recognised authority on West Coast geology and its mining history. One section where the text has been amended deals with the Snowy River works, not far from Waiuta, where Divis in the early 1930s took a unique set of photographs depicting the gold recovery process such as the stamping battery, Wilfley tables and so on. By annotating one of the photographs of the works, it can now be more clearly appreciated how the whole gold recovery process, driven by water power and utilising gravity, took place.

Other photographs of alluvial mining, the large bucket gold dredges, landscapes, both in New Zealand and overseas, family groups and social functions remain unchanged. The non-mining photographs,

while interesting in their own right, help put the mines, their people and the towns they supported in context with not only the rest of the country but the wider world. Enhancing the new edition is a clear locality map and also a vertical plan of the Waiuta Mine that shows how it developed over the many years that Davis knew it.

Being a miner was a hazardous life. Divis was hit on the head by a rock fall that inflicted some brain damage (no hard hats in those days). And at some stage he lost part of a finger as evidenced by one of the new photographs in the book. Many of the photographs, depicting what were then standard mining practices, are a reminder of changing attitudes to safety that have developed since Divis was working underground.

Even for those who have the original version, it is well worth having a copy of the new edition: whether as a geologist, mining historian, or simply to understand how big mines dominated the West Coast and Coromandel, and overall contributed to the economic and social fabric of New Zealand. The photographs record a way of life that has long gone and never to return. Indeed, the mechanisation that has so altered all facets of life in the 21st century is not evident in any of these photographs. While Divis, because of financial considerations was not able to make a living as a full-time photographer, he is, thanks to this book—and that he was able to include himself in many of the photographs—means that he is not forgotten.

This review first appeared in *Geoscience Society of New Zealand Newsletter* Number 21, March 2017.

Reviewed by Mike Johnston, Nelson, New Zealand

Póka, T., Kozák, M., Rózsa, P. (ed.) 2016. *Székyné Fux Vilma 100 (Vilma Széky-Fux 100)*. Edited by Hungarian Geological Society, Budapest. *Földtani Tudománytörténeti Évkönyv (Annals of the History of Geology)*, Special issue, 9, 146 p.

This volume, edited by former students, celebrates the 100th anniversary of the birth of Professor Vilma Széky-Fux. She was professor of Debrecen University, Hungary. She was best known as an outstanding teacher, but she also had important results in petrology and in the study of the Carpathian hydrothermal ore deposits. She served in several leading positions in the Hungarian Geological Society.

The book is introduced by the personal memories of her daughter, Annamária Széky. The scientific career is discussed by her successors in the university, M. Kozák, R. W. McIntosh and P. Rózsa, and by Gy. Vitális. The biography is illustrated by several photographs of historical interest. Additional personal memories were sent from the United States by the former students G. Kisvarsányi, É. Kisvarsányi-Bognár, and a memorial note of the late exploration geologist E. Mátyás is included. T. Póka presents a general evaluation of the scientific life's work. Special aspects of her activity are discussed in several articles, such as on the Neogene volcanism of the Tokaj Mts. and Pannonian Basin by P. Gyarmati, on gold mineralisation at Telkibánya in general frames of the Carpathian Basin by T. Zelenka, on her results on carbonate petrography, saline soils and bentonite deposits by I. Viczián and on bauxite exploration by Á. Tóth. As demonstrated by P. Papp, she was also active in history of science. The publication of the book was made possible by generous donations of her thankful students.

István Viczián and Éva Zsadányi

Geologists, mineralogists and paleontologists of Graz/Austria (1812 – 2016)

- Announcement of a new publication

Bibliographic information of the presented publication:

Title: “Grazer Erdwissenschaftler/innen (1812–2016). Ein bio-bibliografisches Handbuch“

Authors: Bernhard Hubmann, Daniela Angetter, Johannes Seidl.

Serial: SCRIPTA GEO-HISTORICA, Grazer Schriften zur Geschichte der Erdwissenschaften.

Publisher: Grazer Universitätsverlag – Leykam – Karl-Franzens-Universität Graz,

Graz 2017. ISBN 978-3-7011-0381-4 Estimated retail price: €22.90 (Euro).

Bernhard Hubmann and Daniela Angetter (Austrian

Working Group “History of Earth Sciences”)

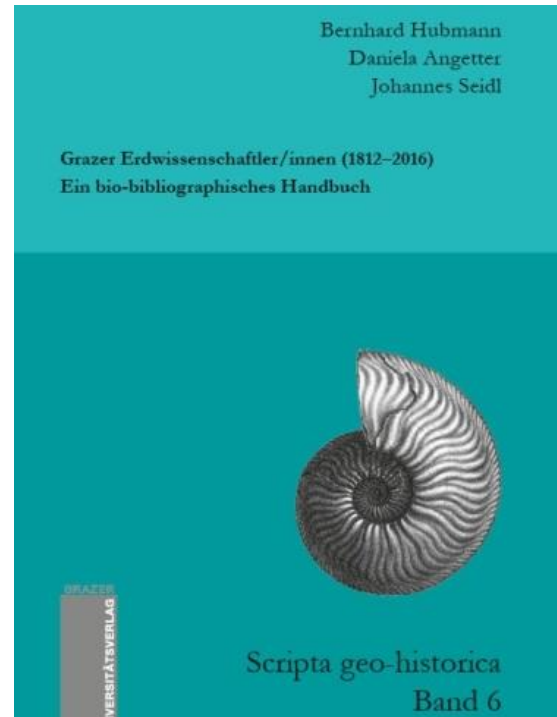


Fig. 1: Cover of the latest issue of the Scripta geo-historica on Earth scientists of Graz (Austria). The ammonite Sirenites striatofalcatus depicted is from the triassic Hallstatt limestones and was described by Edmund Mojsisovics (1839-1907) in his famous treatise “Die Cephalopoden der Hallstätter Kalke” from 1893.

The professional field of “Earth Scientists” (in common terms: geologists, mineralogists, and paleontologists) is a very young one in Austria looking back on a history of only 200 years. The “Joanneum” in Graz, a polytechnic institute, was founded in 1811 and is one of the oldest educational institutions in Austria where geology was taught. Since the Baroque period, mineralogy has been integrated into the university lectures in the course of other natural sciences. In contrast to this, geology did not enter the university curriculum until the 1860s. This is

surprising, since already in the 1840s “geognostic-montanistic associations” were founded and successfully carried out their work. The Geological Survey of the Austrian Monarchy was also founded in Vienna in 1849, although the study of geology was still not established at the universities.

This situation - on the one hand geologists were needed, on the other hand no professional studies were available - led to the fact that in the first years of the very intensive geological survey of the Monarchy the work was carried out by a not very suitably trained staff. Most of the “field geologists” were physicians who had acquired a general scientific basis during their studies in order to acquire autodidactic geological basic knowledge!

Later, in 1860, the Department of Geology and Mineralogy was established at the Polytechnic Institute in Vienna. In October 1862, the Geological Institute of the University of Vienna was founded, and two years later, in February 1864, a professorship for Mineralogy and Geology was established in Graz. Establishment and “evolution” of a scientific sector are linked, on the one hand, to the institutions on which the subject has been taught, and on the other hand to the people who have advanced the development of the subject. Recently a study was concluded that focuses on the development of earth

sciences and their representatives in Graz. As a result of this study, a bio-bibliographical reference book is expected to be published soon. The publication announced is based on several objectives. On the one hand, a fundamental work on research on the history of science - especially on those of Graz - is to be presented, which serves as a solid basis for further detailed studies. On the other hand, conditions under which geoscientists spent their childhood, youth, and their studies were reviewed. Likewise, the socioeconomic horizons of the persons were examined in order to unravel their social networks. Finally, the present study offers a mosaic of the development of geology in Graz and beyond throughout Austria. The first part of the new publication on Earth scientists of Graz outlines the history of those institutions in which earth sciences have been taught. These are:

- The “Old” University, founded in 1585. From the 18th century onwards, mineralogy lessons in the context of education in physics are traceable. In 1782, the university was converted into a lyceum, which led to the disappearance of science subjects from teaching.
- Joanneum: In 1811 Archduke Johann of Austria founded this “National Institute.” It consisted of a library, an archive, a coin and antique cabinet, a natural history museum and a botanical garden. In 1812, with the appointment of Friedrich Mohs, the era of a “modern” earth science education started in Graz.
- “Geognostic-montanistic Association” (Geognostisch-Montanistischer Verein für Steiermark): This association was founded in 1850 to promote the geological survey and the careful study of ore and coal deposits and mineral resources. In 1874, after successful completion of the work, the association was dissolved.
- Karl-Franzens-University: In 1827 the University of Graz was reopened. Earth sciences were first taught only within the framework of natural history education for high school teachers. From 1861 onwards, an Institute for Mineralogy was established; in 1864 it was changed into an Institute for Geognosy and Mineralogy, and in 1879 it was divided into individual departments; the Institute for Geology and Paleontology, and the Institute for Mineralogy and Petrology.
- Graz University of Technology (“Erzherzog-Johann-University”): In 1865, the technical university in Graz developed from the “Joanneum Institute.”
- Geological and mineralogical services: Established in 1965 to provide a platform for the applied geoscientists of the national administration.
- The Association for Hydrogeological Research in Graz: Established in 1962 to study the hydrogeological conditions of the country and to publish the research results in its own journal.

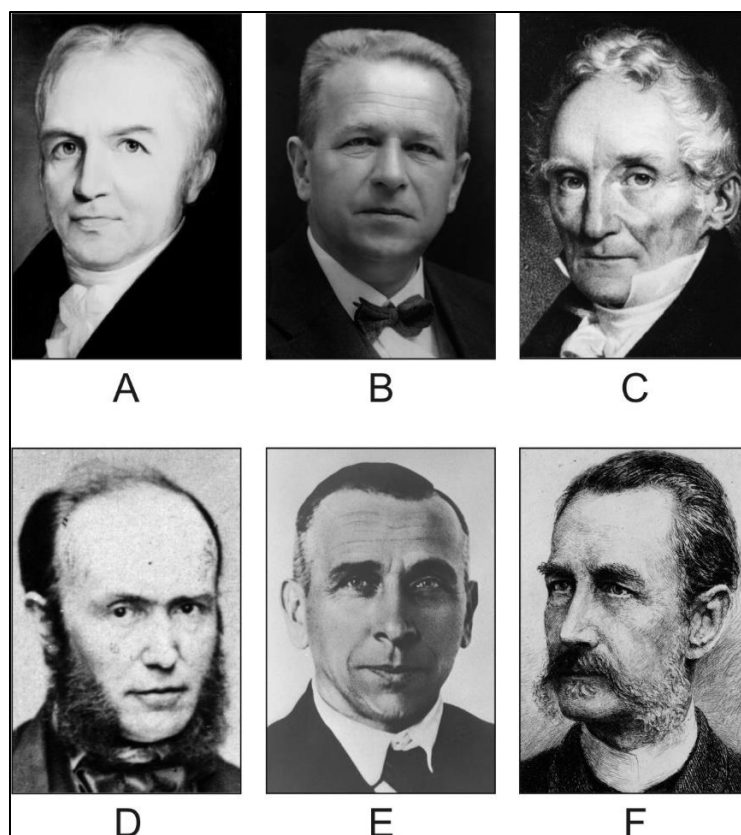


Fig. 2: *Each scientific idea has a face. A shortened Geologist's alphabet of Graz (Austria) to give an insight into this branch of profession: (A) **Mathias ANKER** was the first to create a geological map for the county of Styria; (B) **Franz HERITSCH** studied upper Palaeozoic corals around the world and erected numerous taxa on different systematic levels; (C) **Friedrich MOHS** proposed a scale of mineral hardness common to every earth scientist ("Mohs' hardness"), a ten-part scale characterizing scratch resistance of minerals through the ability of harder material to scratch softer material; (D) **Carl PETERS** who was the first to do carbonate microfacial studies; (E) **Alfred WEGENER**, his ideas of continental drift triggered a re-thinking in geology by clearing the way of plate tectonics; (F) **Victor ZEPHAROVICH** provided a mineralogical lexicon of the largest country of Europe of his time, the Austro-Hungarian monarchy.*

A large number of persons were active at these institutions which were dealt with accordingly in the publication. Selection criteria for the compilation were:

- Only deceased persons were considered; thus it was possible to provide completed biographies.
- An academic education at an institution in Graz had to follow at least a short-term job as assistant and/or private lecturer at the university or high school teacher. Thus, the people treated here are restricted to those who have taught Earth Sciences.
- External geologists, mineralogists or paleontologists who were appointed as professors either at the Karl-Franzens-University or Graz University of Technology; or those who were employed in the provincial administration.

According to these criteria biographies of the following 90 persons who were active in Graz during the 19th to the 21st century were included: Aichhorn, Sigmund (1814–1892); Alker, Adolf (1921–1984); Angel, Franz (1887–1974); Anker, Mathias (1771–1843); Bach, Franz (1886–1943); Bauer, Karl (1868–1927); Becker, Leander (1938–2012); Benesch, Helmut (1902–?); Blümel, Otto (1912–1985); Clar, Conrad (1844–1904); Clar, Eberhard (1904–1995); Doelter, (y Cisterich) Cornelio (1850–1930); Ettingshausen, Constantin von (1826–1897); Fenninger, Alois (1941–2013); Firtsch, Georg (1860–1914); Fleischhacker, Robert (1855–1937); Friedrich, Otmar Michael (1902–1991); Gobanz, Josef (1831–1899); Grafeneder, Gerhard (1968–2015); Granigg, Bartel (1883–1951); Haas, Hellmuth (1925–2007); Haltmeyer, Georg (1803–1867); Hansel, Vincenz (1853–1929); Hanselmayer, Josef (1904–1980); Hatle, Eduard (1851–1909); Hauser, Alois (1899–1955); Heritsch, Franz (1882–1945); Heritsch, Haymo (1911–2009); Hiebleitner, Gustav (1892–1964); Hilber, Vincenz (1853–1931); Hoffer, Edgar (1942–2015); Höller, Helmut (1930–2010); Hübl, Harald Hans (1913–1946); Hussak, Eugen (1856–1911); Ippen, Josef (1855–1917); Kahler, Franz (1900–1995); Kopecky, Benedikt (1815–1872); Kossmat, Franz (1871–1938); Krajicek, Egon (1908–1991); Krašan, Franz (1840–1907); Kubart, Bruno (1882–1959); Kuntschnig, Alois (1892–1942); Machatschki, Felix (1895–1970); Maurin, Victor (1922–2011); Meixner, Heinz (1908–1981); Metz, Karl (1910–1990); Mohr, Hannes (1882–1967); Mohs, Friederich (1773–1839); Mottl-Györffy, Maria (1906–1980); Murban, Karl (1911–1971); Nebert, Karl (1912–2003); Peltzmann, Ida (1890–1976); Penecke, Karl Alfons (1858–?1944); Peters, Carl Ferdinand (1825–1881); Ploteny, Paul Maria (1925–1986); Pollak, Alfred (1901–1991); Pöschl, Viktor (1884–1948); Prangner, Matthäus (1812–1853); Purkert, Richard (1901–1968); Riedmüller, Adolf Gunther (1940–2003); Rittler, Walter (1912–?); Rumpf, Johann (1841–1923); Schäfer, Anton (1913–2005); Scharizer, Rudolf (1859–1935); Schenk, Walter (1886–?); Schmidt, Eduard (1823–1886); Schouppé, Alexander von (1915–2004); Schwiner, Robert (1878–1953); Seelmeier, Hans (1911–1985); Senarclens-Grancy, Walter (1907–1982); Sigmund, Alois (1853–1943); Spengler, Erich (1886–1962); Standfest, Franz (1848–1916); Stiny, Josef (1880–1958); Teppner, Wilfried (1891–1961); Teppner, (Meyer) Alfonsa von (1912–2005); Thurner, Andreas (1895–1975); Tornquist, Alexander (1868–1944); Tronko, Wilhelm (1908–1967); Unger, Franz (1800–1870); Wallbrecher, Eckart (1940–2016); Wegener, Alfred (1880–1930); Winkler-Hermaden, Artur (1890–1963); Zepharovich, Victor von (1830–1890); Zirkl, Erich (1923–2001); Zötl, Josef (1921–2001).

In order to provide precise biographies, we endeavored to verify all the data cited in the literature by archive studies. As a result, mistakes were corrected which were passed on in the literature over decades. Thus, multiple-checked biographical data of the subjects are now available. The biographies are based on a uniform scheme. Elementary life data are followed by data on social origin, school and advanced training, and the career path. Particular emphasis is placed on the scientific achievements, therefore a list of the most important publications of each person is provided. Finally, great effort was made to illustrate the biographies with portrait photographs of the personalities.

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EARTH SCIENCES HISTORY

Volume 36, No. 1, 2017

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COUNTRY REPORTS FOR 2016

ARGENTINA

An important event of the last year was the publication of an historical dictionary of the Earth Sciences in Argentina: *Archivo histórico del Museo de La Plata*, 2016. Diccionario histórico de las ciencias de la Tierra en la Argentina. Pp. 1-399. Prohistoria ediciones, Rosario.

Ricardo N. Alonso

Alonso R. N., 2016. Dr. Ricardo H. Omarini (1946-2015). Necrológica. Revista de la Asociación Geológica Argentina 73 (1): 149 – 155. Buenos Aires.

Alonso, R. N., Solís N.G., y E. del V. Silva, 2016. Carlos F. Stubbe (1884-1946): Minero, bibliófilo, escritor. Revista del Museo de La Plata. Volumen 1, Número Especial, pp. 27-34. ISSN 2545-6377. La Plata.

Silva, E. y Alonso, R. N., 2016. Enrique Sparn (1889-1966). Sus aportes a la bibliografía geológica. Revista del Museo de La Plata. Volumen 1, Número Especial, pp. 291-301. ISSN 2545-6377. La Plata.

Alonso, R. N., 2016. Los Desastres Naturales: Geológicos, Climáticos, Cósmicos. Prólogo de Dr. Douglas Burbank. 1a ed.- Salta: Mundo Gráfico Salta Editorial. 170 p.; 22 x 15 cm. ISBN 978-987-698-133-0. Salta.

Stubbe, Carlos F. 2016. El cateador o buscador de minas: su evolución, su vida y su trabajo / Carlos F. Stubbe; editado por Natalia G. Solís; Ricardo N. Alonso; Emilia Silva de Cruz. - 1a ed. - Salta: Mundo Gráfico Salta Editorial, 2016. 180 p.; 15 x 21 cm. ISBN 978-987-698-151-4 1. Minería. I. Solís, Natalia G., ed. II. Alonso, Ricardo N., ed. III. de Cruz, Emilia Silva, ed. IV. Título. CDD 622. Salta.

Alonso, R. N., 2016. Historia del petróleo del norte argentino: desde Pablo Sardicat de Soria a Francisco Tobar - 1a ed. Prólogo de Dr. Guillermo Eduardo Ottone. Mundo Gráfico Salta Editorial, 2016. 160 p.; 22 x 15 cm. ISBN 978-987-698-161-3 1. Salta

Alonso, R. N., 2017. Minería en La Rioja. Las memorias de Federico Benelisse y su descripción del Famatina en 1887. 1ra. Ed., Prólogo de Dr. Florencio Gilberto Aceñolaza. Mundo Gráfico Salta Editorial, 2017. 92 p.; 16 x 22 cm. ISBN 978-987-698-175-0. Salta

Alonso, R. N., 2016. Catástrofes: Erupciones volcánicas. En: Podgorny, I., et al. (2016). Diccionario Histórico de las Ciencias de la Tierra en la Argentina. Archivo Histórico del Museo de La Plata-CONICET. Prohistoria Ediciones, Rosario-La Plata, 400 p., ISBN 978-987-3864-27-8, pp. 96-98. La Plata.

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Alonso, R. N., 2016. Catástrofes: Terremotos. En: Podgorny, I., et al. (2016). Diccionario Histórico de las Ciencias de la Tierra en la Argentina. Archivo Histórico del Museo de La Plata-CONICET. Prohistoria Ediciones, Rosario-La Plata, 400 p., ISBN 978-987-3864-27-8, pp. 100-102. La Plata.

- Alonso, R. N., 2016. Brackebush, Ludwig. En: Podgorny, I., et al. (2016). Diccionario Histórico de las Ciencias de la Tierra en la Argentina. Archivo Histórico del Museo de La Plata-CONICET. Prohistoria Ediciones, Rosario-La Plata, 400 p., ISBN 978-987-3864-27-8, pp. 81-82. La Plata.
- Alonso, R. N., 2016. Ciencia y minería 200 años después. El Tribuno, Salta, Julio de 2016. <http://www.eltribuno.info/nuestra-ciencia-y-nuestra-mineria-200-anos-despues-n734017>
- Alonso, R. N., 2016. El extraño destino de José M. Sobral. El Tribuno, Salta, Lunes 17 de octubre de 2016. <http://www.eltribuno.info/el-extrano-destino-jose-m-sobral-n775541>
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- Alonso, R. N., 2016. Evolución del conocimiento geológico y minería. El Tribuno, Salta, Lunes 5 de diciembre de 2016. <http://www.eltribuno.info/evolucion-del-conocimiento-geologico-y-mineria-n796678>
- Alonso, R. N., 2016. Historia de la mina Tincalayu. El Tribuno, Salta, Lunes 12 de diciembre de 2016. <http://www.eltribuno.info/la-historia-la-mina-tincalayu-n799596>
- Alonso, R. N., 2016. La azarosa vida de Federico Benelische. El Tribuno, Salta, Lunes 19 de diciembre de 2016. <http://www.eltribuno.info/la-azarosa-vida-federico-benelische-n802447>
- Alonso, R. N., 2016. La curiosa vida de Carlos Stubbe. El Tribuno, Salta, Lunes 26 de septiembre de 2016. <http://www.eltribuno.info/la-curiosa-vida-carlos-stubbe-n766982>
- Alonso, R. N., 2016. Los sabios suizos del Perito Moreno. El Tribuno, Salta, Lunes 17 de octubre de 2016. <http://www.eltribuno.info/los-sabios-suizos-del-perito-moreno-n778299>

A. C. Riccardi

- Riccardi, A. C., Ed., 2016. Historia de la Geología en el Bicentenario de la Argentina. Pp. 1-333. Talleres Gráficos Servicop, La Plata. ISBN 978-987-42-3211-3.
- Riccardi, A. C., 2016. Academia Nacional de Ciencias. In: Archivo Histórico del Museo de La Plata, ed., Diccionario Histórico de las ciencias de la tierra en la Argentina, pp. 30-32. Prohistoria Ediciones, Rosario.
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- Riccardi, A. C., 2016. Petróleo - Investigaciones. In: Archivo Histórico del Museo de La Plata, ed., Diccionario Histórico de las ciencias de la tierra en la Argentina, pp. 308 - 322. Prohistoria Ediciones, Rosario.
- Riccardi, A. C., 2016. Servicio Geológico Minero Argentino. In: Archivo Histórico del Museo de La Plata, ed., Diccionario Histórico de las ciencias de la tierra en la Argentina, pp. 349-352. Prohistoria Ediciones, Rosario.
- Riccardi, A. C., 2016. Universidad de Tucumán. In: Archivo Histórico del Museo de La Plata, ed., Diccionario Histórico de las ciencias de la tierra en la Argentina, pp. 383 - 384. Prohistoria Ediciones, Rosario.

- Riccardi, A. C., 2016. Yacimientos Carboníferos Fiscales. In: Archivo Histórico del Museo de La Plata, ed., Diccionario Histórico de las ciencias de la tierra en la Argentina, p. 397. Prohistoria Ediciones, Rosario.
- Riccardi, A. C., 2016. Yacimientos Petrolíferos Fiscales. In: Archivo Histórico del Museo de La Plata, ed., Diccionario Histórico de las ciencias de la tierra en la Argentina, pp.397 -399. Prohistoria Ediciones, Rosario.
- Riccardi, A. C., 2016. Las investigaciones geológicas del Museo de La Plata desde la época del centenario a la del sesquicentenario: 1906-1966. In: Riccardi, A.C., Ed., Historia de la Geología en el Bicentenario de la Argentina. Pp. 1-228-256. Talleres Gráficos Servicop, La Plata. ISBN 978-987-42-3211-3.
- Riccardi, A. C., 2016. Enrico Fossa Mancini: significación y trascendencia de su obra geológica. En: Riccardi, A.C., Ed., Historia de la Geología en el Bicentenario de la Argentina. Pp. 1-257-284. Talleres Gráficos Servicop, La Plata. ISBN 978-987-42-3211-3.

ARMENIA

All local members of INHIGEO (**A. Karakhanyan, G. Khomizuri, G. Malkhasyan, Kh. Meliksetian, A. Pilipossyan**) were elected to the Organizing Committee for holding the 42nd Commemorative Symposium of INHIGEO in Yerevan (the Organizing Committee was headed by R. T. Jrbashyan, academician of the National Academy of Sciences of the Republic of Armenia). They held meetings for discussion of issues related to the arrangement of the Symposium, offered program and organizational issues. In addition, the group met with representatives of the government of the Republic. The First Circular was compiled and sent to all members of INHIGEO and leading historians of geology.

The Group of the History of Geology was created at Institute of Geological Sciences of the National Academy of Sciences of the Republic of Armenia in May 2016 and is headed by G. Khomizuri. The Library of the history and methodology of geology and works of leading geologists of Armenia was created on the basis of personal library and books of Armenian geologists transferred to the Group. Work is being carried out in compiling a List (with brief data) of the Armenian authors and authors of other countries who have made any contribution to the development of geological thinking in Armenia. By the end of the year (2016), the list included more than 1,100 names. Work was begun to create an Archive of portraits and documents according to the above-mentioned List. On basis of the "Access Database" the work of creating the Database of Armenian authors and authors of other countries who have made any contribution to the development of geological thinking in Armenia is being conducted. The "Bibliography of the history of geology of Armenia" has been compiled. The work with the topic "History of geological thinking in Armenia" has been conducted, beginning with the observations carried out in Armenia in the 5th century B.C. by the Lydian historian Xanthos.

Publications:

Khomizuri G. History of the origin of geological knowledge in Armenia // News of the National Academy of Sciences of the Republic of Armenia. *Earth Science*. 2016. N 2. P. 75-85.

As a member of the Organizing Committee for holding the Symposium in Yerevan, 2017, **G. Malkhasyan** carried out support and update of the Website of the Symposium. He has carried out the

search of archived documents about geologists V. Lodochnikov, K. Paffenholz, L. Spendiarov, F. Levinson-Lessing, and others, which he subsequently handed over to the Group of the history of geology of Institute of Geological Sciences of the National Academy of Sciences of the Republic of Armenia. He transferred the bibliographic catalog of scientific works to this Group from his own archive which were dedicated to the geology of Armenia (more than 3000 cards) as well as a part of **E. Malkhasyan's** archive, a past member of INHIGEO (1968-2003).

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AUSTRALIA

INHIGEO Annual Report for 2016

Barry Cooper retired from the roles of INHIGEO Secretary General, Secretary of the Heritage Stone Task Group and Project Leader of International Geoscience Programme Project (IGCP) 637 – “Heritage Stone Designation” at the International Geological Congress, September 2016, in Cape Town, South Africa.

Barry had also been “Theme Coordinator – History of the Geosciences” for the Cape Town IGC..

His 2016 publications, listed below, include primarily abstracts of conference papers presented at international conferences in Vienna, Adelaide and Cape Town:

- The Solenhofen Limestone: A stony heritage of many uses. Geophysical Research Abstracts. Vol. 18, EGU General Assembly Vienna 2016 (Joint with M. Kölbl-Ebert and S. Kramar
-
- Keynote Address – “Heritage stone designation: A new geological standard”. Geological Society of Australia, Abstracts 118: 94, Australian Earth Sciences Convention, Adelaide 2016
- Robert Bedford and the Adelaide Scientific Establishment. Geological Society of Australia, Abstracts 118: 206 (Joint with J.B. Jago), Australian Earth Sciences Convention, Adelaide 2016
- Heritage Stone in South Australia. Paper 356, 35th International Geological Congress, Cape Town, South Africa, 2016 (<http://www.americangeosciences.org/information/igc>).
- “Indigenous Understanding of Geology: The Australian perspective” Paper 355, 35th International Geological Congress, Cape Town, South Africa, 2016: <http://www.americangeosciences.org/information/igc> (Joint with John McEntee).

Barry has also been author and joint author of two papers in the special INHIGEO 50th Anniversary Volume, entitled *History of Geoscience: Celebrating 50 Years of INHIGEO*, that will be launched in 2017.

A book chapter considering the long defunct Technological Museum in Adelaide, South Australia, as a legacy of the 1887-8 International Exhibition in Adelaide, and its significant geological collections, was also published as follows:

- Cooper, B.J. “The Technological or Applied Science Museum 1889-1963”. Chapter 25, Pp. 318-324, in: Garnaut, C., Collins, J. and Jolly, B. (Eds.) 2016, “Adelaide’s Jubilee International Exhibition, 1887-1888: The Event, the Building, the Legacy”. Crossing Press 362pp.

Tom Darragh, Curator Emeritus Museums Victoria, was awarded the *Tom Vallance Medal* by the Earth Sciences History Group of the Geological Society of Australia for his contributions to the history of geology of Australia, especially Victoria. Tom is currently working on the German physician Hermann Beckler and his work on the Murray Basin.

Charles Russell Lawrence, University of Melbourne, presented the keynote address at the INHIGEO session of the International Geologic Congress in Cape Town. The title of the address was: “A history of hydrogeology in Australia”, which has been further developed into a draft manuscript. In June 2017, Charles will be attending a meeting of the International Association of Hydrogeology in Calgary (Canada) and attending an excursion in Alberta on “The History of hydrogeology in Canada.”

Wolf Mayer – compiled and edited the INHIGEO Annual Record No. 48. In September 2016, he completed his four-year term as member of the INHIGEO Board and as its Editor. He continued to work as corresponding editor on the INHIGEO anniversary volume, all articles for which have now been published online. The hardback edition is expected to appear in mid-2017. It will be published as:

MAYER, W., CLARY, R. M., AZUELA, L. F., MOTA, T.S. and WOLKOWICZ, S. (eds) *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London, Special Publication, 442, <https://doi.org/10.1144.SP442.41>.

Ken McQueen continued his geological heritage activities, particularly through his membership of the Steering Committee for the National Rock Garden and the Heritage Committee of the ACT Branch of the Geological Society of Australia. In August Ken attended the 35th International Geological Congress in Cape Town and contributed to the INHIGEO session ‘History of the Geosciences’ with a presentation on early theories and practicalities of gold occurrence in Australia. He participated in the pre-conference field trip to the Vredefort Dome and UNESCO World Heritage site, which also visited pre-historic petroglyphs and some early gold-mining sites. In September, he attended the 11th International Mining History Congress in Linares, Spain, an historic silver-lead mining district, famous for its Cornish mining heritage. In Linares, he presented a paper on aspects of early mining history in the Broken Hill region of Australia. During the year Ken completed notes on the mining history of the Cobar – Lake Cargelligo area for the new Cobar 1:500,000 metallogenic map published by the Geological Survey of New South Wales in September. A major activity was the organisation of the 22nd Australasian Mining History Conference in Cobar held from 16-21 October. Ken presented a paper on the mining history of the Cobar mineral field and ran field trips to historic and currently active mining sites in the area. At the Annual General Meeting of the Australasian Mining History Association in October Ken was elected President of the AMHA.

Publications:

McQueen, K. G., 2016. ‘Tackaringa’: First step to Broken Hill. *Journal of Australasian Mining History*, **14**, pp. 77-98.

- McQueen, K. G., 2016. Early theories and practicalities on gold occurrence in Australia. 35th *International Geological Congress*, 27th August – 4th September 2016, Cape Town, South Africa. Abstract volume online:
<https://www.americangeosciences.org/sites/default/files/igc/993.pdf>.
- McQueen, K. G., 2016. The pathway to Broken Hill: Early discoveries in the Barrier Ranges of New South Wales, Australia. 11th *International Mining History Congress*, 6-11th September, Linares, Spain. Abstract Volume p. 37.
- McQueen, K. G., 2016. Mining the Cobar Mineral Field: An historical overview. In McQueen, K. G. and Davies, M. J. (eds), *Building on the Mining Past*, Proceedings of the 22nd Annual Conference, AMHA, Cobar 16-21 October 2016, Australasian Mining History Association, Perth, p. 28.
- McQueen, K. G. 2016. Cobar 1:500 000 Special Metallogenic Map (back sheet notes). Geological Survey of New South Wales, Maitland, NSW, Australia.
- McQueen, K. G., 2016. Geology of the Cobar Region, New South Wales – Mining History. Geological Survey of New South Wales, public information brochure.
- McQueen, K. G., 2016. National Rock Garden Education Pavilion. *AIG News*, No. 124. p. 37.

Susan Turner has continued her research on the work of various geoscientists, both men and women. Her work on the Swedish vertebrate palaeontologist Erik Stensiö, who was the subject of her talk at the 40th INHIGEO meeting in Beijing in 2015, is the subject of an essay with Dr Roger Miles (London) submitted to the second Planet Earth volume being edited by Professor John Talent (Sydney). Sue reviewed a new book on the *Father of Australian Geology*, the Reverend William Clark.

Continuing the collaboration with Martina Koelbl-Ebert on the history of Women in Geosciences for the 50th INHIGEO volume, Sue continues to build a database of women in geoscience and promotes this through her Facebook page. Sue has, again, been English editor for the JHOST, assisting chief editor Ana Carneiro (Portugal).

Presentations

In July 2016 Sue gave a talk to her local Kenmore Library Friday Club on her work in China since 1984 and the amazing changes that have taken place.

Research via Social Media

Work on the Facebook page for the Thomas Sopwith Appreciation Society currently has 176 likers:
<https://www.facebook.com/ThomasSopwithAppreciationSociety>.

The Facebook page for Professor Dr. Friedrich and Dr. Erika von Huene currently has 187 likers:
<https://www.facebook.com/FriedrichErikaVonHuene>.

The Women in Geoscience Facebook page now has 431 likers.
<https://www.facebook.com/WomeninGeoscience>.

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

And with 25 years since the death of her teacher, Lambert Beverly Halstead, in April 1991, a further Facebook page has been made (currently 55 likers):

<https://www.facebook.com/HalsteadTarlo,LambertBeverly>.

The book by Canadian Rick Antonson on the history of Armenia/ Kurdistan/ Turkey/ Iraq/ Iran that she edited, entitled *Full Moon Over Noah's Ark; An Odyssey to Mount Ararat*, was published in Spring 2016.

Publications

Koelbl-Ebert, M. & Turner, S. 2016. Towards a history of female geologists. In: Mayer, W., Clary, R. M., Azuela, L. F., Mota, T. S. & Wołkiewicz, S. (eds) *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London, Special Publications, 442, 12 pp.
<http://doi.org/10.1144/SP442.16>

Turner, S. & Long, J.A. 2016. 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) 2016. *Arthur Smith Woodward: His Life and Influence on Modern Vertebrate Palaeontology*. Geological Society, London, Special Publications, 430, 261–288.

Book Review

Turner, S. 2016. Review of Robert Young, 2015. *This Wonderfully Strange Country*: Rev. W. B. Clarke, Colonial Scientist. self-published Thirroul, NSW, 177pp. In: *tag* (The Australian Geologist: Geological Society of Australia Newsletter), December, 2p.

AUSTRIA

In addition to some presentations given by members of the AWGHES at various events following articles were published:

Fritz, H. & Hubmann, B. (2016): Univ.-Prof. Mag. Dr. phil. Eckart Wallbrecher (6.8.1940–1.9.2016). *Geohistorische Blätter*, 27, 91-92, 1 fig., Berlin.

Hamilton, M. & Pertlik, F. (2016): Chronologische Dokumentation der zu Ehren von Friedrich Becke (1855-1931) benannten Lichtlinie. In: *Mitteilungen der ÖMG* (Wien 2016), 73-81.

Hamilton, M. (2016): Der Weg von der praktischen Erkenntnis zur theoretischen Deutung im Anschluss an die Notizbücher des Mineralogen und Petrographen Friedrich (Johann Karl) Becke (1855-1931). – Ph.D. Thesis.

Hamilton, M. (2016): Wiederentdeckte Zeugnisse der regen Forschertätigkeit des Mineralogen und Petrographen Friedrich (Johann Karl) Becke (1855-1931). – *Mitteilungen der ÖMG* (Wien 2016), 61-72.

Hamilton, M. (2016): Die Notizbücher des Mineralogen und Petrographen Friedrich Becke 1855-1931. Der Weg von der praktischen Erkenntnis zur theoretischen Deutung. – *Schriften des Archivs der Universität Wien*, Band 23

Hubmann, B. & Moser, B. (2016): Der Bausteinbestand der Burgruine Gösting (Graz, Steiermark). *Joannea - Geologie und Paläontologie*, 12, 128-140, 7 figs., Graz.

Hubmann, B. (2016): „Im Steinschleifen bin ich schon ein wackerer Geselle geworden“: Zu Franz Ungers erdwissenschaftlichen Pionierleistungen in der Stratigraphie und seiner phytopaläontologischen Dünnschliff-Untersuchung. – In: Klemun, M. (ed.): *Einheit und Vielfalt. Franz Ungers (1800-1870) Konzepte der Naturforschung im internationalen Kontext*. – 195-205, Wien (Vienna University Press).

Hubmann, B. (2016): In Memoriam Edgar Hoffer (1942–2015). – Mitteilungen des Naturwissenschaftlichen Vereines für Steiermark, 145, 5-6, 1 fig., Graz.

Marianne Klemun

Books:

Marianne Klemun and Ulrike Spring (Eds.), *Scientific Expeditions as Experiments*. Palgrave Studies in the History of Science and Technology (London, New York, Palgrave Macmillan, December 2016).

Articles:

- Spaces and places: an historical overview of the development of geology in Austria (Habsburg Monarchy) in the eighteenth and nineteenth centuries. Geological Society, *Special Publications*, 442. Online, Lyell Collection 442.
- Together with Ulrike Spring, *Expeditions as Experiments: An Introduction*. In: Marianne Klemun / Ulrike Spring (Eds.): *Scientific Expeditions as Experiments* (London, New York, Melbourne: Palgrave & Macmillan 2016), 1-25.
- Wie wurde der Großglockner zum höchsten Berg seiner Region? Ein Reiseführer durch die Geschichte eines Wahrnehmungswandels. In: *Bulletin des Geschichtsvereines für Kärnten*, 1. Halbjahr (2016) 45-50.
- Aye-Aye, Chamäleon und Octopusbaum: Flora und Fauna Madagaskars im Wandel des Wissens (16. bis 20. Jahrhundert). In: *Carinthia* II, 206/126. Jg., Teil 1 (2016) 69-82.

Conferences and panels organised:

Together with Ana Carneiro: Organisation of the Session: “Textbooks and Handbooks as an Instrument of Power (Symposium Nr. 41, 10 papers), at: 7th International Conference of the European Society for the History of Science: “Science and Power, Science as Power”, Faculty of Arts, Charles University, Prague, 22–24 September 2016.

Conference talks (mostly invited)

- Franz Unger (1800–1870): Einheit in der Vielfalt. Von der Ökologie zur Evolution, [Franz Unger, from ecology to evolution], at: Österreichischer Naturschutzbund Wien, Museumsquartier, Museumsplatz 1, St. 13, 21. Februar 2017 (invited)
- Von der Paradiesvorstellung zur blutenden Insel [From Paradise metaphors to a bleeding island] at: Madagaskar – ein Naturparadies voller Widersprüche. Neujahrstreffen der Biologen. Institut für Pflanzenwissenschaften an der Universität Graz, 13. Jänner 2017 (invited).
- Launch of the book: “Einheit und Vielfalt. Franz Ungers Naturforschung im internationalen Kontext“ org. von der Zoologisch-Botanischen Gesellschaft Wien [Society for Zoology and Botany in Vienna], Althanstr. 14, UZA 1, 16. November 2016 (invited).
- Short talk at “Wissenschaft und Metropole“ [Science and Metropolises]. Workshop der Kommission für Geschichte und Philosophie der Wissenschaften, der Österreichischen Akademie der Wissenschaften [Austrian Academy of Sciences], Wien, 14. Oktober 2016.

- Reisen in die Kälte [Journeys to the „Coldness“], bei: Kalten Staub aufwirbeln. Winterreisen um 1816. Symposium zum „Jahr ohne Sommer“, organisiert von: akut. – Verein für Ästhetik und angewandte Kulturtheorie, Altes Rathaus Wien, 29.9. 2016 (invited).
- Commentator of nine papers: “Skulls and roses: natural History collections and their meaning in 18–19th centuries,” at: 7th International Conference of the European Society for the History of Science: “Science and Power, Science as Power”, Faculty of Arts, Charles University, Prague, 22–24 September 2016.
- Ancient Terms and New Concepts: “The Face of the Earth” and “Gondwana-Land”, at: Historical Studies of Gondwana. 35th International Geological Congress, 27 August – 2 September 2016, Cape Town, South Africa.
- Knowledge through Diverse Objects. Collections of the University of Vienna in Early Modern Times, at Scientiae Disciplines of Knowing in the Early Modern World. St Anne’s College, University of Oxford, 5–7 July 2016, Oxford/GB.
- Entangled Functionalities: Science, Competition, and Empire. Expeditions Commissioned by the Habsburg Court in the Eighteenth Century, at: “Intertwined Enlightenments? Studies of science and empire in the Habsburg, Ottoman and Russian realms during the eighteenth century”, org. by Central European University, Institute for Advanced Study, Budapest, May 19 – May 20, 2016 (invited).
- Im Aufbruch [A Departure]: Verwissenschaftlichung der Naturforschung und Lehre im Wien der 1850er Jahre, at: 150 Jahre Mendelsche Regeln: vom Erbsenzählen zum Gen-Editieren. Internationales Symposium an der Österreichischen Akademie der Wissenschaften, 17. und 18. März 2016, Wien (invited).
- Stones and Taste: ‘Vulgar Reasoning’ in Earth Sciences, at: “Flavours of the Eighteenth Century”, International Conference of the Dutch-Belgian Society for 18th-Century Studies & Contactforum KVAB, Royal Flemish Academy of Belgium for Science at the Arts, Paleis der Academiën (Troongebouw), Brussels, 10–11 March 2016.
- Überlegungen zum Thema: “Expeditionen“ [Reflexions about the topic: History of Expeditions], at: Workshop zum Projekt “Geschichte der Österreichischen Akademie der Wissenschaften 1847–2022. [History of the Austrian Academy of Sciences]“ Österreichische Akademie der Wissenschaften, Johannessaal. 19. 1. 2016 Wien (invited).

Report – Johannes Mattes (Austria)

Johannes Mattes has published 7 papers in journals and books:

J. Mattes: Coming from Abroad. The Discourse on Scientific Centralism and Jovan Cvijić’s Studies in Vienna. In: V. Jović /A.M. Petrović (Hg.): 150th Anniversary of Jovan Cvijić’s Birth. Proceedings of the International Conference held at the Serbian Academy of Sciences and Arts, October 12–14, 2015. Belgrade: Serbian Academy of Sciences and Arts 2016. S. 13-28.

- J. Mattes: Going Deeper Underground: Social Cooperation in Early Twentieth-Century Cave Expeditions. In: Marianne Klemun / Ulrike Spring (Hg.): Scientific Expeditions as Experiments. London, New York, Melbourne: Palgrave & Macmillan 2016. S. 163-186.
- J. Mattes: 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). In: Atti e Memorie della Commissione Grotte “E. Boegan”, Trieste, 47. Jg. 2016 S. 71–88.
- G. Stummer, L. Plan, J. Mattes: Höhlenkundliche Organisationen. In: C. Spötl / L. Plan / E. Christian (Ed.): Karst und Höhlen in Österreich. Linz: Oberöstr. Landesmuseen 2016. S. 391-398.
- J. Mattes: Höhlennutzung seit der Antike. In: C. Spötl / L. Plan / E. Christian (Ed.): Karst und Höhlen in Österreich. Linz: Oberöstr. Landesmuseen 2016. S. 287-296.
- J. Mattes: Geschichte der Höhlenforschung. Von den Anfängen bis zum Ende des 20. Jahrhunderts. In: C. Spötl / L. Plan / E. Christian (Ed.): Karst und Höhlen in Österreich. Linz: Oberöstr. Landesmuseen 2016. S. 377-390.
- D. Kuffner, B. Wielander, J. Mattes: Trauntaler Voralpen. In: C. Spötl / L. Plan / E. Christian (Ed.): Karst und Höhlen in Österreich. Linz: Oberöstr. Landesmuseen 2016. S. 589-598.

Johannes Mattes gave 5 oral presentations and lectures in the following meetings or conferences:

Between Nature and Culture: Concepts of Knowledge and Space in Historical Cave Maps (1500-1800). *Scientiae – International Congress on the Disciplines of Knowing in the Early Modern Age*, Oxford (GB), 7th July 2016.

“Claims on the Past“ — Cave Excavations by the SS Research and Teaching Community “Ahnenerbe” (1935–1945). *International Geological Congress, Session of the International Commission for the History of Geological Sciences*, Capetown (RSA), 29th August 2016.

“Zeigen und Verschweigen – Wissens- und Raumkonzepte in historischen Höhlenkarten [Concepts of Knowledge and Space on Historical Cave Maps], Kartographiehistorisches Kolloquium D-A-CH, Vienna (AU), 17th September 2016.

Disciplining Interdisciplinarity – The development of speleology as a “handbook science” (1870–1920). *International Congress of the European Society for the History of Science*, Prague (CZ), 24th September 2016.

Zirkulation von Menschen und Wissensdingen in Wien und zwischen den Metropolen [Circulation of scholars and objects of knowledge in Vienna and between metropolises], Workshop of the Commission for the History and Philosophy Sciences, Austrian Academy of Sciences, Vienna (AU), 14th October 2016 (together with Karl Kadletz, Marianne Klemun & Brooke Penaloza Patzak).

Matthias Svojtka – In 2016 Matthias authored four biographies of natural scientists for part 67 of the Austrian Biographical Dictionary and 10 biographies for the (online published) second edition of the Austrian Biographical Dictionary (part 5, November 25th), which including the famous botanist and

palaeobotanist Franz Unger (1800-1870) and the professor of natural history at Graz (Styria) Johann Georg Bill (1813-1870). Apart from that he gave an extensive account on the history of teaching natural history and collecting at the University of Prague in the period from 1749 to 1849.

Publications:

Svojtka, M. 2016: Unger Franz. *Österreichisches Biographisches Lexikon 1815-1950*, 67. Lfg., 101-102 (ISBN 978-3-7001-7965-8).

Svojtka, M. 2016: Bill Johann Georg. *Österreichisches Biographisches Lexikon ab 1815* (2nd ed. – online), Lfg. 5, 25.11.2016 (ISBN 978-3-7001-3213-4).

Svojtka, M. 2016: Das Fach Naturgeschichte und seine Fachvertreter an der Universität Prag von 1749 bis 1849. *Berichte der Geologischen Bundesanstalt (Wien)* 118, pp. 95-105.

BRAZIL

Activities regarding the history of geological sciences in Brazil by members of INHIGEO continued to increase smoothly last year. Besides having taken part in several scientific meetings, Brazilian INHIGEO members also organized some symposia. Silvia Figueirôa is involved with the organization of the next 25th International Congress on the History of Science and Technology that will be held in Rio de Janeiro-RJ on July 23-29, 2017. It is worth of mentioning, too, that Dr. Ermelinda Pataca became Associate Professor at the University of São Paulo (USP).

Publications specific to the history of geosciences were (in alphabetical order):

FIGUEIRÔA, Silvia F. de M. “Brazilian geology for Brazilian students: the general geology textbook published by John Casper Branner in 1906”. *Earth Sciences History*, v.35, p.375-386, 2016.

FIGUEIRÔA, Silvia F. de M. “Innovation and critical thinking: contributions of the history and philosophy of geological sciences to teaching, especially undergraduate teaching”. *Geological Society Special Publication*, v. único, p. 1-8, 2016.

FIGUEIRÔA, Silvia F. de M. “The books by Nerée Boubée (1806-1862) travel to Brazil: how and why?” In: 7th ESHS Conference, 2016, Praga. *Book of Abstracts – 7th ESHS Conference*. Praga: Czech Society for the History of Sciences and Technology and Charles University, 2016. v. único. p. 60-61.

GANDOLFI, Haira E.; ARAGÃO, Thayse Z. B.; FIGUEIRÔA, Silvia F. de M. “Os alambiques no Brasil colônia: uma proposta de abordagem histórica e social no ensino de ciências”. *Química Nova na Escola*, v.38, p.215-223, 2016.

GANDOLFI, Haira E.; FIGUEIRÔA, Silvia F. de M. “La enseñanza de química desde las geociencias: la minería colonial y sugerencias para el trabajo interdisciplinario”. *Revista de Estudios y Experiencias en Educación*, v.15, p.181-196, 2016.

GONÇALVES, Pedro W. “Concepção de natureza na revista Química Nova na Escola”. In: ENCONTRO NACIONAL DE ENSINO DE QUÍMICA, 18, 2016, Florianópolis, SC. *Anais...* Florianópolis, SC: Divisão de Ensino de Química da Sociedade Brasileira de Química, v.1, p. 01-12, 2016.

- LIMA, Thailine A. de; FIGUEIRÔA, Silvia F. de M. “Introdução à História das Ciências por meio do projeto ‘RISCAR O MUNDO: Desenhos científicos do antigo Império português nos fundos documentais do MUHNAC, Universidade de Lisboa (Séc. XVIII-XIX)’” .In: XXIV Congresso de Iniciação Científica da UNICAMP, *Anais Eletrônicos*.... 2016. v. 2.
- LOPES, Maria Margaret. “Archhelenis” (dictionary entry). In: Irina PODGORNYY. (Ed.) *Diccionario histórico de las ciencias de la Tierra en la Argentina*. 1ed.Rosario: Prohistoria Ediciones, 2016, p. 52-55.
- LOPES, Maria Margaret. “Congresos Geológicos Internacionales” (dictionary entry). In: Irina PODGORNYY. (Ed.) *Diccionario histórico de las ciencias de la Tierra en la Argentina*. 1ed.Rosario: Prohistoria Ediciones, 2016, p. 123-125.
- LOPES, Maria Margaret. “Gender, collecting practices, museums”. *HoST - Journal of History of Science and Technology*, v. 10, p. 1-9, 2016.
- LOPES, Maria Margaret. “Ihering, Hermann von” (dictionary entry). In: Irina PODGORNYY. (Ed.) *Diccionario histórico de las ciencias de la Tierra en la Argentina*. 1ed.: Prohistoria Ediciones, 2016, p. 215-216.
- LOPES, Maria Margaret; ROMERO SÁ, Magali. “A Museum in the heart of Amazonia: one man’s laboratory”. *Museum History Journal*, v. 9, p. 77-92, 2016.
- PATACA, Ermelinda M. “Coleta, transporte e aclimação de plantas no Império Luso-Brasileiro (1777-1822)”. *Revista Museologia & Interdisciplinaridade*, v.5, p.84-104, 2016.
- PATACA, Ermelinda M.; OLIVEIRA, C. B. “Escrita de micronarrativas biográficas de viajantes luso-brasileiros: aproximações entre história das ciências no Brasil e ensino”. *Educação e Pesquisa - Revista da Faculdade de Educação da USP*, v.42, p.165-180, 2016.
- PEYERL, Drielli; FIGUEIRÔA, Silvia F. de M.; BOSETTI, Elvio P. “The North American geologist Walter Karl Link (1902-1982) and the oil exploratory research at PETROBRAS (1954-1960)”. *Earth Sciences History*, v.35, p.387-398, 2016.
- PICANÇO, Jefferson de L.; MESQUITA, Maria José. “Geólogos que fazem história: Orville Derby, Avelino Oliveira, Othon Leonardos, Viktor Leinz e suas monografias sobre a História da Geologia no Brasil (1897-1955)”. In: 15º Seminário Nacional de História da Ciência e da Tecnologia, 2016, Florianópolis. *Anais Eletrônicos*.... Florianópolis: SBHC, 2016.
- PODGORNYY, Irina; LOPES, Maria Margaret. “Filling in the picture: nineteenth-century museums in Spanish and Portuguese America”. *Museum History Journal*, v. 9, p. 3-12, 2016.
- SCHIAVINATO, Iara L.; PATACA, Ermelinda M. “Entre imagens e textos: os manuais como práxis de saber”. *História, Ciências, Saúde-Manguinhos*, v.23, p.551-566, 2016.
- SOUZA, M. F. M.; LOPES, Maria Margaret. “Estudo da coleção de livros editados pela Sociedade dos Cem Bibliófilos do Brasil da Biblioteca Central da Universidade de Brasília”. *Museologia e Interdisciplinaridade*, v. 5, p. 239-257, 2016.
- VISSICARO, Suseli P.; FIGUEIRÔA, Silvia F. de M. “As possibilidades e limites de utilização da História das Ciências e da Tecnologia por professores no contexto da formação continuada”. In: 15º Seminário Nacional de História da Ciência e da Tecnologia, 2016, Florianópolis. *Anais Eletrônicos*.... Florianópolis: Sociedade Brasileira de História da Ciência, 2016. v. único. p. 1-17.

VISSICARO, Suseli P.; FIGUEIRÔA, Silvia F. de M.; ARAÚJO, M. S. “Questões sociocientíficas nos anos iniciais do ensino fundamental: o tema água em evidência”. *Indagatio Didactica*, v.8, p.1596-1609, 2016.

Silvia Fernanda de Mendonça Figueirôa, Campinas

Maria Margaret Lopes, Brasília

BULGARIA

Activity Reports Prof. D. Sc. B. Mavrudchiev

The annual National Scientific Conference of the Bulgarian Geological Society with international participation “Geosciences 2016” was dedicated to the 150th anniversary of Acad. Georgi Bonchev and was opened by the lecture of:

Zagorchev I., Mavrudchiev B. 2016. Academician Georgi Bonchev (1866–1955): beyond the biography. - *Bulgarian Geological Society, National Conference with international participation “GEOSCIENCES 2016”*, 11-12.

Prof. DSc. P. Tchoumatchenco

Platon Tchoumatchenco, with international colleagues, continues the activity to collected data about the fates and the professional activity of the Russian geologists abroad. Now, together with Alberto Riccardi, Argentina; Ricardo Alonso, Argentina; Michel Wiasemsky, France; Demetrio Boltovskoy, Argentina; Reynaldo Charrier, Chile; and Elena Minina, Russia, collected data about the Russian geologists, who worked or work now in the countries of the Latin America. To date they have data on about 76 Russian geologists. In the 2016 the following papers were published:

Tchoumatchenco, P., Durand-Delga, M., Ricour, J. and Wiazemsky, M., 2016. Geologists of Russian origin in the francophone countries. *Boletín Geológico y Minero*, 127 (2/3): 689-716.

Tchoumatchenco P., Branagan D., Wiazemsky M., Torrens H. 2016. The geologists of Russian origin in the British Isles.-*Conference "Russian heritage in the contemporary world", London, 19 December 2016*; 94-102.

Tchoumatchenco P., Nikolov T. 2016. Dr Rostislav Beregov (1908–1946) – life and scientific activity. *Review of the Bulgarian Geological society*, 77, 1; 93–108 (in Bulgarian).

Tchoumatchenco P., Nikolov T. 2016. Compendium of Bulgarian palaeontologists (1896–December 31, 2015). Part I. A-K. – *Review of the Bulgarian Geological society*, 77, 1, 109–126 (in Bulgarian).

Tchoumatchenco P., Nikolov T. 2016. Compendium of Bulgarian palaeontologists (1896–December 31, 2015). Part II. L-Ya. – *Review of the Bulgarian Geological society*, 77, 2-3, 115-133 (in Bulgarian).

Tchoumatchenco P. 2016. In memoriam. Lilia Delcheva Dodekova-Sapunova (1934-2016). - *Review of the Bulgarian Geological society*. 77/2–3; 169-169 (in Bulgarian).

About Prof. P. Tchoumatchenco

Executive Body of the Bulgarian Geological Society. 2016. The 80th Anniversary of Prof. DSc. Platon Vassilievich Tchoumatchenco, Honourable Member of the Bulgarian Geological Society. – *Review of the Bulgarian Geological Society*, 77/1; 131-132 (in Bulgarian).

Nikolov T. 2016. Life in mountains of difficulties to the symbol of the irresistible spirit of exploration. – *Review of the Bulgarian Geological Society*, 77/2-3; 150-165 (in Bulgarian).

CANADA

Ernie Hamm, Department of Science and Technology Studies, York University, Toronto, Ontario: The highlight of this past year was being an invited Professor in Paris during May and June at the École des Hautes Études en Sciences Sociales, where I gave four lectures, all of which dealt with the history of geology in the late eighteenth and early nineteenth centuries. “Brocken: A Harz Journey in Winter” focused on Johann Wolfgang von Goethe’s winter ascent of the Brocken, a mountain with deep connections to myth and geology in German history and which turns out to be of very profound significance for Goethe. The second lecture, “Goethe and Granite”, offered an explanation of why granite came to have such an importance in Goethe’s geological work. “Alexander von Humboldt, Volcanoes and the Natural History of the Americas” showed why volcanoes in the Americas turned out to be fundamental for the way the Europeans understood volcanoes. “Faust: Polemics and a New Science” took up geological themes in Faust II, especially in relation to Goethe’s attacks on radical changes in geology in the 1820s.

Gerrard Middleton: Gerrard gives his status as inactive.

Randy Miller: Retired from the New Brunswick Museum of Natural History

David A. E. Spalding, Alberta Provincial Museum History: The planned history of the Royal Alberta Museum and its predecessors, discussed in last year’s report, was cancelled during 2016 without explanation by the Friends of the Royal Alberta Museum, who had commissioned the project. It is ironic that an organization with such a major role in studying and interpreting the history of the province is so cavalier about its own institutional history. History of Earth Sciences Society: I continued to serve as an editorial board member for Earth Sciences History, with particular responsibility for vertebrate paleontology, geological education, conservation and Canada. Alberta Women Paleontologists: During the year, I prepared a brief introductory essay for Darren Tanke’s book on Alberta paleontologist Hope Johnson, and contributed information to the same author’s work on Jane Colwell-Danis.

Darren H. Tanke: The biography of amateur paleontologist, naturalist, historian, and artist Hope Johnson (1916-2010) still continues. New information still comes in as ongoing efforts of digitizing old newspapers means new information is discovered. Another trip to Victoria, British Columbia in 2016 resulted in more biographical and historical information on her. INHIGEO member David A.E. Spalding is one of several people contributing a foreword for the book.

The biography on Albert F. Johnson (1875-1956), a paleontological fieldworker for the American Museum of Natural History (AMNH) in Alberta (1913-1915), Montana (1915-1916, 1929),

Texas (1929), and Gobi Desert, Mongolia (1923) was resumed and biographies on AMNH technicians Peter C. Kaisen (more correctly Kaison) resumed and George Olsen started.

The year 1916 saw the sinking of the *SS Mount Temple* and her Alberta, Canada dinosaur cargo. Several new historical projects related to this event: I was interviewed and *Earth* magazine ran a feature story on the centenary of the *SS Mount Temple* sinking (Augliere, 2016). I've been approached by a women children's book writer to explore the history of the *SS Mount Temple* sinking and her dinosaur cargo.

On July 12, 2016, I assisted in the scattering of the ashes of Maurice Stefanuk (1924-2016) by some of his family in the Late Cretaceous Horseshoe Canyon Formation (Campanian) badlands overlooking the Red Deer River near the Horseshoe Canyon lookout area. This is not far upriver from Drumheller, his long-time home, and in a place of his final request. We built a cairn of stacked glacial erratics to mark the spot. Dinosaur collectors in the early 20th Century worked in, and passed through this area many times. A biography on him is in progress too and I have been making contact with old workmates and friends for imagery and stories on him. He was a lab technician (fossil preparator) at the Royal Tyrrell Museum of Paleontology about 1982-1987. He had an interest in vertebrate paleontology history and assisted the late Dr. Loris S. Russell in relocating old Barnum Brown and Sternberg family pre-WWII (mostly) dinosaur quarries, along with me, in the late 1980's. He found the two best skeletons of the tyrannosaurid dinosaur *Albertosaurus*; one about 1973 and the second in 1985. I have already been slotted in to give a talk on him at the Alberta Paleontological Society meetings in Calgary and Royal Tyrrell Museum of Palaeontology (Drumheller) in early 2018. INHIGEO member Clinton Tippet has helped identify an old picture of an oil rig on which Maurice worked for the Stefanuk biography.

A reattempt to float the 1:1 scale replica scow (the *Peter C. Kaisen*) used by the American Museum of Natural History in Alberta on dinosaur digs from 1910-1914 (their scow was named the *Mary Jane*), was planned for June, 2016 but the river was too low. Even repeated heavy rains this summer failed to raise the river by much, certainly not enough to float our boat. Instead, on June 12, the scow was taken by a large flat-decked transport truck to Dinosaur Provincial Park for part of a Park "Historic Scow Event" celebration. Dressed in c. 1920-style paleontologists clothing, I gave a synopsis of the Park's early dinosaur collecting history to the gathered public. A commemorative bronze plaque was attached to the scow and a handover ceremony conducted. The next day the six-ton scow was transported into the Park's restricted preserve area and by crane placed in a flat area in the badlands of Late Cretaceous Dinosaur Park Formation (Campanian) immediately adjacent to the bus tour road (Fig. 1). It will now become a major stop for scheduled bus tours resuming this year. About 50,000 people are on these tours each tourist season so that aspect of the Park's paleontological heritage will get great coverage. Many period artifacts or replicas thereof will be placed inside and out so as to resemble an actual dinosaur collector's scow from the early 20th Century.



Figure 1. The scow Peter C. Kaisen just before being unloaded for public display in Dinosaur Provincial Park, Alberta, Canada. The scow is a 1:1 scale replica of the Mary Jane used by the American Museum of Natural History as a floating base camp in Alberta 1910-c.1914. Photo taken by Darren H. Tanke, June 13, 2016.

I continued working on the biography of Jane Colwell-Danis (1941-), Canada's first academically-trained female vertebrate paleontologist. I now have all her known personal papers (there may be more deeply buried in storage at her sister's house in Fresno, California) relevant to her paleontological career in Alberta and Ontario (1965-1991), of which there are a great many, and which are proving very useful for completion of her life story. This material includes detailed diaries, over 750 letters, photographs, cassette-recorded interviews, maps, museum documents, etc. I visit with her two to three times a week and get more information from her that way. She is suffering from early stage dementia and/or a related condition, but her oldest memories are still very good and I can confirm this from her detailed letters penned long ago. A poster (fig. 2) on her career was presented at the 21st meeting of the Alberta Palaeontological Society in Calgary (Tanke, 2017) on March 18, 2017. The same poster will be presented at the upcoming Canadian Society of Vertebrate Paleontology meeting to be held in Dinosaur Provincial Park, Alberta in May, 2017. INHIGEO member David A.E. Spalding has also graciously provided data towards this project.

Figure 2. Jane-Colwell-Danis, Canada's first (1965) academically-trained female vertebrate paleontologist; seen here with a poster on her career. Drumheller, Alberta, Canada, April 9, 2017. Photo by Darren H. Tanke.



Other earth science history projects under development are setting up some Wikipedia pages on early fossil collectors in Alberta, assisting with the description of some of the earliest vertebrate (dinosaur mostly) fossils collected in Alberta in the 1880's and now curated at the Canadian Museum of Nature (Ottawa), and a spring 2017 road trip to NW Montana, USA to gather more information on the Albert F. Johnson noted earlier. Materials are being gathered and I'm working with two co-authors (and maybe more) for a comprehensive paper on field, research, and museum development activities related to vertebrate paleontology in Alberta in the 1960s. Curiously, we know more about those activities from the 1910s-1930s, yet the 1960s, an important, seminal decade, is poorly documented.

References:

- Augliere, B. 2016. December 6, 1916: Dinosaur fossils lost at sea in World War I. *Earth*, 61(11-12):108-111.

Tanke, D.H. 2017. Jane M. Colwell-Danis: Canada's first academically-trained female vertebrate paleontologist. pp. 9-17. In: Alberta Palaeontological Society, 21st Annual Symposium. Mount Royal University, Calgary. March 18-19. Edited by H. Allen.

Clinton Tippet: I am a geologist, formerly with Shell Canada and now retired, living in Calgary, Alberta, Canada.

Petroleum History Society (PHS): My focus on historical geology matters over the past year continues to be primarily through the Calgary-based PHS. I am both its President and the Editor of its newsletter Archives (back issues of which are accessible through our website at: www.petroleumhistory.ca).

Production of this newsletter involves the creation of articles summarizing presentations that have been given, news items from the media, photographs (current and historical) and excerpts from the publications of related organizations. The PHS sponsors six-seven luncheons each year at which speakers address historical petroleum-related topics, many of which have a significant geological component. We have an annual awards program recognizing the preservation and communication of the history of the Canadian petroleum industry comprising Book of the Year, Article of the Year, Multimedia, Preservation and Lifetime Achievement. We have in the past organized topical field trips and walking tours both of which have strong geological flavours.

Turner Valley Oilfield Society (TVOS): During 2016, both the PHS and I continued co-operation with the TVOS which is working with the Government of Alberta to continue an interpretive program, including guided walking tours, at the Turner Valley Natural Gas Processing Plant. This now-inactive facility is both a provincial and a federal historic site, dating back to the late 1910's. These tours feature all aspects of petroleum exploration and production including the interpretation of the geological framework of this oil and gas field. The TVOS has a number of other preservation and communication initiatives ongoing as well.

American Association of Petroleum Geologists (AAPG): During 2016 I continued in a three-year term as the Canada Region representative on the Advisory Council of the AAPG. 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 was Chair of the Advisory Council's Honors and Awards Committee for the 2016-2017 cycle for which award winners were selected in the Fall of 2016 to be honoured at the AAPG. The Annual Meeting in Houston in 2017 is to be held on the occasion of the 100th anniversary of the Association. I continue as Co-Chair of this committee for the selection of award winners at the Houston meeting for presentation in the Spring of 2018 in Salt Lake City. I was involved in the preparations for the 2016 AAPG Annual Convention and Exhibition that took place in Calgary in June 2016. I was one of the Chairs of the History of Petroleum Geology technical session at that meeting that featured seven presentations on the evolution of geological thought and of the industry. I am a member of the History of Petroleum Geology Division of the AAPG whose meeting I attended in Calgary in June 2016 at which, amongst other things, plans for the 100th Anniversary of the AAPG in 2017 were discussed.

Canadian Society of Petroleum Geologists (CSPG): In late 2016 I was voted in as the President-Elect of the CSPG for 2017 and will be its President in 2018. Within that organization, I am also the Chair of the History and Archives Committee. In addition, I am the Chair of the CSPG Stanley Slipper Gold Medal

Committee that selects the recipient for this award that honours an individual who has made outstanding contributions to petroleum exploration in Canada, be that through their own accomplishments, by leading exploration teams or through mentorship. An understanding of the evolution of geological concepts is a key factor in exploration success.

Petroleum History Institute (PHI): I was fortunate enough to be able to attend the PHI's annual meeting and conference in Casper, Wyoming in late July. This included an excellent field trip to the Salt Creek Oil Field. I am a lifetime member of that organization

Geological Society of America (GSA): I am a member of the History and Philosophy of Geology Division of the GSA.

Annual report compiled and edited by Darren H. Tanke (INHIGEO editor for Canada)

CHILE

History of Geology Group at the Sociedad Geológica de Chile – Geological Society of Chile

Our Chilean group on History of Geology:

1. Organized a VII Symposium on History of Geology, in Santiago at the Department of Geology of the University of Chile during one whole day on November 11, 2016, and
2. Participated in the IV Argentinan Congress on History of Geology, held in the city of La Plata, Argentina, the 15th and 16th September 2016.
3. Plans to organize a VIII Symposium on History of Geology in Santiago around October 2017.

1. Presentations at the VII Symposium on History of Geology, Santiago, Chile:

Aceñolaza, Florencio G., *“El Despoblado de Atacama: exploradores y naturalistas del siglo 19”*. INSUGEO-Universidad Nacional de Tucumán, Argentina.

Aguirre, Luis, *“Acerca de la génesis de las “piedras”: en la Antigüedad greco-romana, la Edad Media...y más allá”*. Departamento de Geología, Universidad de Chile, Santiago.

Aguirre-Urreta, Beatriz, *“Un naturalista olvidado: Franz Meyen y los fósiles de Lo Valdés”*. Instituto de Estudios Andinos “Don Pablo Groeber”, Departamento de Ciencias Geológicas, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires.

Camus, Francisco, *“La historia de los pórfidos de cobre en Chile”*. Private consultant, Santiago, Chile.

Carvajal, M., Cisternas, M., Muñoz, D. & Araya-Cornejo, C., *“Source of the 1906 Metropolitan earthquake constrained by written records and far-field tsunami mareograms”*. Escuela de Ciencias del Mar, Pontificia Universidad Católica de Valparaíso. Valparaíso, Chile.

Charrier, R., Hervé, F. & Aceituno, P., *“Contribución del Prof. Hans Brüggén a la geología en Chile”*. Geology School, Universidad Andrés Bello, and Facultad de Ciencias Físicas y Matemáticas, Universidad de Chile, Santiago.

- Chong Díaz, Guillermo, *“Mis experiencias como geólogo en los “primeros” cincuenta años”*. Pontificia Universidad Católica del Norte, Departamento de Geociencias, Antofagasta, Chile.
- Cisternas, M., Carvajal, M. & Gorioitía, N., *“Exploring the historical earthquakes preceding the giant 1960 Chile earthquake in 1737 and 1837: implications for the width of the region’s seismogenic zone”*. Escuela de Ciencias del Mar, Pontificia Universidad Católica de Valparaíso. Av. Altamirano 1480, Valparaíso, Chile.
- Díaz Céspedes, Francisco, *“Ignacio Domeyko y el Desarrollo de la Geología en Chile”*. Universidad de Santiago de Chile (USACH).
- Fortt, María Eugenia, *“María Angélica Fortt precursora femenina de la geología en Chile”*. Geology student, Tierra Viva, Copiapó.
- Godoy, Estanislao, *“Don Giovanni o ‘el Checho’ ”*. Dirección de Aguas, Ministerio de Obras Públicas, Santiago, Chile.
- Hervé, F. & Charrier, R., *“Louis Agassiz en Chile: una historia poco conocida”*. Geología, Universidad Andrés Bello, & Departamento de Geología, Universidad de Chile, Santiago, Chile.
- Leyton Alvarado, Patricio, *“Enrique Cappelletti (1831-1889) y el magnetismo terrestre como causa de los sismos en Chile”*. Filosofía y Ciencia Universidad Alberto Hurtado, Santiago, Chile.
- Marquardt, Juan Carlos, *“Minas de Pórfidos Cupríferos de Chile. III Parte, 1990-2000”*, Private consultant, Santiago, Chile.
- Ramos, Victor A., *“El primer estudio geológico de las Provincias Unidas del Río de la Plata: Los aportes de Dámaso A. Larrañaga”*. Instituto de Estudios Andinos “Don Pablo Groeber”, Departamento de Ciencias Geológicas, Universidad de Buenos Aires, Argentina.
- Sanhueza, Carlos, *“La producción transnacional del conocimiento y el estudio de los glaciares chilenos durante el siglo XIX”*. Departamento de Ciencias Históricas, Universidad de Chile, Santiago.
- Silva Parejas, Carolina, *“Cronología eruptiva histórica de los volcanes Tupungatito y San José: una revisión crítica”*. Universidad Santo Tomás, Santiago, Chile.
- Valderrama, Lorena B., *“El fenómeno de los temblores pertenece a la geología.” Montessus de Ballore y los límites disciplinares a inicios del siglo XX”*. Instituto de Historia de la Medicina y la Ciencia, López Piñero, España.

2. Participation in the IV Argentinan Congress on History of Geology, La Plata, Argentina.

i. Presentation of talk and manuscript to be published in:

Charrier, R., Hervé, F. & Aceituno, P., 2016. Contribución del Profesor Johannes Brüggen a la geología en Chile. Revista del Museo de La Plata, Universidad Nacional de La Plata - Facultad de Ciencias Naturales y Museo, Volume 1, Number 3, p. 1-25.

ii. Presentation of talk and manuscript to be published in:

Hervé, F. & Charrier, R., 2016. Legado de Ignacio Domeyko (1802 – 1889) a la geología y a la institucionalidad científica de Chile. Revista del Museo de La Plata, Universidad Nacional de La Plata - Facultad de Ciencias Naturales y Museo, Volume 1, Number 3, p. 138-148.

CHINA

Annual Report 2016

Committee on the History of Geology of the Geological Society of China

Part One: Main works in 2016:

1. Actively preparing for the annual meeting of geological history and participating in the related academic exchange meetings:

1.1 The 26th annual academic meeting of Committee on the History of Geology of the Geological Society of China (hereinafter referred to as Committee)

The 26th annual academic meeting of Committee was held at the International Conference Center of China University of Geosciences (Beijing) on October 22, 2016 with the strong support of China University of Geosciences and the Geological Society of China. Reviewing and studying the development of the geological sciences in China over the past hundred years were the themes of this annual meeting, which included four aspects:

- (1) The development and evaluation of the geological discipline development of Chinese geology in recent one hundred years;
- (2) Interaction between Chinese Geological Science and social development over the past hundred years;
- (3) The role and evaluation of geological scientists and the groups of geological scientists in the development of Geological Science in China;
- (4) How to promote the effective study of geological history of China in the new era and the new historical conditions.

Yu Guang, the deputy director of the Committee, presided over the opening ceremony. Forty-nine participants joined the opening ceremony, who were from the government departments of geology, petroleum, metallurgy, nuclear industry, and China University of Geosciences, Peking University and so on. Twenty-seven papers were received for the meeting and 17 were presented at the meeting. The contents covered the histories of geological discipline, geological figures, geological thoughts, geological education, geological investigation, and the geological communication.

Wang Xunlian, the vice president of China University of Geosciences (Beijing), expressed his congratulates at the opening of 26th Annual Meeting. He fully affirmed the significant contributions of the Committee to Chinese History of Geology and put forward the demand for study directed toward the history of geology. He suggested that some interviews should be organized and planned of the older generation of scientists who still work at their workplaces. This would be first-hand and precious information for the study, and the collection and accumulation of real history data.

Professor Yu Guang said that the leaders of China University of Geosciences (Beijing) gave their strong support to Committee. The Institute of Geological History was established with its support, which is the professional institute for study of geological history. In 1916, 13 graduates started their geological works at the Chinese Geological Survey. From then on, the Chinese Geological Survey and research works were officially launched. Over the past hundred years, China's geological science grew up and developed gradually, starting from nothing. The theme of the 26th annual meeting was also related to its historical development.

The oral presentations were vivid and clear, which inspired the delegates at the meeting. The main contents were as follows:

(1) The study of geological figures. The reports were as follows:

Mr. Zhang Hongzhao and Chinese Early Geological Education;
A Brief Analysis of Zhang Hongzhao's View of Knowledge and Practice;
Several Field Researches of Huang Jiqing and His Colleagues;
Pioneer of Geological Cause----- Professor Yuan Fuli;
The Comprehensive Review of Zhang Hongzhao, Ding Wenjiang, Weng Wenhao
and Li Siguang;
The Primary Study on Academic Thought and Science Achievements of Mr. Wang
Hongzhen;
Massacre Reviews of Xu Deyou, Chen Kang and Ma Yisi During the Anti-Japanese
War;
Recalling Professor Wang Jiayin;
Xie Jiarong and the Foundation of Soil Science in modern China.

(2) Geological discipline and the history of geological survey. Reports were as follows:

Research and development of organic petrology review of China;
Geological Survey in Past Century;
SMR Archives: Study on 《Mongolia Report of Taonan - Manchuria》.
(Here SMR means South Manchuria Railways Co.)

(3) Research on the history of geological science communication. The reports included:

International exchanges and cooperation in the field of hydrogeology, engineering,
and environment in the latter half of the twentieth Century;
Geological revolution began with the introduction of new research methods.

(4) The history of contention of a hundred schools of thought in geology. The reports covered:

New Research of the Founding Time of the Translation of “Ordovician”;
I Have Witnessed and Known: Debate of Quaternary glaciation problems in eastern
China.

At the closing ceremony, Cai Keqin, the Vice-Director of the Committee, made the concluding speech. He stressed that a wonderful academic atmosphere filled the meeting.

1.2 The related academic communication meetings

(1) The 2016 symposium of Earth Science and Culture. The members and researchers of the Committee joined the Symposium which was jointly organized by National Geological Library of China and Geological Documentation Centre of China Geological Survey on November 13, 2016.

(2) The 100th Anniversary of National Geological Library of China and the Seminar of Zhang Hongzhao's academic thought. Yu Guang and Cai Keqin, Vice-Directors of the Committee, gave the reports: *Mr. Zhang Hongzhao and Chinese early education and A Brief Analysis of Zhang Hongzhao's View of Knowledge and Practice* respectively on November 10, 2016.

(3) Symposium of commemorating the 100th Anniversary birthday of academician Wang Hongzhen, was held by China University of Geosciences (Beijing) on November 19, 2016. Yu Guang, the Deputy Director of the Committee, gave the report: *Carrying forward the excellent tradition culture and promoting the study of geology in China*. His talk made great contributions to Chinese geological cause and geological education.

2. Actively carrying out the study of the history of geological science and compiling the books on the history of Geology

(1) Compiling *History of Geological Science*:

The researchers of the Committee actively have carried on the study of, and collected a large number of documents and materials, the history of geological science, history of geological thoughts of ancient China, the history of geological education of China, and the history of geological characters. A consensus of researchers of the Committee produced the book *History of Geological Science*. In recent years, the Committee made a research plan to actively carry out a project of studying China's geological science history research from 2011 to 2015. The researchers are Cai Keqin, Chen Baoguo, Pu Qingyu, Hu Xuankui, Yun Xuemei, and Dai Jinye. So far, nearly half of the manuscript has been completed and the first draft will be finished by the end of 2017.

(2) Compiling Geological History of China:

Pu Qingyu, Vice-Director of the Committee, wrote the books *Geological History of China·Ancient Volume* and *Geological History of China·Modern Volume*, published by Guangxi Education Publishing House; both of which have gained great praise from all walks of life.

(3) Participating in the revision of *Encyclopedia of China* and *Dictionary of Earth Science*:

In 2016, Chen Baoguo, the researcher of the Committee, took part in the discussion of the articles on the *Encyclopaedia of China* and writing of related articles. He is responsible for compiling the terms of geological characters and geological history of *Dictionary of Earth Science* and also acted as the editor of that part.

Part Two: Work plan of Committee in 2017

1. Actively preparing for the 27th Annual Academic Meeting of the Committee and editing the papers of 40th International Symposium on geological science history.

2. Editing *Essays of Geological History*, which the Committee is planning to publish it at the end of 2017.

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CROATIA

Mladen Juračić:

The first activity report to the INHIGEO on activities in Croatia 2016.

As the single member (for the moment) of INHIGEO from Croatia in this first report I would like to remind you or introduce you to some notable names of people in the history of geology who were born in Croatia.

First is **Ruđer Bošković** (Ruggiero Boscovich; Rodericus Iosephus Boscovicus) May 18, 1711. Dubrovnik (Ragusa) – February 13, 1787. Milano (Milan). He was a rather well-known Ragusan physicist, astronomer, mathematician, philosopher, diplomat, poet, Jesuit priest, and a polymath from the city of Dubrovnik, (Croatia). However, for geologists it is important that in his publication *De inaequalitate gravitatis in diversis terrae locis* (1741) (On the inequality of gravity in diverse places on earth), he put forward the basis of the theory of isostasy. He concluded that the relatively small deflection of plumb towards mountains is caused by the fact that the deeper layers are denser and outweigh the gravity. He used the terms *earth's crust*, and mentioned action of "underground fire" that raise the plains of the Earth's crust.

Second one is **Andrija Mohorovičić** (January 23, 1857. Volosko/Opatija – December 18, 1936. Zagreb), Croatian geophysicist (meteorologist and seismologist) best known for the discovery of eponymous Mohorovičić (Moho) discontinuity, the largest natural object on Earth. He is also considered as one of the founders of modern seismology.

Another notable name in geosciences, born in Croatia, is **Milutin Milanković** (May, 28 1879. Dalj – December 12, 1958. Beograd). He was Serbian mathematician, astronomer, climatologist, geophysicist, civil engineer, university professor, and populariser of science. He produced a mathematical theory of climate changes caused by changes in solar radiation; the basis of paleoclimatology. He explained Earth's long-term climate changes were caused by changes in the position of the Earth in comparison to the Sun, now known as *Milankovitch Cycles*.

The first Croatian geologist who obtained his Ph.D. (in 1868. – from the Université Libre de Bruxelles) was **Đuro Pilar** (April 22, 1846. Slavonski Brod (Brod na Savi) – May 19, 1893. Zagreb). He was a versatile geologist who studied the action of groundwater and created the foundations of karst hydrology, investigated earthquakes, speleological objects, and coal occurrences. Also, he was the first professor of mineralogy and geology and the first rector of the University of Zagreb with background in natural science in the academic year 1884/1885.

The last notable name to be mentioned in this first report is **Dragutin Gorjanović Kramberger** (October 25, 1856. - December 24, 1936., Zagreb) a Croatian geologist and paleontologist. He received his doctoral degree in 1879, in Tübingen, Germany, with work related to fossilized fishes. Afterwards, he was engaged in paleontology, stratigraphy, tectonics, paleoclimatology, applied geology, geological mapping, and hydrology. The world recognition came after his discovery, in 1899, on Hušnjak hill, near the Croatian town of Krapina, and subsequent publications, of the very rich Neanderthal site today known as Krapina man (*Krapinski pračovjek*).

Some of the papers dealing with these important persons can be found in the Virtual bibliography of INHIGEO.

CZECH REPUBLIC

Report of scientific activities of Prague INHIGEO members in 2016

In 2016 the members of Czech INHIGEO group in Prague published the atlas: **Kozák, J., Čejchanová, A., Kukal, Z., and K. Pošmourný, (2016). Early geological maps of Europe. Central Europe 1750 to 1840**, 155 pp., 63 maps. Springer International Publishing, Switzerland.

Professor Kennard B. Bork, former Secretary general of the INHIGEO, wrote Foreword to the book. The maps published in the Atlas are thoroughly discussed, commented and classified by the authors in 5 text chapters and 13 brief text sub-chapters. The authors of the Atlas highly appreciate the assistance of the colleagues-geologists from abroad in making some maps published in the Atlas accessible. In the Atlas, the co-authors expressed their credit and cordial thanks to all these co-workers.

Czech INHIGEO members other 2016 activities

Jan Kozák

J. Kozák and M. Švamberková (2016): Selected Biblical Illustrations and actual natural disasters, 97 pp., 73 illustrations, album (countryside) shape, half-leather binding. Publ. by Inst. Geoph., Acad. Sci. of the Czech Republic, Prague.

Karel Pošmourný

M. Opletal, K. Pošmourný, P. Rambousek: The study about the ferrous ores (Fe-skarns) in the southern part of the Giant Mts. Mineral resources (in print)

For the purposes of the geothermal study in the vicinity of the towns of Usti and Labem have been processed by Karel Pošmourný using the ancient geological data from maps 1 and 2 geological mapping of the former Austrian monarchy.

Alena Čejchanová

P. Budil, A. Čejchanová, M. Polechová (2016): Naplnění dílčích cílů "Návrhu koncepce dalšího rozvoje skladů hmotné a písemné dokumentace ČGS" - reskartace a nové uložení lokálních paleontologických sběrů a sanace kolekce J. Sekyry v Lužné u Rakovníka. Závěrečná zpráva interního projektu ČGS 343500. 14 pp., Czech Geological Survey, Prague

P. Budil, A. Čejchanová, L. Kondrová, M. Polechová (2016): Bilaterální spolupráce s Geologische Bundesanstalt Wien - sbírky, archiv a GIS. Závěrečná zpráva interního projektu ČGS 343600, 10 pp., Czech Geological Survey, Prague

L. Kondrová, A. Čejchanová (2016): Digital presentation of historical geological maps. 6.4.2016. Vídeň, Rakousko. Druhé setkání střeoevropských geologických služeb CE-GIC, Czech Geological Survey, Prague

M. Paleček, V. Pospíšil, Z. Krejčí, A. Čejchanová, J. Šanderová, P. Čoupek (2016): Mapový archiv ČR. Praha. URL address: http://mapy.geology.cz/mapovy_archiv_cr/, Czech Geological Survey, Prague

Příjemce: "Alena Čejchanová" <alena.cejchanova@geology.cz>

FRANCE

Report on the activities of the French COFRHIGEO

The French Committee on the History of Geology (COFRHIGEO) suffered a severe shock by the end of 2015 with the untimely and sudden death of **Jean Gaudant**, its secretary since the COFRHIGEO inception in 1976 (see *Inhigeo Annual Record* 48, p. 31). Jean was so active in all aspects of the daily life of our association that many doubted that our committee could survive. Luckily, a number of members considered that the best way to honor the memory of our great figures, Jean Gaudant, Michel Durand-Delga and, before them, the COFRHIGEO's founder François Ellenberger, was to continue the work of an association that has become an important actor on the scene of the French history of geology. A new board was elected under the presidency of Philippe Taquet, member and former president of the *Académie des Sciences*. Gabriel Gohau, who has been our faithful president for 20 years, is now honorary president.

COFRHIGEO has met three times in 2016. The scientific contributions were the following:

Jacques TOURET : Le tombeau de Napoléon, entre pétrographie et histoire [Napoléon's tomb : between petrography and history];

Antonietta CHERCHI et Rolf SCHROEDER : Antonio Snider-Pellegrini (1802–1885), précurseur de l'idée des dérives continentales (1858) [A. Snider-Pellegrini, precursor of the continental drift concept (1858)];

Gaston GODARD : Le Discours du jésuite Jacques Vignier sur les coquilles de la Montagne de Reims (1635) : Un texte précoce en faveur de l'origine organique des fossiles [An early text on the seashells from Champagne (1635) supporting the organic origin of fossils];

Nicolas GINSBURGER : *La Face de la Terre* en Grande Guerre : Emmanuel de Margerie et ses réseaux internationaux (1914–1918) [Emmanuel de Margerie and his international relationships during World War I];

Lydie TOURET : François Pasumot (1733–1804), ingénieur géographe du roi et naturaliste [Pasumot, engineer geographer and naturalist];

Marie-Françoise AUFRÈRE : Boucher de Perthes et la Société d'Émulation d'Abbeville [the prehistorian Boucher de Perthes and the *Société d'Émulation d'Abbeville*];

Jean-Claude GALL: Les sciences de la Terre à l'Université impériale de Strasbourg (1871-1918) [the Earth sciences at the Imperial University of Strasbourg between 1871 and 1918].

Myriam JULIEN, Charaf CHABOU, Gaston GODARD, René MÉDIONI et Jean ROMAN : La bibliographie analytique de Philippe Morin sur la géologie de l'Algérie [the analytical bibliography on the geology of Algeria by Philippe Morin].

These contributions will be soon published the 29th volume of the *Travaux du Comité français d'Histoire de la Géologie* (ISSN 1156-2919; see the online edition on <https://hal.archives-ouvertes.fr/COFRHIGEO> and <http://www.annales.org/archives/cofrhigeo/travaux.html>).

COFRHIGEO also participates to several editorial projects: (a) geology and First World War; (b) analytical bibliography of the geology of Algeria. Finally, several members of our committee published studies on several aspects of the history of geology:

Blieck, A., De Baere, J.-P. (eds.). La Société géologique du Nord et l'histoire des sciences de la Terre dans le nord de la France. *Société géologique du Nord, Mémoires*, vol. XVII, 183 p. [with 15 contributions on the history of geology in northern France, on the *Société géologique du Nord*, and the history of the Channel Tunnel projects].

Durand Delga, M., Cherchi, A., Schroeder, R. Les "Nummulites carbonifères" comme source de querelles entre Jacques Deprat et Maurice Piroutet sur la stratigraphie de la Nouvelle-Calédonie. *Boletín Geológico y Minero* 127(2/3), 657-672.

Godard, G., Chabou, C.M., Adjerid, A., Bendaoud, A. First African diamonds discovered in Algeria by the ancient Arabo-Berbers: History and insight into the source rocks. *Comptes Rendus Geoscience* 346(7-8), 179-189.

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

Godard, G., Reynes, J., Bascou, J., Ménot, R.-P., Palmeri, R. First rocks sampled in Antarctica (1840): Insights into the landing area and the Terre Adélie craton. *Comptes Rendus Geoscience* 349, 12-21.

Kornprobst, J. Boris Choubert: The forgotten fit of the circum-Atlantic continents. *Comptes Rendus Geoscience*, in press.

Mergoïl, J., Mergoïl-Daniel, J., Gui de Mortessagnes s.j. (1714-1796), un savant, collaborateur de Faujas de Saint-Fond, acteur de la découverte des volcans en Vivarais et Velay. *Bulletin historique illustré publié par la Société académique du Puy-en-Velay et de la Haute-Loire*, vol. 90, 40 p.

Poncet, D., Bichot, F., Bouton, P., Branger, P., Camuzard, J.-P., Godard, G., Moisdon-Pouvreau, P., Tézière, S., Vosges, J. *L'Homme et la pierre en Deux-Sèvres. Des origines à nos jours*. Editions patrimoines médias, Niort, 243 p.

Silberstein et al. *Qu'est-ce que la science... pour vous ? 50 scientifiques et philosophes répondent; tome 1. Sciences & philosophie*, Paris.

INHIGEO annual report

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ACADEMIC TITLES AND FUNCTIONS

Directrice d'Etudes à l'Ecole des Hautes Etudes en Sciences Sociales (EHESS, Paris) depuis 2014.
Histoire et Philosophie des sciences

[Director of Studies (Full Professor) at the School for Advanced Studies in the Social Sciences (EHESS, Paris) since 2014. History and Philosophy of Science]

Directrice d'Etudes cumulante (Cumulative full professor) à l'Ecole Pratique des Hautes Etudes (EPHE)
3^e Section, Sciences de la Vie et de la Terre depuis 2012

Chaire: "Biologie et Société" Laboratoire Biogéosciences, Université de Bourgogne, Dijon
[Cumulative Director of studies (Cumulative full professor) at the Ecole Pratique des Hautes Etudes (EPHE) 3rd Section, Life and Earth Sciences since 2012

Chair: "Biology and Society" Laboratory Biogéosciences, University of Burgundy, Dijon]

FUNCTIONS AND RESPONSIBILITIES IN FRENCH OR INTERNATIONAL INSTITUTIONS

-Named member of the National Council of the Universities 72th section (history and philosophy of science), college A, for 4 years since November 2015.

-Advisor to the President of the Earth Science Society (Washington, USA) since January 2014

-Member of the reflection committee on the social role of natural history, named by Bruno David, President of the National Museum of Natural History (Paris) from June 2016

-Member of the Scientific Council of the Think Tank Institut Diderot, Paris (Diderot Institute)

ACADEMIC TEACHING:

Séminars taught in 2016 (I don't teach courses, only seminars):

- *La diversité est-elle un bien* [Is diversity a value]? Weekly seminar November 2015 to June 2016 organized with EPHE biologist Michel Veuille
- *Travaux de femmes* [Women's work : Place and roles of women in Prehistoric societies] (Weekly seminar, November 2015 to February 2016)
- *Penser l'évolution humaine* [Thinking about human evolution] (Weekly seminar November 2016 to February 2017)
- Organization and co-direction of the monthly Seminar of the EHESS Interdisciplinary Programme Biology and Society : Genetics and the social sciences] monthly seminar with Biologist Henri Atlan
- Organization et co-direction of the monthly seminar of the *CRAL (Research Center for Arts and Languages- EHESS CNRS)* - monthly seminar with sociologist Nathalie Heinich, from Septembre 2015, through end 2016
- Organisation et codirection of the weekly séminar « *Anthropologie générale* » [General anthropology PSL (EHESS – EPHE – ENS – Collège de France) with anthropologists Charles Stepanoff et Andrea-

Luz Gutierrez-Choquevilca (EPHE) from September 2016

SUPERVISIONS OF STUDENT WORK

Ph.D. Preparation:

Mr Ralph-Samuel Grossmann : *Le paysage dans l'art contemporain au regard des sciences de la Terre : géologie, archéologie, astronomie* (sera soutenue en 2018) [Landscape in contemporary art with regard to earth sciences: geology, archeology, astronomy] (will be defended in 2018)

Master:

Ms Nadine Lere « *Le point de fuite : la construction d'une perspective en art contemporain* » "The Vanishing Point: Constructing a Perspective in Contemporary Art"

FOREIGN SCHOLARS INVITED AT EHESS, PARIS

Invitations of foreign scholars as professors at the Ecole des Hautes Etudes en sciences sociales :

- Ernie HAMM (University of York, Canada) for 1 month (May-June 2016)
- Francesco GERALI (Oklahoma University) for 1 Month (November 2016)

PARTICIPATION TO CONFERENCES

“From Richard Owen to Charles Darwin : origins of Life diversity” ISYEB conference on *Diversity and Evolution*, Paris National Museum of Natural History, 4th October 2016 (Keynote lecture)

“Traces, evidence and proof in paleontology”, Conference *Looking for evidence The practice of proving in science, humanities and law An International workshop around Michael Lynch* EHESS, Labex TEPSIS Paris, 16 March 2016

“Theorizing the notion of race in France (1880-1950)” Public Project “*Race and science, use and abuse*” Penn Museum of Anthropology, Philadelphia 20-22 September 2016

ACADEMIC AND PUBLIC LECTURES

“L’administration de la preuve en paleontologie et en préhistoire » Lille, 2 Juin 2016.

“Regards sur l’Evolution humaine”, in cycle “L’évolution en question”, Bibliothèques de Montreuil 1^{er} Octobre 2016.

“Place et rôles des femmes dans les sociétés préhistoriques”, Espace Mendès France, Poitiers, 18 Octobre 2016.

PUBLICATIONS: Books published in 2016

- *Origines de l’humanité : les nouveaux scénarios* (with José Braga, Bruno Maureille, Nicolas Teyssandier), Paris, La ville brûle, May 2016

-*Femmes de la préhistoire Paris*, ed. Belin, October 2016.

FILM PREPARATION

In June 2016: Trip to Israel with cineast Momoko Seto, for the preparation of a film on “Women in the Field.” We conducted interviews of Israeli scholars and filmed sites in relationship with Oxford archaeologist Dorothy Garrod and her explorations of Palaeolithic and Natufian sites in the Cave Valley near Haifa.

G. Godard, secretary of the Cofrhigéo.
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GERMANY

Meetings and events

Cornelia Lüdecke organized the following conferences:

6-7 October 2016: *The Exploration of the Arctic from the Air*. Zeppelin Museum, Friedrichshafen, Germany.

26 August 2016: Session on *Footprints in Antarctica, and Antarctica's footprint: perspectives from history*. Scientific Committee on Antarctic Research/International Arctic Science Committee, Kuala Lumpur, Malaysia.

Presented the following talks:

Deutsche in der Antarktis. Deutsches Schiffahrtsmuseum, Bremerhaven (19 January 2016)

Die deutsche Polar- und Meeresforschung in der Nachkriegszeit (1950er und 60er Jahre). DFG: Rundgespräch, Deutsches Schiffahrtsmuseum, Bremerhaven (16 February 2016)

Gletscher in Bewegung- Erich von Drygalskis Polarexpeditionen. Naturhistorische Gesellschaft Nürnberg (25 February 2016)

Erich von Drygalskis Grönlandexpeditionen 1891, 1892-1893. Historischer Verein von Oberbayern, München (7 March 2016)

Wiederaufnahme der Polarforschung im geteilten Deutschland nach 1945. Nationalkomitee SCAR/IASC, Bremen (19 May 2016)

Johann Jakob Hemmers globales meteorologisches Messnetz und die Begründung der Klimaforschung. “Hemmer-Tag“ in Schloss Mannheim anlässlich der Generalversammlung der Academia Domitor (12 June 2016)

Gletscher in Bewegung – Erich von Drygalskis Polarexpeditionen. Festkolloquium zu Ehren von Herrn Professor Dr. H. C. Hubert Miller. Geology of Extreme Regions, Lehrstuhl für Geologie, München (15 July 2016).

Missing footprints in German Antarctic Research? SCAR Open Science Conference 2016, Kuala Lumpur, Malaysia (26 August 2016)

NORGE, ITALIA und GRAF ZEPPELIN 1926-1931: Fünf Jahre Luftschiffe in der Arktis. “Die Erforschung der Arktis aus der Luft“ Tagung anlässlich des 85. Jahrestages der Arktisfahrt des LZ 127 GRAF ZEPPELIN, Zeppelin Museum, Friedrichshafen (6 October 2016)

Cloud Classification before and after Luke Howard's Publication. "Nuages romantiques. Des Lumières à la Modernité", Colloque international à l'Université de Potsdam (Sanssouci) (28 October 2016)

Fast 35 Jahre nach ALPEX - Aus der Sicht der Studentengruppe FROGEX im Operation Center in Genf. Meteorologisches Kolloquium, Meteorologisches Institut der Universität München (6 December 2016)

Presentations by other INHIGEO members:

Harald Walter presented a talk *Paläontologie in Sachsen* including a section on history of geology at the Jahrestagung der Paläontologischen Gesellschaft in Dresden (12 September 2016).

M. Kölbl-Ebert (2016): German Petroleum Geologists in World War II. In: The Geological Society: European Oil & Gas Industry History Conference 3-4 March 2016. Programme and Abstract Volume: 64.

Kölbl-Ebert, M., Kramar, S., and Cooper, B. J. (2016): The Solnhofen Limestone: A stony heritage of many uses. EGU General Assembly Conference Abstracts 18: 3403. [poster]

The Werner-Symposium in Freiberg is in preparation, see <http://tu-freiberg.de/ub/werner-symposium-2017>.

Publications

Boyd, Louise Arner (2016): Zu den Fjorden Ostgrönlands mit einem geschichtlichen Überblick zur Erforschung der Fjordregion von John K. Wright. Aus dem Englischen übersetzt von Niels-Arne Munch. Herausgegeben und eingeleitet von Cornelia Lüdecke, Edition Erdmann, marixverlag, Wiesbaden, S. 270.

Kölbl-Ebert, M. (2016): Thinking about the geosciences in their religious/philosophical context. In: Mayer, W, Clary, R. M., Azuela, L. F., Mota, T. S., and Wołkowicz, S. (eds) *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London, Special Publications 442: DOI 10.1144/SP442.5.

Kölbl-Ebert, M., and Turner, S. (2016): Towards a history of women in the geosciences. In: Mayer, W, Clary, R. M., Azuela, L. F., Mota, T. S., and Wołkowicz, S. (eds) *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London, Special Publications 442: DOI 10.1144/SP442.16.

Kölbl-Ebert, M. (2016): The Interdisciplinary Appeal of a Natural History Collection: The Case of the Jura-Museum Eichstätt. In: Wolf Schmidt, G. (ed.) (2016) *Enhancing University Heritage-Based Research*. Nuncius Hamburgensis. Beiträge zur Geschichte der Naturwissenschaften 33: 150–165.

Lüdecke, C. (2016): Einleitung. In: Über der Arktis. Der erste Langstreckenflug über das Eismeer. Neu Übersetzt von Niels-Arne Münch. Herausgegeben und eingeleitet von Cornelia Lüdecke. Edition Erdmann, marixverlag, Wiesbaden, 9-37, 315-317.

Lüdecke, C. (2016): Beriberi at Kerguelen: A case study during the international Antarctic co-operation

- 1901-1903. In: Peder Roberts, Lize-Marié van der Watt and Adrian Hoiwkins (eds.), *Antarctica and the Humanities*. Palgrave Studies in the History of Science and Technology, Palgrave, 53-76. http://link.springer.com/chapter/10.1057/978-1-137-54575-6_3
- Lüdecke, C. (2016): Einleitung. In: Zu den Fjorden Ostgrönlands mit einem geschichtlichen Überblick zur Erforschung der Fjordregion von John K. Wright. Aus dem Englischen übersetzt von Niels-Arne Munch. Herausgegeben und eingeleitet von Cornelia Lüdecke, Edition Erdmann, marixverlag, Wiesbaden, S. 11-71, 267-270.
- Thalheim, K. (2016): Die "Silberachate" von Johanngeorgenstadt in Sachsen. - Mineralien-Welt, 27 (5): 42-48, Salzhemmendorf.
- Thalheim, K. (2016): Die Sammlung Richard Baldauf (1848-1931) am Museum für Mineralogie und Geologie Dresden. - Mineralien-Welt, 27 (6): 18-41, Salzhemmendorf.
- Thalheim, K. (2016): Ein historischer Streifzug zur Suche und Verwendung von Schmucksteinen in Sachsen vom 16. bis zum 18. Jahrhundert. - Mineralien-Welt, 27 (4): 18-37, Salzhemmendorf.
- Thalheim, K., Erler, D, and Seibt, J. (2016): Die geologische Literatur über Sachsen 2006-2010. Bibliographie der im Zeitraum von 2006-2010 erschienenen Veröffentlichungen zu geowissenschaftlichen Problemen des sächsischen Territoriums. - Schriften des Museums für Mineralogie und Geologie Dresden, 20: 1-420, Dresden. [This bibliography also comprises literature concerning the history of the geosciences in Saxony. It is the last of a series of bibliographies now covering the time-span of 1835 to 2010. They are available via http://www.senckenberg.de/root/index.php?page_id=18539.]
- Walter, H. and Rascher, J. (2016): Paläontologie in den Nachfolgeeinrichtungen des Sächsischen Geologischen Landesamtes 1945-1990. - Mitteilungen des Freiburger Altertumsvereins 109/110, S. 393-432, Freiberg
- Wilkins, George Hubert (2016): Über der Arktis. Der erste Langstreckenflug über das Eismeer. Neu Übersetzt von Niels-Arne Münch. Herausgegeben und eingeleitet von Cornelia Lüdecke, Edition Erdmann, marixverlag, Wiesbaden, 319 S.

A new volume (27) of the journal *Geohistorische Blätter* has been edited by Ulrich Wutzke (Berlin).

Lectures

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

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

Summer Semester 2016: Einführung in die Geschichte der Polarforschung

Winter Semester 2016/17: Von Amundsen bis Zeppelin – Erforscher der Polargebiete und Gebirgsregionen

Peter Schimkat - In 2016, I continued with my professional life as a freelance writer and museum consultant. A large chunk of that time was neatly tied to my initial training as an astronomer: in April, the local planetarium in Kassel finally reopened, with very much modernized equipment. Before and thereafter, I happened to be busy acquainting myself with the new facilities, preparing and improving shows, and helping to get rid of bugs. So far, we have not moved (much) beyond astronomy programmes, but I am working on branching out into the earth sciences as well, eventually. But for 2016, it has proven to be surprisingly difficult to move back from matters celestial to the terrestrial world: no more publications following 'West Meets East: Personal Reflections on 25 Years of Trying to

Unify the History of Geology in Germany' (included in the *Inhigeo Annual Record* for 2015, pp. 84-86, but accidentally omitted in last year's country report) as of yet. Nor was I involved in other papers: after initially being asked to peer-review an article on geology in NS-Germany for *Earth Sciences History*, I was vetoed by its author and subsequently replaced by the journal's editor.

News of the profession

In November 2016, Cornelia Lüdecke received the title “Professor” from the University of Hamburg. The help of the German members of INHIGEO in the compilation of this report is much appreciated.

Martina Kölbl-Ebert, Eichstätt (Germany)

HUNGARY

Lectures in sessions of the History of Science Section of the Hungarian Geological Society, in 2016.

January 18.

Tóth, Á. – Margit Balogh (1881-1965), the first Hungarian woman geologist.

Nagy, B. – Commemoration of Béla Jantsky, on the 25th anniversary of his death.

February 15.

Zelenka, T. – Perlite exploration of György Vecsernyés in Turkey in the years 1970 to 1975.

Viczián, I. – Unknown letters of German naturalists to Domokos Teleki at the end of 18th century.

March 21.

Vitális, Gy. – The description of the hydrological conditions in vol. 3 of the work by János Hunfalvy: *A magyar birodalom természeti viszonyainak leírása* (Description of the natural conditions of the Hungarian Empire), published 150 years ago.

Szabó, Z., Vadász, G. and Kovács, P. – The 125th anniversary of the first torsion balance field measurements of Loránd Eötvös on Mt. Ság.

June 1.

Tóth, Á. – Presentation of a new book by Ildikó Cserényi-Zsitnyányi: *“Kibányászott lignitbűnök”* (Lignite crimes uncovered – Anatomy of a show trial against mining engineers in the Rákosi era, 2012).

Tóth, J. – Connection of the lignite trial with the trial of MAORT (*Hungarian-American Petroleum Ltd.*).

June 20.

Csath, B. – 150th anniversary of the thermal water drilling Harkány-1 carried out by Vilmos Zsigmondy.

Viczián, I. and Gurka, D. – Presentation of the book “Deutsche und ungarische Mineralogen in Jena” (ed. by Dezső Gurka, 2015). (The book was discussed in the *INHIGEO Annual Record* No. 48.)

September 19.

Celebration of the 60th anniversary of the Hungarian revolution 1956.

Discussion chaired by Tibor Kecskeméti with contributions by Győző Dojcsák and László Trunkó on emigration of geologists after the defeat of the revolution.

October 17.

Dobos, I. – 25th anniversary of death of András Rónai (cartographer and quaternary geologist).

Csath, B. – 100th anniversary of death of Béla Zsigmondy (engineer of artesian wells).

Nagy, B. – 50th anniversary of the first edition of the book by Sándor Koch: „*Magyarország ásványai*” (Minerals of Hungary), Budapest.

November 21.

Tóth, Á. – The legacy of István Ferenczi (1890-1966), professor of geology of Szeged University.

Papp, P. – György Wein (1912-1976), the only honorary candidate of earth sciences.

Papp, P. – Trilateral meeting at Marianka, near Bratislava.

Komlóssy, Gy. – Béla Vizy (1932–2016), the last chief geologist of the Hungarian aluminium industry.

December 12.

Presentation of classical works of geology and mineralogy available in the Library of Hungarian Institute of Geology and Geophysics.

Works of the following authors were presented and displayed:

Ferenc Benkő (by Viczián, I.),

Francois-Sulpice Beudant (by Síkhegyi, F.),

Ignatz Edler von Born (by Papp, G.),

Sámuel Köleséri (by Kázmér, M. and Nagy, B.) and

Robert Townson (by Rózsa, P.).

Special events in 2016

March 11., Miskolc

The new book *Magyarország ásványai (Minerals of Hungary)* by Szakáll, S., Fehér, B. and Tóth, L., edited by Geolitera, Szeged, 2016, 523 p. was presented. In this occasion, a scientific session devoted to the history of topographic mineralogical description of Hungary was organised by the Herman Ottó Museum. Papp, G. reported on the early periods of topographic description of Hungarian minerals.

The following editions of books on the same topics were presented by the speakers:

Szakáll, S. on the book by Tóth, Mike 1882: *Magyarország ásványai (Minerals of Hungary)*;

Pál-Molnár, E. on the 1st edition of the book by Koch, Sándor 1966: *Magyarország ásványai (Minerals of*

Hungary);

Weiszburg, T. on the 2nd revised and enlarged edition of the book by Koch, Sándor, edited by Mezősi, József 1985: „*Magyarország ásványai*” (Minerals of Hungary),

Fehér, B. reviewed the books edited after the 2nd edition of Koch’s monograph in 1985.

June 30 – July 3, Leghia (Jegenye-fürdő, Romania)

The Hungarian Technical Scientific Society of Transylvania organised the *9th Meeting on History of Science and Technology*. On this conference participants from Hungary presented the following lectures:

Pápay, L. – Selected passages from the life and scientific heritage of mineralogist Sándor Koch.

Tóth, J. – The 1956 revolution in the Hungarian oil industry.

Viczián, I. reviewed the newly published book by Gurka, D. (ed.) 2015: *Deutsche und ungarische Mineralogen in Jena. Wissenstransfer an der Wende des 18–19. Jahrhunderts im Rahmen der „Societät für die gesamte Mineralogie zu Jena“* (The book was reviewed in INHIGEO Annual Record No. 48).

August 24 – 27, Sárospatak

The *annual regional meeting of the Hungarian Geological Society* was held at the Reformed Theological Academy of Sárospatak. A plenary lecture by J. Földessy and T. Zelenka reviewed the history of mineral exploration in the Tokaj Mts.

On August 26, a *Section devoted to the history of mining and geology* was held. The following lectures were presented:

Gyarmati, P. – On the role of Gábor Pantó in the geological exploration of Tokaj Mts.

Hála, J. – Illustrated history of millstone production in Sárospatak.

Németh, Z. – The rock sample collection of József Szabó in the Grammar School of Sárospatak Reformed College.

Szlabóczky, P. – Miscellaneous memories on my geological activity in the Tokaj Mts.

Viczián, I. – What is “Tokaj earth”?

Wanek, F. – Local names as tools in the study of history of mining, example of Kalotaszeg region.

Zelenka, T. – Vilma Széky-Fux, scientist of ore deposits at Telkibánya and in the Carpathian Basin.

In the *Poster Section I*. Benke presented a poster on the history of mining of Tokaj-Hegyalja.

On August 26 another *Section devoted to the relationship of theology and earth sciences, entitled “Earth and Heaven”* was held. In this section, the following presentations were dealing with historical questions:

Balla, P. – The addressees of the Letter to the Galatians and the date of its writing.

Breznayánszky, K. – The importance of William Smith in the formation of creation myth of our world.

Nagy, M. – Pál Szőnyi, mineral collector and teacher.

Szalay, L. P. – The land flowing with milk and honey.

Viczián, I. – “Two books” – according to the introductory speech of Ferenc Benkő in Nagyenyed (1970).

Personal news

Irma Dobos

On 12 May the Hungarian Geological Society celebrated an extraordinary scientific conference at the occasion of the 90th birthday of Dr. Irma Dobos, hydrogeologist. Dr. Irma Dobos has been an active member of the Society since her graduation. She was greeted by the members of the History of Science Section, by Hungarian members of INHIGEO, by her colleagues and students including the President of the Society Dr. Csaba Baksa.

On this occasion the 6/2016 issue of GeoNews, Monthly newsletter of the European Federation of geologists selected her for EurGeol of the month and published an interview with her.

Publications of Irma Dobos in 2016:

Articles:

Drinking cure in Hungary. In memoriam of my one-day university courses. *Balneológia-Gyógyfürdőügy, Gyógyidegenforgalom* (Balneology, Hydrotherapy, Health Tourism) 2016, 51-56. (In Hungarian)

Hydrological Memorial Day in the Hungarian Agricultural Museum and Library. *Hidrológiai Tájékoztató* (Hydrological Informations) 2016. 47 - 50. (In Hungarian)

Lectures:

Celebration of the 90th birthday of Viktor Dank. Hungarian Geological Society, Hungarian Geological and Geophysical Institute, April 14, 2016. (In Hungarian)

Thoughts on the recognized mineral water. Jubilee meeting of the 125 years old Hungarian Balneological Society, Hévíz. November 18-20, 2016 (In Hungarian).

Miklos Kazmer

Kázmér, M. & Timár, G. (2016): The first scientific description of aurora borealis - the 10 September 1580 event in Transylvania, recorded by Marcello Squarcialupi. – *Geoscience Letters* 3, 15. DOI: 10.1186/s40562-016-0047-2; [[download](#)]

Kázmér, M. (2016): Köleséri Sámuel ásvány- és ősmaradvány-gyűjteménye – történeti rekonstrukció. [Mineral and fossil collection of Sámuel Köleséri - historical reconstruction] In: Balázs, M., Font, Zs., Kovács, A. (szerk.): Köleséri Sámuel és az európai korai felvilágosodás. [Sámuel Köleséri and the Early Enlightenment in Europe.] *Kölesériana* 3. Erdélyi Múzeum Egyesület, Kolozsvár, pp. 187-198. [[reprint](#)]

ITALY

Fabiana Console (Library – ISPRA, Rome) - member of INHIGEO from March 2016, continued her research on the history of geological sciences, with particular attention to historical geological maps. She presented a lecture at La Sapienza Rome University conference dedicated to the role of geologists during the First World War on the Dolomitic front. In February, she participated in the “Centennial of Domenico Lovisato” at the High School of Mining in Iglesias (Sardinia, Italy). In June, she collaborated on the exposition “Mountain in War. Men, science, nature on Dolomitic front 1915-1918”, at the Geological Museum in Predazzo (Dolomites), in cooperation of the MUSE - Trento Science Museum. She co-edited the volume “Memorie Descrittive della Carta geologica d’Italia” n.100 titled “The Cartography of the Geological Survey of Italy”, in which she wrote some chapters: “1867 – Geological knowledge from Italian Provinces”; “The digitalization of geological maps”. She took care of the bibliographical repertoire as well.

She presented a paper at the 35th IGC in Cape Town in August, on history of geological researches made in North Africa by Italian geologists during the first decades of the 1900s. On 7-9 September, she participated in the 88th Congress of the Geological Society in Naples with a presentation at the Session “Three century of Geology in Italy” making a presentation on the “History of geological cartography in Calabria (Southern Italy)”.

Publications

- Romano, M., Console, F., Pantaloni, M., and Frobisch, J. (2016) - *One hundred years of continental drift: the early Italian reaction to the ‘visionary’ Wegener’s theory*. Historical Biology: -22. DOI: 10.1080/08912963.2016.1156677
- Congi, M. P., Console, F., Pantaloni, M., Perini, P., and Roma, M. (2016) - *Raccontare la geologia attraverso le story-telling: Roma dal 1820 al 2008*. Geomedia, 2/2016: 12-16.
- Console, F., Fabbi, S., and Pantaloni, M. (2016) - *Geological mapping in Calabria in XIX century*. Rend. Online Soc. Geol. It., Suppl. n. 1 al Vol. 40.
- Pantaloni, M., Console, F., and Petti, F. M. (2016) - *1867: Early geological knowledge from the Italian provinces*. Rend. Online Soc. Geol. It., Suppl. n. 1 al Vol. 40.
- Petti, F. M., Pantaloni, M., Console, F., and Fabbi, S. (2016) - *The contribution to the geological knowledge of Tripolitania and Cyrenaic regions (Libya N-Africa): the first Italian expedition between 1910 and 1914*. Rend. Online Soc. Geol. It., Suppl. n. 1 al Vol. 40.
- Sammuri, P. and Pantaloni, M. (2016) - *Tuscany: mineral resources mapping in the 18th century*. Rend. Online Soc. Geol. It., Suppl. n. 1 al Vol. 40.
- Console, F., Pantaloni, M., and Tacchia, D. (Eds.) (2016) – *La cartografia del Servizio Geologico d’Italia*. Memorie Descrittive della Carta Geologica d’Italia, **100**: 302 pp.
- Console, F. and Pantaloni M. (2016) – *Catalogo della Mostra “Montagne in guerra: uomini, scienza, natura sul fronte dolomitico 1915-1918. Berge im Krieg: Menschen, Wissenschaft und Natur an der Dolomitenfront 1915-1918”*. Museo geologico di Predazzo, 24 giugno 2016 – 14 gennaio 2017.
- Pantaloni, M., Console, F. and Perini, P. (2016) – *Evoluzione della Piana del Fucino tra bonifica e terremoto (1870-1915)*. Dalla mappa al GIS, collana del laboratorio geocartografico “Giuseppe Garaci”. Roma: 223-238.
- Pantaloni, M. (2016) – *1940: The Tiber river length shortened for 2700 m*. Italian Journal of

Groundwater. DOI 10.7343/AS-2016-244

Pantaloni, M. and Console F. (in press) – *The ephemeral Ferdinanda*. In: *Geology and History*. EuroGeoSurveys

Pantaloni, M. (in press) - *Portis, Alessandro*. Dizionario Biografico degli Italiani, Enciclopedia Treccani, vol. 84.

Pantaloni, M., Console, F., Lorusso, L., Petti, F. M., Romano, M., Franchini, A. F. and Porro A. (in press) - *Italian Physicians' contribution to geosciences*. In: *Geology and Medicine: Historical Connections*. Geological Society of London, Special Publications. Vol. 452.

Pantaloni, M., Console, F. and Petti, F. M. (in press) - *La cartografia geologica delle Alpi meridionali tra XIX e XX secolo: un esempio di collaborazione italo-austriaca*. L'Universo, 5/2016: 102-124.

Francesco Gerali – Report for 2016

In 2016, Francesco worked at the School of Library and Information Studies of the University of Oklahoma as Content Curator for the digital humanities project *Digital Latin Library*. He was responsible for research, appraise and ingest metadata, authority records and digital sources (XIV-XIX centuries) from international catalogs, databases and repositories published in English, French, Spanish, German Italian, and Latin; to develop acquisition procedures and quality standards to grow and improve the collection.

At the same time, Francesco concluded his five-year research on the history of oil in Mexico and started a new course of study on the history of the unconventional oil resources and the hydraulic fracturing technologies (1930s-2000s). This line of investigation aims to frame and analyze first the development and then the convergence of directional drilling, the vertical fracturing of the wells, and the 20th century studies on the commercial exploitation of the shale rocks for oil and gas. He began to network with scholars from the history, sociology, and earth sciences disciplines, as well with oil industry practitioners. It follows the first agreement for a transdisciplinary approach to the historical studies on the history of unconventional resources with the College of Law of the University of Oklahoma.

From April to July, Francesco was the Doan Research Fellow at the Chemical Heritage Foundation of Philadelphia, to develop the project *Succinum resolutum, Hertzverde, and petroline: shaping the idea of petroleum between 1600 and 1800*. In September, he attended at the Geological Society of America Annual Meeting in Denver and the session *Geoscience Librarianship 101* organized by the Geoscience Information Society. He advocated the valorization of resources for the history of the geosciences to geology librarians. In November, Francesco was at the *Maître de Conférences* at the *Ecole des Hautes Etudes en Sciences Sociales*, Paris, upon invitation of Prof. Claudine Cohen, where he presented four seminars on the history of oil and energy. The same month, Francesco was an invited lecturer by Assistant Professor Simone Fari at the *Facultad de Ciencias del Trabajo*, University of Granada, Spain.

Selected conference papers and symposium organization

May 23, The Chemical Heritage Foundation, Philadelphia. Brown Bag Lecture Series. *Petroleum in the Modern Age: a puzzle that lasted four centuries*.

July 26 – 30, Organizer of the symposium *Petroleum and technology: artifacts, know-how and labor inside and outside the barrel*, 43rd ICOHTEC meeting, Porto, Portugal.

43th ICOHTEC Meeting, Porto, Portugal, July 26-30, 2016. *Oil exploration down under: the case of Western Australia at the beginning of the 20th Century.*

November 14, Ecole des Hautes Etudes en Sciences Sociales, Paris. Seminars on the history of the oil industry. *When oil found momentum: the meaning of the 'Pennsylvanian Pattern'.*

November 17, Facultad de Ciencias Económicas y Empresariales, Universidad de Granada. Seminar for the graduate students. *El sueño en el cajón. Los combustibles sintéticos y la búsqueda de la alternativa al petróleo.*

November 25, Ecole des Hautes Etudes en Sciences Sociales, Paris. *Seminars on the history of the oil industry. Italy, Mexico and Australia between the 19th and 20th century: which one oil?*

Editorial Activities

09/2016 - present Co-editor for the volume *History of the European Oil and Gas Industry* to be published by the Geological Society of London by March 2018.

Publications

Gerali, Francesco, Riguzzi Paolo. 2016. "Gushers, Science and Luck: Everette Lee DeGolyer and Mexican

Oil Upsurge, 1909–1919." In: Wolf Mayer, Renee Clary, Luz Fernanda Azuela, Teresa Salome Mota, & Slawomir Wołkowicz, (eds) *History of Geoscience: Celebrating 50 Years of INHIGEO*.

Geological Society, London, Special Publications, 442.

Gerali, Francesco, Jenny Gregory. 2016. "Harsh oil: finding petroleum in early twentieth century Western Australia." In: Wolf Mayer, Renee Clary, Luz Fernanda Azuela, Teresa Salome Mota, & Slawomir Wołkowicz, (eds) *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London, Special Publications, 442.

Gerali, Francesco. 2016. Review of Paige G. Andrew, Susan M. Moore, and Mary Larsgaard, *RDA and Cartographic Resources*. Chicago, IL: ALA Editions, 2015. In *Information and Culture. A Journal of History*.

Gerali, Francesco. 2016. 'INHIGEO Virtual Bibliography: Argentina, Australia, Austria, Brazil and Bulgaria'. *INHIGEO Annual Record* n°48: 155-192.

Learned Societies

2016 American Library Association (ALA), including the Association of College and Research Libraries, Delaware Valley Chapter (ACRL-DV), and the Rare Book and Manuscripts Section (RBMS).

2016 Special Libraries Association (SLA) - Philadelphia Chapter.

Awards

2016 Travel grant program (TAP) of the College of Art and Science and the Graduate College's Robberson Conference Presentation Grant, University of Oklahoma (\$1950).

FRANCESCO LUZZINI

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UNIVERSITY OF INSUBRIA, DEPARTMENT OF THEORETICAL AND APPLIED SCIENCES (VARESE, ITALY)

ANNUAL REPORT – 2016

Francesco started his two-year appointment as Councilor (2016-2017) for “Earth Sciences History”, the Journal of the History of Earth Sciences Society (<http://www.historyearthscience.org>). 2016 was also the second and last year of his Edition Open Sources Postdoctoral Fellowship at the University of Oklahoma Libraries, where he worked towards a critical edition of Antonio Vallisneri’s manuscript *Primi itineris per montes Specimen physico-medicum* (<https://www.researchgate.net/project/The-Edition-Open-Sources-Project-Towards-a-critical-edition-of-Antonio-Vallisneris-manuscript-Primi-Itineris-Specimen-1705>). The volume is now in the final editing phase, and is expected to be published in the Edition Open Sources Series (<http://www.edition-open-sources.org/>) by fall 2017.

In compliance with the rules of the EOS Program, in July 2016 Francesco moved to the Max Planck Institute for the History of Science in Berlin (MPIWG), where he spent the last six months of fellowship as Visiting Scholar. Later on, he continued collaborating with the MPIWG as Affiliate Scholar, within the Anthropocene Umbrella Project (<https://www.mpiwg-berlin.mpg.de/en/research/projects/anthropocene-and-technosphere>; <http://www.anthropocene-curriculum.org/>).

From October 2015 to October 2016, Francesco was also Senior Research Fellowship at the Department of Theoretical and Applied Sciences (DISTA) of the University of Insubria (Varese, Italy). The aims of this other project (*Sharing sparks of truth. Towards a critical edition of Antonio Vallisneri’s “Primi Itineris Specimen”*) were closely connected with the goals of the EOS Postdoctoral Fellowship. Currently, he is Research Affiliate in the same Department, at the Research Center for the History of Mountains, Material Culture, and the Earth Sciences.

Francesco is still Scientific Manager of the Electronic Inventory of Vallisneri’s Correspondence (<http://www.vallisneri.it/inventario.shtml>). As such, he is affiliated to the ISCH COST Action IS1310 – *Reassembling the Republic of Letters, 1500-1800*, a digital framework for multi-lateral collaboration on Europe’s Intellectual History (<http://www.republicofletters.net/>). He also continued his activity as Column Editor for «Acque Sotterranee», Italian Journal of Groundwater: (<http://www.acquesotterranee.it/en/rivista/acquesotterranee/about-journal>).

Meetings, Lectures, and Seminars

1. Seminar (January 27): *Closing the cycle. Early modern science and the search for the origin of springs from the 16th to the 18th centuries* (University of Oklahoma, School of Aerospace & Mechanical Engineering, Norman, OK, USA)

2. Conference (February 1): 2016 Digital Humanities @ OU Day 2 (University of Oklahoma, Zarrow Hall, Norman, OK, USA)
Talk: *Defining a New Harmony. The Edition Open Sources (EOS) Project: Towards a Critical Edition of an Early Modern Scientific Text* (Panel 3 – New Digital Connections)
3. Seminar (February 4): *Closing the cycle. Natural Philosophy and the debate on the origin of springs from the 16th to the 18th centuries* (University of Oklahoma, School of Geology & Geophysics, Norman, OK, USA)
4. Meeting (September 7-9): *Geosciences on a changing planet: learning from the past, exploring the future* (88th Meeting of the Italian Geological Society, Naples, Italy)
Paper: *The Edition Open Sources Project. Towards a critical edition of Antonio Vallisneri's manuscript Primi Itineris Specimen (1705)* (Session 35 – Three Centuries of Geology in Italy)
5. Meeting (September 15 to 17, 2016): *Scienza, Innovazione, Istituzioni* (Meeting of the Italian Society for the History of Science, Fondazione Marconi, Sasso Marconi, Italy)
Paper: *Ad venandam veritatem. Le scienze della Terra nel "Giornale de' Letterati d'Italia": tra ricerca sul campo e accademia*
6. Seminar (November 15): *Primi Itineris Specimen (1705). An Edition Open Sources Book* (Max Planck Institute for the History of Science, Department I, Berlin, Germany)

Publications

1. *L'Itale Terre a vagheggiare inteso. La regolazione dell'Adige nel XVIII secolo: tra storia e scienza*, in *Il fiume, le terre, l'immaginario. L'Adige come fenomeno storiografico complesso*, Proceedings of the meeting (Rovereto, February 21-22, 2013), edited by Vito Rovigo, Rovereto, Edizioni Osiride, 2016, pp. 287-312.
2. *Da Apollo alla Serenissima. Le terme dei Colli Euganei*, «Acque Sotterranee», Italian Journal of Groundwater, n. 1, March 2016, pp. 49-50.
3. *Description, analogy, symbolism, faith. Jesuit science and iconography in the early modern debate on the origin of springs*, «Acque Sotterranee», Italian Journal of Groundwater, n. 2, June 2016, pp. 65-67.
4. *L'eruzione vesuviana del 1631. Una storia d'età moderna/The Vesuvian Eruption of 1631: an Early Modern History*, by Alfonso Tortora, book review, «Aestimatio», n. 11, 2014 (2016), pp. 364-369.
5. *The Edition Open Sources Project. Towards a critical edition of Antonio Vallisneri's manuscript Primi Itineris Specimen (1705)*, Abstract, in *Geosciences on a changing planet: learning from the past, exploring the future*, 88° Meeting of the Italian Geological Society (Naples, September 7-9, 2016), Abstract book, edited by D. Calcaterra, S. Mazzoli, F.M. Petti, B. Carmina and A. Zuccari, «Rendiconti Online della Società Geologica Italiana», Volume 40, Supplemento n. 1, July 2016, p. 905.

6. *Per tingere i panni in nero. Le fonti di Vitriola*, «Acque Sotterranee», Italian Journal of Groundwater, n. 3, September 2016, pp. 65-66.

Marco Pantaloni (Geological Survey of Italy – ISPRA, Rome)

Marco, a member of INHIGEO from March 2016, has continued his research on the history of geological sciences, with particular attention to historical geological maps, history of Geological Survey, and biographies of scientists. He coordinated the “History of Geoscience Section of the Geological Society of Italy” which was attended by more than 140 members. In January, he organized and chaired the conference on the role of geologists during the First World War on the Dolomitic front, at La Sapienza Rome University, while in February he participated at the “Centennial of Domenico Lovisato” at the High School of Mining in Iglesias (Sardinia, Italy). In June, he collaborated to the realization of the exposition “Mountain in War”, into the Geological Museum in Predazzo (Dolomites), dedicated to the role of geologists and scientists on the Dolomitic war front during the WW1.

In August, he co-edited the jubilee volume n.100 “Memorie Descrittive della Carta geologica d’Italia” dedicated to the “Cartography of the Geological Survey of Italy.” The volume contains some chapters related to history of geology: “1867 - Geological knowledge from Italian Provinces”; “The digitalization of geological maps”; “Scientific content of the 1:100,000 scale geological maps of Italy” from its beginning (in 1873) up to date.” Also in August, he presented a paper at the 35th IGC in Cape Town on the reconstruction of geological researches made by Italian geologists in North Africa during the first decades of the 1900s. On 7-9 September, he organized and chaired the Session “Three century of Geology in Italy” during the 88th Congress of the Geological Society of Italy that was held in Naples. He continued his collaboration with the *Treccani* Italian Encyclopedia for the redaction of the biographies of Italian geologists.

Gian Battista Vai

G. B. Vai (2016), *L’opera scientifica de Raimondo Selli (1916-1983)*. Documenta 3, Museo Geologico Giovanni Capellini, Editrice Himolah, 95 p.

A. Ceregato and G. B. Vai (2016), *Sullo sfondo: visita geologica pittorica alle cappele Bentivoglio e S. Antonio nel tempio di San Giacomo Maggiore, Bologna*. *Natura & Montagna*, 63, 2, 18-31.

G. B. Vai Over half a century of Messinian salinity crisis. *Boletín Geológico y Minero*, 127, 2/3, 625-641, ISSN: 0366-0176.

JAPAN

Country report of 2016

The JAHIGEO (Japanese Association for the History of Geological Sciences) held as usual three meetings in 2016. The first was held at the Hokutopia, Tokyo, on 19 June; the second at Nihon University, Tokyo, on 11 September, and the third, serving as the annual meeting, at the Hokutopia on

23 December. The stimulating presentations at the first meeting were: Tadahide Ui “Are volcanic activities in Japanese Islands becoming vigorous?” and Arifumi Yoshioka “The World of Science Educational Films in Japan—OTA Nikichi (1893–1954) and the Beginning of Science Educational Films”. The second formed a session of the annual meeting of the Geological Society of Japan (JGS), two lectures being given: Shuzo Kotaki “The history of *Boso Chigakukai* [Geoscience Society of Chiba Prefecture] since its founding in 1989” and Nobuyuki Aida, “Some geohistorical heritages in 23 wards of Tokyo.” At the third meeting, Hidehisa Mashima gave “The Extension of Japan Sea and Methodology of Earth Science” and Shunzo Ishihara “History of studies on Granite in Japan.” At the annual meeting of GSJ, Michiko Yajima claimed “Important Materials for Earth Sciences in the Archives of Earth and Planetary Science, Department, Graduate School of Science, the University of Tokyo” in the session on the history of geoscience.

The Study Group for the History of Geosciences (*Chigaku-shi Kenkyu-kai*) conducted by JAHIGEO members had five (61st to 65th) meetings at the Waseda Service Garden, Tokyo, on 20 February, 19 March, 18 June, 25 September and 17 December. At the February meeting, Geoffrey C. Bowker (University of California, Irvine) gave the lecture on “Human time and natural time in geology: from Lyell’s Principles to the Anthropocene.” At the March Meeting, Takehiko Furukawa presented “History of Meteorological Services” with many interesting slides. In June, after the brief report of “Benjamin Smith Lyman Collection at the American Philosophical Society Library” by Tomomi Nakagawa, Natsuho Kushiya talked about “Showing the Deep Time: William Buckland and his Visual Materials.” In September, Masumi Osawa gave the lecture of “Development of scientific studies on cultural properties, with special reference to archaeological sciences.” At the fifth December Meeting, two presentations were given: Yasumitsu Kanie’s “Elephant fossil *Palaeoloxodon naumanni* excavated in 1967 from the Hakusenzan, Yokosuka Arsenal, Yokosuka City”, and Akira Yamamoto’s “Establishment of a national meteorological service of Japan.”

At the 63rd annual meeting of the History of Science Society of Japan (HSSJ) held at Kogakuin University, Tokyo, 28–29 May, thirteen papers were read on the history of earth and planetary sciences:

- Kazuo Gesi, “A Consideration on a Fossil of Naumann’s Elephant (*Palaeoloxodon naumanni*) Obtained from the Nishiyagi-bed, Akashi;”
- Tomoko Fukukawa, “The geography books to which K. Kume referred for editing *Bei-o kairan jikki* (Part VIII-2, Volume on the voyage home);”
- Toshihiro Yamada, “‘Theory of the Earth’ and the Transition in Geography: Before and after Thomas Burnet;”
- Michiko Yajima, “Important Books on Earth Sciences in the Library of Earth Science Institute, Faculty of Science, University of Tokyo;”
- Mariko Takegami, “Science in China at the Dawn of the ‘Pacific Era’: Focusing on the Pan-Pacific Science Congress;”
- Kae Takarabe, “Smithsonian Meteorological Observers;”
- Atsushi Miyashita, “The Present Status and Progress of Geochronology about the Geology of Japan;”
- Takahito Hatsuyama, “Researches of Limnology in Tohoku Imperial University in its Founding Era;”
- Ai Iijima, “Caroline Herschel (1750–1848) and her Astronomical Research;”
- Takeshi Sugimoto, “The Longitude Problem about the Island of St Helena;”

- Kazuyuki Ito, “Text of Galileo’s *Sidereus nuncius*,”
- Seiko Yoshida, “Rethinking the Background of the Hirayama families of asteroids,” and
- Toshiyuki Tajima, “‘Noisy crowd’: Early days of the radio astronomy and union activities at the Tokyo Astronomical Observatory.”

A week before the HSSJ sessions, on 22 May, at the Makuhari Messe, Chiba, the Japan Geoscience Union (JpGU) provided sessions for geoscience studies: historical, philosophical and STS studies, in which six papers were read and three posters presented. The six oral papers were:

- Harufumi Tamazawa, Hisashi Hayakawa, and Kiyomi Iwahashi, “Two records of observation in Fushimi, Kyoto and the change of feeling of night sky;”
- Akira Yamamoto “The origin of Japanese word for the wooden thermometer screen: *hyakuyo-so*,”
- Michiko Yajima, “Controversy between Edmund Naumann (1854–1927) and MORI Ogai (1862–1922): German geologist vs. Japanese writer from the former’s perspective”;
- Jun’ichi Chiba, “A Comparative Study of Research Methodology of Geology and Geophysics (or Seismology)”;
- Mamoru Hayashi, “‘Restrain’ over Critical Thinking Involving Geoscience in the Cases of Geohazards”;
- Shigeyuki Aoki, “Whewell’s anti-pluralism of worlds.”

Three posers were:

- Yoshinari Hayashi, “Environmental Citizen Science as the Seamless Earth Science (SMLES) Policy;”
- Toshihiro Yamada, “Background of the Geologist Teiichi Kobayashi’s Conception of ‘Geoscience’”; and
- Michiko Yajima and Toshihiro Yamada, “Important Materials for Earth Sciences in the Archives of Earth and Planetary Science Department, Graduate School of Science, University of Tokyo.”

In 2016, the JAHIGEO issued its *Bulletin*, Numbers 46 and 47 (in Japanese), and the *JAHIGEO Newsletter*, Number 18 (in English). The content of the Newsletter is “German science teachers in the early stages of the Meiji period in Japan” written by Takeshi Ozawa.

Recent publications of books on the history of geosciences are following:

-Yoichi Shibata, *Teikoku Nihon to Chiseigaku: Ajia-Taiheiyo Senso ki niokeru Chirigakusha no Shiso to Jissen* [Geopolitics and the Japanese Empire: Thoughts and Practices of Japanese Geographers in the Asia-Pacific War], Seibundo, Osaka, 2016, 421 pp. Shibata describes the life and work of Saneshige Komaki (1898–1990), the first Japanese geopolitician, and analyses his influences. This is a remarkable achievement in the field of historical study on geoscientific thoughts.

-Translation into Japanese of Charles Coulston Gillispie (1918–2015)’s *Genesis and Geology* (1951) by the historian of science Nagayasu Shimao (1920–2015) was at last published in 2016, Koyo-shobo, Kyoto, 183+78 pp. Rupke’s 1994 review in *Isis* was also translated. This is very important for Japanese historian of geology.

-Toshihiro Yamada, *The Transformation of Geocosmos: Perceptions of Earth from Descartes to Leibniz* (in Japanese), Keiso-shobo, Tokyo, February 2017), 256+xxvii pp. This is the revised edition of his Ph.D. thesis.

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

LITHUANIA

In 2016, Acad. **A. Grigelis**, Honorary Member of INHIGEO, continuously edited ***Baltica***, An International Journal on Earth Sciences (biannual; Web on Science rank, ISI Thomson Reuters). Several public papers were published by him in ***The News of the Lithuanian Academy of Sciences*** and in ***The Journal of the Geological Society of Lithuania 'Horizons of Geology'*** in Vilnius.

Prof. A. Grigelis took part in working group of the European Academies Science Advisory Council (EASAC) and Joint Research Centre (JRC) of the European Commission that elaborated extended report on ***Marine sustainability in an age of changing oceans and seas*** presented in Brussels in January 2016.

Annual Vilnius' Conference ***SCIENTIA ET HISTORIA-2016*** that held on 31 March brought about 20 reports on different issues of history of philosophy, education, social, physical and natural sciences, few reports were devoted to jubilee dates of eminent Lithuanian scientists.

In 2016 A. Grigelis published two farewell articles in the ***Baltica Journal*** to memory of Professor Tom Floden (1937-2016) and Dr. Sci. Saulius Gulbinskas (1961-2016), the eminent scientists of the Baltic marine geology.

Two papers were submitted by A. Grigelis to INHIGEO Jubilee Volume to be published by London Geological Society in 2017.

Several chapters have been written by A. Grigelis on works and life of famous XIX c. world-wide known geologist and mineralogist **Ignacy Domeyko in history of Lithuanian Science [Lith.]** stored on website of the Lithuanian Society of historians of sciences and philosophers 2016:

<http://www.moksloistorija.lt/zinynas/domeika-ignotas>

The academic community of Lithuanian Academy of Sciences, Vilnius University, and State Institute Nature Research Centre celebrated 85-years jubilee of Professor Academician Algimantas Grigelis who gave a report on the Toarcian revolution in the Earth biota history and first appearance of planktonic foraminifera that is a large target for his long time studies of this Protozoa group:

<http://www.lma.lt/images/files/MR/mr-05.pdf>; http://lietuvai.lt/wiki/Algimantas_Grigelis;

Another member of INHIGEO, **Dr. Gailė Žaludienė** in 2016 has published an article on 220-birthday of Tomasz Zan (1796-1855), poet, naturalist, friend of Adam Mickiewicz, member of Vilnius Philomaths and Philareths society. T. Zan explored the mineral resources of clay, sand, sandstone, iron ore, etc. bodies in Vilnius region, collected boulders with fossils in them, in 1842 he explored building materials in the area of Western Belarus, and in 1850-1851 he was looking for salt in Samogitia and Grodno districts.

Main publications (periodicals, papers)

Baltica : an International Journal on Earth Sciences / Nature Research Centre, Institute of Geology and Geography ; scientific editor **A. Grigelis**. – Vilnius, 2016. – ISSN 0067-3064. Vol. 29, No. 1–2, 159 p. [ISI Web on Science list, 2015 IF 0,674].

Marine sustainability in an age of changing oceans and seas / European Academies Science Advisory Council (EASAC), Joint Research Centre (JRC) of the European Commission ; working group: J. Thiede, D. Aksnes, M. Betti, F. Boero, G. Boxshall, P. Cury, M. Dowell, R. Emmerson, M. Estrada, M. Fine, **A. Grigelis**, P. Herman, G. Herndl, J. Kuparinen, J. Th. Martinsohn, O. Prašil, R. S. Santos, T. Soomere, C. Synolakis. – Belgium, 2016. – 60 p. : iliustr., lent. – ISBN 978-92-79-46139-2. – DOI:10.2760/787712. – [http://www.easac.eu].

I. Dailidienė, L. Ž. Gelumauskaitė, **A. Grigelis**. Farewell to Dr. Sci. Saulius Gulbinskas : Obituary (January 22, 1961 – June 21, 2016) // *Baltica*. – 2016, vol. 29, no. 2, p. 156–157.

A. Grigelis. In Memoriam. Farewell to Professor Tom Flodén (1937 11 30 – 2016 09 07). // *Baltica*. – 2016, vol. 29, no. 2, p. 158–159.

A. Grigelis. Memoires of Professor David Oldroyd (1936–2014) // *INHIGEO Annual Record*. – Canberra, 2016, No. 48, p. 35–44. <http://www.inhigeo.org>

A. Grigelis. First geological observations in Lithuania : a historical viewpoint. In: *History of Geoscience: Celebrating 50 Years of INHIGEO* (INHIGEO Jubilee Volume, London, 2017.

A. Grigelis, S. Czarniecki. International Commission on History of Geological Sciences : the earliest events. In: *History of Geoscience: Celebrating 50 Years of INHIGEO* (INHIGEO Jubilee Volume, London, 2017.

A. Grigelis. Ignotas Domeika // Lietuvos mokslo istorija : Lietuvos mokslo istorikų ir filosofų bendrijos tinklalapis, 2016 [**Ignacy Domeyko in history of Lithuanian Science**] <http://www.moksloistorija.lt/zinynas/domeika-ignotas>

A. Grigelis. Tarptautinė geologijos mokslų istorijos komisija ir jos pirmieji žingsniai [**International Commission on History of Geological Sciences – first steps; Lith.**]. Geologijos akiračiai [Geological Horizons], 2016, Nr. 1, p. 26–32.

A. Grigelis. Toario revoliucija Žemės biotos istorijoje : pranešimas [**Toarcian revolution in the Earth biota history : a report**]. Akademinė popietė, skirta LMA nario, habilituoto daktaro, profesoriaus Algimanto Grigelio 85-rių metų jubiliejui, 2016 m. gegužės 11 d., Vilnius <http://www.lma.lt/images/files/MR/mr-05.pdf>; http://lietuvai.lt/wiki/Algimantas_Grigelis;

S. Gulbinskas. Some thoughts to modern researchers of the Baltic Sea sciences : (Professor Algimantas Grigelis – 85). *Baltica*, 2016, vol. 29, no. 1, p. 1–2.

Альгимантас Григялис : (к 85-летию со дня рождения). – Portr. // Літасфера. – Мінск, № 2 (2016), р. 164.

Algimantas Grigelis, Gailė Žalūdienė, Vilnius

MEXICO

2016 ANUAL REPORT

During 2016 the following papers related to the History of Geological Sciences were read in Scientific Conferences:

- Azuela, L. F., 2016. "Los contenidos mineros en el Diario del Imperio" [Mining Contents in the Imperial Newspaper], V Congreso de Historiadores de las Ciencias y las Humanidades, Universidad Autónoma del Estado de Hidalgo, Pachuca, March 2016.
- Morán-Zenteno, D. Keynote Address: "Nuevos enfoques en el estudio de la evolución de la Tierra" [New Perspectives in Earth's Evolution Research], Auditorio José Guadalupe Aguilera, Instituto de Geología-UNAM, September 2016.
- Morelos-Rodríguez, L., "Celebrating 110 years of the building of the Museum of Geology", Museo de Geología de la Universidad Nacional Autónoma de México, September 2016.
- Morelos-Rodríguez, L. and J.O. Moncada-Maya, "Karl T. Sapper's Scientific Journeys in Southeastern Mexico", Universidad de Chile, April 2016.
- Morelos-Rodríguez, L., "The Practical School of Mines in 19th Century Mexico", Coordinación Nacional de Monumentos Históricos, Instituto Nacional de Antropología e Historia, March 2016.
- Morelos-Rodríguez, L., "Disciplinary Narrative in the History of Geological Sciences, 19th and 20th Centuries Mexico", V Congreso de Historiadores de las Ciencias y las Humanidades, Universidad Autónoma del Estado de Hidalgo, Pachuca, March 2016.
- Morelos-Rodríguez, L., "The emergency of Geology in 19th Century Mexico", Museo de Geología de la Universidad Nacional Autónoma de México, February 2016.
- Morelos-Rodríguez, L. and F.O. Escamilla-González, "The Origins of Cabinet Construction Materials in the National School of Engineers, 1882", II Coloquio Mexicano de Historia de la Construcción: Materiales, Sistemas Constructivos y Trabajo, Mérida, October 2016.
- Ríos-Gil, A., C. Canet-Miquel, J.C. Mora-Chaparro, A. Iglesias-Mendoza, M.A. Cruz-Pérez, E. Salgado-Martínez and L. Morelos-Rodríguez, "Strategy of linkage between the Population and the Geopark Project Comarca Minera, State of Hidalgo", 10th National Meeting of Geomorphology and 1st Mexican Symposium of Geoheritage and Geopark, Morelia, November 2016.
- Morelos-Rodríguez, L., J.C. Mora-Chaparro, M.A. Cruz-Pérez, A. Gil-Ríos, E. Salgado-Martínez, P. Escalona-Muñoz, "The Basaltic Prisms in Hidalgo, Mexico: Scientific Descriptions of the 19th Century", 10th National Meeting of Geomorphology and I Mexican Symposium on Geoheritage and Geopark, Morelia, November 2016.

- Uribe-Salas, J. A., "Territorio y paisaje minero en los trabajos de Santiago Ramírez" [Territory and Mining Landscape in the Work of Santiago Ramírez], V Congreso de Historiadores de las Ciencias y las Humanidades, Universidad Autónoma del Estado de Hidalgo, Pachuca, March 2016.
- Uribe-Salas, J. A. & P. Corona, "El geoparque Tlalpujahua/El Oro: Un modelo para armar" [Tlalpujahua/El Oro Geopark: An Assemble Model], V Congreso de Historiadores de las Ciencias y las Humanidades, Universidad Autónoma del Estado de Hidalgo, Pachuca, March 2016.
- José Alfredo Uribe Salas, "Movilidad de la gente y circulación del conocimiento en la historia de la Nueva España" [People Mobility and Knowledge Circulation in New Spain's History. Andrés del Río's Case Study (1764-1849)], Seminario de Plata en España y México, siglos XVI al XIX, Secretaría de Cultura/INAH, Tlalpujahua, Michoacán, May 27, 2016.
- Uribe-Salas, J. A., "Mining Engineers, Biocultural Heritage and Development of Mining in Tlalpujahua and El Oro, XIX Century", Biocultural Heritage and Megaminería: a multiple challenge, National Institute of Anthropology and History, Centro INAH Michoacán, September 29 2016.
- Uribe-Salas, J. A., "Mineros and men of science in the beginnings of Geology in Mexico", XII State Congress of Physics; XII State Meeting of Professors of Physics and VII State Fair of Physics, Michoacana University of San Nicolás de Hidalgo, December 8, 2016.
- Uribe-Salas, J. A., "The scientific exploration of the novohispano / mexican territory in the work of Andrés del Río", Simposio Internacional: *Espacios de Ciencia. Historia Natural, Antropología y Biología entre el viaje científico y la ciudad*, Consejo Superior de Investigaciones Científicas, Madrid, January 21-22, 2016.
- Uribe-Salas, J. A., "Science and technology for New Spain's Mines in the Work of Mineralogist Andrés del Río", V Congreso Latinoamericano de Historia Económica, Sao Paulo, Brazil, July 19-21, 2016.

Recent Bibliography

- Azuela, L.F. (2016). "Zoltan de Cserna y la historia de la geología. Una interpretación historiográfica" [Zoltan de Cserna and the History of Geology. A Historiographical Interpretation], *Boletín del Instituto de Geología de la UNAM*, num.120, pp.71-80, ISSN 0185-5530.
- Azuela, L.F. & Rodrigo, (coords.), 2016. *La geografía y las ciencias naturales en algunas ciudades y regiones mexicanas, siglos XIX-XX* [Geography and Natural Sciences in some Mexican Cities and Regions, XIX-XX Centuries], Instituto de Geografía-Dirección General de Asunto, ISBN: 978-607-02-6966-0.
- Uribe-Salas, J. A., I. Herrera-Canales, A. Parra-Campos, F.O. González-Escamilla & L. Morelos-Rodríguez (coords.), 2016. *Economía, sociedad y cultura en la historia de la minería latinoamericana* [Economy, Society and Culture in the History of Latin American Mining], Instituto Nacional de Antropología e Historia, Universidad Michoacana de San Nicolás de Hidalgo.
- Morelos-Rodríguez, Lucero & Omar Moncada, 2016. "Antonio del Castillo (1820-1895): El primer geólogo mexicano" [Antonio del Castillo (1820-1895): The First Mexican Geologist], *Boletín del Instituto de Geología de la UNAM*, num.120, pp. 81-96, ISSN 0185-5530.

- Escamilla-González, F.O. & L. Morelos-Rodríguez, 2016. "La Escuela Teórico-práctica de Minas de Guanajuato (1864-1866)" [The Theoretical-Practical School of Mines in Guanajuato (1864-1866)], in Uribe-Salas, I. Herrera-Canales, A. Parra-Campos, F.O. González-Escamilla & L. Morelos-Rodríguez (coords.), 2016. *Economía, sociedad y cultura en la historia de la minería latinoamericana* [Economy, Society and Culture in the History of Latin American Mining], Instituto Nacional de Antropología e Historia, Universidad Michoacana de San Nicolás de Hidalgo, p. 15-30, ISBN: 9786074246155.
- Uribe-Salas, J. A., "Franz Fischer and his fire furnace for the benefit of silver in Angangueo, Mexico", Inclusions. *Journal of Humanities and Social Sciences*, Special Volume, July-September, 2016, pp. 61-77 (online version ISSN 0719-4706).
- Uribe-Salas, J. A., 2016. "El hombre prehistórico en la literatura mexicana del siglo XIX" [The Prehistoric Man in Mexican Literature of the 19th Century], in Cuví, N., E. Sevilla, R. Ruiz and M. A. Puig-Samper (eds.), 2016. *Evolucionismo en América y Europa. Antropología, Biología, Política y Educación* [Evolutionism in America and Europe. Anthropology, Biology, Politics and Education], Quito, Madrid, Mexico, Doce Calles Editions / FLACSO / UNAM / Universidad Católica de Ecuador, pp. 111-127, ISBN: 978-84-9744-201-5.
- Uribe-Salas, J. A., 2016. "Territorio y recursos naturales en la cuenca del río Mezcal-Balsas" [Territory and Natural Resources in the Mezcal-Balsas River Basin, Mexico, 19th Century] Azuela, L.F. & Rodrigo, (coords.), 2016. *La geografía y las ciencias naturales en algunas ciudades y regiones mexicanas, siglos XIX-XX* [Geography and Natural Sciences in some Mexican Cities and Regions, XIX-XX Centuries], Instituto de Geografía-Dirección General de Asunto, pp. 63-84, ISBN: 978-607-02-6966-0.
- Uribe-Salas, J. A. & J. Zaragoza, 2016. "El cambio tecnológico en los procesos de beneficio de la minería regional mexicana. El Porfiriato" [Technological Change in Regional Mining Processes in Mexico (1876-1910)], in Uribe-Salas, I. Herrera-Canales, A. Parra-Campos, F.O. González-Escamilla & L. Morelos-Rodríguez (coords.), 2016. *Economía, sociedad y cultura en la historia de la minería latinoamericana* [Economy, Society and Culture in the History of Latin American Mining], Instituto Nacional de Antropología e Historia, Universidad Michoacana de San Nicolás de Hidalgo, p. pp. 217-232, ISBN: 9786074246155.

Museum Exhibits (museography and texts)

Morelos-Rodríguez, L. Curator of the Exhibition *The Dawn of the Geological Institute of Mexico*, Museo de Geología de la Universidad Nacional Autónoma de México, Mexico City, February 2016.

Morelos-Rodríguez, L. Curator of the Exhibition *Between Tradition and Innovation. 110 years of the Building of the Geological Institute of Mexico*, Museo de Geología de la Universidad Nacional Autónoma de México, Mexico City, November 2016.

As a final note, we would like to add that members of our group continue teaching three different courses in the National Autonomous University (UNAM) and Universidad Michoacana de San Nicolás de Hidalgo (UMSNH), containing topics on the History of Geological Sciences, contributing to raise the interest of young students in our subject matter.

Dr. Luz F. Azuela, lazuela@igg.unam.mx.

NEW ZEALAND

Research on the history of geology in this country by New Zealand INHIGEO members endures. **Rodney Grapes'** study of past New Zealand earthquakes continues to be timely as the country has entered a period of heightened seismicity, including a M7.8 event in November. **Simon Nathan** continues to gather information on the career of Lloyd Homer, formerly of the New Zealand Geological Survey and who was a leading aerial photographer of landforms. **Mike Johnston** progresses a history of the northwest Nelson goldfields. A major new research project initiated by INHIGEO member **John Taylor** is the locating and digitising of historic New Zealand mining maps and plans. John has now catalogued nearly 10,000 plans and has given publicity to this huge project in a paper titled *New Zealand's Legacy Mine Plans and Geological Maps*. This was published in AusIMM Monograph 31 - *Mineral Deposits of New Zealand - Exploration and Research* 2016.

During the year, **Rodney Grapes** edited three issues of *Journal of the Historical Studies Group* of the Geoscience Society of New Zealand. One of them (Number 54 – October 2016) was a special issue containing the edited memoirs of Dr R. P. (Pat) Suggate (1922-2016), a former director of the New Zealand Geological Survey. Pat was a leading researcher of the Pleistocene and undertook detailed work on New Zealand coals, which led to the formulation of the “Suggate Rank.” The memoirs, which unfortunately were not completed before Pat’s death, were transcribed and edited by Simon Nathan. Among the other articles in this issue is one by Nathan titled *James Park and the geological bulletins of Otago*. Otago province was a major alluvial gold producer and, after its re-organisation 1905, the Geological Survey commenced systematic mapping of areas of economic significance. This article sheds light on how fieldwork was conducted in a much more formal era than the present.

Articles in other issues of the journal earlier in the year include the conclusion of **Rodney Grapes'** *Earthquakes experienced in New Zealand, 1773-1827; II* (Number 52 April 2016). This issue also contained a short article *Processing gold-bearing quartz ore in the early twentieth century: and illustrated case history from the Snowy River battery, Waiuta, New Zealand* by Nathan and co-author Les Wright. This utilises photographs by outstanding mining photographer Jos Divis. During 2016, a revised edition of Nathan’s *Through the Eyes of a Miner - The photography of Joseph Divis* was published (see review elsewhere in this volume).

The August 2016 issue (Number 53) contains two articles by Grapes and which deal with aspects of the history of geology of the East Coast of the North Island. They are *William Mein Smith's Wairarapa coastal survey of 1855-56 and first geological descriptions* and *Triphook to Hochstetter 1859, with notes*. In addition to the above articles, there are several others by non INHIGEO members, on a variety of topics. A regular contributor is Graeme Stevens whose frequent articles provide a valuable record of the New Zealand Geological Survey and its successors.

Both **Simon Nathan** and **John Taylor** were involved in celebrations of various aspects of mining on the West Coast of the South Island of New Zealand. These included the 125th celebration of a public electricity supply in Reefton, the first such scheme in the Southern Hemisphere, which was so named from the quartz reefs nearby, including at Waiuta. Simon has also collaborated with the National Library of New Zealand in acknowledging the achievements of legendary explorer, and self-taught geologist, Charles Edward Douglas (1840-1916), better known as Mr Explorer Douglas. A full-scale facsimile of

Douglas' 18-foot-long geological map of the rugged Southern Alps formed part of the celebration of his life as well as a talk by Nathan.

Mike Johnston, Nelson, New Zealand

POLAND

Acting from 2015 Commission on the History of Geological Sciences of the Polish Geological Society organized four scientific meetings in 2016.

The hero of the first meeting (March 20, 2016) was Professor Józef Morozewicz - outstanding scientist and organizer of the Polish Geological Institute and the Mining Academy which was celebrating its 150th birthday. There were three talks given which widely presented Prof. J. Morozewicz as a righteous citizen and organizer of the geological activity in Poland, his scientific research, including discoveries of new minerals and rocks. The authors of the speeches were Marek Graniczny, Krystyna Wołkowicz, Halina Urban and Stanisław Wołkowicz (PGI-NRI) and Jan Parafiniuk (Faculty of Geology, Warsaw University). At the same time at the meeting a book by the first four speakers listed above was promoted which is entitled "*Józef Morozewicz (1865-1941). Contribution to the biography.*" Professor J. Morozewicz was an extraordinary person, he was an indefatigable organizer of scientific life in Poland, a hot patriot able to see the needs of Poland, which regained its independence after more than a hundred years of partition. But he was also a pioneer of experimental petrological research that brought him world fame.

Next Meeting - Historical Aspects of Studies of Russian and Soviet Geologists in Poland (May 16, 2016) was a counterpoint to the paper presented during the scientific meeting in 2015, which was an international character due to the presence of the Japanese delegation (<https://www.pgi.gov.pl/en/home1/all-events/international-cooperation/6682-polish-japan-session-on-the-history-of-geological-sciences-in-siberia-and-east-asia.html>), at which M. Graniczny gave the lecture on the contribution of Polish geologists in recognition of the geological structure of Siberia and the Far East. It is hard to deny the fact that many Russian geologists worked in the territories of Poland under Russian rule. Dr Tatiana Voroncowa-Marcinowska (PGI-NRI) presented the silhouettes of Dmitri N. Sobolev (1872-1949) and Nikolai J. Krisztafowicz (1866-1941). Some Russian professors working at the Warsaw University supported Polish students, for example, J. Morozewicz owes much to the outstanding mineralogist Aleksander J. Lagorio (1852-1922), who was a Russian with Swiss roots. But Russian and Soviet geologists also worked in Poland after the Second World War. Their studies were primarily concerned with the research of uranium deposits, especially in the Lower Silesia. Around their activity, which was particularly intense until 1953, many myths and half-truths have arisen. The problem of the presence of geologists from the "brotherly state" in the sociological and social context was presented by prof. Robert Klementowski (Wrocław University) in the paper "*Around the presence of geologists from the USSR in the 'Kowary Mines': research reconnaissance.*" The problems of ore-geology were presented by S. Wolkowicz and R. Strzelecki (PGI-NRI) in the paper *The scope of exploration and production of uranium conducted by Enterprise R-1 in Kowary*. But the most important event of this meeting was the presence of special guests, who were former employees of the Enterprise R-1 in Kowary: Dr. Elżbieta Bareja, Wojciech Bareja and Dr. Wiesław Śliżewski. They talked about

how they were at R-1 in Kowary, what was their job, what was their relationship with Russian geologists and geophysics.

The hero of the third meeting (October 20, 2016) was Professor Jan Samsonowicz: outstanding geologist and extraordinary man. This meeting was quite unusual, due to the presence of the son of the meeting hero Professor Henryk Samsonowicz, with Spouse, and the presence of students of the Professor, Prof. Stanisław Orłowski and Dr. Wojciech Salski. After the presentation of the biography of Prof. Jan Samsonowicz by S. Wołkowicz (PGI-NRI), S. Orłowski talked about J. Samsonowicz as an academic teacher, head of the Chair of Historical Geology at Faculty of Geology at Warsaw University, and organizer of the Polish Academy of Sciences, founded in 1951. In turn Prof. Włodzimierz Mizerski (PGI-NRI) presented J. Samsonowicz's contribution to geological exploration of Holy Cross Mountains. Most remarkable were the statements of Dr. Albin Zdanowski, who presented the importance of Prof. Samsonowicz's research in the discovery of hard coal deposits – so-called Polish Bug River Basin. This was also important when Poland changed its borders in 1951. In the area that was then incorporated into the USSR, coal is still exploited (currently it is the territory of Ukraine). Later in the meeting, Dr. Barbara Żbikowska presented the correspondence of the Professor J. Samsonowicz to her mother - Professor Krystyna Korejwo, who was the first assistant of the Professor, and at the same time was probably the only woman in the circle of his close co-workers. The memories of Professor Henryk Samsonowicz about his father were very warm, and he emphasized his father's modesty and extraordinary curiosity of the world. It is probably common with the Father that geological and archaeological tours have shaped the later Rector of the Warsaw University and the Minister of National Education in the government of Tadeusz Mazowiecki. The material gathered during the preparation for the session is so plentiful that a special booklet dedicated to Professor Jan Samsonowicz will be prepared in 2017.

The December 12, 2016 meeting of the Section had a joint title - the Union of History and Geology, but the subject matter of the speeches was varied. Prof. Janusz Skoczylas (Adam Mickiewicz University, Poznań) presented a talk on the use of rock raw materials in the state of the first Piast Dynasty. This author is a recognized expert in petroarcheology, hence, the lecture, richly illustrated with photographs of the Piast buildings using various rocks as a building block, has aroused great interest. The second paper, entitled *Vistula unveiling in Warsaw marbles - traces of plunder 360 years ago*, was delivered by prof. Magdalena Sikorska-Jaworowska (PGI-NRI) was involved in the Swedish Deluge. The extremely poor Scandinavian country, further besieged by a small ice epoch, made perhaps the greatest damage in the history of Poland. The Swedes were robbing everything, including large-scale stone elements of the Warsaw palaces and floor tiles. Some boats filled with spoils did not sail - they sank. And now, after many years, very low water levels on the Vistula river reveal "*corpus delicti*." In the last paper, Prof. Piotr Krzywiec (IGS PAS) spoke about Robert Townson (1762-1827) and his trip to the Tatra Mts and Wieliczka. This English gentleman was a medical doctor and traveler, dealing with botany, geology and mineralogy. During his trip to Hungary he also stayed in the Tatras, where he conducted numerous geological observations. He also visited a well-known in Europe salt mine in Wieliczka. All his observations, together with a geological map, he published in 1797 in the large work *Travels in Hungary, with a short account of Vienna in the year 1793*. A large part of this book is devoted to the area of Poland and is illustrated with a few copper engravings.

Besides scientific meetings of the Commission on the History of Geological Sciences of the Polish Geological Society, the members of INHIGEO carried out numerous research projects. The biographical

trend was dominant. **Professor Zbigniew Wójcik**'s extensive monograph on Ignacy Łukasiewicz, the creator of the Polish oil industry, should be regarded as the most important achievement. This work has been submitted for publication and should be published in 2017.

Additionally, **Z. Wójcik** has published:

- (1) *Krzysztof Jakubowski (1937–2011) – museologist*. (Analecta. Studia i materiały z dziejów nauki. Vol. 25, No. 1, p. 91–107);
- (2) *Jan Pazdur – historian of the old industry of Starachowice*. (IBIDEM, p. 197–208);
- (3) *Bronisław and Józef Piłsudski – Exiles*. (Biuletyn Archiwum Polskiej Akademii Nauk. Vol. 57, p. 138–207);
- (4) *Stanisław Pilat (1881–1941), a petroleum engineer from the Lviv University of Technology*. (Wrocławskie Studia Wschodnie, Vol. 19, p. 245–262);
- (5) *Elements of geology in Stanisław Staszic's „The human race”*. (Zeszyty Staszicowskie. Vol. 10, p. 27–36) - Co-author Ewa Lewandowska;
- (6) *Staszic's legacy on the work of Stanisław Małkowski*. (IBIDEM, p. 93–104).

Professor Janusz Skoczylas has published:

- (1) *From the history of exploration and exploitation of lignite in Jerce (Wielkopolska)*. (Mining Review, Vol. 72, no 2, p. 82–87);
- (2) *The influence of Stanisław Staszic's "On the earth-formation of the Karpaty Mountains..." on the textbooks of John the Baptist Motte*. (Zeszyty Staszicowskie, Vol. 10, p.37–47);
- (3) *The influence of Stanisław Staszic and Friedrich Reden on the development of industry on Polish Lands*. (Zeszyty Staszicowskie. Vol. 10, p. 84–92).

Very active in historical research on the border between geology and mining is a research center linked to the Institute of History of Sciences of the Polish Academy of Sciences and the Municipal Museum "Szttygarka" in Dąbrowa Górnicza. Particularly noteworthy is the work of **Andrzej J. Wójcik**, author of numerous important publications on this subject. From the works published in 2016, attention should be paid to the three-volume work: *Dąbrowa Górnicza. Monograph*. Ed: A. Rybak, Andrzej J. Wójcik, Z. Woźniczka, issued by Municipal Museum "Szttygarka" in Dąbrowa Górnicza. Volume I - *The natural and geographical environment* (373 pp.); Volume II - *Districts of the City* (742 pp.); Volume III - *The history of the City* (688 pp).

From other works of **A. Wójcik** should be mentioned:

- (1) *Applied geology in studies of Karol Bohdanowicz and his students in Siberia in the late nineteenth and early twentieth century*. (**Studia Historiae Scientiarum**, Vol. XV, p. 195–217);
- (2) *Protection, maintenance and restoration of the stone casing of underground excavations*. (In: W. Preidl, G. Dyduch, (Ed.) *Hereditas Minariorum*, Vol. 3, p. 33–52);
- (3) *About rock oil – publication of Priest Franciszek Siarczyński from 1828*. (IBIDEM, p. 243–254).

It is also worth noting the article prepared by **Jerzy B. Miecznik** – *Bohdan Świdorski* – a tireless researcher of Carpathian tectonics. (Przegl. Geol. Vol. 64, No. 11, p. 881–888).

Professor Radosław Tarkowski has published two papers on the work of Polish geologists on the South American continent:

(1) *Cooperation of Antonio Raimondi (1824-1890) with polish naturalists and engineers.* (Przegl. Geol. Vol. 64, No 2, p. 93-100;

(2) *Memorias del naturalista polaco Jan Sztolcman de su viaje al Perú entre 1875-1881.* Sociedad Geográfica de Lima Co-authors: Pýrcz T.W., Goluchowska Katarzyna T. de Dunin- Borkowski).

The INHIGEO Polish team was also very active during the 35th International Geological Congress in Cape Town and presented several papers:

(1) Graniczny M., Wołkowicz S., Wołkowicz K., Urban H. - *The contribution of Ignacy Domeyko (1802 – 1889) to the geology of Poland, Lithuania and Chile;*

(2) Krzywiec, P., Wołkowicz, S., Wołkowicz, K. - *Development of geological and geophysical cartography in Poland (XVIII – XXI cent.);*

(3) Wołkowicz S., Graniczny M., Wołkowicz K., Urban H. - *Outline of the mining history in the Polish Lands.*

In addition, at the 3rd Polish Geological Congress, a special scientific session was devoted to the history of the development of geological sciences in Poland. There was also an exhibition titled *Geology of the Lower Silesia on the historical geological maps* prepared by S. Wolkowicz, K. Wolkowicz & P. Krzywiec.

An important way to disseminate knowledge about the history of geological sciences is by the presentation of lectures during various meetings and conferences. It can be concluded that the Polish INHIGEO members gave dozens of other lectures, not described above, devoted to this subject, both on the national and international level.

Stanisław Wołkowicz, Warsaw

PORTUGAL

Chapters in International Books

Mota, Teresa Salomé (2016) "It had to be us. Geological practice, scientific authority and politics in the expedition to Goa (1960-1961);" *In: Klemun, Marianne and Spring, Ulrike (eds.) Expeditions as Experiments. Practising Observation and Documentation*, Palsgrave Studies in the History of Science and Technology, Palgrave Macmillan, pp. 235-253.

Mota, Teresa Salomé and Carneiro, Ana (2016) "The ups and downs of geology in Portugal: the Geological Survey, a historical perspective", Geological Society, London, *Special Publications*, 442, doi:10.1144/SP442.2.

Abstracts in Scientific Meetings

Mota, T. S. (2016) "Have we ever been geologists?" Images in geology textbooks in Portuguese secondary education, 1836–1974, Book of Abstracts, 7th International Conference of the European Society for the History of Science, Prague, Czech Republic, 22-24 September 2016, p. 62.

Carneiro, A.; Mota, T. S. and Amaral, I. (2016) "The Bulletin of the Association of Portuguese Physicians (1899–1919). Regulating the Profession and its Prerogatives", Book of Abstracts, 7th International Conference of the European Society for the History of Science, Prague, Czech Republic, 22-24 September 2016, pp. 67 and 68.

Oral Presentations by Invitation

Mota, T. S. "Filhos de um chão menor: os colectores e a tradição de trabalho de campo nos Serviços Geológicos de Portugal", 5th National Meeting of History of science and Technology, University of Coimbra, 13-15 July 2016.

Mota, T. S. "Amostras anormais da humanidade". As mulheres na prática e no ensino da Geologia; o caso de Judite dos Santos Pereira em Portugal", International Workshop História do Género. Género na História: da Modernidade à Contemporaneidade. Construções interdisciplinares, University of Évora, 3 and 4 March 2016.

Mota, T. S. "Prática geológica, autoridade científica e política na expedição a Goa pela Junta de Investigações do Ultramar (1960-1961)", Seminar Science and Empire, Institute of Social Sciences/Faculty of Sciences of the University of Lisbon, Lisbon, Portugal, 13 January 2016.

Oral Presentations in Scientific Meetings

Mota, T. S. "Have we ever been geologists?" Images in geology textbooks in Portuguese secondary education, 1836–1974, 7th International Conference of the European Society for the History of Science, Prague, Czech Republic, 22-24 September 2016.

Carneiro, A.; Mota, T. S. and Amaral, I. "The Bulletin of the Association of Portuguese Physicians (1899–1919). Regulating the Profession and its Prerogatives", 7th International Conference of the European Society for the History of Science, Prague, Czech Republic, 22-24 September 2016.

Mota, T. S. 'Imagens na Geologia', Day's Work of the Department of History and Philosophy of Science, Faculty of Sciences of the University of Lisbon, Portugal, 24 July 2016.

Other Activities

Member of Research Project's Team: "Visões de Lisboa. Ciência, tecnologia e medicina (CTM) e a construção de uma capital tecno-científica (1870-1940)" (PTDC/IVC-HFC/3122/2014), CIUHCT, sponsored by FCT.

Member of Research Project's Team: "O Triunfo da Baquelite — Contributos para uma história dos Plásticos em Portugal' (PTDC/IVC-HFC/5174/2014), CIUHCT, sponsored by FCT

Organization and presentation of the Interuniversity Centre of History of Science and Technology Conferences; September 2016 to June 2017.

Teresa Mota

RUSSIA

Chuvash State University (Cheboksary, Chuvash Republic, Russia)

Gennady F. Trifonov was a participant of the 35th session of the International Congress in South Africa:

Trifonov, G. F. 2016. Discussions and their role in the development of geological sciences. (35th IGC. Cape Town, South Africa. 2016. 41st INHIGEO Symposium).

N. M. Fedorovsky All-Russian Institute of Mineral Resources (Moscow)

As a Deputy Director **Igor G. Pechenkin** was an organizer of the 31st Scientific Conference dedicated to the memory of Anatoly (Nathan) I. Ginzburg (1917-1984) and the Centenary of the Arshinov's Institute library foundation (Moscow. March, 2016). Pechenkin is the head of the Geological Section of the Central House of Scientists of the Russian Academy of Sciences (founded in 1922).



Figure 1. Central House of Scientists of the Russian Academy of Sciences (Photo: I. P. Vtorov).

The Section had four meetings in 2016:

February 17 – Sergey Vladimirovich Obruchev': to the 125th anniversary Vladimir A. Obruchev.

March 16 – Timur's gravestone: historical and geological etude (Pechenkin).

October 12 – Academician A. E. Fersman – little known pages of biography.

December 7 – Hawaii volcanoes: the history of research (Vtorov).

Articles in journals & books

Pechenkin, I. G. et al. 2016. The role of the All-Russian Institute of Mineral Resources in the development of mineral resources base of Russia. *Prospect and Protection of Mineral Resources*. 5. p. 6-9. (co-authors L. A. Antonenko, E. V. Ershova, et al.) (in Russian).

- Pechenkin, I. G.* 2016. Stone casting in the USSR (1920-1940s). *Essays of the History of Science and Technology*. 2. p. 251-268 (in Russian).
- Bastrikov, Yu. L. Pechenkin, I. G.* 2016. Way to domestic uranium: a history of geological exploration of uranium. *ANRY (Apparatus & News of Radioactive Measurements)*. 2. p. 65-70 (in Russian).
- Pechenkin, I. G.* 2016. Central Asian routes of N. M. Fedorovsky: on the 130th anniversary of his birthday. *Noosphere*. 2. p. 157-166 (in Russian).
- Pechenkin, I. G.* 2016. V. A. Zilbermintz – the founder of the geochemistry of coals: on the 130th anniversary of his birthday. *Noosphere*. 2. p. 167-171 (in Russian).

Conference presentations

- Pechenkin, I. G.* History of the exhibition of industrial types of ores of Russian Scientific Research Institute for Mineral Resources named after of N. M. Fedorovsky. (International scientific conference to the 300th anniversary of academician A. E. Fersman. Fersman Mineralogical Museum, RAS. Moscow. November, 2016).
- Pechenkin, I. G.* The theory of uranium ore formation of the sandstone type: the first steps. (All-Russian conference ‘Geochemistry of landscapes’ to the 100th anniversary of A. I. Perel’man. Moscow. October, 2016). [URL](#)
- Pechenkin, I. G.* Applied significance of the results of the study of ancient soils of desert and steppe regions. (International seminar ‘Scientific heritage of Vasily V. Dokuchaev: tradition and development of ideas’ to his 170th anniversary. May, 2016).
- Pechenkin, I. G.* Timur's gravestone: historical and geological etude. (32nd annual conference of the Institute for Science and Technology by S. I. Vavilov, RAS* to the 125th anniversary of S. I. Vavilov. Moscow. March-April, 2016).
- Pechenkin, I. G.* A brief history of the All-Russian Institute of Mineral Resources in its library stamps: for the 100th anniversary of the Scientific and Technical Library named after V. V. Arshinov. (31st scientific conference dedicated to the memory of A. I. Ginzburg. Moscow. March, 2016). * Here and below RAS – Russian Academy of Sciences

Geological Institute of the Russian Academy of Sciences (Moscow),

Department for the History of Geology

Irena G. Malakhova and **Ivan P. Vtorov** worked under the RAS plan of fundamental studies titled ‘Information System *History of Geology & Mining*’ (since 2010). <http://scirus.benran.ru/higeo/>
Content: persons (676), documents (527), bibliographies (572), institutions (353), photographs (908).

In 2016, we were involved in organization of the special meeting at the Geological Institute. Academician Yuri M. Puscharovsky celebrated his centenary on the 31st of December, 2016. Puscharovsky is a Russian geologist well-known with works on regional tectonics and the Pacific. He is a ‘live history’ of our Institute. Thanks to his close relations with Vladimir V. Tikhomirov a lot of documents, memoirs and photos of Puscharovsky were carefully kept in our Department, digitalized now and used for the slide show (arranged with music) at the jubilee meeting.
<https://youtu.be/hB3xSKnA2TA>.

Malakhova was delegated to the 8th All-Russian Congress of Geologists[#] (Moscow. October, 2016).

[#]The first three sessions of the Congress were: 1922 – Petrograd; 1926 – Kiev; 1928 – Tashkent. The 4th session was held only in 2000 (Saint-Petersburg).

Vtorov had a private trip to the Kola Peninsula and visited the Geological Institute of the Kola Science Centre of the Russian Academy of Sciences, museums and historical sites.

He was responsible for the compilation of the list ‘Significant dates_2017’ (Web site of the Geological Institute). <http://www.ginras.ru/struct/19/9/daty2017.php>.

Malakhova and Vtorov placed new publications, descriptions and pictures of minerals (the Fersman Mineralogical Museum, Russian Academy of Sciences) in the “Digital Library *Scientific Heritage of Russia*”. <http://e-heritage.ru/index.html>

The Russian INHIGEO members can now get information, do comments and discuss on the new Web-site (in Russian) (Malakhova – an editor, Vtorov – an administrator).

<https://sites.google.com/view/inhigeo-ru>

Articles in journals & books (Malakhova & Vtorov)

Malakhova, I. G. 2016. N. P. Yushkin: short meetings – long memory. *Academician Nikolay Pavlovich Yushkin: to the 80th anniversary*. Institute of geology, Komi Science Centre, RAS, Syktyvkar. p. 85-88. (in Russian).

Vtorov, I. P. 2016. Soil as a museum exhibit in Russia. *Proceedings of the 13th International Erbe Symposium*. The Slovak Mining Museum, Banská Štiavnica. p. 237-241.

Conference presentations

Malakhova, I. G. Keeping the geological scientific heritage: information resources. (8th All-Russian Congress of Geologists. Moscow. October, 2016).

Malakhova, I. G. Museum collections as a part of the Digital Library ‘Scientific Heritage of Russia’. (International scientific conference to the 300th anniversary of academician A. E. Fersman. Fersman Mineralogical Museum, RAS. Moscow. November, 2016).

Kalenov, N. E. & Malakhova, I. G. The Information System ‘History of Geology and Mining’ as an example of the heterogeneous resources integration. (20th scientific conference ‘Information for science: new technologies’. Yekaterinburg. 2016).

Malakhova, I. G. The Russian trace of Hans Stille. (Leibniz Sozietät. **Kolloquium ‘Hans Stille (1876-1966) – deutscher Geologe mit Weltruf, akademischer Lehrer an den Universitäten Göttingen und Berlin, Funktionsträger der Akademie der Wissenschaften in Berlin in schwierigen Zeiten’**. Berlin. Oktober, 2016. <http://leibnizsozietat.de/wp-content/uploads/2016/10/G-Malakhova-2016-10-14.pdf>

Malakhova, I. G., Vtorov, I. P. and Bryanchaninova, N. I. Information resources in geology: geoscientists, publications, museum collections. (31st scientific conference dedicated to the memory of A. I. Ginzburg. Moscow. March, 2016).

Vtorov, I. P. Museum information in the Digital Library ‘Scientific Heritage of Russia’: methods of displaying. (International scientific conference to the 300th anniversary of academician A. E. Fersman. Fersman Mineralogical Museum, RAS. Moscow. November, 2016).

Vtorov, I. P. The first interpretations of Dokuchaev’s concepts abroad. (International seminar ‘Scientific heritage of Vasily V. Dokuchaev: tradition and development of ideas’ to his 170th anniversary. May, 2016).

Geological Institute, Kola Science Centre (Apatity), Russian Academy of Sciences

Yuri L. Voytekhovsky headed organizing committees of several scientific meetings hold at the Geological Institute and was the editor-in-chief of conference proceedings. Four issues of the journal *Tietta* (Voytekhovsky – the editor-in-chief) were published in 2016. The Journal has an open access at the Web-site of the Geological institute, Apatity. <http://geoksc.apatity.ru/index.php/zhurnal-geologicheskogo-instituta-tietta/tietta2016>

Articles in journals & books

Voytekhovsky, Yu. L. 2016. Academic science and development of the Kola North's economy. *Bull. Komi Science Centre, RAS*. 31. 38-40. (in Russian).

Voytekhovsky, Yu. L. and Stepenschikov, D. G. 2016. Vertex and edge truncations of simple closed forms: to the 280th anniversary of J.-B. Romé de Lisle and the 80th anniversary of N. P. Yushkin. *Bull. Institute of Geology. Komi Science Centre, RAS*. 5. C. 32-37. (in Russian).

Conference presentations

Voytekhovsky, Yu. L.

- I. A problem of J.-B. Romé de Lisle: to his 280th anniversary;
- II. Academician N. P. Yushkin and the entropy of thinking;
- III. On the history of Khibiny mines in 1930s (with co-authors);
- IV. Significant dates 2016. (13th All-Russian, with international participation, Fersman session. Apatity. April, 2016).

http://geoksc.apatity.ru/images/stories/Print/%D0%A2%D1%80%D1%83%D0%B4%D1%8B%20%D0%A4%D0%9D%D0%A1_2016-%D1%80%D0%B5%D0%B41.pdf

Voytekhovsky, Yu. L.

- I. Mineral resources of the Kola Peninsula: old problems & new accents;
- II. Perspectives of small geological and mining enterprises. (8th scientific and practical conference 'The North & the Arctic in a new world development paradigm'. Apatity. April, 2016).

Voytekhovsky, Yu. L. Modal analysis of rocks under microscope: history, present-day, perspectives. (11th Russian seminar 'Results of interdisciplinary studies in the technological mineralogy'. Saint-Petersburg. September, 2016).

Voytekhovsky, Yu. L. The Murmansk railway as a requisite of the Khibiny region development: 100 years since construction. (Scientific and practical conference 'Small homeland – the history of my country' to the 50 years of Apatity and 85 years of Kirovsk. Kirovsk. October, 2016).

Voytekhovsky, Yu. L. Science and innovations in prospecting, mining and processing of ore deposits. (6th International conference 'Mining industry in the Barents Euro-Arctic region: view to the future', IMIC BEAR-2016. Kirovsk. November, 2016)

Voytekhovsky, Yu. L. To the 100th Anniversary of A. V. Sidorenko's birthday. (Fedorov's session. Saint-Petersburg. October, 2016).

A. P. Karpinsky Russian Geological Research Institute (Saint-Petersburg)

Leonid R. Kolbantsev held consultations and participated in the Exhibition 'In search of gold in Siberia' ('Guld I Sibirien') opening ceremony in the Nordic countries Cultural Center, Helsinki. The

exhibition was dedicated to the history of the Finnish geological expedition to the Uryankhay region (now – the Republic of Tyva) in 1917, led by a Russian-Finnish geologist Jakob *Sederholm* and his Swedish colleague Helge *Backlund*.

Articles in journals & books

Kolbantsev, L. R. 2016. Geological and mining symbols in the heraldry of Russian city. *Proceedings of the 13th International Erbe Symposium*. The Slovak Mining Museum, Banská Štiavnica. 126-132.

Kolbantsev, L. R. 2015. Konikov Alexander Zalmanovich; Tolmachov Innokenty Pavlovich (1872-1950). *Researchers of the Central Siberia subsoil*. Krasnoyarsk. 10, 151, 259. (in Russian).

Conference presentations

Kolbantsev, L. R.

I. Cambrian System in Siberia – discovery ‘at a desk’ (co-author A. Z. Konnikov);

II. Materials on South Africa geology in the Academician Th.N. Tschernyschew Central Research Geological Prospecting Museum, St.-Petersburg” (co-authors O.V. Petrov and A.R. Sokolov). (35th IGC. Cape Town, South Africa. 2016. 41st INHIGEO Symposium).

Kolbantsev, L. R. Formation of a fund for material geological information for ensuring state geological study of the Russian Federation and its continental shelf territory. (8th All-Russian Congress of Geologists. Moscow. October, 2016).

Kolbantsev, L. R. Mineralogical material in the Central Research Geological Prospecting Museum geological collections. (International scientific conference to the 300th anniversary of academician A. E. Fersman. Fersman Mineralogical Museum, RAS. Moscow. November, 2016).

Kolbantsev, L. R. The light and shadows of jubilee photographs: from the Russian Geological Committee history. (37th Annual international conference of the St.- Petersburg Branch of the Russian National Committee for the History and Philosophy of Science and Technology, RAS. December, 2016).

Andrei V. Lapo participated in the organization of the Exhibition dedicated to the 120th anniversary of a Russian paleontologist A. G. Vologdin at the All-Russian Geological Library in Saint-Petersburg.

Articles in journals & books

Lapo, A. V. 2016. The Prophet in his own country. *Regional Geology and Metallogeny*. 65. p. 116-119. (in Russian)

Lapo, A. V. 2016. The echo of the Krasnoyarsk geologist’s case. *Geology and Mineral Resources of Siberia*. 4. 24. p. 101-103. (in Russian)

Snigirevsky, S. M., Lapo, A. V., Oshurkova, M. V. et al. 2016. In memoriam: Natalia Sergeevna Snigirevskaya: [Obituary]. *Botanic Journal*. 101. 9. p. 1089-1093. (in Russian)

Lomonosov Moscow State University; Paleontological Institute, Russian Academy of Sciences

In 2016, the Paleontological Society of Russia celebrated the 100th anniversary. About 200 geoscientists came to Saint-Petersburg in April to take part in the jubilee session of the Society. **Alexander S.**

Alekseev was an organizer of this meeting and a co-author of the special monograph (see a review elsewhere in this volume):

Zhamoida, A.I., Alekssev, A.S., Rozanov A.Yu., Suyarkova A.A. 2016. Paleontological Society of Russia 100th anniversary: Historical overview. VSEGEI, St-Ptb. 244.

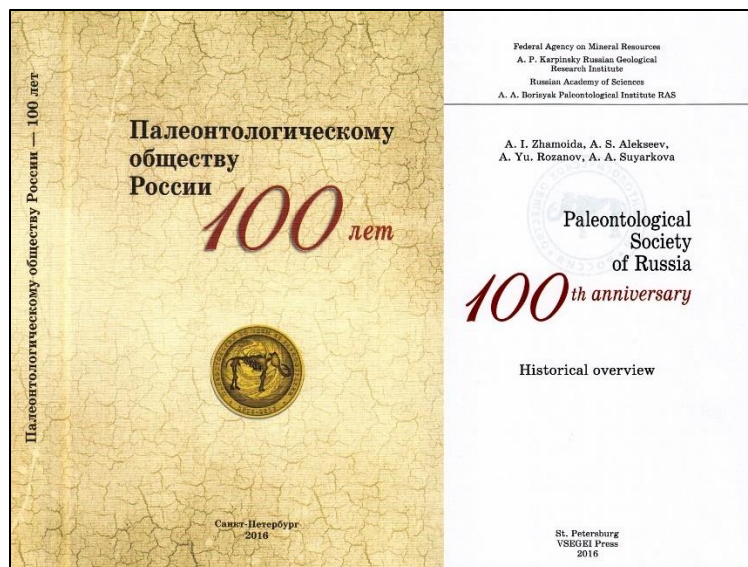


Figure 2. Cover of the monograph; 100th Anniversary – Paleontological Society of Russia.

Vernadsky State Geological Museum, Russian Academy of Sciences (Moscow)

Zoya A. Bessudnova

Articles in journals & books

Bessudnova, Z. A. 2016. The 105th anniversary from the birth of Alexander Leonidovich Yanshin. *National Geology*. 2. 83-86. (in Russian)

Bessudnova, Z. A. 2016. The first Russian monograph on the history of geology by Grigory E. Shchurovsky, Professor of Moscow University: on the 150th anniversary of the publication. *GSL Special Publ.* 442. online published. doi:10.1144/SP442.31

Bessudnova, Z. A. [Rev.] 2016. A. A. Inostrantsev, *Professor of St.-Petersburg University*. Text prepared by V. V. Arkadiev, comments by V. A. Prozorovsky and I. L. Tikhonov, 2014. Publishing House “Superwave Group Company”. St.-Ptb. 352. (In Russian). *INHIGEO Annual Record*. 48. 63-67.

Conference presentations

Starodubtseva I., Bessudnova Z. and Pukhonto, S. Founding members of the Russian Paleontological Society: the Pavlov’s geological school. (47th session of the Paleontological Society, RAS & 100th anniversary of the Russian Paleontological Society: Problems and prospects of paleontological research. St.-Petersburg).

Bessudnova, Z. A. Women are founding members of the Russian Paleontological Society. Maria Vasilievna Pavlova. (1854-1938). *Ibid*.

Bessudnova, Z. A. *et al.* Historical collections in the expositions of the Vernadsky State Geological Museum of the Russian Academy of Sciences. (3rd All-Russian Scientific Conference on the memory of Prof. Vitaly Ochev. Saratov. September, 2016).

Bessudnova, Z. A. The first century of the Natural History Museum of the Moscow University: traditions of philanthropy, fate of collections, history of science. (Conference dedicated to the 225th anniversary of the Scientific Research Zoological Museum of the Moscow State University. Moscow. October, 2016). (an invited speaker).

Elena L. Minina

Articles in journals & books

Minina, E. L. 2016. Mineralogical collection and its creators. *Priroda*. 1. 88-96. (in Russian)

Conference presentations

Minina, E. L. The mineralogical collection of L.P. Prokhorova (the early 20th century). (International scientific conference to the 300th anniversary of academician A. E. Fersman. Fersman Mineralogical Museum, RAS. Moscow. November, 2016).

Dr. Irena G. Malakhova

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Phone 7-495-651 3049; Cell 7-916-687 1401; mig@ginras.ru

SERBIA

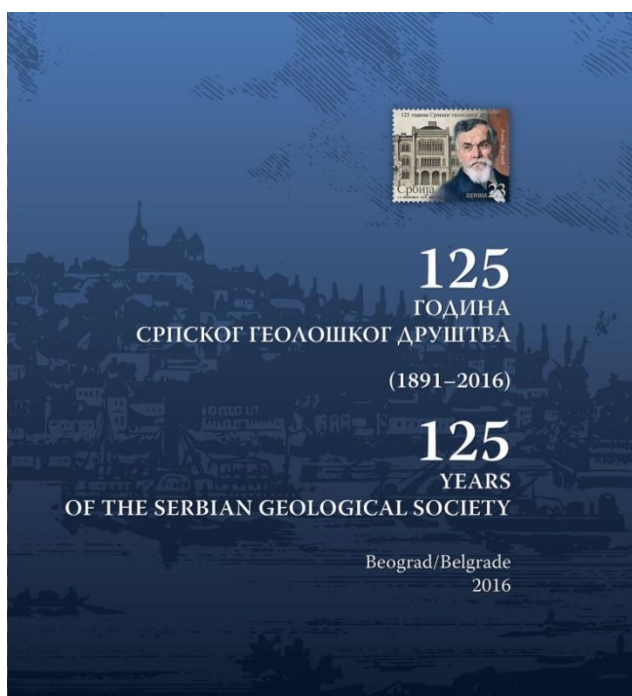
The Serbian National Commission of INHIGEO (hereinafter: INHIGEO SRB) officially work as History of Geology Division (<http://sigsgd.blogspot.com>) of the Serbian Geological Society (SGS) and has the INHIGEO “Affiliated Association” status from the June, 2015.

During the 2016, the following activities by INHIGEO members were performed:

- At the begining of 2016, on the occasion of 125 years of SGS, the Post of Serbia issued a jubilee stamp with the portrait of Jovan Žujović, the founder of Society. Special thanks go to T. Gaudenyi for this realization.
- On the occasion of 125 years of SGS, the Serbian Geological Society was awarded by the President of the Republic of Serbia during the celebration of the Statehood Day. The consolidated proposal was submitted on behalf of the Geological Institute of Serbia, the Academy of Engineering Science of Serbia, and the Faculty of Mining and Geology. Later, the Department of Mathematics, Physics and Geosciences of Serbian Academy of Science and Arts also supported the proposal. On February 15, 2016, the President of Serbia, Mr. Tomislav Nikolić, handed the Sretenje Order of Second Degree to the Serbian Geological Society for "special merits and outstanding achievements and contribution to the development of scientific and technical thought and practice in the field of geological sciences." Besides the President of SGS Prof. Zoran Stevanović, who received the medal, two other past-presidents of SGS Prof. A. Grubić and Prof. Lj. Rundić (INHIGEO members) attended the ceremony.
- The memorial book regarding the 125th Anniversary of the Serbian Geological Society (125 година Српског геолошког друштва) was published during October 2016 (Editors: Lj. Rundić & A. Grubić). It is two-language edition (Serbian Cyrillic and English). Among the five authors, most of them are INHIGEO members (Lj. Rundić, A. Grubić and N. Banjac). The book

consists of XIV chapters. Among them, the first five chapters (Creation Of The Society, The First Period (1891–1921), The Period Between The Two World Wars (1922–1941), The Next Fifty Years Of The Society (1945–1991 and SGS In Its Second Century (1992–2016)) represent the main historic, social, scientific and professional aspects of the SGS long history. Other chapters speak about the founder and honorary president of SGS, the prominent and old members of SGG (e.g. Jovan Cvijić and Milutin Milanković(tch), world-famous geoscientists). Besides, biographies of all the SGS presidents are given as well as the list of foreign members of Society, all the members of SGS official bodies, etc. The book can be downloaded from SGS web site: www.sgd.rs.

Book cover.



- During the celebration of the 125th Anniversary of the Serbian Geological Society, on October 21, 2016 a memorial plaque was unveiled by Prof. A. Grubić, INHIGEO Honorary senior member, in the courtyard of the Rectorate of Belgrade University, where the Society was established and where it had operated until 1952.

- On October 22, 2016, Lj. Rundić hosted the presidents of the Geological Society of Romania (Dr. Antoneta Seghedi), the Bulgarian Geological Society (Dr. Evgenia Tarasova) and the President of Serbian Geological Society (Dr Zoran Stevanovic) in the Memorial room of J. Žujović (Kamenička str. 6, Belgrade) where they were signed memorandum of understanding and cooperation of these societies. Guests are enrolled in the Memorial book (more details at www.sgd.rs).

- Publications & Public Lectures

1. Rundić, Lj. and Grubić, A. (Eds), 2016. 125 godina Srpskog geološkog društva (1891-2016) / 125 years of the Serbian Geological Society. Srpsko geološko društvo / Serbian Geological society, 256 pgs (in Serbian and English). ISBN 978-86-86053-17-6 COBBISS.SR-ID 226330892 (www.sgd.rs)
2. Grubić, A., 2016. Постанак Друштва / Creation of the Society. In: Rundić, Lj. & Grubić, A. (Eds.): 125 godina Srpskog geološkog društva (1891-2016) / 125 years of the Serbian Geological Society). Srpsko geološko društvo / Serbian Geological society, 11-18 (in Serbian and English). ISBN 978-86-86053-17-6 COBBISS.SR-ID 226330892
3. Grubić, A., 2016. Први период (1891–1921) / The first period. In: Rundić, Lj. & Grubić, A. (Eds.): 125 godina Srpskog geološkog društva (1891-2016) / 125 years of the Serbian

- Geological Society). Srpsko geološko društvo / Serbian Geological society, 19-46 (in Serbian and English). ISBN 978-86-86053-17-6 COBBISS.SR-ID 226330892
4. Banjac, N., 2016. Период између два светска рата / The period between the two World Wars (1922–1941). In: Rundić, Lj. & Grubić, A. (Eds.): 125 godina Srpskog geološkog društva (1891-2016) / 125 years of the Serbian Geological Society). Srpsko geološko društvo / Serbian Geological society, 47-80 (in Serbian and English). ISBN 978-86-86053-17-6 COBBISS.SR-ID 226330892
 5. Sudar, M., 2016. Других педесет година Друштва (1945–1991) / The next fifty years of the Society (1945–1991). In: Rundić, Lj. & Grubić, A. (Eds.): 125 godina Srpskog geološkog društva (1891-2016) / 125 years of the Serbian Geological Society). Srpsko geološko društvo / Serbian Geological society, 81-130 (in Serbian and English). ISBN 978-86-86053-17-6 COBBISS.SR-ID 226330892
 6. Rundić, Lj., 2016. SGD u drugom stoleću / SGS in its second century (1992-2016). In: Rundić, Lj. & Grubić, A. (Eds.): 125 godina Srpskog geološkog društva (1891-2016) / 125 years of the Serbian Geological Society). Srpsko geološko društvo / Serbian Geological society, 131-174 (in Serbian and English). ISBN 978-86-86053-17-6 COBBISS.SR-ID 226330892
 7. Smalley, I.J, Holger, K, Gaudenyi, T, Jovanović, M. (2016). Loess encounters of three kinds: Charles Lyell talks about, reads about, and looks at loess. *Geologos* 22 (1), 71–77.

The series of public lectures titled: *Journey through the geological history of Serbia*. Lectures were given by our members:

1. N. Banjac – Istorijska geologija u istorijskom vremenu/Historical Geology in Historical Time (14.04.2016 / Kolarac University, Belgrade)
2. N. Banjac – Srbija na obalama okeana/ Serbia on shores of the ocean (06.05.2016 / Kolarac University, Belgrade)
3. Lj. Rundić – O poslednjem moru u Srbiji/About the last sea in Serbia (13.05.2016 / Kolarac University, Belgrade)

INHIGEO SRB



Ljupko Rundić

SPAIN

INTRODUCTION

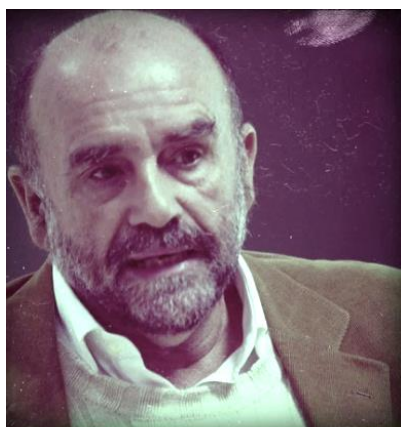
Many diversified activities can be reported from the Spanish INHIGEO group.

The INHIGEO members: Mrs. ISABEL RÁBANO GUTIÉRREZ, President of the Commission of History of Geology, of the Spanish Geological Society (SGE), in collaboration with Mrs. ESTER BOIXEREU VILA and others, has directed an exhibition titled: *Hispaniae Geologica Chartographia*.

The geological representation of Spain through History. (Segovia, October 6. 2015, to March 31, 2016). This exhibition on history of geological maps has been organized by the Spanish Geological Survey (IGME). The exhibition was transferred to the National Research Center on Human Evolution (Burgos, from October 7 to December 16, 2016).

On the occasion of the commemoration of the 60th anniversary of the publication of the work on meteor dating, of CLAIR C. PATTERSON (1956-2016), CÁNDIDO MANUEL GARCÍA CRUZ, INHIGEO member, gave a lecture titled: *The Age of the Earth, a Debate between faith and reason* (February 11, 2016)

On 17 February, the *III International Seminar on Industrial Heritage* of Training Classroom G + I_PA1 (Management and intervention in Architectural and Industrial Heritage) was held at the Industrial Engineering School, Polytechnic University of Madrid. In this Seminar, Mr. OCTAVIO PUCHE RIART, INHIGEO member, lectured: *Prospecting and historical exploitation of Spanish petroleum products and the industrial heritage related to the asphalt of Maeztu and the oil of Ayoluengo*.



Emilio Pedrinaci
Geólogo

Mr. EMILIO PEDRINACI RODRÍGUEZ (December 16, 1949-April 11, 2016), old INHIGEO member, died in Seville on April 11. He was honored, on June 10, at the El Majuelo High School, San Ginés, Seville.

From the 23rd to the 26th of June the *IX International Symposium on the Historical Mining and Metallurgy in SW Europe: Our mining roots*, was held at the Mining and Energy School (Polytechnic University of Madrid). The Congress was organized by Mr. OCTAVIO PUCHE RIART and Mr. MARIANO AYARZAGÜENA, in collaboration with the members of INHIGEO: Mrs. ISABEL RÁBANO, Mr. LUIS FELIPE MAZADIEGO and Mrs. ESTER BOIXEREU, among others. All of them presented various works at the Congress.

From September 6 to 11, the *XIth International Mining History Congress* was held in Linares (Jaén), where Mr. OCTAVIO PUCHE gave the inaugural lecture: *Historical Mining in Spain, from its origins to the Catholic Kings*. Likewise Mr. OCTAVIO PUCHE RIART and Mr. JOSÉ EUGENIO ORTIZ MENÉNDEZ presented a poster on: *The Roman quarries in Spain*.

On September 14, a Symposium on the *History of Geology* took place in the framework of the *IX Geological Congress of Spain*. The meeting was coordinated by Mrs. ISABEL RÁBANO and Mr. PERE SANTANACH, and it had a total of eight communications. One of the communications was that Mrs. ISABEL RÁBANO, and she dealt with the research she is currently carrying out on the figure of Mr. MANUEL FERNÁNDEZ DE CASTRO, Director of the Geological Map Commission of Spain

(Spanish Geological survey) between 1873 and 1895. The Symposium culminated in a guest lecture, by Mrs. ANA CARNEIRO, of New University of Lisbon and INHIGEO member, on *The Portuguese-Spanish relationships in the context of the respective Geological Surveys, in the nineteenth century*.

The Congress *Evolution after evolution*, organized by the Institute of Humanities ÁNGEL AYALA, with the collaboration of the Spanish Society of Paleontology and the Cavanilles University Institute of the University of Valencia, the Spanish Society of Evolutionary Biology and the Catalan Society of History of Science and Technology, took place from 26 to 28 October, at the Colomina Palace (Valencia). The congress emerged as a result of the 50th anniversary of the publication of the book *The Evolution*, which in its day included more than twenty contributions from authors of diverse ideologies and branches of knowledge. As was pointed out in the presentation at the congress, the publication of *Evolution represented, in some way, a milestone on the road to the normalization of studies on the subject in Spain*" and symbolized *"the attempt to overcome -of reluctance that continued to act in later year - of the conflict between religion and science*.

On November 4, 2016, on the occasion of the 240th anniversary of the Museum of Natural Sciences of Madrid, was inaugurated the exhibition: *A collection, a learned creole and a King. A cabinet for an enlightened Monarchy*. The exhibition was coordinated by Mr. JAVIER SÁNCHEZ ALMAZÁN.

On 9th November, the Royal Academy of Exact Sciences, Physical, Chemical and Natural Sciences of Zaragoza awarded the research prize (in Natural Sciences) to Mr. RODOLFO GOZALO GUTIERREZ, INHIGEO member. The award ceremony took place in the Hall of Grades of the Sciences Faculty of the University of Zaragoza

On November 17, on the occasion of the *XVI Madrid Week for Science*, Mr. ESTER BOIXEREU VILA imparted, at the College of Geologists of Madrid, the conference: *Geological mapping, from the past to the future*.

On 18 November, on the occasion of the *XVI Madrid Week for Science*, a meeting was held commemorating the 18 years of the declaration as Site of Cultural Interest the Espartinas saltworks, under the title: *History of salt: From the briquetage to the first rafts of evaporation*. In it Mr. OCTAVIO PUCHE RIART gave the lecture: *Land art and earthworks in mines and salt mines*.

On November 24, at the Hall of the Royal Botanic Gardens of Madrid, Mr. FRANCISCO PELAYO LÓPEZ, INHIGEO member and researcher of the History Institute of the Superior Council of Scientific Research (CSIC), spoke about the fascinating history of human fossils, fossils Human and the origin of the studies of Paleoanthropology and Prehistory, in the conference titled: *The look of Medusa*.

PUBLICATIONS

- ALCALDE FUENTES, M.R.; BARROSO BARCENILLA, F.; SEGURA, M. (2016). Los viajes geológicos de Juan Vilanova y Piera por Europa/The geological travels of Juan Vilanova y Piera across Europe. *Geotemas*, 16 (2), 263-265.
- ANADÓN, P.; TORNÉ, M., FERNÁNDEZ TURIEL, J.L.; DÍAZ, J. (2016). 50 años de historia en el Instituto de Ciencias de la Tierra Jaume Almera/50 years of history at the Institute of Earth Sciences Jaume Almera, *Geotemas*, 16 (2), 243-246.

- AUDIJE GIL, J.; BARROSO BARCENILLA, F.; SEGURA, M. (2016). Recuperación de la Colección Histórica “Bargalló” de la Universidad de Alcalá/Recovering the “Bargalló” Historical Collection of the University of Alcalá. *Geotemas*, 16 (2), 235-238.
- BARRERA MORATE, J.L. (2015). Hace 200 años, el geólogo von Buch acuñó el término “caldera volcánica”. *Tierra y Tecnología*, 46 (1^{er} semestre), 55-59.
- BARRERA MORATE, J.L. (2016). Lucas Fernandez Navarro. El iniciador de la vulcanología en España. En *Ciencia y Técnica entre la Paz y la Guerra. 1714, 1814, 1914*. Ed. SEHCYT. Madrid, 2, 955-962.
- BARRERA MORATE, J.L. (2016). El primer geólogo español que pisó las islas Chafarinas. *Aldaba*, 40
- BOIXEREU VILA, E. (2016). *Evolución histórica de la cartografía geológica en España: desde sus orígenes hasta los mapas de Verneuil y Collomb y Maestre, 1864*. Tesis Doctoral, Universidad Politécnica de Madrid. Director: OCTAVIO PUCHE.
- BOIXEREU VILA, E.; PUCHE RIART, O.; LÓPEZ OLMEDO, F. (2016). Un mapa geológico inédito de la Sierra de Albarracín (C. Ibérica) de Santiago Rodríguez (1824-1876). En *Ciencia y Técnica entre la Paz y la Guerra. 1714, 1814, 1914*. Ed. SEHCYT. Madrid, 2, 1001-1007.
- BOIXEREU VILA, E. (2016). Salvador Reguant (1928-2016). Profesor de grandes inquietudes. En *Agenda Necrológica*, ABC, 29 de febrero de 2016.
- BOIXEREU VILA, E. (2016). La dimensión científica del geólogo Francisco de Luxán. En *Milicia y Geología: Francisco de Luxán*. Eds. Ministerio de Defensa y Ministerio de Economía y Competitividad. Pp. 60-70.
- CHIRIBELLA MARTORELL, J.B.; LIÑÁN, E.; AHLBERG, P.; GOZALO, R. (2016). A blind trilobite with Baltic affinities from Cambrian Series 3 of the Iberian Chains, Spain, and its stratigraphical and palaeobiogeographical significance. *Geologiska föreningen* (Sweden), 137 (3), 175-180.
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- GOZALO, R.; SALAVERT, V.L.; PELAYO, F. (2016). La verdad sobre el falso fraude de las pinturas rupestres de Altamira. *El Mundo* <http://www.elmundo.es/la-aventura-de-la-historia/2016/04/01>.
- LEÓN GARRIDO, M. (2016). La contribución del Nuevo Mundo al nacimiento de las ciencias paleontológicas. *Revista de Humanidades*, 28, 23-48
- LIÑÁN, E.; GÁMEZ VINTA, J.A.; LUIGI PIGOLA, G.; GOZALO, R. (2016). Upper Ovetian trilobites from Spain and their implications for the palaeobiogeography and correlation of the Cambrian Stage 3 in Gondwana. *Tectonophysics*, 681, 46-57.
- LORENZO, S.; GUTIÉRREZ-MARCO, J.C. (2016). Las Reales Minas de Almadén (Ciudad Real) en la historia de la Geología y Paleontología españolas/The Royal Mines of Almadén (Ciudad Real province) in the history of the Spanish Geology and Palaeontology. *Geotemas*, 16 (2), 255-258.
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- MARTÍN ESCORZA, C. (2016). Primeros pasos en el conocimiento del yacimiento de Villarroya, La Rioja, Spain/First steps in the knowledge of the site of Villarroya, La Rioja, Spain. En: *Villarroya, yacimiento clave de la paleontología riojana* (ALBERDI, M.T.; AZANZA, B.; CERVANTES, E.; Coords.). Instituto de Estudios Riojanos, Logroño, 45-66
- MARTÍN ESCORZA, C. (2016). El mapa de Roussel & La Blotière publicado en 1809/The map of Roussel & La Blotière published in 1809. *Kalakorikos*, 21, 243-255

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- RÁBANO GUTIÉRREZ, I. (2016). Francisco de Luxán, Presidente de la Comisión del Mapa Geológico. En *Milicia y Geología: Francisco de Luxán*. Eds. Ministerio de Defensa y Ministerio de Economía y Competitividad. Pp. 247-250.
- RÁBANO GUTIÉRREZ, I. (2016). Las investigaciones geológicas y mineras de Manuel Fernández de Castro en Cuba y Santo Domingo (1859-1869)/Geological and mining investigations by Manuel Fernández de Castro at Cuba and Santo Domingo (1859-1869). *Geotemas*, 16 (2), 247-250.
- RÁBANO, I. (2016). Early history of the Spanish Geological Survey. The Commission for the Geological Map of Spain (1849-1910). En Mayer, W., Clary, R. M., Azuela, L. F., Mota, T. S. & Wolkowicz, S. (eds). *History of Geoscience: Celebrating 50 Years of INHIGEO*. Geological Society, London, Special Publications, 442, <http://doi.org/10.1144/SP442.3>
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- SÁINZ VARELA, J. A.; BARRERA MORATE, J. L. (2015) ¿Quiénes fueron los promotores de la Compañía Española de las Minas del Rif? En *Ciencia y Técnica entre la Paz y la Guerra. 1714, 1814, 1914*. Ed. SEHCYT. Madrid, 2, 971-978.
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- SEQUEIROS, L. y CASTELLANO, J. (2016) Asociaciones de Amigos de Pierre Teilhard de Chardin en España. *Naturaleza Aragonesa*, 32, 65-67.
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- SEQUEIROS, L. (2016). Teilhard de Chardin y los nuevos paradigmas geológicos. En el centenario de Eduard Suess. *Pensamiento*, serie especial, 7, 1141-1153.
- SEQUEIROS, L. (2016). “La prehistoria y sus progresos” (1913). Teilhard de Chardin, un siglo más tarde. *Pensamiento*, serie especial, 7, 1153-1164.

ESTER BOIXEREU-VILA and OCTAVIO PUCHE-RIART

SWITZERLAND

Dominik Letsch: Having been concerned with many other duties, my only real contribution to the history of Earth Sciences during 2016 has been a chapter for the recently published Special Publication celebrating 50 years of INHIGEO. In this little contribution entitled “Swiss contributions to mid-nineteenth century tectonic research: a step backwards or the prologue to the nappe tectonics revolution?”, I ask this somewhat provoking question, given the rather bad reputation of some Swiss geologists of this time period in the historiography of our science. By analyzing the situation of Alpine tectonics around 1850, I propose that the work of mainly two influential geologists (Albert Heim and Arnold Escher) laid the very foundation of the later nappe tectonics revolution. dlletsch@ethz.ch.

TURKEY

Professor A. M. Celâl Sengör

Published papers:

Historical Geological Maps of Istanbul: *Geohistorische Blätter*, v.27, No.1/2, p. 1-23

What is the Use of the History of Geology to a Practicing Geologist? The Propaedeutical Case of Stratigraphy: *Journal of Geology*, v. 124, p. 643-698.

Two papers have been submitted: one to the *Earth Sciences History* on ideas concerning extensional structures; and the other a precursor to the idea of transform faulting to be published in a book on Transform Faults and Fracture Zones (Elsevier, edited by João Duarte).

Contributed articles include: “Eduard Suess, Carl Ritter, Julius Klaproth and Paleogeographic Maps” to the volume on the 19th century of the History of Cartography project. The volume is supposed to come out in 2022.

The Geology Department of the Faculty of Mines of the Istanbul Technical University has added to the curriculum an elective course entitled “Geology in its historical and philosophical development” which Professor Sengör will teach.

Also in preparation: (with Johannes Seidl of the University of Vienna Archive) a biography of Eduard Suess, to be published in 2109 by Springer. And to be submitted in 2017 for publication by the Geological Society of America, *History of Geology in Turkey: A Scholar's Aid*.

UNITED KINGDOM

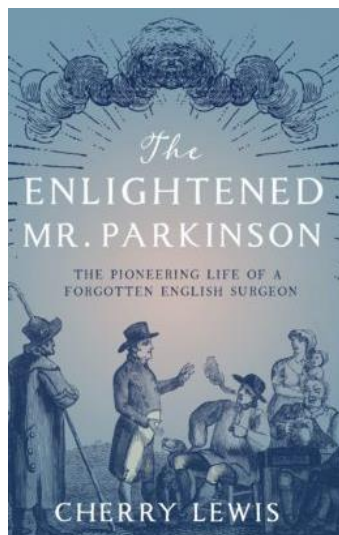
We regret to report that INHIGEO Member Dr **Trevor Ford** passed away in Leicester on 22 February 2017. His daughter Jan Baxter tells us that he had congestive heart failure and was taken ill early that morning & died peacefully that afternoon. His obituary will appear in the Annual Record 2018 (events of 2017).

A conference of possible interest is *The Old Red: Hugh Miller's Geological Legacy* in his native burgh of Cromarty on 9-10 September 2017:

(<http://www.thefriendsofhughmiller.org.uk/index.asp?pageid=661915>).

Richard Howarth – “I was honoured to be awarded the Sue Tyler Friedman Medal of the Geological Society of London for contributions to the history of geology at their AGM in 2016. I am currently completing research to establish the identity (among several competing alternatives of the same name who have been suggested in the literature) of the American mathematician, Robert J. Adcock (now definitely 1826-1895). I became interested in him while working on a book *Dictionary of Mathematical Geosciences with historical notes*, which Springer will be publishing later this year.”

Cherry Lewis – has published a biography of James Parkinson (1755-1824), of Parkinson’s disease, who during his lifetime was famous for his publications on fossils such as *Organic Remains of a Former World*.



Also she has published articles for *New Scientist*, *Geoscientist*, and *Daily Express*, and *Open Democracy* website, on James Parkinson and his various activities. She was also awarded the Scott-Garrett prize for best lecture of 2015, and the British Association of Local History ‘best article’ prize, in all local history journals across the UK in 2016, for her paper ‘David Mushet and his contribution to the “map that changed the world”’. She will also be the field trip convener for the forthcoming meeting ‘The history of geology and mining in the Forest of Dean’ (May 2017).

Publications

- Lewis, C. L. E. 2016. David Mushet and his contribution to the ‘map that changed the world.’ *New Regard, the Journal of the Forest of Dean Local History Society*, 30, 60-73.
- Lewis, C. L. E. 2016. David Mushet, John Farey and William Smith: geologising in the Forest of Dean. *Earth Sciences History*, 35/1, 167-196.
- Lewis, C. L. E. 2017. *The Enlightened Mr Parkinson*. Icon Books, London.
<http://www.iconbooks.com/ib-title/the-enlightened-mr-parkinson/>

John Mather – reports that a paper given at the William Smith Anniversary Conference, held in London in 2015 was published in *Earth Science History* and another on William George Maton was

finally available in printed form in a Geological Society of London Special Publication. Maton's mineralogical map of south-west England proceeded Smith's map by some 18 years.

Work on historic spas and mineral springs resulted in articles looking at the relationship between spas and holy wells and on the purging waters of Shooter's Hill, near Woolwich to the east of London. The latter was one of several saline springs in the capital, characterized by high concentrations of Epsom Salts. The waters were derived from sandy horizons in the Eocene London Clay Formation. The mineralogy of the clays suggests that pyrite oxidation, within the weathered zone, formed acid solutions, leading to the dissolution of carbonates, particularly dolomite. Varying concentrations of dolomite account for the wide range of Mg concentrations in London Clay groundwaters and the distribution of the historic purging wells.

Presentations were given at a commemorative meeting to celebrate the life and work of Robert (Bob) Symes (1939-2016), a prominent mineralogist and member of the UK's History of Geology Group and at a meeting on *Military Aspects of Engineering Geology* which encompassed both historic and recent experiences.

Publications

Mather, J. D. 2016. Geology and landscape in SW England in the late eighteenth century, as recorded in the travel journals of William George Maton (1774-1840). In: Hose, T. A. (ed.) *Appreciating Physical Landscapes: Three Hundred Years of Geotourism. Geological Society, London, Special Publications*, 417, 171-185. First published online November 13, 2014.

Mather, J. D. 2016. William Smith, the natural order of strata and the search for underground water supplies. *Earth Science History*, 35, 124-144.

Mather, J. D. 2016. Wonder Working Waters. *Geoscientist*, 26 (8), 10-15.

Mather, J. D. and Duffin, C. J. 2016. Nathaniel Hodges and the purging wells of Shooter's Hill. In: Duffin, C. J., Gardner-Thorpe, C. & Moody, R. T. J. (eds.) 2016. *Geology and Medicine: Historical Connections. Geological Society, London, Special Publications*, 452; <https://doi.org/10.1144/SP452.4>.

Martin Rudwick - has three publications to report, all (despite appearances) relevant to the history of geology:

Rudwick, M. J. S. 2016. Constructive controversy and the growth of knowledge. In: Alexander Blum, Kostas Gavroglu, Christian Joas and Jürgen Renn (eds.), *Shifting Paradigms: Thomas S. Kuhn and the History of Science*. Edition Open Access, Max Planck Institute for the History of Science, Proceedings 8, 181-189, 2 figs.

Rudwick, M. J. S. 2016. Insiders and outsiders: INHIGEO seen from the sidelines. In W. Mayer, R. M. Clary, L. F. Azuela, T. S. Mota, and S. Wołkowicz.(eds.), *History of geoscience: celebrating 50 years of INHIGEO. Geological Society of London, Special Paper 442* [<http://doi.org/10.1144/SP442.25>].

Rudwick, M. J. S. 2016. Two careers across two cultures. In Frank James (ed.), *Some significances of the Two Cultures debate. Interdisciplinary Science Reviews*, 41, 268-277.

Ralph O'Connor and Michael Taylor – have a new edition of the first, 1841, edition of Hugh Miller's *The Old Red Sandstone* being considered by a potential publisher. This includes a critical apparatus of explanatory notes and an introductory essay analysing the book's surprisingly complex genesis and

literary structure, and its significance. They will be lecturing on it at a conference on Miller in his native burgh of Cromarty on 9-10 September 2017:
(<http://www.thefriendsofhughmiller.org.uk/index.asp?pageid=661915>).

Michael Taylor – is completing a study of the history of Hugh Miller's fossil collections and its museums with Lyall Anderson. He has also been working on the 19th century Liassic marine reptiles of south-west England with particular reference to their dispersal to museums and collectors, and the use of plaster casts to replicate them for other museums, sometimes on the other side of the Atlantic. This has included studies of the virtually unknown fossil locality of Banwell in Somerset, and a hitherto unknown fossil collector, Henry Ball (c. 1783-?1856) of Watchet, Somerset.

Publications

- Taylor, M. A. 2016. The Reverend David Williams F.G.S. (1792-1850) of Bleadon, and his collection of ichthyosaurs and a plesiosaur from the Lower Lias of Somerset. *The Geological Curator*, 10, 263-267.
- Taylor, M. A. 2016. A lost ichthyosaur from the Lower Lias of Somerset in the collection of the Rev. David Williams F.G.S. (1792-1850), and figured in William Buckland's Bridgewater Treatise of 1836. *The Geological Curator*, 10, 267-269.
- Taylor, M. A. 2016. 19th Century plaster casts of Lower Jurassic ichthyosaurs and plesiosaurs in the Bristol Institution for the Advancement of Science, Literature and the Arts, and the Academy of Natural Sciences, Philadelphia. *The Geological Curator*, 10, 277-281.
- Taylor, M. A. 2017. A memoir of Hugh Miller (1802-1856) attributed to his son Hugh Miller F. G. S. (1850-1896). *Archives of Natural History*, 44.1, 103-109. DOI: 10.3366/anh.2017.0417
- Taylor, M. A. and Anderson, L. I. 2016. The two birthdays (and baptisms) of Charles W. Peach (1800-1886). *The Geological Curator*, 10, 235-236.
- Taylor, M. A. and Anderson, L. I. 2016. Tennyson and the geologists part 2: saurians and the Isle of Wight. *Tennyson Research Bulletin*, 10.5, 415-430.
- Taylor, M. A. and Clark, R.D. 2017. Ichthyosaurs from the Lower Lias (Lower Jurassic) of Banwell, Somerset. *Geoscience in South-West England*, 14, 59-71.
- Taylor, M. A. and Evans, M. 2016. A plesiosaur from the Lower Lias of Watchet, Somerset, in the collection of the Reverend David Williams F.G.S. (1792-1850), and its casts. *The Geological Curator*, 10, 269-272.
- Taylor, M. A. and Torrens, H. S. 2016. Henry Ball (c. 1783-?1856), fossil collector of Watchet, Somerset, and the forced sale of his collection in 1841 to Robert H.W. Bartlett (c. 1814-1887). *The Geological Curator*, 10, 272-277.
- Taylor, M. A. and Torrens, H. S. 2016. A lost ichthyosaur from the Lower Lias figured in William Buckland's Bridgewater Treatise of 1836, and possibly owned by the Geological Society of London or Viscount Cole F.G.S., later Earl of Enniskillen (1807-1886). *The Geological Curator*, 10, 281-282.

Hugh Torrens – has the following publications to report:

Rosenbaum, M. S. and Torrens, H. S. 2017. "A farmer": an early scientific explanation of continental drift. 4pp draft, comments welcome. The article, with the original book by "A farmer", is available from:

<http://www.shropshiregeology.org.uk/SGSpublications/Table%20of%20Contents%20for%20Current%20Proceedings.htm> .

The anonymous review in *British Critic* (1804) indicated that the book by "A farmer" included a detailed description of Whitcliffe, the common land facing Ludlow and site of quarrying for building stone since medieval times. After many years of searching, a single copy has been located, in Edinburgh. Not only does the original indicates an extant interest in the geology of South Shropshire by the beginning of the 19th Century, some 30 years before Murchison's first visit, but also provides an early scientific explanation of continental drift.

- Taylor, M. A. and Torrens, H. S. 2016. Henry Ball (c. 1783-?1856), fossil collector of Watchet, Somerset, and the forced sale of his collection in 1841 to Robert H.W. Bartlett (c. 1814-1887). *The Geological Curator*, 10, 272-277.
- Taylor, M. A. and Torrens, H. S. 2016. A lost ichthyosaur from the Lower Lias figured in William Buckland's Bridgewater Treatise of 1836, and possibly owned by the Geological Society of London or Viscount Cole F.G.S., later Earl of Enniskillen (1807-1886). *The Geological Curator*, 10, 281-282.
- Torrens, H. S. 2016. William Smith (1769-1839): His struggles as a consultant, in both geology and engineering, to simultaneously earn a living and finance his scientific projects, to 1820. *Earth Sciences History*, 35, 1-46.
- Torrens, H. S. 2016. Thomas Beddoes and natural history, especially geology, pp. 79-115; *In The Democratic Vision of Thomas Beddoes: Science, Medicine and Reform*, by T. Levere, L. Stewart and H. S. Torrens, Taylor & Francis, London.
- Torrens, H. S. 2016. Appendix 1. The mystery of Dr. John Edmonds Stock, Beddoes' first biographer, pp. 238-248; *In: The Democratic Vision of Thomas Beddoes: Science, Medicine and Reform*, by T. Levere, L. Stewart and H. S. Torrens, Taylor & Francis, London.
- Wachelder, J. and Torrens, H. S. 2016. Models, toys, and Beddoes' struggle for educational reform, 1790-1800. Pp. 206-237 in *The Democratic Vision of Thomas Beddoes: Science, Medicine and Reform*, by T. Levere, L. Stewart and H. S. Torrens, Taylor & Francis, London.
- Williams, R. B. and Torrens, H. S. 2016. *A history of the fossil fruits and seeds of the London Clay* (1840): a historical and bibliographical account of James Scott Bowerbank's unfinished monograph. *Archives of Natural History*, 43, 255-277.
- Williams, R. B. and Torrens, H. S. 2016. No. 3 Highbury Grove: the private geological museum of James Scott Bowerbank (1797-1877). *Archives of Natural History*, 43, 278-284.

Chris Duffin kindly sends us the news of the **History of Geology Group** for 2015-2016:

"This has been an encouraging year for the History of Geology Group with a number of interesting and well-attended meetings, including a 'behind the scenes' visit to The Natural History Museum. At the beginning of the year we welcomed several new Committee members – Sabina Michnowicz, Stephen Cribb and Geoff Walton. Tom Sharpe was appointed Chair and Chris Duffin became Secretary. The HOGG website and associated social media is in the process of receiving a much-needed overhaul, thanks to the groundwork provided by Cherry Lewis and the ongoing lead of Sabina Michnowicz.

The Group continues to 'punch above its weight' with regard to its output of publications. All 200 copies of the limited facsimile edition of the *Memoir to the 1815 Map* of William Smith, edited by Cherry Lewis with contributions from Tom Sharpe and Hugh Torrens were quickly reserved, and a companion volume on the Subscribers to Smith's 1815 Map is in preparation. Keeping with the William Smith theme, papers from the HOGG meeting were published in a special issue of *Earth Science*

History. Furthermore, *Appreciating Physical Landscapes*, a Special Publication of the Geological Society edited by Tom Hose was published in January 2016, and plans are well advanced for publication of the papers presented at the November 2016 meeting on *Military Aspects of Engineering Geology, Past and Present*. The second volume concerning historical connections between geology and medicine is in press, also as a Special Publication.

The Committee continues to plan for the future, with a Field Meeting in the Forest of Dean taking place in May 2017, a meeting at Lyme Regis in September, and a Joint Meeting with the Royal Society of Arts in November. A meeting honouring Bob Symes, a supporter of HOGG and former Committee member took place in December 2016.”

Michael Taylor mat22@leicester.ac.uk

UNITED STATES OF AMERICA

Kenneth R. Aalto (Professor Emeritus at Humboldt State University, Arcata, CA) — presented the following paper at the 2016 International Geological Congress meeting in Cape Town: Hermann Karsten, Pioneer of geologic mapping in northwestern South America.

Michele L. Aldrich — passed away on 23 November 2016 after a brief illness. Her colleague Alan Leviton describes her as “a bright star in so many of our lives.” Michele leaves behind her husband of 51 years, Mark Aldrich, and family, friends, and colleagues too numerous to mention in this limited space. An éloge is scheduled to appear in the forthcoming issue of *Earth Sciences History*, vol. 36, no. 1 (see obituary elsewhere in this volume). Michele Aldrich and Alan E. Leviton presented two papers at the GSA 2016 meeting in Denver:

1. California Academy of Sciences: A Museum Center for Public Outreach and Basic Research in the Geosciences, 1907-2000, constituting a brief historical overview of a natural history museum's activities in the Earth Sciences during a lengthy period of transitions, including recovery from devastating regional earthquakes to changes in perspectives relating to public outreach and education, in the session Museums at the Forefront of the History of Science (GSA *Abstracts with Program* (Denver), 48(7):41-5)];
2. Mignon Talbot (1869-1950) Geologist, in the session Unearthing the History of Women in Geology (GSA *Abstracts with Program* (Denver), 48(7): [98-6]).

The updated fourth edition of their essay titled AAAS Pacific Division: History and Portrait Gallery of its Officers (1913-2015), 4th ed., appeared in late 2015 in the Proceedings of the AAAS Pacific Division, 34(1):1-19.

Victor R. Baker — continued work on his long-standing project to generate a book dealing with the history of investigations into the origin of slaty cleavage. Vic provided some historical background on geological studies of Lake Bonneville in the following: Baker, V. R., 2016, Foreword: Letting Earth tell its story, *In* Oviatt, J., and Schroder, J., editors, *Lake Bonneville: A Scientific Update*: Elsevier, p. xxi – xxiv.

He also produced a historical perspective on studies of the Channeled Scabland region in eastern Washington as part of the following guidebook article for the 2016 Geological Society of America Rocky Mountain Section Meeting in Moscow, Idaho: Baker, V. R., Bjornstad, B., Gaylord, D., Smith, G., Meyer, S., Alho, P., Breckenridge, R., Sweeney, M. R., and Zreda, M., 2016, Pleistocene megaflood landscapes of the Channeled Scabland; *In* Lewis, R. S., and Schmidt, K. L., eds., *Exploring the Geology of the Inland Northwest: Geological Society of America Field Guide 41*, Boulder, Colorado, p. 1-73.

Kennard B. Bork - rotated off of the INHIGEO Executive Board after a dozen years of enjoyable service. The late-summer-2016 appearance of *Early Geological Maps of Europe: Central Europe 1750 to 1840* (Springer, 2016) was a noteworthy event. Ken had worked with editors Kozak, Cejchanova, Kukal, and Posmourny on English phrasing of individual articles and wrote the Introduction to the book. INHIGEO members will profit from perusing the informative text and superb maps, in full color. Past-Secretaries-General Bork and Cooper contributed to the upcoming Geological Society of London publication on the history of INHIGEO by discussing the Commission's evolution from 1996 to 2016.

Jody Bourgeois — served as Chair of the History and Philosophy of Geology Division of the Geological Society of America. At the GSA Annual Meeting, she convened, with Kathy Lohff and Renee Clary, a session titled “Unearthing the History of Women in Geosciences.”

<https://gsa.confex.com/gsa/2016AM/webprogram/Session40153.html>

Her own presentation included a tribute to Michele Aldrich, a pioneer in writing the history of women in geosciences, and who presented in the session on the topic of Mignon Talbot; we were sad to learn of Michele’s passing not long after GSA. One of Jody’s current goals is to increase the representation of historical women geoscientists in online resources available for educators and students.

William R. Brice made several invited presentations related to his continuing work in the history of the oil and gas industry and the history of geology:

BRICE, William R., 2016d, The early oil industry and the first “Fracking”: Northern Alleghenies Geological Society, Ebensburg, Pennsylvania, October 25 (Invited Speaker).

_____, 2016c. Katherine Van Winkle Palmer (1895-1982); The lady and her fossils: Geological Society of America Annual Meeting, Baltimore, Maryland, *2015 Abstracts with Programs*, v. 48, no. 7, doi: 10.1130/abs/2016AM-279326 (Invited Speaker).

_____, 2016b, Patrick C. Boyle (1846-1920) and John A. Mather (1829-1915); Chroniclers of the early Pennsylvania oil industry by word and image: Annual Meeting, MENSA, Pittsburgh, Pennsylvania, September 3 (Invited Speaker).

_____, 2016a, The early oil industry and the first “Fracking”: Northern Appalachian Landman’s Association Conference, Pittsburgh, Pennsylvania, March 17 (Invited Speaker).

Brice continues as 2nd Vice-President of the Petroleum History Institute, and an Associate Editor for the PHI journal, *Oil-Industry History*, and *Earth Sciences History*, the journal of the History of Earth Sciences Society (HESS). He was the Symposium Coordinator for the annual meeting of the Petroleum History Institute held in Casper, Wyoming, July 28-30.

BRICE, William R., SILVERMAN, Matt, SPERR, Tom, and CAMPBELL, Cat, (Eds), 2016, *Program, Abstracts and Field Trip Guide: Petroleum History Institute Annual Oil History Symposium & Field Trip*, Casper, Wyoming, July 28-30, 56 p.

Also in 2015, but not reported, Brice was awarded the Petroleum History Institute's *Samuel T. Pees Keeper of the Flame Award* for his work in the history of the oil and gas industry. In 2016, he was elected Editor for INHIGEO.

Paul D. Brinkman – is currently serving on the editorial board of the history of science journal *Endeavour*, on an editorial panel for the journal *Archives of Natural History*, and he is the secretary-elect of the History of Earth Sciences Society. Paul continues to work on a multitude of projects. He has two papers in press, one on the paleontological reconstructions of the Field Museum's John Conrad Hansen, and another on the history of the Kansas University paleontological expedition of 1894. He is also working on a book-length history of the Captain Marshall Field Paleontological Expedition to Argentina and Bolivia, 1922-1927.

Publications

“On the objectives and results of the Handel T. Martin paleontological expedition (1903-04) to the Santa Cruz Formation in southern Patagonia.” (Co-authored with S. F. Vizcaíno and R. F. Kay.) *Revista del Museo de La Plata* 1: 316-333.

“Edward Drinker Cope's final feud.” *Archives of Natural History* 43(2): 305-320. 2016. “Paleontology.” *In: A Companion to the History of American Science*. New York: Wiley-Blackwell, pp. 227-240.

Renee M. Clary —served on the Geological Society of America's History and Philosophy of Geology Division Management Board as Past Chair. At the GSA 2016 annual meeting in Denver, she co-convened two topical sessions: “Unearthing the History of Women in the Geosciences” (with Joanne Bourgeois and Kathleen Lohff), and “Museums at the Forefront of the History and Philosophy of Geology” (with Gary Rosenberg). The latter topical session has been developed into a special volume to be published by the Geological Society of America. She serves as co-editor of the volume with Gary Rosenberg. Within GSA, she continues to serve as the Webmaster for the History and Philosophy of Geology Division Connected Community website, and is a permanent Joint Technical Program Committee representative for the Division. She also serves on the Nominating Committee within the History of Earth Sciences Society, and as an associate editor on the special INHIGEO 50th anniversary volume, published by the Geological Society of London. She is an editor for the Rock Stars series published within *GSA Today*. Within Mississippi, Renee served on the task force of the Science Standards revision, which has thus far managed to incorporate history of science in science standards (in spite of its absence in the U.S. Next Generation Science Standards). For the GSA 2017 Seattle meeting, Renee is a co-convenor with Dorothy Sack of a topical session on the “Great Maps in Geology.”

In research, two of Renee's 2016 publications have relevance to the History of Geology and are part of the 50th anniversary INHIGEO volume. The manuscripts are published online within the Geological Society of London's Lyell Collection:

- Clary, R.M. (2016). Controversies in the history of geology and their educational importance for facilitating understanding of the nature of science. In W. Mayer, R. Clary, T. Salome, & W. Stanislaw (eds.) *History of Geoscience: Celebrating 50 Years of INHIGEO*. London: Geological Society of London. SP442.36.
- Clary, R.M., & Sharpe, T. (2016). The farthest end of the Earth: The role of geological research in Antarctic exploration, 1895 – 1922. In W. Mayer, R. Clary, T. Salome, & W. Stanislaw (eds.) *History of Geoscience: Celebrating 50 Years of INHIGEO*. London: Geological Society of London. SP442.28.

In 2016, three of Renee's research presentations, listed below, were directly relevant to the history of geology. In Cape Town, South Africa, she co-authored a presentation within INHIGEO/IGC with Tom Sharpe on the history of early Antarctic fossil discoveries in support of the supercontinent Gondwana. She also participated in the two history of geology topical sessions at the Geological Society of America in Denver, CO with papers on the fossil collection and stratigraphic analyses by early woman geologist Etheldred Benett, and the history of Mississippi State University's Dunn-Seiler Museum:

- Clary, R. M. (2016, August). A history of early Antarctic fossils discoveries in support of the supercontinent Gondwana. Research paper presented at the 35th International Geological Congress, Cape Town, South Africa.
- Clary, R. M. (2016 September). Etheldred Benett: The first lady geologist was a paleontologist and a stratigrapher. Research paper presented at the Geological Society of America Annual Meeting, Denver, CO.
- Clary, R. M. & Moe-Hoffman, A. (2016 September). Small museum, large impact: The role of the Dunn-Seiler Museum's university exhibitions in promoting public geoliteracy. Research paper presented at the Geological Society of America Annual Meeting, Denver, CO.

Renee was also named the Mississippi Academy of Sciences 2016 Science Teacher of the Year for outstanding contributions in the state.

(<http://www.msstate.edu/newsroom/article/2016/02/ren%C3%A9-clary-msu-selected-top-state-teaching-honor/>)

John A. Diemer — continued to serve as editor of *Earth Sciences History*, in 2016 editing two numbers (v. 35, numbers 1 and 2):

- Diemer, J. A. 2016. *Earth Sciences History*. Volume 35, Number 2, pp. 237–406. Charlotte: History of the Earth Sciences Society. Editor's Introduction, pp. iii–iv.
- Diemer, J. A. 2016. *Earth Sciences History*. Volume 35, Number 1, pp. 1-236. Charlotte: History of the Earth Sciences Society. Editor's Introduction to the 'William Smith special issue', pp. iii–iv.

The first of these issues (35/1) was a special issue celebrating the 200th anniversary of the publication of William Smith geologic map of England, Wales and part of Scotland. That issue contained papers presented at the 2015 William Smith Meeting at the Geological Society of London from 23–24 April 2015, which was organized by the History of Geology Group (HOGG).

John also published a paper in the 50th anniversary volume for INHIGEO:

Diemer, J. 2016. Murchison in Sweden: consolidating Lower Silurian stratigraphy in the summer of 1844.

In: History of Geoscience: Celebrating 50 Years of INHIGEO, edited by W. Mayer, R. M. Clary, L. F. Azuela, T. S. Mota, and S. Wolkowicz. Geological Society, London, *Special Publications*, 442: 353–366.

John also participated in the INHIGEO meeting held in conjunction with the IGC in Cape Town, South Africa. He presented the following paper at the Cape Town meeting:

Diemer, J. A. 2016. Verifying the Silurian: Murchison's 1845 field campaign in Sweden. 35th International Geological Congress, Cape Town, South Africa, 27 August – 2 September, 2016.

Robert H. Dott — published a paper (with coauthor Ian Dalziel) titled “Darwin the geologist in southern South America” in *Earth Sciences History*, v. 35, no. 2, p. 303-345.

Gregory Good — was glad to be able to participate so fully in the INHIGEO meeting in Cape Town. He contributed a paper on John Herschel's geological work in the Cape region in the 1830s and an invited paper on the long story of the interaction of geologists and physical scientists. Greg also led the INHIGEO field trip, following the geological research of John Herschel and Charles Darwin to half a dozen sites. That field trip report appears elsewhere in this volume.

Sandra Herbert — continues her research on the reception of evolutionary ideas in the U.S. In October, she gave a paper "Evolution Comes to the Castle" at the National Museum of Natural History (Smithsonian Institution). Sandra encourages INHIGEO members to also join the History of Earth Sciences Society (www.historyearthscience.org).

Alan E. Leviton — with colleague Michele Aldrich presented two papers at the GSA 2016 meeting in Denver:

(1) California Academy of Sciences: A Museum Center for Public Outreach and Basic Research in the Geosciences, 1907-2000, constituting a brief historical overview of a natural history museum's activities in the Earth Sciences during a lengthy period of transitions, including recovery from devastating regional earthquakes to changes in perspectives relating to public outreach and education, in the session Museums at the Forefront of the History of Science (GSA Abstracts with Program (Denver), 48(7):41-51);

(2) Mignon Talbot (1869-1950) Geologist, in the session Unearthing the History of Women in Geology (GSA Abstracts with Program (Denver), 48(7):[98-6]). The updated fourth edition of their essay titled AAAS Pacific Division: History and Portrait Gallery of its Officers (1913-2015), 4th ed., appeared in late 2015 in the Proceedings of the AAAS Pacific Division, 34(1):1-19.

Cliff Nelson — continues to prepare for publication, by an academic or commercial press, his narrative analysis of the successes and failures in the reform of federally sponsored mapping and science, especially during the administration of the U.S. President Rutherford Hayes (1877-1881). He informs interested INHIGEO members that some 300 paper copies of Volume 4 (1939-1961) of the history of the U.S. Geological Survey were printed by July 20, 2016. The 704-page book was originally issued

online by the USGS in 2015; it is freely available at <https://dx.doi.org/10.3133/70142267>. Printed copies are for sale (US\$22 per copy) from:

[https://store.usgs.gov/b2c_usgs/b2c/start/\(xcm=43standardpitrex_&care=0000000035&citem=00000003500000000086\).do](https://store.usgs.gov/b2c_usgs/b2c/start/(xcm=43standardpitrex_&care=0000000035&citem=00000003500000000086).do).

Sally Newcomb — 2016 was a good year for Sally Newcomb. She completed the paper titled “Progression of instrument use and practice in mineralogy and petrology, 1750-1950” for the volume, *History of Geoscience: Celebrating 50 Years of INHIGEO* in the Geological Society of London *Special Publications* series, Vol. 442. At the Denver meeting of the Geological Society of America, September 25-28th, 2016, she gave a light-hearted oral paper “The Philadelphia Phlash: Museums for Everyone,” the *Phlash* being the shuttle bus that easily transports people between venues in that city. That paper is being expanded into a serious look at the resources for historian of geology in Philadelphia titled “The museums of Philadelphia”, to be included in the Geological Society of America volume, *Museums at the Forefront of the History and Philosophy of Geology*. The first paper has been online for several months, while the volume will be published in the next several months. The second paper will be online as soon as the reviewing process is complete, with the volume published in Feb. 2018. Sally enjoys seeing Greg Good while attending the Trimble lectures that he organizes at the Center for the History of Physics at the American Institute of Physics in College Park MD.

John A. Norris — had three publications appear in 2016. The first was an article entitled “Agricola’s *Bermannus*: A Dialogue of Mineralogical Humanism and Empiricism in the Mines of Jáchymov,” in the book *Latin Alchemical Texts of Czech Provenance*. This book comprised the proceedings of a small conference that occurred in October 2014 at the Centre for Renaissance Texts of Palacký University in Olomouc, Czech Republic. John’s article discusses the significance of Georgius Agricola’s (1494-1555) book *Bermannus* (1530) and considers the knowledge of pyrites as an example of his mediation between the study of mineralogical information from classical texts and the empirical knowledge of his contemporaries in the mining industry. The article communicates some of the information John presented at the INHIGEO conference at Pacific Grove, California in 2014.

John reviewed the book *The Limits of Matter: Chemistry, Mining, & Enlightenment* by Hjalmar Fors (University of Chicago Press, 2015) in Vol. 35, No. 1 of *Earth Sciences History*. The book is excellent, and John heartily recommends it to anyone interested in eighteenth-century geology, mineralogy, or mining.

A chapter by John entitled “Mining and Metallogenesis in Bohemia during the Sixteenth Century” was published at the very end of 2016 in the English edition of the book *Alchemy and Rudolf II* (Aretfactum, 2016). This chapter originally appeared in the original Czech edition of the book (2011). John offers to send a pdf of this chapter, as well as his article on Agricola (mentioned above), to anyone who is interested. Contact him at <norrisjohn1@gmail.com>.

John received a travel grant for studying at the History of Science Special Collections at the University of Oklahoma. As many know, these collections house a great variety of early-modern geological, mineralogical, mining, alchemical, and medical books. For two weeks in April, he collected information on vitriol (basically melanterite and chalcantite) from sixteenth- through eighteenth-century sources, toward completing a project on the range of ideas about this mineral substance throughout that time

range. He is currently expanding his studies into mineral-forming theories of the eighteenth century, focusing mainly on pre-Werner/Hutton ideas concerning the generation of metallic ores and granite.

Antony Orme (UCLA) was elected an Honorary Fellow of the British Society for Geomorphology in 2016 for research and services to the advancement of the field over his career. His paper on "Dynamic geomorphology: historical convergence towards modern practice" was published on-line by The Geological Society of London in 2016 and will appear in print with the forthcoming edited GSL volume on *History of Geoscience: Celebrating 50 Years of INHIGEO* scheduled to appear in May 2017. Among related activities, he continues to evaluate the scientific and artistic merits of the Pacific Railroad Surveys of the western United States in the 1850s, and the scientific growth of physical geography (earth science, biogeography, climatology and hydrology) over the past 500 years.

Steve Rowland — joined the INHIGEO Executive Board, taking over from Greg Good the role of Vice President for North America. He continues as an associate editor of *Earth Sciences History*, published by the History of Earth Sciences Society.

Dorothy Sack – In 2016, I presented a history of geomorphology paper at the GSA annual meeting in Denver, and served that society's History and Philosophy of Geology Division as first vice chair. I continued in the position of chair of the Association of American Geographer's (AAG) History of Geography Specialty Group and completed my three-year term on the AAG's Archive and Association History Committee. I organized three paper sessions on the history of geography for the 2016 AAG annual meeting in San Francisco.

Kenneth Taylor — There are days, Ken says, when he feels almost like a new man. This might have a basis in recent surgeries and some new parts, such as the matching pair of titanium shoulder joints. It was on account of the second of these that he was unable to attend INHIGEO's 2016 conference, held with the 35th IGC at Cape Town, South Africa. All the same, his keynote address for one of the sessions on history of geology was presented for him there by Ernie Hamm ("An empire of water, islands of fire: Perspectives on 18th-century geology"). It was at the Cape Town meeting that his term as INHIGEO President came to a close. Ken's two contributions to the 2017 celebratory volume marking INHIGEO's 50th anniversary appeared online in 2016: "Historians of geology in the field: A half-century of INHIGEO excursions," written in collaboration with Mike Johnston; and "Before volcanoes became ordinary."

Roger D. K. Thomas – was invited to re-enact the role of William Smith at the 2015 Annual Meeting of the Geological Society of America, in conjunction with a symposium marking the 200th anniversary of publication of Smith's great map of the Geology of England, Wales, and part of Scotland. Attired in period costume, equipped with surveying instruments and a mason's hammer, he carried with him a set of ammonite species employed by Smith as keys to his stratigraphy and specially made facsimiles of his book on draining water meadows and the memoir that annotates his map. Smith introduced himself by noting that having gone to sleep in Nottingham, on his way to the Annual Meeting of the BAAS, he awoke to find himself in world remarkably changed from the one he knew.

In 2016, Roger taught "Changing Views of the Earth, 1650-1850", the course that had done so much to develop his knowledge of the history of geology and its cultural context, for the last time. He is currently working on Samuel Haldeman, a naturalist who assisted W. B. Rogers on the first geological

survey of Pennsylvania. Best known for his work in invertebrate biology (noted by Darwin) and the Pennsylvania German dialects, Haldeman is the author of the well-known trace fossil *Skolithos*, in which we are especially interested. Roger expects to get his paper on James Hutton's Leibnitzian view of time written up, finally, this year.

UZBEKISTAN

In 2016 Uzbekistan suffered a huge loss - an outstanding state and political figure, the First President of the Republic of Uzbekistan, Islam Abduganievich Karimov, passed away.

The year 2016 was the most difficult for academic geological science. The Institute was transferred from the Academy of Sciences of Uzbekistan to the State Committee of Geology and Mineral resources. Employees of the Institute went through two transfers: from the Academy of Sciences and Mineral resources (August 3) and then from the State Committee on Geology (October 20).

In Tashkent six conferences were held, four international and two republican:

On May 18 - 20 the 20th International Exhibition and Conference "Oil and Gas of Uzbekistan - OGU 2016" took place. More than 200 companies from 26 countries participated in the exhibition. The section "Young Scientists" was attended by students and young specialists of the Tashkent Chemical Technology Institute, a branch of the Russian State Gubkin University of Oil and Gas in Tashkent. Discussions in the plenary sessions focused on the role of youth in solving urgent issues of development of the oil and gas sector in Uzbekistan.

On August 19, 2016, the International Scientific and Technical Conference "Integration of Science and Practice as a Mechanism for Effective Development of the Geological Industry of the Republic of Uzbekistan" was held (State Committee of Geology and Mineral resources) dedicated to the 25th anniversary of Uzbekistan's independence with the participation of scientists from Armenia, Great Britain, Kazakhstan, China, Russia, Tajikistan, and Ukraine. Since the conference itself is limited to a 25-year time period, it can be said that most of the reports (from a total of 185) have historical direction and significance - development of ideas, methods, the involvement of new territories, which contributed to the expansion of the search attributes of ores of solid minerals, hydrocarbons: G. S. Abdullaev, F. G. Dolgoplov - on the geodynamic map of the modern time of the lithospheric blocks of Central Asia, scale: 1: 2 500 000 (2014) and three-dimensional models of individual sites; P. P. Nagevich - on the planetary cleavage of the Earth; Kh. A. Saipov - on Study of material signs of the miners' activities in the history of Uzbekistan; M. M. Pirnazarov - on Features of geological study, trends in the development and exploration of the mineral resource base of gold in Uzbekistan; S. G. Chunikhin - About assessment of large ore deposits on example of the history of Almalyk; G. V. Pyanovsky and others - about the organization of geoparks; of particular importance are the reports of the comparative nature of development; Yu. S. Savchuk (IGEM) - about position of large and super-large gold deposits; I. G. Kremnev and others - about the similarity of the conglomerates of the Chatkal-Kurama region with the gold-uranium Witwatersrand (South Africa), Blind River (Canada), and others.

October 12-14, the International Conference "Actual problems of modern seismology" was held, dedicated to the 50th anniversary of the Institute of Seismology named after G. A. Mavlyanov of the

Academy of Sciences of the Republic of Uzbekistan (T. Mixr Press LLC, Proceedings, 159, 144 p. Reports 127, 735 p.). Collections included reports and theses of scientists from Azerbaijan, Belarus, Zambia, Israel, Kazakhstan, China, Kyrgyzstan, Morocco, Russia, USA, Tajikistan, Turkmenistan, Ukraine, and Japan. In the collection of abstracts for the history of geology, reports containing information on earthquakes in antiquity are of interest: A. A. Nikonov and others - Destructive earthquakes in the Fergana Valley in the 17th-20th centuries; V. I. Ulomov - about fundamental scientific contribution to seismology of the results of studies of the nature of the Tashkent 1966 and Gazli earthquakes (1976 and 1984); O. Djuraev and others - about the historical earthquake of 1821-1822 in Western Uzbekistan; Sh.E.Uusupaev - about the first IGN map of lithosphere roof transformation on the example of the territory of the Republic of Uzbekistan; M. T. Usmanova and others - about the Kan, Tuyabuguz, Marzhanbulak, Kitab earthquakes of the seismically active phase of Central Asia (1998-2018).

Some reports contain data on deep faults that are of interest to a wide range of geologists: D. Kh. Atabaev and others - about the North Fergana; and M. F. Djalilova - about the South-Fergana. Of great importance are survey reports on general geophysics: B. S. Nurtaev - Tien-Shan, M. K. Turapov and others-Uzbekistan; on the assessment of the geoecological state of the territories on the example of the reservoirs of Uzbekistan by Sh. I. Yodgorov and others - Tupolang, Gissarak, Chimkurgan, Chartak.

In the collection of reports for history, it is worth mentioning the work of E. L. Elmanova and others about analysis of the adequacy of seismic resistance of monuments of Muslim architecture with modern requirements (p. 620) with consideration of Ulugbek madrasah (15th century) in Samarkand and the Kalyan mosque (XVI century) in Bukhara with magnitude scores of 7.8 and 8.3. The report of M. T. Usmanova (p. 483) contains information on the different seismicity of the four segments of the Talas-Fergana fault, the value of the earthquake catalogs of the Tashkent seismic station, functioning since 1901 and being one of the 4 stations of the beginning of the 19th century was noted.

A book was published for the conference (The Institute of Seismology named after G. A. Mavlyanov of the Academy of Sciences of the Republic of Uzbekistan, 50 years (1966 - 2016)) / editor S. S. Khusomiddinov - T.: Institute of Seismology of the Academy of Sciences of Uzbekistan, 2016. - 210 p.), dedicated to the history and achievements of seismological science in Uzbekistan and the Institute's subdivisions; with brief scientific biographies of the institute's employees, information about scientific schools, articles, monographs, author's certificates and patents of the Republic of Uzbekistan for inventions, doctoral and candidate dissertations.

On November 10th, the scientific conference was held with the theme of, "The main problems of magmatic geology of the Western Tien Shan", and dedicated to the 80th anniversary of Academician T. N. Dalimov (1936-2011). The conference materials are published in two books. The first (228 p.) contains articles of interest to the history of geology: R. N. Abdullaev and L. R. Sadykova - History of the formation of terrane analysis on the example of the Chatkal-Kurama region; L. R. Sadykova - On the question of the geodynamic terms; E. A. Dunin-Barkovskaya and others - about the importance of museums in the process of teaching students in universities on the examples of St. Petersburg, Moscow State University, Central Asia, opening of the Museum of T. N. Dalimov in 2014 in the National University of Uzbekistan; I. P. Sidorova and others - on the history of the separation of ore-magmatic concentrates in Uzbekistan; F. K. Divaev and others - The teachings of Kh. M. Abdullaev on petrometallogenic series of igneous rocks and endogenous deposits at the present stage with reference to

the territory of the Republic of Uzbekistan, which showed that the rows allocated by Kh. M. Abdullaev more than 60 years ago are not, lost the relevance until now. The second book "Memoirs" contains memoirs about T. N. Dalimov; I. N. Ganiev, Kh. D. Ishbaev and A. Z. Umarov), memories of classmates and colleagues.

On November 17-18, IGIRNIGM organized the Republican Scientific and Practical Conference "Modern Forecast of the Hydrocarbon Subsoil Potential and Advanced Technologies of Exploration for Oil and Gas." Also on November 17, IX International Conference "Investment Potential of Solid Minerals of the Republic of Uzbekistan" UZGEOINVEST-2016 "was held.

Among the most important events of 2016, it is necessary to note the participation of Uzbek specialists in International Conferences abroad, especially the 35th Geological Congress in Cape Town.

Large works have been prepared that are of great importance for the history of geology: "Catalog of faults of the Middle, Southern Tien Shan and adjacent territories" (L. N. Londkipanidze, O. G. Tsay - T.: State Enterprise "NIIMR", 2016. - 113 p.), dedicated to the 25th anniversary of the independence of the Republic of Uzbekistan. Catalog contains 806 names of faults, their definitions, years and names of researchers which have entered them into geological literature. The historical stages of their selection are reflected in a special article of the journal of these authors (Geology and Mineral Resources, 2016. No. 3).

During the reporting period, 2016, several major monographs were published: at the IGIRNIGM Institute: G. S Abdullaev and F. G. Dolgoplov Geodynamics and petroleum potential of the lithosphere of Uzbekistan. - T.: "Uz NIO NGP", 2016. - 362 p., summarizing the analysis of all available geological and geophysical material collected during the XX-XXI centuries, compiling a three-dimensional geodynamic model of four hierarchical levels from lithospheric blocks to fault-block local structures. As a result, a new forecast estimate of the hydrocarbon potential of Uzbekistan is given.

From the Institute of Seismology, Academy of Sciences of Uzbekistan: M. A. Tuichieva and N. M Djuraev - Regularities in the formation of natural and technogenic changes in the geological environment as the basis of seismic risk. - T.: Navruz, 2016. - 325 p.

From the State Enterprise "NIIMR": Atlas of geological maps of Uzbekistan was published at a scale 1: 2500000 / Ed. Turamuratov I.B. - T.: State Enterprise "NIIMR", 2016. - 134 p. (In Uzbek, Russian, English).

In the journal "Geology and Mineral Resources" (No. 4), articles devoted to the 25th anniversary of Uzbekistan's independence were published: Scientific research is the basis for the future development of the geological industry (I. B. Turamuratov and B. F. Islamov, pp. 5-8); The main results of the geological service of Uzbekistan and the nearest prospects (A. A. Mavlonov and A. B. Kholikov, pp. 9-14) and the historical review; The main milestones in the development of the geological industry in Uzbekistan (B. A. Isakhodzhaev and F. K. Divaev, pp. 15-18).

Following the new requirements for general and regional geology, there was one Ph.D. defense: L. R. Sadykova, Geodynamic conditions and copper mineralization of the Middle Tien Shan, T.: MCHJ "Ishonch", 2016.

Anniversaries

The 90th anniversary of N. N. Khodjibaev (1926-1979) - a prominent scientist, organizer and leader, researcher in the field of hydrogeology and engineering geology, laureate of the USSR State Prize, Honored Geologist of Uzbekistan, Doctor of Geological and Mineralogical Sciences, Professor, First Director General of Science - Production association "Uzbekhydrogeology" (№ 5). The 80th anniversary of Kh. A. Akbarov - a prominent scientist-geologist, academician of the Academy of Sciences of the Republic of Uzbekistan, Corresponding Member of the International Engineering Academy, a foreign member of the Academy of Natural Sciences of the Russian Federation, Doctor of Geological and Mineralogical Sciences, Professor, for many years studying history of the structures of ore fields and deposits (No. 2).

Also recognized were R. N. Abdullaev - an outstanding geologist, tectonist, doctor of geological and mineralogical sciences, professor, engaged in geodynamics of the Tien Shan; M. Miraslanov - one of the leading scientist of Uzbekistan in the field of engineering geology (№ 2); D. S. Mukimova - one of the leading scientists of Central Asia in the field of hydrogeochemistry and geochemical methods of prospecting deposits of ore minerals, doctor of geological and mineralogical sciences, professor (№ 3);

M. Sh. Shermatov - a well-known scientist in the field of engineering geology, engineering seismology and geoecology, doctor of geological and mineralogical sciences, leading researcher of the Institute of Seismology named after G. A. Mavlyanov of the Academy of Sciences of Uzbekistan, professor (№1);

The 75th anniversary of Kh. S. Sabirov - veteran of the analytical service of the State Committee of the Republic of Uzbekistan for Geology and Mineral Resources, candidate of physical and mathematical sciences (№1);

The 70th anniversary: S. S. Khusamiddinov - Director of the Institute of Seismology of the Academy of Sciences of the Republic of Uzbekistan, doctor of physical and mathematical sciences (№5);

B. A. Isakhodjaev - famous scientist, doctor of geological and mineralogical sciences, Professor of the Faculty of Geology and Mining, Tashkent State Technical University (№ 4);

The 60th anniversary of A. I. Rustamov, one of the best geologist of the State Committee of the Republic of Uzbekistan for Geology and Mineral Resources (№ 6).

Losses to Science

It is with great sadness that we report that the following colleagues have passed: **V. A. Pak** (1928-2016) - an outstanding geophysicist, scientist of the Institute of Geology and Geophysics of the Academy of Sciences of the Republic of Uzbekistan, candidate of geological and mineralogical sciences; **Kh. Uzakov** (1933-2016) - a major specialist in regional geology of the Pre-Mezozoic foundation of the closed territories of Uzbekistan, leading researcher of the State Enterprise "NIIMR", candidate of geological and mineralogical sciences; **N. T. Khodjaev** (1957-2016) - prominent scientist in the field of nonmetallic minerals geology.

L. N Lordkipanidze, B. S. Nurtaev, O. G. Tsay Von:Oksana Tsay [<oksana_tsay@list.ru>](mailto:oksana_tsay@list.ru)
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NOTICE TO INHIGEO MEMBERS

My name is **Francesco Gerali**, Italian INHIGEO member and leader of the INHIGEO Virtual Bibliography Project on behalf of the Commission and its members.

The rationale and the aim of this bibliographic initiative have been already introduced in the 2012/2013 Newsletter and the 2014 Annual Record. The first outcomes of the project were published in the 2014 and 2015 Annual Record. Please, find an example in this 2016 Record – Appendix A.

The next chapter of the Bibliography is schedule to be included in the 2017 Annual Record. I am proceeding to develop the bibliography following the alphabetical order. It is now time to complete the bibliography for the countries whose first letters is D, E, and F.

I kindly ask you to contribute to the project by sending the bibliographical references of your contribution on the history of the geosciences. The project is focused on history, please do not send publication without a clear historical point. In addition, if possible, you also help by providing details of other publications on the history of geology in your country that are published by people who are not INHIGEO members.

To make this contribution substantial and relevant for publication in the Annual Record, I have to receive as many lists of publications as possible from you by January 15, 2018.

I invite you to provide a MS Word file with the list of your publications as, for example, it may appear in your academic curriculum vitae. It is then my task to format each record following the Chicago Reference Style 16th Edition, the formal and univocal style adopted for this project. Those of you willing to edit their records within the guidelines of the Chicago Style are most welcome to do so, but it is not a requirement.

I kindly ask you to send me complete and detailed references; to write *in extenso* names of journals, place of publication and editors, author names and given names.

Please, do not send me pdf files or links to webpages as retrieving your bibliographical records from such sources is difficult and time consuming; be sure to remove hyperlinks, special formatting, and other features that slow down the formatting process.

I kindly ask you to forward your files to my email address francesco.gerali@gmail.com, and in copy to: francesco.gerali@uwa.edu.au; or francesco.gerali@gmail.com.

I thank you in advance for your attention and contribution to the INHIGEO Virtual Bibliography.

Cordially
Francesco

Ps: I look forward meeting you in future at the annual INHIGEO meetings, meanwhile you can connect with me on LinkedIn and/or researchgate.org.

APPENDIX A

INHIGEO VIRTUAL BIBLIOGRAPHY 2017:

Canada, Costa Rica and Croatia

Compiled by Francesco Gerali

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CROATIA

Abbreviations and notes for the reader

HAZU: *Hrvatska akademija znanosti i umjetnosti* - Croatian Academy of Sciences and Arts.

HGD: *Hrvatsko geološko društvo* - Croatian Geological Society.

Priroda: Nature. This is a popular science journal has been published for one hundred and six years by the Croatian Society of Natural Sciences.

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APPENDIX B



INTERNATIONAL COMMISSION ON THE HISTORY OF GEOLOGICAL SCIENCES (INHIGEO)

TERMS OF REFERENCE

OBJECTIVES

The primary objective of the International Commission on the History of Geological Sciences (INHIGEO) involves the promotion of studies on the history of geological disciplines in an international context. In so doing, INHIGEO endeavours to promote and co-ordinate the activities of regional, national, and international organisations having shared purposes. INHIGEO also works to foster the publication of individual or collective works that illuminate the history of the geological sciences and to maintain an information-rich website.

STRATEGIES

- ☐ Meet regularly, usually once a year, and every four years with the International Geological Congress (IGC), to conduct a major symposium on the history of geology. This typically includes a multi-day field component. Associated with these activities are the publication of abstract volumes and excursion or other guidebooks.
- ☐ Work with various publishing houses and journals, and where appropriate in co-ordination with the IUGS, to promote the publication of symposia proceedings and a variety of contributions relevant to the history of geological sciences.
- ☐ Publish the INHIGEO Annual Record that incorporates information from the Officers and Members, national reports, book reviews, conference reports, interviews, obituaries, short historical research papers, and a variety of news items and illustrations that promote the sharing of professional insights.
- ☐ Provide regular information by email circulars to the INHIGEO membership dealing with issues of immediate relevance to the Commission and to the study of the history of the geological sciences.
- ☐ Develop and maintain an internet website that provides up-to-date information on the Commission's activities as well as other information that will be of interest to INHIGEO Members and the wider public.
- ☐ Liaise with IUGS to enhance the recognition of outstanding geologists via its "Scientific Awards of Excellence", and specifically with the "Vladimir V. Tikhomirov History of Geology Award".

□ Contribute to Episodes on historical matters, for example by recording the history of past IGC meetings and other IUGS activities, by promoting knowledge of classic works in geology, and by furnishing reviews of books on the history of geological sciences.

BY-LAWS

1. INHIGEO is a Commission of the International Union of Geological Sciences (IUGS). It is also affiliated with the International Union of the History and Philosophy of Sciences (IUHPS).

2. INHIGEO is therefore bound by the IUGS Statutes and the IUGS By-Laws for Commissions.

3. The task of INHIGEO is to promote studies in the history of geological sciences and to stimulate and co-ordinate the activities of national and regional organizations that have the same purpose. It does so by promoting the holding of national, regional, and international symposia, by the organisation of informative field trips, by the publication of individual and collective works on the history of geological sciences, and by the maintenance of an informative website.

4. Reports on the work performed by INHIGEO, and its Members, and its plans and budget for the following year are to be submitted annually to the IUGS at a date designated by the IUGS Secretary-General. Similar reports are submitted to the IUHPS.

Structure

5a. A primary objective of INHIGEO is to establish an international network of scholars with active representation from as many countries as possible, and where possible having a diverse age range amongst its Members. INHIGEO specifically encourages the formation of national and regional groups.

5b. INHIGEO Members consist of scientists, historians and other scholars known for their publications and/or other activities in the field of the history of geological sciences.

5c. INHIGEO Honorary Senior Members are proposed by the INHIGEO Board from amongst the extant INHIGEO membership, in recognition of their significant contributions to the field of the history of geological sciences and/or to INHIGEO. Proposals shall require the endorsement of the INHIGEO members present at a subsequent INHIGEO Business Meeting.

5d. Individuals, who have a bone fide interest in the work of the Commission, but are not otherwise qualified for membership, may be nominated for approval by the INHIGEO Board as Associate Members. Associate Members cannot hold office, make nominations or participate in ballots, but in other respects have the advantages of INHIGEO membership. Over time, Associate Members are encouraged to qualify for and convert to full INHIGEO membership. Applications for Associate Membership of INHIGEO are especially encouraged from countries with minor scholarly communities.

5e. The INHIGEO Board consists of the President, regional Vice Presidents, Secretary-General, Editor, and Past President, with the Past Secretary-General having an ex officio role. Board membership should circulate within regions and to different countries as much as possible. The major regions, to be

represented, when possible, are: North America, Latin America (South America, Central America and the Caribbean), Europe, Asia, Australasia and Oceania, and Africa. Board candidates are proposed by current Board members and elected by INHIGEO Members, subject to their approval by the IUGS Executive Committee and ratification by the IUGS Council. Any INHIGEO Member can also nominate another Member or other Members for membership of the INHIGEO Board when nominations are called by the Secretary-General. If there is more than one nomination for any position then the Secretary-General will organise an email ballot to determine Board membership. The President and other members of the Board remain in office until the next session of the IUGS Council and are eligible for re-election once only (or twice if their initial appointment was made between the years of the installation of IUGS Councils). The maximum term of office is therefore eight years under normal circumstances. Any casual vacancies on the Board will be filled by the residual Board with ratification by the INHIGEO membership at the earliest opportunity.

5f. Prospective members of INHIGEO shall normally be nominated by at least one INHIGEO member and supported by one Member of the INHIGEO Board, or by a national committee of geology or history of science. Nominations will be reviewed by the INHIGEO Board, the decisions of which will be conveyed to the INHIGEO Members present at the subsequent INHIGEO Business Meeting and will be announced in the Commission's subsequent correspondence to Members. Where appropriate, Associate, rather than Full Membership, may be proposed by the Board. If a person wishing to join INHIGEO is not acquainted with any INHIGEO Board Member, a Membership application may be made directly to the Secretary-General who will determine Board support and reach a decision accordingly.

5g. INHIGEO membership is ongoing, provided that participation in INHIGEO activities continues. Every four years (during the term of an elected Board) all Members, other than Honorary Senior Members, shall be asked whether they wish to continue their INHIGEO membership. Failure to respond will normally result in cancellation of membership. Activities contrary to the Objectives and Strategies of INHIGEO may also result in termination of INHIGEO membership.

5h. An INHIGEO Affiliated Association or Affiliate is an organisation, with similar objectives to INHIGEO, which has been specifically approved by the INHIGEO Board to have the status of "INHIGEO Affiliated Association". National and regional history of geology groups are encouraged, in particular, to affiliate. The Secretary of Affiliated Associations shall receive routine communications from INHIGEO with the expectation that similar information will be provided in exchange to INHIGEO. A summary annual report of an Affiliate shall, where possible, be published in the INHIGEO Annual Record. Affiliates are encouraged to report on INHIGEO activities and to promote INHIGEO, its conferences and publications. Individual members of Affiliates shall receive no additional privileges from INHIGEO. Affiliated Associations will be permitted to state formally in their correspondence that they are "Affiliated with the International Commission on the History of Geological Sciences (INHIGEO)". The status of "INHIGEO Affiliation Association" is ongoing unless terminated by the INHIGEO Board on recommendation from the Secretary General.

Functions

6. The INHIGEO Board directs the activities of the Commission. The President may delegate his or her powers to one of the Vice Presidents by mutual agreement. The President and the Secretary-General divide the management of organisational and financial matters between themselves.

7. The INHIGEO Board distributes information to Members by means of regular emails and the INHIGEO Annual Record in English.

8. INHIGEO Business Meetings are held at the time of the meetings of the International Geological Congress, in order:

a. to discuss reports on the work of INHIGEO and to consider plans for the next term;

b. to finalise Board membership for confirmation by the IUGS Council; and

c. to carry on any other Commission business that may come before the meeting.

9. INHIGEO Business Meetings can also be convened at any other time by decision of the Board. They shall normally be held at the annual INHIGEO conferences.

10. INHIGEO Board Meetings may be convened at any time as decided by the Board. It is anticipated that day-to-day matters will be regularly discussed by the Board, via email correspondence, given the world-wide dispersion of Board Members.

11. At INHIGEO Business Meetings each Member present (but not including Associate Members), including members of the Board, has a vote. A motion is considered passed if it receives a simple majority of the affirmative votes cast at the meeting.

12. The INHIGEO Board is responsible for recommending to the IUGS a recipient for the “Vladimir V. Tikhomirov History of Geology Award” every four years, during the first quarter of the year corresponding to an IGC. At this time, the INHIGEO Board shall communicate its nomination to the IUGS Board, for presentation by the IUGS President during the opening ceremony of the IGC.

Approved by the INHIGEO Board 2 December 2015

Approved by the IUGS Executive Committee.....January 2016

Approved by the IUGS Council31 August 2016

APPENDIX C

Affiliated Association

INHIGEO Affiliated Associations (Current as of June 2016)

International	History of Earth Sciences Society (HESS)
Argentina	Comisión Argentina de Historia de la Geología
Australia	Earth Sciences History Group, Geological Society of Australia (ESHG)
Austria	Austrian Working Group “History of Earth Sciences” (AWGHES)
China	Committee on the History of Geology, Geological Society of China
France	Comité Français d’histoire de la Géologie (COFRHIGEO)
Japan	Japanese Association for the History of Geosciences (JAHIGEO)
Poland	Section on the History of Geological Sciences; Polish Geological Society
Serbia	History of Geology Division Serbian Geological Society (Srpsko geološko društvo - SGD) –
United Kingdom	History of Geology Group (HOGG), Geological Society of London
Venezuela	Sociedad Venezolana de Historia de las Geociencias

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APPENDIX D

Honorary SeniorMembers

August 2017

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Professor Robert H. Dott, Jr., USA
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
Professor Léo F. Laporte (USA)
Dr Ursula B. Marvin, USA
Professor Martin J. S. Rudwick, United Kingdom
Professor Wojciech Narębski (Poland)
Professor Sally Newcomb (United States of America)
Professor Kanemori Suwa, Japan
Professor Philippe Taquet, France
Professor Hugh S. Torrens, United Kingdom
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APPENDIX E

NEW MEMBERS 2016 (Total of 13 nominations from 7 countries)

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APPENDIX F

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Appendix G



MEMBERSHIP NOMINATION FORM

NAME

Country

Birth date:

Address:

Telephone:

E-mail:

Education:

(with dates)

Positions held:

(with dates)

Areas of interest / expertise in geology (eg sedimentology, vulcanology):

Scientific Publications (summary in 1-3 lines):

Area of interest in the history of geosciences:

List of all publications in the history of geosciences: (attach)

Languages:

Indicate preference for either Ordinary Membership given demonstrated achievement in the history of geology or Associate Membership

Nominators: (If available: Current INHIGEO member in same country or appropriate Government representative, another INHIGEO member, INHIGEO Board Member)

PLEASE SEND, PREFERABLY BY EMAIL TO THE INHIGEO SECRETARY GENERAL, To.- Prof. Marianne Klemun, Department for History, University of Vienna, Universitätsring 1, 1010 Vienna, Austria; EMAIL: marianne.klemun@univie.ac.at