

International Commission on the History of Geological Sciences

INHIGEO

ANNUAL RECORD No. 54



Conference banner for the 46th Symposium INHIGEO in Poland.

INHIGEO

is

A Commission of the International Union of Geological Sciences

&

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International Union of the History and Philosophy of Science and Technology

Covering Activities generally in 2021

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(Published in August 2022 and covering events and activities during 2021)

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PRESIDENT'S MESSAGE



Dear INHIGEO Members,

I am delighted to present to you the INHIGEO *Annual Record* 54, which covers the activities of our Commission during 2021.

The restrictions imposed worldwide by the Covid-19 pandemic during this year has forced us to change our ways of interaction and scientific communication, with the organization of virtual events and meetings. However, in spite of these difficulties, the 46th INHIGEO annual symposium, the first which took place entirely online, thanks to the efforts of our Polish colleagues from Warsaw and Krakow, was attended by some hundreds of participants and included 58 papers by authors from 19 countries. Also the INHIGEO symposium at the 26th International Congress on the History of Science and Technology, held online from Prague, was very well attended and included speakers from Austria, Brazil, Canada, France, Germany, Italy, Japan and USA. In both these occasions our community proved to be lively and active and all the organizers deserve our warmest thanks and congratulations !

The quality of the research and publications by INHIGEO members was not affected by the persistence of the Covid-19 restrictions, as shown by the country reports and by other materials included in this *Annual Record*. Our website has been constantly enriched and updated, in particular with the "Anniversaries Series" historical papers that INHIGEO prepares for the *IUGS E-Bulletin*: 11 short papers were published in 2021, on historical topics from different regions worldwide related to stratigraphy, geophysics, mineralogy, volcanology, petrology, geological surveying, as well as arts and communication in the field of the Earth sciences.

We will continue to support various projects and activities for promoting the history of geological sciences, as well as to increase the important interaction with other IUGS and IUHPST/DHST commissions and affiliated associations. Our membership is growing, but we need to increase it, in particular from non-represented countries and from young researchers.

The next INHIGEO annual symposium will take place at Les Eyzies in southwestern France and I look forward to meeting you in person on that occasion, which will be possible thanks to the efforts of the French colleagues of the organizing committee, who deserve our gratitude.

I would like to thank all the contributors to the *Annual Record* and particularly our Editor John Diemer, who prepared this issue with his usual skill, expertise and precision.

I hope that this message will find you all in good health and spirits. Enjoy reading the annual record!

Ezio Vaccari
President of INHIGEO (2020-2024)

SECRETARY-GENERAL'S REPORT

Due to the Covid-19 Pandemic, 2021 continued to be a difficult time for INHIGEO. Travel restrictions and bans on meetings of larger groups of people forced us all to abandon our usual ways of organizing conferences and symposia. On the other hand, we learned to use online tools to meet in virtual spaces, and I at least, enjoyed being able to listen in on many public talks, which I would have been unable to attend otherwise. Thus, I hope that in future we can retain the best from both cultures.

The highlight of the year was our online INHIGEO Annual Symposium organized by our Polish colleagues. Topics of talks were, history of geological surveys and biographies of their creators, history of geological societies, history and development of geological cartography, mining history, and general contributions and biographies of famous geologists. We held our business meeting as a zoom meeting on July 20, 2021, the minutes of which are published in the INHIGEO Quarterly Circular of September 2021.

The INHIGEO Annual Symposium was immediately followed by the IUHPST/DHST Conference, which was held online as well and where INHIGEO had a session in three parts on spatial and temporal scales in the history of the geosciences.

Preparations for the 47th INHIGEO Symposium at Les Eyzies in southwestern France 15–24 September 2022 are well on their way. There will also be an INHIGEO sponsored session at the 6th International Palaeontological Congress in November in Thailand.

INHIGEO currently has 265 members from 50 countries, nine of whom have been added in 2021. Ken Taylor (USA) and J.B. (Bruce) Waterhouse (New Zealand) have been appointed Honorary Senior Members in 2021. In October 2021, Steve Rowland (USA), current Vice President for North America, received the GSA History and Philosophy of Geology Division's Mary C. Rabbitt Award at the Geological Society of America annual meeting in Portland, USA. The ballot for 2022 is on its way; 18 nominations from 13 countries have been received by the INHIGEO Board. INHIGEO encourages proposals of new memberships, in particular from non-represented countries and from young researchers.

INHIGEO has been very active in 2021 to increase its visibility and public outreach. The INHIGEO website is in the capable hands of Johannes Mattes and is continuously updated and expanded, in 2021 most notably by a page about INHIGEO membership.

Publications and Outreach Coordinator Kathleen Histon has successfully revived INHIGEO's contributions to the monthly IUGS E-Bulletin and to the journal *Episodes*. Eleven contributions to the Anniversary series have been published in 2021:

- Marianne Klemun: Adolphe von Morlot's (1820-1867) Quaternary and Pleistocene – points of confusion
- Steve Rowland: Charles R. Knight (1874–1953): Life through the ages
- Silvia Figueirôa, William Brice and Margaret Lopes: Orville Adelbert Derby (1851–1915) and Brazilian geology
- Carol Bacon: William Frederick Petterd (1849–1910) and Tasmanian mineralogy
- Martina Kölbl-Ebert: From volcano to impact crater: Shifting a paradigm
- Toshihiro Yamada: Takuji Ogawa (1870–1941) – Japanese geographer-geologist founder of the Geology Department in Kyoto University in 1921
- Sharad Master: “Symposium on Granites, Gneisses and Related Rocks of Rhodesia” (Salisbury, Rhodesia, 1971)
- Kathleen Histon: Geology in the Crystal Palace Great Exhibition of 1851
- Ezio Vaccari: Alexander Macmillan Heron – First geological survey of the Everest Region, 1921
- Martina Kölbl-Ebert: Inge Lehmann discovered the inner Earth core in 1936
- John Diemer: Roderick Murchison's visit to Tcheketau Peak, Russia, 180 years ago

All anniversaries are archived on the INHIGEO website:

<https://www.inhigeo.com/anniversaries.html>

During 2021 two reviews by INHIGEO members on books on the history of women in the geosciences were published in *Episodes*. Several papers from various authors completing the IGC Histories series in *Episodes* have been submitted and are currently under review/accepted for publication as well as a variety of papers on general history of the geosciences.

The proceedings volume of the 44th INHIGEO Symposium held in Varese / Como in 2019 has been published in *PHYSIS Rivista Internazionale di Storia della Scienza*, volume 56 (2021).

The quarterly “INHIGEO Circular” continues with issues in late March, June, September and December of each year, prepared by the Secretary-General and sent out by e-mail.

The Annual Record documents and compiles all INHIGEO activities thanks to editor John Diemer and can be accessed via our homepage. It also contains the current membership directory.

I would like to wish each and everyone of you peace, safety and good health! Thank you for your lively cooperation and being part of our international INHIGEO family!

Martina Kölbl-Ebert
Secretary-General of INHIGEO (2020–2024)



EDITOR'S MESSAGE FOR THE 2021 ANNUAL RECORD, NO. 54

The year 2021 was a year of both challenges and opportunities due to the continued presence of the Covid-19 virus and its variants. Despite the challenges, the members of INHIGEO continued to be engaged in the history of the geosciences as documented by the 54th edition of the INHIGEO Annual Record which reports on activities during 2021. Opportunities to work close to home were supplemented by the advent of virtual meetings which provided a valuable means of connecting world wide.

The 46th INHIGEO symposium based in Poland was our first opportunity to gather as a whole since 2019. The meeting was masterfully organized and run in a virtual format by our Polish colleagues led by Stanislaw Wolkowicz. The meeting was stimulating and attended by participants world wide. Despite the differences in time zones, the meeting provided an opportunity for valuable and global interchange of ideas which further cemented the bonds within our community. Plans for the 47th INHIGEO symposium, to be held from 16-21 September, 2022 at Les Eyzies in southwestern France, are well underway. It promises to be an exciting and fascinating symposium accompanied by multiple field excursions.

As was the case last year, I want to thank all of the membership for reporting in a timely manner on activities during 2021. The practice of assembling the reports by country is very helpful and I particularly want to thank the country coordinators for undertaking that valuable task. It is a rewarding experience to read about the accomplishments and progress made by INHIGEO members in their research endeavors to better understand the history of the geosciences. Most of all, it has been a pleasure to correspond with so many INHIGEO members during the past year, and I look forward to more interactions in the coming year as the world continues to adapt to the post-pandemic reality.



**John Diemer, Editor of the *Annual Record*
(2020-2024)**

INHIGEO CONFERENCES

46TH INHIGEO SYMPOSIUM, POLAND, 19-22 JULY 2021

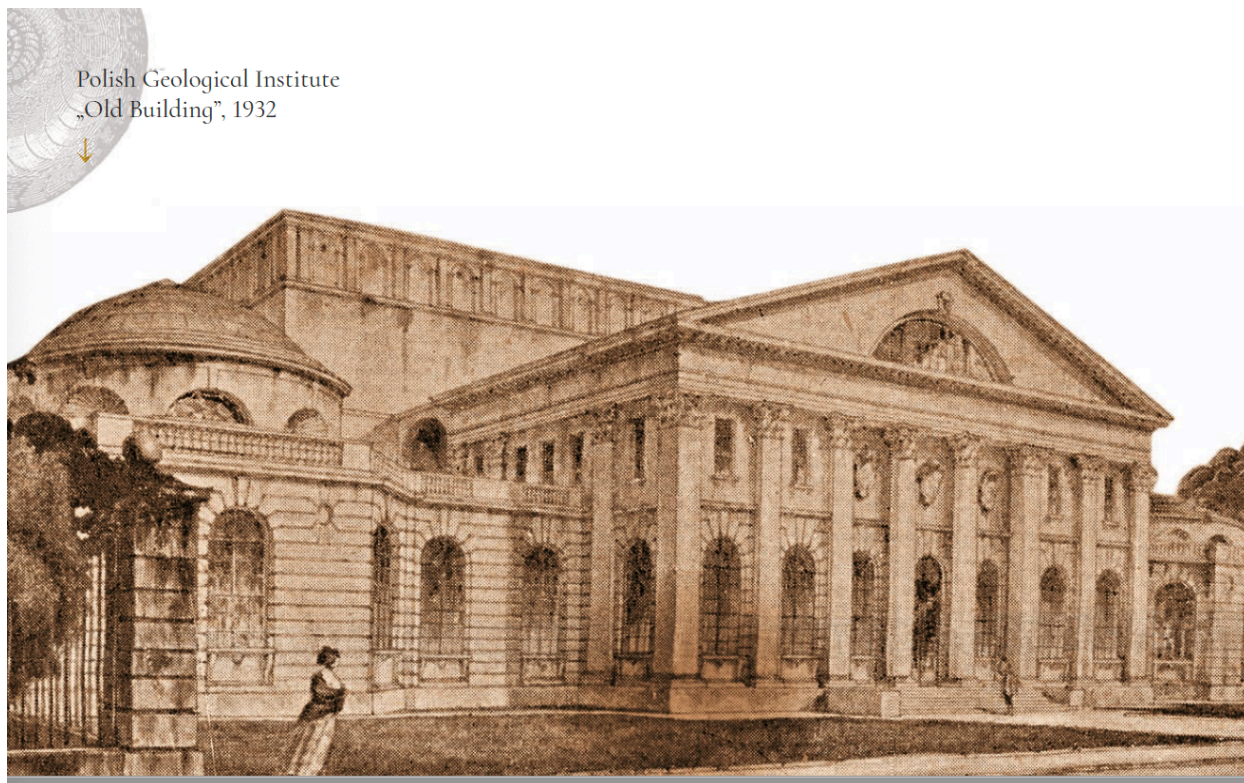


Figure 1. Third Circular title page.

Information, including the Third Circular (Figure 1), for the meeting is available from:

inhigeo@pgi.gov.pl

The Conference Themes included:

- History of geological surveys and biographies of their creators
- History of geological societies
- History and development of geological cartography
- Mining history
- General contributions and biographies of famous geologists

The well-subscribed meeting occurred on Zoom and was both informative and stimulating. The conference organizers are to be congratulated for organizing a very interesting meeting accessible to participants all over the world. Memorable images associated with the meeting include the behind-the-scenes teamwork that resulted in a seamless conference (Figure 2), and the farewell speech by the Chair of the Conference Committee, Professor Stanislaw Wolkowicz (Figure 3).



Figure 2. Technology infrastructure for the INHIGEO meeting.

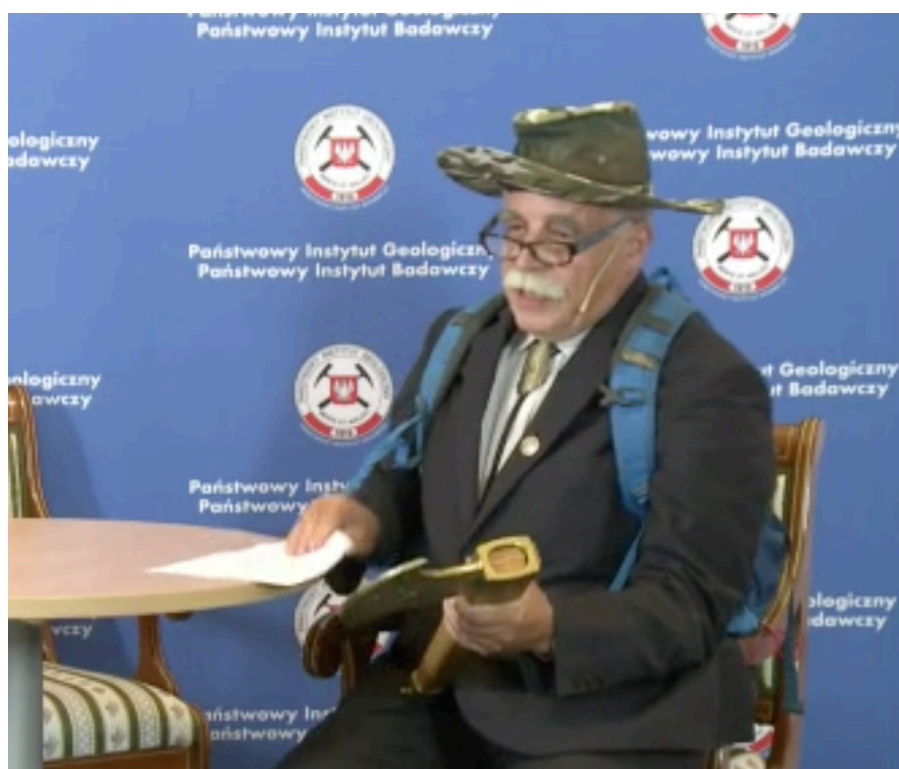


Figure 3. Parting remarks by Stanislaw Wolkowicz.

INHIGEO AND OTHER CONFERENCES

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Dr. Krystyna WOLKOWICZ
Polish Geological Institute - National Research Institute



26th INTERNATIONAL CONGRESS OF HISTORY OF SCIENCE AND TECHNOLOGY, PRAGUE 25–31 JULY, 2021



Symposium - *Great to small: spatial and temporal scales in the history of the geosciences* (INHIGEO)

Convenors: Marianne Klemun (Austria) & Greg Good (USA)

Virtual Hall 3, 27.7.2021, 18:00 - 20:00



INHIGEO AND OTHER CONFERENCES

| | |
|---------------|---|
| 18:00 - 18:30 | <ul style="list-style-type: none"> ● Powers of Scaling: Conceptual and Sociopolitical Considerations in A. P. Coleman's Mapping of the Sudbury Region ([b]Ernst Hamm) A310 (ID: 941) |
| 18:30 - 19:00 | <ul style="list-style-type: none"> ● From rocks to mountains: the use of 'small' specimens for the 'great' history of the Earth during the 18th century ([b]Ezio Vaccari) A311 (ID: 758) |
| 19:00 - 19:30 | <ul style="list-style-type: none"> ● Macro-evolution vs micro-evolution in Palaeontology. The 1970's "Punctuated Equilibria revolution" and its scientific/political issues ([b]Claudine COHEN) A312 (ID: 949) |
| 19:30 - 20:00 | <ul style="list-style-type: none"> ● Scaling down the earth's history: visual materials for popular education by Nerée Boubée (1806-1862). ([b]Silvia Figueiroa) A313 (ID: 667) |

LINK TO RECORDED SESSION: click [HERE](#)

Virtual Hall 9, 28.7.2021, 10:00 - 12:00



| | |
|---------------|---|
| 10:00 - 10:30 | <ul style="list-style-type: none"> ● Scale in the history of geology: dinosaurs and ostracods ([b]Michiko Yajima) A370 (ID: 671) |
| 10:30 - 11:00 | <ul style="list-style-type: none"> ● The elaboration of the concept of Gondwana and the making of the scientific discourse for extractivism ([b]Mariana Ferrari Waligora) A371 (ID: 889) |
| 11:00 - 11:30 | <ul style="list-style-type: none"> ● The Rearrangement of Scaling and Networking: Cosmographical Worldview Evolved into Geological Mapping ([b]Toshihiro Yamada) A372 (ID: 911) |

LINK TO RECORDED SESSION: click [HERE](#)

Virtual Hall 9, 28.7.2021, 13:00 - 15:00



| | |
|---------------|---|
| 13:00 - 13:30 | <ul style="list-style-type: none"> Henry Thomas De la Beche's (1796-1855) <i>Duria antiquior</i>: temporal visualization within the golden age of geology (1788-1840) ([b]Renee Clary) A408 (ID: 656) |
| 13:30 - 14:00 | <ul style="list-style-type: none"> Small pieces of rocks, shells, sand grains and mineral nodules: islands and ocean as geological strategic projects in Brazil ([b]Maria Margaret Lopes) A409 (ID: 660) |
| 14:00 - 14:30 | <ul style="list-style-type: none"> Scale in the history of geology ([b]Martina Kölbl-Ebert) A410 (ID: 812) |
| 14:30 - 15:00 | <ul style="list-style-type: none"> Caught between cosmos and crystals, space and time: John Herschel's planet Earth ([b]Gregory Good) A411 (ID: 893) |

LINK TO RECORDED SESSION: click [HERE](#)

FUTURE INHIGEO MEETINGS

As the Annual Record for 2021 is going to press (in July 2022), arrangements are well underway for the 47th INHIGEO meeting to be held at Les Eyzies in southwestern France.

47TH INHIGEO SYMPOSIUM, 15-24 SEPTEMBER, 2022, AT LES EYZIES IN SOUTHWESTERN FRANCE

Information for the meeting including the Third Circular is available at: inhigeo.com/france2022/ What follows here was extracted from various conference materials including the Third Circular: http://www.inhigeo.com/france2022/Third_Circular.pdf

The Comité français d'Histoire de la Géologie (COFRHIGEO) is organizing the 2022 INHIGEO Congress in France, in September 2022, in the Périgord region (southwestern France). The main venue of the congress will be Les Eyzies, a picturesque village in the Vézère Valley, otherwise known for its many prehistoric sites (Lascaux, Cro-Magnon, La Madeleine, Font de Gaume, Combarelle, etc.). The program presented here is still provisional and subject to possible revision.

INHIGEO AND OTHER CONFERENCES

Périgord is an active tourist region with many accommodations at reasonable prices (including hotels and AirBnB's). There are also other accommodation possibilities in Les Eyzies, notably the Maison François Bordes, managed by the University of Bordeaux. The village is well served by train from the city of Bordeaux.

Conference registration will begin at 4 pm on September 16, 2022 at the Maison Bordes, 6 Avenue de la Préhistoire, in Les Eyzies. The inauguration evening will take place the same day at 5:30 pm on the balcony of the National Museum of Prehistory, and will include a guided tour of the museum followed by a cocktail dinner.

Conference talks and poster sessions will take place at the Pole international de la Préhistoire with important extensions at the National Museum of Prehistory, from September 17 to 21, 2022. The 5-day conference would include scientific presentations and posters, evening lectures, and may include several full or half-day trips to major geological and prehistoric locations, including Lascaux and Commarque Caves, Cro-Magnon and Pataud shelters, the sites of Le Moustiers and La Ferrassie, and the historical city of Sarlat. The main scientific themes will be:

- History of Quaternary geology, prehistory and geology of caves;
- History of Miocene geology, since the region includes the Burdigalian and Aquitanian stratotypes;
- Other sessions of the conference will cover all subjects related to the history of geosciences.

In addition, pre- and post-conference excursions are planned, subject to independent pricing and organization:

- **A 2-day pre-conference excursion**, from Poitiers to Les Eyzies (September 15 and 16) will start at the Poitiers railway station at 1:30 pm on September 15 and end at Les Eyzies on September 16 at 4:00 pm. The trip will include stops at the Paleontology Department of Poitiers University and the museum and meteorite impact sites of Rochechouart. The impact sites of Chassenon-Rochechouart resulted from the fall of an asteroid in Triassic times. Molten and brecciated rocks, observed by Desmarest in 1773, were long taken for volcanic rocks, and remained a geological enigma until the 1960s, when the impact origin was recognized.
- **The 3-day post-conference field trip** starts at Les Eyzies on September 22 (8:30 a.m.) but includes the previous night (21 to 22), for which you do not have to book a hotel room if you participate. It will include explorations of the magnificent cave art of Font de Gaume, Pech Merle caves and Cap Blanc shelter, visits to the sites of Laugerie Haute and Laugerie Basse, and to the historical phosphate mines of the Quercy. It will continue with a visit to historical Miocene sites of the Bordeaux region, namely the paleontological site (and vineyard) of Sainte-Croix-du-Mont, first described in 1622, and the Aquitanian and Burdigalian stratotypes at the geological Reserve of Saucats- La Brède – not to forget the picturesque village of Saint-Cirq-Lapopie, and the cities of Agen and Bordeaux, where the conference will end on the afternoon of September 24.

The Conference program will be supervised by a Scientific committee, chaired by Philippe Taquet, former president of the INHIGEO and current president of the COFRHIGEO. The material organization (registrations, financial management) will be entrusted to an organizing committee,

chaired by Claudine Cohen and Pascal Richet. It will benefit from several sponsorships and the services of the association *Naturalia et Biologia*. The abstract and excursion booklets, written in English, will be published in digital formats, and if possible, in hard copy. A third circular containing the most up-to-date information is available at: inhigeo.com/france2022/

48TH INHIGEO MEETING IN KRAKOW, POLAND, 2023

This meeting, based in Krakow, Poland is planned to be held in-person and be accompanied by field excursions that could not be held during the 46th INHIGEO meeting in 2021.

49TH INHIGEO MEETING IN BUSAN, REPUBLIC OF KOREA, 2024

The 49th INHIGEO meeting will be held in conjunction with the 37th IGC meeting in BUSAN, Republic of Korea, in 2024

50TH INHIGEO MEETING, 2025

The 50TH INHIGEO meeting will be held in conjunction with the 27th International Congress of History of Science and Technology (ICHST) in Dunedin, New Zealand.

OTHER FUTURE CONFERENCES

6th International Palaeontological Congress: From Gondwana to Laurasia

There will be a History of Geology session at the “6th International Palaeontological Congress: From Gondwana to Laurasia”, to be held in Thailand from 7–11 November 2022. The title of the session is: “Hidden histories revealed in scientific revision of palaeontological collections”.

Selected history of paleontology papers from this meeting will appear in a future theme issue of *Earth Sciences History*. More information on this Congress: <https://ipc6.msu.ac.th/>

Geological Society of America Annual Meeting: 9-12 October 2022, Denver, Colorado

- The History and Philosophy Division of the Geological Society of America will be sponsoring sessions at the Annual Meeting of the Geological Society of America.
- Pardee Keynote Symposia “Geoheritage: Connecting Our Stories to Earth’s History” on Monday October 10, 2022 from 1:30 pm–5:30 pm.

The *Sir Julius von Haast Bicentenary Conference* was held online from Christchurch 30 April-1 May 2022 under the auspices of the Canterbury Museum. Haast (1822-1887) had an international reputation and was one of the leading geologists in 19th century New Zealand. Further details can be obtained at: haast200@canterburymuseum.com.

CONFERENCE REPORTS FOR 2021

ARGENTINA

In Argentina the most important activity on the history of geology during 2021 was the Symposium on the History of Paleontology, held during the XII Congress of the Argentine Paleontological Association (Virtual meeting, 23d-26th November, 2021), where several INHIGEO members participated. A total number of seventeen papers on historical issues were presented and will be published in a proceedings volume.

CHINA

Nine members of the Chinese Commission of History of Geology (CCHG) participated in the First International Conference of Yangshao Culture held from 19–21 October 2021 at Mianchi, Henan Province. The 31st Annual Conference of CCHG originally scheduled for 20 November 2021 was cancelled due to Covid-19. The working meeting for the conference did occur on 9 December 2021. Full details can be found in the ‘Country Report’ for China later in this document.

FRANCE

In 2021, the French Committee on the History of Geology (Cofrhigéo) could meet only twice, because of the restrictions due to the Covid pandemic.

The session of September 8th, 2021, was dedicated to the history of some geological collections and museums and included 6 talks (the recording of which can be viewed at: https://www.youtube.com/watch?v=fv15M2P_v_o&list=PLrHyJcVtILnkeBCXD5loTBYIGCYg3q2k). Full details of the talk can be seen in the ‘Country Report’ for France later in this document.

During the annual general meeting of December 15th, 2021, we paid tribute to our deceased members, before listening to two scientific talks (the recording of which can be viewed at: <https://www.youtube.com/playlist?list=PLrHyJcVtILnLQNHowmludJcig8HWebR8>). Full details of the talks are available in the ‘Country Report’ later in this document.

HUNGARY

The History of Science Section of the Hungarian Geological Society met from 20-22 September 2021. In addition to the election of the new council, the following paper was presented on September 20: Tóth, Á.: Reception of the Wegener theory in Hungary.

On September 22, in a memorial session on the 200th anniversary of the birth of Miksa Hantken, the following historical lectures were presented:

Kázmér, M.: Professional career of Miksa Hantken in pictures.

Breznysnyánszky, K.: Miksa Hantken, director of Institute of Geology.

Görög, Á., and Szente, I.: Contemporary Hantken.

Szentesi, Z., and Görög, Á.: The legacy of Hantken.

Mohr, E.: Miksa Hantken and the research of foraminifers.

Galács, A.: Miksa Hantken and the beginnings of the study of Jurassic Ammonites in Hungary.

ITALY

The activities of the History of Geoscience Section of the Italian Geological Society during 2021 continued with the organisation and participation in seminars and conferences, publication of scientific and popular articles in national and international journals, on the Section's blog (<http://www.geoitaliani.it>) and with dissemination of news related to the history of geology topic on the Facebook page (<https://www.facebook.com/geoitaliani/>) and on Twitter. The Facebook page has 2798 followers, an increase of about 10% since last year.

The Section's blog has published a number of short notes by various Section members; the blog statistics show almost 501,000 visits since its creation, with a daily average of about 150 visits in recent months.

Among the various social activities, the section has also activated a YouTube channel (<https://www.youtube.com/channel/UCNL6k7NY4pyEt2zKnXYtl8Q/featured>).

Various activities

Conclusion of the activities of the collaboration agreement between ISPRA - Lazio Region - Metropolitan City of Rome Capital for the preparation of a database and the editing of a volume on "The sites of geological memory in the territory of the Lazio Region".

Continuation of the activities related to the editing of "The biographies of the Presidents of the Italian Geological Society" finalized with the editing and publication of 59/78 biographies, written by the members of the Section: Alessio Argentieri, Luca Barale, Massimiliano R. Barchi, Andrea Candela, Simonetta Cirilli, Roberto Colacicchi, Fabiana Console, Giorgio Vittorio Dal Piaz, Giovanni De Caterini, Agata Di Stefano, Simone Fabbì, Paolo Roberto Federici, Giulia Innamorati, Giusy Lavecchia, Marcello Manzoni, Stefano Marabini, Marco Menichetti, Giorgio Minelli, Pietro Mosca, Marco Pantaloni, Eric Pavan, Fabio Massimo Petti, Antonio Praturlon, Marco Romano, Gian Battista Vai.

Continuation of the gathering of information for the compilation of the bibliographic repertory of publications on the History of Geology in Italy.

Conferences and seminars

January 29, 2021. Online presentation of the volume "I siti della memoria geologica nel territorio del Lazio", Memorie descrittive della Carta geologica d'Italia, volume 106. Rome, Italy.

April 14, 2021. Organization of the Seminar "Geologia e pseudoscienza", within the Master in "Comunicazione della Scienza dell'Università di Padova", Padua, Italy.

May 28, 2021. Organization of the online conference "Vermicino '81, Anno Zero. La conoscenza geologica del sottosuolo per la sicurezza del territorio e la protezione civile". Rome, Italy.

July 18-24, 2021. Participation to the 46th International Commission on the History of Geological Sciences (INHIGEO), online Symposium, Cracow, Poland.

September 22, 2021. Participation to the conference "Per terremoto o per sostegno manco: la Geologia nell'inferno di Dante", Università degli Studi di Torino- Dipartimento di Scienze della Terra, Turin, Italy, organized to celebrate the VII Century anniversary of the death of Dante Alighieri.

September 9, 2021. Participation to the seminar on "Dante Alighieri e le Scienze Naturali ed Umane", Accademia Pugliese delle Scienze - Università degli Studi della Basilicata, Potenza, Italy, organized to celebrate the VII century anniversary of the death of Dante Alighieri.

INHIGEO AND OTHER CONFERENCES

- September 17, 2021. Organization of the workshop W4 'Through the barricades: history of boundaries in Geology'. Congress of the Geological Society of Italy, Trieste, Italy.
- October 6-7, 2021. Participation to the international conference “Fréjus 150”, Turin, Italy.
- November 19, 2021. Organization of the conference “Straniero in patria. Luigi Ferdinando Marsili a Bologna”, Accademia delle Scienze di Bologna, Italy.
- November 24, 2021. Presentation of the book “I fossili una storia italiana. Il contributo italiano alle prime conquiste della paleontologia” by Marco Romano. Dipartimento di Scienze della Terra della Sapienza Università di Roma, Rome, Italy.
- November 25, 2021. Participation to the online conference “Erosione del Litorale tra Capo Linaro e Palo (Provincia di Roma). Gestione sostenibile degli interventi di difesa della costa”. SIGEA Lazio – Ordine Geologi del Lazio, Rome, Italy.
- November 25, 2021. Participation to the workshop “L'acqua da modificante a modificata” with the presentation: “Le sorgenti del Torbidone nella piana di Norcia”.
- December 1, 2021. Lectiones magistrales “Renato Funicello” presso il Liceo Lazzaro Spallanzani (Tivoli, Roma) Seminario Renato Funicello, scienziato, atleta e molto altro: un esempio di resilienza. Tivoli, Italy.
- December 3, 2021. Organization of the conference “140 anni insieme: la Società Geologica Italiana, 1881-2021”. Dipartimento di Scienze della Terra, Sapienza Università di Roma, Italy.
- December 21, 2021. Organization of the conference “Giovanni Arcangeli e Sigismondo De Boniaski cittadini e scienziati di San Giuliano nella storia delle Scienze Naturali”. Società Toscana di Scienze Naturali, S. Giuliano Terme (Pisa), Italy.

Exhibitions

- From October 10, 2021 to February 27, 2022. Participation to the exhibition “La scienza di Roma. Passato, presente e futuro di una città”. Palazzo delle Esposizioni, Rome, Italy.

Publications

- Argentieri A. (2021). Il webinar “VERMICINO ‘81, ANNO ZERO” (28/5/2021) - The “Vermicino '81, Year Zero” webinar (28/5/2021) Acque Sotterranee. *Italian Journal of Groundwater* AS37-517: 80 - 82 (DOI 10.7343/as-2021-517).
- Argentieri A. (2021). L'artista della cartografia geologica: Alfonso Di Pasquale, pittore e disegnatore. In “Giornate di geologia e storia” (S. Nisio, ed.) *Memorie Descrittive della Carta geologica d'Italia* 108: 163-172
- Argentieri A., Marchili P., Pantaloni M. (2021). Vermicino 1981: l'anno zero della conoscenza geologica del sottosuolo per la protezione civile e la gestione del territorio in Italia. Acque Sotterranee. *Italian Journal of Groundwater* AS36-510: 73-77. DOI 10.7343/as-2021-51073-77
- Argentieri A., Parotto M. (2021). The impulse given by Angelo Secchi to the development of Terrestrial Physics in Italy. In: *Angelo Secchi and Nineteenth Century Science. The Multidisciplinary Contributions of a Pioneer and Innovator*, edited by I. Chinnici, G. Consolmagno 225-242. Historical & Cultural Astronomy, Springer Nature Switzerland.
- Barale L. (2021). Bartolomeo Gastaldi (1818-1879) and the “glacial erratics” of the Torino Hill, NW Italy. *International Journal of Earth Sciences* 110(5): 1863-1873. DOI: 10.1007/s00531-021-02048-2

- Bernoulli D., Capuzzo N. (2021). The voyage of the ‘Guyot Stone’ from the Swiss Alps to Neuchâtel and Princeton. *International Journal of Earth Sciences* 110: 3015–3022. <https://doi.org/10.1007/s00531-021-02078-w>, Open access.
- Bernoulli D., Doglioni C. (2021). Geology without borders: A tribute to Albert W. Bally. *Marine Petroleum Geology* 134, <https://doi.org/10.1016/j.marpetgeo.2021.105340>
- Bilotta A.M., De Caterini G., Argentieri A. (2021). Vattenriket: il Regno dell’Acqua (Contea della Scania, Svezia) - Vattenriket: The Water Kingdom (Scania County, Sweden) Acque Sotterranee. *Italian Journal of Groundwater* AS38-534: 57-60 (DOI 10.7343/as-2021-534).
- Dal Piaz G.V. (2021). Felice Giordano dalla Gran Becca al Kinabalu nell’arcipelago dei Pirati della Malesia. *Alpinismo Fiorentino, Annuario 2021*, 2 fig.
- Dal Piaz G.V., Argentieri A. (2021). 150 years of plans, geological survey and drilling for the Fréjus to Mont Blanc tunnels across the Alpine chain: An historical review. *Italian Journal of Geoscience* 140/2, <https://doi.org/10.3301/IJG.2020.29>
- Dal Piaz G.V., Argentieri A., Dal Piaz Vittorio (2021). Silvia Zenari e la carta geologica delle Tre Venezie. *La Polifora, Istituto Veneto di Scienze Lettere ed Arti* n. 8, Febbraio 2021, 8. pp.
- Dal Piaz G.V., Argentieri A., Sella M. (2021). Il Traforo del Frejus e l’abbattimento dell’ultimo diaframma, con resoconto di Felice Giordano a Quintino Sella e Costantino Perazzi. *GeologicaMente* n. 4: 78-80.
- Dal Piaz G.V., Urbani C. (2021). Il Canale di Suez e il Traforo del Fréjus nei resoconti in parallelo di Luigi Torelli all’Istituto Veneto nella seconda metà dell’Ottocento. *La Polifora, Istituto Veneto di Scienze Lettere ed Arti*, n. 14, Agosto 2021, 8 pp.
- Furlani S., Musumeci D. (2020). Were the continents drifting before continental drift? Domenico Lovisato and the role of Wegener’s precursors in the theory of continental drift. *Physis* 2020/1-2 (LV).
- Macini P., Console F., Pantaloni M. (2021). Mapping petroleum resources in Italy: From Antonio Stoppani to the foundation of Agip (1926), *PHYSIS, Rivista Internazionale di Storia della Scienza* 2020/1-2 (LV), pp. 33-47. (ISSN 0031-9414).
- Macini P., Console F., Pantaloni M. (2021). The early cartography of petroleum resources in Italy (1866–1926). In: E. Borgogno Mondino and P. Zamperlin (Eds.), *Geomatics and Geospatial Technologies*, ASITA 2021, CCIS 1507 (Communications in Computer and Information Science), pp. 151–162, Springer Nature Switzerland AG 2022. ISSN 1865-0929 ISSN 1865-0937 (electronic) ISBN 978-3-030-94425-4 ISBN 978-3-030-94426-1 (eBook), https://doi.org/10.1007/978-3-030-94426-1_12
- Macini P., Mesini E. (2021). The birth of petroleum geosciences in Italy, *PHYSIS, Rivista Internazionale di Storia della Scienza*, 2021/1-2 (LVI), pp. 101-113. (ISSN 0031-9414).
- Mori M., Chiorino M.A., Dal Piaz G.V., Pelizza S., Sella M. (2021). 150 anni: il traforo ferroviario del Fréjus è la più antica galleria montana del mondo. *Gallerie* 138: 31-38, 6 fig.
- Musumeci D., Branca S., Ingaliso L. (2021). Magmatological tectonics. Alfred Rittmann's paradigm (1893-1980). *Earth Sciences History* 40(1): 261–281.
- Sammuri P. (2021). Two letters on mining sites in Tuscany by Giovanni Targioni Tozzetti to the Count of Richecourt. *Physis* LVI: 117-133.
- Sammuri P., Scapigliati W. (2021). Il pozzo toscano di Montemassi – Ribolla (1841-1844). *Atti Soc. Tosc. Sci. Nat., Mem., Serie A* 128: 9-20. DOI: 10.2424/ASTSN.M.2021.16
- Vai G.B., Venturini C. (2021). Con Gortani alla scoperta geologica dell’Alta Carnia: i taccuini di rilevamento 1910–1911 e 1921. *Gortania* 43: 5-63, Udine.

History of geology section on the journal “GeologicaMente”

- n. 4: *Le biografie dei Presidenti della Società geologica Italiana; Michele Deriu.*
- n. 5: *Vermicino '81, Anno Zero. La conoscenza geologica del sottosuolo per la sicurezza del territorio e la protezione civile.*
- n. 6: *CIAO PRAT!!! In memoria di Antonio Pratlurion; Antonio Pratlurion. Nota biografica; Antonio Pratlurion. Ricordo.*

Blog Geoitaliani

January - Il sinkhole di Marcellina (Roma), vent'anni dopo.

March - Silvia Zenari e la Carta geologica delle Tre Venezie.

June - Un'escursione in Riviera (di Luca Barale e Marcus Bicknell).

September - Workshop W4 'Through the barricades: history of boundaries in Geology'.

December - 140 anni insieme - La Società Geologica Italiana, 1881 - 2021; Traforo ferroviario del Frejus (1853-1871). 150 anni dall'inaugurazione.

Field trips

June 4, 2021. Scienza Insieme e Notte Europea dei Ricercatori, Rome:

Il Drizzagno e l'ansa morta di Spinaceto lungo il Tevere, caratteri geologici ed ecosistemi fluviale a confronto.

September 12, 2021. Scienza Insieme e Notte Europea dei Ricercatori, Anzio, Rome:

Tor Caldara: un itinerario tra geologia, ambiente e storia.

October 11, 2021. Settimana del Pianeta Terra, Civitavecchia-Tarquinia, Rome:

Il Monumento Naturale La Frasca: l'evoluzione dell'ambiente dal Pleistocene a oggi.

November 27-28, 2021. Festival delle scienze Auditorium Parco della Musica, Rome:

Le passeggiate geologiche con l'ISPRA - Il fiume e la città: tracce delle alluvioni storiche del Tevere;

Le passeggiate geologiche con l'ISPRA - Roma tra due fuochi: come gli eventi naturali hanno modificato la morfologia della città.

Report compiled by Marco PANTALONI

JAPAN

Two meetings of the Japanese Association for the History of Geological Sciences (JAHIGEO) were held at the Waseda Service Garden, Tokyo in 2021, partly on-line because of the Covid-19 pandemic. The summer meeting was held on June 26th. The winter meeting was held on December 19th. The Study Group for the History of Geosciences (*Chigaku-shi kenkyu-kai*), organized by JAHIGEO members since 2000, had its 79th meeting at the Waseda Service Garden, Tokyo, partly on- line, on 28 March 2021. The 69th annual meeting of the History of Science Society of Japan (HSSJ) was held on May 22-23 entirely on-line. Full details of the meetings appear in the 'Country Report' for Japan later in this document.

LITHUANIA

A conference of the Lithuanian Society of Science Historians and Philosophers entitled *SCIENTIA ET HISTORIA* 2021 was held virtually from 25–26 March, 2021. At the conference the following paper was presented: Eugenija Rudnickaitė. 2021. History of the meteorite collection at the

Museum of Geology of the Vilnius University. In: *Abstract book of conference SCIENTIA ET HISTORIA 2021 (Virtual Conference)*. 2021, p. 36. ISSN 2669-2872
http://www.polia.info/Genealogija/JAPabreza/2021-03-25%20scientia_et_historia.pdf

A virtual conference was held on 15-16 October 2021 on the topic of “Natural Science Education in a Comprehensive School–2021”. Eugenija Rudnickaitė presented on “Informal Science Education: Meteorites as a Source of Information from Space” which appeared in the *Proceedings of the Twenty-seventh National Scientific-Practical Conference, 15-16 October, 2021*. Šiauliai : *Scientia Educologica*. 2021, t. 27, Nr. 1, p. 58-66. ISSN: 2335-8408; DOI: 10.48127/gu/21.27.58.
http://gu.puslapiai.lt/gubum/wp-content/uploads/sites/4/journal/published_paper/volume-27/issue-1/2BTeyTeX.pdf

USA

American Association of Petroleum Geologists

The AAPG Annual Convention and Exhibition was held jointly with the Society of Economic Geophysicists in Denver, Colorado from September 26 to October 1, 2021. As part of the Convention, the AAPG History of Petroleum Geology Special Interest Group convened in-person with a petroleum geology historical session.

Geological Society of America

The GSA Annual Meeting was held in Portland, Oregon from 10–13 October 2021. The History and Philosophy of Geology Division of GSA sponsored or co-sponsored several sessions at the meeting including T174: *Great Geological Outcrops and Locales*; T114: *From the Guajira Desert to the Apennines, and from the Sardinia/Corsica Microplate to the Killer Asteroid: Honoring the Career of Walter Alvarez on the Occasion of his 80th Birthday*; and a Pardee Symposium P3: *Geoheritage: Celebrating Our Past, Protecting Our Future*. The Division also held its annual luncheon, business meeting, awards ceremony, and a reception for students and friends.

Petroleum History Institute

The P.H.I. publishes *Oil-Industry History*, an annual compilation of papers about the petroleum industry and its technical underpinnings. The Institute held its annual symposium in Pittsburgh, Pennsylvania from September 29 to October 1, 2021.

AWARDS

AWARDS

Professor Valentinas Baltrūnas was awarded with the **Golden Geologist's Hammer** for meritorious contributions to Lithuanian geology and for fostering science and culture. The Board of the Antanas Giedraitis Foundation established the Golden Geologist's Hammer, with the inscription *Mente et malleo* engraved on the stem.

Joanne Bourgeois (University of Washington, USA) is the recipient of the **2021 Gerald M. and Sue T. Friedman Distinguished Service Award** for her contributions to the History of Geology. The Friedman Award is presented annually by the Geological Society of America's History and Philosophy of Geology Division to an individual for exceptional service to the advancement of our knowledge of the History and Philosophy of the geological sciences. Past winners of the award are listed at: <https://community.geosociety.org/histphildiv/awards/dsa>

Renee M. Clary received the 2021 Transformation Award of the National Association of Geoscience Teachers (NAGT), Geoscience Education Research (GER) Division. Her research includes the incorporation of the history of science in multiple educational settings to improve learners' understanding of the nature of science.

Barry Cooper (University of South Australia, Adelaide) has been awarded the Tom Vallance Medal of the Geological Society of Australia for 2021 for his contributions to the history of geology. Barry has served as Secretary General and President of INHIGEO. The Tom Vallance Medal is a relatively new award commemorating the contributions the late Tom Vallance, a former INHIGEO Vice President. Past recipients of the Vallance Medal have been David Branagan, David Oldroyd, Tom Darragh and Sue Turner, all INHIGEO members.

Sandra Herbert received the Sue Tyler Friedman Medal from the Geological Society of London in 2020, in part for a paper on Charles Darwin as geologist that she and others published in 2009:

Herbert, S., Gibson, S., Norman, D., Geist, D., Estes, G., Grant, T., and Miles, A. 2009. Into the field again: Re-examining Charles Darwin's 1835 geological work on Isla Santiago (James Island) in the Galápagos Archipelago. *Earth Sciences History* 28(1): 1–31.

Stephen Rowland (University of Nevada, Las Vegas, USA) is the recipient of the 2021 **Mary C. Rabbitt History of Geology Award** for his contributions to the History of Geology. The Mary C. Rabbitt History of Geology Award is presented annually by the Geological Society of America's History and Philosophy of Geology Division to an individual for exceptional scholarly contributions of fundamental importance to our understanding of the history of the geological sciences. See: <https://community.geosociety.org/histphildiv/awards/rabbitt>

Dr. Eugenija Rudnickaitė was granted the status of 'Honorary Member' of the Geological Society of Lithuania.

Gerardo J. Soto (INHIGEO member from Costa Rica) was awarded the 9° National Geological Award named in honor of Dr. César Dóndoli Burgazzi. The award will be given in 2022.

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DAVID F. BRANAGAN (1930–2022)



Figure 1. David Branagan holding the 2020 V. V. Tikhomirov Award Medallion.

INHIGEO Honorary Senior Member David Branagan passed away Sunday, 9 January 2022, at the age of 91. David started his geological career in 1958 at the University of Sydney, where he later obtained a lectureship, teaching first-year geology, which matched his desire to learn about many aspects of geology new to him, notably engineering geology. He retired from the University in July 1989 but continued as an Honorary Research Associate.

David's research for his doctorate was on the coal seams in the Newcastle region which led to the expansion of his nascent interest in the history of science and geology. David's interest in the history of geology and science was enhanced further through his contact and friendship with INHIGEO Vice President, Tom Vallance. David began to attend INHIGEO conferences where he contributed actively.

David was INHIGEO President from 1992 to 1996 during which he arranged INHIGEO's participation in the International Geological Congress (IGC) in Sydney 1994. More recently he arranged a field trip (that started in Sydney and ended in Brisbane) for INHIGEO as part of the Brisbane IGC in 2012.

Although having an international perspective, David for many years emphasised the achievements of Australian geological and scientific ideas through his extensive research, lectures and publications. David had around two hundred publications to his credit, of which about half are concerned with the history of geology, mineral exploration, and ideas in science, as well as biographies of geologists, engineers, and metallurgists. His most important work is his definitive biography of T.W. Edgeworth David, described as a masterful work on an Australian pioneering geological academic and explorer. In 2007 David was awarded an honorary DSc. by the University

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of Sydney, chiefly in recognition of this biography. Other honours followed, including the reception of the 2020 V. V. Tikhomirov Award for the History of Geology (Fig. 1).

Modified from INHIGEO Circular, March 2022, edited by Martina Kölbl-Ebert, University of Munich

A Memory of David Branagan

David Branagan was a geologist-historian who perfectly embodied the ‘INHIGEO spirit’. His passion for historical research, always considered to be of equal importance to geological studies, is clearly highlighted by his numerous publications and emphasized by his extraordinary ability to present their results in scientific conferences, as well as in informal discussions.

David was one of the founding members of our Commission and one of the youngest participants in the second INHIGEO symposium in Montreal in 1972, but he was also an active scholar in promoting the international role of the history of geological sciences throughout all his scientific life and academic career.

Particularly during the years of his INHIGEO Presidency, in the first half of the 1990s, he supported the importance of the constant dialogue between scientific and humanistic disciplines, encouraging new interdisciplinary research by young scholars to be involved as new members of INHIGEO. I consider myself very lucky to have been among them and to have learned so much from David’s precious explanations and advice, especially during the excursions that regularly take place after and/or precede the INHIGEO annual symposia. In all those occasions, David’s skills as a teacher, historian and field geologist were expressed at their best (often with a touch of that gentle sense of humour that only belongs to those who are truly competent scholars) and allowed us to recognize the value of historical-geological research through the observation of rocks, fossils, minerals, stratifications, structures and landscapes, as invaluable sources in order to understand the work and the ideas of the geologists of the past.

David Branagan, a wonderful person, dear friend and an excellent scholar, will be greatly missed by the whole INHIGEO community, but the memory of him will always remain as a shining reference for all of us.

Ezio Vaccari, University of Insubria, Varese, Italy

David Branagan has been remembered by his son, Marty Branagan, in the *Sydney Morning Herald*, on February 22, 2022 (<https://oa.anu.edu.au/obituary/branagan-david-francis-32337>).

His list of publications can be found in the *Encyclopedia of Australian Science and Innovation* (<https://www.eoas.info/biogs/P002064b.htm>).

A more extensive obituary by his colleagues will be published in the Annual Record 55 for 2022.

DAVID WALTER PEEL CORBETT
(25 April 1933 to 17 September 2021)

David Corbett (1933–2021) had a life-long interest in the history-of-geology and pursued this interest especially in his later years. Following from training and teaching as a geologist he was an active INHIGEO member during the period 1991–2016 and his contributions to the history of geology in Australia, especially in South Australia, during this period, have been substantial and pioneering. Sadly he passed away on 17 September 2021.

David Corbett retired from INHIGEO before his death in order to care for his wife, Barbara, who suffered from prolonged periods of ill health. Incredibly Barbara has outlived her husband in 2021.

Early in his career David earned a PhD in 1958, with a thesis titled “The Geochemistry of Oil Prospecting” from the University of Nottingham (U.K.) He then migrated to Australia later in the same year to join the Bureau of Mineral Resources based in Canberra with its associated field work in Papua New Guinea and outback Australia (Queensland and Northern Territory).

In 1962, David relocated to Adelaide, South Australia, where he gained appointment as Curator of Minerals and Fossils at the South Australian Museum. This early period in South Australia was notable for David as a period of specialisation on meteorites and tektites, including an historical record of these lodged in the South Australian Museum.

In early 1964, David was approached by the Department of Adult Education in the University of Adelaide to lead and teach mature age geology students on their annual exploratory field trips which ranged mostly into the remote areas in South Australia.

As a consequence of this involvement, David became a permanent staff member of the Department of Adult Education (later Department of Continuing Education), University of Adelaide in 1968 thus establishing a university link which was held until retirement in 1994 with an internal University transfer to its Centre for Environmental Studies in 1984. David obtained a voluntary position of Research Associate with the South Australian Museum following his retirement.

The transfer to the University of Adelaide allowed David to develop an even greater emphasis on historical themes in his University lectures in the first instance with two initial lecture courses given in 1972 and 1973 that were both entitled “The Earth and the Universe”. Historical themes were also expanded via a review of geological observations made by the first European explorers of South Australia. This was followed by a review of reports made by the first interested European settlers.

The International Geological Congress that was held in Sydney in 1976 was the first major history-of-geology conference held in Australia. It facilitated not only the visit of international experts to Australia but also the interaction between Australian history-of-geology enthusiasts.

David Corbett presented a paper to the Congress entitled “South Australia’s Contribution to the Development of Australian Geology in the Nineteenth Century”. It was this type of involvement that led him to make the history-of-geology an important part of his geological lectures. This activity also led to significant supporting publications.

Arguably the most significant publication that was prepared by David was his textbook entitled:

Corbett, D.W.P. 1976 “Rocks and Men: An Introduction to the History of Geology”
Contribution 44 of the Department of Adult Education, University of Adelaide, 67pp.

OBITUARIES

The front cover of this book is reproduced here with this obituary (Figure 1). *Rocks and Men* attempts successfully to interpret the early history of geology as understood by the pre-Christian philosophers such as Aristotle and Theophrastus. Corbett's (1976) contribution then progressively moves into the changing foci of geological understanding in Europe from the Middle Ages to the 20th century.

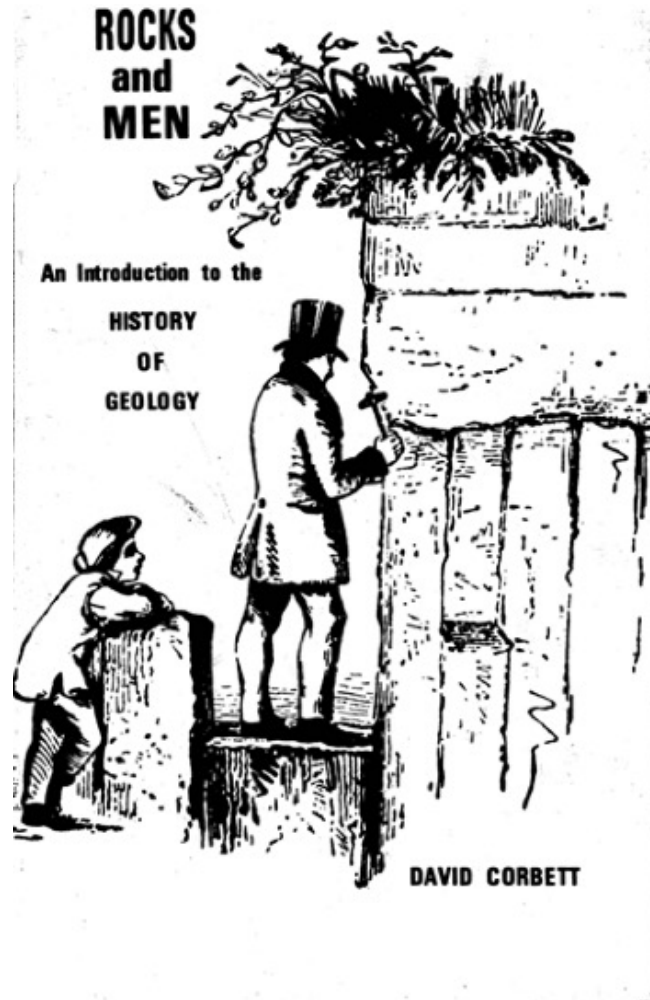


Figure 1. Title page of *Rocks and Men* by D.W.P. Corbett (1976).

A second historical volume edited and also partly written by David Corbett followed a few years later and is entitled:

Corbett, D.W.P. 1980 (Editor) "Darwin and Evolution" Contribution 72 of the Department of Continuing Education, University of Adelaide, 75pp.

As well as these publishing achievements, David also worked on the newly established University radio station lecturing on the history of geology. Individual chapters (and radio episodes) by David within this volume include:

Corbett, David, 1980. "Charles Darwin: Aspects of his Life and Work". Publication, Department of Continuing Education, University of Adelaide, 72: 2-23.

Corbett, David, 1980. "Darwin, Geology and Evolution". Publication, Department of Continuing Education, University of Adelaide, 72:24-35

In early 1983, Barry Cooper canvassed national support to establish a history-of-geology Specialist Group within the Geological Society of Australia (GSA) which David Corbett enthusiastically supported. This suggested entity was created as the "Earth Sciences History Group" of GSA in 1984 with Barry as inaugural Chair and David as inaugural Vice Chair on the Foundation Committee.

About the same time Barry and David also commenced collaborating to write a chapter on the history of geology in South Australia that was published by the Royal Society of South Australia in 1986 in a special volume commemorating the 150th anniversary of British colonization of South Australia and entitled "Ideas and Endeavors: The Natural Sciences in South Australia".

A few years later, David and Barry worked together again on the production of two Special Australian and New Zealand issues of the international journal *Earth Sciences History* where Barry was an Editor and David was the author of the following significant paper:

Corbett, D.W.P. 1987. The Foundations of South Australian Geology, 1802-1860. *Earth Sciences History* 6(2): 146-158.

David was also Foundation President of the locally based Field Geology Club of South Australia (FGC) (1972-1973). His foundation links to the FGC led to biographical profiles, 1977-1978, of historically prominent geologists, viz Ralph Tate and Walter Howchin from South Australia, as well as W.B. Clarke, based in New South Wales, being published in the newly launched, *FGC Bulletin*.

With the election of David Corbett to INHIGEO membership in 1991 he also developed a special interest in Sir Douglas Mawson, eminent geologist and polar explorer who was based in Adelaide until his death in 1958 and whose historical archives were then being stored close to David's University base. Two major papers eventuated.

Corbett, D.W.P. 1998 "The Geologist as Explorer". *Records of the South Australian Museum* 30:107-136.

Corbett, D.W.P. 2000. A staunch but testing relationship. Douglas Mawson and T.W. Edgeworth David. *Records of the South Australian Museum* 33:49-70

In the last decade of his life, David and his family assembled his life memories as a large volume of personal Memoirs. They may be cited as follows:

Corbett, D.W.P. 2020. Looking Back: A Personal History. Unpublished bound volume of 425 pages, copies of which are held by the Corbett Family.

Another initiative towards the end of his career was the composition of book reviews that were published in the INHIGEO *Annual Record* (known as the *Newsletter* prior to Number 46). Examples of these are:

OBITUARIES

INHIGEO *Newsletter* 34: 41-42 (2002) “Moles and Eagles: An earthly view of the origins of British Geology”. Book Review: H. Torrens “The Practice of British Geology, 1750-1850.

INHIGEO *Newsletter* 43: 60-62 (2010) “Leading Geologists and Jamaica”. Book Review: Donovan, S.K. (Editor). Memoir 205, Geological Society of America

INHIGEO *Newsletter* 44: 74-75 (2012) “A treasure trove on the history of minerals research”. Book Review: Proceedings of the 35th INHIGEO Conference, Madrid and Almadan, Spain

In conclusion, David Corbett has been a major contributor and notable pioneer in the modern interest in the history of geology especially in South Australia. It is hoped that there will be many more history-of-geology specialists like him.

B. J. Cooper and R. B. Major, both of Adelaide, South Australia

LORA NIKOLAEVNA LORDKIPANIDZE (7 October 1932–24 March 2022)

Lora Nikolaevna Lordkipanidze – Doctor of Geological and Mineralogical Sciences, and Honorary Senior Member of the International Commission for the History of Geological Sciences, passed away on 24 March 2022.

Lora Nikolaevna Lordkipanidze was a participant in many international congresses, symposia and meetings including: XIII International Congress on the History of Science (Moscow, 1971); bilateral symposia of the USSR-GDR (Berlin, 1975; Yerevan, 1979); USSR-Poland (Wroclaw, 1978); XXIII Annual Meeting of the Geological Society of the GDR (Halle, 1976 as a delegate of the Academy of Sciences of the USSR); XXVI session of the IGC (1980); X International Symposium INHIGEO (Budapest, 1982); author, co-author and editor of more than 200 works, including 30 monographs, books, and reference books. She was Laureate of the fund's prize of academician Khabib Abdullaev (2003); awarded with the Order 'Dustlik' (2003), as well as medals for 'Veteran of Labor' and '50 years of the Academy of Sciences of Uzbekistan', diplomas of the Presidium of the Academy of Sciences of the Republic of Uzbekistan and the boards of the All-Union and Republican Societies 'Knowledge'.



Irena G. Malakhova, Geological Institute, Russian Academy of Sciences

ANATOLY GEORGIEVICH RYABUKHIN
(21 January 1941 – 10 February 2022)

Anatoly Georgievich Ryabukhin passed away after a hard and long disease. He followed his father in the profession. His father, Georgy Evgenievich Ryabukhin (1908-1998), was a famous Soviet geologist, a specialist in regional and oil and gas geology, and a professor of the Gubkin Russian State University of Oil and Gas (founded in 1930). Anatoly Georgievich Ryabukhin graduated from Gubkin Russian State University in 1953. Tectonics, geology of oil and gas deposits, and the application of remote sensing methods in geology were the fields of his interests.



A.G. Ryabukhin worked in the Caribbean Basin and in the south of European Russia. He also studied geological structures of the Mediterranean Basin. In 1989, A.G. Ryabukhin defended a Doctor of Science thesis on geodynamics of the Antillean orogenic belts in the Mesozoic and Quaternary times. He obtained a professorship in 1990 at the Department of Dynamic Geology (Faculty of Geology, Moscow State University).

A.G. Ryabukhin was a gifted lecturer. He offered courses at three faculties of the University (Geology, Geography, Physics): Geomorphology with the Basics of Geology, General Geology, Geology with the Basics of Geotectonics, Space Methods in Geology.

A.G. Ryabukhin headed the Chair of the History and Methodology of Geosciences from 1990-2014. There are researches on the history of mobilism in Russia (1993) and the development of geosciences in the oldest University of Russia (Moscow University, 1755) in the list of his publications.

In 1996, A.G. Ryabukhin was elected an INHIGEO member. In cooperation with another member of the Commission from Russia (academician Victor E. Khain, 1914-2009) A.G. Ryabukhin published the textbook *History and Methodology of Geosciences*. He lectured on this course at the Faculty of Geology and had very friendly interactions with students.

He published many articles on the history and methodology of geology, and analyzed the ideas of L. Elie de Beaumont (1999), and M.V. Lomonosov (2009). A.G. Ryabukhin paid special attention to the first (G.E. Schtschurowsky) and recent (D. Oldroyd) historians of geosciences. In 2008, *Episodes* published the article by A.G. Ryabukhin on the history of the Natural History Museum of the Lomonosov University in Moscow. The bibliography of Anatoly Ryabukhin is available in the Information System “History of Geology and Mining” (<http://higeo.ginras.ru/view-record.php?tbl=person&id=760>).

Irena G. Malakhova, Geological Institute, Russian Academy of Sciences

**STANISŁAW KONTKIEWICZ: POLISH GEOLOGIST AND THE AUTHOR OF THE
FIRST GEOLOGICAL MAP OF THE KRYVORIZKYI
IRON ORE BASIN IN UKRAINE**

Andrzej J. Wójcik

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Polish Academy of Sciences
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Kryvorizkyi Iron Ore Basin or Kryvbas (Ukrainian: Кривбас, Криворізький залізорудний басейн) is an important economic and historical region in central Ukraine around the city of Kryvyi Rih, specializing in iron ore mining and the steel industry.

The ore deposits occur in seven levels within the Paleoproterozoic series of highly folded metamorphic rocks forming the syncline. Kryvbas is one of the most abundant iron ore basins on Earth. The deposit zone is meridional, about 100 km long and up to 6–7 km wide. The ore has been mined since 1881 by opencast and deep mines to a depth of 350 meters. There are two types of ore: the rich one with the iron content of about 65% (resources estimated at 2 billion tons) and the poor ones with the iron content of 25–45% which resources are estimated at 19 billion tons. The main ore minerals are hematite, martite and magnetite. The rich ores are of hydrothermal origin, have much less distribution and continuity, and are associated with tectonic zones where they appear as lenses and seams.

Many researchers have participated in the study of the geology of Kryvyi Rih. Unfortunately, much of the geological literature has not survived or is difficult to access. The very first information about the iron slate comes from 1781 from the journeys of W. Sujew. At the end of the 18th century, the famous Russian researcher P. S. Pallas, a professor of the Berlin Academy of Sciences, visited Ukraine. He drew attention to the granite complexes present there. In 1835–1837, Kryvyi Rih was researched by P. I. Kulszyn, who presented a description of the iron ores occurring there. The first serious work was presented in 1869 by professor N. P. Barbot de Marny. He indicated the basic types of rocks occurring here and defined the places of iron ore occurrence. Geological research was also carried out by the industrialist Aleksander Poll who made some French companies interested in the iron ore deposits.

In 1878–1879, Stanisław Kontkiewicz (Figure 1) began research at the request of the Mining Department. He made the first geological map of the region and iron ore deposits (Figure 2). He also distinguished age-old rock formations and proposed a three-segment division of the deposit series, which has survived to this day with minor changes. He also pointed to the tectonic complexity of the area. He believed that under the influence of strong lateral pressure, the rocks bent and folded into numerous folds, and the original width of the entire belt was reduced by a third, reaching a 45-degree slope. Kontkiewicz discovered also the other iron ore deposits, south of Kryvyi Rih.

STANISŁAW KONTKIEWICZ (6 May 1849 – 21 March 1924)

S. Kontkiewicz spent his childhood in the places of work of his father (educator) in Radzymin, Radom, Częstochowa, and finally in Warszawa. There, in 1866 he obtained his high school diploma in a gymnasium. Until 1868 he studied natural sciences at the Szkoła Główna Warszawska. Then, he continued his studies at the Politechnische Schule in Riga. After his graduation in 1871, Kontkiewicz worked on the railway line construction in Gomel. From 1875 to 1876 he studied at the Mining Institute in St. Petersburg and then worked in the Mining Department. From 1876 to 1877 he conducted geological research on metal ores in the Urals and anthracite coals at Lake Onega. He discovered a new mineral there – shungite. For the next



Figure 1. Stanisław Kontkiewicz (1849-1924) - (photograph 1891, by Karoli&Pusch Warszawa). Special Collections Scientific Library PAU i PAN, Kraków, sign. BZS.RKPS.6625.k.7/1.

two years, as mentioned, he researched areas in Ukraine (Figure 3). From 1880 Kontkiewicz conducted geological exploration in the Kingdom of Poland. From 1881 he worked in the private mining industry – first in Kryvyi Rih, as the director of a French company. From 1882 he collaborated with the Geological Committee. In 1886 he became the director of “Flora” hard coal mine in Dąbrowa Górnicza. Aside from the research of coal seams, he also conducted (until 1905) extensive studies of the Jurassic sediments of the Kraków-Częstochowa Upland. Kontkiewicz accumulated significant collections of rocks and fossils. From 1897 he taught mineralogy and geology at the Mining School in Dąbrowa Górnicza. He published in the scientific press of various countries, mainly Russia and the Kingdom of Poland. He also wrote geology textbooks for schools. From 1905 Kontkiewicz lived in Warszawa and worked in the management of “Flora” Coal Mines Association. At that time, he collaborated with the Geological Laboratory of the Industry and Agriculture Museum. From 1913 he was a member of the Organizing Committee of the Mining Academy in Kraków.

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- KONTKIEWICZ S., 1882: *Geologische Beschreibung der Umegegend von Krivoi Rog in Süd Russland*, „Зап Императ С.-Петербург. Минер. Общ.”, Series 2, vol. 17, p. 61-107.
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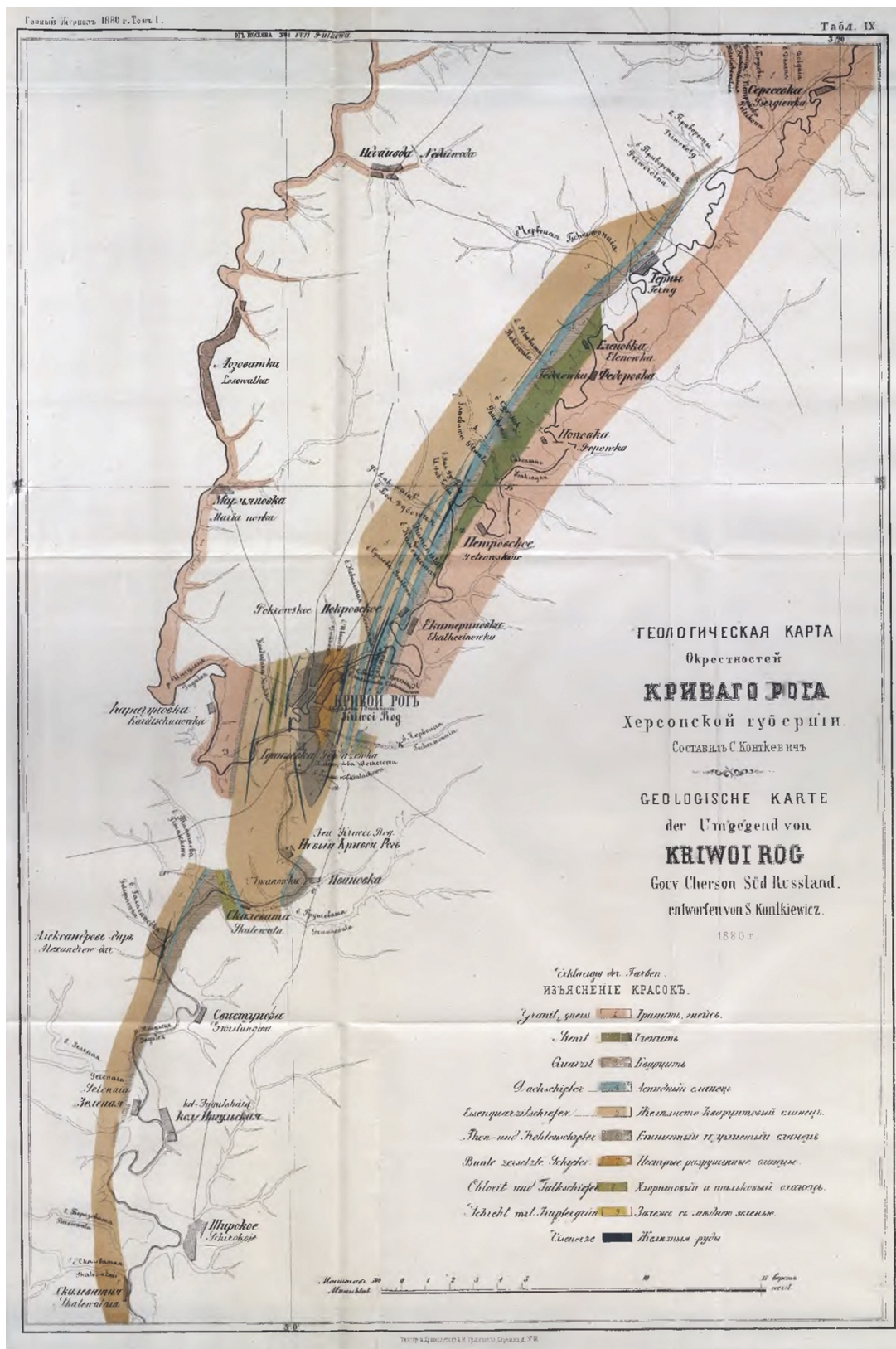
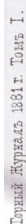


Figure 2. First geological map of the Kryvyi Rih iron ore deposit (1880) by KONTKIEWICZ S. (Контеквич С. С.), 1880: Геологическое описание окрестностей Кривого Рога Херсонской губ., „Гор. Журн.,” vol. 1, p. 341-375.



Tunc, Tuncer'diş, A. H. Tuncer. Öykü, roman, F. 12.

BOOK REVIEW

A Living Legacy of Memory. Russian Geological Dynasties: Thoughts about the Past and the Future: To the 300th Anniversary of the Russian Academy of Sciences and the 270th Anniversary of the Moscow State University [collected papers] / Ed., compiler D.Ya. Romanova. Moscow: The Heritage Institute. 2021. 276 p. DOI 10.34685/HI.2021.62.23.019; ISBN 978-5-86443-363-8. (In Russian) <https://heritage-institute.ru/wp-content/uploads/2021/09/geologicheskie-dinastii.pdf>

The publication is dedicated to two upcoming significant events for Russia: the 300th anniversary of the Russian Academy of Sciences (1724) and the 270th anniversary of the Lomonosov Moscow State University (1755). Members of the Russian Academy of Sciences, regional geologists, and representatives of the Likhachev Russian Research Institute for Cultural and Natural History Heritage are among contributors. Particular attention is paid to the development of modern geological concepts in the context of professional and family succession.

The Preface underlines that “personal and family safety of any Russian were subject to higher values – to survival and security of the Fatherland. The highest destiny of any individual was service to the state” (p. 11 in Okorokov A.V. 2004. *Russian Volunteers*. Moscow: Avuar Consulting, 446 p.). These comprise an epigraph.

Founders of dynasties came from different countries to serve Russia or were originally Russian. Such dynasties as Iossa, Karpinsky, Kulibin, Barbot-de-Marni, Golubyatnikov, Obruchev, Tscherniyshev, Luchitsky and many others are inscribed in gold letters in the history of mining and geology in Russia. The peer-reviewed collection includes articles about geologists of different generations (see examples below).

Four generations of Vernikovsky. Anton K. Vernikovsky (1869–1924) moved to Siberia after the Polish uprising in 1863–1864. Three generations of his descendants subsequently worked in geological expeditions and institutions in Siberia, Middle Asia, Arctic, and Ukraine.

The Sergeev-Eremin dynasty also consisted of four generations. The best known representative was the academician Eugene M. Sergeev (1913–1997) – the founder of the school of engineering geology at the Moscow State University. Both daughters and the husband of one of them – corresponding member of the Russian Academy of Sciences Nickolai I. Eremin (1932–2021), also were famous geoscientists with connections to the Geological Faculty of Moscow State University.

The story about the interesting fate of four generations was shared by an employee of the Geological Institute of the Russian Academy of Sciences, Alexander O. Mazarovich (b. 1954). The dynasty owes its beautiful surname to ancestors from Montenegro. A famous Russian geoscientist, and professor at the Moscow University, Alexander N. Mazarovich (1886–1950) was the founder of a dynasty. He was also a founding-father of the Faculty of Geology. His son Oleg A. Mazarovich (1922–2002) also was associated with the Moscow University during his life.

The newly elected President of the Russian Mineralogical Society, Sergey V. Krivovichev (born 1972), told his story about three generations of mineralogists and crystallographers.

In February 2022, we lost INHIGEO member Anatoly G. Ryabukin (see his obituary in this issue and his family photo to the right). He came from the Ryabukhin-Lobusev dynasty. The founder



Рис. 3. Г. Е. Рябухин, Д. А. Рябухин, А. Г. Рябухин

was George E. Ryabukhin (1908–1998). Professor G.E Ryabukhin was known for oil-prospecting works in Siberia, Arctic, China, Egypt, and he lectured at the I.M. Gubkin Moscow Oil Institute.

All articles of the book are beautifully illustrated with documents and photographs from personal archives of the contributors. Publication of the peer-reviewed book was initiated after the roundtable at the Likhachev Russian Research Institute for Cultural and Natural History Heritage devoted to the Puscharovsky dynasty. The paper of Dmitry Yu. Puscharovsky (b. 1944) about his work in mineralogy and crystallography and the achievements in geotectonics of his father Yuri M. Puscharovsky (1916-2018) is included in the book too.

The President of the Faculty of Geology of Moscow University, D.Yu. Puscharvsky, announced the intention to continue a series of publications about dynasties in geology. We wholeheartedly support this initiative and hope to take part in this interesting work.

Irena G. Malakhova, Geological Institute, Russian Academy of Sciences

COUNTRY REPORTS FOR 2021

AFRICA ANNUAL REPORTS FOR 2021

Submitted by: Dr Sharad Master, INHIGEO Vice-President for Africa (2020-2024)

There were no international meetings relating to History of Geological Sciences in Africa in 2021, but several Africans participated in the Annual Meeting of INHIGEO, which was held online and coordinated from the Polish Geological Institute in Warsaw, Poland.

The Colloquium of African Geology, which was originally scheduled to take place in Fez, Morocco, in November 2020, was postponed to 2101 due to the Covid-19 Pandemic. However, the persistence of the pandemic in 2021 led to further postponements to 2022. As a consequence, the largest African meeting in geosciences failed to take place on the continent for a second year in a row, and it was thus not possible to make contact with geoscientists from other African countries, and to expand the influence and interest in INHIGEO and its activities, as had been planned.

In South Africa, the Geocongress that had been planned for 2021 suffered the same fate, and was postponed to 2022. Quite a number of prominent and even world-famous geoscientists who had worked in South Africa passed away in 2020 and 2021, many of them due to the effects of Covid-19. Their obituaries were published in the *Geobulletin of the Geological Society of South Africa*. There were also some book reviews published in the same journal, as well as other articles related to the history of geological sciences, and on active geoscientists.

News from Zimbabwe was reported in the *Newsletter* of the Geological Society of Zimbabwe (www.geologicalsociety.org.zw).

Obituaries of Geoscientists:

Altermann, Wlady (2021). Obituary: Dietrich Dankwert Klemm 29 January 1933 to 2 October 2020. *Geobulletin Geological Society of South Africa* 64(1) March: 41-44.

Bristow, John; Owen Garvie; Jeff Harris; Paddy Lawless; Barbara Scott Smith; Assie van der Westhuizen (2021). Obituary: Derek Nigel Robinson 18 February 1942 to 30 October 2020. *Geobulletin Geological Society of South Africa* 64(1) March: 43-47.

Hartnady, Michael; Ruth Hartnady; Dylan Blake (2021). Obituary: Christopher John Hubert Hartnady 4 July 1945 to 23 July 2021. *Geobulletin Geological Society of South Africa* 64(3) September: 36-40.

Hartnady, Michael; Ruth Hartnady; Dylan Blake (with contributions from Judy Bryant, John Rogers and Steve Richardson) (2021). Obituary: Elizabeth Rowena Hay 21 October 1955 to 8 July 2021. *Geobulletin Geological Society of South Africa* 64(3) September: 40-44.

Dunlevy, John (2021). Obituary: Lesley Turner 29 April 1947 to 16 July 2021. *Geobulletin Geological Society of South Africa* 64(3) September: 45-46.

Anhaeusser, Carl; Richard Viljoen (2021). Obituary: Morris Viljoen 21 July 1940 to 19 August 2021. *Geobulletin Geological Society of South Africa* 64(3) September: 46-52.

Slade, Carl (2021). Obituary: Larry Edwin Neuhoﬀ 27 September 1950 to 13 April 2021. *Geobulletin Geological Society of South Africa* 64(4) December: 33-35.

Meintjies, Gerhard (2021). Obituary: Nicolaas Johannes Grobler 7 December 1930 to 18 October 2021. *Geobulletin Geological Society of South Africa* 64(4) December: 35-37.

Mtewa, Kennedy (2021). Godfrey Gundani 17/1/1969 – 16/1/2021. *Geological Society of Zimbabwe Newsletter* 2021(1) February: 30-31.

Du Toit, Andy; Steve Duma; Tim Broderick (2021). Obituary: Sidney Simango. *Geological Society of Zimbabwe Newsletter* 2021(2) June: 15-16.

Geological Society of Zambia (2020). In Memoriam: James Mwale. *Geological Society of Zambia Newsletter* 3 June 2020: 1-7. https://www.geozambia.org/wp-content/uploads/2020/06/GSZ_Newsletter_Issue3_2020-.pdf

Book Reviews:

Anhaeusser, Carl (2021). Book Review: ‘The Geotraveller - Geology of Famous Geosites and Areas of Historical Interest’ by Roger N. Scoon. *Geobulletin Geological Society of South Africa* 64(2) June: 47-48.

Articles of Geohistorical Interest:

Master, S., and Henry, G. (2021). The first fossil locality in the Karoo Basin rediscovered after 218 years! *Geobulletin Geological Society of South Africa* 64(2) June: 24-26.

Steenkamp, Nicolaas C. (2021). KwaHlathi Diamond Rush 2021. *Geobulletin Geological Society of South Africa* 64(3) September: 24.

Prevec, Steve (2021). Rochelle Wigley: A distinguished alumnus of South African geoscience. *Geobulletin Geological Society of South Africa* 64(4) December: 12-15.

Scoon, Roger; Viljoen, Richard (2021). Morris Viljoen and the Bushveld Complex. *Geobulletin Geological Society of South Africa* 64(4) December: 15-18.

Cawthorn, Grant (2021). Geoheritage: Dr Hans Merensky. *Geobulletin Geological Society of South Africa* 64(4) December: 24-29.

Mtewa, Kennedy (2021). Historical photographs relating to early ZIMPLATS exploration. *Geological Society of Zimbabwe Newsletter* 2021(1) February: 6-7.

COUNTRY REPORTS

46th INHIGEO Conference, Warsaw, Poland, 19-22 July, 2021, Papers from Africa:

Garba, A. (2021) The evolution of the Nigerian Geological Survey Agency (NGSA) .

Kusi, M.M.A.N., Neh Fru, M.I. (2021) The birth of the Institute of Geological and Mining Research. [Yaounde, Cameroon]

Master, S. (2021) Mapping Basutoland: Correspondence between geologists Gordon Murray Stockley and Alexander Logie du Toit (1938–1946).

Nguno, A.K., Schneider, G.I.C. (2021) The Geological Survey of Namibia: From Colonial Office to National Geoscience Institution.

**Report compiled by Dr Sharad Master
INHIGEO Vice-President for Africa**

ARGENTINA ANNUAL REPORT 2021

In Argentina the most important activity on the history of geology during 2021 was the Symposium on the History of Paleontology, held during the XII Congress of the Argentine Paleontological Association (a virtual meeting held on 23–26 November 2021) where several INHIGEO members participated. A total number of seventeen papers on historical issues were presented and will be published in a proceedings volume.

In addition, several books and articles, as listed below, were published during 2021.

Books (in Spanish):

Alonso, R. N. 2021. [BASIC MINERALOGY. REFLECTIONS ON THE FASCINATING MINERAL WORLD]. *Mineralogía Recreativa. Reflexiones en Torno al Fascinante Mundo Mineral*. Prólogo del Prof. Dr. Guillermo Chong Díaz. Prefacio de Prof. Dra. Juana Norma Rossi. 1a ed., Mundo Gráfico Salta Editorial, 236 p.; 20 x 15 cm. ISBN 978-987-698-326-6. Salta.

Alonso, R. N. 2021. [ESSAYS AND REFLECTIONS ON MINING, MINES, MINERS AND MINERALS]. *Ensayos y reflexiones sobre Minería, Minas, Mineros y Minerales*. Prólogo del Dr. Hernán Celorrio. Prefacio de Lic. Eddy Lavandaio. 1a ed., Mundo Gráfico Salta Editorial, 196 p.; 20 x 15 cm. ISBN 978-987-698-365-5. Salta.

Guereschi, A.B., Martino, R.D. & Ramos, V.A. (eds.) 2021. La mujer en la Geología [WOMEN IN GEOLOGY]. Asociación Geológica Argentina, Serie D, Publicación Especial No. 14: 1-152.

This book includes a total number of twenty-three papers, as follows:

Aguirre Urreta, B. & Ramos, V.A. 2021. Las cinco primeras geólogas egresadas de la Universidad de Buenos Aires: temprana paridad de género.

- Alonso, R.A. 2021. Lola Mora y su incursión por la minería y el petróleo [The plastic artist Lola Mora and her interest in mining and oil].
- Alonso, R.N. 2021. Ascensión Isasmendi de Dávalos: primera empresaria minera de Salta. [Acensión Isasmendi de Dávalos: Salta's first mining businesswoman in the 19th century].
- Alonso, R.N. 2021. Vida y obra de la paleontóloga Margarita Toro [Life and work of paleontologist Margarita Toro in Bolivia].
- Ametrano, S. and Carrasquero, S.I. 2021. Las primeras geólogas en la Universidad Nacional de La Plata (1906-1950)
- Ametrano, S., Montenero T., Pezzutti, N. and Coniglio, J. 2021. Milka Kronegold de Brodtkorb: desafíos de.
- Bonalumi, A.A. 2021. Geóloga María Afazani de Juárez, petróloga. En silencio para la gente, pero no para la Geología de Córdoba.
- Calegari, R.J. 2021. Dra. María Casanova, su huella en YPF.
- Lovecchio, J.P., Rodríguez Schelotto, M.L. & Raggio, M.F. 2021. ¿“El petróleo no es para las chicas”? : relatos de mujeres geólogas que iniciaron sus carreras en la industria del petróleo de la década de 1980.
- Martino, R.D. 2021. Juana Norma Rossi y su contribución a la Mineralogía petrográfica en la Cátedra de Petrología Ígnea y Metamórfica, Universidad Nacional de Córdoba.
- Martino, R.D. 2021. Josefa Vicenta Giambastiani de Peláez (1891- 1974): primera doctora en Geología y Mineralogía de la Universidad Nacional de Córdoba.
- Montenegro, T. & Concheyro, A. 2021. Edelmira Mórtola, primera geóloga de la
- Narváez D., P. 2021. Breve historia del desarrollo profesional de geólogas en Chile, con énfasis en las.
- Parejas, C.S. 2021. Relato del terremoto de 1822 en Chile y la controversia geológica vivida por Maria.
- Passeggi, E. & Zucol, A.F. 2021. Hetty L. R. Bertoldi de Pomar, una precursora de los estudios fitolíticos en Argentina.
- Ramos, V.A. 2021. Pierina Pasotti: una pionera en la Neotectónica de las pampas República Argentina.
- Tanuz, M.A. 2021. Paulina Mühlmann, una pionera de la geología de campo una geóloga en el siglo XX.
- Ramos, A.V., (ed.) 2021. *Los miembros Correspondientes de la Asociación Geológica Argentina*. Asociación Geológica Argentina, Serie D, Publicación Especial No. 15: 1-318.

This multi-author book includes the biographies and lists of papers of 43 correspondent members of the Argentine Geological Society, *i.e.* A. Heim (1882–1965), V. M. López (1905-1989), L. Jaques de Moraes (1896-1968), H. Gerth (1884-1971), A. Herrero Ducloux (1915-1965), H. Flores Williams (1906-1984), G. Zuloaga (1904-1984), J. Muñoz Cristi (1898-1967), R. Méndez Alzola (1907-1981), U. G. Cordani, J. C. Vicente, I. W. D. Dalziel, A. V. Carozzi (1925-2014), Miller (1936-2020), O. Rösler (1938-2018), M. R. A. Thomson (1942-2020), G. Westermann (1927-2014), Mario Barbieri, R. Charrier, J. Corvalán (1929-1996), E. Godoy, F. Hervé Allamand, E. Mutti, J. Saavedra Alonso, S. Mahlborg Kay, J. Oyarzúm Muñoz (1937-2021), R. J. Pankhurst, R. Ch. Whatley (1936-2016), R. W. Allmendinger, T. E. Jordan, K. Creer (1925-2020), K. Schwab, J. Bossi (1934-2020), A. von

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Hillbrandt, P. Edwin Potter (1925-2020), P. Černý (1934-2018), F. (Ferrán) Colombo, K. Kawashita (1937-2020), C. Mpodozis, P. F. Rawson, P. R. Cobbold (1946-2021), M. Basei, N. Heredia

Articles

- Alonso, R.N. 2021. Women in Geology from Argentina, Chile and Bolivia. Book Review, *Episodes, Journal of International Geoscience*, IUGS, 44 (4): 469-471. <https://doi.org/10.18814/epiugs/2021/021033>.
- Ramos, V.A. 2022. Los inicios de la enseñanza de la geología en Latinoamérica. *MAYA Revista de Geociencias*, Febrero 2022, pp. 48-56.
- Riccardi, A. C. 2021. Francisco P. Moreno en el avance del conocimiento de la Patagonia. *Ciencia e Investigación* 71 (3): 13-31.

Newspaper articles in Geology and History of Geology (in Spanish):

- Alonso, R. N. 2021. History of sedimentary iron in northern Argentina: <https://www.eltribuno.com/salta/nota/2021-1-3-21-45-0-el-hierro-de-unchime-y-zapla>
- Alonso, R. N. 2021. An old colonial dictionary: <https://www.eltribuno.com/salta/nota/2021-1-11-0-0-0-salta-en-un-viejo-diccionario-colonial>
- Alonso, R. N. 2021. Francisco San Roman, the geographer of Atacama: <https://www.eltribuno.com/salta/nota/2021-1-18-0-0-0-san-roman-el-geografo-de-atacama>
- Alonso, R. N. 2021. Geological history of Coranzulí, Puna of Jujuy: <https://www.eltribuno.com/salta/nota/2021-1-25-0-0-0-historia-geologica-de-coranzuli>
- Alonso, R. N. 2021. Lorenzo Sundt and his geological observations: <https://www.eltribuno.com/salta/nota/2021-2-1-0-0-0-lorenzo-sundt-y-la-puna-argentina>
- Alonso, R. N. 2021. A paleontological name for a Salta hero, Guemes: <https://www.eltribuno.com/salta/nota/2021-2-8-0-0-0-homenaje-paleontologico-a-martin-guemes>
- Alonso, R. N. 2021. History of geysers in the Puna region: <https://www.eltribuno.com/salta/nota/2021-2-15-0-0-0-geiseres-y-manantiales-en-nuestra-puna>
- Alonso, R. N. 2021. Alejandro Bertrand and his studies in the Puna region: <https://www.eltribuno.com/salta/nota/2021-2-22-0-0-0-alejandro-bertrand-y-la-puna-de-atacama>
- Alonso, R. N. 2021. Crystals of inyoite in the Puna region: <https://www.eltribuno.com/salta/nota/2021-3-1-0-0-0-inyoita-el-borato-de-los-bellos-cristales>
- Alonso, R. N. 2021. Geosciences and society: <https://www.eltribuno.com/salta/nota/2021-7-12-0-0-0-geociencias-y-sociedad>
- Alonso, R. N. 2021. History of solar storm in our planet: <https://www.eltribuno.com/salta/nota/2021-7-26-0-0-0-el-ardor-de-los-cielos>
- Alonso, R. N. 2021. Natural history of caves: <https://www.eltribuno.com/salta/nota/2021-8-2-0-0-0-historia-natural-de-las-cuevas>

- Alonso, R. N. 2021. History of mines and miners: <https://www.eltribuno.com/salta/nota/2021-8-9-0-0-0-historias-de-nuestras-minas-y-mineros>
- Alonso, R. N. 2021. Red beds in northern Argentina: <https://www.eltribuno.com/salta/nota/2021-8-16-0-0-0-las-capas-rojas-del-norte-argentino>
- Alonso, R. N. 2021. Natural history of landscapes: <https://www.eltribuno.com/salta/nota/2021-8-23-0-0-0-el-retrato-en-la-roca>
- Alonso, R. N. 2021. Mines, miners and minerals: <https://www.eltribuno.com/salta/nota/2021-8-30-0-0-0-minas-mineros-y-minerales>
- Alonso, R. N. 2021. History of badlands in northern Argentina: <https://www.eltribuno.com/salta/nota/2021-9-6-0-0-0-historia-de-las-tierras-malas>
- Alonso, R. N. 2021. The man of the Puna: <https://www.eltribuno.com/salta/nota/2021-9-13-0-0-0-el-hombre-de-la-puna>
- Alonso, R. N. 2021. The figured stones: <https://www.eltribuno.com/salta/nota/2021-9-20-0-0-0-las-piedras-figuradas>
- Alonso, R. N. 2021. Life and works of Rafael Argañaraz, a miner: <https://www.eltribuno.com/salta/nota/2021-9-27-0-0-0-rafael-arganaraz-un-minero-vocacional>
- Alonso, R. N. 2021. History of El Sauce thermal springs: <https://www.eltribuno.com/salta/nota/2021-10-11-0-0-0-las-fuentes-termales-de-el-sauce>
- Alonso, R. N. 2021. Experiences in scientific journalism: <https://www.eltribuno.com/salta/nota/2021-10-13-17-13-0-experiencias-autobiograficas-de-cuatro-decadas-en-el-periodismo-cientifico>
- Alonso, R. N. 2021. José Bonaparte, a dinosaur man: <https://www.eltribuno.com/salta/nota/2021-10-18-0-0-0-recuerdos-sobre-jose-bonaparte>
- Alonso, R. N. 2021. Averroes and the deep time: <https://www.eltribuno.com/salta/nota/2021-10-25-0-0-0-averroes-y-el-tiempo-ilimitado>
- Alonso, R. N. 2021. History of curious landscapes in northern Argentina: <https://www.eltribuno.com/salta/nota/2021-11-1-0-0-0-paisajes-curiosos-en-el-norte-argentino>
- Alonso, R. N. 2021. The wonderful world of the rocks. <https://www.eltribuno.com/salta/nota/2021-11-7-19-55-0-el-mundo-maravilloso-de-las-rocas>
- Alonso, R. N. 2021. A curious cave in a clay deposit: <https://www.eltribuno.com/salta/nota/2021-11-15-0-0-0-la-mitica-cueva-de-rumical-en-cerrillos>
- Alonso, R. N. 2021. Fossils, rocks and meteorites: <https://www.eltribuno.com/salta/nota/2021-11-22-0-0-0-fosiles-rocas-y-meteoritos>
- Alonso, R. N. 2021. Julio Monteros, a graptolite man: <https://www.eltribuno.com/salta/nota/2021-11-29-0-0-0-julio-monteros-y-los-graptolitos>
- Alonso, R. N. 2021. History of geology and mining in Jujuy province: <https://www.eltribuno.com/salta/nota/2021-12-6-0-0-0-la-rica-historia-de-la-geologia-y-la-mineria-en-jujuy>

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Alonso, R. N. 2021. Landscapes and its origin: <https://www.eltribuno.com/salta/nota/2021-12-12-21-28-0-erosion-la-artista-de-los-paisajes>

Alonso, R. N. 2021. Libraries and his treasures: <https://www.eltribuno.com/salta/nota/2021-12-20-0-0-0-las-bibliotecas-y-sus-tesoros>

Alonso, R. N. 2021. Ludwig Brackebusch and his geological observations: <https://www.eltribuno.com/salta/nota/2021-12-27-0-0-0-brackebusch-un-sabio-en-nuestras-termas>

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

ARMENIA ANNUAL REPORT FOR 2021

G.E. Malkhasyan prepared materials about the lives and scientific heritage of 3 outstanding Armenian geologists – geologist and the first dean of the geological faculty of Yerevan State University - O.S. Stepanyan; geophysicist R.T. Mirijanyan; hydrogeologist V.A. Avetisyan. He also digitized a map of the underground freshwater resources of the Republic of Armenia, that was created in 1997 and left hand drawn after the death of the authors. The digitized map was gifted to several scientific organizations and Ministries.

Kh.B. Meliksetian wrote an article devoted to Holocene volcanism in Armenia (Karkar, Syunik Volcanic Ridge) that showed that volcanic activity associated with the Syunik fault was superimposed on human activity in Southern Armenia from the Paleolithic to the Bronze Age. He prepared materials on the topic “Ancient Armenia at the crossroads: Natural hazards and adaptation strategies in Armenia from 10 000 BCE onwards”. He also prepared materials about the life and scientific heritage of the outstanding Armenian geologist: B.M. Meliksetian.

G.P. Khomizuri began to collect materials for the history of geological thought in Armenia for the period 1869-1899. He was processing the materials collected after the publication of the monograph “Geotectonic Thought in Antiquity” in 2002 to complete the monograph “History of Geotectonic Thought from Antiquity to N. Steno”.

Publications:

Malkhasyan G. H.S. Stepanyan, R.T. Mirijanyan and V.A. Avetisyan. 2021. Encyclopedia of the Hayazg Foundation.

Meliksetian Kh., Malkhasyan G, B.M. Meliksetian 2021. Encyclopedia of the Hayazg Foundation. Meliksetian Kh., Neil I., Barford D., Milne J., Waters E., Navasardian G., Grigorian E., Olive V., Odling N., Karakhanian A. Volcanism at The Karkar Geothermal Prospect. 2021. Armenia. *Quaternary Geochronology* Volume 66: 101-201.

Perello B., Badalian R., Meliksetian Kh. 2021. Ancient Armenia at the crossroads: Natural hazards and adaptation strategies in Armenia from 10,000 BC onwards. *Quaternary-International Journal* 579: 1-114.

Khomizuri G. 2021. The development of geological thought in Ancient and Medieval China (Article 2). [URL](#)

Report compiled by G. Khomizuri, Yerevan (Armenia)
g.khomizuri@yandex.ru

AUSTRALIA ANNUAL REPORTS FOR 2020

Carol Bacon currently serves as the INHIGEO Vice-President for Australasia/Oceania. She continues her interest in the history of geology, particularly in the lives of people who have contributed to the understanding of Tasmanian geology. In recent times she has been involved in writing biographies of early settlers of Tasmania, made possible by access to diaries and letters from the 1830s to the 1860s. Carol attended the 2021 INHIGEO conference in Poland by Zoom and contributed an article on the mineralogist William Frederick Petterd (1849-1910) to the Anniversary Series. This coming year Carol intends to work on a biography of Charles Gould (1834-1893) who was commissioned by the Tasmanian Government in 1859 to make a geological survey and prepare a book on the geology of Tasmania.

Barry Cooper was awarded the Tom Vallance Medal of the Geological Society of Australia for 2021 for his contributions to the history of geology. The Tom Vallance Medal, a relatively new award, commemorates the contributions of past INHIGEO Vice President, the late Tom Vallance. Past recipients of the Vallance Medal have been INHIGEO members David Branagan, David Oldroyd, Tom Darragh and Sue Turner.

Ken McQueen maintained his portfolio of activities related to geoscience history and heritage, including mining history. These activities included continued membership of the Heritage Committee of the ACT Branch of the Geological Society of Australia, the Earth Sciences History Group of the GSA and the Steering Committee for the Australian National Rock Garden. He continued to serve on the Advisory Committee of the Australasian Mining History Association, maintaining the AMHA website and serving on the Advisory Committee and editorial board of *Journal of Australasian Mining History*. During the year he conducted field work related to mining history in central and northern New South Wales and commenced writing a report on the mining history of the Northeast Lachlan-Macquarie region of the state for the Geological Survey of NSW. A highlight of the year was the publication of an article in *Earth Sciences History* on early scientific theories of gold occurrence in Australia. Ken also completed a report for the Geological Survey of New South Wales on the mining history of the East Riverina region.

Publications and reports

- McQueen, K.G., 2021. Early theories and practicalities on gold occurrence in Australia. *Earth Sciences History* 40: 409-432. doi: 10.17704/1944-6187-40.2.409
- McQueen, K.G. 2021. Beneath the copper ‘tablecloth’: History of the Mount Hope mines, northwest New South Wales. *Journal of Australasian Mining History* 19: 85-107.
- McQueen, K.G., 2021. Mining history of the East Riverina region, New South Wales. Geological Survey of New South Wales Open File Report GS2021/0042, 27 pp.
- McQueen, K.G., 2021. Comments on report by ACT Geotechnical Engineers Pty Ltd on the Canberra Brickworks site. Report to Geological Society of Australia, ACT Heritage Committee, 1 p.

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McQueen, K.G., 2021. Early ‘lithogeochemical’ mapping of the Australian landscape. *The Australian Geologist* 200: 38-39.

McQueen, K.G., 2021. The National Rock Garden is moving! *AIG News*, No. 144: 36-37.

AUSTRIA ANNUAL REPORTS FOR 2021

Austrian Working Group “History of Earth Sciences” of the Austrian Geological Society (AWGHES)

Due to Corona, there were no activities on the part of the working group on the history of geology of the Austrian Society for Geology in 2021. This year’s conference on geology and myth is scheduled for December 3, 2022. Submitted by Mag. Dr. Daniela Angetter-Pfeiffer.

Marianne Klemun has, in 2021, published one book and five articles (invited, peer reviews). She co-organized one conference. She gave six oral presentations.

Book

Klemun, Marianne together with Hubert D. Szemethy und Fritz Blakolmer (eds.), *Science Tracing. Spuren und Zeichen im öffentlichen Raum. Kulturhistorisches Wissen der Universität Wien* [Science Tracing. Traces and Signs in the Public Space. Cultural Knowledge of the University Vienna] (Böhlau: Vienna and Cologne, 2021).

Articles

Klemun, M.: Communicating Geology between Bureaucracy, Public, Society and Layman: Private Conversation and Productivity in the Metropolis Vienna. In: *Physis. Rivista Internazionale di Storia della Scienza*. Vol. LVI, Nuova Serie, Firenze (2022), 167–180.

Klemun, M.: “Spaces in Between”: Political, National and Epistemological Barriers and Bridges. Meetings of German Naturalists, Austria and the Congresses of Italian Scientists in Padua (1842) and Venice (1847). In: *Scinziati Italiani a Congresso nel Veneto Asburgico (1842, 1847)*, ed. by Valeria Mogavero and Maria Pia Casalena. *Venetica rivista degli istituti per la storia della Resistenza di Belluno, Padova, Treviso, Venezia, Verona e Vicenza ae del Polesine*, XXXV, n 60/1, Cierre edition 2021, 35–60.

Klemun, M.: *Spuren und Zeichen im öffentlichen Raum. Kulturhistorisches Wissen der Universität Wien. Eine Einleitung*. [Science Tracing. Traces and Signs in the Public Space. An Introduction] In: Marianne Klemun together with Hubert D. Szemethy und Fritz Blakolmer (eds.), *Science Tracing. Spuren und Zeichen im öffentlichen Raum. Kulturhistorisches Wissen der Universität Wien*. [Science Tracing. Traces and Signs in the Public Space. Cultural Knowledge of the University Vienna] (Böhlau: Vienna and Cologne, 2021), 11–23.

Klemun, M.: *Speik: Verschränkte Wege einer Wildpflanze zwischen Wissenschaft und Ökonomie*. [Winding Ways of a Wild Plant between Science and Economy] In: Lumetsberger Tanja and Hörtl Andrea (eds.): *Tagungsband, 19. Österreichische Botanik-Tagung, 22.-25. September 2021, Donau-Universität Krems und Museum Niederösterreich*. Edition Donau-Universität Krems, 33, Online.

Klemun, M.: Lokale Lebenswelten – Transregionale kulturelle und naturwissenschaftliche Aktivitäten. Sigmund Zois Baron Edelstein (1747-1819). [Local Ways of Life – Transregional Cultural and Natural Scientific Activities. The Mineralogist S. Zois]. In: Bulletin, Geschichtsverein für Kärnten, zweites Halbjahr 2021, Klagenfurt, 69–74.

Oral presentations

Zwischen Schauräumen und Laboratorien: Botanische Gärten als Wissens- und Wissenschaftsräume des 19. Jahrhunderts [Between Exhibition Room and Laboratories], bei: Von einer Wissenschaft des Lebens zu den Lebenswissenschaften in Zentraleuropa – wissenschaftshistorische Beiträge. From the Science of Life to the Life Sciences in Central Europe – Contributions from History of Science. Ignaz Lieben-Gesellschaft, Universitätscampus Wien, 14-16 Oktober 2021.

Pflanzen und Politik: Rückwärtsgewandte oder doch auch zukunftsweisende Konzepte? [Plants and Politics: Backward-looking or Future-Oriented Concepts], bei: Vom Alten abgrenzen und das Neue vorwegnehmen? Umordnen von Staat und Gesellschaft im 18. Jahrhundert in zeitlicher Perspektive. [Disassociating from the Old and Anticipating the New] Instituto Storico Austriaco, Roma, 22-24. September 2021.

Speik: Verschränkte Wege einer Wildpflanze zwischen Wissenschaft und Ökonomie [Speik: Winding Ways of a Wild Plant between Science and Economy], bei: 19. Botanik-Tagung 2021, 23-25. September 2021, Donau-Universität Krems. Online-Tagung.

Botanische Gärten und Stadtbotanik [Botanical Gardens and Urban Botany], bei: Grün in der Stadt – Vom Hortus conclusus zum Urban gardening [Green City: From Hortus conclusus to Urban Gardening]. Commune Merano/Stadt Meran, Palais Mamming, 15-17 September 2021.

“Special Commission” Meteorites: Fireballs and Short-term Sensation. In Session II organised by Ernie Hamm: “Knowledge of the Earth: Art, Perception and Image, 1500-1900”. Meeting of the International Commission on the History of Geological sciences INHIGEO, Cracow, Poland, 18-24 July 2021, online Conference.

Mountains, Glaciers and Ranging Waterfalls. Movement and Dynamics as Expressions of Changing Concepts of Nature. At: Splashing Science, Scientiae, Amsterdam, 9-12 June 2021, online Conference.

Organisation of Conference

Klemun was the organiser of the session with three panels (12 speakers) with Greg Good (USA): “Great to Small: Spatial and Temporal Scales in History of the Geoscience”, at: 26th ICHST, International Congress of History of Science and Technology, 25-31 July 2021 Prague, online Conference.

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Johannes Mattes published three **scientific papers**, one **lexicon article**, and a **conference report** in 2021. He also prepared an **edited book** and two **scientific papers** for publication that appeared in January 2022:

- J. Mattes. 2020/21. Imperial science, unified forces and disciplinary boundary-work: Geographical and geological societies in Vienna (1850–1925). In: *Annals of the Austrian Geographical Society* 162: 155–210. doi: 10.1553/moegg162s155
- J. Mattes. 2020/21. “Disciplining Metadisciplinarity”: The power of scientific handbooks and the emergence of speleology (1870–1925). In: *Atti e Memorie della C.G.E.B.*, 50: 110–133.
- J. Mattes. 2021. Erlesene Geschichte(n) – Geschichte erlesen. Subjektorientierung und Methodik des Lesens im Geschichtsunterricht (in English: Exquisite (his)stories – reading history. Subject orientation and reading methodology in teaching history). In: *Was heißt subjektorientierte Geschichtsdidaktik. Beiträge zur Theorie, Empirie und Pragmatik*, edited by C. Ottner-Diesenberger, T. Hellmuth, and A. Preisinger, 108–122. Frankfurt a.M.: Wochenschau.
- J. Mattes. 2021. Rudolf Pirker (1904–1982). In: *Österreichisches Biographisches Lexikon* 71: 68.
- J. Mattes. 2021. Conference Report. The history of European academies in the 20th century: State of the art and institutional issues, 27.05.2021. In: *H-Soz-Kult*, 16.09.2021.
- A. Franza, J. Mattes, G. Pratesi (eds.). 2022. *Collectio mineralium. The Catalog of Holy Roman Emperor Leopold's II Mineralogical Collection*. Florence: Firenze University Press, 155 pp.
- J. Mattes. 2022. Mining, collecting, knowing: Habsburg state-building, resources, and geographies in the context of Archduke Leopold's mineralogical catalog. In: *Collectio mineralium. The Catalog of Holy Roman Emperor Leopold's II Mineralogical Collection*, edited by A. Franza, J. Mattes, G. Pratesi, 1–36. Florence: Firenze University Press.
- J. Mattes. 2022. Mapping the invisible: Knowledge, credibility, and visions of Earth in early modern cave maps. *The British Journal for the History of Science* 55(1): 53–80. doi: 10.1017/S0007087421000789

Mattes gave seven **oral presentations** within the following international conferences/lecture series:

- J. Mattes: “*Empires of Exchange: (Popular) Scientific Societies in Constantinople, St. Petersburg and Vienna (1850–1925)*“, Invited Lecture, Institute of Cultural Studies and Theatre History, Austrian Academy of Sciences (Vienna, 04/2021)
- J. Mattes: “*Talking Images and Painting Words: Crossroads of Knowledge and Art in Visual Representations of Caves (1750–1850)*“, 46th INHIGEO Conference (Cracow, Poland 7/2021).
- J. Mattes: “*Cooperative Empires: Scientific Societies in Vienna, Habsburg's Imperial Agents, and the Orient*“, 26th International Congress of History of Science and Technology (Prague, 7/2021).
- A. Franza, J. Mattes, L. Pittarello, G. Pratesi: “*Royal imperial minerals. The mineralogical collections of the holy roman emperors Joseph II and Leopold II between museology, science, and history*“, 3rd European Mineralogical Conference (Cracow, Poland 8/2021).
- J. Mattes: „*Skalen multinational? Technische Gesellschaften im Spannungsfeld habsburgischer Technologiepolitik*“ [Scales multinational? Technical Societies in the Field of Tension of Habsburg Technology Policy], Annual Meeting of the Society of the History of Technology

(GTG) and the Society for the History of Sciences, Medicine and Technology (GWMT) (Vienna, 9/2021).

- J. Mattes: „*Wissenschaft und Öffentlichkeit(en) im Dialog? Preisaufgaben als Mittel der Forschungspolitik und Selbstrepräsentation*“ [Science and the Public(s) in Dialogue? Price tasks as a means of research policy and self-representation], Invited Lecture, conference “On the Benefit and Disadvantage of Sciences for Life”, Federal Library of South Tyrol (Bozano, Italy 10/2021).
- J. Mattes: „*Forschung und Öffentlichkeit im Dialog: Kooperatives Handeln im Verbund von Akademien und naturwissenschaftlichen Vereinen (1870–1914)*“ [Research and the Public in Dialogue: Cooperative Action in the Network of Academies and Natural Science Associations (1870–1914)], Research Colloquium of the Center for Science Research, Leopoldina – National Academy of Sciences (Halle, Germany 12/2021).

BRAZIL ANNUAL REPORT FOR 2021

As the pandemic continued in a severe way in the country, the members of INHIGEO continued their activities in a remote fashion throughout the year. Silvia F de M. Figueirôa started a new research project entitled “Arenas of geological debate in the nineteenth century: the Société Géologique de France and the Geological Society of London as spaces of knowledge production”, supported by the Brazilian Science Foundation (CNPq); Maria Margaret Lopes continued her research project on “Paleontological research: basis for the search for oil in Brazil (1907-1940) (CNPq)” with her activities as Vice-President of INHIGEO for Latin America. Rualdo Menegat keeps developing the Project Geology for Sustainable Development; and Jefferson de Lima Picanço develops the research on social and environmental impacts of tailing dam disasters in Brazil. Ermelinda Pataca continued her activities as editor of the *Revista da Sociedade Brasileira de História das Ciências*. The list below shows aspects of our production more specifically related to the History of Geology.

Articles:

- FERRARO, Mário Roberto; and FIGUEIRÔA, Silvia Fernanda de Mendonça. 2021. A implantação da agricultura científica brasileira e a presença do modelo estadunidense (1876–1908). *Diálogos* (On-line), v. 25: 122-143. DOI: <https://doi.org/10.4025/dialogos.v25i1.47149>
- FIGUEIRÔA, Silvia Fernanda de Mendonça. 2021. The “Table of mineral classification” by Oscar Nerval de Gouvêa: mineralogy and medicine in Brazil. *História, Ciências, Saúde-Manguinhos* v. 28: 491-508. DOI: <https://doi.org/10.1590/S0104-59702021000200009>
- FIGUEIRÔA, Silvia Fernanda de Mendonça. 2021. Science popularization in Nineteenth Century France: Nérée Boubée (1806–1862) and the journal L’Écho du Monde Savant. Notes and Records – The Royal Society. *Journal of the History of Science* 50: 1–19. <https://doi.org/10.1098/rsnr.2021.0060>
- FIGUEIRÔA, Silvia Fernanda de Mendonça; BRICE, William R.; and LOPES, Maria Margaret. 2021. Orville Adalbert Derby (1851-1915) and Brazilian Geology. *IUGS E-Bulletin*, IUGS, 28: 1–4.
- FIGUEIRÔA, Silvia Fernanda de Mendonça. 2021. The science, the society, the savants, and the scientist: Nérée Boubée at the Société Géologique de France (1830–1860). In: 46th

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Report prepared by Maria Margaret Lopes and Silvia Fernanda de Mendonça Figueirôa

CANADA ANNUAL REPORTS FOR 2021

We welcome new Canadian INHIGEO member Dr. Philip John Currie from the University of Alberta, Edmonton. I, Darren Tanke, nominated him to INHIGEO and asked him to introduce himself here, touching on his many career highlights, and those involving the preservation of earth sciences history. Welcome Phil!

Philip J. Currie

Background: Like many people, I became interested in dinosaurs (and therefore Earth History) when I was six years old. I had found a plastic toy in a cereal box, and from that discovery, I became a dinosaur fanatic. When I was eleven years old, I read “All About Dinosaurs” by Roy Chapman Andrews (1950). The book was as much about being a field scientist as it was about dinosaurs, and the day I read it was the day I knew what I would do with my life. Growing up in the Toronto area gave me the opportunity to visit the dinosaur displays at the Royal Ontario Museum, to visit and get advice from the palaeontologists at that institution, and eventually to gain some experience as a volunteer. Loris Russell (Figure 1) – who wrote a wonderful booklet called “Dinosaur Hunting in Western Canada” (1966) – was one of my teachers as an undergraduate at the University of Toronto. Years later when I was a graduate student at McGill University, he



Figure 1. Loris S. Russell (1904-1998) was a well-known palaeontologist, both in Canada and internationally. In addition to his extensive list of research publications, he was well known for his publications on the history of lighting in North America. Seen here in the dinosaur laboratory of the Royal Ontario Museum, 1972.

contacted me when a job opened up for a dinosaur researcher at the Provincial Museum of Alberta because he felt I would be a good fit. David Spalding was the main decision maker during the job interview, and gave me the chance to prove myself as a dinosaur hunter and researcher. Like Loris Russell, he had strong interests in the history of the development of vertebrate palaeontology (Spalding 1993, 1999) and other fields of Natural History, and we wiled away many hours in the field and on the road talking about the history and romance of dinosaur collecting. He also introduced me to W.A.S. (Bill) Sarjeant from Saskatoon, who had the most amazing collection of books and papers on the history of geology (including vertebrate palaeontology), and put together the quintessential bibliography of geological history (Sarjeant 1980). Both Bill and David joined

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us on some of our expeditions to collect dinosaur footprints in the Peace River Canyon of British Columbia (Mossman and Sarjeant, 1983).

My career in Alberta has been a fairy story, thanks to the support of so many people. I was involved with the creation and construction of the Royal Tyrrell Museum of Palaeontology, and the designation of Dinosaur Provincial Park (Figure 2) as a UNESCO World Heritage Site. Some of my greatest honours have been having both a museum near Grande Prairie named after me, as well as a chaired position in Vertebrate Palaeontology at the University of Alberta. As a fellow of the Royal Society of Canada and the Royal Canadian Geographical Society, I have received many awards including both the Explorer's Medal and Stefansson Medal from the Explorers Club, the Gold Medal from the Royal Canadian Geographical Society, the Alberta Order of Excellence, and the Romer-Simpson Lifetime Achievement Award from the Society of Vertebrate Paleontology. To me, one of the greatest rewards is to be able to work with and help train graduate students. Although most of these research projects relate to the palaeobiology of dinosaurs, sometimes we can work in projects that help solve historical mysteries. One such project was the recognition and collection of a hadrosaur skeleton that we found without its head in the badlands in 1991. As it turned out, the skull had been collected in 1920 and became the holotype specimen (or name bearer) for a type of duckbilled dinosaur in our own institution. Once we realized this was a possibility, we collected the rest of the skeleton (Bramble et al. 2017).



Figure 2. Skull and neck of an ornithomimid dinosaur, one of the hundreds of skeletons found in Dinosaur Provincial Park in Alberta, Canada. This specimen (in the collections of the Royal Tyrrell Museum of Palaeontology) was found in 1995

Recognizing that we were losing historical information with the death of the older dinosaur hunters, I arranged for a series of taped interviews with C.M. Sternberg who was by that time in

his 90s. I initiated a program to relocate and mark dinosaur quarries in Dinosaur Provincial Park. Many had been quarry staked by C.M. Sternberg (Sternberg 1950), but even these were difficult to find (Dodson 1978). Darren Tanke was given the task of putting metal poles with brass identifying heads in unmarked quarries (Tanke 2005), and has always done an amazing job of finding and identifying mystery quarries. This eventually led to a multi-year project pinpointing significant fossil sites using differential GPS technology (Macdonald and Currie 2005).

Around the time that we started construction of the Royal Tyrrell Museum of Palaeontology in Drumheller, and with our encouragement and support Loris Russell joined the program during the summer months with the goal of identifying dinosaur quarries in the Drumheller region. My own interest in a site found by Barnum Brown in 1910 led to an intensive effort that relocated the *Albertosaurus* bonebed (Figure 3) in 1997 (Currie and Koppelhus 2010). By now we had started to build a collection at the Tyrrell Museum of the field notes and photographs of the earlier dinosaur hunting expeditions in Alberta.



Figure 3. The *Albertosaurus* bonebed was found by an American Museum of Natural History expedition led by Barnum Brown in 1910. He built a scow and floated down the Red Deer River as he explored the badlands for fossils. In 1997, we rediscovered the bonebed by going down the same river in flotilla of smaller watercraft. Darren Tanke had a much classier idea, however, and was responsible for rebuilding the scow from the original plans and floating down the Red Deer on the 100th anniversary. It was an amazing and memorable experience for all us who manned the “Peter C. Kaisen”! [Kaisen was Brown’s leading field man in Alberta].

Over the years I have been able to work on every continent, including three expeditions in Antarctica, where we used Alberta-style techniques to relocate the quarry of the first south polar dinosaur that was found in 1986. However, the area where I have done the most fieldwork and research outside of Alberta has been the Gobi Desert of China and Mongolia. When I found myself

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under the hot Gobi sun at one of the sites where my childhood hero Roy Chapman Andrews had worked almost half a century earlier was an amazing experience that I will never forget. The Nemegt Basin in Mongolia has been my prime focus in the region, however, because of similarities between the dinosaurs and palaeoecosystems of Alberta and Mongolia. Discovered originally by Russian palaeontologists in 1946, many international expeditions have collected fossils in the Nemegt Basin. However, the best records were kept by the Polish-Mongolian Palaeontological Expeditions (Kielan-Jaworowska 1969), and in the period between 1964 and 1971, they found and collected more about 100 dinosaurs. Their quarries were laboriously marked on hand-drawn maps triangulated between cairns of stones built for the purpose along the edges of the valley walls. Most of the cairns are still in position where they were built half a century ago, so we could GPS them, relocate the quarries, and construct more accurate topographic maps using drone technology (Currie 2016, Fanti et al. 2018). Other quarries done by Russian and other expeditions (including our own) were also marked on the new maps (Figure 4). Around the year 2000, poaching of dinosaur quarries became a major problem in this part of Mongolia (Williams 2018). The poached



Figure 4. In 2016, a conference was held to celebrate the 50th anniversary of the Soviet expedition to Mongolia that discovered the rich dinosaur resources of the Nemegt Basin. Along with Mongolian and Russian colleagues, I was one of the people to dig up three time capsules left by the Soviet expeditions. The contents were taken to an archive in Ulaanbaatar, and were replaced by new time capsules commemorating the conference field trip. The time capsule in this photograph was in a glass jar under an obscure piece of equipment buried beneath a carved slab of sandstone that marked the position of the Soviet camp at the Nemegt Locality.

quarries were also mapped, and bone in those quarries was geochemically analyzed using a portable XRD so that we could potentially re-associate those specimens that were retrieved by the authorities. One of the more spectacular successes dealt with a mysterious dinosaur called

Deinococheirus. The original specimen, found in 1965, consisted primarily of the arms, each of which was about 2 metres long! But because the rest of the skeleton was unknown, *Deinococheirus* was both enigmatic and controversial. In 2006 and 2009, we found two poached quarries in Mongolia that we could identify as *Deinococheirus*. Although the hands, feet and skulls of the specimens had been collected by the poachers, much of the rest of each skeleton was left in the quarry as rubble. Still, that provided more information than we had ever had before of this animal, so we collected and prepared the specimens. Because we had also relocated the original quarry of *Deinococheirus* from 1965, a colleague from Belgium (Pascal Godefroit) contacted me in 2011 to report that he had seen the skull, hands and feet of one of our poached specimens in Europe. A quick trip confirmed it was from one of our specimens, and arrangements were made to return the missing parts to Mongolia. We were finally able to reveal to the world that *Deinococheirus* was a giant ostrich-mimic dinosaur (ornithomimosaur) with the beak and feet of a duck-billed dinosaur, and backbone spines like those of *Spinosaurus*.

In 2005, I moved from the Tyrrell Museum to the University of Alberta so that I could have graduate students. Even though the collection of dinosaurs had started in 1920 at the University and the vertebrate palaeontology collection had grown steadily to more than 65,000 catalogued specimens, I found the collections records for dinosaurs were abysmal and many of the unprepared specimens were stored in unmarked plaster jackets in a Quonset hut. A program to find fieldwork photographs, field notes, and information from collectors who were still alive was initiated while we undertook preparation and organization of the neglected specimens. The work goes on, but I am happy with the progress that has made scientifically valuable specimens the focus of research projects, often done by my students.

In July 2021, I was accepted as a member of INHIGEO. Since then, I have continued to do work on the history of palaeontological research in Alberta, China and Mongolia. A special exhibit is being done (for summer, 2022) in Tokyo on the major palaeontological international expeditions to the Gobi Desert, and I have contributed photographs for the display and exhibit catalogue focussing on our own expeditions to China and Mongolia. Along with Jordan Mallon (INHIGEO member at Canadian Museum of Nature) and Kathleen Steward, I coedited a special issue of the *Canadian Journal of Earth Sciences* (Mallon et al., 2021) in honour of Dale Russell, a dinosaur palaeontologist who passed away in 2020. A special limited edition republished the articles from that volume along with personal stories about Dale Russell from colleagues, family and friends (Mallon et al., 2022). Two important anniversaries are scheduled for celebration in 2022, and I have been involved in the planning for events to mark the importance of both. On September 1, 1922, the Third Central Asiatic Expedition (of the American Museum of Natural History) discovered the Flaming Cliffs of Mongolia. Although it was too late in the field season for them to adequately explore the exposures, in subsequent years they collected many fine examples of the first recognized dinosaur eggs at this now famous locality. The site (also known as Shabarakh Usu and Bayan Zag) is perhaps one of the best-known sites in central Asia, and has been visited by every major dinosaur hunting expedition (including our own) to that part of the world, as well as many thousands of tourists. On site celebrations will be held at this now protected region of the Gobi Desert, and a scientific conference will be held at a new museum nearby. Along with other palaeontologists and geographers, time will also be spent pinpointing American, Polish and Russian quarries at the Flaming Cliffs. In preparation for this, I also spent considerable time going through the photos of the Polish-Mongolian Expeditions (1963-1971). These are in the archives of the Institute of Palaeobiology in Warsaw, Poland. Many of them have only minimal information that I was able to flesh out. This year is also the hundredth anniversary of the expedition of the

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Field Museum of Natural History (Chicago) to what is now Dinosaur Provincial Park in Alberta, Canada. To mark the anniversary, a half dozen people will join us from the Field Museum for 10 days to revisit sites that were documented by photographs in 1922. Most of the quarries and campsites of that expedition have been identified in the past by INHIGEO member Darren Tanke. He will also join our expedition to help identify the remaining excavation sites. At the University of Alberta, I have continued to track down field notes, field catalogues and field photographs of palaeontological sites worked by one of the previous professors (Dr. Richard C. Fox, who passed away in April 2022). I have expanded my search to include not just dinosaurs, but significant Cretaceous and Palaeocene mammal sites in Alberta. Finally, two articles of interest for their historical implications for palaeontology have appeared in the last year (Currie, 2021; Benton, Currie and Xu, 2021).

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Ernie Hamm

My 2021 INHIGEO activities consisted mainly of several conference papers, two of which were part of sessions of papers I organized. Global conditions being as they were, all of these conferences were held virtually. In May, I presented “Science, Empire, Centre and Periphery: Considerations via the Caucasus, Tartu, St. Petersburg and Paris,” at the annual meeting of Canadian Society for the History and Philosophy of Science (19 May – 2 June, Western University). This paper examined Friedrich Parrot’s 1829 expedition to and ascent of Mt Ararat not so much as a feat of mountaineering prowess, but as an example of imperial science. Despite being sponsored by the Russian empire and the University of Dorpat, Parrot’s journey was very much embedded in a larger European framework. The ideas of Alexander von Humboldt clearly came into play, as did the work of many other naturalists. In many respects the journey’s legacy was and is more important for places on the imperial periphery, such as Armenia and Estonia, than it was the for the St. Petersburg and the Russian parts of the empire. This paper was part of a session of papers called “Decentred Science: Beyond Centre-Periphery Stories.” In July, I presented “Image, Artifice and Geology: Mapping Seen and Unseen” at the INHIGEO conference (19-22 July, Krakow). This paper considered the fieldwork of Johann Gottlob Lehmann, an eighteenth-century Prussian, and that of A. P. Coleman, a late nineteenth-early twentieth century Canadian. Both of these men were grappling with the problem of depicting and explaining phenomena of fundamental geological importance that can only be observed partially and with great difficulty. This paper was part of a session on “Knowledge of the Earth: Art, Sense and Image, 1500-1900,” which also included papers by Tina Asmussen, Claudine Cohen, Marianne Klemun and Johannes Mattes. Finally, at the International Congress for the History of Science and Technology (25-31 July, Prague) I presented “Powers of Scaling: Conceptual and Sociopolitical Consideration in A. P. Coleman’s Mapping of the Sudbury Region.” Coleman’s map of the Sudbury nickel belt, a justly renowned example of geological mapping, needs to be understood as part of the British and American war effort, specifically their armaments industry. Geology was at once concerned with fundamental, conceptual issues such as scaling at the same time that it was implicated in geopolitics.

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Jordan Mallon

My students and I continue to relocate forgotten historical dinosaur quarries in western Canada, alongside others mentioned here. Last summer (2021), we relocated the site where Canada's smallest and second-most complete dome-headed dinosaur skeleton was collected in 1973. The site occurs immediately outside the bounds of the east block of Grasslands National Park in Saskatchewan, and was relocated with the help of Gilles Danis, who originally collected the specimen with the late Dale Russell. We also relocated the site where the holotype skull of *Triceratops albertensis* was collected in 1946, in the badlands of the Red Deer River, near Rumsey, Alberta. This was done with the help of Darren Tanke and François Therrien of the Royal Tyrrell Museum of Palaeontology.

In September 2021, my co-editors (Philip Currie and Kathlyn Stewart) and I finally saw the publication of the tribute issue to Dale Russell (former palaeontologist at the Canadian Museum of Nature) in the *Canadian Journal of Earth Sciences*. Dale passed away in 2019 and had a profound influence on current thinking about dinosaur evolution and extinction. I also published a popular article detailing the history of the tyrannosaurid *Daspletosaurus torosus* at the Canadian Museum of Nature, and my student Mat Roloson published an abstract related to his research on Canadian *Triceratops*, which involved further historical quarry relocation that I detailed in last year's update.

Recent publications in historical palaeontology

Mallon, J. C., P. J. Currie, K. M. Stewart. 2021. Special Issue in honour of Dale Alan Russell (1937–2019). *Canadian Journal of Earth Sciences* 58: v–vi.

M. J. Roloson, E. L. Bamforth, J. Scannella, and J. Mallon. 2021. *Triceratops* from the uppermost Maastrichtian Frenchman Formation of southern Saskatchewan, and implications for the anagenesis hypothesis. *Society of Vertebrate Paleontology Meeting Program and Abstracts*: 221.

Mallon, J. 2021. A brief history of *Daspletosaurus* at the Canadian Museum of Nature. *Prehistoric Times* 137: 49–50.

Recent relevant media

Canadian Museum of Nature. 2022. What if Dinosaurs Survived? <https://youtu.be/qOGtB50pFkY>

David A.E. Spalding

Covid continued to have personal impact on many aspects of our lives through 2021. The most serious for my family has been delays in other medical support as the pandemic takes over hospitals. However, my wife has now managed to receive two knee surgeries, and is mobile again — a great relief to both of us. As elderly and vulnerable persons we were early candidates for vaccination, and have each received three during 2021. Our little island continued to be relatively free of the pandemic until the recent rush to return to “normality.” Consequently, our vulnerability to the still active pandemic increases as new variants evolve, while governments forget their science-based policies and rush to open up public events, abandon required vaccinations, and cease to worry about masks. As a historian of science, it is little consolation to note that the later stages of previous pandemics, such as the Great Plague in England (Defoe 1722), and the Spanish Flu of the 1920s (various accounts), brought many more deaths.

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Earth Scientists Write at Night

Despite distractions, I have managed to do useful work on a number of projects. I have continued my involvement with *Earth Sciences History*. During 2020 I reviewed a fascinating paper on early photographs connected with the discovery of Peking Man, written by Professor Xiaobo Yu, who is working on the papers of Chinese vertebrate palaeontologist C.C.Young (Yang Zhongjian). I believe Prof. Yu's paper will appear shortly in *Earth Sciences History* 41(1): 133–160.

The photos showed a number of individual and group photographs of individual scientists and other workers involved with the Peking Man investigations. I had previously written about Young's dinosaur work in China, and Roy Chapman Andrews and his 1920s expeditions in the Gobi desert, so welcomed the chance to learn more about this interesting period of vertebrate palaeontology. Andrews' expeditions were based in Peking (now Beijing), and when not travelling he was next door, as it were, to Young and his colleague Canadian Davidson Black, who named *Sinanthropus* (Hood 1954). Naturally there were scientific and social connections between the three scientists and others, and a number of questions required analysis and interpretation. The new photographs focussed attention on visual aspects. One question was Black's choice of field clothing, which typically included the Anglo-Indian riding garment known as jodhpurs (Figure 5).



Figure 5. Roy Chapman Andrews in Peking, 1925.

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I remembered seeing a photo of Andrews, also wearing jodhpurs, and tracked it down to a biography (Gallenkamp 2001). In this photo Andrews was so attired for playing polo, but it led to published recollections which gave new insights into the group, their work environment, and relationships. Andrews described the late-night research and writing habits of Andrews, Black and Swedish explorer Sven Hedin, and their extension into social encounters.

In 1931 Andrews was writing his book *New Conquest of Central Asia* (Andrews 1933). “Dr Sven Hedin... happened to be doing a book at the same time,” recollected Andrews, “and Dr. Davidson Black was studying the remains of the “Peking Man”.... All three of us found we could work better at night ... Usually about three o’clock in the morning I telephoned Hedin and Black. We would meet at ... night cafés of dubious reputation, have scrambled eggs, dance with the Russian girls, and then go home to bed.” (Andrews, source unspecified, but quoted in Gallenkamp 2001).

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Canadian First Nations, Geology and Palaeontology

On arrival in Canada in 1967 from the UK, I began to learn about the natural sciences of a continent new to me, and also something about the various cultures that formed its society. As I explored the history of these sciences, I became interested in the relations between indigenous populations and the geological resources of their country, and the history of the relationships between them and visiting scientists who came to seek scientific knowledge, and resources to convert to economic benefit.

Canadian “settlers” are now re-examining their relationship with aboriginal peoples on many levels, at a time when reconciliation is a political priority, land and resource ownership issues are in dispute in every level up to our supreme court, and settlers increasingly acknowledge their recognition of the status of the land they occupy. (For the record, I gratefully acknowledge that my home is on unceded land traditionally occupied by Salish speaking peoples, particularly the WSANEC nation). It seems to me desirable that historians of science should begin to take a new look at these relationships in the light of modern perspectives .

Much of my research and writing has been about the discovery of dinosaurs and other fossils, as well as some about exploration and mining, and about indigenous cultures. In telling these stories I have described in passing a number of instances of interactions during the nineteenth century. Gathering together some of my notes provides a preliminary basis for the understanding of some aspects of this particular area of colonial/indigenous history. Brief summaries (usually based on a single source) of encounters and events are presented below in chronological order. These incidents were specifically not selected for the light they shed on intercultural issues, so are not necessarily representative. I fully recognize that my sources entirely reflect the colonial “settler” perspective, and that indigenous perspectives are necessary to allow a full understanding of these and similar events.

A word on naming of aboriginal peoples. While the term “Indian” was in common use during most of Canada’s history to describe most of the original inhabitants, in Canada it has increasingly been replaced by more accurate terms such as the First Nations, First Peoples, or

(where appropriate) the names the various nations use for themselves. The peoples of the high arctic, formerly known as “Eskimo” are now generally referred to as Inuit. I retained the contemporary terminology in quoting original sources, but attempted to use modern terminology in my commentary.

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Carrying Coals to Vancouver Island (c. 1835)

The English saying for a futile or unnecessary activity is “Carrying coals to Newcastle” — the site of a rich coal field. It appears that the Hudson Bay Company carried this activity to extremes, by bringing coal from Britain to Vancouver Island. It is reported that “Kwakiutl Indians” laughed at a blacksmith in Fort McLoughlin when he told them that the coal had been brought by ship for half a year from the other side of the world. “White men are very wise. The great spirit tells them everything. The red man knows nothing; he is poor, yet he is not such a fool as to bring soft black stone so great a distance when it may be had at his very door.” William Fraser Tolmie (1812-1886), trader and physician, reported this in 1835, adding that “having for two years incited the natives to search for that mineral,” he had been successful. However, the coal was not of high standard, and the resource was not developed until 1849. It is not reported whether the natives were just aware of the material, or actually used the coal as a source of heat (Lillard 1986).

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The Buffalo's Grandfather (pre-1871)

As I became aware of the impressive size and relative completeness of dinosaur skeletons found in the field in western Canada, it became obvious to me that First Nations of the prairies must have been aware of these fossils, and wondered how they interpreted them. However, initially nothing in my reading or conversations provided any hint of a connection. Eventually I consulted Hugh Dempsey, a leading historian then on the staff of the Glenbow Museum in Calgary. He drew my attention to the fascinating story of Jean L'Heureux (c. 1837-1919), a Québécois who lived with the Peigan (Pikuni) nation in southern Alberta in the early 19th century. (Ironically, Dempsey wrote a detailed summary of L'Heureux's life in which he does not mention the following story). L'Heureux had recorded a story of a large fossil skeleton in the badlands (identifiably in what is now the Dinosaur Provincial Park area, and so almost certainly a dinosaur). It was shown to him by indigenous persons, who told him that it was revered by the natives of the area, who customarily left offerings at the site. I briefly noted this story in my book *Dinosaur Hunters* (Spalding 1993) and expanded it in a later Canadian focused book *Into the Dinosaur's Graveyard* (Spalding 1999). I recognized the native interpretation as a scientific one within the cultural context, in that their name as “the Buffalo's grandfather” recognized the similarities between the fossil skeleton and the bones of one of the few large living vertebrates known to them. A few years later this recorded find was featured in Adrienne Mayor's wide-ranging study of aboriginal knowledge of fossils in North America (Mayor 2005). She expanded the context of L'Heureux's report with Jesuit Paul Le Jeune's 1634 report “that each animal species has an elder relative.” She also lists other Canadian connections between First Nations and elephant bones in Manitoba and the Yukon. An

updated summary of early records of dinosaurs (Spalding & Sarjeant 2012) mentions L'Heureux and adds another Canadian report of dinosaur tracks in British Columbia, where the Gitskan nation named a ridge with a dinosaur trackway "Where You Find the Tracks of the Giant Marmot." (Mayor 2007).

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Yukon Expedition (1887)

George Mercer Dawson (1849-1901) was a geologist and palaeontologist who travelled extensively in western Canada (where he found the first Canadian fossils we still regard as dinosaurian). He became in due course director of the Geological Survey of Canada. He, and many other Canadian geologists, used the services of First Nations assistants in the field, as guides, canoeists, packers and other supporters of arduous travel in the wilds. Many of Dawson's journals are now published; an example is Dawson's 1887 journey through what is now northern British Columbia and Yukon (see Figure 6), of which excerpts are quoted in Wright 1976.

On entering the Finlayson Canyon he notes that "two of our coast Indians were instructed to endeavour to track [a canvas boat] up the shallow and winding stream, while the rest of the party followed their way as best they could along the valley, with heavy packs." In his travels, Dawson used a mixture of place names given by previous travellers, names he himself created, and names used by indigenous groups, on occasion restoring native names to replace ones applied by miners, as in Ta-gish-ai (Tagish Lake). Unlike many of his colleagues, Dawson took a keen interest in his native associates, collecting and publishing vocabularies of their languages and stories of their lives, thus becoming a pioneer anthropologist as well as a geologist.

For such travellers, finding and hiring native support was not always a smooth operation. Some natives were regarded as hostile, others were ready (or could be persuaded) to be hired. Some (from the perspective of the expedition leaders) deserted, but we have no knowledge of the arrangements made, or of how clearly the two parties understood the nature of their agreement. Sometimes there were no residents to be found; on part of his trip Dawson travelled for 43 days before meeting anyone. Then two natives, a father and son were encountered "working their way upstream in a small dugout canoe." There was no common language, and "as we were totally unable to communicate with each other except by signs, it was impossible to obtain any definite information from them."

Sometimes the large amount of goods considered necessary strained the resources of the country to manage. Dawson was due to meet William Ogilvie, a Government Surveyor, who was wrangling seven tons of equipment at Haines Mission. It was "redistributed into 120 packs, and the difficult task of rounding up enough Indians to carry this gear across the pass was commenced." Two traders "used their considerable influence with the natives to assist in making arrangements for the portage" but it seems that the support of the commander of the United States gunboat *Pinta* "greatly assisted in the lengthy business of coming to terms." The nature of the commander's support is not specified, but a gunboat carries at least an implied threat of coercion. At any rate, on 6th June "120 Indians, men, women and children, started for the summit." (p. 189) The natives in this area were



Figure 6. G. Dawson photo of Kung Indian Village. Queen Charlotte Islands (Haida Gwaii), 1878.

then known as Tagish, or Stick Indians. A white settler, George Washington Carmack, had married into the group, and spoke both the Tagish and Chilkoot languages. He and two native friends known as Skookum Jim and Tagish Charlie participated in the expedition (Figure 7). Nine years later, these three staked the first claims in the Klondike, starting a major gold rush.

Reference cited

Wright, Allen A. 1976. *Prelude to Bonanza: The discovery and exploration of the Yukon*.

Red Deer Voyage (1888-1889)

Geological Survey of Canada collector Thomas Chesmer Weston (1832-1911) was the first to collect fossils along the length of the Red Deer River in Alberta using a boat. His first attempt was abandoned after problems with his boat, but local farmer Weston names only as “Mr. McKenzie” (and later less formally as Mac). McKenzie offered to build a new vessel during the winter and travel with him the following year, 1889. McKenzie was Métis, and (as Weston described him) “a fine example of the half-breed Indians of the North-West Territories.” Weston comments that “many of the beautiful names given by the Cree and other Indians to the lakes, rivers and mountains have been changed by the white man,” but these names continue to be used by the natives, and

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“even the half-breed seemed to resent the re-naming of rivers, localities, etc., a thing too much done by the young explorers of the present day.”



Figure 7. George Carmack, Tagish Charlie and Skookum Jim dance for joy at their gold claim on Rabbit Creek, 1896.

McKenzie and his two sons managed the boat on the second voyage, and many fossils were discovered. Weston indicates the “we landed to examine some favoured spot for fossils,” but does not detail how much his helpers assisted with his collecting activities, but describes one occasion when “Three hours were spent digging out this bone, and three pairs of hands carefully lifted our precious specimen,” which to his disappointment crumbled into pieces.

Reference cited

Weston, T.C. 1899. *Reminiscences among the Rocks in Connection with the Geological Survey of Canada*.

Tyrrells, Iroquois, Métis and Maps (1893-94)

Native canoe men from the Iroquois Caughnawaga Reserve in Quebec, as well as three Metis, formed a fundamental part of the team for an expedition to the north country in 1893-1894 (Spalding 2007). Leaders Joseph Tyrrell (of the Geological Survey of Canada), and his brother James (also with GSC experience), led the expedition (Figure 8). James (in his subsequent book, 1898) took care to describe the team members and their backgrounds. The Iroquois were Pierre,

Louis, and Michel French. Pierre was “a veteran canoe man, being as much at home in a boiling rapid as in the calmest water.” Louis “had won some distinction ... through having accompanied Lord Wolseley as a voyageur on his Egyptian campaigns.”



Figure 8. J.B. Tyrrell expedition on Dubaunt Lake, 1893.

The Metis members of the expedition included John Flett, a Chipewyan speaking part Loucheux ‘half breed’ from Prince Albert Saskatchewan, who “was highly recommended ... as an expert portageur of great experience in northern travel, and was also an Eskimo linguist.” Two other “western half-breeds, trained in the use of the pack straps as well as the paddle, and ... a pair of fine strong fellows” joined the team in Fort McMurray. James Corrigan was part Cree, and Francois Maurice was part Chipewyan, thus adding to the linguistic capacity of the team.

The Tyrrells were no strangers to northern travel, and in a previous exploration Joe had acquired a map drawn by a Chipewyan guide, Ethingo Campbell, “of lakes and rivers pointing north ... across the barrens.” Now they headed out from Ottawa by train, wagon and steamer before embarking in canoes. A local guide, a Chippewyan named Moberly, led them east from Fort Chipewyan, then warned of the dangers ahead and refused to go any further. The party travelled north and east onto the barrens, finding caribou to eat, but no inhabitants. In August they encountered “a solitary Eskimo deer skin tent.” The owners were frightened, but James’ knowledge of their language and a gift of tobacco put them at their ease, and they provided another

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sketch map of the course of the river. After six months, and over 1000 miles, the party arrived at Churchill on Hudson's Bay.

The expedition did not produce any immediate economic benefit and was criticized by *The Mining Review*. However, anthropologist W. N. Irving later praised the Tyrrell expedition for first knowledge of the "Caribou Eskimo." The Tyrrells discovered a major (but uneconomic) iron ore reserve, and the area later produced nickel, uranium (supplying the Manhattan project), and diamonds. Both Tyrrells moved on to mining, and became wealthy with gold and other resources. Joseph also contributed to scientific history, editing the journals of earlier explorers Samuel Hearne and David Thompson.

References cited

Spalding, David A. E. 2007. Two Tyrrells cross the barren lands of Canada. In: *Four Centuries of Geological Travel: The Search for Knowledge on Foot, Bicycle, Sledge and Camel*, edited by P. N. Wyse-Jackson, 287–296. Geological Society of London, Special Publications 287.

Tyrrell, J.W. (1898) 1973. *Across the Subarctics of Canada*.

Summary

This selection of encounters and collaborations between "settler" earth scientists and indigenous people of Canada is brief, and originally gathered primarily for other purposes. Yet it presents a remarkable variety of interactions from many parts of Turtle Island (now regarded as Canada) during some 60 years. It shows that indigenous people had made scientifically valid interpretations of large vertebrate fossils (grandfather) and tracks (marmot), and recognized economically valuable substances (coal) before settler arrival or sharing of knowledge. Native expertise was used by many earth science explorers, who travelled by land and water with their aid, ate food they had acquired, and (ironically) used maps they had been given to "explore" a country that was often later regarded as not legally belonging to the people who had been its residents for thousands of years. Some apparently began to learn the techniques of fossil collection, while others were ready to take advantage of settler information and legal procedures to engage in economic activity (gold). These episodes are more than a scientific concern. They are also part of the tangled history of settler/indigenous relations, and have some bearing on current questions of reconciliation and land and resource ownership. One can begin to identify some of the questions that would aid in interpretation. Colonial history involves the identification and exploitation of earth's resources. How far did First Nations help in this task, how were they recruited, and how were they (individually and collectively) rewarded for their efforts? How much did visiting specialists learn about traditional knowledge of land and resources? What opportunities became available for indigenous people to learn the scientific and technical knowledge brought by travellers, and how did this facilitate their own understanding of the natural landscape and exploitation of resources in non-traditional ways. These issues deserve much fuller exploration than they have received thus far.

Darren H. Tanke

The COVID-19 pandemic continued to impact my paleontological fieldwork and lab work. As these are tied to my research and writing on our province's paleontological human history, my work on the latter continues to be degraded. However, I continue to be active and there are plans to resume fieldwork in 2022 so I hope life returns to normal for me and my colleagues worldwide.

I have been heavily involved with a new project with Dr. Marjorie Cantine on a history of serious work injuries, deaths and close calls/near misses in archaeology, paleontology and geology. We each independently started our manuscripts, neither knowing the other. She published first, covering deaths in geologists only over the past 20 years. My project was much bigger, going back centuries, but including injuries and close calls, and, additionally, paleontologists and archaeologists. We have decided to combine our researches for a larger study (Cantine 2022). The manuscript now is over 530 pages and a quarter million words, with over 2,000 entries. If INHIGEO members have stories applicable to our research, they can contact me at: dtanke@hotmail.com

The function of this document is not only a history of misfortunes suffered by our colleagues, but is to address health. Several interesting patterns have emerged and from these data we hope our colleagues will learn and hopefully adjust their institutional culture and personal behavior and lead to better safety practises. How many geologists in flying in overcast mountainous terrain have to die before they get the point and wait for better weather conditions?

I wrote an entry for the Canadian Encyclopedia on Canada's first vertebrate paleontologist Lawrence M. Lambe (1863-1919).

I proofread a short piece by Canadian INHIGEO member Jordan Mallon on the history of vertebrate paleontology in the Hilda, Alberta district for a local history book, currently his field area. We have agreed to write a larger piece on the history of vertebrate paleontology in the area and that manuscript is underway.

I've been wracking my brain trying to determine the catalogue number of an important dinosaur fossil found in our museum's collections. I finished preparing it recently, but someone else started it long ago and inexplicably cut horizontally slightly below mid-height through the hand-written catalogue number. Is that a 1? Or a 7, or 9? A 5 or a 3; 6 or an 8? Solving this conundrum and trying to resolve who found it and when and where so long ago now is proving most difficult. This reminds us of the need to write catalogue numbers on plaster of Paris field jackets and specimens multiple times.

On March 19, 2022 I gave a talk for the Alberta Palaeontological Society's annual meeting which was virtual this year on account of the pandemic. This talk was on the recent confirmed relocation (Tanke 2021) and recovery of new bones and possible reassociation of cranial pieces, both of the armored dinosaur *Euoplocephalus*, the first dating to 1913-1914 and the second from 1897. For the latter, skull pieces found in 2017 might fit onto the type specimen of *Euoplocephalus*, a partial skull collected in 1897 (Tanke 2022). The 2017 pieces will have to go to Ottawa and be test-fitted onto the 1897 specimen. Only one fit is needed to confirm the suggested association. I hope to try this jigsaw puzzle effort soon.

A 1940's *Triceratops* locality (the type specimen of *T. albertensis*) on the Red Deer River in central Alberta, Canada was revisited last summer. It had a quarry marker in it. A site photograph taken during the specimen's collection that we brought along suggested we were in the wrong spot; and the quarry stake was installed at the wrong spot. New evidence, a map penned by the finder/collector, shows our suspicions were in fact true so the site's true location, a little further to the south, will have to be determined, stake removed and reinstalled.

This summer I am to team up with fellow Canadian INHIGEO member Philip J. Currie and Dr. Jingmai O'Connor from the Field Museum (Chicago) as we visit Field Museum quarries in Dinosaur Provincial Park that were worked in 1922. Several of that expedition's quarries still remain unrelocated so we'll be trying to find those as well.

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I continue to work on my various biographies on lesser-known people involved in the early history of Albertan vertebrate paleontology; part of my “Remember Me” series. The elderly daughter of one of these men (William Aultin Kelly who collected dinosaurs here in Alberta in 1921) passed away recently and her family sent me his papers, field photographs and field notes, the latter two mostly related to geological explorations in northern Alberta and into the Northwest Territories. I am now engaged in finding proper repositories and recipients of this material.

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Clinton Tippet

I am a retired geologist, formerly with Shell Canada, living in Calgary, Alberta, Canada. In addition to the specific organizational roles that are described below I have continued to bring my geological background and historical knowledge to bear as the Chair of the Yukon Oil and Gas Advisory Committee and as a member of the Oil and Gas Technical Advisory Committee for Geoscience British Columbia.

Petroleum History Society

My focus on historical geology over the past year continued to be primarily through the Calgary-based Petroleum History Society (P.H.S.). 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, interpretive pieces, photographs (current and historical) and excerpts from the publications of related organizations. A number of our most popular articles relate to geological controversies or anniversaries having a pronounced geological foundation.

The P.H.S. normally sponsors 6-7 luncheons plus an Annual Meeting 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.

The P.H.S. has a working relationship with the University of Calgary through which our scholarship program is coordinated. We have links to the Department of History through Professor Petra Dolata and to their School of Public Policy.

The pandemic shut-down impacted our Society in several ways. We have had to cancel our Annual Meeting, including our award presentations, for the past three years (2020, 2021 and now 2022) and have held our elections via e-mail. Our luncheon program was also curtailed both

because the Petroleum Club venue was closed by municipal order and, later on, once it was available again, because we made a decision to act in the best interests of our potential attendees, many of whom are elderly.

Turner Valley Oilfield Society

During 2021, both the P.H.S. and I continued to cooperate with the Turner Valley Oilfield Society (T.V.O.S). The T.V.O.S. is working with the Government of Alberta to develop and enhance an interpretive program, including guided walking tours, at the Turner Valley Natural Gas Processing Plant. This now-inactive industrial facility is both a provincial and a federal historic site, dating back to the late 1910's. The tours feature all aspects of petroleum exploration, production and processing including the interpretation of the geological context of this formerly prolific oil and gas field. The Society has a number of other preservation and communication initiatives ongoing as well as a speaker series and various 'story book' documentation for tours of the Turner Valley region as supported by the Calgary Foundation, a major local charity.

Although the Turner Valley Gas Plant and its associated tours were cancelled in 2021 due to the pandemic, work was fortunately able to continue on several of the digital projects.

American Association of Petroleum Geologists

I am a member of the History of Petroleum Geology Special Interest Group of the A.A.P.G. The in-person Annual Convention and Exhibition of the A.A.P.G. during which this group holds its regular meeting was held in Denver, Colorado from September 26 to October 1, 2021 and included a petroleum geology historical session. It was held jointly with the Society of Economic Geophysicists.

Canadian Society of Petroleum Geologists

I am an Honorary Member of the Canadian Society of Petroleum Geologists (C.S.P.G.) as well as a Past-President. Within the organization I am the Chair of the History and Archives Committee. We continue to plan for the reinvigoration of our historical activities through the establishment of a committee in preparation for our centennial in 2027. This will involve interviews with key society participants and other activities, following in the footsteps of our 75th anniversary celebrations in 2002.

In addition, I am involved with the C.S.P.G. Stanley Slipper Gold Medal Committee that selects as the recipient 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 recognizing the key drivers of past and future exploration success.

I have been active as an editor for articles in our series "Go Take a Hike" comprising geologically-oriented hikes primarily in Alberta and British Columbia.

I am also a member of the C.S.P.G.'s Medal of Merit Committee that annually recognizes the publication of an important paper on the petroleum geology of Canada.

Petroleum History Institute

I am a life member of the Petroleum History Institute. The P.H.I. publishes *Oil-Industry History*, an annual compilation of papers about the petroleum industry and its technical underpinnings. The Institute held its annual symposium in Pittsburgh, Pennsylvania from September 29 to October 1, 2021.

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Geological Society of America

I am a member of the History and Philosophy of Geology Division of the G.S.A. I also became a member of the award selection committee for the Curtis-Hedberg Award of the G.S.A. Energy Division. We chose technical and industry leader Art Green as the 2021 winner.

Society of Industrial Archeology

I am a member of this Michigan-based group. They have adapted to the pandemic by running a very successful series of virtual historical on-line seminars as well as continuing the publication of their journal and annual meeting.

Alberta Palaeontological Society

I am a member of this society and have made several presentations to them concerning the La Brea Tar Pits in Los Angeles and the Florissant Fossil Beds in Colorado. Activities include monthly presentations on matters related to palaeontology including key locales, controversies and recent developments. An annual forum occurs every year in March and a series of field trips are organized each summer.

Burgess Shale Geoscience Foundation

I was formerly on the Board of this Field, British Columbia-based organization that primarily runs hikes to the Walcott and Mount Stephen quarries to examine Cambrian fauna. More recently I was involved in the preservation of some of their instructional geological materials.

Research of Historical Interest

I have initiated a study of carbonate research done in the 1960's by well-known ex-Shell sedimentologist Robert Ginsberg at Coral Gables in Miami and Arthur Rupp, a Canadian carbonate stratigrapher working for Shell Canada. Unfortunately, the technical records of this collaboration reside in the storage facility of Shell Canada in Calgary and access has continued to be impossible during the pandemic.

Canadian 2021 INHIGEO annual report compiled and edited by Darren H. Tanke.

CHINA ANNUAL REPORT FOR 2021

ANNUAL REPORT OF CHINESE COMMISSION OF HISTORY OF GEOLOGY

Mainly supported by the Geological Society of China and China University of Geosciences (Beijing), the Chinese Commission of History of Geology (CCHG) strived to promote relevant work in 2021 in an orderly fashion despite the pressure of the Covid-19 pandemic. Throughout the year, the CCHG conducted four research projects, organized two academic meetings, and held five public lectures, as well as co-organized two international conferences.

In order to commemorate the 100th anniversary of the discovery of Yangshao Culture and the founding of Chinese Archaeology, the First International Conference of Yangshao Culture was held from October 19-21, 2021, in Mianchi, Henan Province. Nine members of the CCHG attended the Conference (Figure 1). Dr. YUN Xuemei and Professor CAO Xiping delivered talks respectively at the conference.



Figure 1. Group photo at the First International Conference of Yangshao Culture

The 31st Annual Conference of the CCHG, with the theme “In Memory of Figures of Chinese Modern Geology and Commemorating the 100th Anniversary of the Discovery of Yangshao Culture”, originally scheduled for November 20, 2021, had to be cancelled due to the outbreak of the Covid-19 in Beijing at the end of October. But the work meeting of the CCHG was held successfully at China University of Geosciences (Beijing) on December 9, 2021 (Figure 2). First, the members of the meeting congratulated Prof. Deng Jun, Chairman of the CCHG, on his election as an academican of the Chinese Academy of Sciences. They then summarized the work of 2021, reviewed the papers in the *Collection of Essays in History of Geoscience* (Volume 8); and co-organized the Beijing Branch Venue of the International Online Symposium on the 100th Anniversary of the Discovery of Shanghe Paleontology Fossil Sites, in which Dr. LV Jinbo and Dr. SUN Chengsheng gave presentations respectively (Figure 3).

Compiled by the CCHG, the following books, *The History and Development of Regional Metallogenic Regularity*, *A Reader of Geosciences*, *Some Anecdotes of History of Chinese Geology*, have been made ready for print. In addition, a contract has been signed with a publishing house, concerning a new book project, *Chronology of One Hundred Years of Geological Society of China*, in order to commemorate the founding of the Society in 1922.

For the popularization of history of geology, the CCHG organized five online public lectures with themes as follows: 1) *Liangzhu Jade and Liangzhu Civilization*; 2) *Spirit and Value of National Southwestern Associated University*; 3) *Discovery of Daqing Oilfield and Its Historical Significance*; 4) *Development of Geoscience in Modern China*; 5) *Cradle of Geologists : Geological Survey of China*. More than 2000 people on site or online listened to the lectures.

Compiled by Xuemei YUN, China University Geosciences (Beijing) and Chengsheng SUN, Institute for the History of Natural Sciences, CAS

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Figure 2. Group photo of the work meeting of CCHG.



Figure 3. Branch venue of International Symposium on the 100th Anniversary of the Discovery of Paleontological Fossil Sites in Shanghe.

COSTA RICA ANNUAL REPORT 2021

In Costa Rica (Central America) the two members of INHIGEO are the geologists Gerardo J. Soto and Guillermo E. Alvarado.

This past 2021 was forecast as a year with little activity in the history of geosciences by the local Costa Rican guild, during the crisis of the COVID-19 pandemic, however, at the end there were several important publications and awards that deserve to be emphasized:

1) The edition of a special volume, *30th Anniversary of the Limon Earthquake, 1991-2021*, in the Revista Geológica de América Central (Linkimer and Denyer, editors), on the so-called 1991 Limon earthquake, the largest earthquake to occur that year worldwide (Mw 7.7, 22 April, 1991). The earthquake had important repercussions on the socio-economic and environmental status of the Caribbean sector of Costa Rica, as well as profound geomorphological changes. The most spectacular geomorphological changes were the multitude of landslides in the rainforest of the Talamanca mountain range, and the seismic uplift of the continent (1.85 m on the coast; 4.46 m on the mainland; Denyer *et al.*, 1991), with the death of coral reefs. This seismic event generated before and after data used in studies of seismic threat and seismic resistant infrastructure, given that it occurred in a period of great seismic activity in Costa Rica (1990-1996). The special volume includes several works reconstructing the historical memory of the region, related to historical tsunamis at the Costa Rican Caribbean coast (Chacón *et al.*, 2021), the exploitation and exploration of mineral coal and peat (Bolaños and Denyer, 2021), and new contributions to the knowledge of the historical seismicity of the Costa Rican Caribbean based on ancient documents (Peraldo and Argüello, 2021). Also, the volume was dedicated to dear departed colleague who worked for years on seismology and neotectonics, in particular, an old friend of mine, Wilfredo Rojas Q. (1959-2021).

2) This year marks the 70th anniversary of one of the most spectacular archaeological finds in Costa Rica. This comprised not only one of the first systematic excavations in 1952 to recover pre-Columbian pieces carried out by the father of archaeology in Costa Rica, Carlos Aguilar, but also the discovery of many objects made of wood, which were well preserved from by volcanic ash. These objects were among the first for which isotopic dating was carried out in Costa Rica using the radiocarbon technique. A summary of geoarchaeological research (including history, volcano observations, relocation of the site), is presented in the paper by Alvarado *et al.* (2021).

3) It is with great pleasure to inform the readers that the Costa Rican member of INHIGEO, Gerardo J. Soto (Figure 1), has just received the 9° National Geological Award Dr. César Dóndoli Burgazzi 2022, which makes the region very proud.

4) The paper by Lucas *et al.* (2021), in which G. E. Alvarado, member of INHIGEO, is coauthor, presents a historical summary of the important historical contributions by foreign and local Guatemalan researchers to vertebrate paleontology in Guatemala.

5) A new book scientifically compiles all the events related to tsunamis in Costa Rica since the first report published in 1746 (Chacón *et al.*, 2022). This book (Figure 2) is a great compilation supported by rigorous scientific analysis, which provides a fundamental basis for the prevention of damage due to future tsunamis of scales greater than any that have occurred in Costa Rica.

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Figure 1. Gerardo J. Soto.



Figure 2. Catalog of Costa Rica tsunamis compiled by Silvia Chacon Barrantes et al. 2021.

6) In the last Annual Record 53 for activities in 2020, two works were mentioned as being in press that were subsequently published in 2021 (Alvarado, 2021; Alvarado and Cordero, 2021). These provide important contributions to the history of geosciences in volcanology and seismic codes.

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Submitted by Guillermo E. Alvarado, San José, Costa Rica, June 2022

FRANCE ANNUAL REPORT 2021

Cofrhigéo activities

In 2021, the French Committee on the History of Geology (Cofrhigéo) could meet only twice, because of the restrictions due to the Covid pandemic.

The session of September 8, 2021, was dedicated to the history of some geological collections and museums and included 6 talks (the recording of which can be viewed at: https://www.youtube.com/watch?v=fv15M2P_v_o&list=PLrHyJcVtILnkeBCXD5loTBYIGCY_g3q2k)

Lydie TOURET: Naturalistes hollandais et français à la fin du XVIII^{ème} siècle [Dutch and French naturalists at the end of the 18th century];

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Maddalena NAPOLITANI: Les pierres de la Nation. Les collections minéralogiques de l'École des Mines de Paris (1760-1850) [The stones of the Nation. The mineralogical collections of the Paris School of Mines (1760-1850)];

Denis DEMARQUE: L'histoire des collections géologiques du Muséum de Nantes, un enjeu pour leur (ré)organisation [The history of the geological collections of the Museum of Nantes, a challenge for their (re)organization];

Olivier VAYRON: Une galerie pour la compétition des savoirs: la Galerie de paléontologie du Muséum national d'Histoire naturelle à l'aube du XX^{ème} siècle [A gallery for the competition of know-ledge: the Paleontology Gallery of the National Museum of Natural History at the dawn of the 20th century].

Pascal TASSY: Conserver, étudier, développer la collection de paléontologie du Muséum national d'Histoire naturelle: ce qu'en disait Albert Gaudry (1827–1908) [Preserving, studying, developing the paleontology collection of the National Museum of Natural History: what Albert Gaudry (1827–1908) said about it].

Cristiano FERRARIS: Histoire des collections de minéralogie du Muséum national d'Histoire naturelle: du microscope à bougie aux électrons accélérés [History of the mineralogical collections of the National Museum of Natural History: from the candle microscope to accelerated electrons].

During the annual general meeting of December 15, 2021, we paid tribute to our deceased members, before listening to two scientific talks (the recording of which can be viewed at: <https://www.youtube.com/playlist?list=PLrHyJcVtILnKLQNHowmIudJcig8HWebR8>):

Didier MERLE: Christian MONTENAT (1941-2021), ancien directeur de l'Institut géologique Albert-de-Lapparent (IGAL) et directeur de recherche au CNRS;

Philippe TAQUET: Jean-Marc DROUIN (1948-2020), philosophe et historien des savoirs naturalistes;

Jacques TOURET: Jean-Paul SCHAEER (1928-2021), administrateur du Département de Géologie de l'Université de Neuchâtel, auteur d'une œuvre cartographique de premier ordre dans le Jura, en Norvège et au Maroc;

Thierry RENAUX: La bauxite au XIX^e siècle. L'invention d'une matière première et la genèse d'une industrie [Bauxite in the 19th century. The invention of a raw material and the genesis of an industry];

Léo CORBEL: L'Union au bout du marteau. Une histoire par le haut du passage à l'Europe des services géologiques (1971–2005) [A history of the transition to European level of the national geological surveys (1971–2005)].

Other activities:

Seminars, organized by Claudine COHEN: "Origins of the social" (École des Hautes Études en Sciences Sociales, Paris); "Scientific uses of the category of race: a critical approach" (École pratique des Hautes Études, Paris).

Conference, organized by Claudine COHEN & Romain PIGEAUD: "Ornaments, from the 19th century to Prehistory", June 9-10, 2021.

Public lectures and podcasts, by Claudine COHEN:

"Latest news from Prehistory", 3 round tables at the Centre Georges Pompidou (Paris) 19-04-21/ 03-05-21/ 07-06-21; <https://www.facebook.com/watch/?v=2823169394602359>;

<https://www.youtube.com/watch?v=xe-j9qMgvQc>;
<https://www.youtube.com/watch?v=vvAe3fAQjWU>;
 Presentation of the book “Nos ancêtres dans les arbres” [our ancestors in the trees]; dialogue
 with F. Savatier, realization Momoko Seto;
<https://www.youtube.com/watch?v=7mN2B6TfMSY>;
 “Prehistoric beauties: the Venus of Lespugue”; <https://www.youtube.com/watch?v=sjBBCqmU>.

Cofrhigéo’s Publications:

The Cofrhigéo publishes an annual periodical, *Travaux du Comité français d’Histoire de la Géologie* (ISSN 1156-2919), which is available online at the following addresses:

<https://hal.archives-ouvertes.fr/COFRHIGEO/browse/period>
<http://www.annales.org/archives/cofrhigeo/travaux.html>.

The 34th volume of this periodical was issued in 2021 and contains the following articles:

- Sylvia FIGUEIROA: Les sciences de la Terre au Brésil (XVIII^e-XX^e siècles): bibliographie [Earth Sciences in Brazil (18th-20th centuries): bibliography];
- Loredana LANCINI: « Un terrible et affreux combat ». L’apport de l’approche géomythologique pour la compréhension du volcanisme [“A terrible and dreadful fight”. The contribution of the geomythological approach to the understanding of volcanism];
- Marie-Françoise AUFRERE: Les premières recherches paléontologiques sur la colline de Perrier (1822–1855) par Léon Aufrère (1889–1977) [The first palaeontological researches on the hill of Perrier (1822–1855) by Léon Aufrère (1889–1977)];
- Jean MERGOIL & Juliette MERGOIL-DANIEL: Présentation de l’ouvrage « Histoire de la découverte géologique du Massif central français » [Presentation of the book “History of the geological discovery of the French Massif Central”];
- Gaston GODARD: Histoire d’une mystification: La découverte de glaucophane à l’île de Groix en 1883 [History of a hoax: The discovery of glaucophane in Groix Island in 1883];
- Francis MELLIEZ: Le gisement houiller du Nord – Pas-de-Calais, de la fin du XVIII^e siècle au XXIV^e siècle... au moins [The Nord – Pas-de-Calais coal deposit, from the end of the 18th century to the 24th century... at least];
- Jean-Charles BESSON: L’exploitation du charbon dans les bassins français du Centre et du Midi [Coal mining in the Center and Midi French basins];
- Jean-Charles BESSON: L’exploitation du charbon lorrain, 1830–2007 [Coal mining in Lorraine, 1830–2007];
- Jacques TOURET: Le sel, de la cuisine à l’usine [Salt, from the kitchen to the factory];
- Éric GROESSENS: Une histoire des marbres exploités dans le Boulonnais [A history of marble mined in Boulonnais (Northern France)].
- Jean-Marc PATURLE & Pascal RICHET: Christophe Colomb: la mesure des terres et des mers et la découverte de l’Amérique [Christopher Columbus: the measurement of the lands and seas, and the discovery of America];
- Hélène PAQUET & Liliane PREVOT-LUCAS: Jacques Lucas (1927–2020), l’un des artisans du renouveau en sciences de la Terre après-guerre: du géologue de terrain au géochimiste de renom [Jacques Lucas (1927–2020), one of the architects of the post-war revival in Earth sciences: from field geologist to renowned geochemist].

Other publications:

Several studies by Cofrhigéo's members were published in 2021 (non-exhaustive list):

- COHEN, C. (2021). *Nos ancêtres dans les arbres: penser l'évolution humaine*. Paris, Seuil, 319 p.
- COHEN, C. (2021). Women in prehistory. In: *The Atlas of Women*, a special issue of *La Vie-Le Monde* Sep 30, 2021.
- MALVESY, TH., TRIPET, J.-P. & SCHAER, J.-P. (2021). Histoire de la connaissance géologique du Jura Franco-suisse. In: *Mémoires de la Société des Sciences Naturelles de Neuchâtel*, vol. 13.
- TOURET, J. (2021). Book review: *David SCHULZ, Die Natur der Geschichte: Die Entdeckung der geologischen Tiefenzeit und die Geschichtskonzeptionen zwischen Aufklärung und Moderne* (De Gruyter, 2020), 15,5 × 23 cm, VII-361 p., bibliogr., index nominum. In: *Revue Histoire des Sciences*, Tome 74-2 (juillet-décembre 2021), p. 500-502.
- TOURET, J. & BESSUDNOVA, Z.A. (2021). Vladimir I. Vernadsky abroad: Years of Studies and Research (in English and Russian). *Mineralogical Almanac*. Tome 26 n°2, p. 6-18.

Report submitted by G. Godard, Secretary of Cofrhigéo

GERMANY ANNUAL REPORT 2021

By far the most important topic of 2021 was, once again, the worldwide pandemic. In spite of the national vaccination programme gradually gaining traction, cultural institutions of just about all kinds effectively remained in lockdown throughout the first half of the year. While this situation improved during the six months to follow, rising infection rates in the latter stage of the year put any notion of a quick return to normalcy to rest.

Matters pertaining to INHIGEO continued to remain affected as well. However, some new developments did occur. The most visible one, alas, relates to the (so-to-speak) 2021 INHIGEO census. Having asked each individual member about her/his interest in continuing being a member of INHIGEO, those replies (or, in some cases: non-replies) saw the current number of German members shrinking to a mere seven. On a more positive note, we are pleased to welcome Swiss INHIGEO member **Tina Asmussen** to Germany. Since October 2020, Tina has been based in Bochum, where she is concurrently employed as head of the mining history research department at the Deutsches Bergbaumuseum (German Mining Museum) and as assistant professor of early modern mining history at Bochum University.

Thinking about the situation in the 1960s (where, in East Germany, half of the geological community seemed to be involved in historical or philosophical debates concerning the earth sciences as well) or as recently as in the 1990s (shortly after reunification, even mere national meetings occasionally had attendances in the higher two-digit figures) increasingly commands misty eyes. This said, our dwindling numbers probably are as much involved in international projects as has ever been the case throughout the history of INHIGEO. One such example is the sizeable work of **Cornelia Lüdecke** in the Humanities and Social Sciences Standing Committee (SC-HASS) within SCAR (= Scientific Committee on Antarctic Research). Cornelia has generously offered an in-depth account about the gradual emergence of that committee, and her

own personal involvement in helping to institutionalize Antarctic History. Her paper forms part of this year's national report.

Publications

It was one of those years! The German 2021 national report is very pleased to announce the publication of a full handful(!) of monographs written by our INHIGEO members. No less than four of those come from the electronic pen of **Cornelia Lüdecke**. Though, to be fair, the official publication release dates of these books stretch all the way from 2020 to 2022.

Three of them consist of edited source material devoted to German explorations into polar regions which initially took place in the first half of the 20th century. For non-German speakers, however, it is the fourth which might prove the most useful: *Germans in the Antarctic* is the English translation of Cornelia's very well-received general historical overview *Deutsche in der Antarktis: Expeditionen und Forschungen vom Kaiserreich bis heute* written in 2015.

The one monograph here remaining comes from **Gottfried Hofbauer**. His 252 page *Granit – Geschichte und Bedeutung* aims to provide a coherent historical account on past research on granite from the late 18th century to current times. According to Gottfried's words, written for our international colleagues of INHIGEO:

I intend to provide a documentary journey into the world of granite. As well known as the rock may be to all of us, it is full of mystery. The question of its formation and meaning has occupied geology for nearly 200 years, leading to harsh, at times even to irreconcilable controversies. I analyze these debates, thereby drawing not only on historical sources, but on my own extensive in situ photographic documentation of many of those controversially interpreted sites.

My historical account starts with the perception of granite in the time of Goethe, Werner, and Hutton. This is followed by the discussion of the problem of space by Suess, as well as subsequent attempts by Cloos in investigating these unresolved questions. During that time, Cloos developed novel concepts about the "tectonics of magma". I also concisely document the granite of Flamanville (Normandy), which after its initial presentation by Michel-Lévy (1893) was of essential importance in the "Great Granite Controversy". This Normandy occurrence was considered to be one of the most excellent references of a metasomatic formation of granite by "fluides minéralisateurs". Of opponents to this idea, the most influential was Heidelberg petrographer Harry Rosenbusch (1836-1914); Rosenbusch's rejection also contributed to the fact that, later on, Sederholm's notion of the rebirth of granite (palingenesis) by anatexis initially failed to receive the attention it should have deserved. Finally, I conclude with the most recent major development: plate tectonics and geochemistry finally making it possible to assign the diversity of granites to their respective formation environment.

Next to the historical presentation, the reader should also be provided with a modern understanding of granite. The latter, after all, does not remain indefinitely in its initial emplacement, courtesy of subsequent exposure and weathering which eventually return its chemical components to the interior of the earth.

As for publications outside those by our membership, the borderland between earth sciences as covered within INHIGEO and the realm of geography continues to be fertile ground. INHIGEO member **Norman Henniges**, who is very actively involved in research activities there, particularly recommends the recent study by Philipp Julius Meyer *Kartographie und Weltanschauung: Visuelle Wissensproduktion im Verlag Justus Perthes, 1890-1945* (Wallstein: Göttingen, 2021). Its focus is on cartographers Hermann Haack and Paul Langhans, both employed by Perthes, then the most prestigious German-speaking publishing house not only for up-to-date geographical literature but for scientifically accurate maps of any kind. The author scrutinizes the political agenda and private interactions of these cartographers, including the manner in which such dealings influenced the process of map-making at Perthes.

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As for the INHIGEO members, the following books and papers were published in 2021:

Tina Asmussen

Ingenuity, Sweat and ‘Bloodscur Work’ in Sixteenth Century Mining Literature *in*: Richard J. Oosterhoff José Ramón Marcaida & Alexander Marr (Eds.) *Ingenuity in the Making: Matter and Technique in Early Modern Europe* (Pittsburgh: University of Pittsburg Press, 2021), pp. 56-78.

Eisen war ich ... Kupfer bin ich, Gold werd ich *In*: Tina Asmussen, Eva Brugger, Maike Christadler, Anja Rathmann-Lutz, Anna Reimann, Carla Roth, Sarah-Maria Schober & Ina Serif (Eds.): *Materialized Histories: Eine Festschrift 2.0. für Prof. Dr. Susanna Burghartz*, accessible online via <https://mhstories.hypotheses.org/4470>

Gottfried Hofbauer

Granit: Geschichte und Bedeutung (Springer: Berlin & Heidelberg, 2021), 252pp.

Martina Kölbl-Ebert

The Physical Sciences *In*: Stephen Bullivant & Michael Ruse (Eds.) *The Cambridge History of Atheism, Two-Volume Set* (Cambridge: Cambridge University Press, 2021), pp. 366–387.

From Volcano to Impact Crater: Shifting a Paradigm *in*: *IUGS e-Bulletin* 176 (July 2021), p. 6, http://www.inhigeo.com/anniversaries/INHIGEO_Anniversary_Volcano.pdf

Inge Lehmann Discovered the Inner Earth Core in 1936. *In*: *IUGS e-Bulletin* 180 (November 2021), p. 7, https://www.inhigeo.com/anniversaries/INHIGEO_Koelbl_Ice_Core.pdf
<review of> Marianne Klemun (with Karl Kadletz) *Wissenschaft als Kommunikation in der Metropole Wien: Die Tagebücher Franz von Hauers der Jahre 1860–1868* (Böhlau: Wien, Köln & Weimar, 2020) *in*: *Mitteilungen des Instituts für Österreichische Geschichtsforschung* 129 (2021), pp. 517-519.

Cornelia Lüdecke

Germans in the Antarctic (Cham/Switzerland: Springer Nature, 2021), 284pp. [= translation of *Deutsche in der Antarktis*, by Bernard Oelkers]

(Ed.) *Auf Entdeckungsreise in die Antarktis: Erste Berichte der deutschen Südpolar-Expedition 1901-1903 = Stella Polaris 6* (Norderstedt: Books on Demand, 2022) 176 pp.

(Ed.) *Deutsche Südpolar-Expedition 1901-1903: Sport, Kleidung und Ausrüstung für Schlittenreisen; basierend auf einem Manuskript von Hans Gazert, Beiträgen von Expeditionsteilnehmern und anderen Zeitgenossen = Berichte zur Polar- und Meeresforschung / Reports on Polar and Marine Research 746* (Bremerhaven: Alfred-Wegener- Institut, 2020) 127pp.

(Ed.) *Erkundung in der Arktis im Dienst der Wettervorhersage: Deutsche militärische Unternehmungen 1940-1944 = Stella Polaris 3* (Norderstedt: Books on Demand, 2020), 236pp, online http://epic.awi.de/id/eprint/53079/1/BzPM_0746_2020.pdf

Neu-Schwabenland *In*: Giulia Foscari (Ed.) *Antarctic Resolution* (Zürich: Lars Müller, 2021) p. 76.

En busca de nuevos territorios de caza. La expedición antártica de Eduard Dallmann (1873-1874) [= translation of « Auf der Suche nach neuen Jagdgründen: Eduard Dallmanns Antarktisexpedition 1873/74”, by Irina Podgorny] *in*: Susana V. García (Ed.) *En el mar*

- austral: La historia natural y la explotación de la fauna marina en el Atlántico Sur* (Rosario: Prohistoria Ediciones, 2021), pp. 131–142.
- (with Hans Volkert) Nachruf Dr. Rudolf Paulus 1926-2020 in: *DMG- Mitteilungen* (1/2020), pp. 26-27, http://dmg-ev.de/wp-content/uploads/2020/02/1_2020_online.pdf
- „es stürmt fürchterlich, Ströme von Regen und hochgehende See“: Georg von Liebig's Analyse des Wirbelsturms vom 9. und 10. April 1858 in der Andaman-See. in: *DMG-Mitteilungen* (3/2021), pp. 17-19, http://dmg-ev.de/wp-content/uploads/2021/08/3_2021_online.pdf
- Historische Orte auf Spitzbergen: touristische Perspektive einer Polarhistorikerin in: *IBZ München - Berichte aus dem Internationalen Begegnungszentrum der Wissenschaft München* (2021), pp. 58-61.
- German-Soviet Cooperation in the Arctic during the Weimar Republic: Friedrich Schmidt-Ott's contribution in: *Journal of Northern Studies* 15 (2/2021), pp. 9-33, accessible online via http://jns.org.umu.se/articles/JNS_2_2021_Ludecke.pdf
- Der Gaußberg: eine Insel in der Schneewüste der Antarktis in: *Mitteilungen der Gauß-Gesellschaft* 58 (2021), pp 95-108.
- Wissenschaft, Abenteuer und Prestige: Deutscher Brennpunkt in Spitzbergen in der Vorkriegszeit 1910-191 In: *Naturwissenschaftliche Rundschau* 74 (2021), pp. 298-306 & pp. 350-359 (Two Parts).
- Hochgebirgsforschung vor über 100 Jahren: Heinrich von Fickers Vortrags- und Vorlesungsmanuskripte im Archiv der Humboldt-Universität zu Berlin. in: *Polarforschung: Journal of the German Society for Polar Research* 89 (2021), pp. 93-95, <http://polf.copernicus.org/articles/89/93/2021>
- Die Schriftstellerin Helene Butenschön: Pseudonym Fr. Lehne (Online Only), accessible via <https://blog.muenchner-stadtbibliothek.de/helene-butenschoen-pseudonym-fr-lehne/>

Klaus Thalheim

- (with Ulf Kempe, Michael Wagner & Andreas Massanek) „Gemeiner Jaspis von Herculaneum“: Auf den Spuren der Antikenbegeisterung des 18. Jahrhunderts in sächsischen Kunst- und Mineralsammlungen in: *Geologica Saxonica: Journal of Central European Geology* 67 (2021), pp. 29-44, accessible online <https://doi.org/10.3897/gs.67.e78614>
- (with Daniela Erler & Norbert Pflug) Die geologische Literatur über Sachsen 2011-2015: Bibliographie der im Zeitraum von 2011-2015 erschienenen Veröffentlichungen zu geowissenschaftlichen Problemen des sächsischen Territoriums in: *Schriften des Museums für Mineralogie und Geologie Dresden*, 21 (2021) pp. 1-499, Online Only, <https://www.senckenberg.de/de/wissenschaft/publikationen/monobiblio/geologica-saxonica/sachsenbibliographie/>
(This website also offers access to all the earlier online bibliographies concerning geological literature on Saxony)

Harald Walter

- (with Manuel Lapp) 150 Jahre sächsische Landesgeologie in: Manuel Lapp (Ed.) *Der Geologische Dienst in Sachsen: Festband zum Jubiläum 150 Jahre Landesgeologie = Geoprofil* 16 (Freiberg: Sächsisches Landesamt für Umwelt, Landwirtschaft und Geologie, 2022), pp. 6-22, a link for downloading the entire volume is available via <http://publikationen.sachsen.de/bdb/artikel/39177>

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Conferences

Tina Asmussen

- The Matter of Air in Early Modern Mining at: Oxford (Online), TORCH (= The Oxford Research Centre in the Humanities) Network “Writing Technologies”, *Workshop ‘Experimenting the Early Modern Elements’* (30.3.2021)
- Resource Landscapes: A Material and Visual History of Early Modern Mining, at: Dublin (Online), Renaissance Society of America 67th Annual Meeting, *Panel ‘The Scientific Revolution of Landscape: Cultures of Science Beneath the Surface I’* (21.4.2021)
- Mineral Ores, Mountain Juices and Extractive Desires in Early Modern Mining, at: Basel (Online), Universität Basel, 49th Renaissance Colloquium, *Panel ‘Geologie der Renaissance’* (23.4.2021)
- Mining and Resource Oeconomies in the Early Modern Period: A History of Vertical Entanglement, at: Venice (Online), Università Ca’ Foscari Venezia, *Workshop ‘Natural Resources in Early Modern Economies of Knowledge’* (29.4.2021)
- Treasure Trove and Divine Artwork: Early Modern Mining as Financial Promise and Aesthetic Experience, at: Krakow (Online), INHIGEO 46th Annual Meeting (19.7.2021), Book of Abstracts, p. 6, https://eventy.online/pliki/inhigeo/INHIGEO_2021_POLAND_.pdf
- Arm, nützlich, giftig und verheissungsvoll: Eine Ressourcengeschichte von Blei in der Frühen Neuzeit, at: Schlatt/Switzerland, Eisenbibliothek Schlatt, 42. Technikgeschichtliche Tagung (TGT) ‘*Unternehmen Rohstoff: Natürliche Ressourcen in der Geschichte*’ (12.11.2021)
- The Smell of Early Modern Silver Refining at: Berlin (Online), Humboldt-Forum, EU Research Network Odeuropa & Berlin Center for Cold War Studies (BKKK) of the Leibniz-Institute for Contemporary History (IfZ), *Workshop ‘Malodours as Cultural Heritage?’* (16.12.2021)

Martina Kölbl-Ebert

- Getting Access: How Female Geologists in Britain Struggled for Membership in Scientific Societies, at: Krakow (Online), INHIGEO 46th Annual Meeting (22.7.2021), Book of Abstracts (p. 31), https://eventy.online/pliki/inhigeo/INHIGEO_2021_POLAND_.pdf
- Spatial Scales in the Mind: Effects of Ideology on Geology in Germany 1933 to 1945, at: Prague (Online), 26th International Congress of History of Science and Technology (28.7.2021)

Public Lectures

Martina Kölbl-Ebert

- Ladies with Hammers: 19th Century Female British Geologists and their Context, at: Zürich (Online), ETH Zürich, organized by the Working Group ‘Geodiversity’ (13.12.2021)

Cornelia Lüdecke

Institutionalizing Antarctic History: A Personal Memoir

- Seven stages of the discovery of Antarctica paralleled with the development of the Humanities and Social Sciences Standing Committee (SC-HASS) within the Scientific Committee on Antarctic Research (SCAR)

The report describes the development of Antarctic research parallel to the development of a history group within the Scientific Committee on Antarctic Research (SCAR) until the formation of the SCAR Standing Committee on Humanities and Social Sciences (SCAR SC-HASS).

1 Existence

My story begins in the 16th century when there was a general assumption that a “terra australis nundum cognita” exists as depicted in Ortelius’ world map of 1570. Although there is a long history of the discovery of and research in Antarctica, members of the Scientific Committee on Antarctic Research (SCAR) of today were not really interested in history. History which was written by Roald Amundsen, Robert Falcon Scott, Ernest Shackleton and his sunken ship “Endurance”, Richard Evelyn Byrd and the International Geophysical Year (1957-1958). This only changed at the beginning of the 21st century. And that is the point, when I came into the play.

Before I changed from meteorology to history of polar research, I gained some practical experience during meteorological experiments on board of German research vessels in the German Bight and in the Northeast Atlantic as well as in meteorological experiments with aircraft in the Alps and in Northern Territories of Australia. Later, I established and became chair of the Working Group of History of Antarctic Research of the German Society of Polar Research.

2 Search

Not before the last quarter of the 18th century, the British dispatched an expedition under the leadership of James Cook to search for the unknown continent in the southern Hemisphere. Cook reached his farthest south at 66° S in 1773, but he was disappointed because he found nothing else than ice. James Weddell penetrated the later called Weddell Sea and reached a new southern record at 74° S in 1823. However, he decided to return and deliver his whale oil instead of proceeding further south, although he could see only open water up to the horizon, but no trace of any continent.

In my archival research for my PhD thesis on German polar research covering the time between 1900 and 1939 I mainly analyzed the Antarctic expeditions of Erich von Drygalski (1901-1903), Wilhelm Filchner (1911-1912) and the “Schwabenland” expedition (1938/39) as well as Herbert Schröder-Stranz’ failed expedition to Spitsbergen and Alfred Wegener’s expeditions to Greenland (1929, 1930-1931).

3 Special Task

After Cook’s unsuccessful search for the southern continent a so-called magnetic crusade took place around the 1840s with the participation of the American Charles Wilkes, the French Jules Sébastien César Dumont D’Urville, and the British James Clark Ross. The latter discovered a huge ice barrier, now called Ross Ice Shelf. but he could not decide, whether the ice originated from a continent or from islands. Besides, Ross determined the location of the magnetic pole of the southern hemisphere reasonably close to the location calculated by the German astronomer Carl Friedrich Gauss. Altogether these three expeditions discovered and charted new coastlines.

The SCAR history group was initiated by Jörn Thiede, the SCAR president and director of the Alfred Wegener Institute in Bremerhaven, when he asked me to establish such a group. During the conference dinner of 1st SCAR Open Science Conference (SCAR OSC) at the

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Museum Universum at Bremen in 2004, I started to search for members with the help of Aant Elzinga, polar historian of the University of Gothenburg (Sweden). The aim was to include scholars from the twelve original signatory states of the Antarctic Treaty, which would form the core of the SCAR History Action Group. The next step was to organize the 1st SCAR History Workshop at the Bavarian Academy of Sciences and Humanities in Munich (2005). 18 participants from seven countries gave presentations under the headline “Steps of Foundation of Institutionalized Antarctic Research”. The workshop which set the stage for the group included polar veterans, historians, field researchers, undergraduate and graduate students as well as Ambassador Jorge Berguno from Chile (Figure 1).

4 International Co-operation

After the model of the 1st International Polar Year (1882-1883), an International Meteorological and Magnetic Co-operation was arranged for Antarctica from 1901 to 1904. Participants were the British Robert Falcon Scott (1901-1904), the German Erich von Drygalski (1901-1903), the Swedish Otto Nordenskjöld (1901-1903), and the Scot William Speirs Bruce (1902-1904), who established overwintering stations in the still unknown Antarctic region. The meteorological data taken together with the experiences of Scott’s march onto the Antarctic ice plateau until 82 °S resulted in the mean height of the widely unexplored Antarctic continent of 2000 m +/- 200 m. From then on Antarctica finally was considered to be a continent.



Figure 1: Ambassador Jorge Berguno talking to young participants (left: Peter Abbink from the Netherlands, and right Adrian Howkins from USA) of the 1st SCAR History Workshop in Munich (2005) (Source: Cornelia Lüdecke).

After the first workshop in Munich, Ambassador Berguno was so kind to invite the History Action Group to hold the 2nd History Workshop on “Multidimensional exploration of Antarctica around the 1950s” in Santiago de Chile in 2006. 21 participants came from seven countries and discussed among other topics the ABC problem, *i.e.*, the conflict of overlapping territorial claims of Argentina, Britain and Chile. We were lucky that we received support to arrange the 3rd History Workshop on “National and Transnational Agendas in Antarctic Research from the 1950s and beyond” at the Byrd Polar Research Center in Columbus (Ohio, USA) in 2007. During the 3rd SCAR OSC in St. Petersburg (2008) we held the 4th History

Workshop on “Polar History and Institutionalization of Polar Research: The International Polar Years”. During the workshop Paul Berkman asked the SCAR History AG to arrange the next 5th workshop in addition to the Antarctic Treaty Summit 2009 in Washington DC and to give the history presentation during the summit. The workshop on “History of International Spaces” then was organized by the SCAR History AG together with the History Committee of the American Geophysical Union led by Kris Harper.

The 6th History workshop on “History of Antarctica and Scientific Research” followed during the 4th SCAR OSC in Buenos Aires (Argentina) in 2010. With each workshop moving from one continent or country to another, more and more local scholars could be attracted to join the group. In Buenos Aires, Steven Chown (SCAR President from 2016-2021) invited and supported the History AG to hold the 7th History Workshop at Stellenbosch University (South Africa) on “Antarctic History: Probing the Unknown” in 2011. In conjunction with the workshop, South Africa’s online system and history project, the Antarctic Legacy project SANAP (historical overview of South Africa’s involvement in the Antarctic and the Sub-Antarctic), as well as the Stellenbosch and the University of Cape Town data bases were presented to the public.

5 The Goal

Ten years after the international co-operation in Antarctica, there was no more co-operation, when single explorers set out to gain national fame by the conquest of the South Pole in the period 1910-1913. With Scott already on his way, the Norwegian Roald Amundsen also set foot on the Ross Ice Shelf, and won the race with dog sledges a month before Scott reached the South Pole by man hauling their sledges. Besides, the Japanese Nobu Shirase explored King Edward VII Land instead of performing a significant advance to the south as originally planned.

About hundred years later in 2011, the History AG summarized its achievements since 2004 for presentation to the SCAR delegates. Usually Action Groups only exist for two to four years in maximum to finish a project, but history never ends. Finally the delegates approved a kind of upgrading of the Action Group to an Expert Group of a longer standing. Besides, the establishment of the History AG paved the way for the establishment of a Social Sciences AG within SCAR in 2010. It was chaired by Daniela Liggett and her co-chairs Gary Steel (2010-12) and Juan Francisco Salazar (2012-14).

The 8th history meeting took place during the 5th SCAR OSC in Portland (Oregon, USA) comprising two sessions on “Historical Views on Gateways to Antarctica” and “Voicing Silences in Antarctic History” in 2012.

6 The Basis

During the International Geophysical Year (1957-1958) the first dense network of stations was established on the Antarctic continent and the first crossing performed. This international co-operation was later also called the 3rd International Polar Year (1957-58). 12 Nations (Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, Union of Soviet Socialist Republics, United Kingdom, United States of America) were involved and decided to continue their research during the following year. This led to the 1st meeting of the Scientific Committee on Antarctic Research (SCAR) in 1958. In the end, the 12 nations signed the Antarctic Treaty in 1959 to use Antarctica for peaceful purposes only. The treaty also specifies freedom of scientific investigation and exchange of scientific data and results, and freezes national territorial claims. By 2004, SCAR often was described as ‘an old men’s club’.

COUNTRY REPORTS

When an overlap of topics in the recent presentations of the History EG and the Social Sciences AG became obvious, a close co-operation of both groups was decided. This led to the 1st joint SCAR History EG and SCAR Social Sciences AG Workshop following an invitation of the British Antarctic Survey in Cambridge (United Kingdom) in 2013. The topic was chosen to be “Past, Present and Future of Human Connections to the Antarctic”.

Official acknowledgement of the History EG was given by the invitation to participate in the 1st SCAR Antarctic and Southern Ocean Science Horizon Scan held in Queenstown (New Zealand) in 2014. In the retreat, SCAR members identified the most important scientific questions for the next two decades.

In the same year, the SCAR delegates approved the change of the Social Sciences Action Group to an Expert Group including the Humanities, which now was called HASSEG with Daniela Liggett as chair and Elizabeth Leane as co-chair (from early 2015 onward). The 2nd joint workshop on “Antarctic Wilderness: Perspectives from History, the Humanities and the Social Sciences” was organized at the Colorado State University in Fort Collins (USA) in 2015.

7 The Change

Under the umbrella of the Antarctic Treaty and supported by the Scientific Committee on Antarctic Research, the number of states to be involved in Antarctic research grew substantially until today. When the Antarctic Treaty could be renegotiated 30 years after its ratification, the Protocol on Environmental Protection, the so-called Madrid Protocol, was passed in 1991. It defined Antarctica as a “natural reserve, devoted to peace and science”.

After two successful joint workshops with increasing numbers of participants, both groups organized several sessions during the 7th SCAR OSC at Kuala Lumpur (Malaysia) in 2016. During the business meeting, we discussed the possible merger of the History EG and the HASSEG with the aim to become a large group. A group with a substantial amount of members might be more easily transformed into a permanent group similar to the three large groups GeoSciences, Life Sciences and Physical Sciences. The 3rd joint SCAR History EG and SCAR Humanities and Social Sciences EG workshop on “Depths and Surfaces: Understanding the Antarctic Region through the Humanities and Social Sciences” took place at the University of Tasmania, Hobart (Australia) in 2017. Finally a proposal to merge the History and HASS Expert Groups to become a permanent group was prepared and presented during the 8th SCAR OSC Delegates Meeting Davos (Switzerland) in 2018 (Figure 2).



Figure 2: From left to right: Daniela Liggett (Social Sciences), Cornelia Lüdecke (History), and Elizabeth Leane (Humanities) presenting their proposal during the SCAR Delegates meeting in Davos 2018 (Source: Cornelia Lüdecke).

8 Achievement

The merger of the History EG and the Humanities and Social Sciences EG was approved by the SCAR Delegates Meeting in Davos in 2018, and the joint group became a Standing Committee, called SCAR SC-HASS. The label “history” disappeared as history is seen as being included in humanities. Now the new group has a permanent standing which can only change its status into another permanent group as a result of a reorganization of SCAR.

The 1st SCAR-HASS Biennial Conference was organized at Ushuaia (Terra del Fuego, Argentina) on “Antarctic Connections at the End of the World: Understanding the Past and Shaping the Future” in 2019. Then the Covid-19 pandemic changed the culture of conferences totally: some of them were cancelled and some became online. Due to this situation, the 2nd SCAR-HASS Biennial Conference on “The Global Antarctic” was a hybrid conference in conjunction with the 14th Polar Law Symposium at Kobe University (Japan) in 2021. Japanese presentations were given in person on the first day, the other presentations were given online during the following days. In one of the online presentations the author looked back to the achievements of the History AG.

From the first international workshop of the SCAR History AG in 2005 until the 2nd biennial conference of the SC-HASS in 2021, the group has grown constantly (see Figure 3). Due to moving the meeting from country to country and from continent to continent, it could include more and more scholars of Antarctic history. These meetings offered a very nice opportunity to present single stages of PhD theses, which were discussed with professionals from various universities or polar veterans, as well as with colleagues from all over the world. No competition occurred during the years, because mostly there are few scholars working on topics covered by the SC-HASS. This friendly environment already led to intercontinental collaboration in writing joint papers or in writing and editing books.

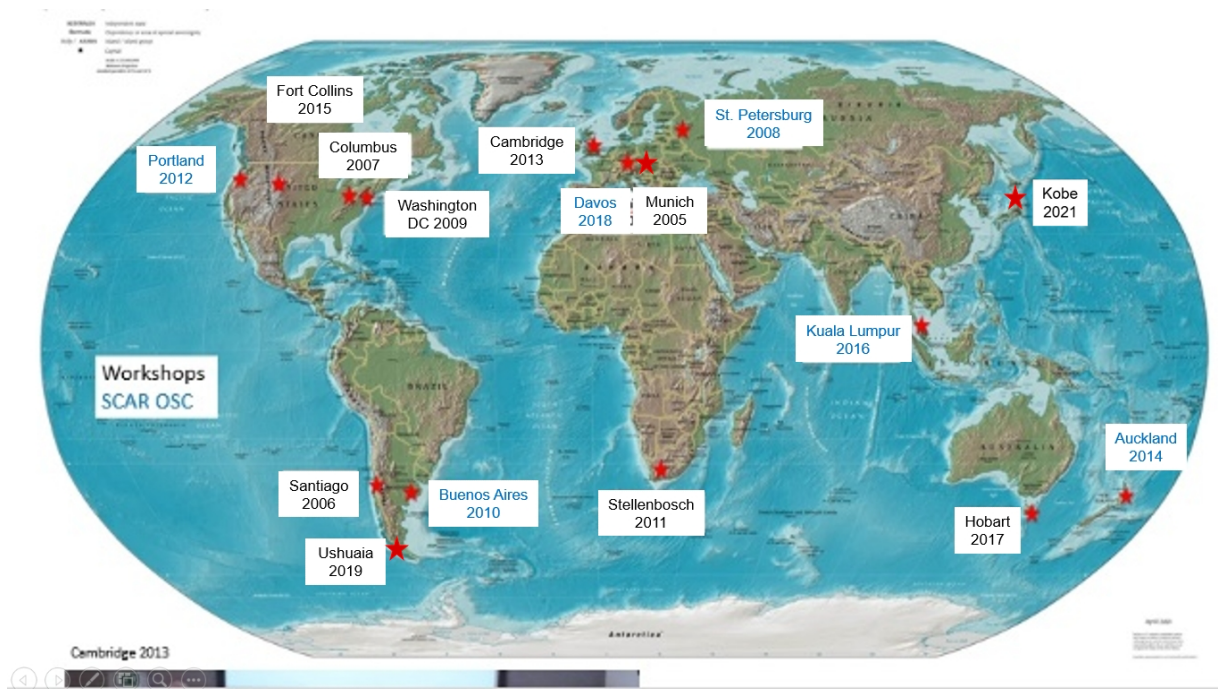


Figure 3: SCAR History AG/EG workshops and joint History SS/HASS EG conferences and sessions. Black: Workshops, Blue: SCAR Open Science Conferences.

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What was the secret behind this success?

- Take the chance for establishment of such a group
- Look for supporters and sponsors
- Use your network
- Offer nice places to meet
- Take no or low conference fees
- Include all generations
- Include all levels of professional career
- Address as many nationalities as possible
- Facilitate exchange and collaboration
- Maintain personal contacts across all continents

Finally it is time to hand over to the younger generation. Soon, Peder Roberts from the University of Stavanger (Norway), who joined the History Action Group in 2007, will be confirmed by the next SCAR Delegates Meeting to represent history on the board of SCAR SC-HASS.

Book

Peder Roberts, Lize-Marié van der Watt & Adrian Howkins (Eds.) *Antarctica and the Humanities* (London: Palgrave Macmillan, Palgrave Studies in the History of Science and Technology, 2016), 337pp.

Reports

Cornelia Lüdecke: "Historical perspectives on Antarctica: XXXII Open Science Conference of the Scientific Committee on Antarctic Research, Portland (Oregon, USA), 16-19 July 2012" in: *INHIGEO Newsletter 45 (2013)*, pp. 31-32.

Cornelia Lüdecke: "Past, present and future of human connections to the Antarctic. A workshop der SCAR History Expert Group and the Social Sciences Action Group. British Antarctic Survey, Cambridge, United Kingdom, 1-5 July 2013" in: *INHIGEO Newsletter 46 (2014)*, pp. 37-39.

Link to abstracts, reports, publication, and proceedings

<https://www.scar.org/science/hass/history-group/>

Additional Information from Individual Members

In 2021, the research of **Tina Asmussen** continued to focus on the history of mining as a resource history since the early modern period, with an emphasis on the intertwining of human and geological agency. Thematically, her research has focused on the interactions of mining, mineral resources, infrastructure, and water. Together with Pietro D. Omodeo, she co-organized a seminar at the Anthropocene Campus Venice 2021 entitled "Past and Present Waterscapes: Geological Agency in the Longue Durée." Together with colleagues from physical geology, paleo-botany, and medieval mining history, she started to develop a new research project that investigates the transformations of river landscapes in the Ore Mountains between the 12th and 18th centuries.

Having jointly (with Austrian INHIGEO members Marianne Klemun and Johannes Matthes) organized a conference “Erde-Natur-Wissen” in 2020, **Norman Henniges** spent part of 2021 editing articles based on the papers presented there. This is intended to lead to a book which hopefully will be published in 2022.

Next to the publication of his book on granite, **Gottfried Hofbauer** is pleased to report that, in 2021, his earlier lavishly illustrated 2016 coffee table book *Vulkane in Deutschland* has been reissued in an extended 2nd edition. It is readily available even in general bookstores. While not principally geared towards an audience specifically interested in the history of the earth sciences, it includes short up-to-date summaries of the major historical controversies concerning our understanding of volcanos.

Klaus Thalheim would like to inform fellow members of INHIGEO that 2021 was his last full year of employment by his host institution. Come April 1, 2022, he entered retirement, but plans to continue being actively involved in the history of the earth sciences.

Peter Schimkat (on behalf of the German members of INHIGEO)

HUNGARY ANNUAL REPORT 2021

Lectures presented in the sessions of History of Science Section of Hungarian Geological Society, 2021:

Because of the pandemic, in the first half of this year, no sessions with personal attendance could be held in the History of Science Section.

September 20.

Tóth, Á.: Reception of the Wegener theory in Hungary.

Election of the council of the Section.

The new council:

President: László Kordos,

Secretary: Éva Zsadányi,

Members: József Hála, Tibor Kecskeméti, Péter Papp, Álmos Tóth and István Viczián.

September 22.

Memorial session on the 200th anniversary of birth of Miksa Hantken (held jointly with other organisations). The following historical lectures were presented:

Kázmér, M.: Professional career of Miksa Hantken in pictures.

Brezsnyánszky, K.: Miksa Hantken, director of Institute of Geology.

Görög, Á., and Szente, I.: Contemporary Hantken.

Szentesi, Z., and Görög, Á.: The legacy of Hantken.

Mohr, E.: Miksa Hantken and the research of foraminifers.

Galács, A.: Miksa Hantken and the beginnings of the study of Jurassic Ammonites in Hungary.

16th Winter School in Mineral Sciences. January 22-23. „Minerals and Life” (held online).

Viczián, I., Németh, T.: A historical mineral medicine: the „terra medicinalis Tokayensis”.

Publications on history of geo-sciences in 2021

Books (with short summary of contents)

Barna, T., Tóth, L. 2020: A mélységektől a magasságokig. Ásványok a Bibliában (From the depths to the heights. Minerals in the Bible). – Kiadja: (Private edition by) Barna Tamás, Kecskemét. 99 p. (Figure 1).

Gurka, D. (ed.) 2021: Time in the “third kingdom of nature”. Prehistory of palaeontology and palaeoanthropology and its philosophical contexts. – Gondolat, Budapest. 231 p.
http://tudasaramlas.btk.elte.hu/images/pdf/library/gd_time.pdf

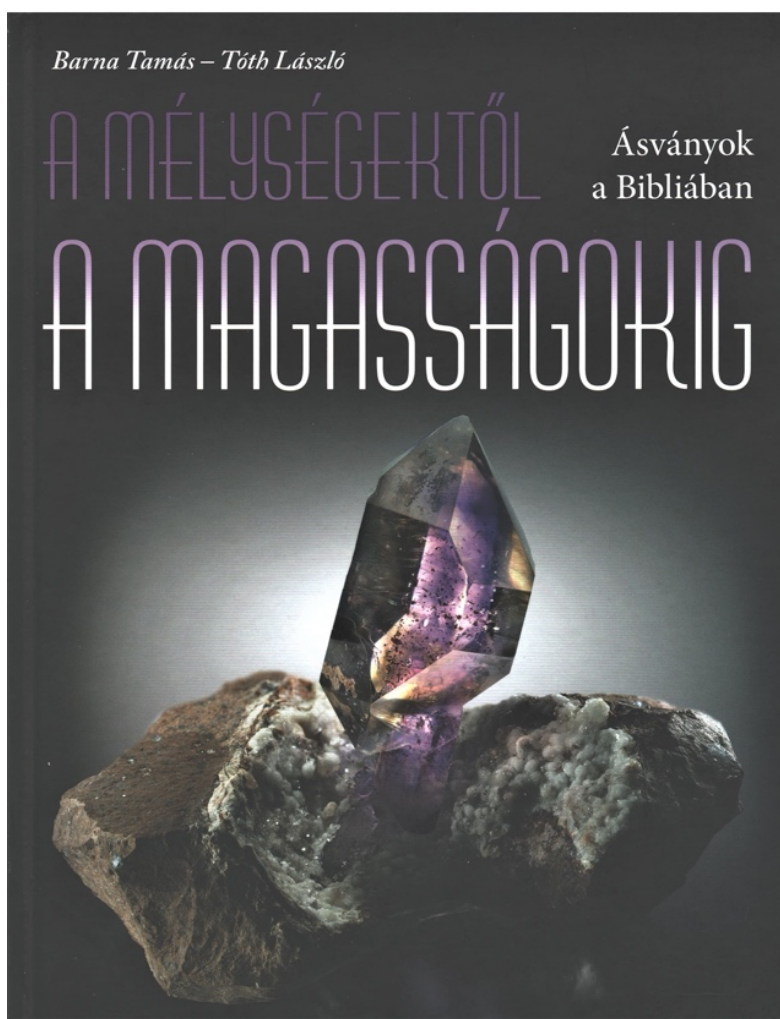


Figure 1. The picture album of the mineral collector Tamás Barna with the photographs of László Tóth selects mineral species and metals occurring in the Bible. The book includes a wealth of historico-cultural and theological knowledge.

Contents of the book (Figure 2) edited by D. Gurka (2021) focus on the philosophical contexts of the early history of palaeontology and palaeoanthropology:

REPRESENTATIONS OF THE TIME OF THE EARTH AND MANKIND IN PHILOSOPHY

Zoltán Horváth: The role of teleology in Kant's concept of epigenesis

Endre Hárs: Im Auftrag des Menschengeschlechts. Geschichtsphilosophische Ressourcen der Naturgeschichte

Wolfdietrich Schmied-Kowarzik: Schellings Naturphilosophie oder der wirbelnde Strom des Werdens. Zur sich potenzierenden Produktivität des Naturprozesses

Ben Woodard: What would it mean for palaeontology to be transcendental? Schelling and Kierkegaard

Dezső Gurka: Henrik Steffens's attempt at a Schellingian interpretation of the Earth's comprehensive history

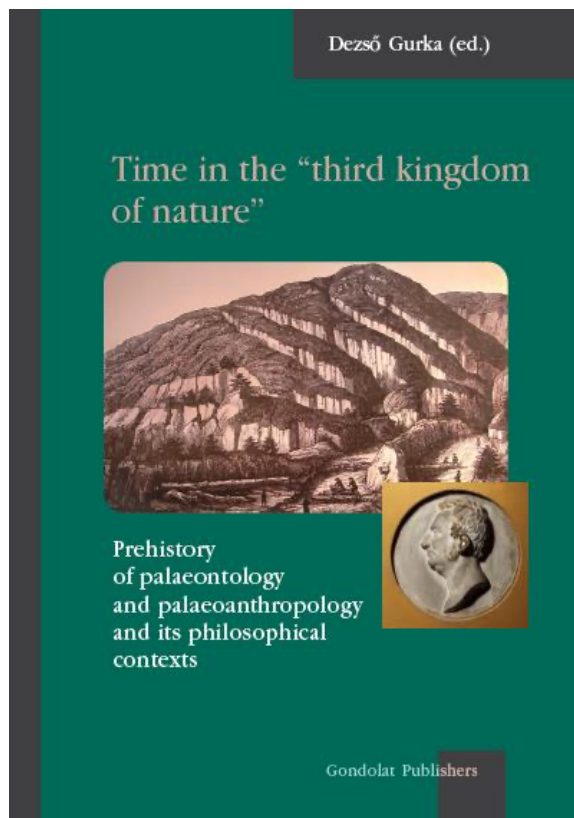


Figure 2. This book is the newest member of the series edited by Dezső Gurka dealing with the connections between philosophy and natural sciences, mainly in Jena, Weimar around the turn of 18/19th centuries. The influence and interaction with east-central Europe is specially emphasized.

PALAEONTOLOGY AND PALAEOANTHROPOLOGY IN LITERATURE

Judit Bartha: Palaeontological aspects in Mór Jókai's novels

Piroska Balogh: Palaeoanthropological references in Ágost Greguss's oeuvre.

Kordos, L. 2021: A Rudapithecus kutatás. Tények és mesék (The Rudapithecus research. Facts and tales). – *Régészet és Természettudományok (Archaeology and Natural Sciences)* 3, Archaeolingua Alapítvány (Foundation Archaeolingua), Budapest, 159 p. (Figure 3).

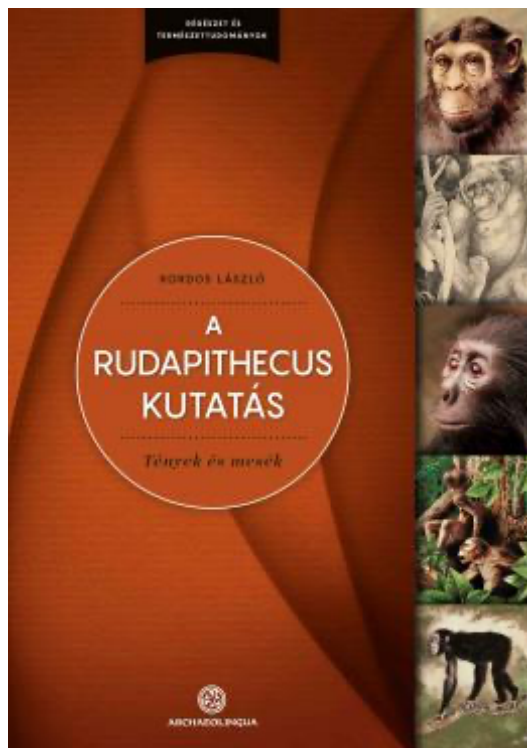


Figure 3. The author reviews the history of his own studies relating the famous rests of Primates of Miocene age at Rudabánya, Hungary. Variations in the interpretation relating the descent of man are discussed. Advantages and difficulties of international cooperation are illustrated.

Löw, I. 2019: Fényszóró drágakövek (Sparkling gemstones). – *Löw Immánuel válogatott művei (Selected works of Immánuel Löw) II.* Szerkesztette: (Edited by) Hidvégi Máté, Ungvári Tamás. Löw Heritage Alapítvány (Foundation Löw Heritage), Edited by Scolar Kiadó, Budapest. 270 p.

Immánuel Löw was chief rabbi in the Jewish congregation in Szeged, Hungary. He died in 1944. He was respected also as outstanding philologist. His manuscript was almost lost and has been published recently. In this book he reviews knowledge of minerals and metals and explains their names in the old Hebrew literature including Torah.

Sipos, I. 2020: Az evolúció misztériuma. Az értelem és a remény felragyogása (Mystery of evolution. Rise of sense and hope). SJP Szerzetesek (Religious order SJP), Miskolci. 200 p. *Imre Sipos, catholic monk and biologist is author of several books and papers on the theological interpretation of the Darwinian theory of evolution from the point of view of the Christian faith. This book is considered as a summary of his life-long activity in this field. In the book he reviews evolution of the living world during earth history accepting the scientific views and adds his spiritual remarks.*

Szakáll, S., Kupi, L. 2021: A Miskolci Egyetem ásványgyűjteménye, avagy Selmezbányától Miskolcig (Mineral collection of the University of Miskolc or from Banská Štiavnica to Miskolc). – Miskolci Egyetem (University of Miskolc), Miskolc. 84 p.

This book is written both in Hungarian and English. Sándor Szakáll, former professor of mineralogy at Miskolc University and founder also of the mineral collection of Herman Ottó Museum, Miskolc, gives a detailed description of the history of the mineral collection of the University. The importance of this collection is that it dates back to the collection of the Mining School at Selmezbánya (Banská Štiavnica, Schemnitz), founded in 1735. He presents details of history in the Selmec, Sopron and finally Miskolc periods. The nice photographs are work of László Kupi.

Wanek, F. 2021: Fordulópontok és meghatározó személyiségek Erdély altalajkincsének megismeréstörténetében 1920 előtt (Turning points and determining personalities in the reconnaissance history of mineral resources of Transylvania, before 1920). – Edited by Scientia Könyvkiadó, Kolozsvár. 265 p. (Figure 4).



Figure 4. Ferenc Wanek, emblematic personality of history of geosciences in Transylvania collected in this book his papers published in the last years. His interest extends to the life and activity of outstanding scientists of the classical period like Apáczai and Fichtel and of the 19th century like Antal Koch and Mór Pálffy. He discusses history of the typical mineral resources of Transylvania and Banat such as salt and earth gas. He detects traces and ethnographic aspects of traditional mining in the Kalotaszeg area, inhabited by Hungarian population.

Wanek Ferenc

Fordulópontok és meghatározó személyiségek Erdély altalajkincseinek megismeréstörténetében 1920 előtt

Scientia Kiadó

Articles and abstracts

- Kázmér, M., Prizomwala, S., Gaidzik, K. 2022: 8th century coastal uplift in Peninsular India – The Shore Temple at Mahabalipuram, Tamil Nadu. – Quaternary International
[https://authors.elsevier.com/sd/article/S1040-6182\(22\)00028-3](https://authors.elsevier.com/sd/article/S1040-6182(22)00028-3) (open access)
- Kázmér, M., Al-Tawalbeh, M., Győri, E., Laszlovszky, J., Gaidzik, K. 2021: Destruction of the royal town in Visegrád, Hungary – historical evidence and archeoseismology of the 1541 AD earthquake at the proposed Danube dam site. *Seismological Research Letters* 92(5): 3202-3214. Featured in *Nature*.

COUNTRY REPORTS

- K. L. [Kordos, L.] 2021: James (Amazing) Randi. Elment a szkeptikus Mágus (The sceptic magician deceased). *Természet Világa* 152(1): 29.
- Kordos, L. 2021: Harminc éves a Természet Világa diákpályázata. Versengve haladunk. (Competition for grammar school students of the journal Természet Világa. Progress by competition.) *Természet Világa* (World of Nature) 152(8): 355-357.
- Kordos, L. 2021: Ajánlás (Recommendation). – *In Csontos L.: Az én megyém! Borsod, Abaúj, Zemplén és egy csipet Gömör* (My county! Borsod, Abaúj, Zemplén and a bit of Gömör). Miskolc, Háromkő Egyesület (Association Three Rocks), 5-6.
- Papp, G. 2020: Frivaldszky Anniversalia I. Kalcedonpéldány és cédulái (Frivaldszky Anniversalia I. Chalcedony specimen and its labels). *Annales Musei historico-naturalis hungarici* 112: 36.
- Papp, G., Topa, B. A., Kis, A. Jánosi, M. 2020: Trianon következményei a Magyar Természettudományi Múzeum Ásvány- és Kőzettárának szemszögéből (Consequences of the Treaty of Trianon from the perspective of the Hungarian Natural History Museum, Department of Mineralogy and Petrology). *Annales Musei historico-naturalis hungarici* 112: 189–228.
- Viczián, I. 2021: Szász József (1782-1812) kéziratok ásványtani táblázatai a Teleki Tékában (Hand-written mineralogical tables in the Teleki Téka Library, compiled by József Szász, 1782-1812). *Historia Scientiarum*, EMT (Hungarian Technical Scientific Society of Transylvania), Kolozsvár, 19/2021: 38-49.
- Viczián, I. 2021: Pathi Nagy Sámuel (1770–1810) szellemi világa – könyvtárának jegyzéke alapján (The cultural background of Sámuel Pathi Nagy (1770–1810) – according to the list of his books). *Historia Scientiarum*, EMT (Hungarian Technical Scientific Society of Transylvania), Kolozsvár, 19/2021: 50-65.
- Viczián, I., Németh, T. 2021: A gyógyszernek használt „tokaji föld” ásványtani meghatározása (Mineralogy of the historical medicine called „Tokaj earth”). *XXII. EMT Bányászati, Kohászati és Földtani online Konferencia* (Online conference on Mining, Metallurgy and Geology, organised by the Hungarian Technical Scientific Society of Transylvania), [Kolozsvár], 2021: 103-109.
- Viczián, I. 2021: Manuel Ferreira da Camara brazil geológus látogatása Tokaj-Hegyalján és Erdélyben (1795–96). (Visit of the Brazilian geologist Manuel Ferreira da Camara in Tokaj area and Transylvania, 1795–96). *EMT XIV. Tudomány- és Technikatörténeti online Konferencia* (Online conference on History of Science and Technology, organised by the Hungarian Technical Scientific Society of Transylvania), [Kolozsvár], 2021: 92-95.
- Viczián, I. 2021: Fissure-filling clay in dacite at Tokaj, Hungary – a historical medicine (abstract). – *8th Mineral Sciences in the Carpathians Conference*, 2021, Miskolc, Hungary. *Acta Mineralogica-Petrographica, Abstract Series*, Szeged, 11: 51.
- †Vitális, Gy. 2021: Karl Alfred von Zittel „Geschichte der Geologie und Paläontologie bis Ende des 19. Jahrhunderts“ című könyvének földtudományi tanulságai (Geoscientific conclusions of the book by Karl Alfred von Zittel „Geschichte der Geologie und Paläontologie bis Ende des 19. Jahrhunderts“). *Bányászattörténeti Közlemények* (Bulletin of History of Mining), Rudabánya, 16: 77-85.
- Wanek, F. 2021: A Nagyalföld Romániához került déli része szénhidrogéntelepeinek ismerettörténete az első világháborúig (Hydrocarbon occurrences in the southern part of Hungarian Great Plain, annexed to Romania. History of reconnaissance until the first world war). *In: Dukrét Géza (ed.): „A múltat tiszteld a jelenben...” Személyiségek, események a*

partiumi és bánsági magyarság életéből („Respect the past in the present...”. Personalities, events from the life of Hungarians in Partium and Banat). Partiumi és Bánsági Műemlékvédő és Emlékhely Társaság (Society of Protection of Monuments and Memorials in Partium and Banat). Edited by Varadinum Script Kiadó, Nagyvárad, 277–292.

Wanek, F. 2021: 100 éve született Erdődön Nagy Lajos geológus (Lajos Nagy, geologist, born 100 years ago in Erdőd). *Partium. A Partiumi és Bánsági Műemlékvédő és Emlékhely Társaság honismereti lapja* (Partium. Bulletin of local history of Society of Protection of Monuments and Memorials in Partium and Banat). Nagyvárad, 25(2): 38–41.

Zsadányi, É. 2021: Dr. Vitális Sándor fullerföld-(bentonit-) kutatásai (Bentonite (Fuller’s earth) prospection of Dr. István Vitális). *Bányászattörténeti Közlemények* (Bulletin of History of Mining), Rudabánya, 16: 86-96.

Submitted by István Viczián.

IRELAND ANNUAL REPORT 2021

In the last year Patrick Roycroft was elected an Ordinary member. Patrick holds a bachelor’s degree in geology from Trinity College Dublin and received his PhD from University College Dublin for his thesis on the mineralogy of the Leinster Granite. In recent years he has worked as a genealogist, editor of the genealogy magazine *Irish Lives Remembered*, and was copyeditor of the journal *Elements*. Details of his publications between 2014 and 2019 and his ongoing research are given below.

Kathleen Histon (Ordinary Member INHIGEO Ireland)

Most of my time during 2021 has been focused on my work as INHIGEO Publications and Outreach Coordinator. I contributed to the INHIGEO Anniversary Series in September 2021 with *Great Exhibition 170 years ago: Geology in the Crystal Palace Great Exhibition of 1851*.

I spent a lot of the summer months of 2021 working in County Donegal (Ireland) on the history of the 19th century topographical mapping of the Irish language *gaeltacht* area *The Rosses* (West Donegal), the geological survey mapping of the area published in 1891 and aspects of the local stone built heritage, especially 18th century bridges and mills and 19th century churches, including a detailed study of the construction of Letterkenny Cathedral between 1891-1901.

A reconstruction of the sectors of West Donegal that were intensely studied as PhD projects supervised by H.H. Read in the second half of the 20th century as part of the Granite controversy is ongoing – these followed on earlier heated discussions from the 19th century when the geological memoirs for the area were first published. The international interest in the area that the maps and memoirs aroused in the 1890s involved leading figures from Britain, USA and Canada. All of the above studies were in connection to research towards a project on local geo-tourism incorporating potential geohistorical trails and elaboration of *Donegal Geostories*.

Tracing the correspondence of Arthur Humphries Foord in connection to those scientists he honoured by naming species of Irish Carboniferous nautiloids after them is in progress and hopefully will shed light on his contribution to classification and systematic studies.

I also continued my studies of the Italian geologist Arturo Issel from Genoa which included a visit to the wonderful library of the Museo Nazionale della Montagna, Club Alpina Italiana, in Turin when lockdown permitted.

COUNTRY REPORTS

I am organizing, together with Sue Turner (Australia) and Toshihiro Yamada (Japan), an INHIGEO sponsored session within the 6th International Palaeontological Congress (Thailand, 7-11 November 2022), on history of palaeontology entitled “*Hidden histories revealed in scientific revision of palaeontological collections*”. Details on the INHIGEO website and on <https://ipc6.msu.ac.th/>

Patrick Roycroft (Ordinary Member INHIGEO Ireland)

Recently, I took up a position as Assistant Keeper of Geology at the National Museum of Ireland. Transitioning from my previous employments to this exciting post has somewhat curtailed my research activities. Nonetheless, I am actively engaged in research on several aspects of Irish mineralogy and Irish mineralogists, including the enigmatic Patrick Doran and Julius Hanna. I am also preparing an A-Z of Irish mineralogy.

Publications:

- Roycroft, P.D. (2014) Julius Hanna, mineral collector – a little more is known. *Earth Science Ireland* 16: 24-25.
- Roycroft, P.D. (2014) Julius Hanna: A genealogical sketch of an important Belfast amateur mineralogist. *Journal of the Genealogical Society of Ireland* 15: 97-110.
- Roycroft, P.D. and Cuypers, M. (2015) The etymology of the mineral name ‘Apatite’: a clarification. *Irish Journal of Earth Sciences* 33: 71-75.
- Roycroft, P.D. (2015) *648 Billion Sunrises: A Geological Miscellany of Ireland*. Orpen Press, Dublin, 194pp.
- Roycroft, P.D. (2016) Cotterite: historical review; extant specimens; etymology of ‘Cotterite’ and the genealogy of ‘Miss Cotter’; new observations on the cotterite texture. *Irish Journal of Earth Sciences* 34: 45-78.
- Roycroft, P.D. (2017) Miss Grace Elizabeth Cotter of Rockforest, County Cork: Irish dedicatee of one of the world’s rarest mineral varieties – Cotterite. *Irish Lives Remembered* 37: 7-15.
- Roycroft, P.D. and Vard, E.J. (2019) Donegalite: an exceptionally obscure synonym for wollastonite coined by Dublin-based chemist and mineral collector Charles R.C. Tichborne (~1838-1905). *Irish Journal of Earth Sciences* 37: 27-32.

Patrick Wyse Jackson (Ordinary Member INHIGEO Ireland)

I am continuing my research on the history and use of dimension and decorative stone in Ireland as part of my Stonebuilt Ireland project (www.stonebuiltireland.com). A paper on the history of extraction and use of Valentia Slate from southwest Ireland has been prepared, and a guide to the use of stone in Dublin is expected to be published next year. This contains ten walks in which the stone utilised in the city is described and illustrated. I am also working on a number of papers on the history of the study of fossil bryozoans.

Publications:

- Elsa Panciroli, Patrick N. Wyse Jackson and Peter R. Crowther (2021). Scientists, collectors and illustrators: the roles of women in the Palaeontographical Society. *Geological Society, London, Special Publications*, **506**, 97–116.
- Patrick N. Wyse Jackson (2021) Geology and Setting, pp. 63–69. In Connolly, Michael Stone, *Bone & Belonging: Killaclohane Portal Tombs, near Milltown, Co. Kerry*. Tralee: Kerry County Council.

Patrick N. Wyse Jackson and Markus Aretz (2022) Obituary: George Demetrius Sevastopulo (1941–2021). *Newsletter on Carboniferous Stratigraphy* 36: 3–5.

Patrick N. Wyse Jackson (2022) Obituary: George Demetrius Sevastopulo 1941–2021. *Palaeontological Association Newsletter* 109: 90–93.

Submitted by Patrick WYSE JACKSON (Dublin) and Kathleen HISTON (Varese)

ITALY ANNUAL REPORT 2021

The restrictions imposed by the Covid-19 pandemic continued also during 2021, but several activities were carried out by INHIGEO Italian members and included research projects, teaching in the field of the history of the Earth sciences, publications and participation to online conferences and symposia. Several Italian members (Ezio Vaccari, Claudia Principe, Maddalena Napolitani, Marco Pantaloni, Simone Fabbi, Marco Romano, Fabiana Console, Giambattista Vai, Stefano Marabini, and Andrea Candela) were the authors of papers presented at the 46th INHIGEO Symposium, held online from Warsaw (Poland) in July. Ezio Vaccari also took part with a paper to the INHIGEO sponsored Symposium “Great to small: spatial and temporal scales in the history of the geosciences” within the 26th International Congress on the History of Science and Technology which was held online from Prague in July. Finally, in September more INHIGEO Italian members (Marco Pantaloni, Fabiana Console, Ezio Vaccari, Maddalena Napolitani, Andrea Candela, Claudia Principe, Luca Barale, Pietro Mosca and Maria Faccioli) took part to the workshop "Through the barricades: history of boundaries in geology", organized by the History of Geosciences section within the annual symposium of the Italian Geological Society, which was held online from Trieste. At the end of the year, the proceedings of the 44th INHIGEO Symposium (Varese - Como, Italy, 2019), edited by Ezio Vaccari, were published in the Italian journal of history of science *Physis* (vol. 56, Florence, L.S. Olschki, 2021). They included papers by INHIGEO Italian members Ezio Vaccari, Andrea Candela, Maria Faccioli, Claudia Principe, Fabio D'Angelo and Marco Pantaloni.

Libera Paola ARENA (Center for the History of Mountains, Material Culture and Earth Sciences, University of Insubria, Varese) continued her research on the reconstruction of the geo-historical routes around the area between Varese (Italy) and Canton Ticino (Switzerland) following the fieldwork of naturalists from late 18th to the early 20th century, in particular on the work by Luigi Lavizzari.

Luca BARALE (National Research Council of Italy, Institute of Geosciences and Earth Resources, Turin) continued his research on the history of geological studies and geological mapping in the French-Italian Western Alps in the late 18th-early 20th century, with particular focus on the Maritime Alps sector.

Conferences:

Mosca P., Barale L., *Geological mapping across the French-Italian border from late 19th to early 20th century*. Workshop "Through the barricades: history of boundaries in geology", 90th Congress of the Italian Geological Society, Trieste, 17 September 2021 (online).

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Publications:

Barale L., *Bartolomeo Gastaldi (1818-1879) and the “glacial erratics” of the Torino Hill, NW Italy*. "International Journal of Earth Sciences", 110, 2021, pp. 1863-1873. DOI: 10.1007/s00531-021-02048-2

Andrea CANDELA (University of Insubria, Varese) continued his research on the history of geology, still focusing his studies both on the relationship between the history of uranium, environmental constraints and nuclear energy in Post-World War II Italy and on the figure of the Italian geologist Scipione Breislak (1750-1826), whose contribution was essential to the institutionalization of the discipline of Geology in Italy. In 2021, Candela continued to serve as Book Review Editor of the international journal of History of Science “Physis”. He also began to supervise and work on a new and really challenging research project, entitled: “Data Science for science and society. Smart Villages & Citizen Science: from territorial digitization to innovative forms of public use of the historical heritage of a mountain community in the Lombard Prealps”. The ongoing research project has been funded by the Cariplo Foundation and, among its main purposes, also aims at preserving and promoting the geological heritage sites of the geographical area under analysis. The project is truly innovative and ambitious because it uses datascience tools to create a dataset along with an open-access management database of different environmental and cultural points of interest. Moreover, Candela continued to get involved in the Insubria research unit of the PRIN research project “Material and Visual Culture of Science: a longue durée perspective”.

Conferences:

Candela A., September 14-16, 2021: 90th Congress of the Italian Geological Society, (Trieste, Italy, online). Workshop: “Across Barricades: History of Boundaries in Geology”. Presentation: *The environment as a technological border: geology and nuclear power plants. A historical perspective*.

Candela A., September 30 - October 1, 2021: "Environmental history in Italy: state of the art and perspectives". National conference held at the University of Padua (Italy). Presentation: *For an environmental history of civil nuclear power: geology and nuclear power plants in the Italian energy transition attempt of the 1970s*.

Publications:

Candela A., *Visualising the theory of the Alps: the first geological map of the Western Lombard Prealps by Christian Leopold von Buch (1829)*, "Physis. Rivista Internazionale di Storia della Scienza", 56, 1-2, 2021, pp. 21-31.

Luca CIANCIO (University of Verona) continued his research on the history of early modern geology and meteorology, investigating in particular the relationships between natural philosophy, natural history and theology in understanding the phenomena and structure of the depths of the Earth.

Publications:

Ciancio L., *Promoting Empirical Knowledge in Habsburg Europe. Dedicatory Letters to the Cardinal Bernardo Cles in Works of Medicine, Astronomy and Natural Philosophy (1524-1536)*, "Nuncius", 36, n. 1, 2021, pp. 95-118.

Ciancio L., *The clueless science of earthquakes: social history of knowledge and intellectual change "Galilaeana"*, 18, n. 1, 2021, pp. 129-136.

Ciancio L., *Ponte di Veja a Sant'Anna d'Alfaedo*, in *Catalogo della mostra Dante a Verona 1321-2021*, Milano, Silvana Editoriale, 2021, pp. 314-315.

Fabiana CONSOLE (Library - ISPRA, Rome) continued his research on the history of geological sciences, with particular attention to historical geological maps and biographies of scientists.

Conferences, seminars and exhibitions:

Console, Fabiana. January 29, 2021 - Online presentation of the volume “I siti della memoria geologica nel territorio del Lazio”, *Memorie descrittive della Carta geologica d'Italia*, volume 106. Rome, Italy.

Console, Fabiana. July 9, 2021 - Partecipation to ASITA Academy on line conference “The Early Cartography of Petroleum Resources in Italy (1866 - 1926)”

Console, Fabiana. July 18-24, 2021 - Participation to the 46th International Commission on the History of Geological Sciences (INHIGEO), online Symposium, Cracow, Poland.

Console, Fabiana. September 17, 2021 - Participation to the workshop W4 'Through the barricades: history of boundaries in Geology'. Congress of the Geological Society of Italy, Trieste, Italy.

Console, Fabiana. November 25, 2021 - Participation to the workshop “L'acqua da modificante a modificata” with the presentation: “Le sorgenti del Torbidone nella piana di Norcia”.

Console, Fabiana. December 14-18, 2021 - Participation to the 30th International Cartographic Conference, Florence, Italy.

Console, Fabiana. October 2021 - February 2022 - Participation to the organization of the exhibition *La scienza di Roma. Passato, presente e futuro di una città* at the Palazzo delle Esposizioni in Rome.

Publications:

Macini P., Console F., Pantaloni M., *Mapping petroleum resources in Italy: from Antonio Stoppani to the foundation of Agip (1926)*, "Physis. Rivista Internazionale di Storia della Scienza", 55, 1-2, 2020 (published in 2021), pp. 33-47.

Macini P., Console F., Pantaloni M., *The Early Cartography of Petroleum Resources in Italy (1866 - 1926)*, in E. Borgogno Mondino and P. Zamperlin (Eds.), *Geomatics and Geospatial Technologies*, ASITA 2021, CCIS 1507.

Pantaloni M., Console F., Congi M.P., Ventura R., *The historical geological cartography: from digital archive to WebGIS environment*. "International Cartographic Association Proceedings. 30th ICC 2021", Florence, Italy.

Console, Fabiana. In the mainframe of the project “Biographies of the President of the Geological Society of Italy”, Fabiana wrote the biographies of 7 Past Presidents (<https://www.socgeol.it/383/presidenti.html>).

Pietro CORSI (Oxford University) continued his research on history of geological sciences particularly in the 19th century, as well as on the history of evolutionary theories and public opinion.

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Publications:

Corsi P., *Edinburgh Lamarckians? The Authorship of Three Anonymous Papers (1826-1829)*, "Journal of the history of biology", 54, n. 3 (September 2021), pp. 345-374.

Corsi P., *Evolutions. Authors, Theories, Readers*, in Bossi L. (ed.) *The Origins of the World: Invention of nature at the time of Darwin*, Paris, Gallimard, 2021, pp. 169-185.

Fabio D'ANGELO (Naples) continued his researches on the history of mineralogical travels in Europe between 18th and 19th century, with particular attention to the area of Naples and southern Italy.

Publications:

D'Angelo F., *Foreign communities, development of metallurgy and mining activities in southern Italy at the beginning of the Bourbon Dynasty (1734-1759)* "Physis. Rivista Internazionale di Storia della Scienza" 56 (1-2), 2021, pp. 303-318.

Simone FABBI (Institute for Environmental Protection and Research - ISPRA) continued his researches on the history of geological mapping, history of geological and stratigraphic studies of Italy, history of geological explorations, history of the Geological Society of Italy, history of military geology.

Conferences:

Argentieri A., Barchi M.R., Candela A., Cirilli S., Colacicchi R., Console F., Dal Piaz G.V., De Caterini G., Fabbi S., Innamorati G., Lavecchia G., Manzoni M., Marabini S., Menichetti M., Minelli G., Pantaloni M., Petti F.M., Praturlon A., Romano M., Vai G.B. *Mente et Malleo: 140 years of history of the Società Geologica Italiana through its Presidents biographical profiles*. 46th INHIGEO Symposium, Poland 2021 (online).

Publications:

Fabbi S., Romano M., Strani F., Sardella F., Bellucci L., *The Pleistocene vertebrate fauna of the Oricola-Carsoli intermontane Basin (Latium-Abruzzi, Italy): state of the art and historical review*. "Bollettino della Società Paleontologica Italiana" 60, 2021, pp. 255-268.

Consorti L., Arbulla D., Bonini L., Fabbi S., Fanti F., Franceschi M., Frijia G., Pini G.A., *The Mesozoic palaeoenvironmental richness of the Trieste Karst*. "Geological Field Trips and Maps", 13, 2021, 2.1.

Fabbi S., Biographies of four past presidents of the Società Geologica Italiana:

Giotto Dainelli - <https://www.socgeol.it/N2659/giotto-dainelli-firenze-19-maggio-1878-firenze-16-novembre-1968.html>

Paolo Vinassa de Regny - <https://www.socgeol.it/N2660/paolo-vinassa-de-regny-firenze-11-luglio-1871-cavi-di-lavagna-18-marzo-1957.html>

Giorgio dal Piaz - <https://www.socgeol.it/N2655/giorgio-dal-piaz-feltre-29-marzo-1872-padova-22-aprile-1962.html>

Mario Canavari - <https://www.socgeol.it/N2897/mario-canavari-camerino-27-11-1855-pisa-20-11-1928.html>

Maria FACCIOLI (University of Insubria, Varese) continued her research on the history of quarrying, mining and mineralogical travels mainly during the 18th century northern Italy, with a particular attention to the Venetian area and the figure of Marco Carburi.

Conferences and seminars:

Faccioli, Maria. September: paper on the topic *The work on the quarry and the development of knowledge, on the border between Earth Sciences and History of Technology* at the workshop "Through the barricades: history of boundaries in geology", 90th Congress of the Italian Geological Society, Trieste, 14-16 September 2021 (online).

Faccioli, Maria. April-May: Seminars (12 hours) on the history of quarrying and mining within the course on "History and resources of the mountains" (prof. E. Vaccari) at the University of Insubria, during the academic year 2020-2021, second semester.

Publications:

Faccioli M., *Mineralogical travels and mining knowledge in the 18th century: preliminary considerations on the case of Marco Carburi*, "Physis. Rivista Internazionale di Storia della Scienza", 56, 1-2, pp. 319-332.

Francesco GERALI (Museo dell'Energia of Ripi, Frosinone, Italy / University of Oklahoma School of Library and Information Studies, Norman, USA / University of Western Australia FABLE, School of Humanities, Perth, Australia) in 2021 worked on remote with the IEEE History Center to conclude the project Popular Oil: Contributions on the Oil & Gas Industry History for the Engineering and Technology History Wiki (ETHW), totaling 60 encyclopedia entries on petroleum technology history. At the Museo dell'Energia (Energy Museum) of Ripi (Latium region), Francesco worked at articles and oral presentations, promoted public relations and collaborations with learned societies and cultural institutions. He also assisted the Director in strategic planning and grant writing. Through the funds provided by the Lazio Regional Administration (Decree May 20, 2020, n°G06026 - L.R n° 24/2019 Annual Plan 2020), on behalf of the Energy Museum of Ripi he wrote and coordinated the making of three videos on petroleum history: *La Fons Olei, Il Petrolio in Età Moderna. La Maturazione Scientifica e Tecnologica di una Pratica Millenaria* and *Il Petrolio nella Valle Latina* (the videos are available at: <https://www.museoenergiaripi.it/guarda-i-nostri-filmati/>). Still on behalf of the Museo dell'Energia, in November Francesco was one of the 45 invited attendees at the 42nd History of Technology Conference of the Iron Library Raw Materials. Natural Resources in History held at the Klostergut Paradies, Schlatt, Switzerland. He also gave a talk for the "miniGeology Radio Show", at the KPFT Radio Station, Houston, TX, USA: Show #125 The 1st International Petroleum Congress (1900). During 2021 he was affiliated to the Newcomen Society for the History of Engineering and Technology, to the American Energy Society (AES) and to the International Committee for the Conservation of the Industrial Heritage (TICCIH).

Conference Presentations:

Gerali, F. September 25-26, 2021. Museo dell'Energia di Ripi, keynote lecture on the history of the Valle Latina petroleum region and presentation of the projects concluded on behalf of the Energy Museum. 2nd Edition of the public engagement/popular science festival Gustascienza. Energy Museum of Ripi.

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Publications:

Encyclopedia entries

Gerali F., "Petroleum History Museums". In: Sorkhabi R. (ed.) *Encyclopedia of Petroleum Geoscience*. Encyclopedia of Earth Sciences Series. Springer, Cham, 2021. https://doi.org/10.1007/978-3-319-02330-4_299-1.

Gerali F., 13 entries for the *Category Energy - Subcategory Petroleum* in the *Institute of Electrical and Electronics Engineer's Engineering and Technology History Wiki*:

[Air tankers;](#)

[Giuseppe Tagliabue;](#)

[Oil Tankers;](#)

[Energy Information Administration;](#)

[Geophysics and Petroleum. Early days, 1900s-1920s;](#)

[François Conrad Schlumberger;](#)

[Petroleum;](#)

[Horizontal Drilling;](#)

[Chronology of the early Russian petroleum history;](#)

[Chronology of the early French petroleum history;](#)

[Chronology of the early German petroleum history;](#)

[Chronology of the early Canadian petroleum history;](#)

[Chronology of the early Latin American petroleum history;](#)

Book Reviews

Gerali F., Review of *The Birth of Energy: Fossil Fuels, Thermodynamics, and the Politics of Work*, by Cara New Daggett. "Technology and Culture", 62 no. 4, 2021, pp. 1287-1289. doi:10.1353/tech.2021. 0185.

Yoel Bergman, Florian Bettel, Maria Elvira Callapez, Donna J. Drucker, Francesco Gerali, Dick van Lente, Tiina Männistö-Funk, Stefan Poser, Thomas Schuetz. *The 47th Symposium of the International Committee for the History of Technology, ICOHTEC's first digital meeting, July 15–17, 2020*. "Technology and Culture", 62, issue 3, 2021, p. 873-893.

Journals edited

Gerali F. & Vassiliou M. (editors). "Oil Industry History Journal", v. 22 (2021), n.1.

Newsletters edited

Gerali F. "ICOHTEC Newsletter" (monthly), issues 176 to 181, 2021.

Contributions in non-peer reviewed publications

Gerali F., *INHIGEO Virtual Bibliography 2020: Italy, Japan, Latvia, and Lithuania*. "INHIGEO Annual Record", 53, 2021, pp. 140-148.

Francesco LUZZINI (University of Ca' Foscari, Venice - Department of Philosophy and Cultural Heritage/ John Hopkins University - Department of History of Science and Technology) in 2021 started his Marie Skłodowska-Curie Global Fellowship at Ca' Foscari University of Venice and Johns Hopkins University. His current research project *Sounding the Depths of Providence* seeks

to understand how the study of mineral generation evolved in early modern Europe, and how the theoretical and practical knowledge underlying this debate influenced the rise and development of the Earth sciences and the role of humans as geological and environmental agents. Both the environmental and the natural-philosophical issues are also central themes in Francesco's ongoing collaboration with the Anthropocene Research Group at Department I of Max Planck Institute for the History of Science in Berlin (<https://www.mpiwg-berlin.mpg.de/project/earth-making>). In 2021, he also continued serving as Contributing Editor (Special Editor for Italian language sources) for *IsisCB*, the *Isis* Current Bibliography of the History of Science. Francesco's research work on the scientific and cultural discovery of the Dolomites in the XIX century is now published. The book (*Quando il mondo scalò il Sublime*) is a critical edition of the first manuscript volume of the guestbook of the Hotel *Nave d'Oro* in Predazzo (Italy), a place where travelers from all over the world left their signatures and a number of historically and scientifically significant notes related to the exploration of the Dolomites.

Meetings, Lectures, Seminars:

- Luzzini, F. (March 12) Seminar: *Alle fonti della storiografia. Edizioni critiche ed edizioni nazionali: significato, metodi, prospettive* (University of East Piedmont)
- Luzzini, F. (April 15) Meeting *RSA Virtual 2021* (Panel *Mining for the Earth-Based Sciences*) – Paper: “*The First and Proper Companion of Mines.*” *Water and Ore Generation in Biringuccio's De la Pirotechnia (1540)*
- Luzzini, F. (April 29) Workshop *Natural Resources in Early Modern Economies of Knowledge* (Ca' Foscari University Venice - MPIWG Berlin) – Paper: *Water and Ore Generation in Biringuccio's De la Pirotechnia (1540)*
- Luzzini, F. (October 14) Inauguration, Max Planck Partner Group *The Water City* (Ca' Foscari University of Venice) – Paper: *The Floating Price of Beauty: Water (and Land) Management in Venice through the Centuries*
- Luzzini, F. (October 20) Seminar: *The Isis Current Bibliography of the History of Science and the IsisCB Explore Platform: Bibliographic Tools for the Study of Scientific Objects* (University of Neuchâtel, Dept. of History)

Publications:

- Luzzini, F. “(Re)Shaping a Method: Field Research and Experimental Legacy in Vallisneri's *Primi Itineris Specimen* (1705),” in *Connecting Territories: Exploring People and Nature, 1700-1850*, eds. S. Boscani Leoni, S. Baumgartner and M. Knittel, Leiden, Brill, 2021, pp. 54-74.
- Luzzini, F. “Thinking on Earthquakes in Early Modern Europe: Firm Beliefs on Shaky Ground,” by Rienk Vermij, book review, *Early Science and Medicine*, Vol. 26, n. 4, 2021, pp. 409–411.
- Luzzini, F. *Quando il mondo scalò il Sublime. Scienza e storia nel primo Memoriale dell'Hotel Nave d'Oro di Predazzo (1820-1875)*, Trento, Museo delle Scienze, 2022.

Forthcoming publications:

- Luzzini, F. “Accettare lo stato mutevole dell'arte. Ecdotica, informatica e interdisciplinarietà: inquietudini epistemologiche, metodologiche, accademiche,” in *Storia e Filosofia della Scienza: una nuova alleanza?*, ed. F. Minazzi, Milan-Udine, Mimesis.

COUNTRY REPORTS

Luzzini, F. “Giovanni Pietro Orelli Barnaba di Locarno, Opera Medica (1711)”, by Benedino Gemelli, book review, *Lezioni Bellinzonesi*, Vol. 11.

Luzzini, F. “The floating price of beauty: Water and land management in Venice through the centuries,” in *An Anthropocene Guide to Venice*, eds. C. Baldacci, S. Bassi and P. Omodeo, Venice, Wetlands Books.

Luzzini, F. “Harvesting underground: (Re)generative theories and vegetative analogies in the early modern debate on mineral ores (I)”, *Notes and Records: the Royal Society Journal of the History of Science*.

Stefano MARABINI (Faenza) continued to study the history of geology and seismic activities in the Romagna region (central Italy), as well as geological heritage, and to collaborate with the Museum Scarabelli in Imola.

Conferences:

Argentieri A., Barchi M.R., Candela A., Cirilli S., Colacicchi R., Console F., Dal Piaz G.V., De Caterini G., Fabbi S., Innamorati G., Lavecchia G., Manzoni M., Marabini S., Menichetti M., Minelli G., Pantaloni M., Petti F.M., Praturlon A., Romano M. & Vai G.B. *Mente et Malleo: 140 years of history of the Società Geologica Italiana through its Presidents biographical profiles*. 46th INHIGEO Symposium, Poland 2021 (online).

Pietro MOSCA (Institute of Geosciences and Earth Resources, CNR - Italian National Research Council, Turin) continued his research activity on the history of geological explorations of the Western Alps during the late 19th and early 20th centuries, with emphasis on the role exerted by Italian geoscientists. He collected new data on the history of ancient quarries of ornamental stone (located in particular in alpine ophiolitic units) active up to 20th century in the Piemonte Region (Italy). He contributed (with Luca Barale) to the drafting of the biography of Alberto Pelloux (1868-1948), who was one of the presidents of the Società Geologica Italiana. (<https://www.socgeol.it/N3618/alberto-pelloux-crema-cr-10-12-1868-bordighera-im-23-02-1948.html>)

Conferences:

Mosca P., and Barale L. *Geological mapping across the French-Italian border from late 19th to early 20th century*, presentation at the workshop W4 “Through the barricades: history of boundaries in Geology”, 90th Congress of the Italian Geological Society (online).

Maddalena NAPOLITANI (University of Insubria, Varese), worked from March to August 2021 at the Deutsche forum für Kunstgeschichte in Paris, with a research project "From mountain peaks to the depth of the Earth. Artistic, scientific and political issues of the mineralogical collections of the École des Mines of Paris (1850-1900)". Moreover, her PhD dissertation, *Les pierres de la Nation. Les collections minéralogiques de l'École des Mines de Paris (1760-1825)*, was accepted to be published by the editor Mare et Martin, Paris. She continued her researches in particular on the history of scientific collections in France (18th-19th centuries), and more broadly on that scientific heritage and museums, crossing the approaches of the history of art and those of the history of science and techniques.

Conferences:

- Napolitani, M. (May). *L'Antiquité entre paysages sublimes et sciences de la Terre. Un dialogue entre les oeuvres de Denis Abel de Pujol et Claude Hugard pour l'École des Mines de Paris (années 1850)*. Day Seminar "L'antiquité dans le paysage: site, nature et mémoire dans l'art pictural de la période moderne", Lausanne University (online).
- Napolitani, M. (June). *Les pierres de la Nation. Les collections minéralogiques entre le monument et le sol national*. Lecture for the research's day of the research unit HiCSA (Histoire Culturelle et Sociale des Arts), Université de Paris 1 Panthéon-Sorbonne, Paris (online).
- Napolitani, M. (July). *Popularizing the history of mining: the two underground exhibitions "Le Monde Souterrain" and "L'exposition minière souterraine" at the Paris' great exhibition, 1900*. INHIGEO 46th Annual Symposium, Institute of Geology, Warsaw (online).
- Napolitani, M. (September). *Les pierres de la Nation. Les collections minéralogiques de l'École des Mines de Paris*. Annual reunion of the Comité Français d'Histoire de la Géologie (COFRHIGEO), Maison de la Géologie, Paris.
- Napolitani, M. (September). *Painting the mountains between art and Earth sciences during the second half of the 19th century. The case of the painter Claude Hugard (1816-1885)*. Workshop "Through the barricades. History of boundaries in Geology", 90th congress of the Italian Geological Society (SGI), *Geology without borders*, Trieste (online).
- Napolitani, M. (October). *Verne e dintorni: la rappresentazione della Terra e della sua storia, dalle pitture ai diorami. Il caso dell'École des Mines di Parigi (1852-1900)*. "Storie di Scienza", young researchers' conference of the Italian Society for the History of Science (SISS) (online).
- Napolitani, M. (December). *Du centre de la Terre aux plafonds peints: Enjeux scientifiques et muséographiques du décor peint pour le musée de minéralogie de l'École des Mines de Paris (1852-1859)*. Conference "Painted Ceilings in Europe (14th-21st centuries): forms, functions, fictions", Centre Allemand d'Histoire de l'Art- DFK, Paris.

Publications:

- Napolitani M., *Les collections de minéraux: un objet d'étude hybride entre arts et sciences, recherche et création*, proceedings of the conference *L'hybridité. Pratiques et perspectives*, Université de Grenoble Alpes (2020), 2021, online, cf. <https://doclittarts.hypotheses.org/1204>
- Napolitani M., *Viaggio al centro della Terra: gli allestimenti immersivi degli ingegneri dell'École des Mines di Parigi, dalle pitture ai diorami (XIX-XX secolo)*, in J. Arnaldo, S. Costa, D. Poulot, A. Rosellini (eds), *Ambiances. Esperienze immersive nell'arte e al museo*, Bologna, Bononia University Press, 2021, pp. 179-192.
- Napolitani M., *Le cabinet d'objets d'art de Balthazar-Georges Sage (1740-1824): la découverte d'une collection entre cabinet particulier et musée au tournant Révolutionnaire*, in L. Jouvett, A. Ottazzi, M. Tauziède-Espariat (eds), *Collectionner: acteurs, lieux et valeur(s) (1750-1815)*, Paris, Éditions du GRHAM, 2021, pp. 180-192.

Pietro Daniel OMODEO (University of Venice "Ca' Foscari") continued his research on the history of the hydrogeology of Venice Lagoon. He is also Principal Investigator of the FARE project *Positioned Cosmology in Early Modernity: The Geo-Praxis of Water-and-Land Management in Venice*, which received funding from the Italian Ministry of University and Research.

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Publications:

- Omodeo P.D., *Bacon's Anthropocene: The Historical-Epistemological Entanglement of Power, Knowledge, and Nature Reassessed*, "Epistemologia & Filosofia Nauki", 58, 2021, pp. 148-170.
- Trevisani S., Omodeo P.D., *Earth Scientists and the Sustainable Development Goals: Geocomputing, New Technologies, and the Humanities*, "Land", 10, 2021.
- Omodeo P.D., Krellig H., *Venice's Marriage to the Sea: Ritual, Representation, and Environmental Transformation*, "Silkroadia", 3, 2021, pp. 185-193.
- Omodeo P.D., *Rethinking Leonardo for the Anthropocene*, in *Leonardo's Intellectual Cosmos*, Firenze-Milano, Giunti, 2021, pp. 323-330.

Marco PANTALONI (Geological Survey of Italy - ISPRA, Rome) continued his research on the history of geological sciences, with particular attention to historical geological maps, history of stratigraphy, history of Geological Survey and biographies of scientists. He is the Secretary of the "History of Geoscience Section of the Geological Society of Italy" which count more than 140 members. He contributed to the organization of the Exhibition "*La scienza di Roma. Passato, presente e futuro di una città*" (Palazzo delle Esposizioni in Rome, October 2021 - February 2022). In 2021 he co-authored 4 papers on national and international journals and organized 5 field trips based on the relations between the actual geological knowledge and landscape and the history of the sites. In the mainframe of the project "Biographies of the President of the Geological Society of Italy", he wrote the biographies of 12 Past Presidents (<https://www.socgeol.it/383/presidenti.html>).

Conferences and seminars:

- Pantoloni, M. (January 29, 2021). Online presentation of the volume "I siti della memoria geologica nel territorio del Lazio", Memorie descrittive della Carta geologica d'Italia, volume 106. Rome, Italy.
- Pantoloni, M. (May 28, 2021). Organization of the online conference "Vermicino '81, Anno Zero. La conoscenza geologica del sottosuolo per la sicurezza del territorio e la protezione civile". Rome, Italy.
- Pantoloni, M. (July 9, 2021). Participation to ASITA Academy on line conference "The Early Cartography of Petroleum Resources in Italy (1866 - 1926)"
- Pantoloni, M. (July 18-24, 2021). Participation to the 46th International Commission on the History of Geological Sciences (INHIGEO), online Symposium, Cracow, Poland.
- Pantoloni, M. (September 22, 2021). Participation to the conference "Per terremoto o per sostegno manco: la Geologia nell'inferno di Dante", Università degli Studi di Torino- Dipartimento di Scienze della Terra, Turin, Italy, organized to celebrate the VII century anniversary of the death of Dante Alighieri.
- Pantoloni, M. (September 17, 2021). Organization of the workshop W4 'Through the barricades: history of boundaries in Geology'. Congress of the Geological Society of Italy, Trieste, Italy.
- Pantoloni, M. (November 25, 2021). Participation to the online conference "Erosione del Litorale tra Capo Linaro e Palo (Provincia di Roma). Gestione sostenibile degli interventi di difesa della costa". SIGEA Lazio – Ordine Geologi del Lazio, Rome, Italy.

- Pantoloni, M. (November 25, 2021). Participation to the workshop “L'acqua da modificante a modificata” with the presentation: “Le sorgenti del Torbidone nella piana di Norcia”.
- Pantoloni, M. (December 3, 2021). Organization of the conference “140 anni insieme: la Società Geologica Italiana, 1881-2021”. Dipartimento di Scienze della Terra, Sapienza Università di Roma, Italy.
- Pantoloni, M. (December 14-18, 2021). Organization of the 30th International Cartographic Conference, Florence, Italy.

Publications:

- Pantoloni M., *The 1:1M Geological Map of Italy: a milestone in geological knowledge*, "Physis. Rivista Internazionale di Storia della Scienza", 56, 1-2, 2021, pp. 383-396.
- Argentieri A., Marchili P., Pantoloni M., *Vermicino 1981: l'anno zero della conoscenza geologica del sottosuolo per la protezione civile e la gestione del territorio in Italia*. "Acque Sotterranee - Italian Journal of Groundwater" AS36-510, 2021, pp. 73-77 (DOI 10.7343/as-2021-51073-77)
- Macini P., Console F., Pantoloni M., *Mapping petroleum resources in Italy: from Antonio Stoppani to the foundation of Agip (1926)*, "Physis. Rivista Internazionale di Storia della Scienza", 55, 1-2, 2020 (published in 2021), pp. 33-47.
- Macini P., Console F., Pantoloni M., *The Early Cartography of Petroleum Resources in Italy (1866-1926)*, In: E. Borgogno Mondino, P. Zamperlin (Eds.), *Geomatics and Geospatial Technologies*, ASITA 2021, CCIS 1507 (Communications in Computer and Information Science), Springer Nature Switzerland, 2021, pp. 151–162.
- Pantoloni M., Console F., Congi M.P., Ventura R., *The historical geological cartography: from digital archive to WebGIS environment*. "International Cartographic Association Proceedings. 30th ICC2021", Florence, 2021.

Claudia PRINCIPE (Institute of Geosciences and Earth Resources, CNR - Italian National Research Council, Pisa) continued her researches in the history of volcanology and geoarchaeology, as well on the history of the Earth sciences in the early meetings of Italian scientists.

Conferences:

- Principe C., Pallecchi P., Clemente F., Gallet Y., Genevey A., *Multidisciplinary Analyses of Tuscan Architectural bricks*. P29 Geoarchaeology – Poster – SGI 2021 Trieste Capitale Europea della Scienza 16-18 September 2021 “Geologia senza confini” (online).
- Principe C., Gogichaishvili A., Devidze M., La Felice S., Cejudo R., Cantini F., Morales J., *Archaeomagnetic dating of three furnaces, in the ancient settlement of San Genesio (San Miniato, Pisa, Italy)* – Oral presentation – 11th Congresso Nazionale della Associazione Italiana di Archeometria (AIAr), Napoli, 28-29-30 July 2021.
- Principe C., Cerbai I. *Olinto Dini (1805-1866) physicist by choice, naturalist by fate* – Oral presentation – 46th International Commission on the History of Geological Sciences (INHIGEO) Symposium Crakow, Poland, 18-24 July 2021 (online).

Publications:

- Principe C., Paolillo A., La Felice S., Arrighi S. *Forma Vesuvii – 2 – Volcanic morphology at the time of AD 79 Plinian eruption*. *Physis. Rivista Internazionale di Storia della Scienza* 56 (1-2) 2021, pp. 289-302 + 2 Tavv.

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Vezzoli L., Principe C., and Sorbini C. The paleo-lacustrine diatomaceous deposits of Monte Amiata volcano (Tuscany, Italy) and the Ezio Tongiorgi paleontological collection in the Museum of Natural History of the University of Pisa, *Annals of Geophysics* 64(5) VO553, 2021.

Vezzoli L., and Principe C. Artist's iron-based natural earth pigments of Tuscany (Monte Amiata Volcano, Italy). *Earth Sciences History* 41(1) 2022, pp. 1–21.

Guido ROGHI (Institute of Geosciences and Earth Resources, CNR - Italian National Research Council, Padua), continued his research work in particular on paleontologist Abramo Massalongo (1824-1860) as well as geologists Tommaso Antonio Catullo (1782-1869), Achille De Zigno (1813-1892). He also contributed to the organization of the exhibition on Déodat de Dolomieu (1750-1801) and the Dolomites, "Déodat de Dolomieu. Curiosando tra i taccuini di viaggio e nella vita avventurosa del padre delle Dolomiti", which was held in Cortina d'Ampezzo, at the Museo Paleontologico delle Regole d'Ampezzo "Rinaldo Zardini", from August to October 2021.

Conferences:

Roghi, Guido. Presentation of the book: *Dolomiti, la prima scoperta – Uomini che hanno fatto la storia della geologia tra Südtirol e Alpi Venete* by Maurizio Alfieri (Fondazione Giovanni Angelini, 2021), within the meeting "Oltre le Vette", Belluno, 8-17 October 2021.

Roghi, Guido. Presentation of the exhibition *Dolomieu in viaggio tra Alpi e Prealpi seguendo l'avventura della vita e della ricerca scientifica*, (Badia di Ganna), Valganna, Varese, 21 November 2021.

Publications:

Roghi G., *Il Minerale, la roccia e le montagne dedicate a Déodat de Dolomieu (1750-1801)*. In L. Zanzi, E. Rizzi, G. Roghi (eds), *Déodat de Dolomieu. Curiosando tra i taccuini di viaggio e nella vita avventurosa del padre delle Dolomiti*. Belluno, Fondazione G. Angelini e Fondazione Maria Giussani Bernasconi, 2021, pp. 75-88.

Marco ROMANO (Sapienza University of Rome) continued his research in the history of Italian geology. In 2021 he also held a course in "History of Geology" for the students of the degree course in Geological Sciences at the University of Rome "La Sapienza".

Conferences and Seminars:

Romano, M. (with S. Fabbì) "Alessandro Portis e l'elefante di Riofreddo (RM)". Presentation of the book *I siti della memoria geologica nel Lazio*, 29 January 2021.

Romano, M. Series of seminars "Per tremoto o per sostegno manco: la Geologia nell'Inferno di Dante", within the celebrations for the anniversary "700 years from Dante Alighieri's death", Università degli Studi di Torino, 2021.

Romano, M. Presentation of the book M. Romano, *I Fossili una Storia Italia. Il contributo italiano alle prime conquiste della Geologia*. Sapienza, Università di Roma, 24 November 2021.

Publications:

Romano M., Pignatti J., *The fossil merchant from Verona: the first written testimony of paleontological forgery in Italy*. "Rendiconti Online della Società Geologica Italiana", 55, 2021, pp. 54-63.

- Romano M., Rubidge B., Sardella R., *A century since the recognition of cyclic climatic change by Milanković*. "Rendiconti Online della Società Geologica Italiana" 53, 2021, pp. 9-13.
- Romano M., Mecozzi B., Sardella R., *The quaternary paleontological research in the Campagna Romana (central Italy) at the 19th-20th century transition: historical overview*. "Alpine and Mediterranean Quaternary", 34 (1), 2021, pp. 109-130.
- Fabbi S., Romano M., Strani F., Sardella R., Bellucci L., *The Pleistocene vertebrate fauna of the Oricola-Carsoli intermontane Basin (Latium-Abruzzi, Italy): state of the art and historical review*. "Bollettino della Società Paleontologica Italiana", 60(3), 2021, pp. 255–268.

Luca SIMONETTO (Museo Friulano di Storia Naturale, Udine) continued his work at the Museo Friulano di Storia Naturale as a laboratory technician, taking care of the geological and paleontological collections. His research in the history of geology focuses on 19th century Italian naturalists and geologists from Friuli region, like Giulio Andrea Pirona and others. He also continues to investigate some aspects of the geological and paleontological research that were carried out between the second half of the 19th century and the first half of the 20th century in the Carnic Alps.

Ezio VACCARI (University of Insubria, Varese) continued his research on the history of the geological sciences in 18th-19th century, with particular attention to stratigraphy and orogenetic theories. He continued to work at the research project (PRIN 2017, *Material and visual cultures of science: a longue durée perspective*) as the scientific coordinator of the unit at the University of Insubria, in order to investigate the development of different 'images' of natural environment from the 16th to the 20th century, through the identification of specific 'visual objects' and iconographical models or styles. He also continued to teach history of geological sciences within his course of History of Mountains at the University of Insubria in Varese and Como.

Conferences and seminars:

- Vaccari, E. "Toward a history of the geological associations in Italy: the *Società Geologica residente in Milano* (1856 - 1859)". Oral presentation at the 46th INHIGEO Symposium (Warsaw / Cracow, online), 21 July 2021.
- Vaccari, E. "From rocks to mountains: the use of 'small' specimens for the 'great' history of the Earth during the 18th century". Oral presentation at the symposium, "Great to small: spatial and temporal scales in the history of the geosciences" organized on behalf of INHIGEO at the 26th International Congress on the History of Science and Technology (Prague, online), 27 July 2021.
- Vaccari, E. "Geology before borders: the early history of a science and its interdisciplinary development". Oral presentation at the workshop "Through the barricades: history of boundaries in geology", within the 90th Congress of the Italian Geological Society (Trieste, online), 17 September 2021.
- Vaccari, E. Presentation of Déodat de Dolomieu volcanological research in Italy at the opening of the exhibition *Dolomieu in viaggio tra Alpi e Prealpi seguendo l'avventura della vita e della ricerca scientifica*, (Badia di Ganna), Valganna, Varese, 21 November 2021.

Publications:

- Vaccari E. The development of lithostratigraphy in the Alpine region during the early 19th century through the work of Giuseppe Marzari Pencati and Pietro Maraschini. *Physis. Rivista Internazionale di Storia della Scienza* 56 (1-2), 2021, pp. 61-74.

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Gian Battista VAI (University of Bologna), continued his research activity in history of geology and paleontology, as past Director of the Geological Museum "Giovanni Capellini", at Bologna University. During 2021 he also continued to work at the organization of a symposium on Giuseppe Scarabelli, within the Bicentennial Celebrations dedicated to this important 19th century Italian geologist.

Conferences:

Argentieri A., Barchi M.R., Candela A., Cirilli S., Colacicchi R., Console F., Dal Piaz G.V., De Caterini G., Fabbi S., Innamorati G., Lavecchia G., Manzoni M., Marabini S., Menichetti M., Minelli G., Pantaloni M., Petti F.M., Praturlon A., Romano M. & Vai G.B. *Mente et Malleo: 140 years of history of the Società Geologica Italiana through its Presidents biographical profiles*. 46th INHIGEO Symposium, Poland 2021 (online).

Publications:

Vai G.B. Leonardo da Vinci's and Nicolaus Steno's geology. *Earth Sciences History*, 40 (2), 2021, pp. 293-331.

Vai G.B. and Venturini C. Con Gortani alla scoperta geologica dell'Alta Carnia: i taccuini di rilevamento 1910 - 1911 e 1921. *Gortania*, 43, 2021, pp. 5-63.

Luigina VEZZOLI (Institute of Geosciences and Earth Resources, CNR - Italian National Research Council, Pisa) continued her research on the history of volcanological studies in Italy, with particular attention to Mt. Amiata in Tuscany.

Publications:

Vezzoli L., Principe C., Sorbini C. The paleo-lacustrine diatomaceous deposits of Monte Amiata volcano (Tuscany, Italy) and the Ezio Tongiorgi paleontological collection in the Museum of Natural History of the University of Pisa. *Annals of Geophysics* 64, 5, VO553, 2021.

Vezzoli L., and Principe C. Artist's iron-based natural earth pigments of Tuscany (Monte Amiata Volcano, Italy). *Earth Sciences History* 41(1), 2022, pp. 1–21.

Report compiled by Ezio VACCARI

JAPAN ANNUAL REPORT 2021

Two meetings of JAHIGEO (Japanese Association for the History of Geological Sciences) were held at the Waseda Service Garden, Tokyo in 2021, partly on-line because of the Covid-19 pandemic. The summer meeting was held on June 26th. SHIKI Tsunemasa talked on “A History of the Geological Institute, Kyoto University, after WWII” and YAJIMA Michiko talked about “Publication of the Book on the Biography of the Geologist Edmund Naumann of 2019”. The winter meeting was held on December 19th. AOKI Shigeyuki presented “Charles Darwin and Philosophy of Science, from the Present Point of View” and KATO Hirokazu gave a presentation on “A Vegetarian Benjamin Smith Lyman (1835-1920) and ‘Vegetarian Festival’ authored by

Miyazawa Kenji (1896-1933). For the works of Miyazawa, Kato published his study in *JAHIGEO Newsletter* No.12 (2010).

The Study Group for the History of Geosciences (*Chigaku-shi kenkyu-kai*), organized by JAHIGEO members since 2000, had the 79th meeting at the Waseda Service Garden, Tokyo, partly on- line, on 28 March 2021. OZAWA Takeshi delivered a lecture about “Dutch Geoscientific Books Imported during the Later Edo Period”. According to Ozawa’s study, Japanese then imported many geographical books (about 70%) together with mining, mineralogy, geology, meteorology, and geophysics.

The 69th annual meeting of the History of Science Society of Japan (HSSJ) was held on May 22-23 entirely on-line. Six papers on the history of geosciences were read: FUKUKAWA Tomoko, “Consideration on Kume Kunitake’s Article ‘Accounts on Oriental History’”; MIYASHITA Atsushi and Therese KARLSON, “Foreign engineers in the Naka-Osaka Iron Mine at the Shimonita Geopark during the early stage of Meiji—With special reference about A. R. Berggren of Swedish engineer”; YAMAMOTO Akira, “Female activities in meteorology of Japan until 1945”; MIYAGAWA Takuya and TSUKAHARA Togo, “Local activities in the initial stage of meteorology in Japan—Case study of Hiroshima and Wakayama”; YAMADA Toshihiro, “Anthropocene issues and the historiography of science”; YAJIMA Michiko, “The beginning of lady earth scientists in Japan”. YAJIMA Michiko also talked on “Darwin, the most favorite and greatest scientist in the 19th Century” in the symposium “The problem of misinterpretation of evolutionary theory” organized by MIZOGUCHI Hajime.

On 6 July, the Japan Geoscience Union (JpGU) provided on-line sessions for geoscience studies: historical, philosophical and STS approaches, in which five posters were presented and discussed on Zoom Live with 35 participants including:

- YAJIMA Michiko, “The beginning of lady earth scientists in Japan”
- HAYASHI Mamoru, “Finding Geoscientific Evidence in Nuclear Disaster Trials 2: Is Not "responsibility of the government" Scientific?”
- AOKI Shigeyuki, “Wilkins’s lunar world”
- YAMADA Toshihiro, “The Popularization of Science and the Geo-power: Cosmic Evolution, China, and Buddhism in 1920s Shinjo Shinzo”
- YAMAMOTO Akira, “Japan's first female meteorologist”

In 2021, the JAHIGEO issued its *Bulletin*, Numbers 56 and 57 (in Japanese), and the *JAHIGEO Newsletter*, Number 23 (in English).

The *JAHIGEO Bulletin* no. 56 published in May, included 4 articles, 4 documents, and 2 obituaries. After President Kato’s address, there were HARA Ikuo’s papers, “A petrofabric task in the past seventy years”, (1) Further consideration on strain rate analysis, pp. 2-9 and (2) Deformational stress pictures analysis, pp. 10-17; AIDA Nobuyuki, “Original of attached figures of "Katsu-shi [H. Credner]" geology textbook,” pp. 18-21; and AIDA Nobuyuki, “Tentative name "Owari [Aichi Prefecture] colored geological map" by Takashima Tokuzo,” pp. 22-24. Four documents are: KATO Hirokazu, “Early history of the study of mud volcanoes in Japan, Part 1, in the Meiji era, pp. 25-29; Part 2, in the Taisho era, pp. 30-37; Part 3, in the early Showa era, pp. 38-45; and

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YAJIMA Michiko, “Geological Movement of Japan in the end of Edo Era and the beginning of the Meiji Era, based on Nobuyoshi Hagiwara’s “The Far Cliff,” (2) , pp. 46-48. Two obituaries are: INOMATA Michiya, “In Memory of Professor Yoshimasu Kuroda,” pp. 49-52 and YAJIMA Michiko, “In Memory of Mr. Yoshiaki Matsushima,” p. 53.

The *JAHIGEO Bulletin* no. 57, published in November, included 7 articles and 2 reports. Seven papers are: SHIKI Tsunemasa, “History of the Geological Institute, Kyoto University, after WWII (reported by KATO Hirokazu),” pp. 2-5; YAJIMA Michiko, “On the book of “Biohistory of Edmund Naumann” 2019,” pp. 6-9; HARA Ikuo, “A petrofabric task in the past seventy years, (3) Its joint work with petrology,” pp. 10-17; (4) 1995 geological excursion and thence-forth, pp.18-25; OZAWA Takeshi, “Dutch geoscientific books imported during the late Edo period,” pp. 26-29; FUKUKAWA Tomoko, “Study on Kume Kunitake's article "Accounts of the Oriental History",,” pp. 30-37; YAMADA Toshihiro, “Studies on Steno's shark's head dissected (1667) with the translation into Japanese (1), pp. 38-45. Two reports are: YAJIMA Michiko, KATO Hirokazu and YAMADA Toshihiro. “INHIGEO 2021, Krakow,” pp. 46-48; YAMADA Toshihiro, YAMAMOTO Akira and YAJIMA Michiko, “26 ICHST, Prague, 2012,” pp. 49-54.

JAHIGEO Newsletter, Number 24 included YATSUMIMI Toshifumi, “The Lives of Zhang Dingzhao and Okada Ietake, Members of the Department of Chemistry, the Shanghai Science Institute”, pp. 2-7.

Members’ recent publications are as follows:

KATO Hirokazu (2021a): *Miyazawa Kenji no chiteki haikei* (The geological background of Miyazawa Kenji)—Celestial and terrestrial phenomena,” *Chi to hito* (The Earth and Man), no. 4, 105 pp. (in Japanese.)

KATO Hirokazu (2021b): *Miyazawa Kenji no chiteki haikei* (The geological background of Miyazawa Kenji)—Meteorological phenomena,” *Chi to hito* (The Earth and Man), no. 5, 117 pp. (in Japanese.)

KATO Hirokazu (2022): *Miyazawa Kenji no chiteki haikei* (The geological background of Miyazawa Kenji)—Cosmical phenomena and Archibald Geikie’s Book,” *Chi to hito* (The Earth and Man), no. 6, 97 pp. (in Japanese.)

NAKAGAWA Tomomi (2021): “Resisting the overemphasis of rationality and intellectuality—Interpreting “Jiu-jutsu (martial art of self-defense)” by Lafcadio Hearn,” *Herun* (The Hearn Society), no. 58, pp. 16-23. (in Japanese.)

YAJIMA Michiko (2021): “Exhibits Observed at the Vienna World’s Fair, in 1873, and the Introduction of Western Geological Thought and Practice to Japan,” *Physis*, 56, 397-402.

YAMADA Toshihiro (2021a): “Mineralogy and Ethics in the Seventeenth-Century: Nicolaus Steno’s *Ornaments*—Translation with Annotations,” *Komazawa University BUNKA* (Culature), no. 39, pp. 30-56 (55-81). (in Japanese.)

YAMADA Toshihiro (2021b): “Ishiwara Jun in Awa Province (Chiba Prefecture) and his Geoscientific Works: From the Natural Disaster to History of the Earth,” *Tokushima kagakushi kenkyu* (Journal of the Tokushima Society for the History of Science), no.40, pp. 21-28. (in Japanese.)

YAMADA Toshihiro (2021c): “Geoscientists and Buddhist Thought: The Popularization of Science and ‘Cosmic Consciousness’ in 1920s Japan,” *Physis*, 56, 235-256.

YATSUMIMI Toshifumi (2021): “Achievement and Life of Shiro GODA, a member of the Department of Chemistry of the Shanghai Science Institute,” *Tokushima kagakushi kenkyu* (Journal of the Tokushima Society for the History of Science), no.40, pp. 7-20. (in Japanese.)

A special news should be added: The Japanese encyclopedia of the history of science *Kagaku-shi jiten* was published from Maruzen Co., Tokyo in 2021, which was edited by the History of Science Society of Japan. YAMADA Toshihiro was the editor of the part of geosciences, in which numerous interesting articles were included.

Submitted by Hirokazu Kato and Michiko Yajima, Tokyo; Toshihiro Yamada, Tateyama, Chiba

LITHUANIA ANNUAL REPORT 2021

In 2021, the Lithuanian INHIGEO group, led by Prof. Acad. Algimantas Grigelis, consisted of 5 members: Dr. Gailė Žalūdienė, Prof. Valentinas Baltrūnas, Prof. Algimantas Česnulevičius and Dr. Eugenija Rudnickaitė.

In 2021, the Lithuanian INHIGEO Group focused on the research and publicity of biographies of persons notable in the geological science and the history of geological institutions. It also examined the popularization of geological science.

Important personal news should be noted includes: Professor Valentinas Baltrūnas was awarded with the badge of honor known as the “Golden Geologist’s Hammer” for merits in Lithuanian geology and for fostering science and culture. [The Board of the Antanas Giedraitis Foundation established the “Golden Geologist’s Hammer” award with the inscription *Mente et malleo* engraved on the stem. It is awarded to geologists for meritorious contributions to Lithuanian geology and for fostering science and culture].

Dr. Eugenija Rudnickaitė was granted the status of ‘Honorary Member’ of the Geological Society of Lithuania.

The members of Lithuanian group contributed scientific reports on several national and international events during the reporting year:

- 46th International Commission on the History of Geological Sciences (INHIGEO) Symposium, Poland, 2021 (*Virtual*)
- Conference of Lithuanian Society of Science Historians and Philosophers *SCIENTIA ET HISTORIA* 2021, 25–26 March, 2021. (*Virtual*)
- Conference: Gamtamokslinis ugdymas bendrojo ugdymo mokykloje - 2021 – *XXVII nacionalinės mokslinės praktinės konferencija, 2021 m. spalio mėn. 15–16 d. Nuotolinė.* = Natural Science Education in a Comprehensive School – 2021. *The Twenty-seventh National Scientific-Practical Conference, 15-16 October, 2021. Virtual Video conference via MsTeams platform. Oral presentation, invited speaker.*

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- In addition, some exhibitions and presentations on achievements in geology of Lithuania have been organised for public.

Special event: “Dedication of benches named for scientists and geologists” was organised by the Geological Society of Lithuania on 12 September 2021. Benches in honor of outstanding geologists were introduced to public at the Botanical Garden of Vilnius University in Kairėnai. A large group of geologists gathered at the Botanical Garden of Vilnius University in Kairėnai (Figure 1). A few years ago, nominal benches were set up here for Vilnius University professors, geologists Juozas Paškevičius and Vytautas Juodkazis; dissident, political prisoner dr. doc. Vytautas Skuodis. This year, continuing the beautiful tradition of giving nominal benches to deserving geologists on the occasion of exclusive anniversaries, six more benches appeared for academician prof. Algimantas Grigelis (Figure 2), habil. dr. Valentina Karatajūte-Talimaa, prof. Algirdas Jurgaitis, prof. Kastytis Juozas Dundulis, dr. Vytautas Narbutas, dr. doc. Valentinas Kadūnas and dr. doc. Petras Vaitiekūnas.

A large group of former colleagues, friends and relatives gathered to celebrate the anniversaries. Those gathered were able to enjoy a sunny summer day, a wonderful garden setting, blooming flowers and socializing with long-seen colleagues. The new benches were surrounded by symbolic stripes that the participants had to cut. Greetings, thanks, flooded memories, and discussions continued over a cup of tea. It is to be hoped that in the future there will be more benches for deserving geologists, and this place will become a frequent space for meetings, discussions, walks, encouraging everyone to enjoy and remember the sincere work of their colleagues.

The researcher of the Botanical Garden, dr. Silva Žilinskaitė, was glad that there are already 200 named benches in the garden area, and that visitors to the garden will find peace and relaxation, a breath of fresh air and pleasant impressions.



Figure 1. Participants of the „Bench Festival“. Photo by dr. Laura Gedminienė



Figure 2. Nominal bench for nominee Acad. prof. Algimantas Grigelis. Photo by dr. Laura Gedminienė

http://www.lgeos.lt/GA/GA_numeriai/2021/3_4/087_GA_2021_Nr%203-4.pdf

<http://mokslolietuva.lt/2021/11/vardiniai-suoliukai-mokslininkams-geologams/>

Selected works on the history of geology by group members for Lithuania in 2021 are given below:

1. Grigelis, Algimantas; Rudnickaitė, Eugenija. 2021. Selected works on history of geology of Lithuania, 2020. INHIGEO Annual Record 53. Charlotte, NC: *International Commission on the History of Geological Sciences*. 2021, no. 53: 104-108. eISSN: 1028-1533. www.inhigeo.com/record/53.pdf

2. Grigelis A. Geologijos aušra Nepriklausomoje Lietuvoje: Lietuvos universiteto Mineralogijos-geologijos katedrai – 100 metų. [Dawn of Geology in Independent Lithuania: 100 Years of the Department of Mineralogy and Geology, University of Lithuania] – Iliustr. – Bibliogr.: 9 pavad. // *Lietuvos mokslų akademija [elektroninis išteklius]*. – Vilnius, 2021. – 9 p. <http://www.lma.lt/uploads/Akad.%20A.%20Grigelio%20straipsnis.pdf>

3. Grigelis A., Baltrūnas V. Lietuvos geologinių žemėlapių kūrėjas. Geologo Jurgio Kispėriaus 101-osioms gimimo metinėms artėjant [Creator of geological maps of Lithuania. The 101st anniversary of geologist Jurgis Kispėrius is approaching]. *Mokslo Lietuva*, 2021 m. balandžio 26 d., Nr. 8(673), pp. 7-8. <http://mokslolietuva.lt/2021/05/lietuvos-geologiniu-zemelapiu-kurejas/>

4. Grigelis A., Baltrūnas V. Minint 100-ąsias Jurgio Kispėriaus gimimo metines [To commemorate the 100th anniversary of Jurgis Kispėris' birth]. *Geologijos akiračiai = Journal of the Geological Society of Lithuania*, 2021, Nr. 1-2, pp. 68-71. <http://www.lgeos.lt/web/GA-2021-m-1-2-nr;>

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<https://drive.google.com/file/d/1V8JUVwA7LKiyQyOX0Emx004M4d5RH1Gh/view>

5. Grigelis A. Lietuvos valstybiniams geologiniams tyrimams – 80. [80 years for the State geological researches in Lithuania]. – Iliustr. – Bibliogr. išnašose // *Geologijos akiračiai = Journal of the Geological Society of Lithuania*. – Vilnius, 2021, nr. 1/2, pp. 47–52. <http://www.lgeos.lt/web/GA-2021-m-1-2-nr>;

<https://drive.google.com/file/d/1sMtZd6EX3wS80pv06dbqr7jLXiL79nil/view>

6. Grigelis A. Naujieji „Auksinio geologo plaktuko“ laureatai. [The new laureates of the Golden Geologist's Hammer] – Iliustr. // *Mokslo Lietuva*. – Vilnius, 2021, liep. 21 (nr. 14), pp. 1–2.

7. Netekome kuklaus bičiulio... : Vincas Vienožinskis, 1930 10 3–2021 05 18 [We lost a modest friend ...: Vincas Vienožinskis, October 3, 1930 - May 18, 2021] / A. Grigelis, L. Ž. Gelumbauskaitė. – Iliustr. // *Geologijos akiračiai = Journal of the Geological Society of Lithuania*. – Vilnius, 2021, nr. 3/4, pp. 108–109.

<http://www.lgeos.lt/web/node/114/>;

http://www.lgeos.lt/GA/GA_numeriai/2021/3_4/108-109_GA_2021_Nr%203-4.pdf

8. Profesoriumi Vytautui Juodkaziui atminti: Vytautas Juodkazis, 1928 11 01–2021 03 01 [In memory of Professor Vytautas Juodkazis: Vytautas Juodkazis, November 1, 1928 - March 3, 2021] / A. Grigelis, A. Marcinonis, R. Mokrik. – Nuotr. // *Geologijos akiračiai = Journal of the Geological Society of Lithuania*. – Vilnius, 2021, nr. 1/2, pp. 91–92. <http://www.lgeos.lt/web/GA-2021-m-1-2-nr>; https://drive.google.com/file/d/1tJGxorrwhcQyFfgh2EglZ5wYmklT_2TF/view

9. Grigelis A. Studijų metų atšvaitai [Reflectors of the academic year]. – Iliustr. // *Kvarteristas Petras Vaitiekūnas: geologija – gyvenimo būdas / sudarytoja E. Rudnickaitė*. [In: *Quarterist Petras Vaitiekūnas: Geology - Way of Life*] – Vilnius, 2021, pp. 49–53.

10. Uolėtųjų atodangų tyrėjas Geologui Vytautui Narbutui – 90 [Researcher of rock outcrops to Geologist Vytautas Narbutas – 90] / A. Grigelis, L. Ž. Grigelenė. – Iliustr. // *Mokslo Lietuva*. – Vilnius, 2021, saus. 5 (nr. 1), p. 6.

11. Vytautas Juodkazis (1928–2021) : [atminimui] [Vytautas Juodkazis (1928–2021): [in memory of]] / R. Mokrik, A. Grigelis. – Portr. // *Lietuvos mokslų akademijos žinios*. – Vilnius, 2021, nr. 2, p. 2.

12. Grigelis A., Railienė B. Two centuries of Eduard Eichvald's idea of the evolution of life. In: *Abstract book of 46th International Commission on the History of Geological Sciences (INHIGEO) Symposium*, Poland, 2021, p. 25. ISBN: 978-83-66509-93-1.

13. Baltrūnas V., Pukelytė V. Antanas Giedraitis (1848-1909) - the pioneer of professional geological cartography in Lithuania. In: *Abstract book of 46th International Commission on the History of Geological Sciences (INHIGEO) Symposium*, Poland, 2021, p. 9. ISBN: 978-83-66509-93-1.

14. Baltrūnas V., Pukelytė V. ANTANAS GIEDRAITIS (1848-1909) - the pioneer of professional geological cartography in Lithuania. *46th International Commission on the History of Geological*

Sciences (INHIGEO) Symposium, Presentation, Poland, 2021.
<https://www.researchgate.net/profile/Valentinas-Baltrunas/publications>.

15. Baltrūnas V., Pukelytė V. 2021. Geologas kunigaikštis Antanas Giedraitis – Vilniaus krašto gyventojas [Geologist Duke Antanas Giedraitis - the resident of Vilnius Region], *Voruta*, 2021, Nr. 4, pp. 47-54. <https://www.voruta.lt>.

16. Grigelis A., Baltrūnas V. Lietuvos geologinių žemėlapių kūrėjas. Geologo Jurgio Kispėriaus 101-osioms gimimo metinėms artėjant [Creator of geological maps of Lithuania. The 101st anniversary of geologist Jurgis Kispėrius is approaching]. *Mokslo Lietuva*, 2021 m. balandžio 26 d., Nr. 8(673), pp. 7-8. <http://mokslolietuva.lt/2021/05/lietuvos-geologiniu-zemelapiu-kurejas/>

17. Grigelis A., Baltrūnas V. Minint 100-ąsias Jurgio Kispėriaus gimimo metines [To commemorate the 100th anniversary of Jurgis Kispėris' birth]. *Geologijos akiračiai = Journal of the Geological Society of Lithuania*, 2021, Nr. 1-2, pp. 68-71. [http://www.lgeos.lt/web/GA-2021-m-1-2-nr](http://www.lgeos.lt/web/GA-2021-m-1-2-nr;); <https://drive.google.com/file/d/1V8JUVwA7LKiYQyOX0Emx004M4d5RH1Gh/view>

18. Algimantas Česnulevičius. Lietuvos kartografijos raida XVI – XXI amžiais. *Paskaita Krokuvos universiteto studentams ir dėstytojams. 2021-10-27*. Krokuvė. Krokuvos universitetas. [Development of Lithuanian cartography in the 16th - 21st centuries. *Lecture for students and lecturers at the University of Krakow. 2021-10-27*. Krakow. University of Krakow.]

19. Algimantas Česnulevičius. Lietuvos reljefo tyrimų istorinė apžvalga: darbai, asmenybės, metodai. *Paskaita Krokuvos universiteto studentams ir dėstytojams. 2021-10-28*. Krokuvė. Krokuvos universitetas. [Historical overview of Lithuanian relief research: works, personalities, methods. *Lecture for students and lecturers at the University of Krakow. 2021-10-28*. Krakow. University of Krakow.]

20. Rudnickaitė Eugenija (sudarytoja). 2021. Kvarteristas PETRAS VAITIEKŪNAS: geologija – gyvenimo būdas. // Rudnickaitė Eugenija (compiler). 2021. Quarterist PETRAS VAITIEKŪNAS: Geology - Way of Life. *Kalbos redaktorė A.Masiukaitė. // Language editor A.Masiukaitė*. Vilnius: AB Spauda, 2021, 200 p. ISBN 978-609-8248-12-8

21. Eugenija Rudnickaitė. 2021. *Pranešimas: „Meteoritai – informacijos iš kosmoso šaltinis neformaliai gamtamoksliniam ugdymui: į pagalbą mokytojui“ (Vilniaus universitetas, Lietuva)*. // Presentation: "Meteorites - a source of information from space for non-formal science education: to help teachers" (Vilnius University, Lithuania). *XXVII-oji nacionalinė mokslinė praktinė konferencija „Gamtamokslinis ugdymas bendrojo ugdymo mokykloje 2021“ 2021 m. spalio 15-16 d. (Nuotolinė konferencija) // The Twenty-seventh National Scientific-Practical Conference, „Natural Science Education in a Comprehensive School – 2021“ 15-16 October, 2021 (Virtual Conference)*

22. Rudnickaitė, Eugenija. 2021. Vilniaus universiteto geologijos studijų programų 2021 m. absolventai ir jų baigiamieji darbai bei apgintos VU Geologijos krypties (N 005) daktaro disertacijos // Graduate students of the geology programme at Vilnius University in 2021: graduate theses and defended doctor dissertations. // *Geologijos akiračiai = Journal of the Geological Society of Lithuania*. Vilnius: Lietuvos geologų sąjunga. 2021, Nr. 3-4, p. 81-82. ISSN: 1392-

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0006; eISSN: 2424-3612. <http://www.lgeos.lt/web/GA-2021-m-3-4-nr;>
http://www.lgeos.lt/GA/GA_numeriai/2021/3_4/081-82_GA_2021_Nr%203-4.pdf

23. Jonas Satkūnas, Eugenija Rudnickaitė, Linas Daugnora, Indrė Satkūnienė, Miglė Stančikaitė, Jonas Mažeika. 2021. Pastatykime paminklą Vilniaus mamutui // Let's build a monument for the Vilnius mammoth. // *Geologijos akiračiai = Journal of the Geological Society of Lithuania*. Vilnius: Lietuvos geologų sąjunga. 2021, Nr. 1-2, p. 61-66. ISSN: 1392-0006; eISSN: 2424-3612. <http://www.lgeos.lt/web/GA-2021-m-1-2-nr;>
<https://drive.google.com/file/d/1sZGaMGkL10V1M6QWP7-hzKYOtQGZZI02/view>

24. Eugenija Rudnickaitė. 2021. Tarsi meteorio blyksnis nušvietęs Lietuvos kvartero padangė... (Minint doc. Petro Vaitiekūno 90-ąsias gimimo metines). = Like a flash of a meteor illuminated the sky of the Lithuanian Quaternary ... (Commemorating the 90th anniversary of the birth of doc. Petras Vaitiekūnas). // *Geologijos akiračiai = Journal of the Geological Society of Lithuania*. Vilnius: Lietuvos geologų sąjunga. 2021, Nr. 1-2, p. 72. ISSN: 1392-0006; eISSN: 2424-3612. <http://www.lgeos.lt/web/GA-2021-m-1-2-nr;>
<https://drive.google.com/file/d/1V8JUVwA7LKiyQyOX0Emx004M4d5RH1Gh/view>

25. INHIGEO ANNUAL RECORD NO. 53. [elektroninis išteklis] - 2021, no. 53, p. 144–148. APPENDIX A: INHIGEO VIRTUAL BIBLIOGRAPHY 2020. Lithuania. Rudnickaitė, Eugenija. Faculty of Chemistry and Geosciences, Institute of Geosciences, Museum of Geology of the Vilnius University, Vilnius, p.144-148. <http://www.inhigeo.com/record/53.pdf>

26. Grigelis, Algimantas; Rudnickaitė, Eugenija. 2021. Selected works on history of geology of Lithuania, 2020. *INHIGEO Annual Record. Charlotte, North Carolina: International Commission on the History of Geological Sciences*. 2021, no. 53, p. 104-108. eISSN: 1028-1533. www.inhigeo.com/record/53.pdf

27. Rudnickaitė E. 2021. History of the meteorite collection at the Museum of Geology of the Vilnius University. - In: *Abstract book of 46th International Commission on the History of Geological Sciences (INHIGEO) Symposium*, Poland, 2021, p. 51. ISBN: 978-83-66509-93-1.

28. Eugenija Rudnickaitė. 2021. Neformalus gamtamokslinis ugdymas: meteoritai kaip informacijos iš kosmoso šaltinis // Informal Science Education: Meteorites as a Source of Information from Space. – In: *GAMTAMOKSLINIS UGDYMAS BENDROJO UGDYMO MOKYKLOJE – 2021 / NATURAL SCIENCE EDUCATION IN A COMPREHENSIVE SCHOOL – 2021. XXVII nacionalinės mokslinės praktinės konferencijos 2021 m. spalio 15–16 d. (virtuali) straipsnių rinkinys. / Proceedings of the Twenty-seventh National Scientific-Practical Conference, 15-16 October, 2021. Šiauliai : Scientia Educologica*. 2021, t. 27, Nr. 1, p. 58-66. ISSN: 2335-8408; DOI: 10.48127/gu/21.27.58. http://gu.puslapiai.lt/gubum/wp-content/uploads/sites/4/journal/published_paper/volume-27/issue-1/2BTeyTeX.pdf

29. Eugenija Rudnickaitė. 2021. Vilniaus universiteto Geologijos muziejaus meteoritų kolekcijos istorija. - *SCIENTIA ET HISTORIA 2021 Konferencijos pranešimų tezės // History of the meteorite collection at the Museum of Geology of the Vilnius University. - In: Abstract book of conference SCIENTIA ET HISTORIA 2021 (Virtual Conference)*. 2021, p. 36. ISSN 2669-2872

http://www.polia.info/Genealogija/JAPabreza/2021-03-25%20scientia_et_historia.pdf

30. Eugenija Rudnickaitė. 233 excursions (about 3500 visitors in total), plus 25 excursions for ~ 550 students with educational practical activities were carried out with a total of ~ 4050 visitors. The exhibition intended to commemorate the 90th anniversary of the birth of Professor Emeritus Meilutė Kabailienė (1931 – 2016) and to show her activities.

Exhibition "Our latest scientific achievements and their popularization, as well as the latest scientific reports" (already ~ 2500 visitors have seen).

Consultations - identification of delivered findings: on average ~ 150.

In total ~ 4750 visitors heard about geology.

The excursions stories integrate the popularization of geology and other natural sciences. [Organizer and guide – dr. Eugenija Rudnickaitė. In total, in 2021, she conducted about 280 excursions per year.]

31. Rudnickaitė, E. <https://www.chgf.vu.lt/apie-fakulteta/naujienos/1740-sveikiname-visas-chemijos-ir-geomokslu-fakulteto-mokslininkes>

32. Rudnickaitė, E. Litwa nieoczywista: Litwa nieoczywista odc. 15, wyd. 26.03.2021. Wilno TVP. Telewizja Polska S.A. <https://wilno.tvp.pl/52987408/litwa-nieoczywista-odc-15-wyd-26032021>

33. Rudnickaitė, E. <https://www.lrt.lt/mediateka/irasas/2000150570/daiktu-istorijos-mamutu-paieskos-meteorologija-lietuvoje-ir-reklamos-istorija>

34. Rudnickaitė, E. <https://lnk.lt/video/kosminiai-reiskiniai-musu-salyje-i-zinios/137539>

35. Rudnickaitė, E. "Smalsumo genas" ["Curiosity gene"].

<https://www.lrt.lt/mediateka/irasas/2000163605/smalsumo-genas-ka-apie-saules-sistema-mums-pasakoja-meteoritai>

36. Rudnickaitė, E. <https://www.facebook.com/events/220509383215472>;

<http://skaitymofestivalis.lt/dalyviai/>; <https://www.youtube.com/watch?v=85WjLh5ehac>;

37. Mokytojų kvalifikacijos tobulinimo seminaras „Geologija ir gamtamokslinis ugdymas“ mokytojams ir jaunųjų geologų būrelių vadovams. Organizatorius: VU Geologijos ir mineralogijos katedra [E. Rudnickaitė] = *Teacher training seminar "Geology and science education" for teachers and leaders of school children young geologists' groups. Organizer: VU Department of Geology and Mineralogy [E. Rudnickaitė]*

<https://www.chgf.vu.lt/apie-fakulteta/naujienos/1742-geologija-ir-gamtamokslinis-ugdymas-kvalifikacijos-tobulinimo-seminaras-mokytojams>

38. Rudnickaitė, Eugenija. Paroda "Intruzija" VDA ir VU Geologijos muziejus = *Exhibition "Intrusion" uniting artists of different disciplines at Geological Museum of Vilnius University.*

<https://www.lrt.lt/mediateka/irasas/2000133394/vu-geologijos-muziejuje-skirtingu-disciplinu-menininkus-jungianti-paroda-intruzija>;

<https://www.lrt.lt/naujienos/kultura/12/1300077/geologijos-muziejuje-isskirtine-paroda-intruzija-kaip-atskirti-senus-eksponatus-nuo-dabar-sukurtu-meno-kuriniu>;

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<https://www.lrt.lt/mediateka/irasas/2000133429/zinios-vu-geologijos-muziejaus-erdvese-vda-magistrantu-paroda-intruzija>

39. Rudnickaitė, Eugenija. Mildos Dainovskytės ir Jeronimo Mantvydo Seibučio paroda "Sklisti / Emanate" - Exhibition of Milda Dainovskytė (*She usually chooses to hold exhibitions in spaces of personal importance or peripheral places that are not specifically intended for this purpose*) and Jeronimas Mantvydas Seibutis (*He is an artist currently living and working in Vilnius*). <http://www.geol.gf.vu.lt/lt/node/67> [~300 visitors].

40. dr. Gailė Žalūdienė spoke on the TV programme „Daiktų istorijos“ // „Stories of Things“ about the geologists of Lithuanian origin who worked in exile in the territory of Russia - Antanas Giedraitis, Juozas Lukoševičius, Jonas Čerskis.

Members of the group also participated in TV shows dedicated to popularizing the activities and lives of prominent scientists (Antanas Giedraitis, Juozas Lukoševičius, Jonas Čerskis, etc.), and the popularization of geology and the History of Geological Sciences.

Report compiled by Algimantas Grigelis and Eugenija Rudnickaitė

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Scientific Conferences

BEYER-RUIZ, María Emilia, Luis ESPINOSA-ARRUBARRENA, Ana María SOLER-ARECHALDE, José Ramón FERNÁNDEZ-BALANZAR, “University Museums in Times of Pandemic”, Commemorating the International Day of Museum organized by The Museo de la Luz [The Museum of Light], May 18th, 2021. Broadcasted via Zoom.

CARRILLO, Ulises & Luis ESPINOSA-ARRUBARRENA, “Importance of the fossil record of Mosasaurids (Mosasauridae) in México”, 4th Symposium of Paleoart in Chile, Chilean Society of Paleoart and Popular Science, August 28- 29, 2021. Broadcasted via Zoom.

ESPINOSA-ARRUBARRENA, Luis, “Preservation of the Paleontological Patrimony”, Academic Section of the University of Zacatecas, Instituto Zacatecano de Cultura Ramón López Velarde, March 5th, 2021. Broadcasted via Zoom.

ESPINOSA-ARRUBARRENA, Luis, “A presentation of the Geological Museum”, Week of Science of the Olmec University, organized by: AAPG Universidad Olmeca, AMGP-UO Capítulo Estudiantil, AMGE-UO and the Museum of Geology, UNAM, March 17th, 2021. Broadcasted via Zoom.

ESPINOSA-ARRUBARRENA, Luis, “Crossover of Science Museums as have never seen!”, Program presented as part of a TERRAFEST 2021, (Museologando). As a dialogue among the directors of: UNIVERSUM (Science Museum of UNAM); The Geological Museum of UNAM; The Geophysics Museum of UNAM, the Museum of the Desert (Museo del Desierto Chihuahuense) and the Paleontological Museum of Guadalajara., April 20th, 2021. Broadcasted via Facebook.

ESPINOSA-ARRUBARRENA, Luis, “Paleontology as part of Earth Sciences: Micropaleontology and Petroleum. Instituto Tecnológico Superior de Misantla, Veracruz”, Technological Institute of Misantla Veracruz, special activities of the Career of Petroleum Engineering. June 8, 2021. Broadcasted via Facebook.

- ESPINOSA-ARRUBARRENA, Luis, “The Drama of life on Earth, the ten more important episodes of this story”, Museo de Geología, UNAM. August 14, 2021. Broadcasted via Facebook.
- ESPINOSA-ARRUBARRENA, Luis, Lucero MORELOS-RODRÍGUEZ, Óscar IRAZABA-ÁVILA, Julio CABALLERO-CORONA, “Unknown Relics of the Geological Museum”, Museo de Geología, UNAM, May 15th, 2021. Broadcasted via Zoom Facebook.
- ESPINOSA-ARRUBARRENA, Luis, David VALLE-GARCÍA, Karla Fabiola MEZA-SOSA, Round Table “Where is my dinosaur? Genetic edition for all?”, Celebration of Sciences and Humanities, 2021, organized by the Universidad Nacional Autónoma de México-Dirección General de la Divulgación de la Ciencia UNAM, October 19th, 2021. Broadcasted via Facebook.
- ESPINOSA-ARRUBARRENA, Luis & Ulices Adolfo CARRILLO, “Dinosaurs and other treasures of the Mesozoic”, Commemorating the 29th Anniversary of UNIVERSUM (The Science Museum of UNAM), organized by: UNIVERSUM, UNAM, December 12th, 2021. The talk was given at the Hall of Mineral and Fossil Treasures of México.
- ESPINOSA-ARRUBARRENA, Luis, Lucero MORELOS-RODRÍGUEZ, Óscar IRAZABA-ÁVILA, Julios CABALLERO-CORONA, José María CHÁVEZ-AGUIRRE, “Not all the caves are Kast”, within the event Virtual Encounter with the Earth, that took place at the end of October beginning of November, 2021, organized by the Instituto de Geología and the Geological Museum, UNAM, November 13th, 2021. Broadcast via Facebook.
- ESPINOSA-ARRUBARRENA, Luis & Ulices Adolfo CARRILLO, “The World of Dinosaurs arrives in Iztapalapa”, Weekend Cycle of conferences of the theme Park “Iztapasuria”, organized by the Iztapalapa County and Institute of Geology, December 19th, 2021. The talk was given at the auditorium of the Iztapasauria theme park.
- MORELOS-RODRÍGUEZ, Lucero, "What are museums, what are they created for and what is their role in science? and History of the creation of the Museum of Geology of the UNAM", Zacatecas, Instituto Educativo Amadeus, April, 2021. Broadcasted via Facebook.
- MORELOS-RODRÍGUEZ, Lucero, “5 special objects of the Historical Collection of the Institute of Geology, UNAM. Unknown Relics of the Museum of Geology”, Museum of Geology, May 2021. Broadcasted via Facebook.
- MORELOS-RODRÍGUEZ, Lucero, “The Engineer Baltasar Muñoz Lumbier (1856-1906): between the mining sciences and techniques”, University Autonomous of Hidalgo State, May 2021. Broadcasted via Facebook.
- MORELOS-RODRÍGUEZ, Lucero, “History of the Mining Region present in the Geosites Guide of the Mining Region”, Pachuca, La Salle University, May 2021. Broadcasted via Facebook.
- MORELOS-RODRÍGUEZ, Lucero, “History of women's contributions in Paleontology”, Institute of Geology, February 2021. Broadcasted via Facebook.
- MORELOS-RODRÍGUEZ, Lucero, “An approach to the heritage of the Institute of Geology of the UNAM”, Mexico City, Secretaría de Cultura, February 2021. Broadcasted via Facebook.
- MORELOS-RODRÍGUEZ, Lucero, “Engineer Baltasar Muñoz Lumbier, a hero of the underground world”, 3rd Colloquium of Biographical Studies for the History of Mexico, Mexico City, Instituto Mora, September 2021. Broadcasted via Facebook.

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- MORELOS-RODRÍGUEZ, Lucero, "The territorial recognition by the Mexican and Central American southeast by Karl Theodor Sapper (1866-1945)", Central American Congress of History 2021, August 2021. Broadcasted via Facebook.
- MORELOS-RODRÍGUEZ, Lucero, "Women in Geology: The Pioneers in Mexico", 50th Anniversary of the Faculty of Anthropological Sciences of the Autonomous University of Yucatan, October 2021. Broadcasted via Facebook.
- MORELOS-RODRÍGUEZ, Lucero, "The feminine gaze in the Cacahuamilpa Grotte", Virtual Encounter of the Earth, November 2021. Broadcasted via Facebook.
- MORELOS-RODRÍGUEZ, Lucero & Luis ESPINOSA-ARRUBARRENA, "Historical Foundations, Guidelines and Regulatory Structure of the Museum of the Institute of Geology", Secretary of institutional Development, UNAM, University Museum of Contemporary Art, (MUAC) and the University Seminar of Museums, Museistic Spaces (SUMyEM) of UNAM, September 27th, 2021. Broadcasted via Facebook.
- URIBE-SALAS, José Alfredo, "The chance in the history of science", Colloquium History, past and present, Faculty of History of the Michoacan University of San Nicolas de Hidalgo, May 11th, 2021.
- URIBE-SALAS, José Alfredo, "Science and politics in the origin and development of the Michoacan Society of Geography and Statistics, 1851-191", Colloquium Scientists, businessmen and officials in the construction of knowledge and its practical application in Mexico (1815-1940), Institute of Geography-UNAM, June 21st, 2021.
- URIBE-SALAS, José Alfredo, "Historian Readings. Sciences and Humanities", 48th Anniversary of the Faculty of History, FH, Universidad Michoacana de San Nicolás de Hidalgo, October 14th, 2021.
- URIBE-SALAS, José Alfredo, "The contributions of Andrés del Río to the mines of New Spain", II Meeting of Correspondents of the Mexican Academy of History. Historiographic advances in Mexico, El Colegio de Jalisco, October 22nd, 2021.

Books

- AZUELA-BERNAL, Luz Fernanda, Rodrigo VEGA-ORTEGA (COORDS.), *La geografía y la historia natural en México. Producción de conocimiento y aplicaciones tecnocientíficas, 1795-1934* [Geography and Natural History in Mexico. Knowledge production and techno-scientific applications], Primera edición, Geografía para el Siglo XXI, Instituto de Geografía, UNAM, 2021. (ISBN: 978-607-30-4577-3).
- CANET, Carles, Eduardo GARCÍA, Miguel CRUZ, Juan Carlos MORA, Lucero MORELOS, Erika SALGADO, *Guía de Geositos de la Comarca Minera*, [Geosites Guide of the Comarca Minera, Mexico, Hidalgo Global Geopark], Pachuca, La Salle University, 2021, 110 p. (ISBN 978-607-8144-07-5)

Articles and book chapters

- AZUELA-BERNAL, Luz Fernanda, Daniel SERRANO-JUÁREZ, "Proceso de integración de México en las redes científicas internacionales y el afianzamiento de sus normas y valores en la Sociedad Científica "Antonio Alzate (1884-1912)" ["Process of integration of Mexico in international scientific networks and the strengthening of its norms and values in the Scientific Society "Antonio Alzate" (1884-1912)", *Estudios De Historia Moderna y contemporánea De México*, 61, 133-173. DOI: <https://doi.org/10.22201/iih.24485004e.2021.61.75481>

- AZUELA BERNAL, Luz Fernanda, Erik VILLANUEVA-VILLASEÑOR, "Joseph Burkart's geological research in Mexico (1825–1834): a paradigmatic case of knowledge co-production", *Physis: Rivista Internazionale Di Storia Della Scienza*, vol. LVI, Nuova Serie, 2021, pp. 135-148.
- AZUELA-BERNAL, Luz Fernanda & Rodrigo VEGA-ORTEGA, "Fragmented Memories", in: BARAHONA, Ana (ED.), *Handbook of the Historiography of Latin American Studies on the Life Sciences and Medicine*, Springer, Cham, Suiza, ISBN 978-3-030-48616-7, pp. 1-25
- AZUELA-BERNAL, Luz Fernanda, "La capacidad tecnocientífica local, la expansión del telégrafo y los intereses del capital en el proceso de estandarización de las medidas electromagnéticas. El caso de México (1850-1884)" ["The local techno-scientific capacity, the expansion of the telegraph and the interests of capital in the process of standardization of electromagnetic measurements. The case of Mexico (1850-1884)"], in: AZUELA, Luz Fernanda & Rodrigo VEGA-ORTEGA (COORDS.), *La geografía y la historia natural en México. Producción de conocimiento y aplicaciones tecnocientíficas, 1795-1934*, Instituto de Geografía, UNAM, México, pp. 131-158. ISBN 978-607-30-4577-3
- AZUELA-BERNAL, Luz Fernanda & Rodrigo VEGA-ORTEGA, "La cultura científica en la prensa imperial, 1864-1867" [Scientific Culture in the Imperial Press (1864-1867)] in: CLARK DE LARA, Belén (ED.), *Repensar el Segundo Imperio Mexicano. Miradas convergentes desde la literatura, la historia y el arte*, Instituto de Investigaciones Filológicas, UNAM, México. ISBN 978-607-30-4908-5.
- AZUELA-BERNAL, Luz Fernanda & Alejandra MORENO-NIETO, "La estandarización científico-técnica en la estrategiapolítica de Manuel González" ["Scientific-technical standardization in Manuel González's political strategy"], in: VIEYRA-SÁNCHEZ, L. & E. ALCÁNTARA-MACHUCA (COORDS.), *El gobierno de Manuel González: relecturas desde la prensa (1880-1884)*, México, Universidad Nacional Autónoma de México. ISBN 978-607-30-5059-3.
- CANET-MIQUEL, Carles, Sara FRANCO, Abdorahman RABAJI, Lucero MORELOS-RODRÍGUEZ, Fernando NÚÑEZ, "Apunte geológico y revisión histórica de la zona geotérmica de Pathé, Hidalgo" ["Geological Note and Historical Review of the Pathé, Hidalgo, Geothermal Zone"], *Geofísica Internacional*, vol. 60, no. 3, July 2021, pp. 258-279. DOI: <https://doi.org/10.22201/igeof.00167169p.2021.60.3.2130>
- CRUZ-PÉREZ, Miguel Ángel, Carles CANET-MIQUEL, Alejandro PASTRANA, Silvia DOMÍNGUEZ, Lucero MORELOS-RODRÍGUEZ, *et al.*, "Green and Golden Obsidian of 'Cerro de las Navajas', Hidalgo (México): Geoarcheological Heritage That Deserves International Recognition", *Geoheritage*, vol. 13, no. 92, October 2021. DOI: <https://doi.org/10.1007/s12371-021-00610-7>.
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- MORELOS-RODRÍGUEZ, Lucero, "Mining education in nineteenth-century Mexico", *Ichan Tecólotl*, México, CIESAS, vol. 33, no. 354, November 2021, p. 8. Available in: <https://ichan.ciesas.edu.mx/la-educacion-minera-en-el-mexico-del-siglo-xix/>

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- RAMÍREZ-VELASCO, Ángel, Luis ESPINOSA-ARRUBARRENA & Jesús ALVARADO-ORTEGA, “Review of the taxonomic affinities of *Latirhinus uitstlani*, an emblematic Mexican hadrosaurid”, *Journal of South American Earth Sciences*, Vol.110, (103391), 2021, 24 p. ISSN 0895-9811. DOI: <https://doi.org/10.1016/j.jsames.2021.103391>
- URIBE-SALAS, José Alfredo, "Intentionality and destiny in the history of science", *Letras Históricas*, no. 24, 2021. (E-ISSN: 2448-8372). DOI: <https://doi.org/10.31836/lh.v0i24.7304>
- URIBE-SALAS, José Alfredo, “Intellectual influences and transnational interconnections of Andrés del Río in the study of Mexican Nature”, in: AZUELA, Luz Fernanda & Rodrigo VEGA-ORTEGA (COORDS.), *Scientists, businessmen and forgers of institutions, 18th to 20th centuries, Mexico*, Institute of Geography, National Autonomous University of Mexico, 2021, pp. 19-37 (ISBN: 978-607-30-4577-3 DOI: <http://dx.doi.org/10.14350/gsxxi.tu.30>).
- URIBE-SALAS, José Alfredo & Paulina SÁNCHEZ-PINEDA, "Engineers and technicians, knowledge and practices in the management of mining companies during the Porfiriato and the revolution", in: GUTIÉRREZ-LÓPEZ, Miguel Ángel & Cecilia Adriana BAUSTISTA-GARCÍA (COORDS.), *Contributions for the discussion of the institutions, processes and actors of History in the 19th to 21st centuries*, Mexico, Faculty of History, Universidad Michoacán de San Nicolás de Hidalgo, 2021, pp. 151-178. (ISBN 978-607-542-183-4).
- URIBE-SALAS, José Alfredo Uribe Salas & Laura VALDIVIA-MORENO, “Scientific practice and new knowledge about Cacahuamilpa in the transition from the 19th to the 20th century”, in: VELÁZQUEZ-DELGADO, Graciela (COORD.), *Essays on the regions of scientific production in Mexico, 19th and 20th centuries*, Mexico, University of Guanajuato, 2021, pp. 89-112. (ISBN: 978-607-441-908-5).

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

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NEW ZEALAND ANNUAL REPORT 2021

The year 2021 was very much a repeat of the previous one in that the Covid-19 pandemic has again curtailed travel overseas. New Zealand was during the year largely free of Covid because of entry restrictions into the country. The downside of this is that New Zealanders returning home may face lengthy delays due to quarantine requirements and uncertainties in airline schedules, all of which in addition to the risk of infection discourages international travel.

Rodney Grapes continues as editor Geoscience Society of New Zealand's *Journal of the Historical Studies Group* (and of which Simon Nathan is convenor). This journal is now entirely digital and can be accessed through the society's web page. The contents of the three issues of the journal published in 2021 are:

Number 68 January 2021

Heather Halcrow Nicholson (1931-2019) – Simon Nathan
Ammonites and belemnites: some thoughts – Graeme Stevens
Geological and related historical aspects of Turanganui-a-Kiwa (Poverty Bay), New Zealand – Rodney Grapes
Geology and the Clyde Dam – Simon Nathan
The first description and analysis of rodingite – Rodney Grapes

Number 69 June 2021

Uranium in the lower Buller Gorge, South Island, New Zealand – John Caygill
Ruby-sapphire rocks from Westland - a history – Rodney Grapes

Number 70 November 2021

Oil exploration at Chertsey on the Canterbury Plains – Glenn Vallender
First reports of in-situ 'jade' (pounamu) in New Zealand: Johann and George Forster (1777, 1778; 1783), James Hector (1863), Arthur Dieseldorff (1901), West Coast Maori – Rodney Grapes

Rodney also co-authored the following:

Grapes R., Nolden S. 2020: Ferdinand von Hochstetter's 1864 description of dunite - a scholarly annotated English translation. *Jahrbuch der Geologischen Bundesanstalt* 60: 409-422.

Mike Johnston slowly progresses his history of the West Nelson goldfields. Volume One *Aorere Gold* has been delayed at the layout stage. Volume Two *Mohua Gold* is ready to go to the publisher and Volume Three *Wangapeka Gold* is being revised prior to its final edit.

Simon Nathan has been involved in preparations for the *Sir Julius von Haast Bicentenary Conference* to be held in Christchurch 30 April-1 May 2022 under the auspices of the Canterbury Museum. Haast (1822-1887) had an international reputation and was one of the leading geologists in nineteenth century New Zealand. Further details can be obtained at: haast200@canterburymuseum.com.

John Taylor continues to work on the *Charles Douglas Digital Archives Project*, relating to material pertaining to the legendary explorer Charles "Charlie" Douglas (1840 – 1919) much of whose lifetime was spent exploring the remote western side of the Southern Alps.

Bruce Waterhouse progresses his research relating to paleontology.

Report compiled by Mike Johnston, Nelson

PORTUGAL ANNUAL REPORT 2021

Ana Simões, Maria Paula Diogo, Ana Carneiro, 'Correia da Serra, entre Ciência, Religião e Diplomacia', in *Razão e Progresso—séc. XVIII*, (coords) Ana Simões, Marta Lourenço e José Alberto Silva, vol. 2, pp. 255-274. *Ciência, Tecnologia e Medicina na Construção de Portugal*, Ana Simões, Maria Paula Diogo (eds.), Lisboa, Tinta Da China, 2021, 4 vols.

Teresa Salomé Mota, Vanda Leitão, Ana Carneiro, 'Os Serviços Geológicos e a Administração do Território' in *Identidade e 'Missão Civilizadora'— séc. XIX*, Ana Carneiro, Teresa Salomé Mota, Isabel Amaral (coords.) vol. 3, pp. 141-164. *Ciência, Tecnologia e Medicina na Construção de Portugal*, Ana Simões, Maria Paula Diogo (eds.), Lisboa, Tinta Da China, 2021, 4 vols.

RUSSIA ANNUAL REPORT 2021

Under COVID-19 restrictions most of the meetings in Russia were held online in 2021. The good result was that the web audience has expanded. Russian INHIGEO members participated in several meetings and published abstracts and papers on the history of geosciences.

The main event in Russia was the celebration of the 175th anniversary of academician Alexander P. Karpinsky (1847-1936). He was and still is the most known geoscientist in Russia. The life of A.P. Karpinsky was devoted to geosciences and its organization in Russia. The career was related with three main Russian institutions: the Mining Institute in Saint-Petersburg, the Geological Committee of Russia, the Imperial (Russian, USSR) Academy of Sciences.



Президент Академии Наук
С С С Р
АЛЕКСАНДР ПЕТРОВИЧ
КАРПИНСКИЙ

A.P. Karpinsky was the first elected President of the Russian Academy of Sciences (February 1917) and held this position until the end (1936).

A.P. Karpinsky had wide scientific relations with foreign colleagues.

He discussed problems of paleontology and stratigraphy, principles of geological mapping and questions of cooperation in various fields of geosciences. The Russian geologist was elected a member of many scientific societies of the world and was awarded with the Wollaston Medal (1916) and the Prix Cuvier (1922).

All-Russian Geological Research Institute (VSEGEI), Saint Petersburg

Leonid R. Kolbantsev participated in several conferences and events took part in the Scientific and Practical Conference dedicated to the 175th anniversary of academician A.P. Karpinsky (St. Petersburg, November 17-18, 2021) (Figure 1).

L.R. Kolbantsev presented papers at the meeting dedicated to the 120th anniversary of Yury A. Bilibin (1901-1952), regional conference in Karelia and 42nd International Conference of the St. Petersburg branch of the S. Vavilov Institute of the History of Science and Technology, RAS. He participated in 13th Interregional Scientific and Local History Conference "Man and Stone", dedicated to the 390th anniversary of the Sortavala city (Karelia) and the 30th anniversary of the

Regional Museum of the Northern Ladoga Region, with presentation “History of the Semiprecious Stones Map “Industry of the Socialism”.



Figure 1. Leonid Kolbantsev (second from right) among the descendants of Academician A.P. Karpinsky, on the conference dedicated to the 175th anniversary of A.P. Karpinsky (St. Petersburg: VSEGEI).

The papers of L.R. Kolbantsev (with a co-authors) were included in the program of the 46th INHIGEO Symposium in Poland and the 15th International ERBE – Symposium in Austria.

Geological Institute of the Russian Academy of Sciences (GIN RAS, Moscow)

In 2021, INHIGEO members of the Department for the History of Geology have prepared for publication a milestone document: “On the status and tasks of scientific work of the Institute of Geological Sciences of the Academy of Sciences of the USSR” (Figure 2). It is the original transcript report of the open session of the Scientific Council of the Institute [Moscow. November 15-22, and December 7, 1948]. Type- and handwritten documents (2057 archive pages) contain 19 general reports of Soviet leading geologists on stratigraphy, Quaternary geology, tectonics, lithology, petrography (petrology), mineralogy, geochemistry, geology of ore and coal deposits. Theoretical and methodological problems of geosciences and its practical results have been widely discussed in debates. As a primary document it shows the development of geological sciences in the 1940s in the USSR. The document described activities of over 500 geoscientists, and hundreds of references provided. The book will continue in the series “Essays on the history of geological knowledge” (Issue 33), started in 1953 at the Institute of Geological Sciences, Vladimir V. Tikhomirov was its first responsible editor. See books of this series on <http://www.ginras.ru/library/papers.php?m=his&p=0&l=30000>.

The Department for the History of Geology also continued update the online Information System “History of geology and mining” (<http://higeo.ginras.ru>). It contains over 1300 geoscientists). INHIGEO members of the Geological Institute took part in few scientific meetings: 27th Annual Conference of the S. Vavilov Institute of the History of Science and Technology, RAS. Moscow

(O.V. Martirosyan, I.P. Vtorov), 13th International Forum in Kungur, the Urals (S.V. Naugolnykh), museums conferences (S.V. Naugolnykh). I.P. Vtorov prepared presentations and papers for the 15th International ERBE – Symposium: Cultural Heritage in Geosciences, Mining and Metallurgy – Libraries – Archives – Collections (Eggenburg) and in Earth Environmental Sciences Conference.

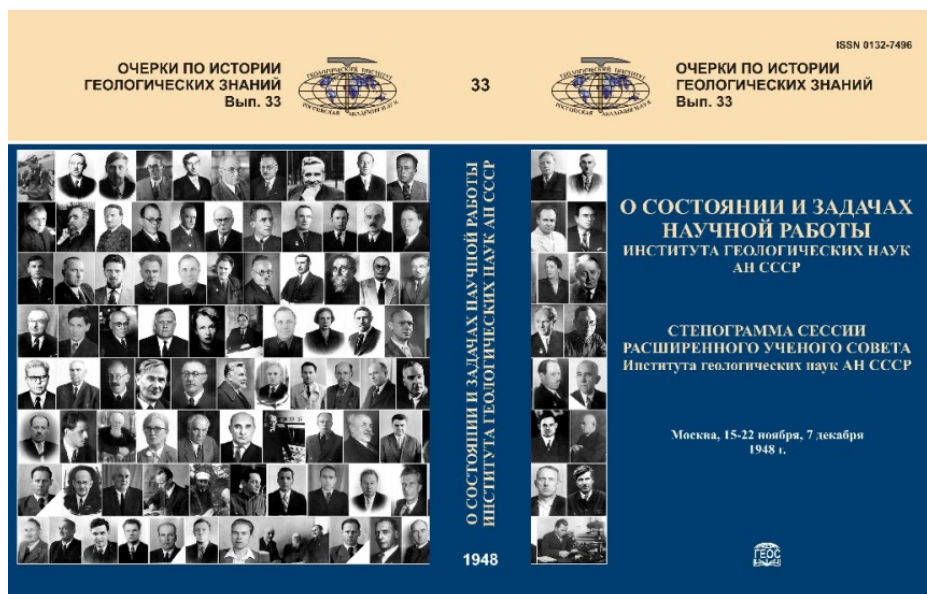


Figure 2. The book cover: On the status and tasks of scientific work of the Institute of Geological Sciences of the Academy of Sciences of the USSR: The transcript report of the open session of the Scientific Council of the IGS AS USSR, (Moscow, 1948) (just published).

N.M. Fedorovsky All-Russian Institute of Mineral Resources (VIMS, Moscow)

Igor G. Pechenkin continued his presidency of the Geological Section at the Central House of Scientists in Moscow. The Institute published a new book dedicated to the memory of Anatoly I. Ginzburg (1917-1984), mineralogist and geochemist, the greatest expert on endogenous deposits of rare metals, honorary member of the Mineralogical Society, Head of the Department of Mineralogy of VIMS and First Chairman of the Scientific Council on Methods of Mineralogical Research of the Ministry of Geology of the USSR. See book review in this Report.

In 2021 VIMS marked the 90th anniversary of its magazine “Exploration and Protection of Subsoil”, which is an important scientific and technical series publication in Russia (Figure 3). It covers geological and geophysical research, technology for resource definition and deposits prospecting. The papers intended for geologists, geophysicists, hydrogeologists, geochemists, and other geoscientists and miners.

The paper of I.G. Pechenkin “USSR Atomic Project: History of the Uranium Geological Survey” was included in the program of the 46th INHIGEO Symposium [Krakow. July 19-22, 2021].

I.G. Pechenkin presented papers at the International Scientific and Practical Conference on scientific and methodological foundations of forecasting, prospecting, evaluation of deposits of diamonds, precious and non-ferrous metals (Moscow), 13th Congress of the Russian Mineralogical Society (Saint-Petersburg), International Meeting on the Geology of Placers and Weathering Crust Deposits (Voronezh), International Conference “Radioactivity and radioactive elements in

environment” (Tomsk), 27th Annual Conference of the S. Vavilov Institute of the History of Science and Technology, RAS (Moscow).

The paper “Pannies of the Urals” (Figure 4), a little-known paper about the wealth of domestic subsoil. Museum diorama – synthesis of Science and Art” I.G. Pechenkin presented at the meeting dedicated to the 100th anniversary of Efim I. Deshalyt (1921-1996) (Moscow).



Figure 3. 90th anniversary of the magazine “Exploration and Protection of Subsoil”
Exhibition in the V. Arshinov Scientific and Technical Library in VIMS.



Figure 4. Historical diorama made from Ural stones “Pannies of the Urals”
(the Urals workers gift to Vladimir I. Lenin, 1924).

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The Kola Science Centre of the Russian Academy of Sciences (Apatity, Murmansk region)

Grigory S. Ilyin took part in the installation of a memorial plaque in honor of the Khibiny exploration pioneer Alexander T. Middendorf (1815-1894) in the Western Khibiny organized by the Russian Geographical Society.

The personal photo exhibition of G.S. Ilyin “Mineral Globe” was held in the city of Kirovsk, Murmansk region. He leads a [YouTube channel](#) on the history of Kola geology. His lecture “The history of the apatite uses as a source of phosphate fertilizers” was noted in the Russian online competition “League of lecturers” initiated by the Society *Znanie* (“Knowledge Society”, est. 1947).

G.S. Ilyin presented papers “The study of the Khibiny mountain in the diaries of expedition members led by academician A.E. Fersman” at the Conference “Polar Readings–2021” (St. Petersburg) and “Researchers of the Kola Peninsula in the middle of the 19th century” at the meeting “Pioneers of the Far North” (Apatity, Kola Peninsula).

Mining University (Saint Petersburg)

Professor Yury L. Voitekhovsky participated in numerous conferences and seminars in Saint-Petersburg, Moscow and in the Urals. The topics varied: mineral and rock collections, scientific correspondence, philosophy of science, and recreation tourism. Among them: “Man in the Arctic” International conference in St. Petersburg Mining University, with presentation “Khibiny and Monche-tundra – unique geological objects of Arctic tourism: to the history of development”, Classical Philosophy and Modern Experimental Science (Philosophical Seminar in V.G. Khlopin Radium Institute, St. Petersburg) “Ornaments in the interior of M.P. Botkin house: the view of a crystallographer, with presentation”, and others in conference papers list below.

S.I. Vavilov Institute of the History of Natural Science and Technology RAS. Saint Petersburg Branch

Tatyana Yu. Feklova participated at the 46th INHIGEO meeting in Poland with the online presentation (Figure 5).



Figure 5. Screenshot from online presentation in the 46th INHIGEO Symposium.

V.I. Vernadsky State Geological Museum, RAS (SGM RAS, Moscow)

Zoya A. Bessudnova presented a plenary paper at the Section of Museology of the Moscow Society of Naturalists dedicated to the 250th anniversary of Fischer von Waldheim and was awarded with the jubilee memorial medal for a significant contribution to the study of his scientific heritage.

Z.A. Bessudnova participated (on-line) in the 46th INHIGEO Symposium (Poland) and in the 15th ERBE Symposium (Austria) with oral presentations.

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Books:

Belyaevskaya N.G., Korosteleva N.E., Pechenkin I.G. et al. 2021. Anatoly Ilyich Ginzburg / Ed. I.G. Pechenkin. Moscow: VIMS. 142 p. (Materials to the bibliography of scientists of the VIMS; Vol. 5), (in Russian).

Articles:

Bessudnova Z., Romanova V., Samsonova N. 2021. Collection of the Saxony Kingdom Mining Department's head Johann Carl Freiesleben (1774-1846) in Vernadsky State Geological Museum. Proceedings of 15th ERBE-Symposium: Cultural Heritage in Geosciences, Mining and Metallurgy – Libraries–Archives–Collections. Eggenburg, Austria, 13th–19th June 2021, pp. 6-14.

Bessudnova Z.A., Lyubina G.I. 2021. Paleontologist Maria Pavlova's communication with foreign scientists in the late 19th – early 20th century. *Physis: Rivista Internazionale di Storia della Scienza*. (54) ½: 201-220.

Feklova T.Yu. 2021. To the history of the Mineralogical Cabinet of the Kunstkamera. Living-inanimate – a collection of shells, corals, and fossils founded by Peter the Great: Academy of Sciences in the 18th – first half of the 19th century. To the 100th anniversary of the birth of Yu.K. Kopelevich / Ed. A.Yu. Skrydlov and G.I. Smagin. St. Petersburg: Rostock. 221-237, (in Russian).

Ivanova T.K., Shvanskaya L.V., Vlasov E.A. 2021. Brazilian geodes in the mineralogical gallery of the Moscow State University: Art of nature in stone. *Life of the Earth* 43(4): 504-511, (in Russian).

Malakhova I.G., Vtorov I.P., Kirillov S.A. 2021. The history of geosciences as the resource for the Digital Space of Scientific Knowledge of the Russian Academy of Sciences. *CEUR Workshop Proceedings* 2990: 50-61, <http://ceur-ws.org/Vol-2990/rpaper5.pdf>

Martirosyan O.V. 2021. Woman-scientist, paleontologist. *Bulletin of Geosciences* 313(1): 35-39, (in Russian).

Naugolnykh S.V., Kirilishina E.M., Isaev V.S. 2021. New data on Permian plants of the Pechora coal basin according to the collection of the Earth Science Museum of Moscow State University: the coevolution of plants and insects. MSU Vestnik. *Geology* 76 (3): 282-290, (in Russian)

Naugolnykh S.V. 2021. Return to the Dinosaur Coast. *Priroda [Nature]* 7: 39-46. (in Russian)

Aksenov S.A., Mashkovtsev G.A., Pechenkin I.G. 2021. Journal Exploration and Protection of Subsoil – 90 years in the service of geology. *Exploration and Protection of Subsoil* 7: 3-8, (in Russian).

Pechenkin I. G. 2021. Creation of a domestic uranium mineral resource base. *Noosphere: Achievements of Russian Scientists during the Great Patriotic War* 1: 15-24, (in Russian).

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- Pechenkin I. G. 2021. History of the discovery of radioactivity. *Exploration and Protection of Subsoil* 8: 65-71, (in Russian).
- Lugovskaya I. G., Pechenkin I. G., Yakushina O. I. 2021. Development of the mineral resource base of graphite in Russia and the role of specialists from the Institute of Mineral Raw Materials in its mastering. *Exploration and Protection of Subsoil* 12: 53-64, (in Russian).
- Voitekhovsky Yu.L. 2021. 100 years of the Fedorov Institute. *Zapiski RMO [Proceedings of the Russian Mineralogical Society]* 4: 135-141, (in Russian).
- Voitekhovsky Yu.L. 2021. Unknown letter to L.A. Popugayeva from the archive of Professor D.P. Grigorieva. *Bulletin of Geosciences* (9): 45-51, (in Russian).
- Vtorov I.P. 2020/2021. Sergei Yakovlev (1878-1957) – the founder of the scientific school of Quaternary mapping and Quaternary studying in Leningrad. *Bulletin of the Commission for Study of the Quaternary* 78: 125-133. <http://www.ginras.ru/library/pdf/2020-78.pdf>
- Vtorov I.P. 2021. The importance of A.E. Fersman research on the island of Elba (1908). *Physis: Rivista Internazionale di Storia della Scienza*. 54 (1/2): 333-350.

Conference papers:

- Bessudnova Z., Romanova V., Samsonova N. 2021. Collection of the Saxony Kingdom Mining Department's head Johann Carl Freiesleben (1774-1846) in Vernadsky State Geological Museum. 15th International ERBE – Symposium: Cultural Heritage in Geosciences, Mining and Metallurgy – Libraries – Archives – Collections [Eggenburg. June 13-20, 2021]. Eggenburg: Riegelnik. 43-44.
- Bessudnova Z.A. 2021. Grigory Helmersen (1803-1885) – creator and first director of the Geological Survey of Russia. 46th INHIGEO Symposium [Krakow. July 19-22, 2021]. Warsaw: PGI NRI. 10.
- Feklova T.Yu. Living / inanimate – the collections of shells, corals, and fossils of the Russian Kunstkamera's Mineral Cabinet. 46th INHIGEO Symposium [Krakow. July 19-22, 2021]. Warsaw: PGI NRI.
- Kolbantsev L.R., Zastrozhnov A.S., Petrov O.V. 2021. History of Association on the study of the Quaternary in Europe in the Archive of All-Russian Geological Research Institute, St. Petersburg, Russia. 15th International ERBE – Symposium: Cultural Heritage in Geosciences, Mining and Metallurgy – Libraries – Archives – Collections [Eggenburg. June 13-20, 2021]. Eggenburg: Riegelnik. 99.
- Kolbantsev L.R. 2021. International Geological Congresses. The Geology. Revival of the Legend. Collection of scientific papers. Scientific and practical conference dedicated to the 175th anniversary of academician A.P. Karpinsky [St. Petersburg. November 17-18, 2021]. St. Petersburg: VSEGEI. 30-34. (in Russian)
- Kolbantsev L.R., Zastrozhnov A.S. 2021. The Association on the Study of the Quaternary Period in Europe: Journey to the USSR, 1932. 42nd International Conference of the St. Petersburg branch of the S. Vavilov Institute of the History of Science and Technology, RAS [St. Petersburg. October 25-29, 2021]. St. Petersburg. 114-115. (Science and Technology, Questions of History and Theory; Vol. 37) (in Russian)
- Kolbantsev L.R. 2021. The first geological map of European Russia. Scientific and practical conference dedicated to the 175th anniversary of academician A.P. Karpinsky [St. Petersburg. November 17-18, 2021]. St. Petersburg: VSEGEI. 39-42. (in Russian)

- Kolbantsev L.R., Malakhova I.G. 2021. Through the history of the Geological Survey of Russia: origin, development, and features: 46th INHIGEO Symposium [Krakow. July 19-22, 2021]. Warsaw: PGI NRI. 30.
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Report for Russia compiled by Irena Malakhova.

SERBIA ANNUAL REPORT 2021

The History of Geology Division of the Serbian Geological Society (SGS) has been an associate member of the International Commission on the History of Geological Science (INHIGEO) since 2015. The Division currently brings together five active researchers, geologists and geographers, from the Faculty of Mining and Geology in Belgrade, Serbian Academy of Science and Arts (SASA), the Geographical Institute of SASA and the Faculty of Science in Novi Sad who are also active members of the International Commission on the History of Geological Science (INHIGEO).

Prof. Aleksandar Grubić, the oldest among us and an Honorary Member of INHIGEO remains active. Bearing in mind the Covid-19 pandemic, his activity and work on different geological topics generates great admiration.

On Planet Earth Day (April 22, 2021) members of the Division visited the National park Djerdap (“Iron Gate”), the first Geopark in Serbia established in 2020 as a part of the UNESCO Global Geoparks Network. During the one-day visit, there were popular short lectures on the geological history of the Geopark and the most interesting geological points and geoheritage sections organized by our members (Figure 1).



Figure 1. A short field lecture by Prof. Rundić (middle) regarding the Middle Jurassic-Lower Cretaceous rocks at the first protected geological profile (Boljetinska River) within the Djerdap Geopark (Photo by M. Jovanović).

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As was announced last year, because of the Covid-19 virus pandemic, the scientific conference dedicated to the 100th anniversary of the arrival of Prof. Vladimir Laskarev to Serbia and the beginning of organized study of loess deposits in Serbia was postponed one year. The meeting was held on May 21, 2021 in the old Zemun (one of Belgrade's municipalities along the Danube River). It was organized by the Environmental Movement of Zemun, which is the manager of this protected natural monument. The four invited speakers (Lj. Rundić and M. Jovanović among them on behalf of the Division) spoke about Laskarev's life and career and his loess research in the vicinity of Belgrade. During the last couple of years, members of the Division supported by other geoscientists have been conducting scientific research on the protected loess section in Zemun. Professional and scientific lectures occurred during the first part of the meeting and were attended by representatives of the Ministry of Environmental Protection, the City's Secretariat for Environmental Protection, the Institute for Nature Protection of Serbia, the Serbian Geological Society, the Faculty of Physics, the Faculty of Geography, and others. In the second part, a workshop was organized for all the participants who made a short boat ride to the protected loess profile in Zemun.

As a reminder, Vladimir Laskarev was a famous Russian and Serbian geologist, Academician of the Serbian Academy of Science and Arts, a long-time professor of geology/paleontology at the University of Belgrade, and a prominent member of the Serbian Geological Society (SGS). He presented an expert analysis and stratigraphic interpretation of the loess series in Zemun at the 185th session of the Serbian Geological Society held on January 10, 1921. A year later, this lecture was published in French (Figure 2).

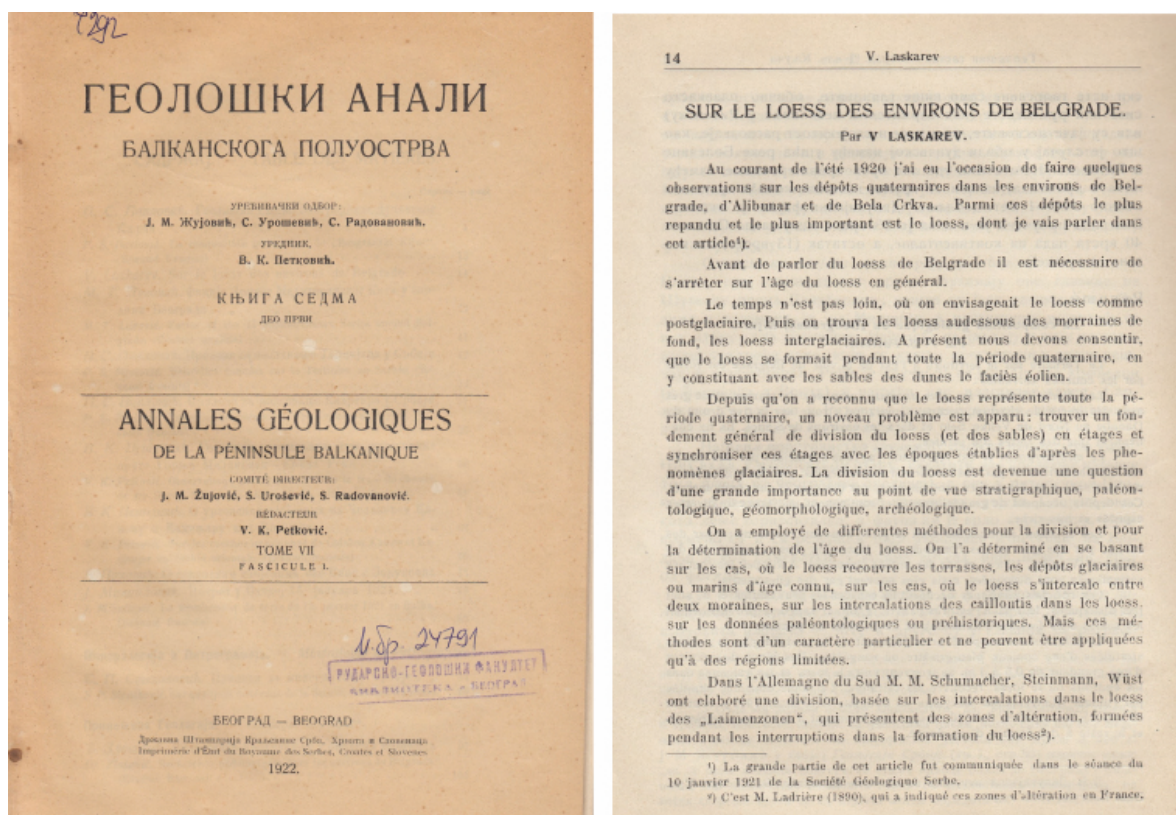


Figure 2. The first paper by V. Laskarev on the loess in the Belgrade vicinity (published in 1922). The cover page of the journal (left) and the first page of original text written in French (right) (Rundić, in press).

The four invited speakers printed their talks in a special popular brochure edited by the Ecological Movement of Zemun (Figure 3).



Figure 3. Cover of a popular brochure regarding the 100th anniversary of the loess research in Zemun (Belgrade city area).

During the virtual meeting of the Council of the Carpathian-Balkan Geological Association (CBGA) held on December 1, 2021, very important issues were discussed and work continued on the organization of the 22nd Congress of the CBGA (September 7-11, 2022 Plovdiv, Bulgaria) (Figure 4). On that upcoming occasion, the 100th anniversary of this association will be celebrated. Among the other events, promotion of the Jubilee Book will be prepared by a group of authors led by Academician Ivan Zagorchev from Sofia. Prof. Rundić will take part as the national representative of Serbia. It should be noted the CBGA was established at the 13th International Geological Congress in Brussels (1922) under the name of Carpathian Geological Association. The present name was adopted at the 4th CBGA Congress in Kiev in 1958, then part of the USSR. CBGA, one of the oldest geological associations in Europe, is affiliated with the IUGS.

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Figure 4. Logo of 22nd Congress of the CBGA.

Report prepared by Prof. Ljupko Rundić on behalf of INHIGEO-SRB, Belgrade, March 7, 2022

SPAIN ANNUAL REPORT 2021

Although the CoVID 19 epidemic prevented some public events from being held, most conferences and congresses were held online during 2021. In any event, the activities in the History of Geology have been important.

Activities

Between December 2020 and March 2021, the exhibition entitled “Materials. A story about human evolution and technological advances” took place. In November, a temporary exhibition of interest was held: “40 years of excavations in the Sierra de Atapuerca (1978-2018)”. EUDALD CARBONELL presented “Atapuerca, past, present and future” at the conference on November 17.

The Association of Friends of the National Museum of Natural Sciences in Madrid organized a series of presentations, among which were those by: MARÍA ÁNGELES BUSTILLO: “Pioneering Women in Geology” (March 8); ALBERTO GOMIS: “Ten moments in 150 years of history of the Royal Spanish Society of Natural History” (May 18); ISABEL REY: “The Royal Spanish Society of Natural History and the development of the scientific collections of the MNCN” (June 1); ISABEL RÁBANO GUTIÉRREZ DEL ARROYO, member of INHIGEO: “Women in the Royal Spanish Society of Natural History” (June 8, 2021); MARÍA ROSARIO ALCALDE FUENTES: “The imprint of naturalists and the Royal Spanish Society of Natural History in the Mineralogy museums” (June 15); MIGUEL GÓMEZ HERAS: “150 years of the Royal Spanish Society of Natural History in the cemeteries of Madrid: valuing memory” (June 22); ESTEBAN MORENO GÓMEZ: “The evolution of scientific instrumentation in the study of nature since the foundation of the Royal Spanish Society of Natural History” (June 29); JAVIER SÁNCHEZ ALMAZÁN: “The creation of the Royal Cabinet of Natural History” (October 26).

A ceremony commemorating the 150th anniversary of the Royal Spanish Society of Natural History was held in the Auditorium of the Complutense University of Madrid on March 15. For this reason, ALBERTO GOMIS BLANCO gave a presentation entitled “Critical bibliography on the history of the oldest private scientific society in Spain”. Two exhibitions were also organized: "The Royal Spanish Society of Natural History: 150 years making history", which was held at the National Museum of Natural Sciences, from May 18 to August 31 (ISABEL RÁBANO GUTIÉRREZ DEL ARROYO, member of INHIGEO, was curator of the exhibition), and “The Royal Spanish Society of Natural History: 150 years of the Library (1871-2021)”, based in the Complutense Historical Library, from October 2021 to February 2022.

The Spanish Gemological Institute (IGE) organized a series of informative online conferences, which took place between the months of March and June. Due to their interest in the History of Gemology, we highlight the following: on March 16, CINTA OSÁCAR spoke on “Diamonds and science fiction from Jules Verne to Arthur Clarke; on April 6, RUI GALOPIN presented on “History of the emeralds”; on June 8, DANIEL NICOLS spoke on “The adventure of Gemology”; and on November 2, RAQUEL ALONSO-PÉREZ presented on “Origin and study methods of emeralds”.

The *Centro de Estudios e Investigación del Patrimonio Geológico y Minero (FGP-IGME-SEDPGYM)*, (Geological and Mining Heritage Studies and Research Center) (FGP-IGME-SEDPGYM), headed by two INHIGEO members, LUIS FEIPE MAZADIEGO MARTÍNEZ and OCTAVIO PUCHE RIART, organized a series of online conferences. Other institutions collaborated in its organization, such as the Spanish Society for the History of Archeology (SEHA) and the Spanish Society for the Defense of Geological and Mining Heritage (SEDPGYM). Thus, MARIANO AYARZAGÜENA SANZ, spoke on: “Salt in Prehistory”, on March 18. The second conference was given by FRANCISCO HERNÁNDEZ ORTÍZ, on April 22, with the title “Geological and Mining Heritage of Rodalquilar”. Finally, a third conference was given by ESTER BOIXEREU VILA, member of INHIGEO, on November 25, with the title “Maps and representations of volcanoes in the territories of the Spanish Crown, before 1850”.

On April 13, within the framework of the Geophysics Seminars of the Master’s Degree in Meteorology and Geophysics of the Complutense University of Madrid, AGUSTÍN UDÍAS VALLINA presented “Large earthquakes and the development of seismology in Spain”.

On 28 April, the Club Español de Medio Ambiente (CEMA), hosted a presentation entitled “Climate change and the evolution of the Earth”. The presentation was by Professor RAFAEL FERNÁNDEZ RUBIO.

On May 5, the commemorative events of the bicentenary of the birth of the geologist Juan Vilanova i Piera (1821-1893) were held, under the auspices of the Illustrious Official College of Geologists (ICOG). The program was as follows:

“Biography of Juan Vilanova”, by RODOLFO GOZALO GUTIÉRREZ (University of Valencia). Member of INHIGEO.

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“Vilanova and the beginnings of prehistoric studies in Spain”, by MARIANO AYARZAGÜENA SANZ (SEHA, SEDPGYM).

“Vilanova and the application of geology to agriculture”, ESTER BOIXEREU VILA (IGME, ICOG), member of INHIGEO.

“Juan Vilanova and the Geological Map Commission”, ISABEL RÁBANO (IGME), INHIGEO member.

“The creation of the Spanish Society of Natural History”, ALBERTO GOMIS BLANCO (Complutense University of Madrid, RSEHN).

“Vilanova and Darwinism”, LEANDRO SEQUEIROS SAN ROMÁN (INHIGEO member).

From May 6 to 7, 2021, the UNED (National University of Distance Education) and the ICAC (Catalan Institute of Classical Archeology) presented an online seminar on historical stonework entitled: “The life of the stone. The quarry and the art of historical stonework”.

From May 7 to 8, Geolodía was held, an activity that since 2012 has been carried out in numerous Spanish provinces, organized by the Geological Society of Spain (SGE), in collaboration with other entities and associations. Normally, it is carried out in places of relevant geological interest, although COVID-19 has moved numerous activities online. Often the planned actions deal with the History of Geology or the Geological Heritage.

On May 11, from the Ramón Areces Foundation, a debate was broadcast online: “The role of the Spanish in the History of Science”, with the intervention of ANTONIO CAMPOS (Royal Academy of Medicine), LEONCIO LÓPEZ-OCÓN (Institute of History of the CSIC), and JOSÉ MANUEL SÁNCHEZ RON (Autonomous University of Madrid).

On May 26, organized by the Spanish Environmental Club (CEMA), an online conference was organized, given by ANTONIO CASTILLO MARTÍN, on: “Know your sources: pioneering environmental action”.

On June 7, MANUEL CASTILLO MARTOS, as part of the Cycle of History and Philosophy of Science and Technology, presented, at the Faculty of Chemistry of the University of Seville, the talk “Introduction of science in New Spain. Collaboration with the independence of Mexico, 1821”.

On 7 to 10 June 2021, se celebró el “X Simposio Internacional de Conservación del Patrimonio Geológico de ProGEO”, contando con la colaboración del Instituto Geológico y Minero de España (IGME). Se trata de un congreso científico periódico sobre geoconservación, organizado por la Asociación Europea para la Conservación del Patrimonio Geológico desde 1991. Este año 2021 fue su 30 aniversario. Se trata de un evento desarrollado totalmente on-line y gratuito.

On June 17, 2021, the Polytechnic University of Catalonia (UPC) paid tribute, in Manresa (Barcelona), to Professor JOSEP MARÍA MATA PERELLÓ. Various speakers took part, including OCTAVIO PUCHE, a member of INHIGEO, who described the life and scientific contribution of this Catalan geologist.

On June 24, the “Women in Science and Engineering Conference” was held at the Rey Juan Carlos University (URJC).

On June 29, at the Guzmán el Bueno metro station (Madrid), the Exhibition “150 years of the National Geographic Institute (1870-2020)” was inaugurated, organized by the IGN in collaboration with the Community of Madrid.

On July 7, within the framework of the X Geological Congress of Spain, a Section dedicated to “Women and Geology” was held.

On August 24, at the Valero Lecha Cultural Center in Alcorisa (Teruel), on the occasion of the “IV Conference on the Dissemination and Defense of Turolense Geological Heritage”, an act of homage was held to Dr. MATTHIJS FREUDENTAL, one of the pioneers of Teruel's modern paleontology of vertebrates. His biography was presented by GLORIA CUENCA, University of Zaragoza, and by MARÍA ÁNGELES SACRISTÁN, National Museum of Natural Sciences. Also, JAVIER MARTÍNEZ-SALANOVA gave the conference: “Precision, rigor and perseverance: the Aragonese works of Matías Freudenthal, a tireless paleontologist”. On August 27, on the occasion of the “5th Conference on Dissemination and Defense of Turolense Heritage”, tribute was paid to the professor and paleontologist JOSÉ PEDRO CALVO SORANDO.

El 22 de septiembre, organizadas por la Cátedra de Cultura Científica y la Dirección de Difusión Social e Investigación de la Universidad del País Vasco, se desarrollaron en Bilbao las Jornadas “Evolución en clave de género”. Entre las diversas conferencias, destacar la impartida por CARMEN MANZANO BASABE: “Las mujeres en los estudios sobre evolución humana”.

From September 29 to October 2, the “XXVI Conference on Paleontology: The teaching of Paleontology: didactics, history and future” was held at the Faculty of Human Sciences and Education in the city of Huesca. This place was chosen on the occasion of the centenary of the death of Lucas Mallada, father of Spanish Paleontology, as it was his homeland.

ISABEL RÁBANO GUTIÉRREZ DEL ARROYO, a member of INHIGEO, was elected President of the Spanish Society of Paleontology (SEP) on October 15.

On the occasion of the centenary of the death of Lucas Mallada y Pueyo (1847-1921), a mining engineer and paleontologist, the Instituto de Estudios Altoaragoneses (IEA) and the Diputación de Huesca organized the series of presentations: “Rocks, fossils and politics: Lucas Mallada a committed geologist”, which were taught at the Manuel Benito Moliner Cultural Center in Huesca. Speakers included ANDRÉS POCOVÍ, JOSÉ IGNACIO CANUDO, CARLOS FORCADELL and ENRIQUE ARAGONÈS. The event took place from October 18 to 23.

JOSÉ LUIS BARRERA MORATE, member of IHIGEO, gave the presentation: “Volcanoes. Eruptions that change history” on October 29, at the Museo del Vino y de la Sal de Chiclana (Cádiz) and in collaboration with La Ciudad de las Estrellas.

The “XI Historical Mining and Metallurgy Congress in SW Europe”, organized by the Spanish Society for the Defense of Geological and Mining Heritage (SEDPGYM) was held in

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Ciempozuelos (Madrid), from November 4 to 7. OCTAVIO PUCHE RIART, member of INHIGEO, was invited to give the presentation: “The figure of the dowser, popular prospector of waters and minerals, in the Modern Age”. Likewise, ISABEL RÁBANO GUTIERREZ DEL ARROYO, a member of INHIGEO, gave another guest lecture: “From litho library to museum: a tour of the collections of the Geological and Mining Institute of Spain”.

Within the framework of a series of presentations held on the occasion of the 50th anniversary of the Museo de Mineralogy of the Autonomous University of Madrid, JAVIER GARCÍA GUINEA gave the talk: “Study on recent meteorite falls in Spain”. The event took place on November 10.

On November 14, within the framework of the Community of Madrid Science Week, ANDRÉS DÍAZ HERRERO (IGME), ESTEBAN CASAUX (IES Mariano Quintanilla), FUENCISLA VICENTE RODADO (Geology of Segovia) and NURIA SACRISTÁN ARROYO (Segovia Educa in Green) developed the scientific route: “In the footsteps of the naturalist pioneers in Segovia”. This traversed footpath passes through different places in the city of Segovia related to naturalists who worked or lived in that city during the 19th and 20th centuries, with special attention to private homes-laboratories, educational centers where they worked and their burial places.

On November 27, at the Faculty of Geology of the University of Oviedo, MONTSERRAT JIMÉNEZ SÁNCHEZ gave the presentation: “Geology and global change; stories of the ephemeral ice”.

As a contribution to the 3rd Paleontological Virtual Congress (December 2021), COLLANTES, L.; MAYORAL, E.J.; LIÑÁN, E. and GOZALO, R., presented the communication: “Redescribing the “Saukianda fauna”: exceptional trilobites from de Marianian (Cambrian Series 2) of the Sierra Norte de Sevilla UNESCO Geopark.

The Valencia Provincial Council organized the exhibition: “Vilanova y Piera. Camino a la Prehistoria” at the Prehistory Museum of Valencia, from December 22, 2021 to June 22, 2022.

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Report compiled by ESTER BOIXEREU-VILA & OCTAVIO PUCHE-RIART.

UNITED KINGDOM ANNUAL REPORT 2021

The History of Geology Group (HOGG) is affiliated to the Geological Society of London (GSL) and has a current membership of circa 164. HOGG was inaugurated in October 1994 to encourage interest in the lives and work of those scientists and philosophers who influenced both the study and the practice of geology. The Group is open to anyone with an interest in the subject. The current Chairperson and (acting) Secretary is Duncan Hawley.



The HOGG Committee met six times (bi-monthly) in 2021. Four members retired at the AGM, all replenished by 'fresh faces'. All meetings moved online.

Over 2021 HOGG engaged with 'parent' affiliate The Geological Society of London to offer guidance, advice and support over a range of issues, viz:

1. The value, importance and use of the Geological Society Library and archives and their possible future. HOGG's contribution was well received and commended for the quality of its comments; a number of key suggestions have subsequently been fed into the Library and Archives Future Strategy.
2. HOGG helped improve clarification and communication with respect to nominations for Geological Society Awards (in particular the Sue Tyler Friedman Award).
3. The Geological Society Campaign to remain in its (historic) Burlington House location in Piccadilly, London at an affordable rent. HOGG organised support and lobbying to Members of Parliament and other influential figures. The building is owned by government who have issued a rent hike. The outcome of this issue lies uncertain and is likely to remain so for the forthcoming year.
4. HOGG provided commentary 'Report on the Society's Archives & Special Collections', commissioned by the Geological Society Council to evaluate potential controversy over historical ties connected with slavery, imperialism, the direct promotion of racial superiority, and, to a lesser extent, eugenics. Subsequently HOGG was invited to join a 'Memorialisation Working Group', tasked with seeking to adopt an ethical line and HOGG helped shape the report to reflect historical accuracy and balance. Committee member Andrew Hopkins represented HOGG on the Working Group.

Activities included six online lunchtime meetings:

1. *Geology and Hospital Planning: A Crimean War Map* by Dr. Beverly Bergman.
2. *William Buckland- glacial impressions* (a themed meeting) a) *Costume of the Glaciers: just a groovy cartoon?* by Duncan Hawley, b) *A case of mistaken identity* by Tom Sharpe, c) *Teaching glaciation* by Susan Newell.
3. *Treasures of the Sedgwick Museum Archive* by Sandra Freshney.
4. *Geological drugs and prophylactics* by Dr. Chris Duffin.
5. *A History of petroleum exploration: how a handful of principles interacted with evolving technologies*, by Dr. Anthony Spencer.

Recordings of meetings are made available to members.

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A full-day online conference was held to mark the bicentenary of the publication of the geological map of England and Wales compiled by Greenough '*The Geological Society's Map understanding George Bellas Greenough and his 1820 map project*'. This was deferred from the originally planned bicentennial date (2020) and was co-convened with the Department of Earth Sciences, University College London. Eleven presentations gave new insights and perspectives on topics cartographical and biographical. The conference attracted wide international participation.

The HOGG AGM in November was followed by a lecture '*Following in the footsteps of Murchison: the 'discovery' of the first true Silurian*' by Duncan Hawley.

Two planned meetings did not take place (both casualties of Covid confidence).

1. *Malvern Rocks! Geology in a Victorian Health Resort*.
2. *Archibald Geikie: Innovator, Influencer and Educator* (symposium) (with Haslemere Educational Museum).

HOGG continues to have a firm but modest presence online. There have been few changes to the HOGG website over the year, excepting the addition of downloadable issues of HOGG Bulletins. The 'History of Geology Project Papers and Notes' website <https://historyofgeology.science.blog/> has not been extended this year as no further contributions have been received. The HOGG Twitter feed gained 2,675 followers (400+ up on 2020) and was active throughout 2021. Posts included a few original tweets but more often were re-tweets of other posts of interest, although often with additions. The social media presence is an important part of our connection to a wider community who are generally not historians of geology. All HOGG members and Associates continue to be linked by email via JISCMail.

2021 saw new directions for HOGG communications with the thrice-yearly HOGG Newsletter morphed into two separate publications:

1. The HOGG Bulletin is a regular update and listing of events, publications and other news from HOGG and the wider history of geology community to HOGG members and associates. It aims to provide some currency to notices, so is issued at intervals of about six weeks. It is distributed to both members and HOGG associates. The Bulletin Coordinator is Andrew Hopkins.
2. GeoHistories is the HOGG Magazine, published twice annually and is available to members only. It aims to interest, stimulate and educate members in addition to providing a 'proceedings' of HOGG events, usually by presenters themselves so also contains a range of regular features on the history of geology. The editor is Peter Lincoln.

In March, the Geological Society Special Publications Volume 506, '*Celebration of the Centenary of the First Female Fellows: Discovering Forgotten Histories*' was published, edited by HOGG members, Cynthia Burek and Bettie Higgs aided by a team of HOGG reviewers. Of the 22 authors in the volume 12 are HOGG members.

A donation of £500 was made to the 'The Charles Lyell Collection Access Fund' (University of Edinburgh) to fund digitising the Charles Lyell Notebooks and other material for online access. A contribution of \$500 was made towards the production of colour plates in the GSA

memoir ‘*The Evolution of Palaeontological Art*’, which contains contributions by several HOGG members.

Publications by HOGG members 2020-21:

- Burek, C.V and Higgs, B.M (eds.). 2021. *Celebrating 100 Years of Female Fellowship of the Geological Society: Discovering Forgotten Histories*. GSL Special Publication No. 506. London: Geological Society.
- Cueille, M., Green, E., **Duffin, C.J.**, Hildebrandt, C. & Benton, M.J. 2020. Fish and crab coprolites from the latest Triassic of the U.K. and evidence for the origins of the ‘Modern’ ecosystem. *Proceedings of the Geologists’ Association* 131(6): 699-721.
- Chancellor, G. 2021. Lyell, Darwin and the principle of reasoning in geology. *Darwin Online* http://darwin-online.org.uk/EditorialIntroductions/Chancellor_LyellsPrinciplesOfGeology.html
- Donovan, S. 2021. Louis Leakey and Piltdown Man. *Proceedings of the Geologists’ Association* 132: 405-406.
- Donovan, S. 2021. John Phillips: Yorkshire's traveller through time. *Proceedings of the Geologists’ Association* 132: 407.
- Duffin, C.J. 2020. Fifteenth century magico-medicinal minerals. *Deposits Magazine*: 26/05/20 : 1-20. *Depositsmag.com*.
- Duffin, C.J. 2020. Medicinal quartz: *Crystallus* or rock crystal. In: Barroso, M. Sameiro do, Duffin, C.J. & Sousa, G. de (eds.): *Medical Heritage of the National Palace of Mafra*, 162-204. Cambridge: Cambridge Scholars.
- Gregorová, R., Bohatý, M., Stehliková, D. & **Duffin, C.J.** 2020: "Crapaudine" (*Scheenstia* teeth) – the jewel of Kings. *Acta Musei Moraviae - Scientiae geologicae*, 105(2): 277-294.
- Kölbl-Ebert, M. 2021. The physical sciences. In: Bullivant, S. and Ruse, M. *The Cambridge History of Atheism, Part IV, Classical Modernity: Philosophical and Scientific Currents*, Chapter 20. Cambridge: Cambridge University Press
- Lincoln, P. 2021. *Ten Views of a Landslip*. “A personal appreciation and analysis of the Great Bindon Landslip [of 1839] in its historical and scientific context.” Free download: https://www.lymeregismuseum.co.uk/lrm/wp-content/uploads/2021/08/10_views_final_version_-21_-June_-2021.pdf
- Morgan, N. 2021. Cashing in on Christmas. *Geoscientist* 31(4): 41.
- Newell, S. 2020. Historical collections in museums: The legacy of William Buckland’s ‘Geological Museum’ collection at Oxford and its potential as a teaching resource today. *The Geological Curator* 11: 4.
- Pymm, R.J. & **Duffin, C.J.** (2020): Dragonstones: Myth, magic, medicine and material culture. In: Barroso, M. Sameiro do, Duffin, C.J. & Sousa, G. de (eds.): *Medical Heritage of the National Palace of Mafra*, 205-256. Cambridge: Cambridge Scholars.
- Riches, P. 2020. A recently discovered hand-coloured geological map of Norfolk and Suffolk attributed to Richard Cowling Taylor (1789–1851). *Archives of Natural History* 47: 2
- Rose, E.P.F. 2021. Canadian links with British military geology. *Earth Sciences History* 40(1): 130-157.
- Rose, E P. F. 2021 British military contributions to the geology of Malta Part1 *Earth Sciences History* 40(2): 503-537.
- Sharpe T. 2021. A case of mistaken identity: Is Mary Anning (1799–1847) actually William Buckland (1784–1856)? *Earth Sciences History* 40(1): 68-73.
- Simpson, M., and Torrens H. 2021. Opinion article: Lessons from a Letter? *Magazine of the Geologists’ Association* 20(2): 39-42.

COUNTRY REPORTS

- Taylor, M. A. 2020. ‘Rude bones’ under the cataract: Lyellian geology in Tennyson’s *The Princess*. *Tennyson Research Bulletin* 11: 265-269.
- Taylor, M. A. 2020. Mary Anning of Lyme Regis, and the great storm of 1824. *Proceedings of the Dorset Natural History and Archaeological Society* 141: 31-40.
- Taylor, M. A., and Anderson L.I. 2020. An unusual papier-mâché replica of a fossil (?) from the Free Church of Scotland College Collection. *The Geological Curator* 11: 207-212.
- Walton, G. 2021. *The Early History of an Applied Geoscience Consultancy*. Down Stone Books.
- Weertz, J., Weertz, E. & **Duffin, C.J.** 2020. Therapeutic stone powder from ecclesiastical sources: supplementary notes. *Pharmaceutical Historian* 50(2): 59-64.

Report compiled by Duncan Hawley, HOGG Chairperson, June, 2022.

UNITED STATES ANNUAL REPORT 2021

Vic Baker presented (on-line) the paper “Charles S. Peirce and the Slaty Cleavage Controversy” at the International History of Geology (INHIGEO) Conference, Warsaw, Poland, July 20, 2021. An extended abstract of the paper was published as follows:

Baker, V.R. 2021. Charles S. Peirce and the slaty cleavage controversy, in *Book of Abstracts, International Commission on the History of the Geological Sciences (INHIGEO) Symposium*, Cracow, Poland, 18-24 July, 2021, p. 7-8.

Vic also completed a commentary, “Hutton, Heroes, and History,” for the on-line journal *Inference* that appeared in v. 6, no. 4. Work continued on some long-term book projects: (1) history of the 19th century controversy over the origin of slaty cleavage, (2) history of geological investigations of the planet Mars, especially during the modern era of space exploration, and (3) a collection of essays emphasizing topics related to the history and philosophy of geology.

Kennard B. Bork was pleased, along with many colleagues, to see the Geological Society of America’s Memoir 218, on *The Evolution of Paleontological Art*, reach the publication stage. Ken’s Chapter 5 was entitled “The illustrations of Brongniart and Cuvier illuminate paleontology in the early nineteenth century”. In October, it was a particular pleasure to serve as Citationist for Steve Rowland, as he received the Mary C. Rabbitt Award from the History and Philosophy of Geology Division of GSA. That is the Division’s highest award, presented for exceptional contributions to the history of geological sciences, and candidates are from a worldwide pool.

Joanne Bourgeois received the Friedman Distinguished Service Award from the History and Philosophy of Geology Division of the Geological Society of America. Jody’s recent publications include the following:

- 2021: Book review of Kölbl-Ebert, M. 2016. From Local Patriotism to a Planetary Perspective: Impact Crater Research in Germany, 1930s–1970s. *Earth Sciences History* 40(2): 625–628.
- 2021: Rock Star: Lou Henry Hoover (1874–1944): An independent woman of action. *GSA Today*, October, pp. 48–50 [with Michele Aldrich and Léo Laporte].

- 2020: Introduction to *A Slice Through America: A Geological Atlas*, by David Kassel (a history of geologic cross sections, with particular reference to North America), New York: Princeton Architectural Press, pp. 9–13 and endnotes, (128 p).
- 2019: “Robert H. Dott, Jr. (1929–2018), earth historian and historian of geology”, *Earth Sciences History*, 38(2): 422–429.

Jody recently came out of retirement to teach “Great Geological Issues” in the fall of 2021; at the Geological Society of America (GSA) meeting in 2021 she presented at talk on the history of the study of fossil trackways in the New Red Sandstone of the Connecticut River Valley, and she is preparing a manuscript on that topic. She serves on the GSA Rock Stars committee; she also wrote a review of Robert McMaster’s 2021 biography of early American geologist Edward Hitchcock.

Renee M. Clary received the 2021 Transformation Award of the National Association of Geoscience Teachers (NAGT), Geoscience Education Research (GER) Division. Her research includes the incorporation of the history of science in multiple educational settings to improve learners’ understanding of the nature of science.

Renee Clary authored a manuscript on Charles Knight’s murals at the Field Museum, Chicago, and co-authored other contributions on Henry De la Beche’s *Duria antiquior* and paleontological art in a small university museum for the Geological Society of America Memoir 218, *The Evolution of Paleontological Art*. She served as Editor of Memoir 218, with co-editors Gary Rosenberg and Dallas Evans. She also contributed a manuscript to a special issue of *Physis* that focused on illustrations in geological communication, which she had orally presented at the 2019 INHIGEO conference. Her 2021 publications include the following:

- Clary, R.M. (2021). Illustration within informal geological communication during the Golden Age of Geology (1788-1840) – Examples from the respective correspondence and archives of Henry De la Beche and William Buckland. *Physis*, LVI, 149-165.
- Clary, R.M. (2021) Review of *The Fossil Woman: A Life of Mary Anning* by Tom Sharpe. *Earth Sciences History* 40(1): 282–284.
- Clary, R.M., Rosenberg, G.D., and Evans, D.C. (2021). Drawing things together with paleontological art. In R.M. Clary, G.D. Rosenberg, and D.C. Evans (eds.), *The Evolution of Paleontological Art*. Geological Society of America Memoir 218, [https://doi.org/10.1130/2021.1218\(01\)](https://doi.org/10.1130/2021.1218(01)).
- Clary, R.M. (2021). The present is the key to the past: Charles R. Knight’s reconstruction of extinct beasts for the Field Museum, Chicago. In R.M. Clary, G.D. Rosenberg, and D.C. Evans (eds.), *The Evolution of Paleontological Art*. Geological Society of America Memoir 218. [https://doi.org/10.1130/2021.1218\(18\)](https://doi.org/10.1130/2021.1218(18)).
- Sharpe, T., and Clary, R.M. (2021). Henry De la Beche’s pioneering illustration, *Duria antiquior*. In R.M. Clary, G.D. Rosenberg, and D.C. Evans (eds.), *The Evolution of Paleontological Art*. Geological Society of America Memoir 218. [https://doi.org/10.1130/2021.1218\(06\)](https://doi.org/10.1130/2021.1218(06)).
- Rowan, R., Funderburk, T.B., and Clary, R.M. (2021). “But why paint a dinosaur blue?": Envisioning the Cretaceous—a vitalizing, multidisciplinary project in a university museum. In R.M. Clary, G.D. Rosenberg, and D.C. Evans (eds.), *The evolution of paleontological art*. Geological Society of America Memoir 218. [https://doi.org/10.1130/2021.1218\(27\)](https://doi.org/10.1130/2021.1218(27)).

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At the 26th International Congress of History of Science and Technology in Prague, and the 46th INHIGEO conference in Warsaw, Renee presented (virtually) “From gentleman to professional geologist: Henry De la Beche and the origins of the British Geological Survey.” At GSA’s ‘Connects 2021’ conference in Portland, Oregon, and also at the Mississippi Academy of Sciences in Biloxi, Mississippi, she presented (in person) “Henry Thomas De la Beche’s (1796-1855) *Duria antiquior*: Temporal visualization within the Golden Age of Geology (1788-1840)”. Other presentations in 2021 include:

- Clary, R.M. (2021, October). “Nevertheless, she persisted: Winifred Goldring and the practice and public dissemination of paleontology.” GSA Connects 2021, Portland, OR. (invited).
- Clary, R.M., and Dockery III, D.T. (2021, October). Charles Lyell (1797-1875) in Mississippi: The historic Town Creek locale. GSA Connects 2021, Portland, OR.
- Clary, R.M. (2021, August). Envisioning the past for a public audience: Charles Knight’s murals in Chicago’s Field Museum. Mississippi Academy of Sciences, Biloxi, MS.

Renee served as President of the History of Earth Sciences Society in 2021. She also serves GSA’s History and Philosophy of Geology Division as webmaster, permanent representative of the Joint Technical Program Committee, and as an editor for the Rock Stars series published in *GSA Today*. At GSA Connects 2021, she co-convened a session on Great Geological Outcrops and Locales, with Kathy Lohff and Jody Bourgeois, and also a Pardee session on Geoheritage with William Andrews, David Mogk, and Steve Semken. At Mississippi State University, Renee serves as Director of the Dunn-Seiler Museum.

John Diemer continued to serve as editor for the journal *Earth Sciences History*. He handled 21 volunteered papers during 2021. He also served as Editor of the INHIGEO Annual Record (No. 53) which is available on the INHIGEO website. He co-authored one chapter in GSA Memoir 218, and was sole author of a paper published in *Physis*, based on his presentation at the 2019 INHIGEO meeting held at the University of Insubria. He also participated in the 2021 INHIGEO meeting held in Warsaw, Poland, and published an article as part of the IUGS Anniversaries Series. John’s 2021 publications include the following:

- Diemer, J. A. 2021. *Earth Sciences History*. Volume 40, Number 2, pp. 293–634. Charlotte: History of the Earth Sciences Society. Editor’s Introduction, p. iv.
- _____. (ed.) 2021. International Commission on the History of Geological Sciences (INHIGEO) *Annual Record* No. 53. Editor’s Introduction, p. ix.
- _____. 2021. *Earth Sciences History*. Volume 40, Number 1, pp. 1–292. Charlotte: History of the Earth Sciences Society. Editor’s Introduction, pp. iii–iv.
- _____. and Diemer, L., 2021. The use of artwork to document geologic systems in the Geology of Russia (1845). In: *The Evolution of Paleontological Art*, edited by Renee M. Clary, Gary D. Rosenberg, and Dallas Evans. GSA Memoir 218, 117–126. Boulder: Geological Society of America. [https://doi.org/10.1130/2021.1218\(14\)](https://doi.org/10.1130/2021.1218(14)).
- _____. 2021. The geology of the Ural Mountains as understood by Roderick Murchison in 1845. Proceedings of the 2019 INHIGEO Meeting, University of Insubria, Varese, Italy, 2–7 September, 2019. *Physis*. Rivista Internazionale di Storia Della Scienza 56: pp. 33–41.

- _____ 2021. Transatlantic transfer of Paleozoic stratigraphic knowledge by G. W. Featherstonhaugh, 'The First U.S. Government Geologist'. 46th Annual INHIGEO Meeting, Warsaw, Poland.
- _____ 2021. Roderick Murchison's visit to Tcheketau Peak, Russia, 180 years ago. IUGS Anniversaries Series, IUGS E-Bulletin 181, <https://www.inhigeo.com/anniversaries.html> ; <https://www.iugs.org/>

Greg Good published "The Astronomers who Fell to Earth: Or, How the Copernican Revolution was completed in the Alps," *Physis: Rivista Internazionale di Storia della Scienza*, New Series, 2021, 56:7-19, thanks to persistent pestering by the editors. It's an honor to have an article in such a great collection of essays from a stellar INHIGEO symposium! Greg retired from the American Institute of Physics in January 2022. He is now a Visiting Scholar in the Department of History at West Virginia University, Morgantown WV. He is continuing a project collecting oral history interviews on Sun-Earth interactions (space weather) and is now working on several book projects. And fishing more often.

Greg worked with Marianne Klemun and others to organize a 3-session INHIGEO symposium for the International Congress of History of Science and Technology in Prague in July. The theme of the symposium was "Great to Small: Spatial and Temporal Scales in the History of the Geosciences". Thirteen papers considered topics from scaling in geological mapping, micro- and macro-evolution, and cosmography in geology, to a wide range of time scales from chemical reaction times to deep time. The geography of topics included Gondwanaland, England, Brazil, Germany, and the colonies of various empires.

Sandra Herbert announces a new mailing address: 100 Newbury Court, Apt 606, Concord, MA 01742. In 2021 she did some reviewing work in the history of geology for a journal (not *ESH*) and continued to work on her play "Castle on the Mall". In 2020 Sandra received the Sue Tyler Friedman Medal from the Geological Society of London for work she and others had done in 2007, published in *ESH* in 2009.

Kerry Magruder. As the History of Science Collections of the University of Oklahoma has begun to emerge from the pandemic, my focus has been on collecting and preserving the papers and books of Martin Rudwick, Hugh Torrens, Ken Taylor, Léo Laporte, and others. In November, Martin Rudwick and Hugh Torrens generously welcomed me to their homes where we boxed up additional shipments of their books and papers. Along with his remaining papers, Martin kindly donated more than 1,200 books, many of them annotated, including his copy of the first edition of Lyell's *Principles*. Hugh sent a third installment of his papers (more than 100 boxes so far) and a selection of his rare books. Finding aids for their papers are appearing here as they are processed: <https://archives.libraries.ou.edu/repositories/4/classifications/6>

Scholarships for short-term visiting fellows are available. The scope of the archive is open to historians of geology with inadequate support from home institutions to keep their papers intact. Please contact me for further information.

Cliff Nelson continues to prepare for publication his narrative analysis of the improvement of federal mapping and science in Gilded Age America, within the wider context of federal civil-service reform during 1877–1881.

COUNTRY REPORTS

Sarah (“Sally”) Newcomb is conducting historical research in the Bohr archives of the American Institute of Physics, now that covid restrictions are relaxed and the archives are open.

Steve Rowland received from the Geological Society of America’s History and Philosophy of Geology Division the Mary C. Rabbitt award for contributions to the history of geology. He contributed two chapters to the recently published Geol. Soc. Amer. Memoir 218, *The Evolution of Paleontological Art*: (1) “The Fritz Zerritsch/Erich Thenius suite of paleontological roll-ups and the pageant of life through time genre of paleontological art,” and (2) “Benjamin Waterhouse Hawkins and the early history of three-dimensional paleontological art” (co-authored with Robert Peck). Steve’s ‘anniversary’ article “Charles R. Knight’s (1874-1953) *Life Through the Ages*: Published 75 Years Ago” was published in the IUGS E-Bulletin, Issue 173, March 2021. He serves on the editorial committee of the *GSA Today* “Rock Stars” series, he is an associate editor of *Earth Sciences History*, and he is the vice president for North America of INHIGEO.

Dorothy Sack gave two conference presentations in 2021 related to the history of geology: one at the annual meeting of the American Association of Geographers (AAG) and the other at the GSA Annual meeting. She continues to serve on the Board of Directors of the AAG’s History of Geography specialty group. In the summer she conducted archival research related to the history of women in geomorphology, and she is currently working on a brief history of geomorphology for a section of a forthcoming textbook.

Annual report for 2021 compiled by Steve Rowland

UZBEKISTAN ANNUAL REPORT 2021

In 2021, the Montana University of Technology (MontanaTech), the Institute of Mining and Technology of New Mexico, as well as the University of Geological Sciences (Tashkent, Uzbekistan) agreed to cooperate (<https://www.uzgeolcom.uz/ru/page/64>). The University of Geological Sciences was established at the initiative of the President of the Republic of Uzbekistan in the system of the State Committee for Geology and Mineral Resources in 2020 on the basis of institutes (Institute of Mineral Resources, Institute of Geology and Geophysics, Institute of Hydrogeology and Engineering Geology, Institute of Geology and Exploration of Oil and Gas Fields, Institute of qualifications and retraining of personnel in the geological industry) and the Geological Museum (<https://uzgeouniver.uz/ru/pages/uni-haqida>).

A branch of the University of Pisa opened in Tashkent in 2021. The University of Pisa provides training for specialists, as well as research in the field of geology (<https://www.gazeta.uz/ru/2022/03/09/unipi/>).

Scientific articles related to the history of geology published in the *Geology and Mineral Resources* journal:

Islamov B.F., Isokov M.U. STRATEGIC DIRECTIONS OF GEOLOGICAL SCIENCE, PROBLEM ISSUES AND WAYS OF THEIR SOLUTION (N 2).

Isokov M.U., Mirkamalov R.Kh., Akhmedov M.Sh. SCIENTIFIC PROBLEMS OF THE GEOLOGICAL INDUSTRY AND TASKS SOLVED BY THE INSTITUTE OF MINERAL RESOURCES (N 2).

- Nurkhodzhaev A.K., Nurtaev B.S. FUNDAMENTAL SCIENCE AND ITS ROLE IN SOLVING CURRENT PROBLEMS OF INDUSTRIAL GEOLOGY (N 2).
- Yusupdjonov R.A., Khayitov N.Sh., Djalilov G.G., Umarov Sh.A. THE ROLE AND CONTRIBUTION OF THE INSTITUTE OF GEOLOGY AND EXPLORATION OF OIL AND GAS DEPOSITS IN THE DEVELOPMENT AND REPRODUCTION OF THE MINERAL RESOURCE BASE OF THE OIL AND GAS GEOLOGICAL BRANCHES OF THE REPUBLIC OF UZBEKISTAN (N 2).
- Bimurzaev G.A., Mavlonov A.A., Okhunov F.A., Andreev D.N. THE ROLE OF SCIENCE IN SOLVING CURRENT PROBLEMS OF HYDROGEOLOGY, ENGINEERING GEOLOGY AND GEOECOLOGY (N 2).
- Dulabova N.Yu., Azimov J.N., Baratov A.H. THE STATE OF THE STUDY OF THE TERRITORIES OF THE REPUBLIC BY REGIONAL GEOLOGICAL STUDIES OF VARIOUS SCALES, PROBLEMATIC ISSUES AND WAYS TO SOLVE THEM (N 2).
- Varisov A.A., Khakberdiev N.M., Golovko E.A., Zhukov A.V., Yuldasheva I.A., Khadimetov A.I., Dmitrieva V.S. HISTORY OF DEVELOPMENT AND FORMATION OF SE «STATE GEOLOGICAL INFORMATION CENTER». DEVELOPMENT STRATEGY OF INFORMATION AND ANALYTICAL SUPPORT OF THE GEOLOGICAL INDUSTRY (N 2).
- Mukhamedov A.A., Olovov X.X., Avulov J.M., Jabborov B.N. HISTORY OF JSC «URANKAMYOBMETGEOLOGIYA», CURRENT ACHIEVEMENTS AND FUTURE PROSPECTS (N 2).
- Abdullabekov K.N., Maksudov S.Kh., Tuychiev A.I. HISTORY OF SEISMOFORECASTING STUDIES IN UZBEKISTAN, SUCCESSES ACHIEVED, EXISTING PROBLEMS AND WAYS TO SOLVE THEM (N 2).
- Antonov A.E., Nurtaev B.S. STRUCTURES OF THE TURKESTAN OCEAN IN THE FOUNDATION AND PALEOZOIC FRAMING OF THE FERGHANA DEPRESSION (N 3).
- Olovov Kh.Kh., Mukhamedov A.A., Korsakov Yu.F. 70 YEARS OF URANIUM GEOLOGY OF UZBEKISTAN (N 3).
- Turamuratov I.B., Ezhkov Yu.B., Bekchanov Zh.I. SCANDIUM – METAL OF THE XXI CENTURY. Sc – POTENTIAL OF WORLD AND UZBEKISTAN (N 3).
- Dunin-Barkovskaya E.A., Bulina N.V., Umarov A.Z. OIL AND NATURAL SULFUR DEPOSITS IN SEDIMENTARY FOLDED AREAS. GEOLOGICAL FACTORS OF THEIR LOCATION AND MINERAL-GEOCHEMICAL SEARCH AND EVALUATION CRITERIA (on the example of the island of Sicily and the Fergana depression) (N 3).
- Umurzakov R.A. ACHIEVEMENTS AND PROSPECTS FOR USE TECTONOPHYSICAL ANALYSIS IN GEOLOGY AND SEISMOLOGY OF UZBEKISTAN (N 3).
- Kenjabaev A.T., Abdullaev M.X. STAGES AND PERSPECTIVES OF INTRODUCTION OF INFORMATION AND COMMUNICATION TECHNOLOGES IN MONITORING OF DANGEROUS GEOLOGICAL PROCESSES IN THE REPUBLIC OF UZBEKISTAN (N 5).
- Turamuratov I.B., Kholmurodov T.T., Rizaev M.M. MINERAL-RAW MATERIALS OF TITANIUM IN THE WORLD. PROSPECTS FOR DETECTING TITANIUM DEPOSITS IN UZBEKISTAN (N 6).

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Jubilees

90th birth anniversary of **Rakhimov Akbarhoja Kamilovich** – Chief Researcher of the State Institution "IGIRNIGM", Doctor of Technical Sciences, author and co-author of more than 200 scientific papers, including 10 monographs and 36 copyright certificates for inventions for drilling oil and gas wells, a number of departmental instructions (Geology and mineral resources, N 6).

80th birth anniversary of **Sabirov Khamro Sabirovich** – Head of the Laboratory of Experimental and Methodological Research of the State Unitary Enterprise "Central Laboratory" of the State Committee for Geology of the Republic of Uzbekistan, Candidate of Physical and Mathematical Sciences (N 1).

Antonov Alexander Evgenievich – Doctor of Geological and Mineralogical Sciences, Professor, Corresponding Member of the Russian Academy of Natural Sciences, Academician of the Academy of Mineral Resources of Kazakhstan, Member of the International Society for Geology of Mineral Deposits SG, co-author and author of more than 100 works devoted to the metallogeny of precious metals and other topical problems of geology (N 5).

70th birth anniversary of **Tsoi Vladimir Denievich** – Doctor of Geological and Mineralogical Sciences, Professor, Head of the Department of Exploration Methodology at the State Institution "Institute of Mineral Resources" of the State Committee of the Republic of Uzbekistan for Geology and Mineral Resources, author and co-author of 2 monographs, more than 120 articles in journals, materials meetings, collections, including in foreign publications (N 1).

Korsakov Yuri Fedorovich – head of the party of predictive and thematic work on uranium of JSC "Uranredmetgeologiya", participant as a representative of the Republic of Uzbekistan of international meetings of the Joint Uranium Group of the OECDIAEA on the preparation of the "Red Book" of the IAEA (N 3)

60th birth anniversary of **Karabaev Mamatxan Sadirovich** – is one of the leading scientists in the field of geochemistry and micromineralogy, Doctor of Geological and Mineralogical Sciences, Professor, co-author of about 70 scientific papers. awarded the state award for contribution and achievements in the development of the geological industry (2020) (N 3).

50th birth anniversary of **Isokov Maksud Uzakovich** – Director of the State Institution "Institute of Mineral Resources", Doctor of Geological and Mineralogical Sciences, co-author of 5 monographs, over 50 scientific articles in journals, including foreign ones, about 20 regulatory documents and methodological manuals governing geological exploration process (N 1).

In Memory of Colleagues:

85th birth anniversary of **Dalimov Turabek Nugmanovich** (18.08.1936-12.10.2011) – a prominent geologist, researcher in the field of petrology and geodynamics, teacher, leader, organizer and public figure, academician, Doctor of Geological and Mineralogical Sciences, professor (N 5).

Losses to Science:

Zimalina Valentina Yakovlevna (23/12/1935-27/07/2021) – Doctor of Geological and Mineralogical Sciences, Professor, Chief Researcher of the State Institution "Institute of Mineral Resources" (Geology and Mineral Resources, N 4).

Chunikhin Sergey Grigorievich (07/25/1939-07/22/2021) – Chief Researcher of the State Institution “Institute of Mineral Resources”, Candidate of Geological and Mineralogical Sciences (N 4).

Abdullaev Rakhmat Nurullaevich (10/21/1936-07/14/2021) – Geologist, Doctor of Geological and Mineralogical Sciences, Professor, Laureate of the Abu Rayhon Beruni Prize (N 5).

Artikov Turdali Usmanalievich (10/17/1941-09/21/2021) – A prominent scientist, one of the founders of the study of seismicity and seismic hazard of the territory of Uzbekistan, Doctor of Physical and Mathematical sciences, Professor (N 5).

Annual Report for 2021 compiled by L.N. Lordkipanidze, B.S. Nurtaev, and O.G. Tsay.

APPENDIX A: INHIGEO AFFILIATED ASSOCIATIONS

(Current as of July 2022)

| | |
|----------------|--|
| International | History of Earth Sciences Society (HESS) |
| Argentina | Comisión Argentina de Historia de la Geología / Argentina Commission on the History of Geology |
| Australia | Earth Sciences History Group, Geological Society of Australia (ESHG) |
| Austria | AG Geschichte der Erdwissenschaften (AWGHES) / Working Group “History of Earth Sciences”, Austrian Geological Society |
| Chile | Grupo de Historia de la Geología / History of Geology Group, Geological Society of Chile |
| China | Commission on the History of Geology, Geological Society of China |
| France | Comité Français d'histoire de la Géologie (COFRHIGEO) / French Committee for the History of Geology |
| Italy | Sezione di Storia delle Geoscienze / History of Geoscience Section, Geological Society of Italy |
| Japan | Japanese Association for the History of Geosciences (JAHIGEO) |
| Poland | Polish Commission on the History of Geological Sciences (POCHIGEO), Polish Geological Society; Polish Geological Institute |
| Serbia | Секција за историју геологије СГД / History of Geology Division, Serbian Geological Society |
| United Kingdom | History of Geology Group (HOGG), Geological Society of London |
| Venezuela | Sociedad Venezolana de Historia de las Geociencias / Venezuelan Society of History of Geosciences |

APPENDIX B: HONORARY SENIOR MEMBERS

(Current as of July 2022)

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 Dr Gabriel Gohau, France
 Professor Algimantas Grigelis, Lithuania
 Professor Aleksandar Grubic, Serbia
 Professor Léo F. Laporte, USA
 Professor Wolf Mayer, Australia
 Professor Wojciech Narębski, Poland
 Professor Sally Newcomb, USA
 Professor Martin J. S. Rudwick, United Kingdom
 Professor Janusz Skoczylas, Poland
 Professor Philippe Taquet, France
 Professor Kenneth L. Taylor, USA
 Professor Hugh S. Torrens, United Kingdom
 Professor J.B. (Bruce) Waterhouse, New Zealand
 Professor Zbigniew Wójcik, Poland

APPENDIX C: NEW MEMBERS ELECTED IN 2021

Marie-Françoise Aufrère, France (A)
Philip John Currie, Canada (O)
Françoise Dreyer, France (O)
Grigory Ilyin, Russia (A)
Olga Martirosyan, Russia (O)
David (Bruce) Norman, UK (O)
Rehan Opperman, South Africa (A)
Cameron Roy Penn-Clarke, South Africa (O)
Patrick D. Roycroft, Ireland (O)

Addresses are provided in the ‘INHIGEO Members’ list (see Appendix D).
O = Ordinary Membership; A = Associate membership

INHIGEO MEMBERSHIP

APPENDIX D: INHIGEO MEMBERSHIP

(as of August 16, 2022)

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(A) Associate Member

(HSM) Honorary Senior Member

Bottom line indicates national affiliation.

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Positions held (with dates):

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Scientific Publications (summarize 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 geosciences or Associate Membership.

Nominators: (If available: Current INHIGEO member in same country or appropriate Government representative, another INHIGEO member, INHIGEO Board Member)

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