

International Commission on the History of Geological Sciences

INHIGEO

ANNUAL RECORD No. 55



Conference banner for the 47th INHIGEO Symposium in Les Eyzies, France.

INHIGEO

A Commission of the International Union of Geological Sciences

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*An affiliate of the International Union of the History and Philosophy of Science
and Technology, Division for the History of Sciences and Technology*

Covering Activities generally in 2022

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PRESIDENT'S MESSAGE



Dear INHIGEO Members,

I am really delighted to present to you the INHIGEO *Annual Record* 55, which covers various activities of our Commission during 2022.

After two years of restrictions imposed by the Covid-19 pandemic, our community was finally able to meet again in person at the 47th INHIGEO Symposium at Les Eyzies in the wonderful French region of Perigord: 40 papers and 10 posters were presented and lively discussed at the meeting, thanks to the excellent organization provided by our French colleagues.

Our Commission is a strongly interdisciplinary group and I am firmly convinced that this aspect is one of our major strengths: in fact, we actively contributed to the IUGS 60th Anniversary Celebrations (with the organization of a webinar on the history of the International Geological Congresses) and we also established a fruitful collaboration with the IUGS International Commission on Geoheritage within the project on IUGS Geological Heritage Sites. Moreover, we took part, as one of the official partners and with the organization of an INHIGEO symposium, to the 6th International Palaeontological Congress in Thailand.

The various 'virtual' experiences of the previous years have also opened some new opportunities for the future, in order to involve our community and explore our potential outreach: the organizations of INHIGEO webinars and open forums, as well as the contribution to promotional online events within IUGS and IUHPST/DHST, have already been established as one of our ongoing tasks.

The country reports included in this *Annual Record* confirm the high quality of the research carried out by INHIGEO members in several different disciplinary and geographical contexts. Our website has been enriched with new sections and is constantly updated with the links to the INHIGEO "Anniversaries Series", historical papers published monthly in the *IUGS E-Bulletin*.

The extent of the activities carried out during 2022 shows that communication, interdisciplinary dialogue and interactions with other groups and communities within the sciences

and humanities are always very important aspects of the research work and the outreach commitment of INHIGEO. We will continue to support 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 more members from non-represented countries and young scholars.

The 48th INHIGEO annual symposium will take place at Krakow in Poland and I look forward to meeting many of you on that occasion. The Polish colleagues of the organizing and scientific committee have been working hard for this meeting and they all deserve our deep gratitude.

I would also like to thank the contributors to the *Annual Record* and above all our Editor John Diemer, who worked at this issue with his usual editorial experience, expertise and accuracy. I hope that this message will find you all in good health and great spirits.

Enjoy reading the *Annual Record* 55 !

Ezio Vaccari
INHIGEO President (2020-2024)

SECRETARY-GENERAL'S REPORT

In 2022, INHIGEO happily returned to its peripatetic mode of annual meetings and congregated at the beautiful site of Les Eyzies in southern France, thanks to our French colleagues from COFRIGEO. We had interesting fieldtrips and inspiring talks – despite the fact that several of us came down with Covid19 during the conference. Main topics of talks were geology and prehistoric archaeology, the geology of caves, history of Quaternary geology and history of Miocene geology. We held our business meeting in Les Eyzies on September 18, 2022, the minutes of which are published in the INHIGEO Quarterly Circular of December 2022.

INHIGEO also sponsored a history of palaeontology symposium at the 6th International Palaeontological Congress “From Gondwana to Laurasia” at Khon Kaen, Thailand, 7–11 November 2022, which apart from the interesting presentations resulted in several applications for INHIGEO membership from hitherto unrepresented countries in southeast Asia.

Preparations for the 48th INHIGEO Symposium at Cracow in Poland 25 July to 4 August 2023 are well on their way. There will also be an INHIGEO sponsored session on History of Volcanology and Historical Volcanology at the 28th International Union of Geodesy and Geophysics (IUGG) General Assembly in July 2023 in Germany.

INHIGEO currently has 271 members from 50 countries, 18 of whom have been added in 2022. The INHIGEO Board has decided to be more flexible about membership countries. Members are welcome to self-identify to which country or countries they want to be counted; they may also change in future.

In October 2022, Marianne Klemun (Austria), current INHIGEO Vice President for Europe, received the GSA History and Philosophy of Geology Division's Mary C. Rabbitt Award at the Geological Society of America annual meeting in Denver, USA. She was also awarded on November 23 (2022) the Medal of Honour from the Carinthian Society for History for her research on history of natural sciences within a political context.

In Les Eyzies, the INHIGEO Board awarded the new INHIGEO Early Career Award to Maddalena Napolitani for her presentation “Painting the mountains between art and Earth sciences during the 2nd half of the 19th century: some French case studies” and the INHIGEO Student Prize for best presentation by a Master/PhD student to Timothé Lhoste for his talk on “Fabriquer l'homme fossile: Enquête autour des vestiges de la Denise et de leur contexte stratigraphique”.

INHIGEO member Daniele Musumeci was awarded the Quintino Sella Prize for the History of Geosciences in Honour of Nicoletta Morello and Bruno Accordi on the 20th September 2022 by the Italian Geological Society.

The INHIGEO ballot for 2023 is on its way; 24 nominations from 17 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 again been very active in 2022 to increase its visibility and public outreach. The INHIGEO website is in the capable hands of Johannes Mattes and is continuously updated and expanded.

INHIGEO contributed various outreach activities to the IUGS 60th Anniversary: INHIGEO President Ezio Vaccari took part in the virtual event Happy Earth Day 2022 on 22nd April 2022 with a short video within the greetings from each IUGS commission to mark Earth Day. An online INHIGEO special event featuring the Histories of the International Geological Congress (IGC) and the IUGS was held on 8 October 2022. INHIGEO successfully submitted four of “The First 100 IUGS Geological Heritage Sites” and presented them at the 60th IUGS Anniversary event at Zumaia (Basque country, Spain) in October 2022.

The INHIGEO Webinar Series was inaugurated on July 11th, 2022, with an informal meeting to present the initiative.

Publications and Outreach Coordinator Kathleen Histon has successfully revived INHIGEO’s contributions to the monthly IUGS E-Bulletin and to the journal *Episodes*. Thirteen contributions to the Anniversary series have been published in 2022:

- Wolf Mayer: William Keene: Geologist, Engineer and Collector, in France and New South Wales
- Martin J.S. Rudwick: William Buckland’s Bone Cave (1822): Time-Travel Into Earth’s Deep History
- Jiuchen Zhang, Jingfei Zhang, Gengshen Zhan: Geological Society of China: Foundation and Development
- Simon Nathan: New Zealand Pioneer Geologist Julius von Haast (1822-1887)
- Ezio Vaccari: Paolo Gorini’s Experiments on the Formation of Volcanoes in May 1872
- Sharad Master: Arthur William Rogers, FRS (1872–1946), Pioneer in the Geological Mapping of the Cape of Good Hope
- Sally Newcomb: Marie Tharp’s Discovery of the Mid Ocean Ridge Rift Valley in 1952
- Kathleen Histon, Martina Kölbl-Ebert, Ezio Vaccari: Organizing the Geological Sciences: Retreading the Path from International Congresses to Scientific Union
- Pierre Savaton: The Contribution of the 1822 Map by Jean-Baptiste Julien d’Omalius d’Halloy to the Geological Cartography of France
- Johannes Mattes: The Serbian Geoscientist Jovan Cvijić (1865–1927) and the Emergence of Karst Geomorphology
- Alberto Riccardi: The Role of Bailey Willis (1857–1949) in the Development of Northern Patagonia

- Martina Kölbl-Ebert: Earthquake in Chile observed by Maria Graham 200 years ago
- Christer Nordlund: An Anonymous Reformer of Mineralogy: Axel F. Cronstedt at the Swedish Bureau of Mines

All anniversaries are archived on the INHIGEO website:

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

During 2022, one book review, one general history of geology paper and five papers from various authors completing the IGC Histories series have been published in *Episodes*.

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 for being part of our international INHIGEO family!

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



EDITOR'S MESSAGE FOR THE 2022 ANNUAL RECORD, NO. 55

The year 2022 was an active one for the members of INHIGEO as documented by the 55th edition of the INHIGEO *Annual Record*. Respondents from more than 25 countries provide fascinating accounts of research projects, publications, meeting presentations and field-based studies that took place during 2022. The wide range of activities clearly demonstrates that the history of geology is alive and well around the world.

A highlight for the members during 2022 was the 47th INHIGEO symposium that took place in September in Les Eyzies, France. The congress was convened by a team of colleagues from COFRIGEO including Claudine Cohen, Françoise Dreyer, Gaston Godard, and Pascal Richet. The congress was accompanied by well-organized and very informative field trips before, during and after the symposium. The insights into the archeology of cave use including cave art were very memorable. Plans for the 48th INHIGEO symposium, to be held from July 31 to August 4, 2023 at Krakow, Poland, are well underway. It promises to be an exciting and fascinating symposium accompanied by multiple field excursions.

As was the case in previous years, I want to thank all of the membership for reporting in a timely fashion. The well-established practice of assembling reports by country is very helpful and I want to thank the country coordinators for undertaking that valuable task. It is always a rewarding experience to read about the activities of INHIGEO members that continue to increase knowledge of the history of the geosciences. Most of all, it has been a pleasure to correspond with so many INHIGEO members during the past year. I look forward to more interactions in the coming year.



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



CONFERENCE REPORTS

INTERNATIONAL COMMISSION ON THE HISTORY OF GEOLOGICAL SCIENCES
47TH INHIGEO SYMPOSIUM 15–24 SEPTEMBER 2022
LES EYZIES, FRANCE



Figure 1: Banner for the International Commission on the History of Geological Sciences (INHIGEO) 47th Meeting, Les Eyzies, France, from 15–24 September 2022 with pre-, intra, and post-meeting field trips.

In 2022 members of INHIGEO met in southwestern France in the heart of a cave district with abundant Paleolithic archaeological sites including stunning examples of cave art. The weather for the field trips and the meeting was ideal with cool evenings and mornings and abundant sunshine in the afternoons. Both the meeting and the field trips were well run with good facilities for presentations (including one lecture that took place inside a church while waiting for a brief shower to pass by). The guidebooks were excellent and provided immediate insights into the significance and previous work done at the various field trip localities.

The conveners for the meeting were: Claudine Cohen (Ecole des Hautes Etudes en Sciences Sociales, Paris and Ecole Pratique des Hautes Etudes, Laboratoire Biogéosciences, Dijon), Françoise Dreyer, Gaston Godard (Université de Paris, IPGP, 1 rue Jussieu, 75238 PARIS cedex 05), and Pascal Richet.

Essential to the success of the meeting were the following presenters and guides who assisted with the meeting: Estelle Bougard, Bruno Cahuzac, Louis de Cèze, Jean-Pierre Chadelle, Nathalie Fourment, Oscar Fuentes, Yves Gilly, Brad Gravina, Marie Locascio, Xavier Margarit, Marc Martinez, Johannes Mattes, Gildas Merceron, Thierry Pélissié, Geneviève Pinçon, Serge Maury, Catherine Roudet, Christophe Vigne, and Marie Yserd.

Also contributing to the success of the meeting were the following organizations: INHIGEO, COFRIGEO, EHES, EPHE, DRAC Bordeaux, Les Editions du Ruisseau, UMR Paleovprim de l'Université de Poitiers, Association Pierre de Lune et Espace Météorite Paul-Pellas

(Rochechouart), Musée national de Préhistoire des Eyzies, Pole d'Interprétation de la Préhistoire (Les Eyzies), Réserve géologique du Lot, Réserve géologique de Saucats-La Brède, Office du Tourisme des Eyzies, and Municipalité des Eyzies.

Programme

Thursday 15 September

The pre-meeting fieldtrip commenced at 1 pm when participants gathered at the railway station at Poitiers, and then boarded the bus which took the group to the human paleontology lab (PALEVOPRIM) at the University of Poitiers. There the group had an opportunity to inspect parts of an impressive collection that includes more than 150,000 specimens. The collection includes more than 13,000 specimens and remains of vertebrates from the main Cenozoic sedimentary basins of the Nouvelle Aquitaine region of southwestern France. In addition, and of particular interest, were the resin casts of bones from several specimens found in the Sahara desert of Chad. The specimens may be from the earliest known hominin (*Sahelanthropus tchadensis*), which was capable of bipedalism and has an age of about 7 my. The results of the study were recently published in *Nature*.



Fig. 1.1 – 3D models of the postcranial material of *Sahelanthropus tchadensis*.

From left to right: the femur, in posterior and medial view; the right and left ulnae, in anterior and lateral view.

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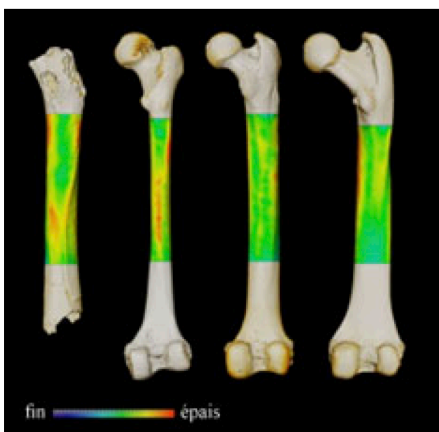


Fig. 1.2 – Example of analysis performed to interpret the locomotor mode of *Sahelanthropus tchadensis*. 3D cortical thickness variation map for the femurs of (from left to right) *Sahelanthropus*, an extant human, a chimpanzee and a gorilla (in posterior view). The colour scale varies from blue (thin) to red (thick).

This analysis enabled us to understand the variations of mechanical constraints on the femur and to interpret these constraints in terms of locomotor mode.

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Figure 2. Replicas of *Sahelanthropus tchadensis* specimens in the PALEVOPRIM / CNRS collection at the Université de Poitiers. Image from the INHIGEO field trip guidebook (p. 3/12).

After leaving Poitiers University we made a stop at Nouaillé-Maupertuis, on the banks of the Miosson River. The plateau located northwest of Nouaillé was the site of the Battle of Poitiers

fought on 19 September 1356 between a French army commanded by King Jean II le bon, and an army commanded by Edward, Prince of Wales, during the Hundred Years War. The French were badly beaten and the King of France was taken prisoner by the English. This former Benedictine abbey of Saint-Junien, founded in the 7th century and fortified in the 15th century, comprises a Romanesque-style church, convent buildings, walls, towers and moats, and is in a terrain composed of Jurassic Bajocian limestones with some flints. This locality produced the floating stones of Poitou, first reported in 1635 to Peiresc by Father Marin Mersenne. Fossils from the area were used by Alcide d'Orbigny in the 1830s to discriminate intervals of strata in his study of the *Terrains Jurassique* (1842–1850).

In the late afternoon, we drove to Saint-Junien where we stayed and dined at Le boeuf Rouge. The dinner was excellent, the first of many convivial meals that we enjoyed during the conference.

Friday September 16, 2022

The first stop on Friday, September 16, 2022 was at the quarry exposure of the Rochechouart-Chassenon impact breccias overlying a fractured granite, on the western margin of the Massif Central near the city of Limoges. The impact occurred between 207 and 203 million years ago, close in time to the Triassic-Jurassic boundary (201.6 Ma). The crater generated by the impact is estimated to have been about 20 km in diameter, but is no longer visible due to erosion. Evidence for the impact comprises large amounts of breccia, the origin of which has been debated for more than 240 years since Nicholas Desmarest first observed it in 1767 at Chassenon. He attributed the alteration of the material to underground fires but without extrusions of lavas. Other workers provided a range of explanations for the breccias, as detailed in the field trip guide prepared by Gaston Godard and others. As explained in the field trip guide, it was François Kraut who first interpreted the breccias containing shocked quartz to be the result of a meteorite impact, analogous to the Ries crater in Bavaria. He published his findings in the late 1960s and as a result the “hypothesis of the formation of the Chassenon-Rochechouart breccias during an asteroid impact was definitively adopted by the scientific community” (Cohen, Dreyer, Godard and Richet 2022, p. 7). In 2008, the Rochechouart impact structure was named the “Réserve Naturelle Nationale de l'astroblème de Rochechouart-Chassenon” and it comprises 12 sites representative of the geological features of the impact structure. The fieldtrip party benefited greatly from the presentations made by staff members of the Réserve Naturelle Nationale.

At the Champagnac quarry we had a good view of a highwall in the quarry exhibiting the highly fractured granitic Variscan basement containing listric faults, overlain by fallout impact breccias at the top. The quarry, which was opened in the 1980s, is being actively worked and we viewed the highwall from a safe distance. Several blocks of the fallout breccia were on display at the viewpoint and they comprised “a heterogenous mixture of fragments of basement rocks, bound together by a glassy cement. These breccias rest on a cataclased granite, very strongly fractured, with some veins of pseudotachylites and listric faults developed during the impact” (Cohen *et al.*, 2022, p. 9).

The next site visited was the Chassenon Roman quarry (stop 3.2.3 in the fieldtrip guidebook). The quarry was used between the 1st and 4th centuries to build the village of Cassinomagus (Chassenon) known for its 1st century thermal baths. The quarry has recently been reopened to acquire stone for restoration of the thermal baths. The quarried rock is a fallout impact

breccia with angular fragments of gneiss, granite and mica schists derived from the Variscan basement.

We continued on to the village of Champonger (site 3.2.2 in the fieldtrip guidebook) where we had the opportunity to examine shatter cones in the walls of a house and garden. The shatter cones formed in the fine-grained rock due to the passage of the shock wave.

The next stop of the morning was the Paul-Pellas meteorite museum in Rochechouart, where many of the houses and monuments are built from the fallout breccia. The museum “Maison de la RéserveEspace Météorite Paul Pellas” was created by the Pierre de Lune association in 1996. The museum provides excellent displays that explain the solar system, meteorites, impact craters, and the Chassenon-Rochechouart impact in particular. In addition to many samples of the local impact breccia, there are examples from elsewhere in the world, notably a large slabbed section of a South African impact breccia.

We picked up the 52 boxed lunches in Rochechouart and then had a picnic by the nearby lake of Vayres. It was a sunny day and the participants enjoyed the shaded picnic spots. After lunch, we drove through vineyards and past castles near Chalus and Perigeux on the way to Les Eyzies where we arrived in the late afternoon, in time to check into our respective hotels and register for the meeting. We then gathered for a welcoming speech from Brad Gravina, followed by a tour of the excellent Musée national de la Préhistoire (Figure 3).



Figure 3. INHIGEO participants assembled in the foyer of the Musée national de la Préhistoire in anticipation of the guided tour prior to the opening reception. Photo courtesy of Fabiana Console.

The tour was followed by a reception on the upper terrace of the museum (Figure 4) where we were welcomed by Philippe Lagarde, the mayor of Les Eyzies, and by Philippe Taquet, president of Cofrhigeo (Figure 5).

INHIGEO AND OTHER CONFERENCES



Figure 4. INHIGEO participants gathered on the upper terrace of the Musée national de la Préhistoire for the opening reception. Photo courtesy of Fabiana Console.



Figure 5. Welcoming remarks from Phillippe Taquet, President of Cofrhigeo (left), and Philippe Lagarde, the mayor of Les Eyzies (right). Photo courtesy of Fabiana Console

The terrace provided a marvelous view of the Vézère River valley with its many cliffs and overhangs in the Cretaceous limestones of the region (Figures 6 and 7).



Figure 6. View from the upper terrace of the Musée national de la Préhistoire overlooking Les Eyzies and the Vézère valley. Photo courtesy of Violeta Pukelyete.

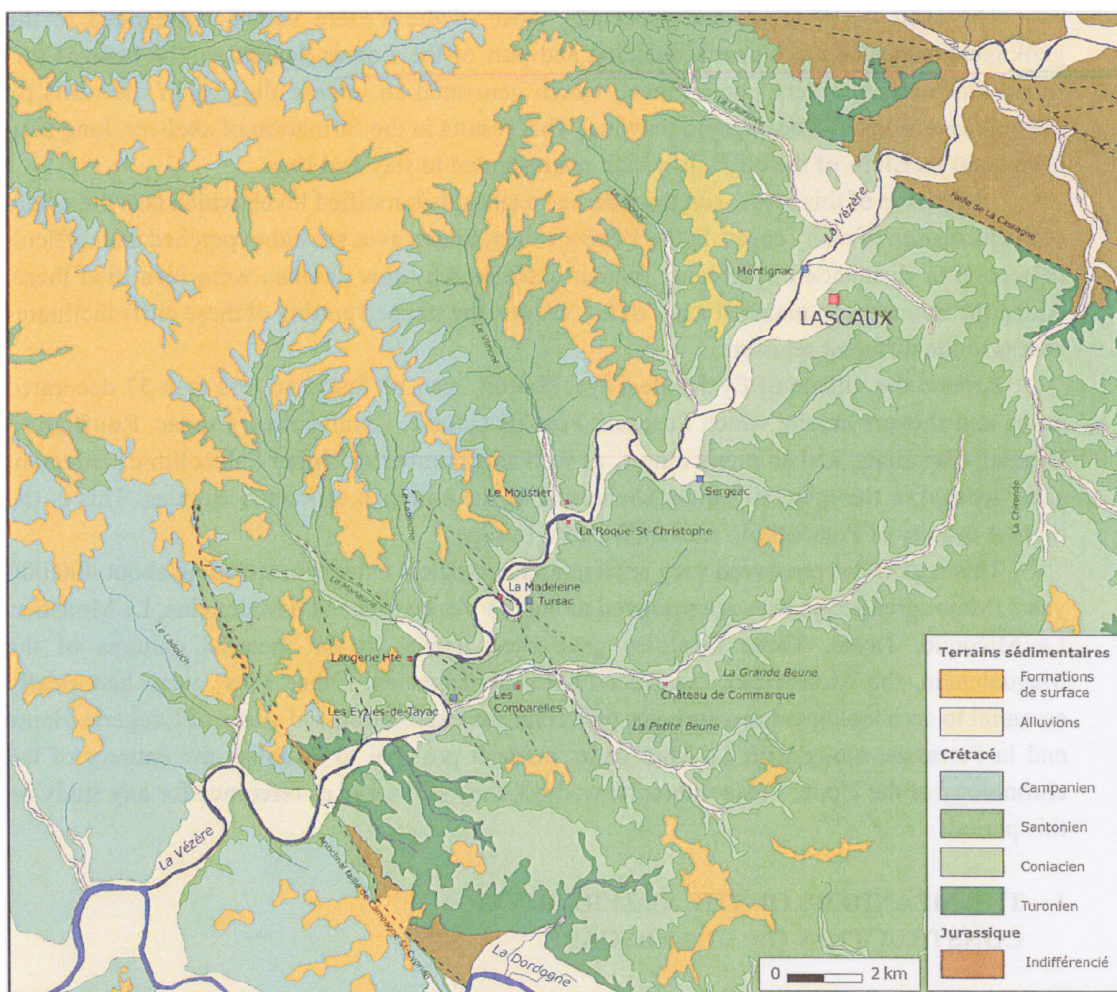


Figure 7. Geological map of the Vézère valley by Norbert Aujoulat, from the "Program for Participants"

Saturday, September 17, 2022

The program of talks began at 9 am in the Pole d'Interprétation de la Préhistoire (PIP) amphitheatre. The abstracts for the talks have been gathered together in an 'Abstracts' volume. All of the talks were held at the well-appointed, modern PIP which has educational displays of many of the Paleolithic sites in the region. The amphitheater is on the ground level and it has a sunny lobby and an outdoor terrace where the coffee breaks were enjoyed and posters viewed. We were welcomed by Christophe Vigne, the director of PIP, and then the first session on "Prehistory and Geology" began with presentations by Claudine Cohen, Jim Secord, and Silvia Figueirôa, with Professor Philippe Taquet presiding (Figure 8).



Figure 8. Introductory remarks from Philippe Taquet, for the first session of the 47th INHIGEO Symposium. Photo courtesy of Fabiana Console.

The talks were as follows:

- Claudine COHEN – *“Archaeogeology” and the foundation of Prehistory in mid-19th century France.*
- James SECORD - *Writing humans out of the landscape: Antiquarians and geologists on the Parallel Roads of Glen Roy.*
- Silvia FIGUEIRÔA - *Prehistory and archaeology in the pages of L'Echo du Monde Savant (1834–1846).*

Coffee Break

The coffee break was followed by the second session on “Prehistory and Geology” with Professor Ezio Vaccari presiding:

Thimothé LHOSTE - *Fabriquer l'homme fossile : Enquête autour des vestiges de la Denise et de leur contexte stratigraphique*

Johannes MATTES - *Reasoning about the Earth's underground: Visual evidence, imagination and authenticity in the travel accounts of J. A. Nagel (1748/49)*

Lunch

The third session, with Professor James Secord presiding, was entitled “Archaeology and Geology of Caves”. The following presentations were made:

Romain PIGEAUD - *Palaeolithic uses of natural reliefs and geological formations in South Western French cave art : for a history of interpretations in prehistoric archaeology*

Kathleen HISTON & Ezio VACCARI - *Cave exploration and human palaeontology in the writings of Arturo Issel (1842-1922)*

Ria LITZENBERG - *The Swabian Jura as a center of early art*

Coffee Break

The session after the coffee break was presided over by Professor Claudine Cohen and it focused on the topic of “Prehistory, Geologie and Ideologies” (Figure 9).



Figure 9. Claudine Cohen (on right) introducing the presentation by Martina Kölbl-Ebert (seated).
Photo courtesy of Fabiana Console.

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Presentations were made by:

Martina KÖLBL-EBERT - *Prehistoric archaeology and Quaternary geology in Nazi Germany*
Marianne KLEMUN - *Lake dwellings : A prehistoric “Scientific Object” between culture and nature, Europe and Oceania in the 19th century.*
Rénée CLARY - *Prejudice on parade: Charles R. Knight’s artistic renditions of early Hominins.*
Steve ROWLAND - *The puzzling archaeology of Gypsum Cave, Nevada (U.S.A.) and the question of when humans first arrived in North America.*

Dinner - Dinner was on our own.

After dinner, Serge MAURY & Jean-Michel GENESTE, presented a lecture and film entitled *Gestes de la préhistoire / The Gestures of Prehistory*. The fascinating film captured the process of working stones into a variety of tools.

Sunday, September 18, 2022

Sunday morning began with Professor Claudia Principe presiding over a session entitled “Concepts and Disciplines”. The presenters were:

Bernard GUY - *From deep time to physics: The contribution of geology to the interpretation of some fundamental concepts*
Jacques TOURET - *The birth of geochemistry and ecology*
Margret HAMILTON - *Eduard Suess’s concept of eustatic sea level movement during his research in the Moldanubicum in Lower Austria. The cross-section Eggenburg-Horn*
Eugenija RUDNICKAITĖ - *Investigations of the Lithuanian Quaternary deposits of Duke Antanas Giedraitis in 1878-1895 and his approach to the theories of continental glaciation and polyglacialism*

Coffee Break

The session after coffee break was presided over by Professor Françoise Dreyer. The topic of the session was “Case Studies - History of Geology in France”. This was the first of three sessions on this topic. The presenters in the first session on this topic were:

Philippe TAQUET - *Georges Cuvier’s “elective affinities”*
Patricia BOBECK - *Abbé Paramelle’s early excursions and hydrogeological observations in the Department of Lot*

Lunch

The session after lunch was presided over by Professor Renée Clary. This was the second of three sessions on the topic of “Case Studies - History of Geology in France”. The presenters of the session were:

Sharad MASTER - *French involvement in the geological studies of Southern Africa from the 17th to 19th centuries*

Wolf MAYER - *Geological observations and investigations by French scientists and naturalists in Australia and Antarctica, 1792-1840.*

Susan TURNER - *Hunting for fossil bones: French women in vertebrate palaeontology.*

Coffee Break

The session after the coffee break was the third and final session on “Case Studies - History of Geology in France”. It was presided over by Professor Pascal Richet. The presenters for the session were:

Maddalena NAPOLITANI - *Painting the mountains between art and Earth sciences during the 2nd half of the 19th century: Some French case studies.*

Joanne BOURGEOIS - *A 1958 snapshot of oceanography: The 83rd CNRS international colloquium.*

Leonid KOLBANTSEV & Irena MALAKOVA - *Scientific relations of Alexander P. Karpinsky (1847-1936) with France.*

INHIGEO Business Meeting

The last scheduled event of the day was the INHIGEO Business Meeting, jointly run by the President of INHIGEO, Professor Ezio Vaccari, and the Secretary-General of INHIGEO, PD Dr Martina Kölbl-Ebert (Figure 10). Reports were made and new business was discussed, including

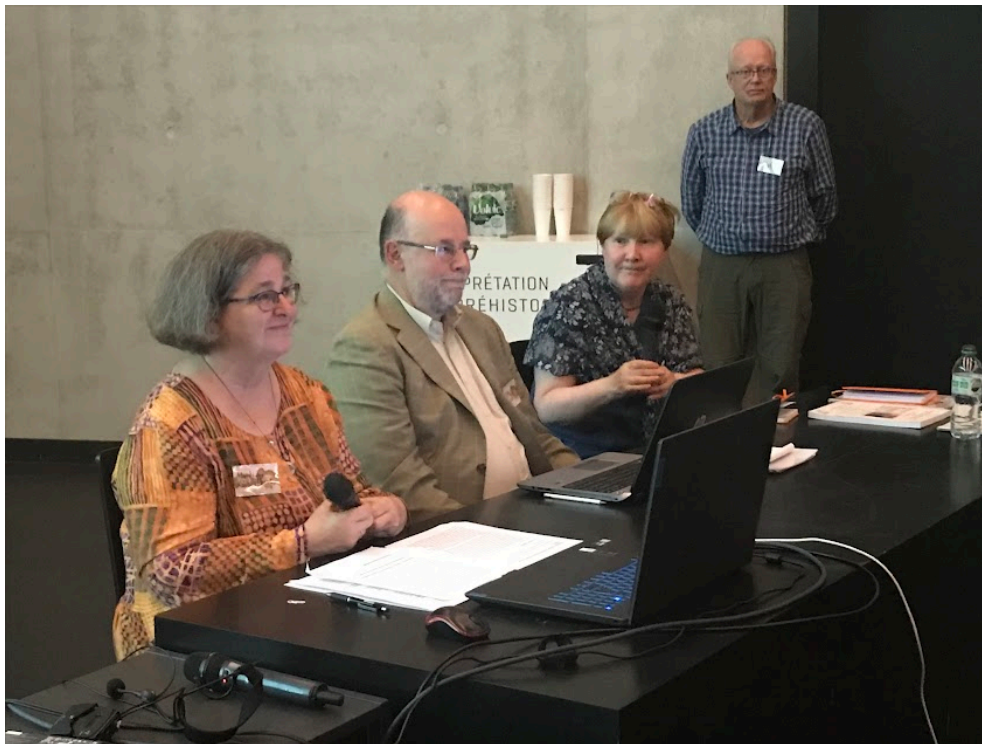


Figure 10. INHIGEO officers at the annual business meeting with Martina Kölbl-Ebert (left), Ezio Vaccari (middle), Kathleen Histon (right), and John Diemer (standing, far right). Photo courtesy of Fabiana Console.

the locations of future INHIGEO meetings: 48th INHIGEO Symposium in Krakow, Poland (2023), 49th INHIGEO Symposium in Busan, South Korea (2024) in conjunction with the 37th International Geological Congress (IGC), 50th INHIGEO Symposium in Dunedin, New Zealand (2025), in conjunction with 27th International Congress of History of Science and Technology (ICHST).

Monday, September 19, 2022

The full day mid-meeting field trip occurred on Monday, September 19, 2022, and comprised visits to Lascaux IV, La Ferrassie, and Le Moustier (Figure 11) as described below.

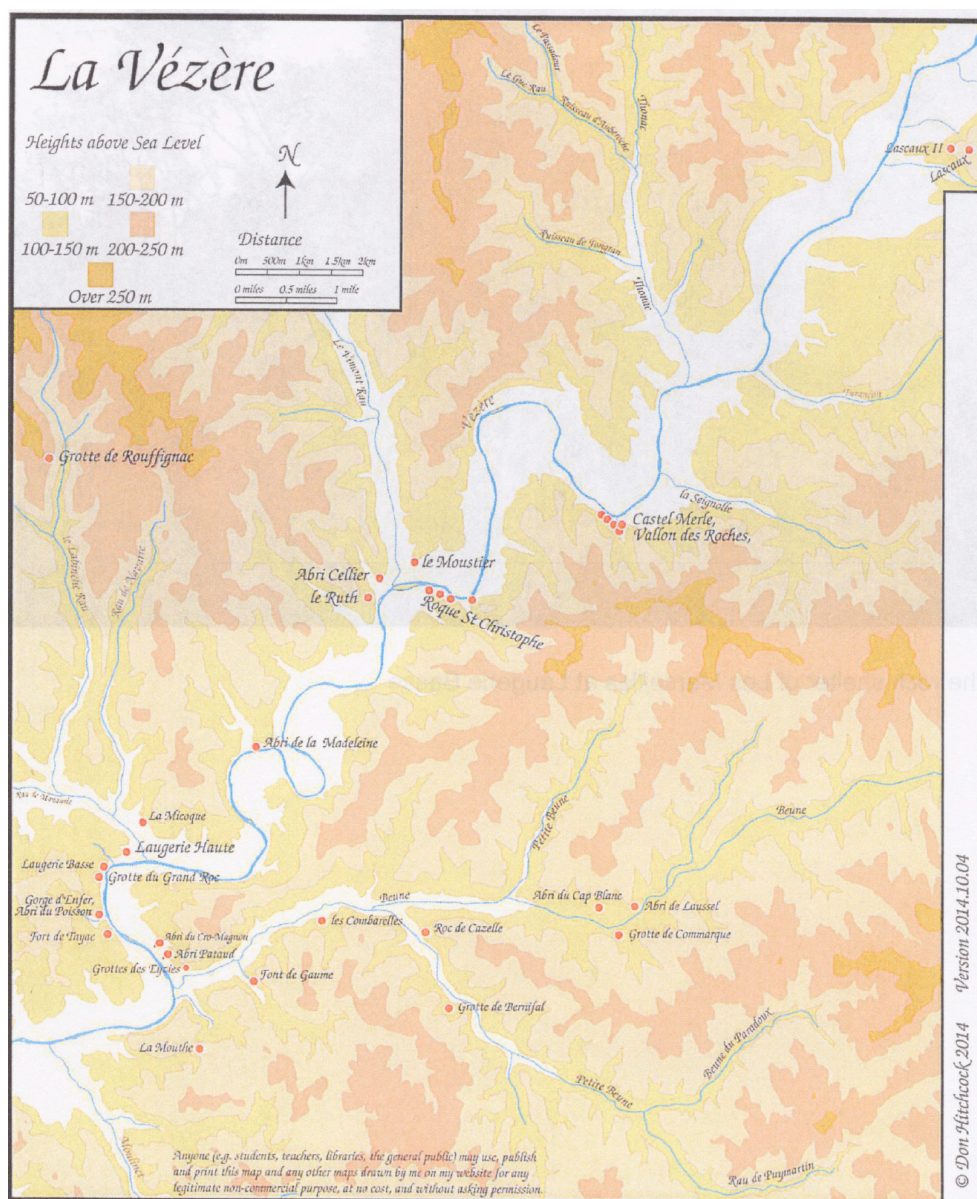


Figure 11. Map of the Lower Vézère Valley with Paleolithic sites indicated by red dots. From a map by Don Hitchcock (2014) as it appears in the “Program for Participants” of the 47th INHIGEO Symposium.

The group boarded the bus at the municipal parking lot at Les Eyzies at 8:30 am and set off for the visitor center at Lascaux (Figure 12). At the visitor center groups of ~25 were led through the facsimile cave, Lascaux IV. The leader of our group was Emma Roland and each member of the group was equipped with a headset so that we could follow her narrative.



Figure 12. Entrance to Lascaux IV visitor's center.

During the tour, we learned about the variety of animals depicted in the cave paintings, including aurochs, horses, deer, ibex, the rare bear, and even a two-horned 'unicorn' (Figure 13). In addition to the animals, mysterious signs in the form of rectangles, crosses, grids and dots, occur in the cave. Our guide also presented the history of discovery of the original cave. The cave was at 13 degrees and the tour lasted for about an hour.



Figure 13. Depiction of a quadruped (horse?) in the Lascaux IV cave.

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We were then taken to the display area where aspects of the cave were presented via interactive displays and additional recordings on hand held tablets (Figures 14 and 15).



Figure 14. Display area for the Lascaux IV visitor center.



Figure 15. Three-dimensional model of Lascaux cave.

Boxed lunches were provided and enjoyed before moving as one group to the Le Moustier shelter where we were able to view the site of the excavation. The history of the discovery and excavation of the site was described by Brad Gravina. The site contained a Neanderthal human skeleton and flint tools, and gives its name, the Mousterian, to the end of the Mid-Paleolithic (150,000 to 40,000 BC).

The bus then took the group to the La Ferrassie shelter located at the confluence of two valleys, about 4 km from Le Bugue (Figure 16).



Figure 16. Participants at the La Ferrassie quarry listening to an introduction by Alain Turq and Brunot Moret.

We were introduced to the site by Alain Turq and Bruno Moret. Deposits of Mousterian, Chatelperronian and Aurignacian ages have been identified at the site. Several Neanderthal (Mousterian) skeletons were recovered from the site, including the remains of an infant. There may also be *homo sapiens* skeletal remains in the cave. The stratigraphy of the site has been worked on in detail and some of the deposits have been dated at 50-45 ka. According to the guide book, “these excavations establish one of the referential stratigraphic sequences of the Paleolithic of Western Europe, where the first traces of symbolic expression by Neanderthal Man are brought to light (burial, cup signs carved on the rock, presence of dye) as well as modern humans’ early symbolic expression (decorated blocks).” (Cohen *et al.*, 2022, p. 24).

After our visit to La Ferrassie, the group boarded the bus once more and returned to Les Eyzies.

Free time and dinner at Les Eyzies

Tuesday, September 20, 2022

During the morning of Tuesday, September 20, 2022, there were two sessions on a variety of “History of Geology” topics. The presider of the first session was Professor Marianne Klemun. The four presentations in that session were as follows:

Paolo MACINI & Paolo SAMMURI - *The Renaissance of Minerals, Mining and Metallurgy in Tuscany: Biringuccio and his Pirotechnia (1540)*
 Claudia PRINCIPE *et alia* – “*Forma Vesuvii*”

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Khaliaf EL GHALBI - *Characteristics of earthquakes in the Mediterranean Sea and their effects, in Arab-Islamic heritage.*

Ernst HAMM - *Lichtenberg on “Geological Fantasies,” a reconsideration.*

Coffee Break

The second session of the morning continued with additional “History of Geology” topics. The presider of this session was Professor John Diemer and the two presentations were on South American topics. The first presentation was made remotely, due to covid restrictions, while the second was made in person.

Salomon KROONENBERG - *Friedrich Voltz (1828-1855), discoverer of the Guiana Shield greenstone belt.*

Pedro GONCALVES *et alia* - *The history of Brazilian geological map and iron mining in Minas Gerais State: The contribution of John Casper Branner.*

Afternoon: After taking a group photo (Figure 17), we took a covid test prior to boarding the bus,



Figure 17. Group photograph of participants at the entrance to the Pole d'Interprétation de la Préhistoire (PIP). Photograph courtesy of Violeta Pukelyete.

and then visited the Commarque Palaeolithic cave and castle (Figure 18). The group enjoyed a boxed lunch on the grounds prior to touring the castle. The view from the highest tower of the castle was splendid!



Figure 18. View of Commarque Castle, site of a Paleolithic cave. Photograph courtesy of Violeta Pukelyete.

A guided tour of the historic town of Sarlat, where as many as 70 percent of the buildings are listed as historical monuments, took place from about 17:00 to 18:30. The guide was Romain Bondonneau, a professor of history at the local university, as well as a photographer and book author, and member of the city administration. Romain started the tour at the Cour de Fontaines, a spring which marked the cradle of the city. The spring supported a monastery which existed in the 9th century during the time of Charlemagne. The monastery reached its maximum size in the 13th century. The fountain was adjacent to the Cathedral Saint-Sacerdos which began construction when the Pope at Avignon named a bishop to Sarlat. The cathedral was built in parts from the 14th to the 17th centuries. Another church that the group visited was the Eglise Saint-Marie March

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Couvert, a church built for the bourgeoisie. After the tour, the participants were free to have dinner at a restaurant of their choice from 18:30-20:30. The group then reconvened at the bus and returned to Les Eyzies by 22:00.

Wednesday, September 21, 2022

On Wednesday, September 21, 2022 the first morning session was on the topic of the “Geology of the Miocene” and was presided over by Professor Silvia Figueirôa. The presentations were by:

Gaston GODARD - *First descriptions of the Miocene sediments of Ste-Croix-du-Mont near Bordeaux (1622, 1718): Did P. de L'Ancre perceive the principle of superposition before Steno?*

Marco PANTALONI & Fabiana CONSOLE - *Karl Mayer-Eymar and the history of the Messinian stage*

Marie LO CASCIO & Yves GILLY - *Historical stratotypes, Global Boundary Stratotype Sections and Points (GSSP) and Nature Reserves.*

Michiko YAJIMA & Takako HONJO - *Defining the Chibanian epoch.*

Coffee Break

The final session of the conference contained papers on a variety of topics in the “History of Geology” and it was presided over by Gaston Goddard. The presentations were by:

John DIEMER – *Murchison's assessment of the Donetsk coal fields.*

Violetta PUKELYTE - *Significant Quaternary objects of the geological research of A. Giedraitis (1848-1909) and their development in the Nemunas River basin.*

Cyril DEICHA & Igor DEICHA - *History of geology in Liechtenstein.*

Lunch - free time for lunch.

Afternoon

In the afternoon, the conference attendees had the option of visiting one or more of the following sites: Abri Cro-Magnon, Laugerie basse, the Neanderthal exhibit at PIP, or the Musée national de la Préhistoire. All of the sites were within walking distance of the center of Les Eyzies. Those attendees who were participating in the post-conference field trip moved to Clos du Rocher, where they were to stay for the first two nights of the field trip.

Evening

The closing ceremony and dinner took place at La Halle des Eyzies. The awards were made for the best student presentation, Thimothé LHOSTE, and the most promising young scholar under the age of 35, Maddalena NAPOLITANI.

Thursday, September 22, 2022

Laugerie Haute Shelter

The first site visited on Thursday was the Laugerie Haute shelter. This key site to the study of the Paleolithic is situated on the right bank of the Vézère River, 2 km upstream from Les Eyzies. It is a rock shelter that is about 180 m long by 35 m wide. It is divided into two parts by a large house that sits on top of the central part of the deposit which is on the order of 6 m thick. The lowest levels of the deposit are Perigordian having been dated to about 33,000 to 20,000 BCE. The upper part of the deposit has been assigned to the Magdalenian period, about 14,000 BCE. An excellent summary by J.-P. Texier of the site's geomorphology and stratigraphy appears in the post-conference field trip guidebook.

Paleolithic cave art in the Vézère valley

The attendees then moved to the Fish Shelter (l'abri du Poisson) which is located in the Gorge d'Enfer dale, formed by a tributary of the Vézère River about 2 km upstream from Les Eyzies de Tayac. The shelter was first studied by Edouard Lartet and Henry Christy in 1863. There is a bas-relief carving of a becard salmon on the ceiling of the shelter (Figure 19). The sculpture is colored with red ochre and is the earliest known sculpture of a fish. It appears that fish were an important food source to the Gavettian people who occupied the shelter. The fish sculpture was discovered by Simon Souffron, a farmer and leaseholder of the shelter, in 1912. Shortly after, an unsuccessful attempt was made to extract the sculpture to sell to a German museum.



*Figure 19. Bas relief carving of a becard salmon in the ceiling of the cave at Ambri du poisson.
Photograph courtesy of Violeta Pukelyete.*

The group then had lunch in a local restaurant situated under an overhang in the Cretaceous cliff (Figure 20), followed by a move to the Cap Blanc shelter. The Cap Blanc shelter is located about 6.5 miles northeast of Les Eyzies-de-Tayac on the right bank of the Grande Beune valley, a

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tributary to the Vézère River. The shelter has a visitor's center where the group was met by the guide, Pascal Villesuzanne, who introduced us to musical instruments that would have been in use at the time. Cap Blanc shelter is the site of one of the finest sculptured friezes to survive the last Ice Age. The frieze was discovered in 1909 by Raymond Peyrille, and described in detail in 1911 by Henry Breuil. The frieze comprises depictions of large animals such as ibex, horses, deer and bison, and was probably sculpted about 15,000 years ago. The outlines of the animals were delineated by percussive carving of the rock. The shelter contains material from the Upper or Final Magdalenian, as well as human remains.



Figure 20. Location of the restaurant near the Ambri du poisson cave. Photograph courtesy of Violeta Pukelyete

The group then went to the cave of Font-de-Gaume, on slope above the Beune River, a tributary of the Vézère River. The cave is decorated by tectiforms and polychrome paintings, drawings and engravings representing bison, mammoths, reindeer, horses, a rhinoceros and carnivores such as wolves, cave lions and bears. The Paleolithic parietal decorations were discovered in 1901 by Louis Capitan, Henri Breuil and Denis Peyrony. They published a major monograph on the artwork in 1910.

Friday, September 23, 2022

Pech Merle Cave at Cabrerets.

The group gathered at the municipal parking lot in Les Eyzies on the morning of Friday, September 23 where we all took a covid test prior to boarding the bus to travel to the Pech Merle cave. The drive took about an hour, and we disembarked at the visitor center for the Pech Merle Cave where we had an appointment for a guided tour. Our guide was Cecile Genovese and she took us into the cave which that day was at 13 degrees Celcius. 20,000 years ago, the cave would have been at 2 to 3 degrees Celsius. The charcoal in the cave paintings has been dated as old as 29,000 years BP.

There are more than 700 painted or engraved motifs, including animal figures, human figures, mammoths, bison, aurochs, horses, deer, ibex, bears, lions, and negative hands. The figures are drawn in black or red outlines, with painted interiors. The cave is also distinguished by the presence of cave pearls composed of calcium carbonate. Most of the paintings range in age from 25,000 years BP to 13,000 years BP.

In the afternoon, the group traveled to Cloup d'Aural in Quercy to visit a phosphate mine that occurs in karst topography developed in massive Jurassic limestones of Callovian or possibly Bathonian age (Figure 21). The mine exploited fossiliferous deposits concentrated in the karst topography. The fossiliferous deposits record as much as 30 million years of evolution of the fauna



Figure 21. Phosphate mine at Cloup d'Aural. Photograph courtesy of Violeta Pukelyete.

at the site. The phosphate deposits were discovered about 1865 by a Mr. Poumarede who noted the vigour of wheat growing in a slightly depressed field strewn with bones and concretions. Chemical analysis detected the presence of tricalcium phosphate and that discovery prompted a phosphate rush in the region. Sinkholes in the carbonate rocks in the region became sites of intense investigation and mining (Figure 22). The bones that collected in the sinkholes are of great interest to paleontologists and the sites are now protected from further pillaging. The guided tour was led by Thierry Pélissié, Léonie Leverger and Quentin Vautrin (Figure 23). After finishing the tour at Cloup d'Aural, the bus took us to Agen where we spent the night.

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Figure 22. Historic photograph of active open pit mining at Cloup d'Aural in Quercy, from the park display. Photograph courtesy of Violeta Pukelyete.



Figure 23. Gaston Godard introducing the phosphate mine at Cloup d'Aural in Quercy and accompanied by the park guides, Thierry Pélissié, Léonie Leverger and Quentin Vautrin. Photograph courtesy of Violeta Pukelyete.

Saturday, September 24, 2022

On the final day of the field trip, the group traveled from Agen toward Bordeaux and made two stops in the vicinity of the village of Saint-Croix-du-Mont. Those two stops were at the cellars of Monsieur Arnaud de Sèze in Loubens and the nearby church of Saint-Croix-du-Mont (Figure 24).



Figure 24. Gaston Godard discussing a spectacular deposit of fossil oysters of the Burdigalian Stage of the Miocene in the cliff below the village of Saint-Croix-du-Mont. Photograph courtesy of Violeta Pukelyete.

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Both stops exhibited a spectacular deposit of fossil oysters of the Burdigalian Stage of the Miocene. The fossil oysters were visited by King Louis XIII in 1620 and then described by Pierre de L'Ancre in 1622. At the cellars in Loubens, sweet white wine was stored and aged. The group had the opportunity to sample some of the wines when we visited the above-ground bottling facility. Our visit to the church of Saint-Croix-du-Mont was accompanied by a box lunch and interrupted by a rain shower which resulted in an impromptu lecture in the church.

The group then traveled to the geological natural reserve of Saucats-La Brède in the Gironde Department of western France. The reserve is about 20 km upstream of Bordeaux. The reserve comprises several parcels of land in the valleys of the Le Saucats River and its tributary Le Brousteyrot stream. This reserve was the first to be established in 1982 and it protects the stratotypes for the Aquitanian and Burdigalian stages of the Lower Miocene. The visit began with a tour of the Maison de la Réserve, a small museum containing fossils, sediment samples, photographs and maps. We then visited the Bernachon outcrop located on the right bank of the Saucats River which contains the lower part of the Aquitanian stratotype. From there we moved up-section to the L'Ariey outcrop which contains the upper part of the Aquitanian stratotype. This outcrop contains distinctive vertical solution pipes formed in coastal sediments with a hardground surface. The group then moved to a 5-meter escarpment on the Saucats River to view sediments deposited during the Burdigalian marine transgression from 20.4 to 19 million years ago. The fossil assemblage is rich and diverse and contains gastropods, bivalves, bryozoans, crustaceans, fish teeth, echinoderms and rare seabird bones and corals. The final stop at the preserve was the Lassime site where it is possible to see the Burdigalian-Serravallian unconformable contact protected under glass (Figure 25). The Burdigalian has been dated to 18.7 million years and it is unconformably overlain by the richly fossiliferous 11.6 million years old Serravallian, a product of the last transgression of the sea in Aquitaine.



Figure 25. The Burdigalian-Serravallian unconformity, protected under glass.

The final stop was at the train station in Bordeaux where we thanked the fieldtrip leaders and said our goodbyes.

FUTURE INHIGEO MEETINGS

As the Annual Record for 2022 is going to press, arrangements are well underway for the 48th INHIGEO meeting to be held at Cracow in southern Poland.

48TH SYMPOSIUM OF THE INTERNATIONAL COMMISSION ON THE HISTORY OF GEOLOGICAL SCIENCES (INHIGEO), AT CRACOW, POLAND, 31 JULY – AUGUST 4, 2023

Information for the meeting is available at: inhigeo@pgi.gov.pl What follows here was extracted from various conference materials including the Second Circular available at <https://www.inhigeo.com/symposia.html> and the INHIGEO website <https://www.inhigeo.com/symposia.html>

48th INHIGEO Annual Symposium, Kraków (Poland), 31 July – 4 August 2023

The 2023 INHIGEO conference will be held at the headquarters of the Polish Academy of Arts and Science, Kraków. There will be a 1-day mid-conference fieldtrip and a 5 days pre-conference fieldtrip (26–30 July).

Main topics of the conference will be the

- 1) history of geological mapping
- 2) history of mining and old mines as objects of geological and mining heritage and their contemporary use (tourist, balneological objects, etc.)
- 3) history of geodiversity conservation and the formation of geoparks
- 4) origin and development of geological research
- 5) general contributions and biographies of famous geologists

Registration fees:

500 euros for Conference and mid-conference trip (early bird registration)

250 euro for students and PhD students

Fee will include: coffee breaks and lunch during the Conference, transportation and lunch during the Mid-Meeting trip, as well as the Conference dinner at one of the famous Cracow restaurants.

500 euros for preconference trip (early bird registration)

Fee will include: transportation, hotel, breakfast, lunch and dinner.

300 euros for special program for accompanying participants (early bird registration)

Fee will include: Special tours during the Conference, mid- conference Trip and the conference gala dinner.

(!) Registration does not include hotel cost during the Conference.

Deadline for [Expression of Interest](#): 31st December 2022

Abstract submission to the congress: 31st May 2023

Contact: inhigeo@pgi.gov.pl

For more information please see the circulars: [First Circular](#), [Second Circular.pdf](#)

Abstract template: [Word file](#)

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, from August 25-31, 2024.

http://www.igc2024korea.org/2015/english/main/index_en.asp

INHIGEO has proposed five scientific sessions and one workshop on the following topics:

- Geosites and Georoutes in the History of Geological Sciences
- Anthropocene, History and the Geosciences: contributions to contemporary debates
- History of Geological Travels in Asia and Beyond
- History of Women in Geology: trailblazers, leaders and those in the shadows
- General Contributions to the History of Geological Sciences
- Hidden Histories in the Geological Sciences (workshop)

Plans are being made by Dr. Michiko Yajima for an excursion for INHIGEO members outside the official program of the IGC. The tentative itinerary is as follows:

Nothern Kyushu Excursion in Japan

Sunday, September 1, 2024:

07:00 gathering at the Busan Port, Republic of Korea

08:30 departure for Hakata, Japan

11:35 arrival at Hakata Port

After lunch visit to Imari (pottery), Hirado (Christian church)

Stay at Sasebo

Monday, September 2, 2024: Shimabara Geo Park

Sasebo to Shimabara via Isahaya

Shimabara Geo Park, Mt. Unzen volcano area

Stay at Shimabara onsen (hot spring)

Tuesday, September 3, 2024: Nagasaki City

Shimabara onsen to Nagasaki
Sightseeing in Nagasaki (Dejima, Atomic bomb site, Gunkan island, etc.)
Stay at Nagasaki

Wednesday, September 4, 2024
Saying goodbye after breakfast

50TH INHIGEO MEETING IN DUNEDIN, NEW ZEALAND, 2025

The 50TH INHIGEO meeting will be held in conjunction with the 27th International Congress of History of Science and Technology (ICHST) at the University of Otago in Dunedin, New Zealand, from 29 June to 5 July, 2025. <https://www.ichst2025.org/>

OTHER FUTURE CONFERENCES

The following future conference is listed on the INHIGEO website
<https://www.inhigeo.com/symposia.html>

28th International Union of Geodesy and Geophysics (IUGG), Berlin, 11 – 20 July 2023

INHIGEO sponsors a History of Volcanology session at the 28th IUGG General Assembly. This cross-disciplinary symposium forms part of INHIGEO's outreach activities where we interact with scientific congresses in order to raise awareness of the history of our science.

V10 History of Volcanology and Historical Volcanology (chaired by Claudia Principe and Martina Kölbl-Ebert)

The history of volcanology is the history of ideas and processes that investigate the reason volcanic events occur and the physical processes that regulate them. The maturation and changes of these ideas over time have made volcanology the science we know today. While the term historical volcanology must refer to the use of historical data, be it documentary or figurative, for the description of volcanic phenomena, for example through the description of eruptive phenomenologies, their products, and the resulting morphologies in written texts and pictorial works. In both cases, these disciplines require a marked multidisciplinary, historical and volcanological approach, and aim to reconstruct volcanological processes and events of the past. Contributions from both of these points of view are welcomed.

<https://www.iugg2023berlin.org/916-2/>

Abstract submission deadline of 14 February 2023

For detailed information on the congress please visit <https://www.iugg2023berlin.org/home-2/>

HOGG Conference and Field/Archive Visits, Dublin, 15-18 August, 2023

There will be a HOGG Conference and Field/Archive visit event this summer in Dublin, 15-18 August 2023. This will be the first full HOGG event post-pandemic. The setting for the meeting is Trinity College Dublin Geology Building. The meeting will tackle *Aspects of the history and progress of geology in Ireland*, including aspects of geology that spread from Ireland as well as geology on the island itself.

Proposals for presentations are welcomed. Send your proposal (250 words) to Dr Patrick Wyse Jackson wysjcknp@tcd.ie by 1st June, 2023. The programme includes a one-day conference and three days of field and archive visits. The conference fee is €17 (to cover the cost of light lunch and refreshments) and is payable at the event. Travel to Dublin is very easy and inexpensive. Participants will need to arrange their own accommodation.

[Click here to the Eventbrite page and see the programme and venue, and to register.](#)

The following future conference is listed on the INHIGEO website

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

6th Argentinian Congress and 1st Latin American Congress of History of Geology / VI Congreso Argentino y I Congreso Latinoamericano de Historia de la Geología

INHIGEO is sponsoring the 6th Argentinian Congress and 1st Latin American Congress of History of Geology, which will take place on 6–7 October 2023 in San Miguel de Tucumán, Argentina.

The conference themes include events, personalities and institutions related to the history of the Earth sciences in Latin America, from the pre-Hispanic and colonial periods until recent times. The meeting aims to reinforce mutual knowledge and collaboration between geosciences and humanities.

Contact e-mail for expression of interest and pre-registration: histogeo2023@gmail.com

For more information please see the circular: [Second Circular](#)

Registration form: [Formulario de Inscripción Historia de la Geología 2023.pdf](#)

Geological Society of America Annual Meeting: 15-18 October 2023, Pittsburgh, Pennsylvania

The History and Philosophy Division of the Geological Society of America will be sponsoring disciplinary and topical sessions and a fieldtrip at the Annual Meeting of the Geological Society of America from 15-18 October 2023 in Pittsburgh, Pennsylvania.

- Topical session T55: *The History of Geologic Discovery in the Pittsburgh Region: Past and Present Advances in the Discipline*
- Topical session T56: *Celebrating State Geological Surveys, State Geologists, and Exceptional State Projects*
- Topical session T57: *The Geoheritage of Planetary Exploration*
- Topical session T58: *The Stories of Geoheritage*
- Field trip 406: *Drake Well: Understanding the Birthplace of the Oil Age and its Historical Human and Environmental Impacts*

CONFERENCE REPORTS FOR 2022

INHIGEO Webinar “History of the geological sciences – providing resources for society”, 11 July 2022

A new online series of INHIGEO webinars started in 2022, with the aim to provide an open virtual forum for discussion of a wide range of topics on the history of geological sciences through panels and roundtables, book presentations, workshops for exchange of views on methodology for those new to historical research, archives and what to look for. The webinars intend to focus in particular on the research recently carried out by young INHIGEO members and early career scholars.

Our first webinar, *History of the geological sciences – providing resources for society*, held on July 11, 2022, was attended by INHIGEO members and colleagues from around the world, representing 17 countries across Europe, Asia, Africa, Australia, and North and South America (Figure 26).



Figure 26. Attendees at the first INHIGEO webinar, July 2022.

INHIGEO / IUGS@60 Webinar on the History of the International Geological Congresses, 8 October 2022

A virtual roundtable, organized by INHIGEO in collaboration with the IUGS@60 Team, was held online on October 8, 2022, as part of the celebrations for the 60th anniversary of the IUGS within the program of the IUGS Earth Science Festival, concerning the history of the International Geological Congress (IGC) within the development of the geosciences from the late 19th century to the end of the 20th century. The aim of this event, entitled *The roots of a geological union for the future of the Earth* was to emphasize and discuss the role of the IGCs for the idea of the foundation of the IUGS and for its development from the 1960s onward. The eight presentations on the IGCs were followed by a 45-minute lively discussion by the panelists with questions and comments from the online participants (Figure 27).

Moderators: Ezio Vaccari (INHIGEO President) and Martina Kölbl-Ebert (INHIGEO Secretary-General). Opening address: John Ludden (IUGS President). Panel: Beris Cox (UK), Marianne Klemun (Austria), Kathleen Histon (Ireland), Philippe Le Vigouroux (France), Zdeňka Petáková (Czech Republic), David Orenstein (Canada), Toshihiro Yamada (Japan), Michiko Yajima (Japan), Hirokazu Kato (Japan), Jingfei Zhang (China), Jiuchen Zhang (China). These speakers are the authors of the papers which will conclude the series on the history of IGCs by INHIGEO, published in the International Union of Geological Sciences (IUGS) journal *Episodes* since 1978 (<https://www.inhigeo.com/publications.html#Classic2>).

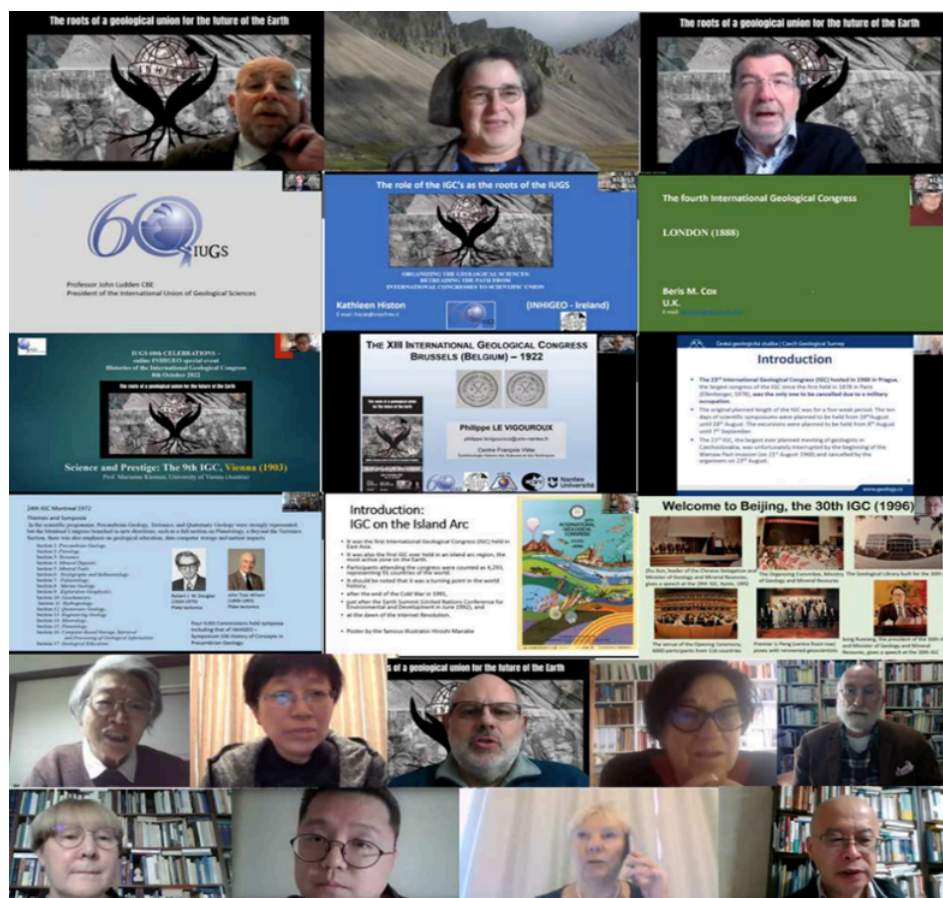


Figure 27. The panelists of the INHIGEO / IUGS@60 roundtable

INHIGEO contribution to “The First 100 IUGS Geological Heritage Sites” Conference, Zumaia, Spain, 25-28 October 2022

An active and fruitful collaboration has been established during 2022 with the IUGS International Commission on Geoheritage (ICG). INHIGEO has provided its contribution for the aspects concerning the history of geosciences within the project on IUGS Geological Heritage Sites, proposing sites of geohistorical relevance, taking part to the evaluation process and contributing to the editing of the book on the *First 100 IUGS Geological Heritage Sites*. Moreover some INHIGEO members (including President Ezio Vaccari, Secretary-General Martina Kölbl Ebert, Publications and Outreach Coordinator Kathleen Histon and Irish member Patrick Wyse-Jackson) took part to the conference / event, held on October 25-28, 2022 in Zumaia, Basque Country, Spain (<https://iugs-geoheritage.org/>) (Figure 28).



Figure 28. Participants at the session on History of Geosciences in Zumaia on October 26, 2022.

INHIGEO members presented four of the first 100 IUGS Geological Heritage Sites selected for their importance in the development of the geological sciences (Siccar Point, Phlegrean Fields, Puy de Dôme, Giants Causeway) in the session dedicated to History of Geosciences on the morning of October 26, 2022. Ezio Vaccari opened the session with a keynote lecture on *The beautiful history of a beautiful science: the historical value of Geosites* (Figure 29).

INHIGEO AND OTHER CONFERENCES



Figure 29. INHIGEO President Ezio Vaccari giving his keynote lecture.

INHIGEO sponsored History of Palaeontology symposium at the 6th International Palaeontological Congress: “From Gondwana to Laurasia”, Khon Kaen, Thailand, 7–11 November 2022

INHIGEO members Kathleen Histon (Ireland), Susan Turner (Australia) and Toshihiro Yamada (Japan) organized a history of palaeontology symposium at the recent 6th IPC held in Thailand as part of INHIGEO’s outreach initiative of cross-disciplinary symposia within scientific congresses. Symposium 3: “Hidden histories revealed in scientific revision of palaeontological collections” included 23 presentations on topics from history of palaeontological travels, institutions, journals, the Treatise, collections and specimens ranging from the Cambrian to Pleistocene and from across the five continents (Titles & presenters listed below). INHIGEO as one of the official sponsors of the congress also promoted its activities as an IUGS commission with a display in an exhibition booth provided by the organizers of the IPC (Figure 30). Some of the INHIGEO members who participated at the conference are shown in Figures 31 and 32. The congress program and book of Abstracts may be downloaded in pdf from the congress website (link below). INHIGEO Symposium 3 was held over two days (Monday 7th November, late Afternoon session 16.00-17.50; Tuesday 8th November, Morning sessions 9.00-10.20, 10.50-12.10, Afternoon sessions 14.00-15.40, 16.10-17.30). A Special Issue of *Earth Sciences History* is in preparation to publish papers arising from the symposium.

Link to the 6th International Palaeontological Congress site (<https://ipc6.msu.ac.th/scientific-sessions/>)

ACKNOWLEDGEMENTS

On behalf of all the participants and the organising committee, we would like to thank our sponsors for supporting the 6th International Palaeontological Congress.

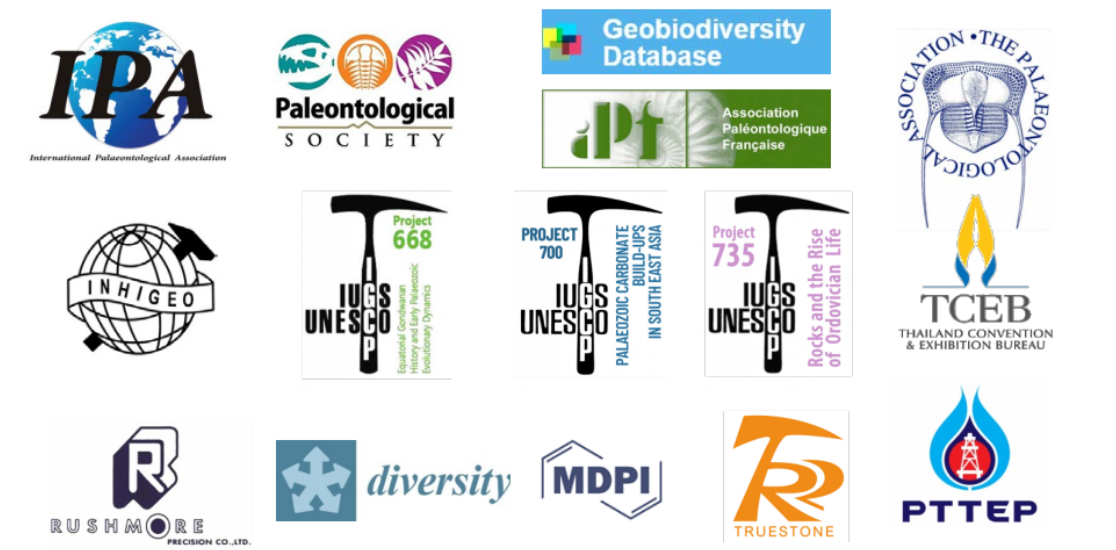


Figure 30. Sponsors of the 6th International Palaeontological Congress.



Figure 31. Members of INHIGEO at the 6th IPC: Michiko Yajima (Japan), Ezio Vaccari (President INHIGEO, Italy), Kathleen Histon (Ireland), Toshihiro Yamada (INHIGEO Vice President for Asia), Sharad Master (INHIGEO vice President for Africa), Maki Yamada (Japan).



Figure 32. Setting up the INHIGEO exhibition booth at the 6th IPC: Sharad Master (INHIGEO vice President for Africa, South Africa), Kathleen Histon (INHIGEO Publications and outreach coordinator, Ireland), Toshihiro Yamada (INHIGEO Vice President for Asia, Japan), Ezio Vaccari (President INHIGEO, Italy).

Symposium 3: Hidden histories revealed in scientific revision of paleontological collections

Oral Presentations

Toshihiro Yamada: *Introduction to symposium and presentation work of INHIGEO.*

Ezio Vaccari: *Palaeontological specimens and collections as historical sources.*

Victor Monnin: *The Dinotherium and the Acropolis: Albert Gaudry's reconstruction of the extinct fauna of Attica and the construction of Greece into a European state (1850-1870).*

Sharad Master: *French Jesuits on their way to Siam in 1687: The first scientific expedition to the top of Table Mountain (Cape Town), in search of fossil evidence for sealevel change.*

Kathleen Histon: *Reconstructing the scientific correspondence of Arthur Humphreys Foord (1844-1933) through species names in his systematic studies of cephalopods.*

Xiaozheng Chen et al.: *The history of research at NIGPAS, China.*

Marie-Béatrice Forel: *Nearly 200 years of sediment collecting in the Arctic area: the Micropaleontology collections in the MNHN (Paris.).*

Michiko Yajima: *"UMUT-CA -the first fossil curating system in Japan".*

Chengsheng Sun: *Palaeontologia Sinica: "Awakening" fossils in China through international cooperation.*

Paul Selden (Keynote): *The Treatise on Invertebrate Paleontology.*

David Evans et al.: *Treatise Part K: High-level classification of the nautiloid cephalopods.*

Jörg Maletz: *The 'Graptolite Treatise' - more important than ever?*

Ralph Thomas Becker: *The Treatise volume on Devonian Ammonoids – a tale of unreadable disks, photo boxes, and outdated taxonomic concepts.*

David Harper: *Chronostratigraphy: The changing role of fossil species in understanding rocks and time*

- Nigel C. Hughes: *History of collections of Cambrian trilobites from the Himalaya.*
- Marianne Klemun: *Moa and bone preparation techniques: From single bones to mounted skeleton as hybrid objects between nature and culture.*
- Muhammad Aqqid Saporina et al: *The history of graptolite studies in the Peninsular Malaysia.*
- Toshihiro Yamada: *Borrowed illustrations of Glossopetra with shark's head: Steno and the Vatican collection of Mercati.*
- Melanie J. Hopkins & Markus J. Martin: *Unravelling parallel conceptions of the Ordovician trilobite Flexicalymene senaria (Conrad, 1841).*
- Sharad Master: *Rediscovery of the first fossil locality in the Karoo Basin, South Africa: Hinrich Lichtenstein's fossil "eel" (1803), and its re-appraisal as a new invertebrate ichnofossil.*
- Wiesław Krzemiński et al.: *The consequences of incorrect determination of fossil resin – a case study of crane flies (Diptera).*

Poster presentations

- Ezio Vaccari & Kathleen Histon: *Arthur Humphreys Foord (1844-1933): the story of an eminent palaeontologist without biography.*
- Kathleen Histon: *The Austrian palaeontologist Guido Stache's unpublished monograph of Silurian faunas.*
- Dawid Drózd et al: *Reconsideration of a purported historical specimen of a Triassic turtle from Germany as an archosaur metatarsal.*

AWARDS

AWARDS

Academician Algimantas Grigelis was awarded the Silver Memory Medal of the Lithuanian Academy of Sciences for his great achievements in science and culture development. The award was made by His Excellency Academician Jūras Banys, the President of the Academy on 20 December 2022.

The History and Philosophy Division of the Geological Society of America awarded the Mary C. Rabbitt History of Geology Award to **Marianne Klemun** for 2022. The award was established by the History of Geology Division in 1981 and renamed in memory of Mary C. Rabbitt in 2005. According to the Division's webpage, "Achievements deserving of the award include publication of papers or books that contribute new and profound insights into the history of geology based on original research or a synthesis of existing knowledge". Marianne earned the award because of her "exceptional scholarly contributions of fundamental importance to our understanding of the history of the geological sciences". The citation by Greg Good and the response by Marianne Klemun are available at: <https://community.geosociety.org/histphildiv/awards/rabbitt>

In addition, Marianne Klemun's research has been honoured recently on two occasions in Austria: She was awarded on 23 November 2022 the Medal of Honour from the Carinthian Society for History for her research on history of natural sciences within a political context. She was also granted on 24 November 2022 the status of "Corresponding Member" of the Geological Survey (Geologische Bundesanstalt) in Vienna for her research about the Survey and history of geology as well for her cooperation with the Survey.

The HOGG Committee was pleased to nominate **Professor John Mather** for the Sue Tyler Friedman Award of the Geological Society of London. This award is given to an individual who is deemed to have made a significant contribution to the history of geoscience. We were delighted to learn that Professor Mather was selected to receive this award and his award citation and response is available at <https://www.youtube.com/watch?v=49gw2OrNtEQ> (@42m:42s)

Daniele Musumeci, INHIGEO member and PhD student at the University of Catania, Italy, was awarded on 20 September 2022 the *Quintino Sella Prize for the History of Geosciences in Honour of Nicoletta Morello and Bruno Accordi* by the Italian Geological Society. This biennial award is intended to recognize and encourage the activity of young researchers under the age of 35. The Prize is conferred to the author of the best scientific paper in the field of the History of Geosciences, published in national or international journals in the two years before the call.

Dr. Eugenija Rudnickaitė was awarded by the badge of honor known as 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 badge of honor "Golden Geologist's Hammer" with the inscription *Mente et malleo* engraved on the stem.

David Spanagel received the Gerald M. and Sue T. Friedman Distinguished Service Award for 2022 from the History and Philosophy Division of the Geological Society of America. According to the Division website, the award may be given "for exceptional service to the advancement of our knowledge of the History and Philosophy of the geological sciences". Furthermore, "service to

the History and Philosophy of geology may include, but not be limited to, the discovery of and making available rare source materials; comprehensive bibliographic surveys; organizing meetings and symposia in the History and Philosophy of geology; exceptional service to the Division; etc.” David Spanagel’s exceptional service as Treasurer for the GSA associated History of Earth Sciences Society for many years did much to promote the history and philosophy of the geological sciences.

Congratulations go to **Jiuchen Zhang** (INHIGEO member for China) who recently won the prestigious Winjin Book Award 2023 from the Chinese National Library in the category of “Popular Science” for her book *Humanity Earth. The History of Human Understanding of the Earth* published in 2022 by Peking University Press. <https://www.pup.cn/>

INHIGEO Young Scholar Awards, 47th INHIGEO Symposium, Les Eyzies (France)

Dr Maddalena Napolitani

INHIGEO Early Career Award for young scholars up to 35 years of age, for her presentation “Painting the mountains between art and Earth sciences during the 2nd half of the 19th century: some French case studies” (Figure 1).

Timothé Lhoste

INHIGEO Student Prize for best presentation by a Master/PhD student for his talk on “Fabriquer l’homme fossile: Enquête autour des vestiges de la Denise et de leur contexte stratigraphique”.



Figure 1. Award ceremony at 47th INHIGEO Symposium in Les Eyzies, France, on September 21, 2022: (from left) Timothé Lhoste, Ezio Vaccari, Maddalena Napolitani, and Martina Kölbl-Ebert (photograph courtesy of Martin Ebert).

OBITUARIES

David Branagan (1930–2022)



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

Associate Professor David Branagan AM, who died aged 91, was one of Australia's most distinguished geologists, associated with Sydney University for an unprecedented 74 years. An award-winning academic, field geologist, science historian, athlete and musician, he taught and mentored generations of students and led international science organisations. The author or editor of almost 300 publications, including 20 books, his biography *T.W. Edgeworth David: A Life – Geologist, Adventurer, Soldier* was a finalist in the 2007 Prime Minister's Prize for Australian History. This book, along with his other biographies, drew international attention to the work of scientists in the Pacific region.

Branagan's best-known book was *Field Geology of New South Wales* (with G. H. Packham), published in four editions over fifty years, which was used by countless geology students at Australian universities and high schools. Over the years he was: President of the Royal Society of NSW (receiving the society medal in 1998); Chairman of the NSW HSC Board of Studies for Science and Chief Examiner for Geology; Foundation Editor of the *Australian Geologist*; and President of the Sydney University Athletics Club.

Branagan had a long-standing interest in the history of geology which was enhanced 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 in 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 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 (Figure 1). David was elected Honorary Senior Member of the International Commission for the History of Geology (INHIGEO).

Born in Broken Hill in 1930 to Francis Branagan, a TAFE maths teacher, and music teacher Winifred (née King), the family shifted to Sydney where David studied at St Ignatius College on a scholarship and bought books with his lunch-money of sixpence. He commenced studies at Sydney University in 1946, aged sixteen, completing his BSc with Honours II (1950), MSc (1958) and PhD (1963) on coal formation and utilisation in NSW. An enthusiastic participant in extracurricular activities, he gained a double blue for Athletics, won the NSW Junior two miles in 1949 and represented NSW in athletics, racing against - and occasionally beating - future Olympians. He sometimes cycled with friends from Chatswood to the Blue Mountains and, once, to Melbourne. He was a founding member of Sydney University's Speleological Society (the study of caves), and performed in musical dramas (alongside John Bell and other notable thespians). In the holidays, he worked as a clothing salesman, sorted mail, and unloaded wheat trucks.

He began his career working as a field geologist in regional NSW, central Australia and north-west Queensland. He topped the NSW south coast bowling with his medium-pacers one season, and played fullback in the mining town Cloncurry, recalling 'Ma' Katter (a relative of Bob), racing from the sidelines with an umbrella to whack anyone who tackled her son. If the roads flooded the geologists drove their ex-army jeeps along railway tracks provided the wheels fitted. At night they would repair to tiny rural pubs, and in that pre-television era would gather around David at the piano and sing the night away.

Meeting his wife of 65 years, Gillian Robinson, at the university Musical Society, they courted while playing duets of Handel's *The Arrival of the Queen of Sheba*. He possessed a fine baritone voice of impressive range and timbre, equally suited to solo and ensemble work (his sister was accomplished soprano Mary Branagan). Pursuing a dream of professional singing, he travelled to London in 1955 and performed there with small vocal groups in opera productions, deriving a detailed knowledge of the sacred choral music of the European Renaissance. He taught secondary school science and worked in photogeological interpretation with Hunting Geological Services, regarded as the world's best map group. When Prince Phillip visited his workplace and asked how he liked London, David responded: 'It's not so bloody hot here, is it?'

He married Gillian in London's Brompton Oratory in 1956 and on his return to Australia, obtained a research fellowship in Sydney University's Department of Geology and Geophysics. He became a Lecturer (1960), Senior Lecturer (1965), and Associate Professor (1975), specialising in civil and mining engineering geology, field mapping, and the Sydney basin. He was active in numerous professional associations, including the Geological Society of Australia and the Australasian Institute of Mining and Metallurgy, and often appeared in the NSW Courts as an expert witness.

An incorrigible punster, he brought a sense of humour to the department, characterised by membership of the spoof 'Stop Continental Drift Society' and his legendary end-of-year lectures, in one of which he entered on a mini-bike wearing a wetsuit, face mask and flippers, and was dragged away by white-coated attendants. Spotting a mattress at the bottom of a mine shaft during

OBITUARIES

an excursion, he described it as a fine example of bedding. Though informal towards his students, he could be firm, once refusing to give any more lectures until the person who'd thrown a paper plane owned up; a delegation of desperate students finally convinced him to return. A progressive 'single-taxer', he scorned political humbug, and at a 1980s conference in East Berlin he and a fellow Australian began a slow handclap to remove from the podium a long-winded off-topic Party hack.

He and Gillian (a popular ESOL teacher) enjoyed an adventurous life, hitch-hiking from London to Italy on their honeymoon, attending as many opera performances as possible while on a budget. On another road-trip their fuel pump broke in Switzerland, so they returned to the UK with the fuel tank on the roof, only for the steering rod to come off on Vauxhall Bridge at peak hour. On sabbatical in Indiana, the doors of their Studebaker car were secured by rope, while on a family road-trip from San Francisco to Ottawa, some poorly-secured sleeping bags cascading from the roof caused chaos on the Golden Gate Bridge. David travelled widely for fieldwork and conferences, including to South America, Antarctica and Asia.

Former students sometimes rescued him from difficulties, such as at Singapore airport where his rock-filled luggage greatly exceeded the weight limit. When a helicopter landed while he had students examining a live volcano in New Zealand, he was greeted not with arrest but a cheery 'Giddy, Dave!' Geology seemed a mysterious and exciting world about deep time, involving expeditions into wild and rugged landscapes, on which his children sometimes joined him, jolting along in noisy landrovers, visiting mining ghost towns and stopping at every second road cutting. I recall him driving at speed along a narrow, twisting creek-bed canyon at the remote geographical centre of Australia only to be confronted suddenly by a wall of sand. And no matter where in the world or how cold, there was an obligatory dip in the ocean or river, followed by a run. Surprises included him giving a conference paper in German, answering a reporter in French, or including bawdy slides of suggestive landforms in a lecture. His office, finally cleared out in 2020, was like the aftermath of an earthquake.

He remained musically active, forming and conducting for thirty years the semi-professional choir St Gregory Chorale, which recorded for the ABC and performed at St Mary's Cathedral, where he continued to sing until recently. For decades he played organ at St Philip Neri, Northbridge, was editor of *Hosanna: Journal of Church Music/Liturgy*, and promoted the repertoire of sacred polyphony. He enjoyed jazz, believed Ligeti's avant-garde *Poème Symphonique For 100 Metronomes* was the 'perfect exemplification of chaos theory', and even played congas at a 1990s human rights benefit.

A kind, gentle father and dedicated family man, he was generous with his time and committed to peace and tolerance, qualities informed by his deeply-lived faith. He supported international students in myriad ways. He helped rescue passengers from a sinking Pittwater ferry in the 1990s. He assisted the conservationist Colong Foundation, was active in sports organisations, and swam daily at Northbridge baths until 2019. He coached rugby and athletics at St Aloysius College, which his four sons attended, and where he opposed compulsory cadets on moral grounds. He built a sailboat and taught his children to sail. Later, when we children travelled he would give us a map which, as it turned out, was usually a geological map 40 years old. The geology hadn't changed much but whole new cities had arisen in that time.

After retiring in 1989 'to get some work done', he continued to research, organise international conferences, and present papers, producing a documentary film *Ngauruhoe Erupts* and scores more publications, including on such diverse topics as Aboriginal star maps, and the geological backgrounds of famous artworks.

In 2006 his life-long achievements were recognised when he was awarded an Honorary Doctorate by Sydney University. The citation read that ‘he was amongst Australia’s foremost geologists with an international reputation in the history of geology and geologists in Australasia, a field in which he has made outstanding and original contributions for over fifty years.’ This was followed by an Order of Australia in 2018 for ‘significant service’ to the geological sciences, professional groups, and the community, service driven by his energy, ability, passion, curiosity and immense *joie de vivre*.

Dearly and widely loved, he passed away peacefully in Chatswood on 9 January, and is survived by his wife, five children and five grandchildren.

Modified from an obituary prepared by Marty Branagan

LORA NIKOLAEVNA LORDKIPANIDZE (1932-2022) (Figure 1) was a prominent scholar in the history of geology, with a DSc in geological-mineralogical sciences. She was an Honorary Senior Member of the International Commission on the History of Geological Sciences (INHIGEO) (2019-2022) and recipient of the Khabib ABDULLAEV Foundation. She was the author, co-author and editor of over 200 works, including 30 monographs, books, reference books, and a certificate of authorship for a database (2018). She was an active participant in numerous international congresses, symposiums and meetings and was awarded the Order of Dustlik (2003), medals “Veteran of Labor” and “50th Anniversary of Republican Academy of Sciences”, Honorary Diploma of Presidium of Academy of Sciences of the Republic of Uzbekistan and boards of All-Union and Republican societies “Znanie”, Prize and the Laureate Diploma of Academician Khabib ABDULLAEV Foundation (2011) (from *Geology and Mineral Resources* - N 3).



*LORA NIKOLAEVNA
LORDKIPANIDZE
(7 October 1932 to 24 March
2022)*

OBITUARIES

Lora Nikolaevna Lordkipanidze was a prominent scholar in the history of geology, with a DSc in geological-mineralogical sciences, and an Honorary Senior Membership of the International Commission on the History of Geological Sciences (INHIGEO) (2019). She was born in Tashkent and was among the first graduates of SAGU which included famous scientists such as N.V. Bogdanovich, a soil scientist, who headed the Institute of Soil Science of the Academy of Sciences of the Republic of Uzbekistan for 11 years, and the honored agronomist A.S. Stepanova. In 1950 she graduated from high school with a gold medal. In 1955 she graduated with honors in geochemistry (petrography) from the Department of Geology of the Siberian State University. Her career began at SSPI as a laboratory assistant in the Department of Petrography and Metallogeny, guided by Kh.M. Abdullaev, with whose work she connected her life, being his last student and closest assistant to the end of his days.

Since 1958 Lora Nikolaevna worked at the Institute of Geology and Geophysics as a junior research associate (1958), scientific secretary of the Department of Earth sciences of the Presidium of the Academy of Sciences of Uzbekistan (from 1967 to 1971), senior (1971) and leading research associate (1991). Under the leadership of Kh.M. Abdullaev, at the Institute of Geology, she conducted research on the history of platform studies, to which she dedicated her PhD thesis *Plates and Their Types. Historical Review. Evolution of Notions* (Moscow, Moscow State University, 1964) and her doctoral thesis *Teaching about Platforms (Stages of Development)* (Moscow, Institute of the History of Science and Technology, Russian Academy of Sciences, 1991). She was the first to analyze the 130-year history of platform studies around the world, and the role of the platform stage in the development of continental and oceanic crust from the Archean to the modern period from the standpoint of geosynclinal theory and tectonics of lithospheric plates.

Lora Nikolaevna's work paid special attention to the historical aspects of tectonic problems, classification of structures, zoning principles, separation of middle massifs, and activation issues (which was reflected in the *Geological Dictionary*, V. I. 1973). The result of this analysis was the creation of a major generalization about the Turan and its position in the structure of Asia (1995). Later, within the framework of projects on basic and applied research, she studied geodynamics, faults of Chatkal-Kurama and Fergana microplates, and the suture zone of the Turkestan paleocean. She justified the possibility of distinguishing the paleotransform faults of the Middle and Southern Tien-Shan on the basis of analysis of the world material. The results of her research are collected in her works *Fault Tectonics of the Tien Shan (Selected Works)* (2019).

For many years, Lora Nikolaevna was at the head of All-Union studies, including preparation and publication of republican issues of the "Geological Study of the USSR" by the Commission on Geological Study of the USSR at the Presidium of the USSR Academy of Sciences (COGI), covering publications of all researchers on geology of Uzbekistan for 1946-1970 and their analytical reviews, with departure on the annual reporting to COGI and as head of the Central Asian Section on History of Geology of the Soviet National Association of Historians of Natural Science. Her section was preceded by the monograph *Geology and Mineral Resources of Uzbekistan*, which received the State Committee on Science and Technology Award for 2001.

The monograph *History of Geological Survey of Uzbekistan in the Asian Civilization System (Ancient Ages - First Half of 19th Century)* (2001) is very well known, following which she was elected a Full Member of INHIGEO (2002). As the only historian of geological science in Uzbekistan, she submitted annual reports to the International Center on works and publications of this profile in the Republic (Uzbekistan // Newsletter. - No. 35-53, 2002-2022, USA, Australia). In 2017 the book *My Way in INHIGEO (International Commission on the History of Geological Sciences)* was published, which included reports on the history of geology of Uzbekistan in two

languages (Russian and English), published since 2002. English versions of the reports are published on the website: <https://www.inhigeo.com/annual.html>.

A monument of geological scientists of several generations is her monographs for the 70th anniversary of the Institute (2007). The best-known monographs are: “Turan Region in the Structure of the Asian Continent (Historical and Critical Review), 2013; “Catalogue of Faults of the Middle, Southern Tien Shan and Adjacent Territories”, 2016; “To the 50th Anniversary of INHIGEO, the International Commission on the History of Geological Sciences”, 2017, as well as Issues of the Republican Volume “Geological Study of the USSR” (1946-1970).

Lora Nikolaevna was the founder of a new direction in the history of geological science in Uzbekistan, scientific bibliography. Under her editorship were issued a seven-volume bibliographical index *Geology of Central Asia (1917-1960)*, which is used as a textbook by students of universities; materials on biobibliographies of Kh.M. Abdullaev, I.H. Khamrabaev, H.N. Baimukhamedov, S.T. Badalov, on the work of outstanding scientists of Uzbekistan and foreign geologists (Al-Khorezmi, I.M. Isamukhamedov, T.M. Voronich, G. Stille, K. Leiks, etc.). Lora Nikolaevna was the author, co-author and editor of more than 200 works, including 30 monographs, books, reference books, an author’s certificate for the database “Faults of the Middle, Southern Tien Shan and Adjacent Territories” (2018).

Lora Nikolaevna was a participant of seven international congresses, symposia, and meetings including the XIII International Congress on the History of Science (Moscow, 1971), the USSR-GDR bilateral symposia (Berlin, 1975, Erevan, 1979), USSR-PNR (Wroclaw, 1978), XXIII Annual Meeting of the Geological Society of the GDR (Halle, 1976 – delegate of the USSR Academy of Sciences), XXVI Session of IGC (1980), Xth International Symposium INHIGEO (Budapest, 1982).

She was awarded the order “Dustlik” (2003), the medals “Veteran of Labor” and “50th Anniversary of Academy of Sciences of the Republic of Uzbekistan”, the Diploma of USSR Presidium and Boards of All-Union and Republic societies “Znanie”. In 2011 she was awarded the Prize and Diploma of Laureate of Academician Khabib M. Abdullaev Foundation.

Lora Nikolaevna Lordkipanidze was very active in social work. In the memory of many colleagues she will remain a good organizer of excellent musical programs. Her optimism, natural cheerfulness, desire to create, love and devotion to the Institute, people and science impressed the staff. The geological community, friends, colleagues, students express their deepest condolences on the death of Lora Nikolaevna Lordkipanidze.

Bright memory of her will forever remain in our hearts.

(*Geology and Mineral Resources* - N 1).

Obituary prepared by B.S. Nurtaev and O.G. Tsay

OBITUARIES

Additional Published Obituaries

Bischoff, Ig (2022). Obituary: Andries Adriaan (Billie) Bisschoff 11 May 1922 to 13 January 2022. *Geobulletin Geological Society of South Africa*, 65(1), March 2022, 25-31.

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Rubidge, Bruce and Drennan, Gillian (2022). Obituary: Ian J. McKay 22 March 1963 to 13 July 2022. *Geobulletin Geological Society of South Africa*, 65(3), September 2022, 47-48.

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ABRAHAM WERNER'S STUDENTS IN POLAND

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Zbigniew WÓJCIK

Museum of the Earth, Polish Academy of Sciences

The Mining Academy in Freiberg, Saxony (Figure 1) was established in 1765 and became a world-famous university thanks to its lecturer in geological sciences, Abraham Gottlob Werner (1749-1817). He was appointed chair in 1775 and remained there until his death. Many prominent foreigners studied at the Academy during Werner's teaching activities, and Poles were among them. Through his students, Werner influenced the development of specific geological disciplines, especially deposit geology. His students disseminated his scientific views in many countries including England, France, Switzerland, Italy, Poland and Russia (Guntau 1984).

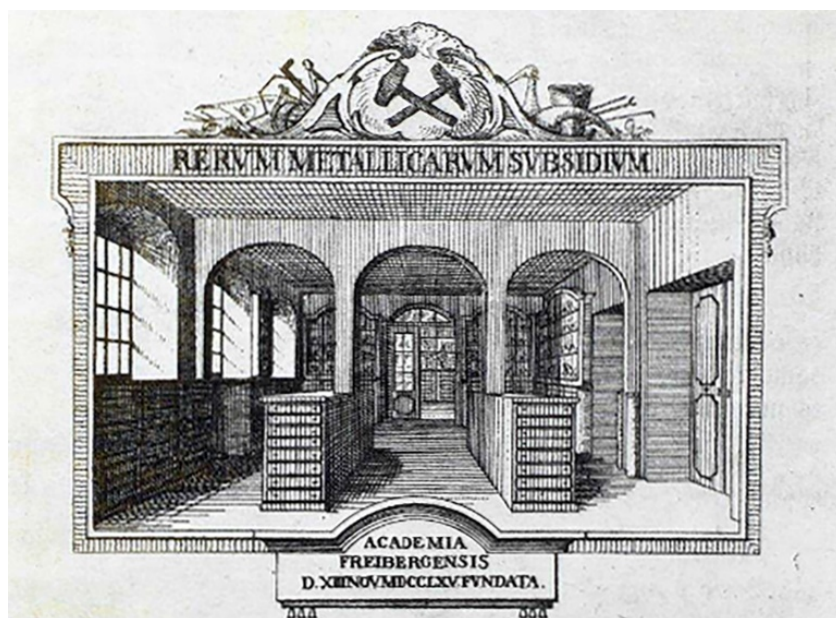


Figure 1. Mineralogical museum and library of the Mining Academy of Freiberg
(From title page of Kern, J. G., 1772. *Bericht vom Bergbau*. S. L. Crusius, Leipzig,
<https://www.deutsche-digitale-bibliothek.de>).

POLISH AND GERMAN STUDENTS WHO WORKED IN POLAND

Different sources, including those in the Archives of the Mining Academy at Freiberg, were used to compile a list of 40 of Werner's students at Freiberg who were Polish and German geologists, miners and metallurgists that worked in Poland after their graduation. In addition, this paper briefly notes 10 Poles who were among Werner's private students and friends, or those interested in his scientific research who visited him at Freiberg. The list of the German students of Werner who later worked in Poland will undoubtedly expand with more archival research. Also, the list of Poles who attended Werner's lectures at Freiberg, but did not enrol at the Academy, is expected to grow

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(Wójcik, Z., 1972). At the current stage of research, the list of Werner's students who worked in Poland, and the approximate periods of their study at the Mining Academy at Freiberg, is as follows (Table 1).

Table 1. List of students of the Mining Academy (1780-1817).

<i>Polish students</i>	<i>German students who worked in Poland</i>
1780 Okraszewski Stanisław - a few months, perhaps also in 1781 Jaśkiewicz Jan - January, perhaps also December 1780	1780 Mehner Carl Gottlob – probably 4 years
1781 Oraczewski Feliks - a short sojourn in the middle of 1781	1791 Becker Wilhelm Gotttlob Ernest - about 4 years
1785 Mathy Franciszek Ludwik - no data	1795 Ullmann Johann Ehrenhold - probably 4 years
1791 Domeyko Józef - at least two years	1797 Graff Johann Jacob - probably 4 years Herder Sismund August Wolfgang - 4 years
1793 Kołątaj Hugo - perhaps also in 1772, a short sojourn Jundziłł Stanisław Bonifacy - about two months	1799 Mielencky (Mielęcki) Aleksander Jan - probably 4 years Mielencky (Mielęcki) Franciszek - no data
1796 Komarzewski Jan - a short sojourn, later also in 1799-1802 with interruptions Nozarzewski Rafał - no data	1801 Kleeditz Heinrich Ludwig - probably 4 years
1798 Karwiński Wilhelm Franciszek - perhaps one year	1803 Bloede Gottlob Fryderyk - probably 4 years
1801 Morsztyn Ludwik - probably a few months, perhaps one year Borówko - probably a few months, perhaps one year	1805 Lempe Fryderyk Wilhelm - 4 years Hunger Fryderyk Gottlob - 4 years
1804 Wybicki Józef - was in touch with Werner probably from 1803 to 1806, Wybicki Lukasz - same as above Wybicki Józef Ksawery - same as above Symonowicz Roman - a few months, probably also in 1805	1806 Pusch Georg Gottlieb - 4 years
1807 Borkowski Stanisław Dunin (Dunin-Borkowski) - about one year	1807 Kaden Johan Carl Heinrich - 4 years
1809 Tomaszewski Józef - at least one year, perhaps two	1808 Kaden Ernest Leopold - 4 years
1813 Niemcewicz Julian Ursyn - a visit Drzewiński Feliks - probably a few months	1809 Krumpel Fryderyk Wilhelm - 4 years
1815 Królikiewicz Marcei - one year	1810 Hollunder Christian Furcht. - 4 years
1816 Łubieński Józef - one year (he stayed longer at the Academy)	

During the period of the Warsaw Duchy (from 1807) and of the Polish Kingdom (from 1815), most of the German miners, metallurgists and geologists held permanent jobs at the Main Board of Mining in Kielce in 1816-1817 and in the Academic Mining School, which existed in Kielce in 1816-1826, as well as in the Warsaw Mint. They included Becker, Ullmann (director of the Main Board of Mining), Bloede, Graff, Kleeditz, Lempe, Hunger, Pusch, J. K. H. Kaden, E. L. Kaden, Krumpel and Hollunder (Table 1). G. G. Pusch must be acknowledged for his most significant merit in studying the geology of the Polish Kingdom and Galicia. Pusch was an author of many geological and palaeontological studies, including the excellent synthesis entitled *Geognostische Beschreibung von Polen . . .* (1833-1836), *Geognostischer Atlas von Polen* (1837), and *Polens Palaontologie . . .* (1837) (Wójcik 2020).

Most of those German miners, metallurgists and geologists who settled in Poland in the period of the Warsaw Duchy and the Polish Kingdom made essential contributions to the general development of Poland with their studies on enhancing the raw-materials resources for industry, and with scientific publications which enriched the knowledge of the geology of those territories.

ADIT NAMED AFTER WERNER

To honour their teacher at the Mining Academy, German specialists named one of the first drifts made to drain coal seams in the Western District of the Kingdom of Poland after Abraham Gottlob Werner. The initiator of this idea was Johann E. Ullmann, acting director of the Main Mining Directorate. The adit helped drain the ‘Tadeusz’ mine, formerly called the ‘Hoym’ mine, which was opened in 1789 near Strzyżowice. The first steam engine was set up to dewater the ‘Tadeusz’ mine shaft in 1797. Later, the ‘Werner’ adit was opened in 1815 in the ‘Tadeusz’ mine to assist in draining the mine. The ‘Werner’ adit ran from east to west. Ten years later, it reached almost 1300 meters in length, with a height of 2.5 to 3.5 meters and a width of 1.2 to 1.3 meters. The course of the adit was marked on maps until the mid-19th century (Figure 2) (Wójcik 2006).

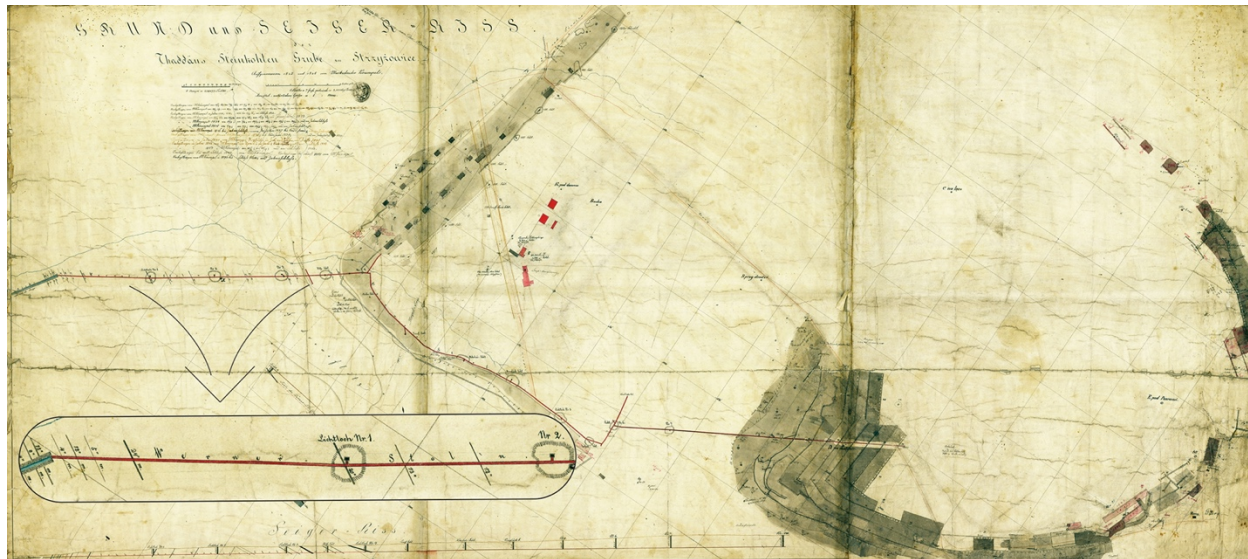


Figure 2. Krumpel, F. W. (1822-1846). Ground and vertical section of the Thaddaus Coal Mine in Strzyżowice (Grund und Seiger-riss der Thaddaus Steinkohlen Grube zu Strzyzowice). State Archive, Katowice, sign. 125. The adit is marked in red. The grey colour indicates the excavated parts of the coal seam. Original map length 220 cm, width 100 cm.

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Other specialists also became patrons of the ‘Ullmann’ and ‘Lempe’ adits. The ‘Ullmann’ adit (opened in 1817) was located at the ‘Reden’ mine (named after the then-Prussian director of the Higher Mining Office in Wroclaw, Friedrich Wilhelm von Reden) in Dabrowa, where coal seams were discovered as early as 1796. The adit ran from south to north. Its cross-section reached up to 6 meters, and in 1824 it reached almost 1700 meters in length. The ‘Lempe’ adit (opened in 1824) was built at the ‘Xavier’ mine near Będzin. It had a length of about 650 meters and ran from south to north. After 1825, the pit was extended by a further 200 meters (Preidl and Wójcik 2017).

SUMMARY

The information presented, currently limited to a list of 40 people who studied or were in contact with Werner, is evidence of his significant influence on the development of the geological sciences in Poland in the late 18th and first half of the 19th centuries. We owe our thanks to Werner more than to any foreign scientist of the time. On the one hand, the Werner school of mineralogy was established under his influence, and on the other hand, miners and geologists trained at the Freiberg Mining Academy contributed significantly to the geological knowledge of the Polish Kingdom in the first half of the 19th century.

Finally, it is worth recalling that Abraham Werner was born in Osiecznica (formerly Werhau) near Bolesławiec (Poland) in the foothills of the Sudetenland. The territory of Lower Silesia was the area of his first geological excursions and, indeed, also his first creative reflections, to which he gave expression shortly after his studies on the external features of fossil bodies. Therefore, Werner’s place in Poland should be honored and maintained (Figure 3).



Figure 3. A commemorative plaque marking the 250th anniversary of Abraham Gottlob Werner's birth was placed on his family home in Osiecznica (<https://polska-org.pl/883603,foto.html?idEntity=514633>).

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BOOK REVIEWS

Aorere Gold: The History of Golden Bay Goldfields, 1856-1863 by Mike Johnston.

Published by Nikau Press, 2023. 480 pages

Mike Johnston has been researching the story of gold mining in the Nelson region for many years, and is now able to publish the results. This volume, the first of a trilogy, records the early days of the goldfields and their impact on the community. The discovery of a payable gold deposit in a remote part of the Aorere valley in 1857 led to New Zealand's first gold rush. It had major implications for the young colony of New Zealand, not the least being the development of legislation to manage gold mining.

Before the discovery of gold, a number of minerals had been found near Nelson, including copper, chromite and coal, leading to the perception that the future of the region was in mining. This was confirmed by the gold rush which led to an influx of up to 1500 miners hoping to make their fortunes. Local Maori were readily accepted into the mining fraternity, and later took their skills to other goldfields.

This volume covers the first seven years of the Nelson goldfields before the first generation of miners left for the much richer discoveries in Otago and the West Coast in the early 1860s. But mining continued in the Nelson region, and the next volume will continue the story until the end of provincial government in 1876.

This is a massive volume, giving a comprehensive account of the beginning of gold mining in a remote part of New Zealand. It is an excellent account of local history, but it is important to a wider audience illustrating the changes that took place in one region with the discovery of gold. The author has made full use of newspaper accounts and letters to illustrate the feelings of the day and the excitement of gold fever. One of the particularly appealing features of this volume is the abundance of illustrations, including maps, sketches, paintings and contemporary photographs as well as a selection of recent oblique aerial photographs of the landscape.

One interesting aspect of gold prospecting was the discovery of a rich trove of moa bones in caves near the diggings. Investigation of the caves by geologists Ferdinand Hochstetter and Julius Haast resulted in excavation of some of the first complete moa skeletons. Hochstetter's arrival was well timed as his written account of the developing goldfields is a valuable source of information.

The depth and breadth of research Mike Johnston has undertaken means that this is the definitive account of the West Nelson goldfields, and we await the appearance of the following volumes with anticipation.

Reviewed by Simon Nathan

The Khibiny Mountains: The Natural and Anthropogenic Environment, edited by E.A. Borovichev and N.E. Koroleva. St. Petersburg, Svoe izdatelstvo, 2022. 308 p. (In Russian)

This is a new detailed and illustrated book describing the Khibiny Mountains on the Russian Kola Peninsula that was published in St. Petersburg (Figure 1). The publication was prepared by the Kola Science Center of the Russian Academy of Sciences, the Institute of North Industrial Ecological Problems and the Murmansk Branch of the Russian Botanical Society. This book is a part of the International Project “Phenomena of the Arctic Nature” (PAN 2019-2022) and Kolarctic Cross-Border Cooperation (CBC program).



Figure 1. Book cover for *The Khibiny Mountains: The Natural and Anthropogenic Environment* (2022)

The book contains current data on the Khibiny environment. It describes the geography, geology, flora and fauna. The meaning and origin of toponyms in the Khibiny Mountains and the history of mining are listed in a special part of the book.

The purpose of the book is to show the recently created Khibiny National Park (established in 2018) covering over 848 square kilometers in the Murmansk region. The Khibiny and the Lovozersky Mountain Ranges of the western part of the Kola Peninsula (Russian Lapland) have a great environmental, scientific and recreational importance.

A large section at the beginning of the book is devoted to the history of the study of the region. It was written by an INHIGEO Associate Member Grigory Ilyin. Since the 19th century, many researchers have been attracted by this inaccessible mountain tundra and the northern taiga. Mining engineer Nikolai Shiroshkin (a cousin of the composer Peter I. Tchaikovsky) in 1834

BOOK REVIEWS

carried out the first scientific descriptions and mapped the surroundings of the Khibiny, which he called the “Skull of the Earth”. Later, Russian geographer Alexander F. Middendorf (1840), then Norwegian explorer Jens Andreas Friis (1867), and a Briton Edward Ray (1870) visited this area. Geologist Nikolai Kudryavtsev (1880) traveled with the expedition of the Imperial Russian Geographical Society. In 1885, French geographer Charles Rabot visited the area and collected specimens described by the geologist Charles Velin. In 1887 and from 1891 to 1892, the Imperial Alexander University and the Society of Fauna and Flora Researchers from Helsinki organized the first large comprehensive expeditions to the interior of the Kola Peninsula, in which Wilhelm Ramsay took part as a geologist. The railway from the centre of European Russia to the Barents Sea constructed in 1916 made the way to the Khibiny more convenient. Since 1920 Alexander Fersman has organized a few mineralogical expeditions. Many minerals were collected for museums and described. Large deposits of apatite were discovered, which began to be developed with great success beginning in 1930. The research station was built for geologists, which was later transformed into the Kola Research Base of the USSR Academy of Sciences (1934). This chapter also contains 5 historical maps and many interesting photographs.

The Khibiny is a 40 km in diameter intrusion massif, composed mainly of nepheline syenites and foidolites. About 95% of Russian phosphorus and 54% of aluminum are obtained from local ores. About 70% of Russian rare earth metals and 10% of titanium are located there too. Over 500 mineral species were discovered here, 115 of them were described for the first time. The book is well illustrated with minerals and rocks and contains reference information.

The book is focused on the most interesting objects to attract the attention of visitors and arouse their interest and it is intended for the residents of the region as well as visitors and students to be used as a guide to the local natural history.

Reviewed by Ivan Vtorov, Department for the History of Geology, Geological Institute, Russian Academy of Sciences

Notice of additional book reviews:

Viljoen, Richard (2022). “Geological Highlights of East Africa’s National Parks” by Roger Scoon. *Geobulletin Geological Society of South Africa*, 65(4): 30-32.

COUNTRY REPORTS FOR 2022

AFRICAN COUNTRIES ANNUAL REPORTS FOR 2022

Submitted by Dr. Sharad Master, INHIGEO Vice-President for Africa (2020-2024)
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Sharad.master@wits.ac.za

Meetings

In 2022, the Geological Society of Africa Conference, that was supposed to have taken place in Fez, Morocco in 2020, and then was postponed twice because of the Covid-19 pandemic finally took place online only, from 6-8 July 2022. Even the Biennial Meeting of the Geological Society of South Africa, which was to have been held in Stellenbosch, was postponed for the third time since 2020 (it eventually took place only in January 2023). Thus the African geoscience community were once again deprived of the opportunity of meeting face to face, and to make new contacts. To my knowledge, the only meeting of any significance to history of geoscience that took place in Africa in 2022, was a meeting organized by the Geological Society of South Africa, the Geoheritage Conference, held online from 3-7 April, 2022. This meeting highlighted the growing importance of geoheritage, including history of geoscience, in South Africa.

Talks given at the Geological Society of South Africa Geoheritage Conference, held online from 3-7 April, 2022. Abstracts available at
https://www.gssa.org.za/uploads/newsletters/Events/Geoheritage_Conference_2022.pdf

- Jasper Knight. The landscape context of geoheritage and geoconservation in southern Africa (Keynote Address).
- Matt Mullins. A geoheritage framework for South Africa - potential structure and objectives
- Khoḏani Matshusa. A proposed evidence-based field methodology approach for assessing the potential for geotourism development
- Gillian Saunders. Geoheritage Tourism – what is our Geoheritage Tourism Potential?
- Kevin Page. Scientific publishing as (another) tool to promote geological heritage for a sustainable future.
- Cameron Penn-Clarke. The Geodyssey mobile app: Bringing the geology of South Africa to the palm of your hand.
- Michelle du Plessis. The Field Guides Association of Southern Africa (FGASA) – an Introduction to the organisation and Geology guide project.
- John Rogers. Geoheritage and GeoLegacy in the Western Cape with a focus on Robben Island Museum.
- Wendy Taylor. Synergies between geoscientists, science educators and artists: Forging pathways that support research by making science more accessible.
- Katherine James-Kleynhans. The history of Johannesburg: the wrong side of the main reef - A brief and unfinished history of the old south of Johannesburg.
- Shamilla Chettiar. How destination development approaches could be applied to better showcase and promote geoheritage from a tourism perspective.

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- Steve Prevec. The importance of geosites (Keynote Address)
- Barry Bryant. Reintroducing geoheritage education into the existing school curriculum
- Dylan Blake & Paul Lee. Celebrating hydro(geo)logical heritage - the Table Mountain Dams Trail and Hermanus Water Walk
- Mike de Wit. Salpeterkop, a remarkable well-preserved Cretaceous volcano in the Karoo
- Tanja Reinhardt & Lauren Hoyer. The inside and outside geology of the Geology Education Museum at University of KwaZulu-Natal.
- Sharad Master. George William Stow's description of a large salt pan near the Vaal River, between Christiana and Bloemhof, in 1876.
- Christoph Heubeck. Contribution of the ongoing ICDP drilling project BASE to the Barberton-Makhonjwa World Heritage Site.
- Stuart Clague. Majakaneng Heritage Hiking Trail
- Roger Gibson. Coming of age – 21 years of geoheritage efforts in the Vredefort Dome.
- Ian McKay. TimeTripSA - a travelling exhibition marketing Geoheritage in South Africa.
- Wendy Taylor. Science Storytelling with Puppetry: Bringing the Past to Life through Arts-Integrated Science Programs.
- Mike Dormer. The experiences of a layperson in creating the Gansbaai earth-age and rock-age display for educational purposes .
- Tim Lewis. A layman's journey and insights into the untold geology of the Cape Fold Mountains.
- Nick Norman. A writer's experience of introducing geoheritage and roadside geology to the public and scholars.
- John Blaine. The geology, structure, geomorphology, and terroir of the Hemel & Aarde Wine Valley.

Conference presentations and articles on the History of Geosciences in Africa in 2022

- Anhaeusser, Carl (2022). Guest Editorial: A geologist recalls the past. *Geobulletin Geological Society of South Africa*, **65(1)**, March 2022, 2-4.
- El Khalbi, Khalid (2022). Characteristics of earthquakes in the Mediterranean Sea and their effects, in Arab-Islamic heritage. Abstracts, 47th INHIGEO Symposium, Les Eyzies-de-Tayac, France, International Commission on the History of Geological Sciences, Comité Français d'Histoire de la Géologie, 15-24 September 2022.
- Master, S. (2022). George William Stow's description of a large salt pan near the Vaal River, between Christiana and Bloemhof, in 1876. Speaker Bio and Abstract Book, Geological Society of South Africa Geoheritage Conference, 3-7 April 2022, p. 44.
- Master, S. (2022). Historical photographs by South African geologist Alexander L. du Toit taken along the Transandine Railway (Argentina-Chile) in 1923. *Andean Geology* **49(2)**, 288-296. doi: 10.5027/andgeoV49n2-3418
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Master, S. (2022). Arthur William Rogers, FRS (1872-1946), pioneer in the geological mapping of the Cape of Good Hope. *Geobulletin Geological Society of South Africa*, **65(3)**, September 2022, 22-26.

Master, S. (2022). Rediscovery of the first fossil locality in the Karoo Basin, South Africa: Hinrich Lichtenstein's fossil "eel" (1803), and its re-appraisal as a new invertebrate ichnofossil. INHIGEO Conf., Hidden histories revealed in scientific revision of paleontological collections; 6th International Palaeontological Congress, Khon Kaen, Thailand, 7-11 Nov. 2022.

Master, S. (2022). French Jesuits on their way to Siam in 1686: the first scientific expedition to the top of Table Mountain (Cape Town), in search of fossil evidence for sea level change. INHIGEO Conf., Hidden histories revealed in scientific revision of paleontological collections; 6th International Palaeontological Congress, Khon Kaen, Thailand, 7-11 Nov. 2022.

Mullins, Matt (2022). Zinc-lead exploration and mining in the Bergamesque Region of northern Italy. *Geobulletin Geological Society of South Africa*, **65(3)**, September 2022, 38-43.

Reimold, W.U. (2022). 3.6 billion years of Geoheritage in South Africa- and some 25 years of GSSA Geoconservation: a personal appreciation. *Geobulletin Geological Society of South Africa*, **65(3)**, September 2022, 27-37.

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ARGENTINA: 2022-2023 ACTIVITIES

In Argentina the most important activity on the history of geology during 2022 was the preparation of the "VI Argentinean Congress on the History of Geology (VI CAHGeo) and I Latin-American Congress on the History of Geology (I CLaHGeo)".

This meeting will take place in October 6th and 7th, 2023 in the city of San Miguel de Tucumán, Argentina. It follows previous meetings held in San Miguel de Tucumán (2007), Buenos Aires (2010), Salta (2013), La Plata (2016) and Córdoba (2020). It is sponsored by INHIGEO, and the Argentinean Geological and Paleontological Societies. Registration deadline: July 31, 2023. E-mail: histogeo2023@gmail.com

For the first time this congress will be coordinated in parallel with the First Latin American Congress on the History of Geology, which has as precedents the Symposium of the International Commission on the History of Geological Sciences - INHIGEO 2013, and the 2017 and 2018 INHIGEO meetings in Rio de Janeiro and in Mexico City.

Several books and articles, as listed below, were published during 2022.

Books

Alonso, R. N., 2022. The borates of the Argentine Puna (History, Geology and Mineralogy). Foreword by Prof. Dr. Cahit Helvacı. Mundo Gráfico Salta Editorial, 172 p.; ISBN 978-987-698-377-8. Salta [In Spanish].

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- Alonso, R. N., 2022. Geology, Science and Toponymy in the Inca Empire. Foreword by Dr. Constanza Ceruti. Mundo Gráfico Salta Editorial, 168 p.; ISBN 978-987-698-397-6. Salta [In Spanish].
- Alonso, R.N., 2022. Histories of the Puna: Natural and human history of an Andean territory. Foreword Gregorio Caro Figueroa. Mundo Gráfico Salta Editorial, 156 p.; ISBN 978-987-698-411-9, Salta [In Spanish].
- Alonso, R.N., 2022. Calchaquí Geology. Metaphors of a singular landscape. Forewords by Marcelo Sutti and Leopoldo Castilla. San Pedro de Yacochuya Winery Editions. Mundo Gráfico Salta Editorial, 124 p.; ISBN 978-987-698-413-3, Salta [In Spanish].

Articles

- Ortiz, G., Saez, M., Alvarado, P., Rivas, C., García, V., Alonso, R., Zullo, F.M., 2022. Seismotectonic characterization of the 1948 (MW 6.9) Anta earthquake, Santa Bárbara System, central Andes broken foreland of northwestern Argentina, Journal of South American Earth Sciences, doi: <https://doi.org/10.1016/j.jsames.2022.103822>.
- Ramos, V.A. 2022. El doctor Amílcar Herrera, mucho más que un geólogo. Fundación Azara, Universidad Maimónides, Revista de Historia Natural 12(1): 139-163.
- Ramos, V.A. 2022. Humboldt's Interpretation of the Andean Geology. En Falk, G.C., Strecker, M.R. y Schneider, S. (eds.) Alexander von Humboldt, Multiperspective Approaches, Springer Verlag, 116-134, Berlin.
- Ramos, V.A., in press. Hans Keidel and Alexander du Toit's relationship and its impact on Wegener's continental drift hypothesis. En Murphy, B. (ed.) The Consummate Geoscientist: A Celebration of the Career of Maarten de Wit, Geological Society, Special Publications. London.
- Riccardi, A. C., 2022. La paleontología de invertebrados en la Revista del Museo de La Plata: 1891-2018. Revista del Museo de La Plata 7(2):95-106.
- Riccardi, A.C., 2022. The role of Bailey Willis (1857–1949) in the development of northern Patagonia. IUGS E-Bulletin, 191: 1-5.

Conferences and articles published in Symposia and Congresses

- Aguirre Urreta, M.B. y Ramos, V.A. 2022. Las cinco primeras geólogas egresadas en la Universidad de Buenos Aires. 21° Congreso Geológico Argentino, Actas: 1427-1428, Puerto Madryn.
- De Barrio, R.E. y Ramos, V.A. 2022. Walther Schiller y su libreta de campaña. 21° Congreso Geológico Argentino, Actas: 1429-1430, Puerto Madryn.
- Ramos, V.A. 2022. Don Félix, una revolución de nuestra petrología en el siglo XX. XII° Simposio Historia de la Geología, Humberstone 25-26 noviembre, Sociedad Geológica de Chile, p. 9, Iquique.
- Ramos, V.A. 2022. El primer estudio geológico de las Provincias Unidas del Río de La Plata: Dámaso Antonio Larrañaga (1819). 21° Congreso Geológico Argentino, Actas: 1445-1446, Puerto Madryn.
- Riccardi, A.C., 2021. Desarrollo histórico de la Paleontología de Invertebrados en la Argentina: 1835 – 1955. Simposio Historia de la Paleontología, XII Congreso de la Asociación Paleontológica Argentina (23- 26 noviembre 2021). Book of Abstracts, p. 26.

- Riccardi, A.C., 2022. Los aborígenes en la Patagonia en la época de F.P. Moreno, Siglos XIX y XX. Conference, October 2022. Academia Nacional de Ciencias de Buenos Aires, Buenos Aires
- Riccardi, A. C., 2022. Francisco P. Moreno: acciones, sueños y espíritu. Conference, June 2022, XVI Feria y Exposición del Libro de Historia de la Ciudad. Junta Central de Estudios Históricos de la Ciudad de Buenos Aires. At: Club del Progreso, C.A. Buenos Aires,
- Riccardi, A.C., 2022. F.P. Moreno y las investigaciones científicas en el inicio del Museo La Plata. Conference: Fundación Museo de La Plata, October 2022

Videos on YouTube

- Ramos, V.A., Puente del Inca: Historia, origen y preservación de un Monumento Natural. <https://www.youtube.com/watch?v=N6h29QrnJ30>
- Ramos, V.A., Historia de la Geología Estructural: evolución de los conceptos en Argentina. <https://www.youtube.com/watch?v=b82xdxBPfUA>
- Ramos, V.A., Don Félix: una revolución de nuestra petrología de Argentina y Chile en el siglo XX. <https://www.youtube.com/watch?v=L0SpaAxlJE4&t=156s>

Articles in Newspapers [In Spanish].

- Alonso, R.N., 2022. Women's in Geology. <https://www.eltribuno.com/salta/nota/2022-1-10-0-0-0-la-mujer-en-la-geologia>
- Alonso, R.N., 2022. Geosciences Masters. <https://www.eltribuno.com/salta/nota/2022-2-7-0-0-0-grandes-maestros-de-las-geociencias>
- Alonso, R.N., 2022. History of conglomerates. <https://www.eltribuno.com/salta/nota/2022-2-14-0-0-0-historia-de-pudingas-y-conglomerados>
- Alonso, R.N., 2022. History of dinosaurs in Salta. <https://www.eltribuno.com/salta/nota/2022-3-7-0-0-0-historia-de-los-dinosaurios-en-salta>
- Alonso, R.N., 2022. Darwin in Córdoba. <https://www.eltribuno.com/salta/nota/2022-3-14-0-0-0-el-aplazo-a-darwin-en-cordoba>
- Alonso, R.N., 2022. Geological history of Cachi. <https://www.eltribuno.com/salta/nota/2022-3-21-0-0-0-historia-geologica-de-cachi>
- Alonso, R.N., 2022. Philosophy of Gea. <https://www.eltribuno.com/salta/nota/2022-3-28-0-0-0-reflexiones-en-torno-a-gea>
- Alonso, R.N., 2022. Women in the history of the paleontology of Salta. <https://www.eltribuno.com/salta/nota/2022-4-25-0-0-0-el-aporte-de-las-paleontologas-de-salta>
- Alonso, R.N., 2022. Maurice de Thierry and the radioactive thermal springs. <https://www.eltribuno.com/salta/nota/2022-5-30-0-0-0-maurice-de-thierry-y-las-aguas-radiactivas>
- Alonso, R.N., 2022. Klaus Schwab, a German geologist in the Argentine Puna. <https://www.eltribuno.com/salta/nota/2022-6-6-0-0-0-klaus-schwab-el-aleman-de-la-puna>
- Alonso, R.N., 2022. Jorge Fillol Casas and the mining of the Puna region. <https://www.eltribuno.com/salta/nota/2022-6-20-0-0-0-jorge-fillol-casas-artifice-de-la-mineria>

COUNTRY REPORTS

- Alonso, R.N., 2022. The amazing biography of Annie Mulryan O'Neill and her miners works in the Puna region. <https://www.eltribuno.com/salta/nota/2022-6-27-0-0-0-la-apasionante-biografia-de-annie-mulryan>
- Alonso, R.N., 2022. History of mining woman's in the Puna of Argentina. <https://www.eltribuno.com/salta/nota/2022-7-4-0-0-0-historia-de-la-mujer-en-la-mineria-andina>
- Alonso, R.N., 2022. The last governor of the Andes territory (Argentine Puna). <https://www.eltribuno.com/salta/nota/2022-7-11-0-0-0-el-ultimo-gobernador-de-los-andes>
- Alonso, R.N., 2022. Mario Pepi and boron alchemy. <https://www.eltribuno.com/salta/nota/2022-7-25-0-0-0-mario-pepi-y-la-alquimia-del-boro>
- Alonso, R.N., 2022. History of the creation of Salta University. <https://www.eltribuno.com/salta/nota/2022-8-22-0-0-0-el-origen-y-creacion-de-la-unsal>
- Alonso, R.N., 2022. Alfredo Tomasini, and the history of Esteco ruins. <https://www.eltribuno.com/salta/nota/2022-8-29-0-0-0-el-sabio-que-rescato-la-memoria-de-esteco>
- Alonso, R.N., 2022. Times of rivers and memories in Chaco region. <https://www.eltribuno.com/salta/nota/2022-9-12-0-0-0-los-tiempos-del-rio-y-el-tesoro-de-la-memoria>
- Alonso, R.N., 2022. History of earthquakes in northern Argentina. <https://www.eltribuno.com/salta/nota/2022-9-19-0-0-0-historia-y-terremotos-en-el-norte-argentino>
- Alonso, R.N., 2022. Catalina Alfaro, a mining woman of Argentina in the XVIII century. <https://www.eltribuno.com/salta/nota/2022-12-19-0-0-0-catalina-alfaro-pionera-de-la-mineria-argentina>

Specific Individual Activities

Dr. G. Aceñolaza continued doing research on geologists working in Argentina during the XIX century, especially in the 1850s.

Dr. G.L. Albanesi initiated a new project on the history of geology with a fellow historian at the University of Urbana-Champaign, Illinois, Professor Nils Jacobsen. The project is focused in some writings of German Academicians of the National Academy of Sciences of Cordoba, Argentina, late 19th century, to analyze the style and justification of the studies carried out, and the ways of doing science of that generation of naturalists, according to the scope, methods and approaches of the time.

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

ARMENIA: ANNUAL REPORT FOR 2022

On November 30, 2022, a scientific seminar was held at the Institute of Geological Sciences of the National Academy of Sciences of the Republic of Armenia to commemorate the 85th anniversary of the founding of the Hovhannes Karapetyan Geological Museum in Yerevan (Figure 1).

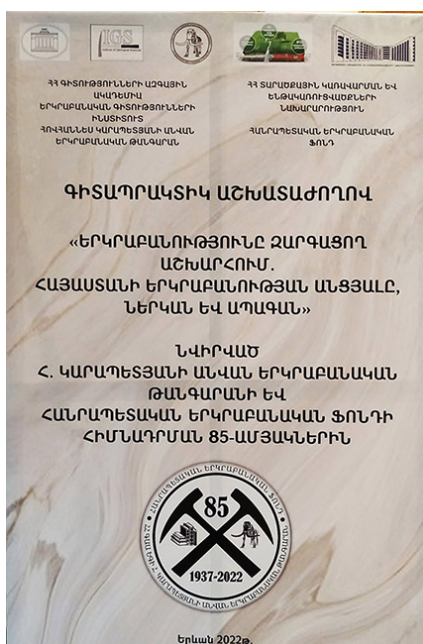


Figure 1. Announcement of the opening of the seminar

INHIGEO members H. B. Meliksetyan (Figure 2) and G.P. Khomizuri were elected to the Organizing Committee. They took an active part in organizing the seminar and also made presentations.



Figure 2. Director of the Institute of Geological Sciences and member of INHIGEO H.B. Meliksetyan (third from left) welcomes the participants of the Seminar inside the Museum

For G.E. Malkhasyan, the primary focus of research in the field of the history of geology in 2022 was the study and systematization of reports pertaining to regional geology, metallogeny, and ore reserves in Armenia, which have been kept at the Republican Geological Fund since 1930. The reports were classified according to the type of metallic minerals and the regions of Armenia. At this point, over 600 reports have been examined and catalogs were created for each group. Using this material, work has begun on a new map of metallic minerals in Armenia. In 2022, a preliminary version of the map was developed. The map will be available in both paper form and on a GIS.

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Malkhasyan also initiated a petition drive for the municipality of the city of Yerevan, requesting the creation of a memorial plaque honoring renowned geologist and academician K.N. Paffenholz on the wall of the building where he lived from 1942 to 1983, on the occasion of his 130th anniversary (Figure 3).

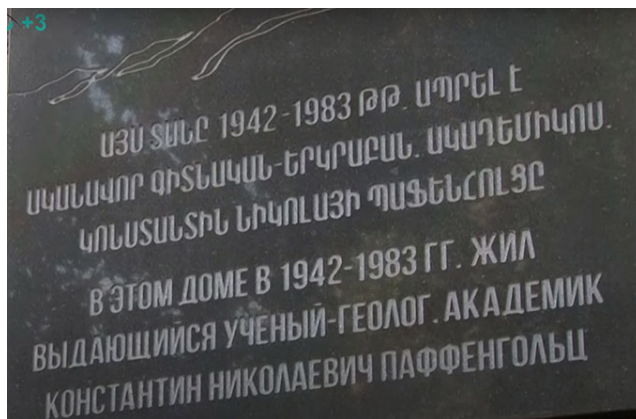


Figure 3. Memorial plaque.

Academician K.N. Paffenholz (Figure 4) devoted most of his life to studying the geology of the Caucasus, in particular, the geology of Armenia. After Otto Wilhelm Hermann von Abich

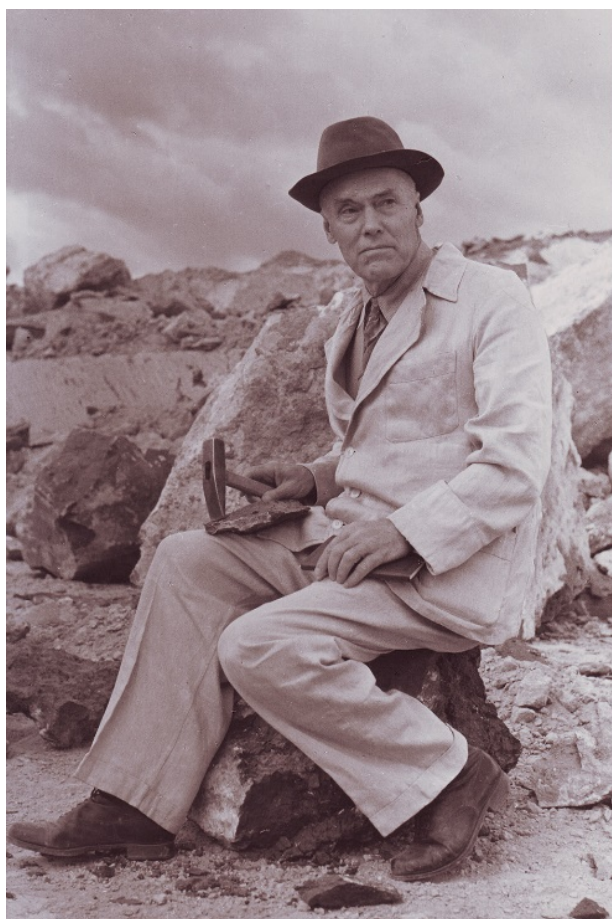


Figure 4. K. N. Paffenholz (1893–1983)

who worked in the Caucasus from 1854 to 1876, K.N. Paffenholz was the first to conduct geological surveys of the Lesser Caucasus. He developed a general stratigraphic scheme for volcanic and sedimentary deposits of all ages for the Lesser Caucasus, and established the ages of intrusions, which was very important in the search for mineral deposits. Thanks to his research, a modern scheme of the tectonic structure of the Lesser Caucasus was developed. He also worked on hydrogeology of rivers and lakes for tasks such as irrigation, energy and water supply, and he described the geology and hydrogeology of the Lake Sevan basin. Paffenholz was the author of more than 700 scientific papers and monographs as well as the chief editor of a geological dictionary, published in the Soviet Union in 1973.

On November 12, 2022, a memorial plaque in honor of K.N. Paffenholz was unveiled. Many leading geologists of Armenia, including members of INHIGEO from Armenia, H.B. Meliksetyan and G.P. Khomizuri, attended the unveiling ceremony (Figure 5).



Figure 5. The unveiling ceremony. First, second and fifth from the left are members of INHIGEO: G.E. Malkhasyan, H.B. Meliksetyan and G.P. Khomizuri

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Specific Individual Activities

G.P. Khomizuri completed the study "The History of Geotectonic thought from Antiquity to N. Steno", which was started in 2003. (227 p.; bibl. 523 names; 112 il.). The monograph "Geotectonic Thought in Antiquity" (Moscow, Nauka, 2002) traced the history of the origin and development of geotectonic thought in antiquity and provides a schematic overview of the views of the authors of the early Middle Ages. In this study, the section on the Middle Ages and Renaissance has been significantly expanded and new materials on the ancient period have been included. The new study was brought up to 1669, the year of publication of N. Steno's work "On the solid naturally contained in the solid", according to many authorities (A. Humboldt, V.I. Vernadsky, and V.V. Belousov), shared by the author of this study, is a milestone, a starting point in the history of geology as a science (and not individual statements). Therefore, since 1669, only serious reflections on the problem of interest to us should be analyzed. But this is beyond the scope of this study. He also continued to collect materials for the history of geology of Armenia for the period 1843-1872.

Publications:

Meliksetyan H.B. On the stratigraphic position of the Khosrov volcanogenic strata of the middle course of the Vedi River basin // Geology in the developing world. Past, present and future. Yerevan, 2022, p. 14-16.

Khomizuri G.P. The History of Geotectonic Thought from Antiquity to N. Steno. Moscow-Yerevan. 2003-2022.

<https://drive.google.com/file/d/15GVFoRBzUtNSLEbthagheZrZMZ-lUdWc/view>

Khomizuri G.P. Repressions against Armenian geologists and miners in the USSR. Izv. NAS RA. Earth Sciences. 2022. № 3. C. 42-56.

Khomizuri G.P. Geological thought in ancient and medieval China // Geology in the developing world. Past, present and future. Yerevan, 2022, p. 24-25.

Report compiled by G. Khomizuri, Yerevan (Armenia)

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AUSTRALIA ANNUAL REPORT FOR 2022

Carol Bacon currently serves as the INHIGEO Vice-President 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 written several books relating to the colonial history of Tasmania. In the last year Carol has attended several INHIGEO events electronically as a virtual participant. Carol has started work on a biography of Charles Gould (1834-1893), who was commissioned by the Tasmanian Government in 1859 to make a geological survey of the island and prepare a book on the geology of Tasmania.

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 (GSA), 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, serving on the Advisory Committee and editorial board of *Journal of Australasian Mining History*. He was also co-editor of the *Journal of Australasian Mining History* in 2022. During the year he completed a report on the mining history of the Northeast Lachlan-Macquarie region of New South Wales for the Geological Survey of NSW.

Publications and reports

- McQueen, K.G. 2022. A challenging ore deposit geometry: History of the Mount Claude-Round Hill silver mine, northwest Tasmania. *Journal of Australasian Mining History* **20**: 15-36.
- McQueen, K.G. 2022. Mining history of the northeast Lachlan-Macquarie region, New South Wales. Geological Survey of New South Wales Open File Report R00055827 (GS2022/1744), 55 pp.
- McQueen, K.G. 2022. Sidwell the Bal Maiden: From Burra to Cobar. In: Bell, P., Both, R.A. and Hudson, G. (eds), Proceedings of the 26th Annual Conference AMHA, Burra, South Australia 18-25 September 2022, Australasian Mining History Association, Perth, p. 33.
- McQueen, K.G. 2022. National Rock Garden on track to its new site at the National Arboretum Canberra. *AIG News*, No. 149.
- McQueen, K.G. 2022. Road cuttings: A window to ancient landscapes. *National Rock Garden Newsletter*, No. 23.
- McQueen, K.G. 2022. National Rock Garden on track for move. *National Rock Garden Newsletter*, No. 24.

AUSTRIA ANNUAL REPORT FOR 2022

Sandra Klos published one peer-reviewed journal article and six peer-reviewed collected volume articles related to the history of Earth Sciences in 2022.

- S. Klos. 2022. (Un)Freedom of choice. Explanations for career choices in mid-20th century Austrian academic CVs. *Studia historica Brunensia* 69(2): 201–213. <https://doi.org/10.5817/SHB2022-2-8>.
- S. Klos. 2022. Contested memories and memorable continuities. Austrian Geographer Hugo Hassinger (1877–1952) and his legacy within speleology. In: *Proceedings of the 18th International Congress of Speleology*, edited by B. Chirol, J. Dreybrodt, F. Guillot, J. Mattes, P.-O. Schut, A.-L. Vullien, S. Yart, Vol. 2 (Karstologia 22): 217–220.
- J. Mattes, D. A. Corradini, S. Klos, B. Mazohl. 2022. Umbrüche und Kontinuitäten. Die Akademie der Wissenschaften in Wien in der Zwischenkriegszeit. In: *Die Österreichische Akademie der Wissenschaften 1847–2022. Eine neue Akademiegeschichte*, edited by J. Feichtinger, B. Mazohl. Vol. 1: 521–608. doi: 10.1553/978OEAW90516
- S. Klos, J. Feichtinger. 2022. Die Entnazifizierung der Akademie in der Praxis 1945–1948. In: *Die Österreichische Akademie der Wissenschaften 1847–2022. Eine neue Akademiegeschichte*, edited by J. Feichtinger, B. Mazohl. Vol. 2: 163–199. doi: 10.1553/978OEAW90516
- S. Klos, D. A. Corradini, B. Mazohl. 2022. Störfall Gender. Weibliche Mitglieder – wissenschaftliche Mitarbeiterinnen – Förderpolitik – Forschungsperspektiven. In: *Die Österreichische Akademie der Wissenschaften 1847–2022. Eine neue Akademiegeschichte*, edited by J. Feichtinger, B. Mazohl. Vol. 3: 63–175. doi: 10.1553/978OEAW90516
- S. Klos. 2022. Akademiepräsidien (1847–2022) und die gegenwärtigen wirklichen Mitglieder der ÖAW.

COUNTRY REPORTS

- In: *Die Österreichische Akademie der Wissenschaften 1847–2022. Eine neue Akademieggeschichte*, edited by J. Feichtinger, B. Mazohl. Vol. 3: 359–365. doi: 10.1553/978OEAW90516
- S. Klos, M. Schlögl, P. Andorfer. 2022. ÖAW M|I|N|E: Auswertungen und Struktur der Webapplikation zu Mitgliedern, Institutionen, Netzwerken und Ereignissen der ÖAW. In: *Die Österreichische Akademie der Wissenschaften 1847–2022. Eine neue Akademieggeschichte*, edited by J. Feichtinger, B. Mazohl. Vol. 3: 367–398. doi: 10.1553/978OEAW90516

Oral presentations

Klos gave six talks during the following meetings and conferences related to the history of earth sciences:

- S. Klos: “*Zwischen Dokumentation und Selbstinszenierung. Selbstverfasste Lebensläufe von Mitgliedern der Österreichischen Akademie der Wissenschaften, 1847–1955.*” University of Salzburg (Salzburg, 11/2022)
- J. Mattes, S. Klos: “*Sensing, Observing, Measuring: The Jan Mayen Expedition of 1882/83, Habsburg (Popular) Science, and the Field Diary of Josef Pálffy.*” Conference, Collecting the North, University of Oslo (Oslo, 10/2022).
- S. Klos: “The Golden Age of Empire – Nostalgic Retrospectives of Austrian Scientists on the Habsburg-Empire in Autobiographic Self-Descriptions post-1918.” Summer School: Empire of Circulation (Vienna, 10/2022).
- S. Klos: “Contested memories and memorable continuities. Austrian Geographer Hugo Hassinger (1877–1952) and his legacy within speleology.” 18ème Congrès international de spéléologie (UIS) (Savoie Mont Blanc, 08/2022).
- S. Klos: “*Selbstverfasste Lebensläufe von Mitgliedern der Österreichischen Akademie der Wissenschaften 1952. Die Akademie als Auffangnetz belasteter Professoren?*” Conference: Biographien als Sonden der Transformation? „Agency“ der NS-Täter:innen nach 1945 in der Bundesrepublik, der DDR und Österreich (Vienna 06/2022).
- S. Klos: “What is a Scientist? Autobiographic Narrative Patterns in Austrian Academia.” Historical Fictions Research Network Conference 2022 (online, 02/2022).

Johannes Mattes published nine peer-reviewed articles and two co-edited volumes related to the history of earth sciences in 2022:

- A. Franza, J. Mattes, G. Pratesi (eds.). 2022. *Collectio Mineralium. The Catalog of Holy Roman Emperor Leopold II's mineralogical collection*. Florence: Firenze Univ. Press, 282 p. doi: 10.36253/978-88-5518-494-6
- B. Chirol, J. Dreybrodt, F. Guillot, J. Mattes, P.-O. Schut, A.-L. Vullien, S. Yart (eds.). 2022. *Proceedings of the 18th UIS Congress of Speleology, Savoie Mont-Blanc 2022 – Vol. 2 “Explorations & History”* (Karstologia 22), 422 p.
- 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. doi: 10.36253/978-88-5518-494-6

- 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
- J. Mattes. 2022. Working from overseas: The New Zealand naturalist and collector Julius von Haast (1822–87) and European scientific societies on the other side of the globe. *Canterbury Museum, Bulletin* 11: 137–153.
<https://www.canterburymuseum.com/research/canterbury-museum-bulletin/no-11-sir-julius-von-haast/>
- J. Mattes, O. Manegold. 2022. Career paths of women in speleology: A historical analysis on the example of the earth scientists Elise Hofmann & Maria Mottl. *Proceedings of the 18th UIS Congress*, Vol. 2 (Karstologia 22): 293–296.
- J. Mattes, D. Corradini. 2022. Köpfe, Staat und Forschungspraxis. Die kaiserliche Akademie der Wissenschaften in Wien in den ersten vier Jahrzehnten ihres Bestehens (in English: Figures, state and research practice. The Imperial Academy of Sciences in Vienna between 1850 and 1890). In: *Die Österreichische Akademie der Wissenschaften 1847–2022. Eine neue Akademieggeschichte*. Vol. 1, edited by J. Feichtinger, B. Mazohl, 137–194. Vienna: Austrian Academy of Sciences. doi: 10.1553/978OEAW90516
- D. Corradini, J. Mattes. 2022. Die Akademie und die Internationalisierung der wissenschaftlichen Zusammenarbeit: Kartell und Internationale Assoziation der Akademien, 1892–1914 (in English: The Academy and the Internationalization of Scientific Cooperation: Cartel and International Association of Academies, 1892–1914). In: *Die Österreichische Akademie der Wissenschaften 1847–2022. Eine neue Akademieggeschichte*. Vol. 1, edited by J. Feichtinger, B. Mazohl, 275–308. Vienna: Austrian Academy of Sciences. doi: 10.1553/978OEAW90516
- M. Klemun, J. Mattes. 2022. Expeditionen und Forschungsreisen (1847–1918). Die kaiserliche Akademie als Förderin und Veranstalterin (in English: Expeditions and research travels: The Imperial Academy as Promoter and Organizer). In: *Die Österreichische Akademie der Wissenschaften 1847–2022. Eine neue Akademieggeschichte*. Vol. 1, edited by J. Feichtinger, B. Mazohl, 197– 273. Vienna: Austrian Academy of Sciences. doi: 10.1553/978OEAW90516
- J. Mattes, D. Corradini, S. Klos, B. Mazohl: Umbrüche und Kontinuitäten: Die Akademie in der Zwischenkriegszeit (in English: Upheavals and Continuities: The Academy in the Interwar Period). In: *Die Österreichische Akademie der Wissenschaften 1847–2022. Eine neue Akademieggeschichte*. Vol. 1, edited by J. Feichtinger, B. Mazohl, 521– 608. Vienna: Austrian Academy of Sciences. doi: 10.1553/978OEAW90516
- J. Feichtinger, K. Geiger, J. Mattes. 2022. Die ÖAW-Forschung in den letzten 50 Jahren (in English: Academy Research over the Last 50 Years). In: *Die Österreichische Akademie der Wissenschaften 1847–2022. Eine neue Akademieggeschichte*. Vol. 2, edited by J. Feichtinger, B. Mazohl, 449–595. Vienna: Austrian Academy of Sciences. doi: 10.1553/978OEAW90516

Oral presentations: Mattes gave six talks at the following meetings and conferences related to the history of earth sciences:

COUNTRY REPORTS

- J. Mattes: “*Hochstetter und wissenschaftliche Gesellschaften*” (in English: Hochstetter and Scientific Societies), Invited Lecture, Hochstetter Workshop, Austrian Academy of Sciences (Vienna, 10/2022).
- J. Mattes, S. Klos: “*Sensing, Observing, Measuring: The Jan Mayen Expedition of 1882/83, Habsburg (Popular) Science, and the Field Diary of Josef Pálffy*.” Conference, Collecting the North, University of Oslo (Oslo, 10/2022).
- J. Mattes: “*Reasoning about the Earth’s underground: Visual evidence, imagination and authenticity in the travel accounts of J. A. Nagel (1748/49)*.” 47th INHIGEO Conference (Les Eyzies, 09/2022).
- J. Mattes: “*Poles & People: Geographical Societies, Statehood, and Civil Society in Transnational Perspective*.” Institute of Archeology, Conservation, and History Meeting (Oslo, 09/2022).
- J. Mattes, O. Manegold: “*Career paths of women in speleology: A historical analysis on the example of the earth scientists Elise Hofmann & Maria Mottl*.” International Congress of Speleology (Savoie Mont-Blanc, 07/2022).
- J. Mattes, “*Working from Overseas: Julius von Haast and European Scientific Societies on the Other Side of the Globe*”, Haast Symposium: Celebrating the Life of Sir Julius von Haast, Canterbury Museum (Christchurch, 05/2022).

Symposia:

On the occasion of the release of the volume “*Collectio Mineralium*” (see above), Mattes organised a symposium in Vienna on 14 June 2022, titled “Enlightened Knowledge of Nature in the Habsburg Environment. Minerals and Imperial Collecting in Florence and Vienna”:
<https://www.oeaw.ac.at/ikt/veranstaltungen/veranstaltungsdetails/enlightened-knowledge-of-nature-in-its-habsburg-settings>

Lectures were given by Franz Fillafer (*Austrian Academy of Sciences*), Annarita Franza (*University of Florence*), and Martin Krenn (*Vienna Natural History Museum*). A conference report (in German) by Sarah Triml was published here: <https://www.hsozkult.de/conferencereport/id/fdkn-130155>

Matthias Svojtka wrote five biographies of natural scientists in 2022 for part 73 of the Austrian Biographical Dictionary, which has now been completed in its printed version with this part. These include *inter alia* the mineralogist Victor Leopold Ritter von Zepharovich (1830-1890), the palaeontologist Heinrich Zugmayer (1841-1917) and the botanist Gustav Adolf Zwanziger (1837-1893), who published on Neogene plants.

ORCID: Matthias Svojtka, <http://orcid.org/0000-0001-7511-3964>

Publications:

- Svojtka, M. 2022: Zepharovich Victor Leopold Ritter von. *Österreichisches Biographisches Lexikon 1815-1950*, 73. Lfg., p. 488 (ISBN 978-3-7001-9336-4).
- Svojtka, M. 2022: Zugmayer Heinrich. *Österreichisches Biographisches Lexikon 1815-1950*, 73. Lfg., pp. 596-597 (ISBN 978-3-7001-9336-4).

Svojtka, M. 2022: Zwanziger Gustav Adolf. *Österreichisches Biographisches Lexikon 1815-1950*, 73. Lfg., pp. 607-608 (ISBN 978-3-7001-9336-4).

BRAZIL ANNUAL REPORT FOR 2022

In 2022, **Silvia F de M. Figueirôa** continued her 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** started a new research project entitled “The mineral resources of the oceans: research trajectories focusing on nodules, crusts and metallic sulfides in Brazil, in the international context (1950-1980) also supported by the Brazilian Science Foundation (CNPq-2023-2026). Mariana F. Waligora (INHIGEO/ Argentina-Brasil) continues to develop her doctoral project “Museums and Scientific Exchanges in the Global South. The fossil genus *Glossopteris* and the theory of continental drift, 1915-1940” at la Plata University, with funding by CONICET, Argentina. In 2022 she also participated in the Research and Innovation Staff Exchange (RISE) Project funded by the European Union, as part of the Horizon 2020 Marie S-Curie Actions (MSCA) Program. And Margaret Lopes, continued her activities as Vice-President of INHIGEO for Latin America.

The list below shows aspects of our production more specifically related to the History of Geology.

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CLEMENTE, José Eduardo Ferraz. O Microcosmo do Instituto de Geociências da IGEO/ UFBA durante a Ditadura Militar e a Formação de Geofísicos para o Petróleo: a modernização autoritária em anos de chumbo (1968-1985). In: 18º Seminário Nacional de História da Ciência e da Tecnologia, São Paulo: SBHC. Caderno de Resumos, 2022.

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

CANADA ANNUAL REPORT FOR 2022

Philip J. Currie

Last year (2022) saw the hundredth anniversaries for several dinosaur-related events of significance. First, on September 1, 1922, the Central Asiatic Expedition of the American Museum of Natural History discovered the Flaming Cliffs (Bayan Zag) of Mongolia. This led to the recovery of the first recognized dinosaur eggs, and the first known specimen of *Protoceratops andrewsi*. In 2022, on our way back from a locality farther west, our expedition stopped at the recently opened interpretive centre at the Flaming Cliffs. To honor the discovery of what has become one of the best-known dinosaur sites in the world, our expedition met at sunset with local officials for supper at the base of the cliffs! We were awarded by the presentation of medals for “outstanding contributions to the prosperity and development of Omnogovi Province, Mongolia”. Seeing that this famous locality has been cleaned up, protected and developed for tourism was an amazing development. However, when we got to Dalanzadgad the next day, we were even more surprised to see a beautiful new museum of Natural History with some of the best dinosaur displays in the country. The displays even include photographs and information (in Mongolian and English) on most of the international dinosaur expeditions to Mongolia.



Figure 1. The Flaming Cliffs of Mongolia (Bayan Zag) a century after they were revealed to the world by Roy Chapman Andrews. Hundreds of dinosaur skeletons have been collected here, but the site is most famous for the nests of dinosaur eggs that are constantly being exposed by erosion.

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Our work in Mongolia included a return to a ‘lost’ quarry of a dinosaur that had been found by the Polish-Mongolian Paleontological Expedition. It was one of two sauropods they collected in 1965 from the Nemegt Formation. A skull that lacked a postcranial skeleton was found at the Nemegt locality, and was described as *Nemegtosaurus mongoliensis* by Nowinski (1971). A sauropod skeleton lacking a skull was found 50 km to the northwest at Altan Uul IV in the same formation. Even though there was no overlap in the parts of the skeletons that had been collected, the second specimen seemed at the time to be from an entirely different family of sauropods, and was named *Opisthocoelicaudia skarzynskii* by Borsuk-Bialynicka (1977).

Over the years, our knowledge of sauropod relationships has greatly improved, and we now know that *Nemegtosaurus* and *Opisthocoelicaudia* are both titanosaurid sauropods (Currie *et al.*, 2018). This suggested to many researchers that these two sauropods that come from the same general area and the same time might in fact be the same species of dinosaur. But this is impossible to prove without having some overlap in the known skeletons. It therefore became imperative to relocate the quarries of the two sauropods. We finally found the quarry of *Opisthocoelicaudia* in 2007 (Currie, 2009, 2016) but did not find any evidence of the skull. It took much longer to find the quarry of *Nemegtosaurus* (Figure 2), but we finally succeeded in 2016 (Currie *et al.*, 2018).



Figure 2. A photograph of the *Nemegtosaurus* site with arrow pointing to the ends of the uncollected tibia and fibula that are protruding from the cliff. The height of the rock above the bones is 3.5 metres. Evidence suggests that the *Nemegtosaurus* holotype skull was removed in 1965 from a block of rock that had fallen to the bottom of the cliff (below the pack-sack on top of the rock).

Fortunately, this time the quarry produced parts of the postcranial skeleton (several vertebrae, a femur, and a toe bone) that overlap with the skeleton of *Opisthocoelicaudia*. Furthermore, more of the skeleton was found inside the sediments but will need to be excavated. Part of our purpose in 2022 was to determine what will be required to reopen the 1965 quarry to recover more of the

skeleton. Plans are now in place for the equipment and manpower to excavate almost 200 cubic metres of rock in 2023. In addition to working at the *Nemegtosaurus* quarry, some new clues have been found that may allow us to identify Soviet dinosaur quarries from 1946, 1948 and 1949 (Efremov, 1949). We hope we will be able to determine which specimens were collected from at least some of these quarries. This also relates to finding a cast of a partial dromaeosaurid skeleton that had been sent to the Canadian Museum of Nature around 1970. It took some diligent sleuthing by INHIGEO member Jordan Mallon to find out how the cast ended up in Ottawa, and a paper describing the specimen is now in process. We hope this year's expedition will pinpoint the geographic position and stratigraphic level of this important specimen.

A final note of historical and personal significance concerning Mongolia is that in 2022, I was awarded the Distinguished Explorer's Award by the Roy Chapman Andrews Society. It was Andrew's book on his expeditions to Mongolia that convinced me to become a palaeontologist when I was 11 years old. And his capabilities as a public educator and as someone who inspired children to become scientists and explorers have always shaped my own career. Without a doubt, this is one of the most meaningful awards that I have ever received.

The second 100-year anniversary celebrated in 2022 was the Field Museum of Natural History Expedition in 1922 to what is now Dinosaur Provincial Park. Formerly known as the "Captain Marshall Field Paleontological Expedition to Alberta, 1922" (Brinkman, 2013), the expedition made many significant finds that were unfortunately largely forgotten because of a subsequent expedition to Argentina. Most of the dinosaur quarries from 1922 have been relocated (Sternberg 1950; Tanke 2005) thanks to the rich legacy of photographs left by expedition members (e.g. Figure 3). However, the anniversary was an opportunity to not only celebrate their success, but also to focus on a search for the still missing quarries. Five people from the Field Museum of Natural History in Chicago joined a similar number of people from Alberta institutions for the tribute expedition in 2022. Although none of the 'lost quarries' were located, significant specimens were collected for research, and sufficient data were put together to hopefully allow us to ultimately find the missing sites. An article was written on the 1922 and 2022 expeditions that should appear soon in *Prehistoric Times* magazine.



Figure 3. Photograph (GFS 28-22) taken by George Sternberg in 1922 of a dinosaur quarry (Quarry 69) compared with the quarry as it appeared in 2022. The Sternberg photo shows one of the crew working amongst the plaster jackets, and the wagon used to haul the hadrosaur skeleton out of the badlands. The vertical metal pin in the middle of the quarry in the 2022 photograph is a marker that identifies the quarry.

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In 2022, I gave many talks and lectures on dinosaurs; most of them included some information on the history of dinosaur collecting somewhere in the world. “Hunting dinosaurs in the Gobi Desert: In the footprints of Roy Chapman Andrews” was mostly about the history of collecting dinosaurs in central Asia, and it was given to the Roy Chapman Andrews Society in Beloit, Wisconsin.

Currie (2023) is an article about the history of changes in how research has been done on dinosaurs over the last 60 years.

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Ernst Hamm

In 2022, my INHIGEO related activities involved both teaching and research. It was a great pleasure to see my student Matthew Burns give a very able and successful defence of his doctoral dissertation, *Predictive Networks and the Plate Tectonics Revolution*. Burns’s dissertation presents a model of scientific knowledge as networked knowledge, and is thus primarily a contribution to the philosophy of science; but it is also a contribution to the history of the geosciences, for it makes its philosophical case through a careful historical analysis of the plate tectonics revolution. Building on the work of others and through his own study of the primary sources, Matthew shows that independent developments in marine geology, geochronology and paleomagnetism “snapped together” to form a new epistemic network. The “snapping together” contributed to the “surging support” for mobilism in the 1960’s. I co-supervised Matthew together with Brian Baigrie, a philosopher of science at University of Toronto; the external examiner was the philosopher Adrian Currie (University of Exeter), who works in the philosophy of the historical sciences, including paleontology, geology and archaeology, and is the author of *Rock, Bone and Ruin: An Optimists Guide to the Historical Sciences* (MIT, 2018)

In May 2022 I organized an “author meets critics” session for the annual meeting of the Canadian Society for the History and Philosophy of Science. The book under discussion was James Elwick’s *Making a Grade: Victorian Examinations and the Rise of Standardized Testing* (University of Toronto 2021). Tara Abraham (Guelph University), Robert Brain (University of British Columbia) and I presented papers offering commentary and critique of the book, and James Elwick replied to our remarks with a paper of his own. The session of papers was published in *Metascience*, 31(3): 325-349 (2022). *Making a Grade* offers a witty and well-written history of the rise of standardized testing in Britain, and to some extent the British Empire. It is also a timely history, for it turns out the current obsession with ranking universities (and just about everything else) has its roots in nineteenth-century regimes of standardized testing.

The highlight of 2022 was unquestionably the conference at Les Eyzies, in the Dordogne of France, another outstanding INHIGEO meeting. I presented a paper on the geological reflections of Georg Christoph Lichtenberg, the eighteenth-century natural philosopher, physicist, aphorist and Göttingen professor. In an essay, ostensibly on the geological insights of Benjamin Franklin, Lichtenberg offered a number of insights on the scientific, social, moral and political relations of the geosciences as they were taking shape at the close of the eighteenth century. INHIGEO meetings aim to intertwine academic sessions with a rich tableau of excursions in the regions of the annual conference, and this year’s meeting was no exception, and I congratulate the organizers on organizing an outstanding program. The riches of the National Museum of Prehistory, just a stone’s throw from the meeting venue, were a delight to all. Even more spectacular were the many prehistoric sites of the region, above all the caves and the magnificent paintings of Lascaux, Font-de-Daume and Peche Merle, art that leaves one with a profound sense of our shared human heritage.

Jordan Mallon

Work continues in line with that reported last year. My M.Sc. student Mathew Roloson successfully defended his thesis last summer, which investigates the historical record of *Triceratops* in Saskatchewan. This work involved much archival research with the intention (and occasional success) of relocating historical dig sites for field mapping. He and I are in the process of preparing the resulting manuscript for peer review now.

Similarly, my other recently-graduated student, Bryan Moore, is preparing his M.Sc. thesis for publication. His work also involved historical quarry work in Saskatchewan, relating to the world’s youngest known dome-headed dinosaur skeleton.

In August of 2022, I spent nearly four weeks digging at a horned dinosaur bonebed in southern Alberta, north of Medicine Hat. This bonebed has been known since the late 1950s, but was never systematically developed. In fact, I have been working the site for several years now, and am close to wrapping up there, having found a third *Centrosaurus* skull in the bonebed last summer. My ongoing work in that area has attracted the attention of the locals, who have been very good to me. The nearby village of Hilda will be celebrating their centennial anniversary in July of 2023, and they asked me to pen a brief write-up about the history of palaeontological collecting in the area, which I have done. I trust that the article will be available in the summer.

David A.E. Spalding

Covid and Climate Change. Daily life continues to be impeded to some extent by Covid; as I am a senior who is medically challenged in various ways it is still advisable to avoid infection if

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possible. However, vulnerable citizens of British Columbia have been well served with injections and updates, and despite the general relaxing of precautions and corresponding surges of infection in the local population, it was not until November 2022 that my wife and I finally contracted our first Covid attack, which was relatively mild though prolonged.

As travel became more practicable in 2022, we essayed short road trips, only to find contacts we proposed to visit sick with the pandemic. A planned winter flight to the adjacent province was cancelled for a different reason, as climate change is increasingly producing unusually extreme weather. The day we were due to fly, we were snowed in at a motel, and airports across the country were buried in snow for weeks.

Earth Science history projects have of necessity continued to be focused at home, using my personal library and (between power outs) the internet as my major resources.

Iron Creek Meteorite/ Manitou-Asiniy. In several recent years I have reported on changes in the status of one of the most important Canadian natural objects, and there have been further developments in 2022. In a nutshell, the Iron Creek meteorite or Manitou Stone, 145 kg, lay on a hillside southeast of Edmonton, Alberta. It has been regarded as a sacred object by aboriginal populations of the prairies for an unknown period before contact. In 1866 it was transported to a Methodist mission, despite prophecies of disasters by indigenous elders, and examples of all the disasters took place within a short time. In due course the meteorite was transported to Victoria College in Toronto, and was then placed on display at the Royal Ontario Museum. There I saw it shortly after being appointed to a senior position at the new Provincial Museum of Alberta, and was able to arrange for its return to Alberta in 1972. There it became a key exhibit in a gallery on the geology of the province. More recently, it was moved to the Human history galleries, and when a new museum building (now the Royal Alberta Museum) was built it was given a special exhibit space distinct from the rest of the exhibits. Its status became involved in discussions between the Provincial Government and Alberta First Nations, and there was interest in Manitou-Asiniy (as it is now often called) being returned to its original site, though discussions have been handicapped by lack of knowledge to identify that site, the absence of a responsible body who could take responsibility for housing it, and the associated costs.

More recently an indigenous-led, not-for-profit organization called Manitou Asinîy-Iniskim-Tsa Xani Center has been formed representing native interests, which approached the government. The latter has made a commitment to return sacred ceremonial objects in government hands to indigenous communities. On 30 September 2022, a co-stewardship agreement was signed between the Government and the centre. A commitment was made to return the Manitou-Asiniy to a site close to its original location and the care of indigenous peoples. Until the centre can be constructed it will remain at the Royal Alberta Museum. The Alberta government has contributed \$500,000 seed money to the project, which is expected to cost around \$10 million, and will provide further support as it develops.

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Mastodons and Mountebanks, Bullock and the Egyptian Hall. I continue to review papers within my experience for HESS. During 2022 I had the pleasure of a looking at a fascinating paper on Albert Koch's Missouriium, a restored (and modified) Mastodon collected in the United States

in the 19th century which was toured around the US and Europe as a travelling exhibit, and ended up (suitably reconstructed) in the galleries of London's Natural History Museum (McMillan, R.B. 2022. Albert C. Koch's Missouriium and the debate over the contemporaneity of humans and Pleistocene megafauna of North America. *Earth Sciences History* 41(2): 410–439). As always, this reviewer learned not only from the paper, but also much else that came up in the research that was peripheral, but fascinating.

One thread that intrigued me was a glimpse into the story of London's Egyptian Hall and its creator. Here in 1841 the Missouriium made its London debut. In search of knowledgeable reactions to the exhibit I checked Gideon Mantell's published journal, a rare volume I am fortunate to have on my shelf (Curwen, 1940). Indeed, Mantell reported his impressions of the Missouriium in December 1841, and also was present at a meeting of the Geological Society in the following June when Missouriium was the subject of "an angry discussion" between Richard Owen and the less well-known palaeontologist Robert Grant.

I had come across other references to the Egyptian Hall, but only now became aware of its odd role as a leading natural history museum in early 19th century London. The hall was created by a showman and naturalist called William Bullock (1773-1849). He was apparently born in my home town of Sheffield, and had training as a goldsmith and jeweller in Birmingham. He exhibited collections in Sheffield, and moved them to Liverpool, by which time he had acquired ethnographic items from Captain Cook's voyages. In 1809 he moved to London, and commissioned the new building in Piccadilly. His architect used features from fashionable Egyptian architecture. When it opened in 1812 Bullock exhibited his extremely popular "London Museum of Stuffed Animals." Bullock was a member of the Geological and other learned societies, and published detailed catalogues of his collections. However, he also recognized the importance of changing exhibits if he was to continue to attract his audience, and auctioned his collections in 1819, retaining the hall. He displayed a temporary exhibit from Lapland, and following an expedition to Mexico in 1822 (where he became involved in silver mining), showed "Ancient Mexico" and Modern Mexico." He sold the lease to the hall in 1825, and later owners continued to exhibit a variety of shows.

Mantell later saw at the Egyptian Hall a number of attractions that I recognized as being associated with Phineas T. Barnum's career — the Siamese twins Chang and Eng in 1829, and the celebrated dwarf known as General Tom Thumb in 1844, who was by this time "under the special patronage of Her Majesty [Queen Victoria] and the King of the Belgians." Barnum described his periodic rental of the hall, as well as his royal patronage, in his *Struggles and Triumphs* (Barnum, 1873). In 1852 Mantell saw other attractions at the gallery; a lecture on "electro-biology," and another lecture and diorama on an ascent of Mont Blanc, of which he felt the "movable transparent scenes were very beautiful" but the speaker left much to be desired.

Meanwhile, Bullock undertook a further expedition to Mexico and the United States, and attempted to build a utopian community on the Ohio River. He published a book on this journey, and returned to London where he died in 1849.

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Ongoing Work on Memoirs. I am continuing work on my own memoirs. A draft is near completion of a memoir of my Sheffield childhood, and my efforts to become a naturalist (working title “Once Bittern”). Drafts of several sections of my Alberta memoir are in progress, covering my arrival in Alberta in 1967, 15 years in senior positions at the Provincial Museum of Alberta, and early development of what is now the Royal Tyrrell Museum. The working title is “A Dinosaur in the Basement”.

Canadian Historians of Earth Science. I have been exploring the question of who (other than INHIGEO members) has written about the history of earth sciences in Canada? For several decades I have been gathering some of the literature of earth sciences in Canada, and have had access to special libraries in the field, notably for many years Bill Sarjeant’s academic reference material, which is now in the University of Alberta library.

While re-organizing my own shelves, I was struck by the diversity of writers outside the INHIGEO membership who have written on aspects of earth science history. Accordingly, I commenced to pull together a preliminary list of those I am aware of who have written about the history of Canadian earth science. My raw material comprises book-length studies of historical aspects of earth sciences, of individuals and organizations, and of regions. More specialized topics I have included are scientific exploration, natural disasters, and the preservation and interpretation of sites of which the interest is primarily geological. I have not included many valuable books which primarily result from individuals writing about their own work, or geological studies in which the historical aspects play a minor part. Accordingly, the list is of those who have brought some outside perspective to their subject; all are professional or amateur historians and biographers to some extent. I have also included a number of individuals whose work is primarily in a number of papers in this field, rather than book form.

Canada is one of the largest countries in the world, with a geology ranging from the Pre-Cambrian Canadian Shield to extensive Ice Age deposits. Its geological phenomena include a number of recognized of international importance, which have in turn attracted writers from elsewhere. So, my list includes Americans Stephen Jay Gould (on the basis of his brilliant book on the Burgess Shale) and Kevin Krajick (who has documented the discovery of diamonds in Canada’s Arctic). Other Americans have written about the Klondike, and the work of American geologists working in Canada. One INHIGEO member from far across the world should also be mentioned in this context. Simon Nathan, a New Zealand member, was attracted to the life of James Hector, who was not only a pioneer geologist in Canada, but became director of the Geological Survey of New Zealand (Figure 4). After the Calgary INHIGEO conference (2009) I was privileged to lead a post conference field trip including Simon into the Rocky Mountains. He was in search of the Kicking Horse Pass, where Scottish James Hector — the one who was kicked — nearly had an early end to his geological career. Hector is now the subject of a biography by Nathan.

Meanwhile, Canadian writers have not restricted their attention to their own country, and some have contributed important studies of international significance. Examples include the early history of geology (Frank Dawson Adams), and pioneers of vertebrate paleontology in the UK (Chris McGowan).

Within Canada, subjects have included biographies of such notable figures as Dawson (Barkhouse, Jenkins), Hector (Lakusta, Spry), Lawson (Vaughan), Logan (Harrington), Tyrrell (Inglis, Loudon, Robertson), and the Vaux family (Cavell).

Histories of geological organizations include the BC Geological Surveys (Sutherland Brown) and Geological Survey of Canada (Thomson, Zaslow). Abundant fossil fields have led to books on the discovery of Cretaceous dinosaurs (Gross). The work of American vertebrate palaeontologists active in Canada, notably Barnum Brown (Dingus and Norell), has been extensively covered by writers from the American Museum of Natural History. Canada's role in establishing international expeditions to the Gobi desert has been featured (Grady).

Economic geology has also attracted much attention (Taylor). Richest in literature is the Klondike Gold Rush. Its centre was in Canada's Yukon, but it attracted many American and other miners and would-be miners, and the mining activity spilled over the border into Alaska. Consequently, aspects of the Klondike are covered by many Canadian and American writers. (Berton, Bolotin and many others). Gold mining is not limited to the Klondike, and crops up in unexpected places; for instance, a biography of American art museum founder Joseph Hirschhorn also covers the source of his wealth in Canadian gold mines and uranium discoveries (Hyams). Oil has attracted authors (Finch, Gould) as has coal (Gadd) and metal mining has also a rich literature (Peterson). Not all economic geology is profitable, and some authors have written about natural disasters that have been costly in lives and dollars (Hollihan).

Canada has pioneered the preservation and interpretation of geological sites, including national parks (Marty, Nelson), some of which are notable for their geological features such as Banff (Luxton), and World Heritage Sites (Dinosaur Provincial Park).

Surveying the provisional list of over 40 writers, I can begin to form a preliminary picture of their backgrounds. I here summarize information on a few examples to illustrate their variety of training and employment.

Geologists and palaeontologists themselves are of course a prime source of historical writing. Some have held senior staff positions in geological organizations. As an example, Athol Sutherland Brown (1923-2016) was born in Victoria, B.C. and had a distinguished career as a fighter pilot with the RCAF before completing a Ph.D. in geology at Princeton, and became chief geologist for the BC Geological Survey. In addition to works on his war experiences and geological fieldwork in Haida Gwaii, he wrote and edited a centennial history of the Survey.

Academics in life and earth sciences include Chris McGowan. Born in 1942 in England, McGowan took a Ph.D. in Zoology at the University of London. Moving to Canada he held academic positions at the University of Toronto and was cross appointed to the Royal Ontario Museum, where he studied dinosaurs and other vertebrate fossils. He has written numerous books for children and adults. His 2001 historical book is an outstanding historical study of the early years of vertebrate palaeontology in the UK.

Academics in other fields, such as historians and economists, have also contributed to earth sciences history. A remarkable example, Morris Zaslow (1918-2013) taught history at three universities, finishing his career as a professor of history at the University of Western Ontario. He specialized in the history of Northern Canada, and was commissioned by the Geological Survey of Canada to write its official history (Figure 4). In almost 600 pages, Zaslow presents a remarkable tale of one of the earliest geological surveys of one of the largest countries.

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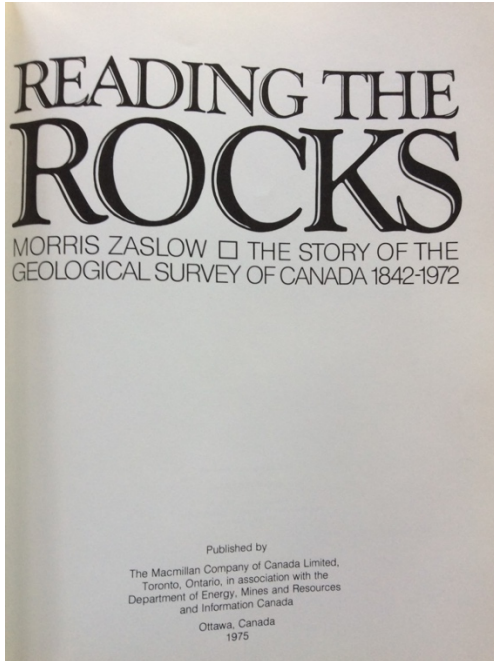


Figure 4. Cover of Morris Zaslow's book Reading the Rocks: The Story of the Geological Survey of Canada, 1842–1972.

Other educational institutions (museums, parks, schools) have produced their earth science historians. Some have support from their institutions, other have worked on their own. One such example was Ernie Lakusta, (1944-2010). From Hardisty, Alberta, Lakusta lived in Calgary, where he obtained B.Ed. and M.Sc. degrees. He became a high school biology teacher and science department head. He was a keen outdoorsman who travelled much of the country first mapped by James Hector, a Scottish geologist who travelled western Canada with the Palliser expedition. His biography of Hector was published in 2007 (Figure 5).

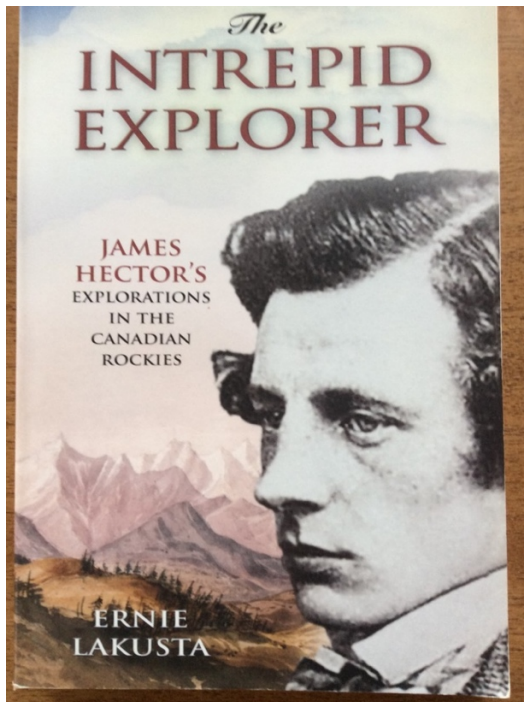


Figure 5. Cover of Ernie Lakusta's book entitled The Intrepid Explorer: James Hector's Explorations in the Canadian Rockies.

Miners and prospectors seem to have contributed relatively little to the history they have been so involved in. However, Eugene Petersen (1916-1989) left some memories of his life in Sandon, a mining town in British Columbia. Born in Norway, his parents brought him to Canada at the age of six. Prospectors found silver ore in 1891, and in 1892 the celebrated silver boulder—125 tons of silver—made the area famous (Figure 6). By the time Petersen arrived, in 1922, Sandon was a major metal mining city with a population of some 3000 people. Petersen prospected and mined, and remained to be the last resident of Sandon when it dwindled to the ghost town it is today. His book, *Window in the Rock*, is a rare volume which I have never seen, but an abbreviated version of it appears in an undated pamphlet.

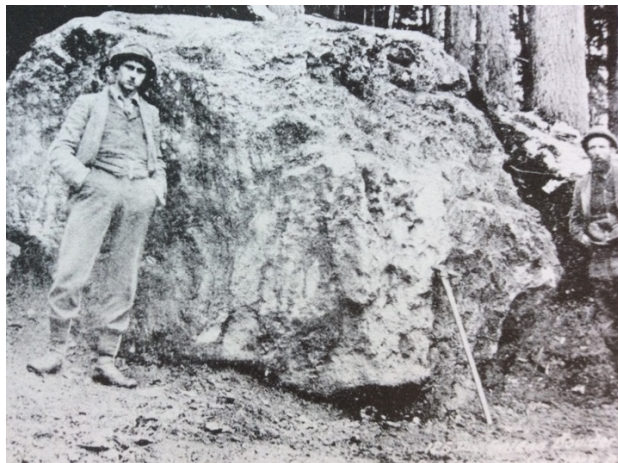


Figure 6. Photograph of the 'Silver Boulder' found in Sandon, British Columbia.

Perhaps the biggest group of writers in this field are freelance writers, editors and reporters, in search of topics of public interest, who have found them in biographies of geologists, dinosaur and gold rushes, and the major extractive industries. The best known of this group is Pierre Berton (1920-2004). Although not a geologist, Berton was well qualified to write about one aspect of earth sciences history. He was born in Whitehorse, Yukon, and moved with his parents to Dawson City when it was still a gold rush town. He studied history at the University of British Columbia, then became a reporter and a prominent broadcaster and writer. He wrote several books related to the Klondike Gold Rush, most notably his history in 1972. Berton's house still stands in Dawson, where it is now a home for writers in residence; a delightful place in which my wife and I had the pleasure of spending a summer — and of course, we wrote about the Klondike.

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Darren H. Tanke

My activities related to earth sciences history preservation in the past year are as follows:

1. In Dinosaur Provincial Park in June, 2022 I assisted a Chicago Field Museum (CFM) and University of Alberta crew, guiding them to dinosaur quarry sites worked by their (CFM) institutional predecessors exactly 100 years earlier. None of these sites were properly documented in any way and their spatial and stratigraphic whereabouts compromised representing valuable data lost to contemporary workers. Many dozens of 1922 expedition photographs were taken and starting about 25 years ago, I began to use the pictures and other clues to systematically relocate all but two of the old dinosaur quarries (the most important one unfortunately not photographed), now long hidden by erosion, masking their appearance. I helped guide the 2022 Chicago crew and others to these 1922 quarries. In many instances, we had the crew pose in the postures assumed by the 1922 crew and took photographs.

2a. In the summer of 2022, I was technical lead on the first phase of the recovery of a half-grown hadrosaur skeleton in Dinosaur Provincial Park (DPP), Alberta, but one that appears to be potentially covered in thin ironstone skin impressions over a large area. Because of this, the skeleton cannot be collected by conventional means which includes dividing the skeleton up into small and more manageable plaster of Paris and burlap field jackets. Therefore, the animal has to be taken out in a single jacket which could weigh up to 5.25 US tons. Removal of such a large item in the middle of the Alberta badlands has never been attempted before so I have been compelled to do much historical research on how earlier expeditions (globally and going back to the later 1800's) accomplished these efforts. I discovered that while there is good literature on how to make a plaster of Paris jackets around dinosaur bones or skeletal parts, there is a dearth of written descriptions on how to then get a heavy jacket from the field to a road for ease of transport. Therefore, I began compiling a paper, including some history on this topic, discussing this problem and created a half hour PowerPoint talk, which I presented for the first time at the 26th annual conference of the Alberta Palaeontological Society at Mount Royal University in Calgary, Alberta (Tanke, 2023a). The larger paper (Tanke, 2023c) came out soon after. At the same conference (and another in Seattle, WA) I did a poster presentation on aspects (including history) of fieldwork health and safety utilized by the Royal Tyrrell Museum of Palaeontology at open pit ammonite mines in southern Alberta (Tanke, 2023b, d).

2b. In the summer of 2023, we continued on the reopening an old American Museum of Natural History armored dinosaur quarry in Dinosaur Provincial Park from 1913-1914. "Thor" as the ankylosaur *Euoplocephalus* therein has been nicknamed, was found by accident; what was thought to be an isolated tibia led to the discovery of more bones including an amazingly perfect tail club and the realization that the site was an old quarry (yielding AMNH 5337), a perfect match with an archival AMNH photo of fieldworkers at the site in 1913 was made (Tanke, 2021: fig. 1). Ongoing work at the field site was effectively torpedoed by the COVID-19 pandemic and other priorities barred work there last year. The skeleton was both articulated and disarticulated. A

review of what each (AMNH and TMP) institution has in their fossil collections (see Tanke, 2021: fig. 3) reveals an absence of one mandibular ramus, cervical vertebrae and cervical ribs, both manii, a femur, a tibia, both fibulae, both pedes (one metatarsal excepting), and the unfused tail vertebrae with their fused chevrons between the pelvis and tail club. Ankylosaurs were heavily armored with osteoderms but neither institution has much armor in their collections. We hoped to find these missing elements in the summer of 2023, but only found one elongate ossified tendon bundle, so this site has been now closed and will be monitored in the future for any new bones exposed by natural erosion.

2c. Another DPP project is the ongoing field recovery of eroded out and possible discarded cranial fragments of the type specimen of the ankylosaur *Euoplocephalus tutus*. In the summer of 2017, I found hundreds of widely scattered and eroded skull fragments (TMP 2017.012.0135) in the badlands there. I have returned to the site several times since, securing more pieces each time and have been slowly gluing back together a badly shattered skull and pieces of cervical half rings (neck armor). Curiously, all the skull pieces are from the back, sides, front and palate regions, but nothing from the middle region. More curious is the type specimen of *Euoplocephalus tutus*, collected by Lawrence M. Lambe in 1897 and now curated at the CMN in Ottawa is the middle of a skull and nothing more – there are no boxes of associated skull fragments there. From Lambe's fieldnotes, I can put him in the TMP 2017.012.0135 field area that summer and the same area where he found the type skull. The positioning of some loose skull pieces, up to three metres away and 0.5 metres upslope from the *in situ* palate, suggest human activity there where the finder went after the more complete middle region of the skull and dug around it, and apparently tossing the loose but associated pieces aside. Remarkably a small piece of bone, forming part of a tooth socket was found about 3 metres away and a bit upslope from the palatal section and fit onto that section, even though the latter was found in 2018 to be 10-15 cm underground and *in situ*. It seems possible that Lambe, in his excitement and vigor to dig around and isolate the middle of the skull, knocked a small piece off and tossed it aside, then in lifting the middle section of the skull out accidentally left the palate behind. It seems impossible a wild animal dug around an exploded dinosaur skull, it's digging activities showering rock and bone debris that far away. Are the 2017-2022 pieces ones that fit onto the 1897 section? That is still undetermined, however all other *Euoplocephalus* skulls from DPP are complete save two- the type, a middle of the skull region only and TMP 2017.012.0135, the rim of a skull missing it's middle. Recovery of more pieces is hoped for in the summer of 2023 and then eventually taking the assembled sections and other pieces to Ottawa and test fitting them onto the type skull to see if there is a match (Tanke, 2022). Only one fit is needed and the mystery is solved!

3a. I have been with the Tyrrell Museum (TMP) and it's predecessor since 1979. Another staffer has been with the museum since 1982. I am now the longest serving employee there, and she among the second-longest serving TMP employees. We both work in the fossil preparation lab. She began a project which I am now helping on. This is a year-by-year accounting of all museum field and lab technicians, hired summer field staff, visiting students who went on to pursue professional paleontology careers, visiting scientists, and outstanding recurring volunteers, and all of this from 1982 to present. The project is arranged year by year, the people arranged alphabetically and each with a portrait-like image cropped from archival lab and field photographs. Of course, this is a massive project, involving many people, many years and a great many memories, some dimmed by time. Data from this are being sourced from a variety of places. First are our own memories, backed up by the memories of our colleagues, still at the museum or now elsewhere. Thousands of museum and personal photographs yield all sorts of valuable clues as to

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the comings and goings of people over the years, as do field notes, volunteer lists, employee lists, etc. Presently we have close to 500 names but no end in sight. Perhaps as to be expected and also a bit disturbing, are people we worked with for several years long, long ago who we have just completely forgotten. We have a name but cannot recall the face.

3b. Another potential project, just beginning to evolve as an outgrowth of 3a, is a thorough examination of nearly 40 years of scanned print pictures, scanned 35 mm slides and digital imagery, mostly related to fieldwork in Alberta and overseas. INHIGEO member Philip J. Currie ensured all his images were properly sorted and documented around the time he left the Royal Tyrrell Museum in 2005, but other images from other curators and technicians, most since retired, less so. Many images were digitally scanned on/about 2009 and put into labelled digital folders, but little care it seems was made by the person contracted to do picture and 35 mm slide scanning to put them in proper folders. In some cases, where the scenes were taken is not recorded and some have mixed up years, some images scanned backwards and other issues. For example, a file labelled “Dinosaur Provincial Park 2007” contains images from that place and year, but other included imagery is from other places in Alberta and/or are from different years and/or are scanned backwards. Metadata on some images are off by a year as the owner of the camera failed to set, or improperly set the camera’s internal computer which records the date the image was taken. Because of this it is entirely possible to be looking at images of a dinosaur quarry work on a hot summer day in 2009, but the metadata says the image was taken on February 13, 2008! This date is very much winter in Alberta. These matters have resulted in a sometimes-tangled mess and only a few of the original field staff remain who could try to make things right again. With such issues, one can only suspect properly labelled images may be in fact incorrect. It’s a truly sad situation, especially so for an institution so young.

Fixing this is underway. It seems that in some cases, someone in an office with the computer with access to the filed pictures will have to show problematic images on a larger television screen in an adjoining room to a small assembly of experienced long-serving technicians who will have to collectively put on their thinking caps and determine the who, what, where and when of each image which will then have to be sorted in well described digital folders and subfolders containing Word document “Read Me” files explain in great detail where the pictures were taken, catalogue number of the specimen(s) shown, workers fully identified and other details. We might have to have some retired curators come and look at images they took as long as 40+ years ago and tell us what we are looking at.

4a. My ongoing writing of biographies on lesser known or easily forgotten people involved in the early Albertan vertebrate paleontology, part of my “Remember Me” series, took a hit during the pandemic as sources of information at various museums and archives were unavailable. Therefore, I was only able to make a little progress on most of them and I pursued other lines of research. A major project with several current and former staff of the American Museum of Natural History (AMNH) involved a detailed, concise history of everything the AMNH did in Alberta in the first half of the 20th Century regarding exploration and fossil collection in our province. That project was shelved because of the pandemic and I hope to get back to it some day.

4b. I was able, after much sleuthing, to finally make contact with several family members of Dr. Wesley R. Read, early president and main driver of the Drumheller and District Rock and Fossil Museum in the mid to late 1950s and early 1960s. I am working on his biography as part of my “Remember Me” series and it is nearly completed, 84 manuscript pages, single-spaced so far. I recently joined that museum’s board (now named the Badlands Historical Centre). They have a fair bit of important paleontological history within the collections and the current board is

unfamiliar with the early history of the museum and the significance of natural and human history artifacts related to regional paleontology. The museum is downsizing the paleontology component of its displays and there were worries it might close outright, so my presence on the board, while altruistic, is also to help ensure if they do ultimately close, that these items reach a proper repository. Like so many small town museums, very little of their holdings is catalogued and has no provenance. A really good original *Pachyrhinosaurus canadensis* horned dinosaur skull which was in the museum since 1967 was donated to the Royal Tyrrell Museum in early November, 2022. The history of this skull and other *P. canadensis* specimens from the Drumheller Valley has been poorly documented, or not at all, so I have begun an article, now well along, on the history of these finds.

I was in Victoria, British Columbia (BC) on April 11 to pursue a file on W.R. Read at the BC Archives there and also drop off a copy of my 2019 book on Hope Johnson, Albertan amateur historian, artist, naturalist and especially paleontologist (Tanke, 2019).

5. A new technician in our preparation lab is actively creating and editing videos for science educational purposes. He and I have been working on some pilot versions based on hadrosaur (duck-billed) dinosaur bones. While most of these will be on fossil bone identification (pointing out unique anatomical features), I am seriously considering working with him on one or two productions on the early history (up to 1965) for dinosaur collecting in Alberta, Canada. It is undecided if this would be one video encompassing all the work or two videos divided between the Drumheller Valley and today's Dinosaur Provincial Park.

6. On a sporadic basis, I have been helping a library at the AMNH identify a number of mystery earth science photographs in their archives. They email me the photos and I can identify some of them (~15%) as they come from known places in Alberta, or offer suggestions as to where the location might be and what the activity recorded is.

7a. An interesting project I started during the pandemic is a collection of stories of close calls and deaths of archaeology, geology and paleontology workers in field and lab settings as part of a growing interest of mine regarding health and safety in the lab and field. I have documented thousands of incidents going back several hundred years. I was looking for any patterns in order to adjust worker behavior and make their work safer. I had not even considered it, but transportation is the number one danger factor, just simply getting to and from work or to and from a field locality is the most dangerous, be it car or plane crashes, boat sinkings, etc. Geologists risking a plane or helicopter trip in mountainous terrain and in poor weather is another big one, usually with fatal consequences. Being an archaeologist in the Middle East or central America runs the distinct risks of being kidnapped and/or killed by guerillas, dissidents, drug cartels and other riffraff. I recently joined the newly-founded Association for Materials and Methods in Paleontology (AMMP) Health and Safety Committee and it is possible that we could ask members to disclose their historical stories of close calls and deaths among colleagues as contributions towards this project. If any INHIGEO members have stories to relate, please send them to me in confidence at: dtanke@hotmail.com. I am looking for factual stories of deaths or near deaths in the field of earth sciences in a work or field setting. Names of individuals or institutions will be edited or left out entirely for privacy. The project is now at 565 pages, single-spaced.

7b. Also, as part of the 2023 annual AMMP meeting I made a digital "In Memorium" wall to show at the closing banquet attended by roughly 150 delegates on 7 April 2023 and also shown at a virtual conference site attended by about 25 people. Previous AMMP conferences were cancelled due to the Covid pandemic or other reasons. The last live AMMP conference with an "In Memorium" presentation was in the spring of 2019 so there was a lot of catching up to do,

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recognizing our fallen colleagues from the summer of 2019 to the spring of 2023 and some that had been overlooked entirely. 58 men and women, ranging from lab and field volunteers, paleontology patrons, to fully degreed professional vertebrate and invertebrate paleontologists were recognized in the 10-minute presentation. I'm presently assembling a new "In Memorium" PowerPoint presentation for the AMMP 2024 meeting as we inevitably lose more of our colleagues.

8. On April 23, 2023 I attended the memorial service for Philip Benham (1965-2023), a Shell Canada geologist, taken from us much too soon from CNS Lymphoma (Allen, 2023). Much history of this great man was shared. I'd like to acknowledge Canadian INHIGEO member Clinton Tippet, who did an excellent job as the Master of Ceremonies at the memorial service.

9. I found a great website that has digitized images taken by George F. Sternberg (1883-1969) curated at the Fort Hays State University in Hays, Kansas, USA. Many current paleontological workers, especially in Canada and the USA are grateful to Sternberg as he was very good about taking lots of pictures of his field and lab work throughout his life. These images have proved useful for a variety of history or history/field paleontology applications. At the site I did a general search for "Sternberg" and got 4263 hits. One can reduce this by more specific searches, like "Montana", "skull", etc. The website, with a page for a Sternberg search, is here: <https://scholars.fhsu.edu/do/search/?q=Sternberg&start=0&context=7676747&facet=>

10. I have recently been made aware of the dilapidated state of the large gravestone for Canadian invertebrate and vertebrate paleontologist Lawrence M. Lambe (1863-1919) in Ottawa. I've encouraged moves, together with Canadian INHIGEO member Jordan Mallon, to think about cleaning and restoring this gravestone. Hopefully there will be some positive news on this front in an upcoming INHIGEO annual report. It will cost about \$800 CDN to repair and restore the large headstone.

11. Last summer, I sponsored a Canadian Legion memorial banner for former serviceman and Royal Tyrrell Museum of Paleontology technician Maurice Stefanuk (1924-2016) (Figure 7). He found the two best skeletons of *Albertosaurus*, a Late Cretaceous tyrannosaurid, both near Drumheller and assisted the late, great, vertebrate paleontologist Dr. Loris S. Russell (1904-1998) relocate lost dinosaur quarries for a biostratigraphic study (Tanke, 2018). These banners, currently numbering about 75 and increasing in numbers each year, hang from the cross arms of downtown Drumheller lamp posts each fall to honor and remember local men and women who served in the Canadian armed forces.



Figure 7. INHIGEO member Darren H. Tanke with memorial banner for Maurice Stefanuk, Drumheller Legion branch, Drumheller, Alberta, January 21, 2023.

12. I assisted webmasters of the www.paleopoems.com webpage on a large posting on the history of the Society of Vertebrate Paleontology's quarterly News Bulletins, now defunct, which occasionally published poetry penned by vertebrate paleontologists. Some of this poetry, often fun in nature, will likely be republished at the paleopoems website.

13. In December, 1916 the Canadian transport ship *SS Mount Temple* was sunk by the German surface raider *SMS Möwe*. On board were several dinosaur skeletons and other fossils collected by Charles H. Sternberg and son Levi in today's Dinosaur Provincial Park, Alberta, Canada (Tanke, 2003; Tanke *et al.*, 2002). I recently came upon German Navy footage of her capture (van Doppen, 2017). *Möwe* survived WWI and, later, renamed the *Oldenburg*, served the German armed forces as a supply ship in their occupation of Norway in WWII. *Oldenburg* was sunk by Australian and New Zealand anti-shipping Beaufighter aircraft in a rocket attack in Vadheim, Norway in early April, 1945. At time of writing, I am in contact with an artist to commission him to do a painting of the Vadheim attack. I have also found some newspaper articles on the capture and sinking of the *Mount Temple* by someone who was there and this has new details which will undoubtedly need to be shared in a future publication.

14. Despite my optimistic reports above, some deeply personal and events in my professional life have seriously impacted my passion and interest in vertebrate paleontology. I qualified for full pension last year and these matters have me at times pondering retirement, partially or perhaps even wholly, and walking away from a field of science I so greatly love. I find myself at a crossroads, doing a lot of soul-searching. Because of the actions, poor actions, and inactions of others, I have resigned from a board and regretfully have had to sever professional and personal contact with several individuals and those who support them. I am not sure where I go from here, I'm torn. So many paleontology history projects involving field workers remain unfinished. I have over 55 manuscripts on the go, over a dozen related to Albertan vertebrate history and some as part of my "Remember Me" series on lesser-known people involved in this field, going back to the late 1800s. I can't dishonor their memories by walking away from their stories left unfinished. There are other projects planned, noted above. Will they ever meet fruition? Whatever happens, I will likely stay active in INHIGEO.

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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 Energy Resources Technical Advisory Committee for Geoscience British Columbia organization.

Petroleum History Society (P.H.S.). My focus on historical geology over the past year continued to be primarily through the Calgary-based P.H.S. I continued as both its President and as the Editor of its newsletter *Archives* (back issues of which are accessible through our website at www.petroleumhistory.ca). Production of this newsletter has traditionally involved 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 per year plus an Annual Meeting. 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 had to cancel our Annual Meetings, including our award presentations, for the past years (2020-2022) and have held our elections via e-mail. Our luncheon program was also curtailed both because the Petroleum Club venue was initially 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 (T.V.O.S.). During 2022, both the P.H.S. and I continued to cooperate with the 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 1910s. 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 in which major discoveries were made in 1914, 1924 and 1936. 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.

The Turner Valley Gas Plant and its associated tours were reopened in 2022 due to the tailing off of the pandemic. Work has continued on several of their digital projects.

Canadian Energy Geoscience Association (formerly Canadian Society of Petroleum Geologists). I am an Honorary Member of this Society as well as a Past-President (2018). 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 include interviews with key society participants and other activities, following in the footsteps of our 75th anniversary celebrations in 2002.

I have been involved 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 active in the creation of our annual geological calendar working to research appropriate comprehensive captions for the photographs that are included.

Finally, I am also a member of the CEGA’s Medal of Merit Committee that annually recognizes the publication of an important paper on the petroleum geology of Canada.

American Association of Petroleum Geologists (A.A.P.G.). I am a member of the History of Petroleum Geology Special Interest Group of the A.A.P.G.

Petroleum History Institute (P.H.I.). I am a life member of this institute. The P.H.I. publishes Oil-Industry History, an annual compilation of papers about the petroleum industry and its technical underpinnings and holds an annual symposium and field trip.

Geological Society of America (G.S.A.). I am a member of the History and Philosophy of Geology Division of the G.S.A.

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

Alberta Palaeontological Society. I am a member of this society and have made several presentations to them. Activities include monthly presentations on matters related to palaeontology including key locales, controversies, and recent developments.

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.

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Research of Historical Interest by Clinton Tippet. I have initiated a study of the collaborative carbonate research done in the 1960s at Coral Gables in Miami, Florida by well-known ex-Shell sedimentologist Robert Ginsberg and Arthur Rupp, a Canadian carbonate stratigrapher working for Shell Canada. The technical records of this joint research previously resided in the storage facility of Shell Canada in Calgary. Access was finally granted to me in mid-2022.

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

CHILE ANNUAL REPORT FOR 2022

Group of Specialists in History of Geology, Sociedad Geológica de Chile founded in 1962.

Group members: Carolina Silva, Francisco Hervé, Reynaldo Charrier, Diego Rojo and Miguel Cáceres (coordinator). The group, organized in the early 2000s, studies the life and scientific contributions of pioneers of the geological activity in Chile and Latin America. The evolution through time of geological interpretations of the territories is also considered. The group organizes symposia and seminars on a yearly basis. In November 2022, the XII Symposium was held at Iquique, Chile.

Relevant activities

- Three telematic meetings of the group members were held in 2022
- The XII Symposium of History of Geology was held in Iquique, Chile, 25–26 November 2022. The conference took place in the old mining town of Humberstone, a nitrate mine active in the XIX century, which is a UNESCO protected heritage site. 11 talks were presented by national and international speakers to a 60-member audience, which also visited the mining town. An electronic version of the Proceedings was generated and sent to the Geological Society (www.sociedadgeologica.cl) and to the library of the National Mining and Geological Survey (Sernageomin, www.sernageomin.cl)
- It was agreed that the XIII Symposium on History of Geology will take place during the XVI Chilean Geological Congress in Santiago, November 2023.
- A text was prepared about the aims of the Group to be published by Sociedad Geológica de Chile in commemoration of its 60th anniversary.
- The abstracts of the talks presented in the present year and previous symposia was prepared and is available at <https://mega.nz/folder/TQoSXAoR#y42Dr4Rku1ufdBSCq49tvQ>.

Other activities

- On November 8, 2022, Miguel Cáceres presented at the Regional Atacama Museum, Copiapó, the second edition of his book *The Earthquake that Destroyed Atacama*, and gave several talks on the subject during the 100th anniversary of the destructive earthquake.
- On November 30, Carolina Silva and the historian Alfredo Palacios held the session called *Anniversary of the megaseisms of 1822 and 1922: An historical and geological perspective* at Universidad Santo Tomás in Santiago.

- Reynaldo Charrier collaborated on the chapter “*Geological History of the Cerro Manquehue*” in the book *Cordon del Cerro Manquehue, paraíso que sobrevive*, and participated in the media release of the book.

Other publications of the Group members.

- Charrier, R. *, Hervé, F. *, Silva, C. *, Moreno, H. 2022. Profesor Ricardo Thiele Cartagena (1936-2019) un homenaje a su legado. *Andean Geology* 49(1): 143-145).
- Hervé, F. *, Tassinari, C., Cordani, U., Stip, M., Zentilli, M. 2022. Francisco Munizaga Villavicencio (1945-2020): The developer of geochronology and isotope geology in Chile. *Andean Geology* 49(2): 307-309.
- Charrier, R. * 2022. Profesor Alfredo Lahsen Azar (1939-2022) Pionero de la energía geotérmica en Chile. *Andean Geology* 49(3): 463-465).

Report prepared by Miguel Caceres and translated to English by F. Hervé and R. Charrier.

CHINA ANNUAL REPORT FOR 2022

The Chinese Commission of History of Geology (CCHG) carried out many academic activities and compiled several books in 2022, while under the pressure of the Covid-19 pandemic.

The year 2022 marks the 100th anniversary of the founding of the Geological Society of China, and a grand commemorative meeting was held in Beijing. While compiling the book *Chronology of One Hundred Years of Geological Society of China*, CCHG held quite a few online and offline workshops (Figure 1). The book has now been published. In addition, several members of the Commission visited the former residence of WENG Wenhao (Figure 2), one of the founders of Geological Society of China.

CCHG also compiled *A Selection of Cai Keqing*, which is now published. Professor Cai was former Vice-President of China University of Geosciences (Beijing). He also served as a Counsellor of the State Council from 2009 to 2014.

After a long period of effort, three other books, *The History and Development of Regional Metallogenic Regularity*, *Some Anecdotes of History of Chinese Geology*, and *Collection of Essays in History of Geoscience* (Volume 8) are in press.

The Commission also organized online public lectures, such as:

- 1) “A Retrospect of Centennial History of Geological Society of China” presented by Professor CHEN Baoguo (Figure 3),
- 2) “A Review on the Historical Research of Geosciences in China” presented by Dr. YUN Xuemei (Figure 4), and
- 3) “Human Earth: New Perspective to Understand the Earth”, a live event on the World Earth Day, presented by Professor ZHANG Jiuchen and Professor SHI Yunli (Figure 5).

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Figure 1. Workshop on the manuscript “Chronology of One Hundred Years of Geological Society of China”.



Figure 2. Visit to the former residence of WENG Wenhao.



Figure 3. Presentation by Professor CHEN Baoguo.



Figure 4. Presentation by Dr. YUN Xuemei.



Figure 5. Live event on World Earth Day.

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

COSTA RICA ANNUAL REPORT FOR 2022

In Costa Rica (Central America) the two members of INHIGEO are the geologists Gerardo J. Soto and Guillermo E. Alvarado. During 2022 and part of 2023 some important activities deserve to be emphasized:

1) It is with great pleasure to announce that the Geological Society of Costa Rica held a meeting about the women geoscientists and their contributions (March 10, 2023). In preparation of the meeting, a short historical account was published in the *Bulletin of the Geological Society of Costa Rica* (Alvarado 2022) about two benchmark historical meetings for the American continent: the *First geological meeting of Women Geoscientist in Costa Rica* on August 24, 1989 (Figures 1a & 1b), and the *First meeting of Latin-American Women Geoscientist* in November 21, 1990 (Figure 2).

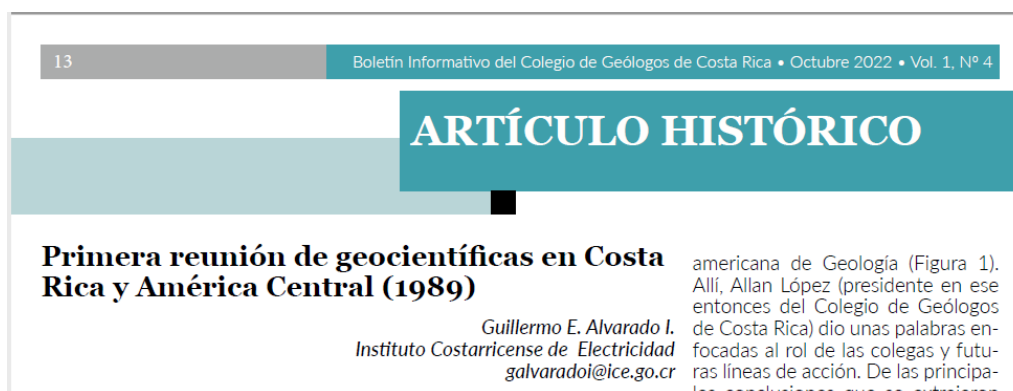


Figure 1a. Title page of an article about the “First Meeting of Costa Rican Women Geoscientists” at the Central American School of Geology at the University of Costa Rica (August 24, 1989).



Figure 1b. Photograph of the “First Meeting of Costa Rican Women Geoscientists” at the Central American School of Geology at the University of Costa Rica (August 24, 1989).



Figure 2. Lunch after the “First Latin-American meeting of Women Geoscientist” at Irazú hotel, joint with the VII Central American Geological Congress.

2) The year 2023 marks the 50th anniversary of the Geological Society of Costa Rica (Figure 3). An inaugural talk was given by Guillermo Alvarado about the scientific contributions and lives of three famous naturalists: Alexander von Humboldt, Charles Darwin and Alfred

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Wegener under the name “*Tres pilares de las ciencias naturales: Humboldt, Darwin y Wegener*”. Several other activities are in progress related to the 50th anniversary.



References

Alvarado, G. E. (2022). Primera reunión de geocientíficas en Costa Rica y América Central (1989). *Bol. Inf. Colegio de Geól. Costa Rica*, 1 (4), 13-14.

Report prepared by Guillermo E. Alvarado, San José, Costa Rica, March 2023

FRANCE ANNUAL REPORT FOR 2022

Cofrhigéo activities:

In 2022, the French Committee on the History of Geology (Cofrhigéo) met three times. The session of March 9th, 2022, was devoted to the **history of the glaciation theory**. Its recording can be viewed at:

<https://www.youtube.com/playlist?list=PLrHyJcVtILnmSLafJdvVYIfJ8BhZdd9WG>

Frédérique REMY: Les glaciations dans la littérature [The glaciations in literature];

Éric ASSELBORN: Glaciologie avant les glaciologues: la conquête naturaliste au Mont-Blanc [Glaciology before glaciologists: the naturalist conquest of Mont-Blanc];

Thierry MALVESY: « Histoire de la connaissance géologique du Jura franco-suisse », ouvrage collectif sous la direction de Thierry Malvesy, Jean-Pierre Tripet et Jean-Paul Schaer [“History of geological knowledge of the Franco-Swiss Jura”, collective book under the direction of Thierry Malvesy, Jean-Pierre Tripet and Jean-Paul Schaer];

Pascal RICHET: Les glaciations: Une histoire de controverses [The Glaciations: A History of Controversies];

Françoise DREYER: La Terre « boule de neige »: de l’hypothèse à la théorie [The “snowball” Earth: from hypothesis to theory].

The session of June 8th, 2022, was dedicated to the **history of Alpine geology**. The recording can be viewed at:

<https://www.youtube.com/playlist?list=PLrHyJcVtILnl0c5SOEOSibk9ugiGON3MP>

Claudio ROSENBERG: Histoire des coupes géologiques alpines: un miroir de l'évolution des concepts tectoniques [History of Alpine geological sections: a mirror of the evolution of tectonic concepts];

Christian CHOPIN: Les Alpes, laboratoire naturel pour l'évolution des concepts pétrologiques [The Alps, a natural laboratory for the evolution of petrological concepts];

Philippe GRANDCHAMP: Une percée de la chaîne alpine sur fond de controverse géologique: le tunnel ferroviaire du Fréjus (1857-1871) [A section through the Alpine chain in a context of geological controversies: the Fréjus railway tunnel (1857-1871)];

Claudio ROSENBERG: Le tunnel du Simplon et l'histoire de la tectonique [The Simplon tunnel and the history of tectonics];

Giorgio Vittorio DAL PIAZ: Plans, études géologiques et forage du tunnel du Mont-Blanc [Plans, geological studies and drilling of the Mont-Blanc tunnel].

During the annual general meeting of December 14th, 2022, we paid tribute to our deceased members, in particular Claude Babin, before listening to three scientific talks. The recording of the talks can be viewed at:

<https://www.youtube.com/playlist?list=PLrHyJcVtLnkfnSL5DRejeA1t0nFtZXCi>

Jean-Paul POIRIER: L'Etna et le Vésuve, notes sur quelques grandes éruptions [Etna and Vesuvius, notes on a few major eruptions];

Philippe JANVIER: L'affaire Deprat revisitée: la biographie d'Henry Mansuy [The Deprat (or Trilobite) affair reconsidered: the biography of Henry Mansuy];

Cyril DEICHA & Jacques TOURET: Georges Deicha, pionnier de l'étude des inclusions dans les minéraux [Georges Deicha, pioneer in the study of inclusions in minerals].

47th INHIGEO Symposium, 15th-24th September 2022, Les Eyzies, France

Forty-five participants took part in the 47th INHIGEO Symposium, organized by the Cofrighéo, from 16th to 26th September, 2022, in southwestern France (<https://www.inhigeo.com/france2022/index.html>; conveners: C. Cohen, F. Dreyer, G. Godard, P. Richet). The 5-day congress was hosted by the *Pôle international de la Préhistoire* at Les Eyzies-de-Tayac, a picturesque village in the Vézère Valley, otherwise known for its National Museum of Prehistory, its many prehistoric sites and decorated caves (Lascaux, Cro-Magnon, La Madeleine, Font de Gaume, Les Combarelles, etc.).

The 2-day pre-conference field trip started in Poitiers, where we visited the Palaeontology department of the university, which had a notable importance in the development of human palaeontology in France; we then visited Nouaillé and finally the museum and meteoritic impact sites of Rochechouart, whose origin constituted a geological enigma from the 17th century until 1967.

Thirty-eight talks and four posters were presented on the history of prehistory, the history of Neogene geology, French geologists in the history of geology, and many other topics. During the conference, we also visited several prehistoric sites (Lascaux IV, Le Moustier, La Ferrassie, Commarque, Laugerie basse, Cro-Magnon).

The 3-day post-conference field trip included the visit of decorated caves (Abri du Poisson, Font de Gaume; Pech Merle, etc.), the historical phosphate mines of the Quercy (Cloup d'Aural), and ended with historical Miocene sites of the Bordeaux region, namely the paleontological

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Miocene site (and vineyard) of Sainte-Croix-du-Mont, described since 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 ended in the afternoon of September 24th.

The proceedings will be published in special issue of the *Travaux du Comité français d'Histoire de la Géologie* (ISSN 1156-2919). Finally, most of the talks can be viewed online at the following addresses:

All talks: <https://www.youtube.com/playlist?list=PLrHyJcVtILnI4-CpXWuoX9-451OS7xk3R>

Playlist on the History of Neogene geology:

https://www.youtube.com/playlist?list=PLrHyJcVtILnntOZB0PQb6yr_O_YaXz07O

Playlist on Prehistory & Geology:

<https://www.youtube.com/playlist?list=PLrHyJcVtILnnFDpL3r6LONN1Xs1WfoOH8>

Playlist on History of geology, Varia:

<https://www.youtube.com/playlist?list=PLrHyJcVtILnlgFTRIYW92SR5fIteRUNWn>

Playlist on French case studies in the history of geology:

<https://www.youtube.com/playlist?list=PLrHyJcVtILnnzAfl0auzzFVdR7DCfiKZ7>

Playlist on History of geology, Concepts:

<https://www.youtube.com/playlist?list=PLrHyJcVtILnlqf0QRrTS0AfDSqJu0dx2J>

Tributes to René-Just Haüy

Two centuries ago, in 1822, René-Just Haüy published the second edition of his *Traité de minéralogie*, in which he created the name of the rock “éclogite”, as well as mineral names like “pyroxene” and “amphibole”. The same year, he also published his *Traité de cristallographie*, in which he developed the concept of “molécule intégrante” (*i.e.*, the unit cell of a crystal). He finally passed away on the 1st June of the same year in Paris. To celebrate this bicentenary, several scientific events have been organized in France in 2022:

- On June 3rd, 2022, the *Sorbonne Université* held in Paris a conference day on Haüy's contributions to mineralogy and crystallography, as well as to the creation of the metric system (see: <http://impmc.sorbonne-universite.fr/fr/evenements/manifestations/bicentenaire-de-la-disparition-de-rene-just-haüy.html>). An exhibition devoted to Haüy's contributions to crystallography was also organized (see Bouillard *et al.*, 2022).

- The 14th *International Eclogite Conference*, organized by Samuel Angiboust and Gaston Godard, took place in France in July 2022 to honour Haüy, the inventor of the name “eclogite”, meaning “chosen rock” (see <https://iec14.sciencesconf.org/>). In addition to field trips and 3 days of conference in Lyon, a special day was organized at Haüy's workplace in the Muséum National d'Histoire Naturelle (MNHN) in Paris, with talks and discussions on two centuries of studies on high-pressure metamorphic rocks, and the visit of the MNHN collections, in particular the type samples of Haüy's eclogite and Damour's jadeite.

- The *International Mineralogical Association* (IMA) paid also tribute to Haüy during its 23rd general meeting in Lyon, France, from 18th to 21st July (e.g., <https://sfmc-fr.org/wp-content/uploads/Min2022-flyer.pdf>).

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 35th volume of this periodical was issued in 2022 and contains the following articles:

- Lydie TOURET: Naturalistes hollandais et microcosme parisien à la fin du XVIII^e siècle [Dutch naturalists and Parisian microcosm at the end of the 18th century];
- Maddalena NAPOLITANI: Les enjeux esthétiques des collections de Balthazar-Georges Sage, premier directeur de l'École royale des mines (1783-1825) [The aesthetic challenges of the collections of Balthazar-Georges Sage, first director of the Royal School of Mines (1783-1825)];
- Pascal TASSY: Conserver, étudier, développer la collection de paléontologie du Muséum national d'histoire naturelle: ce qu'en disait Albert Gaudry (1827-1908) [Conserving, studying, developing the palaeontology collection of the Muséum national d'histoire naturelle: what Albert Gaudry (1827-1908) said about it];
- Philippe TAQUET: Jean-Marc Drouin (1948-2020);
- Jacques TOURET: Hommage à Jean-Paul Schaer (1928-2021), ami du Cofrhigéo et grande figure universitaire et scientifique [Tribute to Jean-Paul Schaer (1928-2021), friend of the Cofrhigéo and great academic and SCIENTIFIC FIGURE];
- PHILIPPE GRANDCHAMP: Présentation de l'ouvrage de Gilbert Boillot « Comment l'idée vient au géologue », Orizons, Paris, 176 p. [Presentation of a book by Gilbert Boillot];
- Philippe GRANDCHAMP: Les portraits au vitriol de quelques grandes figures de la minéralogie et de la géologie françaises croqués par Isidore Salles de Gosse en 1847 [The merciless portraits of some great figures of French mineralogy and geology sketched by Isidore Salles de Gosse in 1847].

Other publications

Several studies by Cofrhigéo's members were published in 2022 (non-exhaustive list):

- BOUILLARD, J.-C., CABARET, D., GIURA, P. René-Just Haüy and the birth of crystallography. IUCr Newsletter, 30 (4): https://www.iucr.org/news/newsletter/etc/articles?issue=155353&result_138339_result_page=25
- COHEN, C. Altruisme, genre et hominisation. *Communications*, 110 (1): 153-165.
- COHEN, C. « V comme Vénus ». In: *Abécédaire de la Beauté*, ed. B 42, pp. 211-217.
- COHEN, C. « Féminicides et violences dans la préhistoire ». In: *Féminicides, une histoire mondiale*, Ed. La Découverte, pp. 37-45.
- COHEN, C. « Vénus impudiques »; « La Dame de l'abri Pataud ». In: *Femmes en Périgord, Sédiments*, 14, pp. 4-5, 6-7.
- LE VIGOUROUX, Ph. The XIII International Geological Congress of 1922 in Brussels (Belgium): between wounds of the Great War and theory passed under silence. *Episodes Journal of International Geoscience*, 45(4): 457-467; <https://doi.org/10.18814/epiiugs/2022/022030>.
- SAVATON, P. L'histoire de la géologie dans la Revue d'histoire des sciences de 1947 à 2022, *Revue d'histoire des sciences*, 75(2): 413-443.
- SAVATON, P. The contribution of the 1822 map by Jean-Baptiste Julien d'Omalius d'Halloy to the geological cartography of France. *Anniversaries in Geo-History, IUGS E-Bulletin*, Issue 189, August 2022, published online in the IUGS E-Bulletin.

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SAVATON, P. Philippe Taquet, Georges Cuvier: Anatomie d'un naturaliste (Paris: Odile Jacob, 2019). *Revue d'histoire des sciences*, 75(1): 275-277.

SAVATON, P. A metaphor dismantled. *Metascience*, 31: 73-75. <https://doi.org/10.1007/s11016-021-00687-4>

Conferences and webinars (non-exhaustive list)

BOULLIARD, J.C. & CABARET, D. « Haüy: un savant hors du commun », 3rd June 2022, Sorbonne Université, Paris.

CHIAPPERO, P.J. « Haüy conservateur: les collections », 3rd June 2022, Sorbonne Université, Paris.

CHOPIN, C. « A brief account of the discovery of metamorphic coesite, and the rise of ultrahigh-pressure metamorphism », Haüy's day, IEC14, 10th July 2022, MNHN, Paris.

COHEN, C. « Literary imagination and fictions of Fossil Humans », Conference *Imaginaires de l'homme fossile*, Collège de France, Paris, June 10th 2022.

COHEN, C. « Darwin, the descent, and the origin of gender », Conference on Darwin's Descent of Man, 150th anniversary, 5th-6th July 2022, Hotel de Lauzun, Paris.

COHEN, C. « Morphology, Diversity and beauty of living beings. From Richard Owen to Stephen Jay Gould », Conference *Beautés vitales, pour une approche contemporaine de la beauté*, 15th-21st July 2022, Cerisy.

COHEN, C. « Are aesthetic values a social construct or do they have a biological origin? », Conference *Aesthetic Values and Decision-Making in the Brain*. IAS, ENS, EHESS, 19th-21st October 2022.

COHEN, C. « Where do Humans come from? », International Symposium of the UNESCO, Philosophy section, *Humans to come*, 16th-18th November 2022, Le Fresnoy.

FARGES, F. « Haüy gemmologue: des minéraux aux pierres précieuses », 3rd June 2022, Sorbonne Université.

FERRARIS, C. « René-Just Haüy (1743-1822), mineralogist », Haüy's day, IEC14, 10th July 2022, MNHN, Paris; 3rd June 2022, Sorbonne Université, Paris.

GODARD, G. « Two centuries of studies on Haüy's "chosen rock" », Haüy's day, IEC14, 10th July 2022, MNHN, Paris.

LE VIGOUROUX, Ph. « 13th IGC (1922) in Brussels, Belgium », The roots of a geological union for the future of the Earth, IUGS 60th Celebrations – online INHIGEO special event, October 2022, Virtual event.

PARODI, G.C. « L'Haüyne, histoire d'une espèce », 3rd June 2022, Sorbonne Université, Paris.

SAUTTER, V. « Haüy pétrologue: les éclogites, un bon choix ? », 3rd June 2022, Sorbonne Université, Paris.

SAVATON, P. « Pluton contre Neptune: controverse sur l'origine des basaltes et des granites », MiniConf n°17, Géole/Société géologique de France, 1^{er} novembre 2022 (<https://youtu.be/aqV5aYz-slg>).

SMITH, D. « 40th anniversary of the International Eclogite Conference and 4 decades of study on high-pressure rocks », Haüy's day, IEC14, 10th July 2022, MNHN, Paris.

Report compiled by G. Godard, secretary of the Cofrhigéo.

GERMANY ANNUAL REPORT FOR 2022

In light of current worldwide political events, it may be debatable whether the year 2022 really should be regarded as a time-span featuring a gradual return to normalcy. But as far as the Corona pandemic was concerned, this indeed was the case – with a strong emphasis on ‘gradual’, that is. In Germany, at the beginning of 2022 while there wasn’t a full-blown lockdown reminiscent of the situation one year earlier, public life nevertheless continued to be severely affected for a considerable length of time by tight governmental restrictions concerning gatherings and events. This of course impeded the organization of conferences and the opening of new museum exhibitions. Only from spring onwards, things eventually started to ease up and then slowly moved towards pre-Covid levels.

These outside influences impaired the activities of our INHIGEO members as well. A surprising amount of them mentioned fluctuating external developments in 2022 as the reason for not being quite as active as usual. No major national conference in our field took place. And while the physical re-start of the pandemic-interrupted INHIGEO Annual Symposia was much appreciated, fewer members travelled to France than in 2019 to Italy.

On a more positive note, for the first time in more than half a decade, our membership actually grew, this courtesy of **Dania Achermann**, confirmed as one of 18 new INHIGEO members during the society’s AGM in Les Eyzies. But while Dania currently still is *Juniorprofessorin* (Assistant Professor) in the Interdisciplinary Centre for Science and Technology Studies at the *Bergische Universität Wuppertal*, she will not be based in Germany for much longer; later in 2023, she is to move to the *Universität Bern* in Switzerland.

Our INHIGEO Members continued their activities in various related societies and their working groups too. In Germany, one of the most visible is the *Arbeitskreis Geschichte der Geographie* which was founded in 1991 by the amalgamation of two respective organizations in East and West Germany. This group offers a lively forum for historical debates falling within the remit of INHIGEO as well, which may not be too surprising. A number of such studies harken back to the late 19th century, and in that time-period there was an unusually strong interaction between the then-nascent academic fields of geology and geography within the German-speaking world. Here, geology was treated considerably more as a structural than an historical endeavour, which led some historically-minded young geologists to decide instead to pursue a career in geography, often without changing their own research topics by much. INHIGEO member **Norman Henniges** is one of the two spokespersons of the working group, and has passed forward recommendations on books published in 2022 which in spite of their primarily geographically-focused themes may also be of interest to the INHIGEO membership. They are included in the ‘List of Publications’, immediately following.

Publications

It is likely that we have to report a demise. Though none of our INHIGEO members continued to be involved in the publication of the *Geohistorische Blätter*, that journal has long been the only remaining German periodical specializing in the history of the earth sciences. During its run, it included a sizeable number of articles both by German and International INHIGEO members as well. In the last decade, it usually was published once a year. The last volume (= No. 31/2020) reached its subscribers in early 2021.

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The most recent incarnation of the journal came about in 2009. During one of the then-regular meetings of the national German *Arbeitskreis Geschichte der Geowissenschaften* (currently inactive), an arrangement was reached to merge its own *Nachrichtenblatt zur Geschichte der Geowissenschaften* (published since 1991; 19 volumes, released annually as 100+ page tomes) with the *Geohistorische Blätter* (published since 1998; coincidentally, 19 volumes as well, with a more uneven publication schedule). The latter initially was founded by a society consisting primarily of retired and historically interested geologists who resided in the Greater Berlin area. By 2009, dwindling memberships of both groups led to the joint decision to combine the resources still available. The first volume (= No. 20) of this merged journal was published in 2010.

In the last three decades, the *Geohistorische Blätter* was justly regarded as a must-read journal for German-speaking historians of the earth sciences. Not least because it offered a unified venue for the specific kind of decent and thorough internalist geohistorical studies which are not embraced any longer by research periodicals either in the history of science or within the earth sciences. Its passing creates an unfortunate hurdle for publishing such articles in the German language, and might now lead to a considerably higher number of them ending up in not always very widely accessible ‘Local History’ publications.

But it has to be added that the writing had been on the wall for quite a while. Not least because the *Geohistorische Blätter* displayed an extraordinary willingness to offer itself also as a forum for authors keen to enter historical debates with personal axes to grind. This occasionally led to vicious and at odd times truly tasteless contributions moving beyond any sensible realm of heated historical debate. During the last 15 years, I sporadically have tried to convince its editor that his many attempts to increase the journal’s pool of writers (I had been approached as well) is not likely to lead to positive results if he continues to allow childish tantrums to be played out in public. Alas, the two of us didn’t seem to see eye to eye on the question of what kind of editorial interference amounts to undue censorship. But whatever side of this argument may be taken in principle, the number of authors willing to be at all associated with the journal shrank considerably over the years. Nevertheless, it is a sad event for the history of the earth sciences that the *Geohistorische Blätter* now appears to be gone for good.

Publications

As to the trio of geographical publications especially recommended by INHIGEO member **Norman Henniges** (see above), there is (1) the collection *Jenseits des Terrazentrismus: Kartographien der Meere und die Herausbildung der globalen Welt* (Göttingen: Wallstein, 2022, 312pp.) edited by Iris Schröder, Felix Schürmann & Wolfgang Struck, (2) the monographical treatment *Kohlezeit: Eine Global- und Wissensgeschichte, 1500–1900* (Campus: Frankfurt am Main, 2022, 479pp.) written by Helge Wendt, and (3) an international compilation *A Geographical Century: Essays for the Centenary of the International Geographical Union* (Cham: Springer, 2022, 247 pp.) which came with sizeable German involvement, and was edited by Vladimir Kolosov, Jacobo García-Álvarez, Michael Heffernan & Bruno Schelhaas.

INHIGEO members published the following books and papers in 2022:

Tina Asmussen

- Asmussen, T. The cosmologies of early modern mining landscapes in: Christine Göttler & Mia M. Mochizuki (Eds.) *Landscape and Earth in Early Modernity: Picturing Unruly Nature* (Amsterdam: Amsterdam University Press 2022), pp. 239-268
- Asmussen, T. Arm, nützlich, giftig und verheissungsvoll: Eine Ressourcengeschichte von Blei in der Frühen Neuzeit. *Ferrum* 92 (2022), pp. 18–26

Gottfried Hofbauer

- Hofbauer, G. Kommentar zu Anke Tietz. *Wissen, Material und Praktiken in den Geowissenschaften der Frühen Neuzeit* 2021 (= Beiträge zum Neuen Lausitzischen Magazin 23), available online via <https://www.gdgh.de/berichte21/b21/b21.html>

Martina Kölbl-Ebert

- Kölbl-Ebert, M. (with Colin MacFadyen & Helen Fallas) Siccar Point: Hutton's Unconformity. *IUGS: The First 100 IUGS Geological Heritage Sites* (2022), pp. 22-23, online accessible via https://iugs-geoheritage.org/videos-pdfs/iugs_first_100_book_v2.pdf
- Kölbl-Ebert, M. A gentle gradualist in a catastrophists' world: Reinhold Seemann's tectonic theory of Ries impact crater (Germany). *Earth Sciences History* 41:161–185, (2022).
- Kölbl-Ebert, M. (with Kathleen Histon & Ezio Vaccari) (July 2022). Organizing the geological sciences: Retreading the path from international congresses to scientific union. *IUGS E-Bulletin* 188, online accessible via https://www.inhigeo.com/anniversaries/Histon_K.,_Koelbl-Ebert_M.,_Vaccari_E._IUGS_founded_60_years_ago.pdf
- Kölbl-Ebert, M. Earthquake 200 years ago: Maria Graham observed orogeny in 1822. *IUGS E-Bulletin* 191 (October/November 2022), online accessible via https://inhigeo.com/anniversaries/Koelbl-Ebert_M._Earthquake_in_Chile_observed_by_Maria_Graham_200_years_ago.pdf
- Kölbl-Ebert, M. (with Boris Ekrt, Caroline Lam & Adriana López- Arbarello). 2022. Drawings intended for Agassiz (1833–1843): Taxonomic implications for fishes from the Solnhofen Archipelago curated in Prague. *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen* 306: 227–263
- Kölbl-Ebert, M. Limits of communication: Geologists' letters and the Nazi regime. *Physis: Revista Internazionale de Storia della Scienza* 56: 257–271, (2021; published in 2022).

Cornelia Lüdecke

- Lüdecke, C. (Editor) *Auf Entdeckungsreise in die Antarktis: Erste Berichte der deutschen Südpolar-Expedition (1901-1903), 2nd Edition = Stella Polaris 6* (Norderstedt: Books on Demand, 2022) 180pp.
- Lüdecke, C. (Editor) *Mit Erich von Drygalski in die Ostantarktis: Paul Björnvigs Tagebuch* [= Translation from the Norwegian by Volkert Gazert] *von der ersten deutschen Südpolarexpedition 1901 – 1903 = Berichte zur Polar- und Meeresforschung / Reports on Polar and Marine Research* 768 (Bremerhaven: Alfred-Wegener-Institut, Helmholtz-Zentrum für Polar- und Meeresforschung) 99pp., online accessible via https://epic.awi.de/id/eprint/57573/11/BzPM_0768_2022.pdf
- Lüdecke, C. Erich von Drygalski: Ein ganz besonderer Polarforscher und Initiator der Münchener Universitätsgesellschaft in: Münchener Universitätsgesellschaft (Eds.): *100 Jahre*

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- Münchener Universitätsgesellschaft: Rückblick, Einblick, Ausblick* (Haar/München: VLG Verlag und Agentur), pp. 128-132
- Lüdecke, C. (with Michael Börngen & Franz Jacobs) Luise Charlotte Lammert (1887–1946): Schriftführerin bei der DGG-Gründung 1922 in Leipzig *in: DGG* [= Deutsche Geophysikalische Gesellschaft] *Mitteilungen* 1 (2022), pp. 16-21, online accessible via https://e-docs.geo-leo.de/bitstream/handle/11858/9651/DGG_01_22_Boerngen_etal.pdf
- Lüdecke, C. Institutionalizing Antarctic History: A Personal Memoir *in: John A. Diemer* (Ed.) *INHIGEO Annual Record* 54 (2022; for 2021), pp. 73-79, online accessible via <https://inhigeo.com/record/54.pdf>
- Lüdecke, C. Alfred Wegeners meteorologische Tätigkeiten und Diskussionen mit seinem Schwiegervater Wladimir Köppen während des ersten Weltkrieges. *Mitteilungen DMG* 1 (2022), pp. 16-19, online accessible via https://dmg-ev.de/wp-content/uploads/2022/08/1_2022.pdf
- Lüdecke, C. Interessante Einträge in Brillouins Buch «Mémoires originaux sur la Circulation générale de l'Atmosphère» aus dem Jahr 1900. *Mitteilungen DMG* 2 (2022), pp. 26-29, online accessible via https://dmg-ev.de/wp-content/uploads/2022/05/2_2022_online-1.pdf
- Lüdecke, C. Amundsens Meteorologen: Zum 150. Geburtstag von Roald Amundsen *in: Mitteilungen DMG* 3 (2022), pp. 18-21, online accessible via https://www.dmg-ev.de/wp-content/uploads/2022/08/3_2022_online.de_-1.pdf
- Lüdecke, C. Ein bahnbrechender Polarforscher: Vor 150 Jahren wurde Roald Amundsen geboren *in: Naturwissenschaftliche Rundschau* 75 (2022), pp. 516-525 & pp. 579-589 (Two Parts)
- Lüdecke, C. 140 Years Ago: the German Station at South Georgia (South Atlantic) of the First International Polar Year (1882–1883). *Polarforschung: Journal of the German Society for Polar Research* 90 (2022), pp. 39–44, online accessible via <https://polf.copernicus.org/articles/90/39/2022/polf-90-39-2022.pdf>
- Lüdecke, C. (with Ronald Savitt) Knowledge, Innovation and the Race to the South Pole. *Polar Record: A Journal of Arctic and Antarctic Research* 58/e26 (2022), pp. 1–12, online accessible via <https://doi.org/10.1017/S0032247421000590>

Conferences

This year's INHIGEO Symposium included two German speakers: next to INHIGEO member **Martina Kölbl-Ebert** (see below), the pre- and early historian Ria Litzenberg, currently working towards her PhD at the *Universität Tübingen*, was also part of the programme, with a presentation about *The Swabian Jura as a Center of Early Art* (16.9.2022).

The following talks were given by INHIGEO members in 2022:

Tina Asmussen

Mechanic Vitality: A Perspective from Early Modern Mining at: Oxford (Online), TORCH-Network 'Writing Technologies', Roundtable Discussion 'Mechanic Vitality', Online Study Day (25.2.2022)

(with Donna Bilak & Tianna Helena Uchacz) Tria Prima: Experimenting with Material Transformation at: Oxford (Online), Turba [=Online Discussion Group on the History of Alchemy] Meeting (18.3.2022)

- Extractive Entanglements: Mining and the Cosmologies of Mineral Resources in the Early Modern Period at: Cambridge, Workshop ‘Earthly Things’, in Celebration of Martin Rudwicks 90’s Birthday (19.4.2022)
- (with Tarisi Vunidilo, Jahnavi Phalkey, Nicolas Kramar & Mitzy Quinto Cortez) Roundtable ‘The Anthropocene and Storytelling’, moderated by Basil Thüring & Sunhild Kleingärtner at: München, Deutsches Museum, Global Summit of Research Museums II: Objects in Motion – Museums in Motion (18.10.2022),
- Unruly Entanglements: Elemental Powers in Early Modern Mining Landscapes at: Oxford, Maison Française d’Oxford, TORCH-Network ‘Writing Technologies’ Study Day (28.10.2022)
- Kunstkammer – Laboratorium – Tresor: Produktionsverhältnisse und Wirtschaftsräume im vorindustriellen Bergbau at: Bochum, Deutsches Bergbaumuseum, Conference ‘All That is Solid Melts into Air: Produktionsverhältnisse in der Kunst des 20. und 21. Jahrhunderts’, Keynote Lecture (10.11.2022)

Martina Kölbl-Ebert

- German Petroleum Geology from the Third Reich to the Iron Curtain at: Bielefeld (Online), Universität Bielefeld, *Conference ‘Science and the State: Governmental Research in War and Peace during the Twentieth Century’* (3.3.2022)
- Prehistoric Archaeology and Quaternary Geology in Nazi Germany at: Les Eyzies, *47th INHIGEO Symposium*, organized by Claudine Cohen, Françoise Dreyer, Gaston Godard & Pascal Richet (16.9.2022)
- (with Colin MacFayden & Helen Fallas) Siccar Point: Hutton’s Unconformity at: Zumaia (Spain), *Conference ‘The First 100 IUGS Geological Heritage Sites’* (26.10.2022)
- Die Naturkundlichen Sammlungen des Eichstätter Priesterseminars: Sammeln, forschen, ausstellen, vermitteln und verstauben? at: Görlitz, Barockhaus Görlitz, *Conference ‘Sammlungen mit Nutzen betrachten: Akteure geowissenschaftlicher Sammlungen um 1800 und ihre epistemischen Praktiken’*, organized by the Universität Münster and the Görlitzer Sammlungen für Geschichte und Kultur (4.11.2022)

Cornelia Lüdecke

- Erich von Drygalski’s Arctic Experience used in Antarctica at: Potsdam, Alfred-Wegener-Institut, Helmholtz-Zentrum für Polar- und Meeresforschung, *28th International Polar Conference* (5.5.2022)
- Erich von Drygalski, Initiator der Münchener Universitätsgesellschaft und Polarforscher at: München, Altes Rathaus, *Conference ‘100 Jahre Münchener Universitätsgesellschaft’* (7.7.2022)
- (with Maria Ximena Senatore) Antarctic Heritage and Visitors: Theoretical Reflections on Narratives, Ruins and Natural Processes of Decay at: Hyderabad (Online), *10th SCAR Open Science Conference* (1.8.2022)

Universities

During the Corona pandemic, the already meagre offering of university teaching on the history of the earth sciences at German institutions came to a complete halt. Fortunately, this has now been reversed, courtesy of INHIGEO member **Martina Kölbl-Ebert** resuming her twice-yearly

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intensive one-week courses – no longer at Hamburg, but in her new institution a few hundred miles south, the *Department für Geo- und Umweltwissenschaften, Ludwig-Maximilians-Universität München*. In 2022, Martina lectured on:

- Geschichte der Paläontologie und Stratigraphie (14.-18.2.2022)
- Geschichte der Dynamischen Erde (10.-14.10.2022)

Museums

By the end of 2022, museums in Germany were as accessible to the general public as they had been prior to the pandemic. But 2022 saw considerably fewer special exhibitions than could be expected in a more normal year with museums often postponing those efforts in lieu of more stable opening patterns.

As far as exhibitions touching the history of the earth sciences are concerned, the biggest event in 2022 was the extensive nine months long lavish display in the *Naturkundemuseum Stuttgart* which was devoted to the Anthropocene (named *Anthropozän – Zeitalter? Zeitenwende? Zukunft?*). It started in October 2021 and ran until June 2022, and was that year's designated prime exhibition of the federal state of *Baden-Württemberg* as well.

Public Lectures

In the short time-period from January to February of 1912, Alfred Wegener gave two talks and released two publications on his novel idea of continental drift. Its 110th anniversary led to a number of public lectures (as well as articles geared for the general reader) on the history of that concept and its relation to plate tectonics. Incidentally, throughout the year, INHIGEO member **Peter Schimkat** had to answer a surprising number of questions on this particular topic coming from the audience of his usual astronomical shows. He still rues not having foreseen that coming and therefore being unable to bolster his explanations by offering a well-prepared visual presentation on the spherical dome.

In November 2022, INHIGEO member **Gottfried Hofbauer** started a 10-part online course *Der schwierige Weg zum Verständnis der Erde* on the history of geology which was aimed at the general public. This was tied to Gottfried's professional activities in Adult Education and to his interest in nurturing a stronger historical awareness of the development of the earth sciences. That course proved remarkably popular and occasionally drew an audience of more than 50 people. The following talks for the general public were given by INHIGEO members in 2022:

Martina Kölbl-Ebert

Ladies with Hammers: 19th Century Female British Geologists and Their Context at: München, 'Diversity4Research@LMU' (24.6.2022)

Observing Orogeny: Maria Graham's Account of the 1822 Earthquake in Chile at: (Online), GeStEIN-Kolloquium (5.7.2022)

Cornelia Lüdecke

Dornier Wal-Flugboote in der Antarktis (1939) at: Friedrichshafen, Dornier-Museum (28.4.2022)

Additional Information from Individual Members

The current research project by **Dania Achermann** is devoted to the historical development of utilizing ice cores in the geological sciences; for a short description (in English), see academia.edu/43009149. Furthermore, Dania would like to share the information that the *Interdisziplinäres Zentrum für Wissenschafts- und Technikforschung (IZWT)* in Wuppertal is open to considering PhD topics in the history of the earth sciences; however, interested candidates should note that applications are only accepted at designated time-periods.

Next to her work in areas thematically covered by INHIGEO, **Tina Asmussen** also served (with Stéphanie Ginalschi, Marino Ferri, Jan-Friedrich Missfelder & Anja Rathmann-Lutz) as co-editor for a special thematic issue *Publizieren in den Geisteswissenschaften: Vergangenheit, Gegenwart und Zukunft / Publier dans les sciences humaines: Passé, présent et avenir* of the Swiss journal *Traverse: Zeitschrift für Geschichte / Revue d'histoire*, published in 2022. She also was strongly involved with the online manifesto of the focus group scholar-led.network which is devoted to the future of academic publishing and its continued general access; see graphite.page/scholar-led-manifesto. Her research in the reporting year 2022 concentrated on early modern mining landscapes from an environmental history perspective.

While primarily still based in Schildow, just beyond the Berlin city borders, **Norman Henniges** is now Associated Researcher at the *Österreichische Akademie der Wissenschaften* in Vienna as well, working on a publishing project with Austrian INHIGEO members Marianne Klemun and Johannes Matthes. Therefore, Norman can also be contacted under *Austrian Academy of Sciences, Institute of Cultural Studies and Theatre History, Dr. Ignaz-Seipel-Platz 2, A-1010 Vienna, Austria* (or via norman.henniges@oeaw.ac.at).

Gottfried Hofbauer continued to offer geological excursions for the general public into both German and foreign lands. Furthermore, he is in the process of writing another monograph on the history of geology which is supposed to complement his earlier book *Die geologische Revolution: Wie die Entdeckung der Erdgeschichte unser Denken veränderte* published in 2015.

In addition to her own talks, **Cornelia Lüdecke** organized a session on the History of Polar Research for the *28th International Polar Conference*, taking place on May 5th at the Alfred Wegener Institute, Helmholtz Centre for Polar- and Marine Research, in Potsdam.

Before turning into an historian of geology, **Peter Schimkat** was trained as an astronomer, and throughout 2022 had still been involved in the running of the state of the art planetarium in Kassel, from writing storyboards to delivering shows. With its host institution (also responsible for the preservation of historical gardens and castles) currently somewhat in turmoil, matters pertaining to science are not an immediate concern any longer. The planetarium is now closed and faces an uncertain future; therefore, 2023 likely will see Peter trying to disentangle himself from local matters.

Report prepared by Peter Schimkat (on behalf of the German members of INHIGEO)

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Lectures presented to sessions of the History of Science Section of the Hungarian Geological Society, 2022:

February 28. Tóth, A., Papp, G. Activity of Luigi Ferinando Marsigli, the all-round man in Hungary.

April 25. Kordos, L. Evolutionary history of science: Presentation of the book “Facts and tales. History of the study of Rudapithecus”.

May 16. 200th anniversary of the birth of József Szabó (satellite programme, Figure 1).

Csath, B. (presented by Papp, P.): How József Szabó became mining officer?

Síkhegyi, F.: Geological maps of József Szabó



Figure 1. Szabó József (1822-1894)

October 17. Presentation of books:

Kis Domokos, Dániel 2022: A Szádeczky-Kardossok (The Szádeczky-Kardoss family) – presented by Kordos, L.

Wanek, Ferenc 2021: Fordulópontok és meghatározó személyiségek Erdély altalajkincseinek megismeréstörténetében 1920 előtt (Turning points and defining personalities in the study of subsurface resources of Transylvania before 1920) – presented by Papp, P. and the author.

Komlóssy, György 2017: „Volt egyszer egy kisgyerek, úgy élt, mint az istenek.” Szemezgetések egy geológus életútjából („There was a little boy, that lived like gods.” Selected passages of a geologist’s career) – presented by Papp, P. and the author).

- November 21. Walking to the graves of our respected predecessors in the Farkasrét Cemetery.
Graves of Endre Dudich, Pál Kriván, István Vitális, Andor Semsey, Mihály Mészáros.
- December 5. Zsadányi, É. 75th anniversary of death of dr. István Vitális. Viczián, I. Contemporary opinions on Domokos Teleki – 225th anniversary of the foundation of Mineralogical Society in Jena

Lectures presented at sessions of the Hungarian Academy of Sciences, Budapest, 2022:

- April 20. Online session of the Petrology Sub-commission of the Hungarian Academy of Sciences and the Mineralogy and Geochemistry Section of the Hungarian Geological Society. Papp, G. “Geology, with special respect to petrography” – life and activity of József Szabó
- July 11. Conference on The Jena–Weimar constellation and its impact in Hungary
Matthews, B. (Bard College, New York): Schelling’s philosophy of nature in connection with contemporary philosophy and sciences
Gurka, D. Ungarische Mineralogen im Umfeld Goethes (Hungarian mineralogists surrounding Goethe)
Viczián, I. Die Jenaer Studienreise von József Szász und seine Tätigkeit in der Mineraliensammlung von Domokos Teleki (Studies of József Szász in Jena and his activity in the mineral collection of Domokos Teleki)
- November 9. Papers presented at a session devoted to the 200th anniversary of birth of József Szabó, the founder of Hungarian geology.
Papp, G. József Szabó – who paved the road of Hungarian earth sciences
Földessy, J., M. Tóth, T., Benkó, Zs. From Selmec to critical elements – the tasks of mineral exploration.
Weiszburg, T., Zajzon, N., Kristály, F., Pósfai, M. The imprint of activity of József Szabó on mineralogy during the last 200 years
Harangi, Sz., Pál-Molnár, E. Based on the petrologic heritage of József Szabó – the concept and processes of magma storage spreading across the earth’s crust
- November 19. Celebration of the 150th anniversary of the foundation of the Hungarian Geographical Society
Brezsnyánszky, K. Geographical attitude in the geologic works of Lajos Lóczy
G. Tóth, L. Past, present, and future of the study of Lake Balaton

XVth Conference on History of Science and Technology, organised by the Hungarian Technical Scientific Society of Transylvania – EMT, Nagyenyed (Aiud), Romania, 2022.

The extended abstracts of the meeting were published in the Hungarian language, with abstracts in English, in the following volume (available online):

- XV. Tudomány- és Technikatörténeti Online Konferencia, Nagyenyed, 2022. június 30. – július 3. (XVth Conference on History of Science and Technology, organised by the Hungarian Technical Scientific Society of Transylvania – EMT, Aiud, Romania, June 30 – July 3, 2022.) <https://ojs.emt.ro/index.php/ttk>
Lectures related history of geo-sciences are listed individually in the list of publications (at the end of this report).

Publications on history of geo-sciences in 2022

Books (with short summaries of contents)

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.

The book was already mentioned in the *Annual Record 54* for the year 2021. Now we present parts of the review by Brezsnayánszky, K. (Földtani Közlöny, 2022, 152/4, p. 360).

Rudapithecus hungaricus is a prehominid ape species that lived 10 to 10.5 million years ago. Its fossils were found in the area of the iron ore mine Rudabánya, NE Hungary. The excavations started in 1971 and were followed by high international interest, guided by Hungarian, American, and Canadian specialists. The results inspired several theories on the hominization and evolution of hominids. Later, some of them proved to be erroneous. Important correlations were found to other similar fossils in Africa, Asia, and Europe. László Kordos reports the whole history of the study, in a chronological sequence.

The environmental conditions were determined in detail. The locality is situated on a narrow peninsula in Pannonian Lake. The Lake was large in those times, extending into Central Asia. The fossils are embedded in paludal-lacustrine and fluvial sediments of lignitic-marly composition. The climate was warm and humid, which supported the development of rich flora and fauna, including the population of apes.

The book is based on rich documentation and the personal experience of the author, who was present at the excavation site from the very beginning and conducted the work for many years.

Wanek, F. 2021: Fordulópontok és meghatározó személyiségek Erdély altalajkincsének megismeréstörténetében 1920 előtt (Turning points and defining personalities in the study of subsurface resources of Transylvania before 1920). – Edited by Scientia Könyvkiadó, Kolozsvár. 265 p. <http://real.mtak.hu/139065/>

The book was already mentioned in the *Annual Record 54* for the year 2021. Now we present an abstract of its contents written by the author:

“This volume is an attempt to paint a picture of the history of natural resources and mining in Transylvania, through a few selected examples arranged in a chronological order, up to the point in time mentioned in the title. It relies on a scientific approach, but also tries to give an account that is easy to read and understand. Some of the chapters identify the locations of medieval mines that were known from documents but had no precise geographic positions; others call the attention to the fact that, taking into account their characteristics, some modern-day mines were also active during medieval times. The book guides the reader through the adventurous history of learning about the geology of energy resources (natural gas, coal) in Transylvania. In the process of doing that, it also highlights ideas and concepts that were introduced here for the first time in the history of science, such as the industrial use of natural gas, pioneering research on single-celled fossils, and the clarification of stratigraphic controversies through the use of paleontology. The effect of the scientific, economic, societal, and political context on the exploration and exploitation of raw materials – and mineral waters as well – is also discussed. By describing the work of a few outstanding Transylvanian geologists (e.g., Franz HERBICH, Gyula HALAVÁTS, and Mór PÁLFY), we also highlight that, despite all the difficulties of doing scientific work in a small and often disadvantaged country, thanks to these scientists, this region was able to keep up with, or

even lead, the scientific advances in Europe and the rest of the world. In some cases, we also discuss their contributions in areas outside of the geosciences. By summarizing and cataloguing those publications of these researchers that are relevant to Transylvania, we also hope to aid further studies in the history of geoscience in this region.

Kis Domokos, Dániel (ed.) 2022. A tudomány szolgálatában két nemzedéken át – A Szádeczky-Kardossok (In service of science, through two generations – The Szádeczky-Kardoss family). Edited by Unicus Kiadó, Budapest. 240 pp.

The book (Figure 2) contains articles about five members of the Szádeczky family who were outstanding scientists. Two of them were university professors of earth sciences: Gyula Szádeczky-Kardoss (1860-1935), geologist and mineralogist, worked in Kolozsvár (Cluj) and Elemér Szádeczky-Kardoss (1903-1984), geologist and geochemist, worked in Sopron, Miskolc, Budapest.

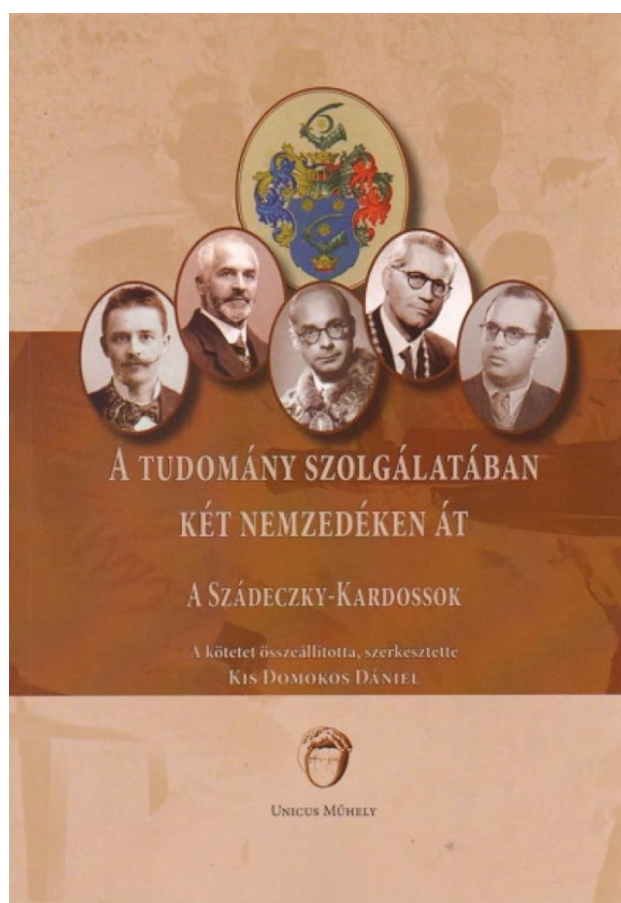


Figure 2. Book by Szádeczky-Kardossok titled: A tudomány szolgálatában két nemzedéken át.

Articles and abstracts

Hevesi, A. 2022. Hunfalvy János élete és munkássága. 1820 Nagyszalók (Schlagendorf, Slavkov), 1888 Budapest (The life and oeuvre of János Hunfalvy, 1820–1888). – XV. Tudomány- és Technikatörténeti Konferencia, 2022. július 2. Nagyenyed (XVth Conference on the History of Science and Technology), Erdélyi Magyar Műszaki Tudományos Társaság (Hungarian Technical Scientific Society of Transylvania), Kolozsvár, 19-34.

COUNTRY REPORTS

- Jánosi, Cs., Karátson, D., Wanek, F. 2022. History of Research: Geoscientific Exploration of the Ciomadul Hills. In Karátson, D., Veres, D., Gertisser, R., Magyari, E. K., Jánosi, Cs., Hambach, U. (eds.): *Ciomadul (Csomád), The Youngest Volcano in the Carpathians. Volcanism, Palaeoenvironment, Human Impact*, Springer, Cham, 3–28.
- Kázmér, M. 2022. Banjarmasin: public health and social structure in 1877, as described by a Hungarian medical doctor and geologist. *Journal of Borneo-Kalimantan* 8/2, 1-6. open access
- Kázmér M. 2022. Posewitz Tivadar és a Borneo (Theodor Posewitz and his Borneo). *Földtani Közöny* 152, 1, 77-90.
- Kordos, L. 2022. Elment Richard Leakey (1944-2022). Múltunk felfedezője, az elefántok megmentője (Richard Leakey (1944-2022) deceased. Explorer of our past, saviour of elephants). *Természet Világa* 153, 2, 56-61.
- Kordos, L. 2022. Rudapithecus-kutatás az evolúciós tudománytörténet hálózatában (The Rudapithecus research in the evolutionary science history network). *Magyar Tudomány* 183, 7, 889-896.
- Kordos, L. 2022. A Szádeczky-Kardossok (The Szádeczky-Kardoss family). In Kis Domokos, D. (ed.): *A tudomány szolgálatában két nemzedéken át. A Szádeczky-Kardossok (In service of science, through two generations. The Szádeczky-Kardoss family)*. Edited by Unicus Műhely, Budapest, 27-28.
- Kordos, L. 2022. Szádeczky-Kardoss Gyula, a geológus (Gyula Szádeczky-Kardoss, the geologist). In Kis Domokos, D. (ed.): *A tudomány szolgálatában két nemzedéken át. A Szádeczky-Kardossok (In service of science, through two generations. The Szádeczky-Kardoss family)*. Edited by Unicus Műhely, Budapest, 136-140.
- Papp G. 2022. A magyarországi ásványgyűjtés történetének 1945-től az 1970-es évek első feléig terjedő időszaka – áttekintés. (History of mineral collecting in Hungary from 1945 to the first half of the 1970s – an overview.) In Szakáll S. & Hollósy F. (ed.): *A hazai szervezett ásványgyűjtés 50 éve (50 years of organised mineral collecting in Hungary)*. (Minerofil Kiskönyvtár VI.) Magyar Minerofil Társaság, Miskolc, 9–29.
- Papp G. 2022. Szendrei Géza (Géza Szendrei). In Tóth A. (chief ed.): *Magyar múzeumi arcképcsarnok II. (Biographical dictionary of the Hungarian museums II)*. Pulszky Társaság – Magyar Múzeumi Egyesület (Edited by Pulszky Society – Hungarian Museum Association), Budapest, 324–326.
- Papp G. 2022. Szabó Anniversalia. *Annales Musei historico-naturalis hungarici* 114, IX–X, 214.
- Pipics, J., Lisewycz, A. 2022. A természetet vizsgáló bölcsek. Tudósok Segesvári István Hell Miksa emlékére írt versében (1792) (Scholars, examining nature. Scientists in István Segesvári's poem in memory of Miksa Hell). *XV. Tudomány- és Technikatörténeti Konferencia, 2022. július 2. Nagyenyed (XVth Conference on the History of Science and Technology)*, Erdélyi Magyar Műszaki Tudományos Társaság (Hungarian Technical Scientific Society of Transylvania), Kolozsvár, 72-76.
- Wanek, F. 2022. Az ásvány- és földtan tanítása (Teaching mineralogy and geology). In Antal, T., Vajda, T. (ed.): *A Szegedi Tudományegyetem és elődei története. II. Rész. A kolozsvári egyetem története az alapítástól a szegedi újrakezdésig 1872–1921 (History of the University of Szeged and its predecessors. Volume II. The history of the University of Cluj-Napoca from its foundation to its successor in Szeged, 1872-1921)*, Published by Szegedi Egyetemi Kiadó, Szeged, 370–381.

- Wanek, F. 2022. A földtanoktatás a 150 éve indult Ferenc József Tudományegyetem Kolozsvárra visszatérte utáni utolsó 5 tanévében (The last 5 academic years of geology education at the “Ferenc József” University (founded 150 years ago) after its return to Kolozsvár (now Cluj-Napoca). *XV. Tudomány - és Technikatörténeti Konferencia, 2022. július 2. Nagyenyed (XVth Conference on the History of Science and Technology)*, Erdélyi Magyar Műszaki Tudományos Társaság (Hungarian Technical Scientific Society of Transylvania), Kolozsvár, 97–104. <https://ojs.emt.ro/TTK/article/view/985/920>
- Wanek, F. 2022. [Entries on] Balogh Ernő; Bányai János; Fuchs Herman; Jekelius, Erich Wolfgang; Knöpfler Gyula, Zarándi; Kürthy Sándor; Phleps, Otto; Primics György; Vutskits György [szócikkek]. In Tóth A. (chief ed.): *Magyar Múzeumi Arcképcsarnok. Életrajzi lexikon II. (Biographical dictionary of the Hungarian museums II)*. Pulszky Társaság – Magyar Múzeumi Egyesület (Edited by Pulszky Society – Hungarian Museum Association), Budapest, 14, 18–20, 101–102, 158–160, 178, 199–200, 270, 276, 394. https://pulszky.hu/wp-content/uploads/2022/11/Arckepcsarnok_II_WEB.pdf
- Wanek, F. 2022. Búcsú Götz Endrétől (1924. augusztus 27. – 2022. szeptember 3.) (A farewell to Endre Götz (August 27, 1924 – September 3, 2022)). *Szabadság* 34, 211, (2022. szeptember 16), 3, Kolozsvár. <https://foldtan.ro/gotz-endre-emlekere/>

Miksa Hantken memorial volume of the journal *Földtani Közlöny*

The journal *Földtani Közlöny* published the lectures held on September 22, 2021, during the Hantken memorial session. The session was held by the Hungarian Academy of Sciences and by the Hungarian Geological Society, on the 200th anniversary of the birth of palaeontologist Miksa Hantken (Figure 3).



Figure 3. Hantken Miksa (1821-1893)

COUNTRY REPORTS

The following papers were published in volume 152, No. 2, 2022:

- Palotás K. Előszó a Hantken Miksa 200 előadóülés cikkgyűjteményéhez (Preface to the papers of the session Miksa Hantken 200). pp. 111-112.
- Breznysnyánszky K. Hantken Miksa, a Földtani Intézet igazgatója (Miksa Hantken, director of the Geological Institute). pp. 113-118. DOI: 10.23928/foldt.kozl.2022.152.2.113
- Görög Á., Szinger B., Szentesi Z. Hantken Miksa hagyatéka (Heritage of Miksa Hantken). pp. 119-138. DOI: 10.23928/foldt.kozl.2022.152.2.119
- Galács A. Hantken Miksa és a magyarországi jura ammoniteszkutatások kezdetei (Miksa (Maximilian) Hantken and the beginnings of Jurassic ammonite studies in Hungary). pp. 139-146. DOI: 10.23928/foldt.kozl.2022.152.2.139
- Görög Á., Szentesi I., Szentesi Z. A köztünk élő Hantken (The Hantken living among us). pp. 165-176. DOI: 10.23928/foldt.kozl.2022.152.2.165

Annual report for Hungary prepared by István Viczián and Éva Zsadányi.

IRELAND ANNUAL REPORT 2022

Kathleen Histon (Ordinary Member INHIGEO Ireland)

In 2022 many of my activities as INHIGEO Publications and Outreach Coordinator, and especially for outreach, were related to the IUGS60 celebration events and the IUGS60 Website. INHIGEO had a dedicated webpage on IUGS60 for which I sourced material and co-designed layout and content. In addition, I co-organized a special Virtual Roundtable to mark the publication of the final set of 7 papers in the INHIGEO sponsored series on the history of the International Geological Congresses (1878-2000) in the IUGS journal *Episodes*. I co-authored a special contribution for the IUGS60 to the INHIGEO Anniversary Series in July 2022 titled *Organizing the Geological Sciences: Retreading the Path from International Congresses to Scientific Union*. This formed the basis for a presentation during the INHIGEO Virtual Roundtable “The Roots of a Geological Union for the future of the Earth” on October 8, 2022. Regarding publications in *Episodes*, I worked throughout the year with the authors of 9 ‘History of Geology’ papers for finalizing their submissions and proofs and was elected as an associate editor of *Episodes* in August 2022.

My research continues along various lines and I presented aspects of the research at conferences during 2022. At the 11th International Symposium “Cephalopods Present and Past” held at the Natural History Museum in London in September 2022 I gave a talk on the correspondence of the palaeontologist Arthur Humphries Foord with those scientists he honoured by naming species of Irish Carboniferous nautiloids after them. I also worked with Zoe Hughes (Cephalopod Curator and symposium organizer) and Svetlana Nikalaeva (NHM researcher) to set up a small exhibit for the symposium of Foord’s 1888 publication, the *Catalogue of the Fossil Cephalopoda in the British Museum (Natural History)*, together with specimens he illustrated from the collections. At the INHIGEO Annual Symposium in Les Eyzies I co-presented a talk on the Italian geologist Arturo Issel from Genoa on his work related to cave exploration. Another major aspect of my research in 2022 was connected with collaboration with the IUGS Geoheritage Commission for the “First 100 Geological Heritage Sites” and I co-proposed and co-authored two sites under the “Theme of History of Geosciences”. The two sites are the Phleagrean Fields

(Naples, Italy) and Puy de Domes (Auvergne, France). I gave presentations for both sites at the meeting in Zumaia (Spain) in October 2022. Together with Sue Turner (Australia) and Toshihiro Yamada (Japan), I organized an INHIGEO sponsored session within the 6th International Palaeontological Congress (Thailand, 7-11 November 2022), on history of palaeontology. The session was entitled “Hidden histories revealed in scientific revision of palaeontological collections” and I also gave presentations there on A. H. Foord, G. Stache and the history of the *Treatise of Invertebrate Paleontology Part K*.

Publications and Abstracts.

- Histon, K. 2022. Book review: *From Local Patriotism to a Planetary Perspective Impact crater Research in Germany, 1930s–1970s* (2020) by Martina Kölbl-Ebert. *Episodes* 45 (4): 455-456.
- Pensa, A., Bonomo, R., Rudwick, M.J.S., and Histon, K. 2022. Site 002 The Quaternary Phleagrean Fields volcanic complex Italy. *The First 100 Geological Heritage Sites*. IUGS Publication, Chapter 1 History of Geosciences, 24-25.
- Van Wyk de Vries, B., Rudwick, M.J.S., Histon, K., Vaccari, E., and Charles, N. 2022. Site 004 The Holocene Puy-de-Dôme and Petit-Puy-de-Dôme volcanoes, France. *The First 100 Geological Heritage Sites*. IUGS Publication, Chapter 1 History of Geosciences, 28-29.
- Histon, K., Kölbl-Ebert, M., and Vaccari, E. 2022. Organizing the geological sciences: Retreading the path from international congresses to scientific union. INHIGEO Anniversaries Series. *IUGS E Bulletin*, 188, July 2022.
- Histon, K. 2022. Arthur Humphreys Foord (1844–1933): The catalogue of the fossil Cephalopoda of the British Museum (Natural History), Volumes I-III. *11th International Symposium on Cephalopods Present and Past*. Natural History Museum, London U.K. September 12-16 2022. Abstract vol. p. 23.
- Histon, K., and Vaccari, E. 2022. Cave exploration and human palaeontology in the writings of Arturo Issel (1842-1922). *47th INHIGEO Annual Symposium*. Les Eyzies France, September 15-24. Abstracts vol. p. 23.
- Histon, K. 2022. Reconstructing the scientific correspondence of Arthur Humphreys Foord (1844–1933) through species names in his systematic studies of cephalopods. Symposium 3: Hidden histories revealed in scientific revision of paleontological collections. *6th International Paleontological Congress*, Khon kaen Thailand, November 7-11, 2022. Abstract vol. p. 9
- Histon, K. 2022. The Austrian palaeontologist Guido Stache’s unpublished monograph of Silurian faunas. Symposium 3: Hidden histories revealed in scientific revision of paleontological collections. *6th International Paleontological Congress*, Khon kaen Thailand, November 7-11, 2022. Abstract vol. Poster p. 32.
- Evans, D., King, A., Cichowolski M., and Histon, K. 2022. *Treatise Part K*: high-level classification of the nautiloid cephalopods. Symposium 3: Hidden histories revealed in scientific revision of paleontological collections. *6th International Paleontological Congress*, Khon kaen Thailand, November 7-11, 2022. Abstract vol. Oral p. 15.
- Vaccari, E., and Histon, K. 2022. Arthur Humphreys Foord (1844-1933): The story of an eminent palaeontologist without biography. *6th International Paleontological Congress*, Khon kaen Thailand, November 7-11th, 2022. Abstract vol. Poster p. 31.

COUNTRY REPORTS

Patrick Roycroft (Ordinary Member INHIGEO Ireland)

The following represent a variety of ongoing projects. It must be noted that my election and warm welcome to INHIGEO coincided almost exactly with my being made the Curator of Geology at the National Museum of Ireland, a new job that has taken a significant amount of my time. However, the following are projects/events that will be happening or that are underway:

- 1) My article on 19th century Irish mineral dealer Patrick Doran has been delayed because another mineral curator has been working on a similar theme. I will contact this person and suggest we pool our respective resources to make a fuller paper.
- 2) Every August in Ireland there is Heritage Week, during which a wide variety of history and natural history groups organise events for the public. On behalf of the National Museum of Ireland, I will be talking about the role that Miss Grace Cotter had in the discovery and dissemination of the quartz variety named in her honour, *cotterite*.
- 3) I will be featured in a planned documentary for RTÉ, Ireland's national television broadcaster, about the human stories behind museum objects. Among the objects the producers specifically want me to talk about is *cotterite* and the history of the Brasky meteorite (which fell on Limerick).
- 4) The European Mineralogical Conference 2024 (EMC2024) is to be held for the first time in Dublin. In celebration, I am putting together a special issue of the *Irish Naturalist's Journal*. One of my own papers, relevant to INHIGEO, will be 'Minerals with an Irish Connection' which will list what minerals have been named after Irish persons and places, including some brief details of that honouree or place. More substantially, I will be publishing the first summary of just the mineralogy of Ireland (not with Great Britain) since 1832, when Sir Charles Lewis Giesecke published *An Irish Mineralogy*.
- 5) I will be helping Dr Andrew G. Tindle with the Irish mineralogical side of the planned 2nd edition of his *Minerals of Britain and Ireland* (2008). This ties in well with project 4 above.

Patrick Wyse Jackson (Ordinary Member INHIGEO Ireland)

This year a great deal of time was spent researching and reporting on various Irish heritage stones types and their use. These included Valentia Slate, an iconic stone from southwest Ireland and its history of quarrying since the early 1800s (Wyse Jackson *et al.* 2022). A video on the history and use of Connemara Marble was broadcast by the IUGS as part of International Geodiversity day, and the history and use of Irish decorative stones featured in a segment in the programme *The Island* broadcast on national television. In October 2022 I attended the IUGS Geoheritage Commission meeting *The First 100 Geological Heritage Sites* in Zumaia, northern Spain where with colleagues from the UK I presented on "The Giant's Causeway" and spoke on its importance for the history and philosophy of geology. An account of this site was published in the accompanying book (Lemon *et al.* 2022).

Publications:

Key, M.M. Jr., and Wyse Jackson, P.N. 2022. History of micro-computed tomographic three-dimensional imaging in bryozoology, pp. 57–72. In: P.N. Wyse Jackson and M.E. Spencer

- Jones (eds) *Annals of Bryozoology 7: Aspects of the History of Research on Bryozoans*. International Bryozoology Association, Dublin.
- Lemon, K., Wyse Jackson, P.N., Cooper, M., and Dempster, M. 2022. The Paleocene volcanic rocks of the Giant's Causeway and Causeway coast, United Kingdom, pp. 30-31, 270-271. In: A. Hilario (ed.) *The First 100 IUGS Geological Heritage Sites*. International Union of Geological Sciences.
- Monaghan, N.T., Simms, M.J., Wyse Jackson, P.N., and Murray, J. 2022. An appreciation: Matthew Alastair Parkes (1961–2020). *Irish Journal of Earth Sciences* 40: 1–9.
- Wyse Jackson, P.N., and Aretz, M. 2022. George Demetrius Sevastopulo (1941–2021), stratigrapher and palaeontologist: an appreciation. *PalZ* 96: 409–413.
- Wyse Jackson, P.N., Caulfield, L., Forde, A., Conlon, I., and Cox, P. 2022. Valentia Slate, Co. Kerry, Ireland: Heritage Stone. *Irish Journal of Earth Sciences* 40: 87–104.

Report for Ireland submitted by Patrick Wyse Jackson

ITALY ANNUAL REPORT 2022

Report for annual activities of Italian INHIGEO members compiled by Ezio Vaccari

INHIGEO Italian members carried out numerous activities during 2022: publications; participation at conferences, symposia, and exhibitions; research projects; and teaching in the field of the history of the Earth sciences. Some Italian members (Fabiana Console, Maddalena Napolitani, Marco Pantaloni, Claudia Principe, and Ezio Vaccari) presented papers and posters at the 47th INHIGEO Symposium, held in Les Eyzies (France) in September, while others (Luca Barale, Simone Fabbi, Pietro Mosca, Daniele Musumeci, Guido Roghi, and Marco Romano) participated with papers at the session "Geology is coming home. A renewed interest in Italian geoscientific tradition" within the 91st SGI-SIMP Congress of the Italian Geological Society "Geosciences for a sustainable future", held in Turin (Italy) in September. A few months earlier, at the end of May, Fabiana Console, Simone Fabbi, Alessandro Iannace, Daniele Musumeci, Maddalena Napolitani, Marco Pantaloni and Ezio Vaccari presented papers at the session "*History of the Earth and History of Geosciences: A Stratified Discipline*", organized by Maddalena Napolitani and Daniele Musumeci within the national meeting of the Italian Society of History of Science "*Ad limina*. Frontiers and transdisciplinary contaminations in the history of sciences" held in Catania (Italy). Other meetings and exhibitions organized in Italy on the history of geological sciences, with the involvement of Italian INHIGEO members, regarded geologists Torquato Taramelli (1845-1922) in Pavia in March (Marco Pantaloni and Fabiana Console), Giuseppe Scarabelli (1820-1905) in Imola in September (Gian Battista Vai, Stefano Marabini and Guido Roghi) and Déodat de Dolomieu (1750-1801) in Varese in December (Guido Roghi and Ezio Vaccari).

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 in the area between Varese (Italy) and Canton Ticino (Switzerland), following the travels and the fieldwork of geoscientists and naturalists from late 18th to the early 20th century.

COUNTRY REPORTS

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 from the late 18th until the early 20th century, with particular focus on the study of field notebooks and other primary sources.

Conferences:

- Barale L., Bicknell M., Massardo E., *Clarence Bicknell (1842-1918): botanist, archaeologist, esperantist, and... citizen geologist*. 91st SGI-SIMP Congress of the Italian Geological Society, Torino, 19-21 September 2022.
- Barale L., Console F., Corno A., Frasca G., Mosca P., Pantaloni M., *The Alpine field notebooks of Secondo Franchi (1859-1932)*. 91st SGI-SIMP Congress of the Italian Geological Society, Torino, 19-21 September 2022.

Publications:

- Barale L., Console F., Corno A., Frasca G., Mosca P., Pantaloni M., *The geology of the Western Alps through the field notebooks of Secondo Franchi (1859-1932)*. "Italian Journal of Geosciences", 141 (2022), 1, pp. 120-143, <https://doi.org/10.3301/IJG.2022.05>
- Mosca P., Barale L., *Geological explorations in the Italian-French cross-border areas (Western Alps) from 19th to early 20th century*. "Rendiconti Online della Società Geologica Italiana", 57 (2022), pp. 2-16, <https://doi.org/10.3301/ROL.2022.08>

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 and on the main geological issues of nuclear siting in post-World War II Italy. In 2022, Candela continued to serve as Book Review Editor of the international journal of History of Science *Physis*. He also concluded the 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 research project, funded by the Cariplo Foundation, aimed at preserving and promoting the cultural as well as geo-environmental heritage sites in the Municipality of Orino north of Varese (Lombard Prealps). The main results of the research are being evaluated by the Cariplo Foundation and will be published soon. In 2022, Candela gave an interview to *Le Scienze*, one of Italy's leading popular science magazines, that was about the geological issues involving the planning of a national radwaste repository in Italy. 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".

Interviews and public engagement:

- *Il deposito della discordia* [on the historical question of nuclear waste in Italy], interview by G. Liva, "Le Scienze", June 2022, pp. 62-69.

Conferences:

- Candela A., *Uranium in Italy: The Case of Novazza Mine* (in Italian). Paper at the 12th Congress of the Society for Geographical Studies, "Oltre la globalizzazione. Narrazioni / Beyond globalization: Narratives", Session: "Lakes and mountains in the scientific and geographical narrative of travel literature between the eighteenth and twentieth centuries", Como, 9 December 2022.

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.

Fabiana CONSOLE (Library - ISPRA, Rome) continued his research on the history of Italian geological sciences, with particular attention to history of geological mapping, history of Geological Surveys and the redaction of the biographies of the past Presidents of the Geological Society of Italy. She is responsible for the GEA POLO of the National Library Service and continued the cataloguing and archiving of the geological maps and archive maintained in the Library of the Geological Survey of Italy – ISPRA. In this framework, a multidisciplinary working group realized a specific page on the Geological Survey of Italy portal dedicated to the visualization on web-GIS of a series of historical geological and geothematic maps.

Conferences and seminars

- Barale L., Console F., Corno A., Frasca G., Mosca P., Pantaloni M. *The Alpine field notebooks of Secondo Franchi (1859-1932)*. Paper at the SGI-SIMP Congress. Torino, 19-21 September 2022.
- Console F., Pantaloni M. *Il contributo di Taramelli alla cartografia: la storia nelle collezioni ISPRA*. Paper at the meeting “L’arte della Scienza: l’eredità scientifica di Torquato Taramelli”, Pavia, 31 March 2022.
- Console F., Fabbi S., Pantaloni M., Principe C. *Bonaventura Montani e la prima carta geologica dei Campi Flegrei: l’area di bonifica di Bagnoli e del Lago di Agnano*. Paper at the conference "Ad limina. Frontiere e contaminazioni transdisciplinari nella storia delle scienze", Convegno Nazionale della Società Italiana di Storia della Scienza, Catania, 30 May - 1 June 2022.
- Fabbi S., Console F., Pantaloni M., Principe C. *The geological map of Phlegraean Fields by Bonaventura Montani: the Bagnoli-Agnano reclamation area*. Paper at the SGI-SIMP Congress. Torino, 19-21 September 2022.
- Lupi C., Console F., Severino F. *Torquato Taramelli: the art of Science*. Paper at the SGI-SIMP Congress, Torino, 19-21 September 2022.
- Pantaloni M., Console F. *Karl Mayer-Eymar and the history of Messinian Stage*. 47th INHIGEO Conference, Les Eyzies, France, 15-20 September 2022.
- Severino F., Console F., Pantaloni M. *Conoscenza e consapevolezza scientifica nella Biblioteca ISPRA*. Paper at the XI Convegno Nazionale NILDE, Un'esplosione di conoscenza: dalla teoria alla pratica per ridurre le disuguaglianze. Messina, 27-30 September 2022.

Field trip organization:

- Pantaloni M., Araneo F., Bianco P.M., Console F., Crosti R., Genta D., La Valle P., Nonnis O., Paganelli D., Pulcini M. *Le saline di Tarquinia: uno scrigno di geodiversità e biodiversità*. Settimana del Pianeta Terra, 8-9 October 2022, Tarquinia, Italy.
- Pantaloni M., Guerra M., Console F. *Le passeggiate geologiche con l’ISPRA: Roma prima di Roma*. Festival delle Scienze di Roma, Auditorium. 27 November 2022.

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Publications:

- Lupi C., Argentieri A., Console F., Fanti R., Maramai A., Piangiamore G.L., Pantaloni M., *Torquato Taramelli: geologo rilevatore esperto di terremoti*, "Geologicamente", 7 (2022), p. 72.
- Macini P., Console F., Pantaloni M., *The Early Cartography of Petroleum Resources in Italy (1866–1926)*, in Borgogno-Mondino E., Zamperlin P. (eds), *Geomatics and Geospatial Technologies*. ASITA 2021. Communications in Computer and Information Science, vol. 1507. Springer, Cham, 2022, pp. 151-162. https://doi.org/10.1007/978-3-030-94426-1_12
- Mosca P., Barale L., Console F., Corno A., Frasca G., Pantaloni M., *The geology of the Western Alps through the field notebooks of Secondo Franchi (1859-1932)*, "Italian Journal of Geosciences", 141 (2022), 1, pp. 121-144. <https://doi.org/10.3301/IJG.2022.05>

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

Publications:

- Corsi P., *Séduire comme un paon. Charles Darwin et la sélection sexuelle*, "Clio. Femmes, Genres, Histoire", 55 (2022), pp. 173-189.

Simone FABBI (University of Rome "La Sapienza") 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:

- Fabbi S., Console F., Pantaloni M. & Principe C., *The geological map of Phlegraean Fields by Bonaventura Montani: the Bagnoli-Agnano reclamation area*. Paper at the SGI – SIMP Congress “Geology for a sustainable future”, Torino 19 - 21 September 2022
- Console F., Fabbi S., Pantaloni M. & Principe C., *Bonaventura Montani e la prima carta geologica dei Campi Flegrei: l'area di bonifica di Bagnoli e del Lago di Agnano*. Paper at the conference "Ad limina. Frontiere e contaminazioni transdisciplinari nella storia delle scienze", Convegno Nazionale della Società Italiana di Storia della Scienza, Catania, 30 May - 1 June 2022.

Maria FACCIOLI (University of Insubria, Varese) continued her researches 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 Carburì.

Conferences and seminars:

- Faccioli M., *The 18th century mineralogical travels and their contribution to geography* (in Italian). Paper at the 12th Congress of the Society for Geographical Studies, “Oltre la globalizzazione. Narrazioni / Beyond globalization: Narratives”, Session: “Lakes and mountains in the scientific and geographical narrative of travel literature between the eighteenth and twentieth centuries”, Como, 9 December 2022.

Francesco GERALI (Museo dell'Energia of Ripi, Frosinone) continued to work on research on petroleum history within history of technology and the history of geological sciences, with particular attention to the Italian context.

Alessandro IANNACE (University of Naples "Federico II") worked at the preparation of his book *Storia della Terra* (which will be published by Laterza in 2023), based on the history of the Earth and the history of the studies on geological phenomena. He is also responsible for the task (18 months), within the framework of a National Project PNRR IR Geosciences led by ISPRA: Geosite's DB implementation by means of 3D Virtual Reality.

Conferences and seminars:

- *Una visione in tre tappe per l'evoluzione della Geologia*. Paper at the conference "Ad limina. Frontiere e contaminazioni transdisciplinari nella storia delle scienze", Convegno Nazionale della Società Italiana di Storia della Scienza, Catania, 30 May - 1 June 2022.

Francesco LUZZINI

CA' FOSCARI UNIVERSITY OF VENICE, DEPARTMENT OF PHILOSOPHY AND CULTURAL HERITAGE
AND JOHNS HOPKINS UNIVERSITY, DEPARTMENT OF HISTORY OF SCIENCE AND TECHNOLOGY

In 2022, Francesco continued working on his research as Marie Skłodowska-Curie Fellow at Johns Hopkins University. His research project, *Sounding the Depths of Providence*, seeks to understand 1) how the study of mineral generation evolved in early modern Europe, and 2) 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 collaborations with the Anthropocene Research Group at Department I of the Max Planck Institute for the History of Science (Berlin) and, since October 2022, with the new Max Planck Partner Group "The Water City: The Political Epistemology of Hydrogeological Praxis" (MPIWG Berlin - Ca' Foscari University of Venice).

In 2022, Francesco continued serving as 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 was published in open access in May. 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), an inn 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, and Seminars

- (January 25) Seminar: *La bellezza sospesa. Repubblica di Venezia e gestione delle acque in età moderna* (Einaudi College in Turin)
- (March 16) Seminar: *On Water and Land Management: From Early Modern Venice to the Global Scale* (Johns Hopkins University, Dept. of Modern Languages and Literatures)
- (May 23) Graduate Seminar: *Learning from Geoenvironmental Data: Tools for a Changing Planet* (Venice International University) – Paper: *Thus was closed*

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the cycle. Natural philosophy and the early modern debate on the origin of springs: a historical and experimental inquiry

- (September 22) Colloquium: *Earth(l)y Knowledge: Mineral (Re)generation, Natural Resources, and Human-Environment Interaction in the Early Modern Period* (Johns Hopkins University, Department of History of Science)
- (November 17-20) History of Science Society (HSS) Annual Meeting (Chicago, IL, USA) – *IsisCB* group activities
- (December 9) Seminar: *Sublime travelers and Sublime climbers: A critical edition of an alpine guest book from the Dolomites (1820–1875)* (Philology Workshop, MPIWG Berlin, Dept. I)

Publications

- *Quando il mondo scalò il Sublime. Scienza e storia nel primo Memoriale dell'Hotel Nave d'Oro di Predazzo (1820-1875)*, Trento, MuSe - Museo delle Scienze, 2022.
- “The floating price of beauty: Water and land management in Venice through the centuries” in *Venice and the Anthropocene: An Ecocritical Guide*, eds. Cristina Baldacci, Shaul Bassi, Lucio De Capitani and Pietro D. Omodeo, Venice, Wetlands Books, 29–32.
- “Quando si parla d’ambiente (e di scienza, e di storia),” in D. Zampieri, *La valle dal cuore di Perla. Sulle orme di Giovanni Arduino nelle cave di marmo della Val Posina*, Padua, CLEUP, pp. 13–19.
- “Giovanni Pietro Orelli Barnaba di Locarno, *Opera Medica* (1711)” by Benedino Gemelli, book review, *Nuove Lezioni Bellinzonesi*, Volume 1, pp. 171–176.

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:

- Marabini S., *La Carta geoarcheologica della Pianura Imolese e Ravennate*, Paper presented at the meeting "Bicentenario Scarabelliano (1820-2020) Convegno Scientifico Storico Celebrativo", Imola, 30 September 2022.

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.

Conferences:

- Barale L., Console F., Corno A., Frasca G., Mosca P., Pantaloni M., *The Alpine field notebooks of Secondo Franchi (1859-1932)*. 91st SGI-SIMP Congress of the Italian Geological Society, Torino, 19-21 September 2022.

Publications:

- Barale L., Console F., Corno A., Frasca G., Mosca P., Pantaloni M., *The geology of the Western Alps through the field notebooks of Secondo Franchi (1859-1932)*. "Italian Journal of Geosciences, 141 (2022), 1, pp. 120-143, <https://doi.org/10.3301/IJG.2022.05>
- Mosca P., Barale L., *Geological explorations in the Italian-French cross-border areas (Western Alps) from 19th to early 20th century*. "Rendiconti Online della Società Geologica Italiana", 57 (2022), pp. 2-16, <https://doi.org/10.3301/ROL.2022.08>

Daniele MUSUMECI (University of Catania) continued his research in the history of volcanology of the twentieth century, with a specific focus on the figure of Alfred Rittmann. He has also studied the interactions between hermeneutic philosophy and the philosophy of geosciences, in order to understand the evolution of volcanological studies in relation to the great paradigmatic changes that have crossed geosciences in the last century, from continental drift to plate tectonics.

Conferences:

- Co-convenor of the session at the session "*History of the Earth and History of Geosciences: a stratified discipline*", within the national meeting of the Italian Society of History of Science "*Ad limina. Frontiers and transdisciplinary contaminations in the history of sciences*", Catania 29 May - 1 June 2022, and Field leader of the fieldtrip on Mt. Etna ("*Schiena dell'Asino*" trail), 2 June 2022.
- <https://www.societastoriadellascienza.it/index.php/it/attivita/convegni-siss/71-convegno-nazionale-sisscatania-2022>
- Musumeci D., Leone G., Branca S., Ingaliso L., *L'evoluzione della vulcanologia cilena nel '900*. Paper presented at the national meeting of the Italian Society of History of Science "*Ad limina. Frontiers and transdisciplinary contaminations in the history of sciences*", Catania 29 May - 1 June 2022.
- Furlani S. & Musumeci D., *Did The Psysical and Metaphorical Border of the Sea Surface forced Geomorphology as a Land-Driven Discipline?*. Paper presented at the 10th IAG International conference on Geomorphology, Coimbra 12-16 September 2022.
- Musumeci D., Leone G., Branca S., Ingaliso L., *The evolution of Chilean volcanology in the 20th century and the work of Lorenzo Casertano*. Poster presented at the 91st SGI-SIMP Congress of the Italian Geological Society, Torino, 19-21 September 2022.
- Argentieri A., Schirolli P., Musumeci D., *Ragazzoni, Cacciamali and Cozzaglio: the 'Brescia geological trinity'*. Poster presented at the 91st SGI-SIMP Congress of the Italian Geological Society, Torino, 19-21 September 2022.
- Co-convenor of the session "The manifold interaction between humans and volcanoes: interdisciplinary studies around volcanology" at the 5th Conference Alfred Rittmann, Catania, 29 September - 1 October 2022.
- Musumeci D., Leone G., Branca S., Ingaliso L., *The evolution of Chilean volcanology in the 20th century and the work of Lorenzo Casertano*. Paper presented at the session "The manifold interaction between humans and volcanoes: interdisciplinary studies around volcanology" within the 5th Conference Alfred Rittmann, Catania, 29 September - 1 October 2022
- Branca S., Ingaliso L., D. Musumeci D., *The role of cartography by Wolfgang Sartorius von Waltershausen (1809-1876) in the frame of the geological investigations of Etna volcano*. Paper presented at the session "The manifold interaction between humans and

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volcanoes: interdisciplinary studies around volcanology" within the 5th Conference Alfred Rittmann, Catania, 29 September - 1 October 2022

- Sepulveda J. P., Musumeci D., Cioni R., Ingaliso L., Branca S., *A historical–methodological review of the studies on the 1932 eruption of the Quizapu volcano, Southern Andes, Chile*. Poster presented at the session "The manifold interaction between humans and volcanoes: interdisciplinary studies around volcanology" within the 5th Conference Alfred Rittmann, Catania, 29 September - 1 October 2022
- Presentation of the research paper awarded by the "Premio Quintino Sella per la Storia delle Geoscienze in onore di Nicoletta Morello e Bruno Accordi", Roma, Assembly of the Italian Geological Society, 2 December 2022.
- Musumeci D., Leone G., Branca S., Ingaliso L., *The evolution of Chilean volcanology in the 20th century and the work of Lorenzo Casertano*, I Simposio Chileno de Volcanología, Plenary Lecture (online), 12 December 2022.

Publications:

- Musumeci D., Arnaldo Angelo De Benedetti, Branca S. & Ingaliso L., *Rittmann's heritage: A philosophical approach for current research* in Foulger G. R., Hamilton L. C., Jurdy D. M., Stein C. A., Howard K. A., and Stein S., (eds.), *In the Footsteps of Warren B. Hamilton: New Ideas in Earth Science*, Geological Society of America Special Paper 553, 2022, pp. 21-28; [https://doi.org/10.1130/2021.2553\(03\)](https://doi.org/10.1130/2021.2553(03))
- Furlani S. and Musumeci D. *Sea surface: a physical and metaphorical border*, "Rendiconti Online della Società Geologica Italiana", 57 (2022), pp. 25-32 <https://doi.org/10.3301/ROL.2022.11>

Maddalena NAPOLITANI (University of Insubria, Varese), worked as Research Fellow at the Center for the History of the Mountains, Material Culture and Earth Sciences (Department of Theoretical and Applied Sciences, University of Insubria) on a PRIN project focused on investigating the extent of a new literature of popular science in the 19th and 20th centuries, which significantly reached a great number of readers and also created a new audience for naturalistic subjects related in particular to the history of the Earth, also through the development of a specific iconography on the natural environment and landscape of the past. In 2022 she also received a PhD dissertation prize from the Comité des Travaux Historiques et Scientifiques (CTHS) of the Académie des sciences politiques et morales (Institut de France, section history of sciences) and the INHIGEO Early Career award for her presentation at the 47th INHIGEO symposium (Les Eyzies, September 2022). At the annual conference of the Italian Society for the History of Science, held in Catania from May 30 to June 1 2022, she co-organized the session "*History of the Earth and History of Geosciences: A Stratified Discipline*". Finally she worked on curatorial activity for the exhibition *Collectionnisme*, which will be held in 2023 at the École des Mines museum of mineralogy in Paris.

Conferences and seminars:

- Napolitani M., *La Siberia di J.P. Alibert: il racconto per immagini di una spedizione nei monti Saiani (1844-1857)*. Paper presented at the 12th conference of the Società di Studi Geografici *Oltre la globalizzazione. Narrazioni / Beyond Globalization. Narratives*, Università dell'Insubria, Como, 9 December 2022.

- Napolitani M., *Représenter les Alpes entre romantisme et “technocratie”: transition ou superposition?* Poster presented at the conference *Encore une transition? Les territoires de montagne face aux changements socio-environnementaux*, Université de Grenoble 1-2 December 2022.
- Napolitani M., *Painting landscapes between art and Earth sciences during the second half of the 19th century: some French case studies*. Paper presented at the 47th INHIGEO Annual Symposium, Les Eyzies, France, 15-24 September 2022.
- Napolitani M., *Enseigner la montagne par ses images : le peintre Savoyard Claude Hugard et ses paysages alpins pour l'École des Mines de Paris (1852-1859)*. Paper presented at the conference *Montagne enseignante, montagne enseignée*, Université de Grenoble, 7-8 September 2022.
- Napolitani M., *Mountain landscapes between geosciences and political issues during the 19th century*. Paper presented at the international symposium of the research group Boulouki *Under the Landscape*, Santorini and Therasia, 26-29 June 2022.
- Napolitani M., *Collezioni mineralogiche tra arte, tecniche industriali e valore patrimoniale: gli oggetti d'arte delle collezioni dell'École des Mines di Parigi (1795-1805)*. Paper presented at the annual conference of the Italian Society for the History of Science "Ad Limina", Catania, 30 May - 1 June 2022.
- Napolitani M., *Painting the Alpine Landscape between Earth sciences and national identity in the 19th century: the case of the French painter Claude Hugard (1816-1885)*. Paper presented at the Workshop and conference "AlpenSymposium: Alpine Landscapes in Transformation: Infrastructure, Culture, and Climate", ETH Zürich, 12-13 May 2022.
- Napolitani M., *La geodiversità nell'arte*. Invited paper presented at the first International Geodiversity Day organized by the Società Italiana di Geologia Ambientale (SIGEA), Roma, 6 October 2022.
- Napolitani M., *Histoire des sciences et histoire de l'art au musée: le cas des galeries savantes*. Invited paper presented at the international conference "L'effet patrimoine. Les expériences de transmission entre ruptures et continuités", Centre Marc Bloch, Berlin, 16 June 2022.

Publications:

- Napolitani M., *Patrimonialiser les collections minéralogiques, entre enjeux scientifiques et esthétiques: le cas de l'École des mines de Paris entre le XVIIIe et le XIXe siècle*, "Culture et musées", 39 (2022), section *Paroles des jeunes docteurs*, pp. 333-336.
- Napolitani M., *Un musée de minéraux à l'École des Mines de Paris*, in Poulot D. (dir.), *L'effet musée. Objets, pratiques et cultures*, Paris, Éditions de la Sorbonne, 2022, pp. 195-214.
- Napolitani M., *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)*, "Rendiconti online della società geologica italiana", 57 (2022), pp. 17-24.
- Napolitani M., *Les collections de Balthazar-Georges Sage, fondateur et premier directeur de l'École royale des Mines, entre sciences et curiosité (1783-1816)*, "Travaux COFRHIGEO", 35 (2022), pp. 17-30.

Pietro Daniel OMODEO (University of Venice "Ca' Foscari") continued his research on the history of the hydrogeology of the Venice Lagoon. He is also Principal Investigator of the FARE

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project *EarlyGeoPraxis*, which received funding from the Italian Ministry of University and Research.

Publications:

- Omodeo P.D. History of Science and History of the Earth in the Anthropocene, *Physis. International Journal for the History of Science*, 57 (2022), 1, pp. 171-188.
- Omodeo P.D., Trevisani S. Historical Geoanthropology in Venice, *Journal of Interdisciplinary History of Ideas*, 11 (2022), item 11: pp. 1-22.
- Omodeo P.D., Garau R., Rispoli G. Historical Geoanthropology, *Journal of Interdisciplinary History of Ideas*, 11 (2022), item 8: pp. 1-12.
- Omodeo P.D. Geopraxis: A Concept for the Anthropocene, *Journal of Interdisciplinary History of Ideas*, 11 (2022), item 9: pp. 1-52.
- Omodeo P.D. Hydrogeological Knowledge from Below: Water Expertise as a Republican Common in Early Modern Venice, *Berichte zur Wissenschaftsgeschichte*, 45 (2022), pp. 538-560.
- Trevisani S., Fabbri P., Omodeo P.D. Groundwater in the Venetian Area. In: Pereira P., Ferreira C. (eds), *Urban Soil and Water Degradation*, Cambridge, Mass., Elsevier, 2022, vol. 8, pp. 161-188.

Marco PANTALONI (Geological Survey of Italy - ISPRA, Rome) continued his research on the history of geological sciences, with particular attention to history of geological mapping, history of Geological Surveys and biographies of geoscientists. In 2022 he became the Director of the ISPRA Library, continued the coordination of the “History of Geoscience working group” of the Geological Survey of Italy - ISPRA and maintained the role of coordinator of the “History of Geoscience Section” of the Geological Society of Italy. In addition, he was appointed Secretary General of the Subcommission Europe of the Commission for the Geological Map of the World (CGMW-CCGM). He continued his collaboration for the redaction of the biographies of the past Presidents of the Geological Society of Italy for the Society website. He continued the digitizing, cataloguing, and archiving of the historic geological maps and archive maintained in the Library of the Geological Survey of Italy – ISPRA. In this framework, a multidisciplinary working group realized a specific page on the Geological Survey of Italy portal dedicated to the visualization on web-GIS of a series of historical geological and geothematic maps.

Conferences and seminars:

- Member of the Organizing Committee of the "Centenario Taramelliano" meeting, Pavia, March 2022.
- Member of the Organizing Committee of the Italian Association of Cartography congress, Napoli, September 2022
- Convener of the session "Geology is coming home" at the 91° Congress SGI-SIMP of the Geological Society of Italy. Torino, September 2022.
- Member of the Scientific Committee of the "Specialistic Quaternary School", organized by Italian Association for Quaternary (AIQUA), ISPRA, Simbruini Mountains Regional Park. Subiaco, Italy, October 2022.
- Pantaloni M., *Mapping on Mars as on Earth*. Plenary lecture. Liceo Scientifico Lazzaro Spallanzani, Tivoli, Italy.

- Console F., Pantaloni M., *Il contributo di Taramelli alla cartografia: la storia nelle collezioni ISPRA*. Paper presented at the meeting “L’arte della Scienza: l’eredità scientifica di Torquato Taramelli”, Pavia, 31 March 2022.
- Console F., Fabbi S., Pantaloni M., Principe C., *Bonaventura Montani e la prima carta geologica dei Campi Flegrei: l’area di bonifica di Bagnoli e del Lago di Agnano*. Paper presented at the meeting "Ad limina. Frontiere e contaminazioni transdisciplinari nella storia delle scienze", Convegno Nazionale della Società Italiana di Storia della Scienza, Catania, 30 May - 1 June 2022.
- Pantaloni M., *Cento anni di geologia del Parco Nazionale d’Abruzzo, Lazio e Molise*. Paper presented at the meeting "Cento e più ... milioni di anni di geologia del Parco Nazionale d’Abruzzo, Lazio e Molise", San Donato Val di Comino, Italy, 3-4 June 2022.
- Fabbi S., Console F., Pantaloni M., Principe C., *The geological map of Phlegraean Fields by Bonaventura Montani: the Bagnoli-Agnano reclamation area*. Paper presented at the 91st congress SGI-SIMP, Torino, 19-21 September 2022.
- Barale L., Console F., Corno A., Frasca G., Mosca P., Pantaloni M., *The Alpine field notebooks of Secondo Franchi (1859-1932)*. Paper presented at the 91st congress SGI-SIMP, Torino, 19-21 September 2022.
- Pantaloni M., Console F., *Karl Mayer-Eymar and the history of Messinian Stage*. Paper presented at the 47th INHIGEO Symposium, Les Eyzies, France, 15-20 September 2022.
- Pantaloni M., Federico Araneo, Pietro Massimiliano Bianco, Fabiana Console, Roberto Crosti, Daniela Genta, Paola La Valle, Ornella Nonnis, Daniela Paganelli, Marina Pulcini, *Le saline di Tarquinia: uno scrigno di geodiversità e biodiversità*. Field trip organization at the Settimana del Pianeta Terra, Tarquinia, Italy, 8-9 October 2022.
- Pantaloni M., Guerra M., Console F., *Le passeggiate geologiche con l’ISPRA: Roma prima di Roma*. Fieldtrip organization at the Festival delle Scienze, Roma, 27 November 2022.

Publications:

- Pantaloni M., Macini P., Console F., Pantaloni M., *The Early Cartography of Petroleum Resources in Italy (1866–1926)* in Borgogno-Mondino E., Zamperlin P. (eds), *Geomatics and Geospatial Technologies*. ASITA 2021. Communications in Computer and Information Science, vol. 1507. Springer, Cham, 2022, pp. 151-162. https://doi.org/10.1007/978-3-030-94426-1_12
- Mosca P., Barale L., Console F., Corno A., Frasca G., Pantaloni M., *The geology of the Western Alps through the field notebooks of Secondo Franchi (1859-1932)*, "Italian Journal of Geosciences", 141 (2022), 1, pp. 121-144. <https://doi.org/10.3301/IJG.2022.05>
- Dal Piaz G.V., Dal Piaz V., Pantaloni M., *XXXIII Riunione estiva della Società Geologica Italiana inaugurata a Padova e proseguita con escursioni nel Triveneto (29 agosto - 4 settembre 1920)*. "Atti dell’Istituto Veneto di Scienze, Lettere ed Arti", 179-180 (2020-2022), Classe di scienze fisiche, matematiche e naturali, pp. 1-26.

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.

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Conferences:

- Console F., Fabbi S., Pantaloni M., Principe C., *Bonaventura Montani e la prima carta geologica dei Campi Flegrei: l'area di bonifica di Bagnoli e del Lago di Agnano*. Paper presented at the session "History of the Earth and History of Geosciences: a stratified discipline" with the conference "Ad limina. Frontiere e contaminazioni transdisciplinari nella storia delle scienze" Annual Meeting of the Società Italiana di Storia della Scienza, Catania, 30 May - 1 June 2022.
- Fabbi S., Console F., Pantaloni M., Principe C., *The geological map of Phlegraean Fields by Bonaventura Montani: the Bagnoli-Agnano reclamation area*. Poster presented at the 91st Congress SGI-SIMP, Torino, 19-21 September 2022.
- Principe C., Paolillo A., La Felice S., Arrighi S., *Forma Vesuvii*. Paper presented at the 47th INHIGEO Congress, Les Eyzies, 15-24 September 2022.

Publications:

- L. Marini, Principe C., Lelli M., *Historical data*, in L. Marini, Principe C., Lelli M., *The Solfataro Magmatic-Hydrothermal System. Geothermometry and Geobarometry of Fumarolic Fluids*. Springer, 2022, pp. 1-8. <https://doi.org/10.1007/978-3-030-98471-7>

Guido ROGHI (Institute of Geosciences and Earth Resources, CNR - Italian National Research Council, Padua), continued his research work in particular on 19th century geologists and paleontologist Abramo Massalongo, Tommaso Antonio Catullo and Achille De Zigno. He also contributed to the presentations of an exhibition on Déodat de Dolomieu and the Dolomites, in Varese and in other Italian venues.

Conferences:

- Roghi G., *Storia degli scavi a Bolca dal '500 al 1900*. Paper presented at the meeting "Scavi paleontologici, studio e conservazione del patrimonio culturale, sviluppo del territorio", Verona, Roncà and Bolca di Vestenanova, 23-24 September 2022.
- Roghi G., *Upper Valsugana: a laboratory for Nineteenth-century geological studies*. Paper presented at the Session S23, "Geology is coming home. A renewed interest in Italian geoscientific tradition", within the 91st SGI-SIMP Congress, Torino, 19-21 September 2022.
- Roghi G., *Massalongo, Scarabelli e la Paleobotanica*. Paper presented at the meeting "Bicentenario Scarabelliano, 1820-2020 - Convegno Scientifico Storico Celebrativo", Imola, 30 September 2022.
- Roghi G., *Geologia ed alpinismo nella avventurosa vita di Déodat Gratet de Dolomieu*. Conferences at the Alpine Club in Padova and at the Società Veneziana di Scienze Naturali in Venice.

Publications:

- Kustatscher E., Martin H., Roghi G., Krings M., *A whole-plant specimen of the marine macroalga Pterigophycos from the Eocene of Bolca (Veneto, N-Italy)*, "Fossil Imprint", 78 (2022), 1, pp. 145-156.

- Roghi G., Bizzarini F., *Volta la carta. 1822 – 2022, Duecento anni di cartografia geologica delle Dolomiti nell'area del Parco Naturale Paneveggio Pale di San Martino* (Catalogo della mostra, Villa Welsperg, Fiera di Primiero), Padova, CLEUP, 2022.
- Zanzi L., Rizzi E., Roghi G. (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, 2022, Second Revised Edition.

Marco ROMANO (Sapienza University of Rome) continued his research in the history of Italian geology as well as the teaching of "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., *Fossils extraordinary objects: between myth, legend and folklore*. Paper presented at the 91st Congress SGI-SIMP - Session S23 "Geology is coming home. A renewed interest in Italian geoscientific tradition", Torino, 19-21 September 2022.
- Romano M., *"Per tremoto o per sostegno manco": la Geologia nell'Inferno di Dante*. Seminar: 12 December 2022.

Publications:

- Manucci F., Romano M., *Reviewing the iconography and the central role of 'paleoart': four centuries of geo-palaeontological art*, "Historical Biology", 35 (2023), 1, pp. 11-48. Published online: 18 January 2022.

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, also with particular attention to historical geosites.

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, *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. *La storia delle Alpi tra scoperte viaggi ed esplorazioni geologiche*. Lecture at UATE Somma Lombardo (Varese), 18 January 2022
- Vaccari E., *La storia della geologia in Italia: primo bilancio di un percorso storiografico transdisciplinare*. Paper presented at the session "History of the Earth and History of

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Geosciences: a stratified discipline", within the national meeting of the Italian Society of History of Science "Ad limina. Frontiers and transdisciplinary contaminations in the history of sciences", Catania, 30 May - 1 June 2022.

- Histon K., Vaccari E., *Cave exploration and human palaeontology in the writings of Arturo Issel (1842-1922)*. Paper presented at the 47th INHIGEO Symposium, Les Eyzies, France, 15-20 September 2022.
- Vaccari E., *The beautiful history of a beautiful science: the historical value of geosites*. Keynote Lecture at "The first 100 IUGS Geological Heritage Sites Conference", Zumaia, Spain, 25-28 October 2022.
- Vaccari E., *Palaeontological specimens and collections as historical sources*. Paper presented at Scientific Session 3 (sponsored by INHIGEO), *Hidden histories revealed in scientific revision of palaeontological collections*, within the 6th International Palaeontological Congress, Khon Kaen, Thailand, 7-11 November 2022.
- Vaccari E., *The historical routes of the geosciences in the Alps: an interdisciplinary project for the development of mountain geotourism*. Paper presented at the International Meeting *Encore un transition? Les territoires de montagne face aux changements socio-environnementaux*, Grenoble, France, 1-2 December 2022
- Convenor of the scientific session "Lakes and mountains in the scientific and geographical narrative of travel literature in 18th and 19th centuries" at the 12th Congress of the Italian Society for Geographical Studies, "Oltre la globalizzazione. Narrazioni / Beyond globalization: Narratives", Como, 9 December 2022.
- Vaccari E., Presentation of the second edition of the volume by E. Rizzi, G. Roghi, L. Zanzi, *Déodat de Dolomieu, Curiosando tra i taccuini di viaggio e nella vita avventurosa del padre delle Dolomiti*, at the Musei Civici di Villa Mirabello, Varese, 11 December 2022.

Publications:

- Vaccari E. *Tommaso Antonio Catullo e la storia della geologia*, in Conte P., Piaia G. (a cura di), *Tommaso Antonio Catullo. Studi e ricerche a 150 anni dalla morte*, "Archivio storico di Belluno, Feltre e Cadore", XCII (2021), n. 368, Supplemento - Quaderno 16, pp. 69-76 (published in 2022).
- Vaccari E. *Dalle teorie alle "bufale" nella storia e nella comunicazione delle scienze geologiche*, in Orecchia A.M., Preatoni D.G. (eds), *Bufale, Fake News, Rumors e Post-Verità. Discipline a confronto*, Milano-Udine, Mimesis, 2022, pp. 133-144.
- Vaccari E., Lemon K. *History of Geosciences*, in Hilario A., Finney S. et al. (eds.), *The first 100 IUGS Heritage Geological Sites*, Huarte, IUGS, 2022, pp. 18-19.

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:

- Vai G.B. *Carteggi dimezzati da Gastaldi (1844–1877) e a Capellini (1864–1904), la Scuola Preistorica Imolese e le ragioni di una donazione*. Paper presented at the meeting

"Bicentenario Scarabelliano (1820-2020) - Convegno Scientifico Storico Celebrativo", Imola, 30 September 2022.

Publications:

- Ferretti A., Vai G.B. *et al.* *A global view on the Ordovician stratigraphy of southeastern Europe*, in Harper D. A. T., Lefebvre B., Percival I. G., Servais, T. (eds) *A Global Synthesis of the Ordovician System: Part 1*. Geological Society of London, Special Publications 532, published online 2022. doi 1144/SP532-2022-174
- Vai G.B. *Bicentenario Scarabelliano 2020. Convegno Scientifico Storico Celebrativo. 30 settembre 2022*, "Geologicamente", 9 (2022), p. 60.

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.

History of Geoscience Section, Italian Geological Society
Report compiled by Marco PANTALONI

The activities of the History of geoscience section, that has 164 members, continued during 2022 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 2836 followers, with a little increase in the last year.

The Section's blog has published several short notes by various Section members; the blog statistics show almost 560,000 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

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 60/78 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 Fabbi, 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, and 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.

Organization of congresses, conferences and seminars

- "L'arte della Scienza: l'eredità scientifica di Torquato Taramelli", Università di Pavia, Società Geologica Italiana, Sezione di storia delle geoscienze, Pavia, 31 March 2022.
- Ad limina. Frontiere e contaminazioni transdisciplinari nella storia delle scienze. Convegno Nazionale della Società Italiana di Storia della Scienza. Catania, 30 May - 1 June 2022.

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- INHIGEO Annual Symposium, 47a International Commission on the History of Geology (INHIGEO) Symposium. Les Eyzies, France, 15-24 September 2022.
- 91st SGI-SIMP Congress “Geosciences for a sustainable future”. Torino, 19-21 September 2022. Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Italian Association of Cartography (AIC) National Congress. Napoli, 28-30 September 2022
- 5th Alfred Rittmann conference. Catania, 29 September - 1 October 2022.
- Bicentenario Scarabelliano 2020 - Convegno Scientifico Storico Celebrativo. Imola, 30 September 2022.
- Scientific session “Lakes and mountains in the scientific and geographical narrative of travel literature in 18th and 19th centuries” at the 12th Congress of the Italian Society for Geographical Studies, “Oltre la globalizzazione. Narrazioni / Beyond globalization: Narratives”, Como, 9 December 2022

Congresses and conferences

- Agostini S. (2022) - Il GeoParco UNESCO Majella. Congress “Il giorno della Maiella. Conoscere il Parco” Aurum Pescara, 8 July 2022.
- Agostini S. (2022) - Il contesto geologico del cemento di Colle di Mezzo e Bomba. Congress “Le vie della marna”, Castello D’Avalos, Colle di Mezzo, 17 July 2022.
- Agostini S. (2022) - Chieti città la stratificata: aspetti del contesto geologico, archeologico, storico e di uno sviluppo moderno non o mai pianificato. ISPRA, Società Geografica Italiana, SIGEA APS, Giornate di geologia e Storia - Le grandi aree urbane: note di archeologia, storia e geologia. Roma, 21 April 2022.
- Argentieri A. (2022) - La storia della SGI tramite i profili biografici dei Presidenti. L’arte della Scienza: l’eredità scientifica di Torquato Taramelli, Pavia, 31 March 2022.
- Argentieri A., Dal Piaz G.V., De Caterini G. (2022) - La geologia rende il sottosuolo trasparente: storie di canali navigabili. Giornate di Geologia e Storia “I mari, le coste, le infrastrutture marittime: evoluzione del paesaggio e trasformazioni”. Società Geografica italiana, Roma- 15 December 2022.
- Argentieri A., Schirolli P. & Musumeci D. (2022) - Ragazzoni, Cacciamali and Cozzaglio: the ‘Brescia geological trinity. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Argentieri A., De Caterini G., Rossetti F. (2022) - It's a Hard Life in Maremma: Luciano Bianciardi and history of geology. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- G. De Caterini, A. Argentieri, A.M. Bilotta, G. Della Ventura (2022) - "In hoc silex vinces": the success of the "sampietrino" in the paving of Roman roads. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Argentieri A., Schirolli P., Musumeci D. Ragazzoni, Cacciamali and Cozzaglio: the ‘Brescia geological trinity’. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Barale L., Bicknell M., Massardo E. (2022) Clarence Bicknell (1842-1918): botanist, archaeologist, esperantist, and ... citizen geologist. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.

- Barale L., Console F., Corno A., Frasca G., Mosca P., Pantaloni M. (2022) - The Alpine field notebooks of Secondo Franchi (1859-1932). SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Bonaccorsi E., Borghini A., Gioncada A. & Pieraccioni F. (2022) - Last century approach to the Wegener theory in the school textbooks. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Borghi A., Giacobino E., Senesi M. & Gallo M. (2022)- The historical collections preserved at the Regional Museum of Natural Sciences: a multimedia recovery and enhancement action. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Branca S., Ingaliso L., Musumeci D. (2022) - The role of cartography by Wolfgang Sartorius von Waltershausen (1809-1876) in the frame of the geological investigations of Etna volcano. 5th A. Rittmann conference, Catania, 29 September - 1 October 2022
- Cirrincione R. (2022) - La Petrografia** nella Storia della Scienza: dalle origini alla comparsa del microscopio. Ad limina - Frontiere e contaminazioni transdisciplinari nella storia delle scienze. Convegno Nazionale della Società Italiana di Storia della Scienza, Catania, 30 May - 1 June 2022.
- Cirrincione R. (2022) - La valorizzazione del territorio come strumento per lo sviluppo turistico. Relazione ad invito Congress “Gaetano Ponte – da Palagonia all’Etna”. Palagonia, 20 May 2022.
- Cirrincione R. (2022) - La Pietra Pece iblea: una risorsa del territorio che ha fatto tanta strada. Ecomed – Progettoconfort – Green Expo del Mediterraneo 6 April 2022 – Centro Fieristico “Le Ciminiere”, Catania.
- Cirrincione R. (2022) - I Parchi minerari realizzazione e fruizione. Intervento alla Tavola Rotonda: “La Valorizzazione dei beni minerari dismessi in Sicilia tra luci ed ombre” nell’ambito della XIV giornata nazionale delle miniere, Riesi 27-28 May 2022.
- Cirrincione R. (2022) - La Calabria, un frammento di crosta europea alla deriva nel Mediterraneo. Congress – La Spiaggia di Michelino; Cava storica ma anche cuore di una camera magmatica; Parghelia 21 June 2022.
- Cirrincione R. (2022) - Valorizzazione del territorio: i Parchi Minerari come strumento per lo sviluppo turistico. Congress “Gli zolfi italiani” organized by SIMP from 6 to 12 June: excursion to the Gabbara mine (CL) 7 June; seminar at Città della Scienza, 10 June 2022.
- Cirrincione R. (2022) - Parchi Minerari, Geoparchi e prospettive future. Invited lecture – workshop organized by ISPRA: “Tutela valorizzazione e fruizione del patrimonio minerario e culturale siciliano”. 11 November 2022.
- Console F., Fabbi S., Pantaloni M., Principe C. (2022) - Bonaventura Montani e la prima carta geologica dei Campi Flegrei: l’area di bonifica di Bagnoli e del Lago di Agnano. Ad limina. Frontiere e contaminazioni transdisciplinari nella storia delle scienze, Convegno Nazionale della Società Italiana di Storia della Scienza, Catania, 30 May - 1 June 2022.
- Console F., Pantaloni M. (2022) - Il contributo di Taramelli alla cartografia: la storia nelle collezioni ISPRA. Congress “L’arte della Scienza: l’eredità scientifica di Torquato Taramelli”, Pavia, 31 March 2022.

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- Dal Piaz G.V. (2022) - Felice Giordano a great geoscientist. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- De Caterini G., Argentieri A., Bilotta A.M. & Della Ventura G. (2022) - "In hoc silex vinces": the success of the "sarnese" in the paving of Roman roads. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- De Caterini G., Colasanto F., Della Ventura G. & Lucci F. (2022) - The History of geology for a sustainable future of the great Engineering achievements. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Fabbi S., Console F., Pantaloni M., Principe C. (2022) - The geological map of Phlegraean Fields by Bonaventura Montani: the Bagnoli-Agnano reclamation area. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Furlani S., Musumeci D. (2022) - Did The Physical and Metaphorical Border of the Sea Surface force Geomorphology as a Land-Driven Discipline? 10th IAG International Conference on Geomorphology, Coimbra - Portugal 12-16 September 2022.
- Histon K., Vaccari E. (2022) - Cave exploration and human palaeontology in the writings of Arturo Issel (1842-1922). 2022 INHIGEO Conference, Les Eyzies, France, 15-20 September 2022.
- Laureti L. (2021) – Insediamenti sotterranei: un lungo cammino dalla preistoria ad oggi, XXXIII Congresso Nazionale di Geografia, Padova, 2021.
- Laureti L. (2022) – Le grotte ossifere del versante meridionale delle Alpi italiane. XXIII Congresso nazionale di Speleologia, Ormea, 2-6 June 2022.
- Lippolis E., La Perna R. & Tropeano M. (2022) - Arcangelo Scacchi, an Apulian geoscientist in the 19th century. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Lupi C. (2022) – Il ruolo di Torquato Taramelli all’Università di Pavia. Congress “L’arte della Scienza: l’eredità scientifica di Torquato Taramelli”, Pavia, 31 March 2022.
- Lupi C., Console F. & Severino F. (2022) - Torquato Taramelli: the art of Science. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Macini P. (2022) - Giovanni Capellini’s Journey to Wallachia (1864): Travel Notes and Early Insights into Petroleum Geology. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Macini P. (2022) - La geologia del petrolio in Italia nel XIX secolo: il diario di viaggio in Valacchia del Professor Giovanni Capellini, SISS conference, Catania 2022.
- Mazzini I., Talenti E., Innocenti G. & Cianfanelli S. (2022) - Marianna Paulucci: the “first lady” geologist of the Italian Geological Society. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Musumeci et al. "The evolution of Chilean volcanology in the 20th century and the work of Lorenzo Casertano". Plenary lecture: - I Simposio Chileno de Volcanología, 12 al 15 de Diciembre en la Universidad Católica de Temuco.

- Musumeci D., Leone G., Branca S. & Ingaliso L. (2022) - The evolution of Chilean volcanology in the 20th century and the work of Lorenzo Casertano. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Musumeci D., Leone G., Branca S., Ingaliso L. (2022) - L’evoluzione della vulcanologia cilena nel ‘900. Ad limina. Frontiere e contaminazioni transdisciplinari nella storia delle scienze, Convegno Nazionale della Società Italiana di Storia della Scienza, Catania, 30 May - 1 June 2022.
- Napolitani M. (2022) - La Siberia di J.P. Alibert: il racconto per immagini di una spedizione nei monti Saiani (1844-1857). 9 December- XII edizione del Congress "Oltre la globalizzazione" della Società di Studi Geografici, Università dell’Insubria, Como.
- Napolitani M. (2022) - Représenter les Alpes entre romantisme et “technocratie”: transition ou superposition? 1-2 Dicembre- Encore une transition? Les territoires de montagne face aux changements socio-environnementaux. International conference, Grenoble University.
- Napolitani M. (2022) - Painting landscapes between art and Earth sciences during the second half of the 19th century: some French case studies. 15-24 September - INHIGEO Annual Symposium, 47a conferenza dell’International Commission on the History of Geology, Les Eyzies, Francia.
- Napolitani M. (2022) - Enseigner la montagne par ses images: le peintre Savoyard Claude Hugard et ses paysages alpins pour l’École des Mines de Paris (1852-1859). 8-10 September - Montagne enseignante, montagne enseignée. Grenoble University.
- Napolitani M. (2022) - Mountain landscapes between geosciences and political issues during the 19th century. 26-29 giugno- Under the Landscape, simposio interazionale organizzato dal collettivo di ricerca Boulouki, Santorini e Therasia.
- Napolitani M. (2022) - Collezioni mineralogiche tra arte, tecniche industriali e valore patrimoniale: gli oggetti d’arte delle collezioni dell’École des Mines di Parigi (1795-1805). 30 May - 1 June - Ad Limina, convegno annuale della Società italiana di storia della scienza (SISS), Catania University.
- Napolitani M. (2022) - Painting the Alpine Landscape between Earth sciences and national identity in the 19th century: the case of the French painter Claude Hugard (1816-1885). 12-13 May - Workshop e conferenza AlpenSymposium: Alpine Landscapes in Transformation: Infrastructure, Culture, and Climate, Institute of Landscape and Urban Studies, ETH-Politecnico Federale, Zurigo.
- Napolitani M. (2022) - La geodiversità nell’arte. 1a Giornata mondiale della geodiversità, Sapienza Università di Roma, 6 October 2022.
- Napolitani M. (2022) - Histoire des sciences et histoire de l’art au musée: le cas des galeries savantes. 16 giugno- Congress internazionale L’effet patrimoine. Les expériences de transmission entre ruptures et continuités, Centre Marc Bloch, Berlino.
- Pantaloni M. (2022) – Cento anni di geologia del Parco Nazionale d’Abruzzo, Lazio e Molise. Cento e più ... milioni di anni di Geologia del Parco Nazionale d’Abruzzo, Lazio e Molise, San Donato Val di Comino (FR), 3-4 June 2022.
- Pantaloni M., Console F. (2022) – Karl Mayer-Eymar and the history of Messinian Stage. 2022 INHIGEO Conference, Les Eyzies, France, 15-20 September 2022.
- Pantaloni M., Console F., Congi M.P., Ventura R. (2021) - The historical geological cartography: from digital archive to WebGIS environment. International Cartographic Association Proceedings. 30th ICC2021, Florence, Italy.

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- Principe C. et alia (2022) - Forma Vesuvii. 2022 INHIGEO Conference, Les Eyzies, France, 15-20 September 2022.
- Punturo R., Indelicato V., Cirrincione R., Maniscalco R., Cassarino G. (2022) - Pietra Pece (Pitch Stone): historical and geological memory of the Hyblean plateau (South-eastern Sicily). Congress Internazionale Man & Karst, Custonaci (TP); 12-17 September 2022.
- Roghi G. (2022) - Upper Valsugana: a laboratory for nineteenth-century geological studies. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Roghi G. (2022) - Storia degli scavi a Bolca dal ‘500 al 1900. Conference “Scavi paleontologici, studio e conservazione del patrimonio culturale, sviluppo del territorio” Verona, Ronca e Bolca di Vestenanova - 23-24 September 2022, organized by ATS - VAL D'ALPONE – FAUNE, FLORE E ROCCE DEL CENOZOICO, Un progetto di candidatura UNESCO per la Val d'Alpone.
- Roghi G. (2022) - Massalongo, Scarabelli e la Paleobotanica. Bicentenario Scarabelliano, 30 September 2022, Imola (BO).
- Roghi G. (2022) - Upper Valsugana: a laboratory for nineteenth-century geological studies. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Romano, M. 2022. Fossils extraordinary objects: between myth, legend and folklore. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Sammuri P., Macini P. (2022) - The Renaissance of Minerals, Mining and Metallurgy in Tuscany: Biringuccio and his Pirotechnia (1540). 2022 INHIGEO Conference, Les Eyzies, France, 15-20 September 2022.
- Sardella R., Mecozzi B., Sigari D., Tarantini M. & Mazzini I. (2022) - Grotta Romanelli (Lecce, southern Italy): the beginning of the systematic and multidisciplinary approach in Quaternary research. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Sella M. (2022) - Quintino Sella, mining engineering in Sardinia. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Senesi M. & Gallo L.M. (2022)- The Fréjus railway tunnel, the first geo-transversal of the Alps. SGI-SIMP 2022 Congress, Torino, 19-21 September 2022; Session S23 “Geology is coming home. A renewed interest in Italian geoscientific tradition”.
- Sepulveda J. P., Musumeci D., Cioni R., Ingaliso L., Branca S. (2022) - A historical – methodological review of the studies on the 1932 eruption of the Quizapu volcano, Southern Andes, Chile. 5th A. Rittmann Conference, Catania, 29 September - 1 October 2022
- Severino F., Console F., Pantaloni M. (2022) – Conoscenza e consapevolezza scientifica nella Biblioteca ISPRA. XI Congress Nazionale NILDE, Un'esplosione di conoscenza: dalla teoria alla pratica per ridurre le disuguaglianze. Messina, 27-30 September 2022.
- Vaccari E. (2022) - La storia della geologia in Italia: primo bilancio di un percorso storiografico transdisciplinare. Convegno Nazionale della Società Italiana di Storia della Scienza, *Ad limina - Frontiere e contaminazioni transdisciplinari nella storia delle scienze*. Catania, 30 May - 1 June 2022

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- Vaccari E. (2022) - Palaeontological specimens and collections as historical sources. 6th International Palaeontological Congress, Session 3 (sponsored by INHIGEO), *Hidden histories revealed in scientific revision of palaeontological collections*, Khon Kaen, Thailand, 7-11 November 2022.
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Exhibitions, seminars, teaching activity

- Agostini S. (2022) - Parco Nazionale della Maiella. Geoparco Mondiale Unesco. Aspettando il Giro. Club Unesco Chieti. 14 May 2022 Sala Conferenze Museo dell'Arte "Nicola D'Innocenzo" Pretoro.
- Agostini S. (2022) - "Il Geoparco UNESCO Maiella", 11 agosto Roccacaramanico, Accendiamo il Medioevo, Museo Etnografico.
- Agostini S. (2022) - Majella UNESCO GEOPARK in evento Paesaggio Archeologia Capitale Naturale sulla montagna madre, 30 June 2022, Abbazia di Santo Spirito Parco Nazionale della Maiella, Sulmona.
- Agostini S. (2022) - "Le sorgenti e le fontane dell'Alta Valle dell'Orta", Roccacaramanico 7 August 2022.
- Agostini S. (2022) - Geologia e fossili della Maiella in tre secoli di ricerche; Parco Majella Unesco, Exhibition "La Montagna della Maiella 16 milioni di anni fa: delfini, foche, squali e coccodrilli", Sulmona – Badia, 21 April 2022.
- Agostini S. (2022) - "Le rocce raccontano – geologia e didattica ambientale", Conosci e comunica la natura: 2° corso di educazione ambientale – Riserva Naturale Regionale Oasi WWF Calanchi di Atri, 23 October 2022.
- Argentieri A. (2022) - Conferenza "Renato Funicello, scienziato, atleta e molto altro: un esempio di resilienza". Università degli Studi Roma TRE- Roma (13/5/2022).
- Cirrincione R. (2022) - Attività documentaristiche su FOCUS TV (Canale 35 – Mediaset):
o Meraviglie Geologiche d'Italia – La Sicilia parte I
o Meraviglie Geologiche d'Italia – La Sicilia parte II
- Lupi C. et alii (2022) - "Terra nascosta", mostra per i cent'anni dalla morte di Torquato Taramelli, Kosmos- Museo di Storia Naturale di Pavia (dal 5 March al 12 June 2022).
- Napolitani M., Monnin V. Monthly INHIGEO webinars: New Perspectives in the History of Earth Sciences.
- Pantaloni M. (2022) – Photographic contest "Scopri e fotografa i geositi delle regioni italiane" 1st edition. 1a Giornata mondiale della geodiversità, Sapienza Università di Roma, 6 October 2022.
- Roghi G. (2022) - Geologia ed alpinismo nell'avventurosa vita di Déodat de Dolomieu, CAI di Padova, 8 November 2022.

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- Roghi G. (2022) - Vita di Déodat de Dolomieu, Museo di Storia Naturale di Venezia, 3 December 2022.
- Roghi G. (2022) - Abramo Massalongo (1824-1860), Mostra sul ritrovamento del rostro di Ittiosauro di Tregnago. Sala Comunale di Tregnago (Vr), 28 October 2022.
- Roghi G. (2022) - Déodat de Dolomieu, Curiosando tra i taccuini di viaggio e nella vita avventurosa del padre delle Dolomiti; Villa Mirabello, Varese, 11 December 2022.
- Romano M. (2022) - “Per terremoto o per sostegno manco: la Geologia nell'Inferno di Dante”. Seminar, 9 November 2021.
- Romano M. (2022) - “Per terremoto o per sostegno manco: la Geologia nell'Inferno di Dante”. Seminar, 12 December 2022.
- Romano M. - Corso di Storia della Geologia per gli studenti del corso di laurea Triennale in Scienze Geologiche, Sapienza Università di Roma- Dipartimento Scienze della Terra.
- Vaccari E. - Lezioni di Storia delle Scienze della Terra nel corso "Storia e Risorse della Montagna", corso di laurea triennale in Scienze dell'Ambiente e della Natura, Università degli Studi dell'Insubria, Varese-Como.
- Vaccari E. - *La storia delle Alpi tra scoperte viaggi ed esplorazioni geologiche*. Lecture at UATE Somma Lombardo (Varese), 18 January 2022
- Vaccari E. - Presentation of the second edition of the volume by E. Rizzi, G. Roghi, L. Zanzi, *Déodat de Dolomieu, Curiosando tra i taccuini di viaggio e nella vita avventurosa del padre delle Dolomiti*, at the Musei Civici di Villa Mirabello, Varese, 11 December 2022.

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- Argentieri A., Dal Piaz G.V., De Caterini G. (2022) - La geologia rende il sottosuolo trasparente: storie di canali navigabili. Memorie Descrittive della Carta geologica d'Italia, vol. 110, in press.
- Caramanna G., Argentieri A., Buonfiglio V. (2022) - Il sinkhole allagato del “Pozzo del Merro”: 20 anni di esplorazione e studio- The “Pozzo del Merro” drowned sinkhole: 20 years of exploration and study. Acque Sotterranee - Italian Journal of Groundwater (2022) - AS43-605, 73 - 78 (DOI 10.7343/as-2022-605).
- De Caterini, G. Argentieri A. (2022) - Gli acquedotti ai tempi del colera- Aqueducts in the time of cholera. Acque Sotterranee - Italian Journal of Groundwater (2022) – AS41-578: 73 - 77 (DOI 10.7343/as-2022-578).
- Dal Piaz G.V., Dal Piaz V., Pantaloni M. (2022) - XXXIII riunione estiva della Società Geologica Italiana inaugurata a Padova e proseguita con escursioni nel Triveneto (29 agosto - 4 settembre 1920). Atti dell'Istituto Veneto di Scienze, Lettere ed Arti, Tomo CLXXIX-CLXXX (2020-2022) - Classe di scienze fisiche, matematiche e naturali, 1-26.
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- Laureti L. (2021) - Le “porte storiche”: valichi stradali obbligati nell'antichità. Convegno nazionale SIGEA, “Le vie di comunicazione nell'antichità”, Roma 24-25 maggio 2021, “Geologia dell'Ambiente”, Supplemento al n. 1/2021, pp. 172-177.

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https://doi.org/10.1007/978-3-030-79260-2_7 Print ISBN: 978-3-030-79259-6, Online ISBN: 978-3-030-79260-2
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- Napolitani M. (2022) - 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)”, *Rendiconti online della società geologica italiana*, vol. 57, luglio 2022, p. 17-24.
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- Roghi G. (2022) - Il minerale, la roccia e le montagne dedicate a Déodat de Dolomieu (1750-1801). in: Déodat de Dolomieu, Curioso tra i taccuini di viaggio e nella vita avventurosa del padre delle Dolomiti, con testi di Luigi Zanzi, Enrico Rizzi e Guido Roghi. Ed. Fondazione Giovanni Angelini, centro studi sulla montagna, Belluno.
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- Giorgio Vittorio Dal Piaz, Geologia del territorio nell'Ottocento e sue applicazioni ai grandi trafori transalpini.
- Mattia Sella, Quintino Sella tra scienza e politica: i trafori ferroviari transalpini, il Fréjus e il San Gottardo.
- Cirrincione R., Punturo R., Maniscalco R. (2022) - L'Oro del Diavolo – Storia dello Zolfo e della sua Estrazione in Sicilia – Itinerari nelle solfate siciliane. Collana: Le Monografie; Club Alpino Italiano. Dicembre 2022. ISBN 978 88 7982 138 4

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- Lupi C., Argentieri A., Console F., Fanti R., Maramai A., Piangiamore G.L., Pantaloni M. (2022) - Torquato Taramelli: geologo rilevatore esperto di terremoti, p. 72
- Rubrica della Sezione di Storia delle geoscienze nella rivista *GeologicaMente* n. 8

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- M. Pantaloni, A. Argentieri, Vai G.B. (2022) – Settembre 2022: un mese intenso per la Storia delle Geoscienze, pp. 58-60.

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- Fabiana Console, Silvana Falcetti, Marco Pantaloni Calendario 2022: “A cento anni dalla morte di Torquato Taramelli (1845-1922)”, 31 dicembre 2021
- Rodolfo Carosi “Villasaltosprung”: da una singola faglia alla moderna concezione della catena Varisica in Sardegna, 12 gennaio 2022
- Luca Barale, Cartoline di un tempo passato: gli scogli di Ventimiglia, 21 gennaio 2022
- Anna Rosa Scalise Geologi di altri tempi: Nicola Zattini, tecnico e rilevatore della Carta geologica d’Italia, 17 febbraio 2022
- Redazione "Geology is coming home. A renewed interest in Italian geoscientific tradition". Congresso SGI-SIMP, Torino, 19-21 settembre 2022, 23 aprile 2022
- Anna Rosa Scalise Le “Grandi Pietre” dell’Aspromonte, 11 giugno 2022
- Alessio Argentieri Estrosi geologi, 10 luglio 2022
- Redazione Anno 2022 - Centenario della scomparsa del grande scienziato Giovanni Capellini, 10 settembre 2022)
- Giovanni Martinelli La Storia della geochimica dei gas, 19 dicembre 2022

Field trips

- Cirrincione R. (2022) - XIV Giornata delle Miniere – ISPRA. 13 maggio 2022 Escursione didattica UNICT – UNICAL (registrazione sul sito dell’ISPRA).
- Cirrincione R. (2022) - Escursione Parco Floristella con AEIT - Associazione Italiana di Elettrotecnica, Elettronica, Automazione, Informatica e Telecomunicazioni - 21 ottobre 2022.
- Pantaloni M., Araneo F., Bianco P. M., Console F., Crosti R., Genta D., La Valle P., Nonnis O., Paganelli D., Pulcini M. (2022) - “Le saline di Tarquinia: uno scrigno di geodiversità e biodiversità. Settimana del Pianeta Terra, 8-9 ottobre 2022, Tarquinia (RM).
- Pantaloni M., Guerra M., Console F. (2022) – Le passeggiate geologiche con l’ISPRA: Roma prima di Roma. Festival delle Scienze di Roma, Auditorium. 27 novembre 2022.

Awards

- Giorgio Vittorio Dal Piaz - Award plaque of the 10th Anniversary Sezione di Storia delle Geoscienze, Assembly of Società Geologica Italiana at the Congress SGI-SIMP Torino, September 2022.
- Marco Pantaloni, nominated Secretary General of the Continental subcommission – Europe della Commission for the Geological Map of the World (CGMW)
- Daniele Musumeci - 2022 Award «Quintino Sella for the History of Geosciences in honor of Nicoletta Morello e Bruno Accordi», for his paper Musumeci, D., De Benedetti, A. A., Branca, S., and Ingaliso, L., 2022, Rittmann’s heritage: A philosophical approach for current research, in Foulger, G. R., Hamilton, L. C., Jurdy, D. M., Stein, C. A., Howard, K. A., and Stein, S., eds., In the Footsteps of Warren B. Hamilton: New Ideas in Earth Science: Geological Society of America Special Paper 553.

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- Maddalena Napolitani - Ph.D. dissertation award of the Comité des Travaux Historiques et Scientifiques (CTHS), Académie des Sciences Morales et politiques, Institut de France.
- Maddalena Napolitani - INHIGEO Early Career award, for her presentation at the 47th INHIGEO Symposium, Les Eyzies, September 2022.
- Costantino Zuccari, "Student paper award 2022" of the "Journal of Structural Geology", for his paper: Zuccari, C., Viola, G., Curzi, M., Aldega, L., & Vignaroli, G. (2022). What steers the "folding to faulting" transition in carbonate-dominated seismic fold-and-thrust belts? New insights from the Eastern Southern Alps (Northern Italy). *Journal of Structural Geology*, 157, 104560.

Report for Italy compiled and submitted by Ezio Vaccari

JAPAN ANNUAL REPORT 2022

Two meetings of the Japanese Association for the History of Geological Sciences (JAHIGEO) were held at the Waseda Service Garden, Tokyo in 2022, partly on-line because of the still continued Covid-19. The summer meeting was held on June 18th. NAKAGAWA Tomomi talked on “Renovating the Intellectual Domination: The Development of Professionalism in Nineteenth-Century America” and GOMI Atsushi talked about “Geologists involved in Peruvian silver mine incident related to Mr. Korekiyo TAKAHASHI”. The winter meeting was held on December 17. SUGAI Toshihiko, with co-author YAMADA Toshihiro, presented “Project of Reading Diaries of the geoscientist Katsumi Mochizuki (1905-1963)” and IMAMURA Ryohei gave a presentation on “History of Measurement of Maps in China”.

The members of JAHIGEO participated in the 6th International Palaeontological Congress (IPC) held in Khon Kaen, Thailand, 7-11 November 2022, in which INHIGEO sponsored a symposium “Hidden histories revealed in scientific revision of paleontological collections”. YAMADA Toshihiro, one of the convenors of the session, talked about “Borrowed illustrations of *Glossopetra* with shark’s head: Steno and the Vatican collection of Mercati”, and YAJIMA Michiko gave a lecture on “UMUT-CA: The first fossil curating system in Japan”.

The Study Group for the History of Geosciences (*Chigaku-shi kenkyu-kai*), organized by JAHIGEO members beginning in 2000, had its 80th meeting at the Waseda Service Garden, Tokyo, partly on-line, on 12 March 2022. The cultural historian OKUMURA Daisuke delivered a lecture about “Spiritual evolution and intellectual history of the Noosphere ideas: Focusing on Pierre Teilhard de Chardin and Vladimir Ivanovich Vernadsky”. At the 81st meeting on 2 October 2022, HASEGAWA Kenji talked about “Vernadsky’s biological geochemistry and genealogy of thought of biosphere”. Hasegawa’s presentation was based on his Masters degree thesis “On the Revolutions of the Earth’s Biosphere: From Vernadsky to Cybernetics” submitted in January 2022 at Tokyo University of Foreign Studies. As commentators on the Hasegawa’s talk, YATSUMIMI Toshifumi gave an account of the Japanese reception of Vernadsky’s *Geochemistry* and the historian of Russian science, KANAYAMA Koji, discussed the situation of Soviet scientists in the 1920s and 1930s. It was remarkable that the presentation of Jacques Touret at the September INHIGEO Symposium in Les Eyzies, France, on “The birth of geochemistry and ecology” which treated with Vernadsky’s works was correspondingly introduced by Toshihiro Yamada with the support of Michiko Yajima, who participated in the symposium.

The 69th annual meeting of the History of Science Society of Japan (HSSJ) was held on May 28-29 entirely on-line. Six papers on the history of geosciences were read: FUKUKAWA Tomoko, “Study on Kume Kunitake’s article ‘Russia is great nation on only picture map’”; YAMAMOTO Akira, “First winter meteorological observation at the summit of Mt. Fuji taught at school”; TAKARABE Kae, “Superintendent of Education, David Murray’s interest in meteorological observation”; KATO Shigeo, “Geological Survey in China by Japanese geologists in the first half of the 20th century”; and YAJIMA Michiko, “Life and work of Tetsugoro Wakimizu (1867-1943)”. Additionally, YAMADA Toshihiro presented on “Science and Buddhism in the history of ‘Science and Religion’: From the historiography of science of George Sarton”.

On May 27, the Japan Geoscience Union (JpGU) provided *in-situ* (International Conference Hall, Makuhari Messe) and on-line sessions for geoscience studies: historical, philosophical and STS approaches, in which six talks and three posters were presented and discussed on Zoom Live with 40 participants. The six talks were:

1. AOKI Shigeyuki, “Strong anthropic principle and the plurality of worlds”
2. YAMAMOTO Akira, “Meteorological service at Sumitomo Besshi Mining Company”
3. YAJIMA Michiko, “Tetsugoro Wakimizu (1867-1942), his work and life”
4. YAJIMA Michiko, “Katsumi Mochiduki (1905-1963) selected to study geology”
5. YAMADA Toshihiro, “Mochizuki Katsumi and the historiography of geoscience: Considering the general interest in the history of science in the 1940s”
6. SHIMAZU Toshiyuki, “Mochizuki Katsumi and his ‘geographical turn’ at the end of the Asian-Pacific War”

The three posters were:

1. AJAYA SHRESTHA and RABIN RAJ NIRLA, “Soil erosion in Gandaki Province, identifying the most sensitive watersheds”
2. YAMADA Toshihiro, “Reconsidering the history of ‘geoscience’ in the 20th century: Study on the diaries of Mochizuki Katsumi in the history of science and of education”;
3. SUGAI Toshihiko, “Mochizuki Katsumi as a geographer demonstrated by his liberal arts education program at the Fourth Higher School and Field Excursions to east Asia entered in his diary.” The project of the survey and study on Mochizuki Katsumi’s diaries was supported by the fund of Tokyo Geographical Society, June 2021-June 2022.

In 2022, the JAHIGEO issued its *Bulletin*, Numbers 58 and 59 (in Japanese), and the *JAHIGEO Newsletter*, Number 24 (in English). The *JAHIGEO Bulletin* no. 58 (2022) published in May, included 8 articles and 1 document. The eight articles and one document were:

1. AOKI Shigeyuki, “Darwin and Philosophy of Science - From his Contemporaries’ and Today’s Perspectives” pp.2-5
2. KATO Hirokazu, “ The episodes about vegetarianism by Benjamin Lyman and Kenji Miyazawa”, pp. 6-13
3. HARA Ikuo, “A petrofabric task in the past seventy years (5): What is furthermore questioned at present?”, pp.14-21
4. HARA Ikuo, “A petrofabric task in the past seventy years (6): Supplement on deformational stress pictures analysis”, pp. 22-29

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5. SAITO Banjo, “Kant’s “Allgemeine Naturgeschichte und Theorie des Himmels” and reverse Newtonianism (no. 1)”, pp. 30-36;
6. SAITO Banjo, “ Kant’s “Allgemeine Naturgeschichte und Theorie des Himmels” and reverse Newtonianism (no. 2)”, pp. 37-42;
7. YAMADA Toshihiro, “Studies on Steno’s shark’s head dissected (1667) with its translation into Japanese (2)”, pp. 43-50;
8. AIDA Nobuyuki, “Stamps of International Geophysical Year and International Year of Planet Earth”, pp. 51-54.
9. One document is YAJIMA Michiko, “Dawn of classification of rocks”, pp. 55-60.

JAHIGEO Bulletin no. 59 (2022), published 30 November included 7 articles and 2 documents:

1. GOMI Atsushi, “Geologists involved in Peruvian silver mine incident related to Mr. Korekiyo TAKAHASHI” pp. 3-10
2. NAKAGAWA Tomomi, “Renovating the intellectual domination: The development of professionalism in nineteenth-century America”, pp. 11-18
3. HARA Ikuo, “Disorder in structural geology of the Sambagawa belt of the Asemigawa Region, central Shikoku”, pp.19-26
4. HARA Ikuo, “Discussion styles in structural geology of the Sambagawa belt of Shikoku”, pp. 27-34:
5. AIDA Nobuyuki, “Research history of Narita formation and Kioroshi formation”, pp. 35-37;
6. YAJIMA Michiko, “TOKUNAGA Shigeyasu and his student IIDUKA Minoru”, pp. 38-41;
7. YAMADA Toshihiro, “Studies on Steno’s Shark’s head dissected (1667) with its translation into Japanese (3) ”, pp. 42-48
8. TOZAWA Takeshi, “Book Collection of Carl A.Schenk (1838-1905), a *Oyatoi* German mineralogy teacher”, pp. 49-55
9. HATTORI Kentaro and OHMURA Junzo , ““Shinsai-roku” a record of earthquakes in Japan in the Early Meiji Era - its relationship to Milne (1882)”, pp. 56-59

The *JAHIGEO Newsletter*, Number 24 (2022) included an article by AOKI Shigeyuki, “The transition from earth science to earth and planetary science departments in Japan”, pp. 2-7.

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- AOKI Shigeyuki (2023). “The plurality of worlds: Its history and today”, *Yuriika* (Eureka), 55 (1): 197-204. (in Japanese)
- ISHIWATARI Akira (2022). “The revised complete road map of Japan edited by Nagakubo Sekisuii, the notoriously famous geographer of Mito clan, Edo period,” *Nihon chishitsu gakkai (Geological Society of Japan) News* 25 (7): 9-10. (in Japanese)
- KATO Hirokazu (2022): *Miyazawa Kenji no chiteki haikai* (The geological background of Miyazawa Kenji) – Cosmical phenomena and Archibald Geikie’s book,” *Chi to hito* (The Earth and Man), no. 6, 97 p. (in Japanese)
- KATO Hirokazu *et al.*, eds. (2022). *Geological Review of Japanese Islands - Their Geological History, Geological Environments, Natural Resources and Geological Disasters*. Tokyo:

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- Osawa Satoru, Yamada Naotoshi and YAJIMA Michiko (2021). “Finding of “Instruction from E. Naumann to K. Kotari” and its significance”, *GSJ Chishitsu News*, 10 (12): 314-321.
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- YAMADA Toshihiro (2022). “How to read Keiji YAMADA’s *Structure of Chinese Thinking* (1975)”, *Kagakushi* (Journal of the Japanese Society for the History of Chemistry), 49: 186-187. (in Japanese)
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LITHUANIA ANNUAL REPORT 2022

In 2022, 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 and they focused on the research and publicity of biographies of persons deserving of geological science and the history of geological institutions. It also addressed the popularization of geological science.

Among the important personal news that should be noted, Acad. Algimantas Grigelis was awarded the Silver Memory Medal of the Lithuanian Academy of Sciences for his great achievements in science and culture development. The award was made by His Excellency Academician Jūras Banys, the President of the Academy on 20 December 2022 (Figure 1).

Dr. Eugenija Rudnickaitė 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.

During 2022, Prof. Academician Algimantas Grigelis (aged 91) actively worked on the topic “Geology for Society”. Together with Dr. Birutė Railienė, Professor Grigelis completed a monograph entitled *Peaks*, a collection of memories over 90 years of the famous philosopher and historian of sciences, Professor Dr. Habilis Juozas Algimantas KRIKŠTOPAITIS (1931-2018). The 279-page volume was published in March of 2022 (Figure 2).

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Figure 1. Acad. Algimantas Grigelis after the award at the Lithuanian Academy of Sciences

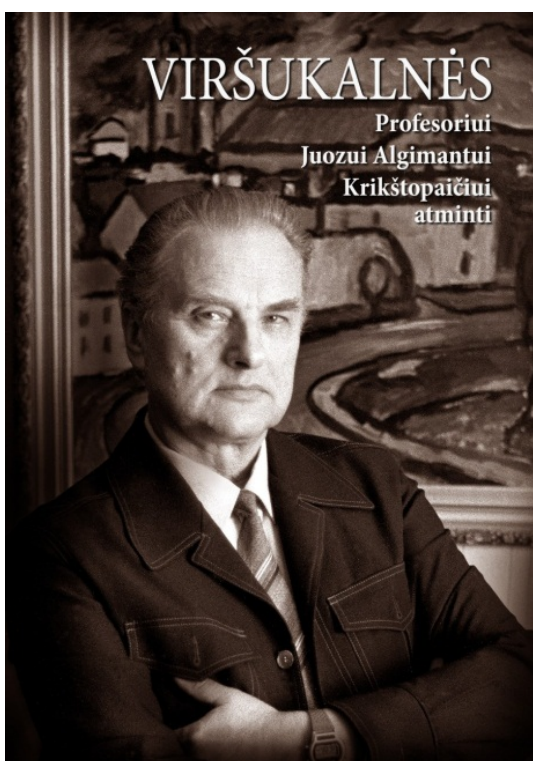


Figure 2. Book cover for Peaks (2022).

On October 20, 2022, Acad. A. Grigelis took part in a scientific conference at Vilnius University commemorating the 220th anniversary of world-renowned mineralogist and humanitarian, Ignacy Domeyko. The conference title was “Ignacy Domeyko and the Intellectual Environment of Vilnius at the Beginning of the 19th Century”, and Professor Grigelis gave a lecture entitled “Memuaristica of Ignacy Domeyko heritage”. The conference was organized by the Lithuanian section of the International Commission for the History of Geological Sciences (INHIGEO), the Institute of Geosciences of Vilnius University, the Department of Biology, Medicine and Geosciences of the Lithuanian Academy of Sciences, the Lithuania Society of Ignacy Domeyko and the Lithuanian Association of the History and Philosophy of Science.

A scientific committee was formed for the organization of the conference composed of: Algimantas Česnulevičius (Vilnius University), Zenonas Dobkevičius (Lithuanian Academy of Sciences), Algimantas Grigelis (Lithuanian Academy of Sciences), Aivaras Kareiva (Vilnius University), Ramūnas Kondratas (The Lithuanian Association of the History and Philosophy of Science), Birutė Railienė (The Vrublevskj Library of the Lithuanian Academy of Sciences), Eugenija Rudnickaitė (Vilnius University), Petras Šinkūnas (Vilnius University), and Edita Sužiedėlienė (Vilnius University).

The conference was devoted to the 220th anniversary of the birth of Ignacy Domeyko - distinguished scientist, world-renowned geologist, mineralogist, ethnologist, a graduate of Vilnius University, active member of the Philomath Society of Vilnius University, participant of the 1831 uprising in Lithuania and Poland, a graduate of the Paris Academy of Mining, professor of the Higher School of Mining in La Serena (Chile), Santiago (Chile) university professor and rector (1867-1883). While living in Chile, Ignacy Domeyko organized several geological expeditions to the Andes Mountains and the Atacama Desert. He comprehensively studied the geological structure of Chile, mineral deposits, and their ores found new minerals, collected large collections of rocks, minerals (4000 samples, which he donated to the University of Chile), and fossils. Ignacy Domeyko compiled the first geological map of Chile.

At the initiative of the Society President, Acad. A. Grigelis, the Lithuanian Society of Ignacy Domeyko established, a Silver honorary medal named “Ignacy Domeyko – 220”, made by the famous artist Maestro Petras Repšys (Figure 3). 50 copies of the medal were produced in November 2022 by the Vilnius’ Coin Factory.



Figure 3. Honorary medal “Ignacy Domeyko 220”, sculpted by Petras REPŠYS in alabaster, size 18 cm. June 2022.

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Members of the Lithuanian INHIGEO group presented scientific reports at several national and international events during the reporting year:

- 47th International Commission on the History of Geological Sciences (INHIGEO) Symposium, Les Eyzies, France, 15-24 September 2022.
- Conference of Lithuanian Society of Science Historians and Philosophers “SCIENTIA ET HISTORIA – 2022”. 20 May 2022, Molėtai, Lithuania.
- Conference: Gamtamokslinis ugdymas bendrojo ugdymo mokykloje – 2022. XXVIII nacionalinės mokslinės praktinės konferencija, 2022 m. balandžio mėn. 29–30 d. Nuotolinė.
- Natural Science Education in a Comprehensive School – 2022. The Twenty-eighth National Scientific-Practical Conference, 29-30 April, 2022. Virtual Video conference via MsTeams platform. Oral presentation, invited speaker (E.Rudnickaitė).
- In addition, some exhibitions and presentations on achievements in geology of Lithuania have been organised for public.

Selected works on history of geology of Lithuania, 2022:

In 2022, Acad. A. Grigelis published about 20 scientific, memorial and popular papers in Lithuanian public media (see below).

Book

1. *Peaks: in Memory of Professor Juozas Algimantas Krikštopaitis | Viršukalnės : profesoriui Juozui Algimantui Krikštopaičiui atminti / sudarytojai Algimantas Grigelis ir Birutė Railienė ; redakcinis komitetas: Algimantas Grigelis (pirmininkas) ... [et al.]*. – Vilnius : Lietuvos mokslų akademijos Teodoro Grotuso fondas, 2022. – 279 p. : iliustr., faks., portr. – ISBN 978-609-455-589-3.

Papers

2. Day Break of Geology in the Independent Lithuania | Geologijos aušra nepriklausomoje Lietuvoje : Lietuvos universiteto Geologijos ir mineralogijos katedrai 100 metų. – Iliustr., portr. – Bibliogr.: 12 pavad. – (Mokslo paveldas ir geomokslų istorija) // Geologijos akiračiai. – Vilnius, 2022, nr. 1/2, p. 15–20.
http://lgeos.lt/GA/GA_numeriai/2022/4_GEOLOGIJOS_AKIRACIAI_2022_NR_1_2_125_126_GRIGELIS_17_22_PSL.pdf
3. Hand Written and Memuaristic Heritage of Ignacy Domeyko | Ignoto Domeikos epistoliarinis ir memuaristinis palikimas / Algimantas Grigelis, Leonora Živilė Grigilienė. – Iliustr., portr. – Bibliogr.: 8 pavad. // Ignotas Domeika ir intelektualinė Vilniaus aplinka XIX amžiaus pradžioje : tarptautinė konferencija, skirta Ignoto Domeikos 220-osioms gimimo metinėms, Vilnius, 2022 m. spalio 20 d. : konferencijos pranešimai [elektroninis išteklius] / konferencijos organizavimo mokslinis komitetas: Algimantas Česnulevičius, Zenonas Dabkevičius, Algimantas Grigelis ... [et al.]. – Vilnius, 2022. – P. 16–19. Prieiga per internetą: https://www.chgf.vu.lt/files/doc/pdf/i._domeikos_konferencijos_pranesimai.pdf.

4. Mineralogy Professors of the Imperatoria Universitas Vilnensis | Imperatoriškojo Vilniaus universiteto “mineraloginė” profesūra. – Bibliogr.: 7 pavad. // Ignotas Domeika ir intelektualinė Vilniaus aplinka XIX amžiaus pradžioje : tarptautinė konferencija, skirta Ignoto Domeikos 220-osioms gimimo metinėms, Vilnius, 2022 m. spalio 20 d. : konferencijos pranešimai / konferencijos organizavimo mokslinis komitetas: Algimantas Česnulevičius, Zenonas Dabkevičius, Algimantas Grigelis ... [et al.] [elektroninis išteklis]. – Vilnius, 2022. – pp. 11–15. – Prieiga per internetą:
https://www.chgf.vu.lt/files/doc/pdf/i._domeikos_konferencijos_pranesimai.pdf.
5. Sapience Blinking as the Higgs’ bozone | Išmintis blyksteli kaip Higso bozonas / Algimantas Grigelis, Birutė Railienė. – Iliustr. // Viršukalnės : profesoriui Juozui Algimantui Krikštopaičiui atminti / sudarytojai: Algimantas Grigelis ir Birutė Railienė. – Vilnius, 2022. – pp. 8–9.
6. Lithuania annual report, 2021 / compiled by Algimantas Grigelis and Eugenija Rudnickaitė // INHIGEO annual record [elektroninis išteklis]. – Charlotte, North Carolina, USA, 2022, no. 54, pp. 104–111. Prieiga per internetą: <https://www.inhigeo.com/record/54.pdf>.
7. The Researcher of the Endless Scientific Mind Springs | Neišsenkančių mokslo minties versmių tyrėjas. – Iliustr. – Bibliogr. išnašose // Viršukalnės : profesoriui Juozui Algimantui Krikštopaičiui atminti / sudarytojai: Algimantas Grigelis ir Birutė Railienė. – Vilnius, 2022. – P. 67–88.
8. The First Geological Expedition in Lithuania and His Chief Professor G. L. Smit Sibinga | Pirmoji geologinė ekspedicija Lietuvoje ir jos vadovas profesorius G. L. Smit Sibinga / Juozas Paškevičius, Algimantas Grigelis. – Iliustr., portr., žml. – Bibliogr. išnašose. – (Mokslo paveldas ir geomokslų istorija) // Geologijos akiračiai. – Vilnius, 2022, nr. 3/4, p. 7–17.
http://lgeos.lt/GA/GA_numeriai/2022/GA2022_3_4/02_GA_2022_3_4_pp007_PASKEVICI_US_GRIGELIS.pdf
9. Three Pryers of the Ignacy Domeyko | Trys Ignoto Domeikos maldos : Ignotui Domeikai – 220 / Algimantas Grigelis, Leonora Živilė Grigelienė. – Iliustr., portr. – Bibliogr.: 6 pavad. // Naujoji Romuva. – Vilnius, 2022, nr. 3, p. 6–14.
10. Interview of Academician Algimantas Grigelis with the Academician Jūras Banys, the President of the Lithuanian Academy of Sciences [Akad. Algimantas Grigelis kalbina LMA prezidentą Jūrą Banį: apie pasirinkimus, mokslą ir Akademiją : horizontalus pokalbis / parengė Evelina Baronienė. – Iliustr. // Lietuvos mokslų akademijos žinios. – Vilnius, 2022, nr. 3, p. 1–4.
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https://www.bahps.org/BAHPS2022_Program_Abstracts.pdf.
35. Europos Muziejų Naktis / The Night of European Museums: “Atsisveikinkime su Mamutu” [“Let's say goodbye to the Mammoth”] <https://openagenda.com/ndm-2022-europe/events/lets-say-goodbye-to-the-mammoth>; <https://openagenda.com/ndm2022?oag%5Blocation%5D=78201566>
36. Eugenija Rudnickaitė. Geologijos muziejaus paroda „Vilniaus mamuto pėdsakais“ iki 2022.07.01 / Geological Museum exhibition “In the footsteps of the Vilnius mammoth” until 01.07.2022.
37. Eugenija Rudnickaitė. 243 excursions (about 3900 visitors in total), plus 46 excursions for ~ 850 students with educational practical activities were carried out with a total of ~ 4750 visitors.
38. The exhibition intended to commemorate the 90th anniversary of the birth of Professor Emeritus Meilutė Kabailienė (1931 – 2016) and to show her activities.
39. Exhibition "Our latest scientific achievements and their popularization, as well as the latest scientific reports" (already ~ 3500 visitors have seen).
40. Consultations - identification of delivered findings: on average ~ 160.
41. In total ~ 4750 visitors heard about geology.
42. The excursions stories integrates the popularization of geology and other natural sciences. [Organizer and guide – dr. Eugenija Rudnickaitė. In total, in 2022, she conducted about 290 excursions per year.]
43. Andriaus Sniadeckio skaitymai: skirti prisiminti A. Sniadeckio Bragino meteorito tyrimus. Sukurtas dokumentinis filmas „Meteorų pažadinti. Andriaus Sniadeckio skaitymai 2022 metais“: veikiantys asmenys: VU Geologijos muziejus, meteoritai, E. Rudnickaitė, etc. Filmo kūrėjai: Lietuvos mokslų akademijos Vrublevskių biblioteka, Birutė Railienė (2022 scenarijus), Miglė Datkūnaitė (2022), Kūrybiniai projektai. Visą filmą rasite čia: <http://www.mab.lt/meteoru-pazadinti-andriaus-sniadeckio-skaitymai-2022-metais-2/>; <https://youtu.be/Lv0YAmP1-p8>. Antra renginio dalis – ekskursija muziejuje / Readings by Andrius Sniadeckis: dedicated to remembering A. Sniadeckis' research on the Bragin meteorite. A documentary film "Awakened by meteors. Readings by Andrius Sniadeckis in 2022": active persons: VU Museum of Geology , meteorites, E. Rudnickaitė, etc. Creators of the film: Vrublevskiu Library of the Lithuanian Academy of Sciences, Birutė Railienė (2022 script), Miglė Datkūnaitė (2022), Creative projects. You can find the whole film here: <http://www.mab.lt/meteoru-pazadinti-andriaus-sniadeckio-skaitymai-2022-metais-2/>; <https://youtu.be/Lv0YAmP1-p8>. The second part of the event was an excursion in the museum.
44. Mokslo festivalis „Erdvėlaivis žemė“ (pas VU geologus 20 srautų ~340 lankytojų) / Science festival "Spacecraft Earth" (at VU geologists 20 streams ~340 visitors)
45. Apie Parodą „Sklisti / Emanate,, (Mildos Dainovskytės ir Jeronimo Mantvydo Seibučio Lietuvos kultūros tarybos remto projekto rezultatas muziejaus erdvėje prijungiant senuosius V.Frič'o kristalų modelius); fotoreportažas Baltijos šalių menų puslapyje / About the Exhibition "Sklisti / Emanate" (the result of the project supported by the Lithuanian Culture Council of Milda Dainovskytė and Jeronimos Mantvydas Seibutis, connecting V. Frič's old crystal models in the museum space); photo report on the Arts of the Baltic States page

- <https://echogonewrong.com/photo-reportage-from-the-exhibition-emanate-at-the-geological-museum-of-vilnius-university-chgf-institute-of-geosciences/>
46. Teminiai vakarai visuomenei + eksk. muziejuje (3, ~60 lankytojų) / Theme Evenings for the Public + Tours in the Museum (3, ~60 visitors).
 47. Mokytojų kvalifikacijos tobulinimo seminaras „Geologija ir gamtamokslinis ugdymas“ mokytojams ir jaunųjų geologų būrelių vadovams. Organizatorius: VU Geologijos ir mineralogijos katedra [E.Rudnickaitė] 2022 m. vasario 17-18 d. = 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] 17-18th february 2022. (Virtual ~300 participants)
<https://www.lmns.lt/renginys/geologija-ir-gamtamokslinis-ugdymas-y2d34/>
 48. E.Rudnickaitė TV laidoje “Daiktų istorijos”: “.... viskas apie ledą” / In the TV show "Stories of Things": ".... all about ice"
<https://www.lrt.lt/mediateka/irasas/2000203191/daiktu-istorijos-lietuvos-veterinarijos-akademija-skucu-gimines-likimas-bei-viskas-apie-leda>
 49. “Atvirų durų diena” stojantiejiems / "Open doors Day" for applicants at the Museum of Geology, <https://www.facebook.com/events/982571022464628/?ref=newsfeed>
 50. Geologo Bernardo Paukščio foto paroda eksponuota in-to laiptinėje. Antarktida. / Geologist Bernard Paukštys photo exhibition displayed in the in-to staircase. Antarctica.
<http://www.lgeos.lt/web/node/127>
 51. “Netradicinės pamokos VU Geologijos muziejuje”. nuotolinis per MsTeams / "Unconventional lessons at VU Geology Museum". remote via MsTeams
<https://www.lmns.lt/renginys/geologija-ir-gamtamokslinis-ugdymas-y2d34/>
 52. E.Rudnickaitė TV laidoje “Istorijos detektyvai” Akmens amžiaus amatų paslaptys / E.Rudnickaitė in the TV show "History Detectives" Secrets of Stone Age crafts
<https://www.lrt.lt/mediateka/irasas/2000198341/istorijos-detektyvai-akmens-amziausamatu-paslaptys-E.Rudnickaitė,-etc.,-etc.>

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

Report compiled by Algimantas Grigelis and Eugenija Rudnickaitė

MEXICO ANNUAL REPORT 2022

Scientific Conferences

- ESPINOSA-ARRUBARRENA, Luis, “Paleontología: Disciplina entre la Geología y la Biología” (["Paleontology: discipline between Geology and Biology"], The American Association of Petroleum Geologists (AAPG), Chapter México, June 13th, 2022. An online presentation.
- ESPINOSA-ARRUBARRENA, Luis, “Plática en Cine-Debate sobre la Película Jurassic Park” (["Discussing the movie Jurassic Park and a questions and answers session to High School students from the area of Modeling and Paleo-art"], Instituto de Biología and the Escuela Nacional Preparatoria of UNAM, Pabellón Nacional de la Biodiversidad, June 13th, 2022.

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- ESPINOSA-ARRUBARRENA, Luis, “Aspectos interesantes sobre el origen del hombre: ¿Qué tan cierto es que Lucy ya no es la madre de la humanidad? [“Interesting events related with the origin of man: Is it true that Lucy is no longer the mother of humanity?”], Weekend Program of Conferences of the Geological Museum, UNAM, June 18, 2022. Broadcasted via Facebook <https://fb.watch/gSyu7QFIK2/>
- ESPINOSA-ARRUBARRENA, Luis, “Discusión sobre las colecciones y el patrimonio de las meteoritas en el Museo de Geología y en México” [“Discussion related to the heritage and meteorites collections in the Geological Museum and México”], Instituto de Ciencias Nucleares, Facultad de Ciencias and Instituto de Geología, all of the entities UNAM with the collaboration of CONACyT, Mexico City, August 30, 2022. Meeting given on site and online (Zoom platform).
- ESPINOSA-ARRUBARRENA, Luis and Ulises CARRILLO, “Los maravillosos fósiles del Museo de Geología” [“The wonderful fossils of the Geological Museum”], talk given within the International Day of Museum a special edition of, “A night at the Museum”, Museo del Instituto de Geología, UNAM, May 18th, 2022. Broadcasted via Facebook <https://facebook.com/InstitutodeGeologia>.
- ESPINOSA-ARRUBARRENA, Luis and Ulises CARRILLO, “Project Iztapasauria”, Symposium “Investigación en Paleoarte y Comunicación para la Paleontología”, [“Research in Paleo art and Communication in Paleontology”], Facultad de Ingeniería en Geología, Minas, Petróleos y Ambiente, Universidad Central del Ecuador, July 14, 2022. An online presentation.
- ESPINOSA-ARRUBARRENA, Luis and Ulises CARRILLO, “Animales gigantes en el pasado geológico (monstruos marinos)” [“Gigantic animals of the geological past (marine monsters)”], Weekend Program of conferences of the Geological Museum, UNAM, August 13th, 2022. Broadcasted via Facebook <https://fb.watch/gSybJ8aU5s/>
- ESPINOSA-ARRUBARRENA, Luis, Edgar JUÁREZ-ARRIAGA, Ricardo BARRAGÁN-MANZO, Jesús ALVARADO-ORTEGA, “La Cantera Tlayúa, geosítio potencial del Cretácico Inferior en la Mixteca Poblana, sur de México” [“The Tlayúa quarry a potential geo-site from the Lower Cretaceous in the Pueblan Mixtec, south of México”], Unión Geofísica Mexicana, Annual Meeting 2022, Puerto Vallarta Jalisco, October 20 to November 4, 2022.
- ESPINOSA-ARRUBARRENA, Luis and Ulises CARRILLO, “La belleza de los reptiles marinos” [“The beauty of marine reptiles”], Weekend Program of Conferences of the Geological Museum, UNAM, December 10th, 2022. Presentation onsite and Broadcasted via Facebook <https://fb.watch/jspPIHwCvL/?mibextid=qC1gEa>
- MORELOS-RODRÍGUEZ, Lucero, “Petrificaciones y relatos paleontológicos de la historia de México, una mirada a archivo” [“Petrifications and paleontological stories of the history of Mexico, a look at archive”], XVII National Congress of Paleontology, Hermosillo, Sonora, November 21, 2022.
- MORELOS-RODRÍGUEZ, Lucero, “Karl Theodor Sapper y el conocimiento geológico del sureste de México (1893-1896)” [Karl Theodor Sapper and geological knowledge of southeastern Mexico (1893-1896)], II Coloquio Internacional Vivir el Exilio, Mexico, UNAM, Instituto de Investigaciones Bibliográficas, October 28th, 2022.
- MORELOS-RODRÍGUEZ, Lucero, “La Escuela de Ingenieros y la creación de una elite profesional (1867-1910)” [“The School of Engineering and the creation of a professional

- elite], Ciclo de Conferencias “La Historia de la Facultad de Ingeniería”; Mexico, UNAM, September 25th, 2022.
- MORELOS-RODRÍGUEZ, Lucero, “La ingeniería de minas en México: precursores, aportes y legado” [“Mining engineering in Mexico: pioneers, contributions and legacy”], Unión Mexicana de Asociaciones de Ingenieros, Mexico, July 25th, 2022.
- MORELOS-RODRÍGUEZ, Lucero, “Reflexiones sobre las aportaciones de Alexander von Humboldt en su viaje por la Comarca Minera de Hidalgo” [“Reflections on the contributions of Alexander von Humboldt in his “research voyage” through the Global Geopark Comarca Minera Hidalgo Mexico], La Salle University, Pachuca, Hidalgo, May 15th, 2022.
- MORELOS-RODRÍGUEZ, Lucero, “Recorrido virtual. Un Museo Geológico y Paleontológico para México: Paseo por el Palacio de la Ciencia” [“A Geological and Paleontological Museum for Mexico: Walk through the Palace of Earth Sciences”], Mexico, UNAM, Museo del Instituto de Geología, April 20th 2022. Broadcasted via Facebook.
- MORELOS-RODRÍGUEZ, Lucero, “Una mirada a la historia de la Geología en México” “An Overview of history of geology Mexico”, Organized by Capítulo Estudiantil Asociación Mexicana de Geólogos Petroleros, Universidad Olmeca, March 5, 2022.
- MORELOS-RODRÍGUEZ, Lucero, “La colección de fósiles del Museo de Geología de la UNAM: Aproximaciones históricas” [“The collection of fossils of the Museum of Geology of the UNAM: Historical Approaches”], VIII Congreso de Historiadores de las Ciencias y las Humanidades, Historiadores de las Ciencias y las Humanidades, HCH, Mexico, April 8, 2022.
- MORELOS-RODRÍGUEZ, Lucero, Arturo Iglesias y Juan Manuel Espíndola, Special Session “History of Geosciences Mexico”, Annual Meeting 2022 Unión Geofísica Mexicana, Puerto Vallarta, Jalisco, October 31, 2022.
- MORELOS-RODRÍGUEZ, Lucero, “El surgimiento de la Paleontología en México: una mirada histórica” [“The Emergence of Paleontology in Mexico: A Historical Look”], Fossil Fest 2022, UNAM, Faculty of Sciences, September 15th, 2022.
- MORELOS-RODRÍGUEZ, Lucero, “Los albores de la Sociedad Geológica Mexicana” [“The dawn of the Mexican Geological Society], Seminario Universitario de Historia, Filosofía y Estudios de las Ciencias y la Medicina, UNAM, September 29th, 2022.
- URIBE-SALAS, José Alfredo, "Research and communicate in times of war: the case of Eritrionio de Andrés del Río", VIII Congress of Historians of Sciences and Humanities, "Nature as a problem of science and humanities. Environmental deterioration and disasters", Faculty of Anthropological Sciences-Autonomous University of Yucatán, April 8th, 2022.
- URIBE-SALAS, José Alfredo, "The interference of armed conflicts in scientific practice and the validation of results", Annual Colloquium of the PAPITT/UNAM Project, August 26th, 2022, Pátzcuaro, Michoacán.
- URIBE-SALAS, José Alfredo, "Technical-scientific knowledge, socio-technical environment and innovation in Porfirian Mexico", 17 State Congress of Science, Technology and Innovation, Government of the State of Michoacán de Ocampo, Morelia, October 26th, 2022.
- URIBE-SALAS, José Alfredo, "Prosopography and history of science: a Mexican proposal of the 19th century", Colloquium New methodological proposals for the study of the past, Faculty of History and Institute of Historical Research, Michoacan University of Saint Nicholas of Hidalgo, November 25th, 2022.

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VILLASEÑOR-ALEJANDRE, Gabriela and José Alfredo URIBE-SALAS, "Guillermo Beltrán y Puga, his contributions to Mexican science", III Colloquium The historical study of science: methodological proposals for its investigation", Interdisciplinary Association for the Study of the History of Mexico, A.C, Mexico City, December 13th, 2022.

Recent Bibliography

Books

- MORELOS-RODRÍGUEZ, Lucero and Omar ESCAMILLA GONZÁLEZ, *El Tratado de Vetos de Andrés del Río, 1795 [Treatise on Veins of Andrés del Río, 1795]*, México, UNAM, 2022. Available in: <http://www.ptolomeo.unam.mx:8080/xmlui/handle/RepoFi/18096>
- MORELOS-RODRÍGUEZ, Lucero, *El Parícutin en 100 imágenes. Historia gráfica del nacimiento del volcán más joven de América [The Parícutin in 100 images. Graphic history of the birth of the youngest volcano in America]*, Mexico, Historiadores de las Ciencias y las Humanidades, 2022. Available in: https://www.geologia.unam.mx/igl/docs/libros/Paricutin_Morelos2022.pdf
- URIBE-SALAS, José Alfredo, Rosaura RUIZ, Miguel Ángel PUIG-SAMPER, María Teresa CORTÉS-ZAVALA (Editors), *Jurhenani darwinista: reflexiones sobre el evolucionismo en Morelia [Jurhenani darwinista: reflections on evolutionism in Morelia]*, Mexico, 2022. (ISBN: 978-607-542-209-1).
- URIBE-SALAS, José Alfredo, María Guadalupe CEDEÑO-PEGUERO, Ramón Alonso PÉREZ-ESCUA (Coords.), *Discursos y prácticas sociales en el contexto de la historia regional continental [Discourses and social practices in the context of continental regional history]*, Mexico, Universidad Michoacana de San Nicolás de Hidalgo, Faculty of History, Graduate Studies Division, 2022.
- VEGA-ORTEGA, Rodrigo and L.F. AZUELA-BERNAL, (Coord.), *Intercambios globales de la geografía y la historia natural mexicanas, siglos XIX y XX [Global Exchange of Geography and Natural History, XIXth and XX centuries]*, Mexico, Instituto de Geografía, UNAM.
- VEGA-ORTEGA, Rodrigo and L.F. AZUELA-BERNAL, (Coord.), *La geografía y la historia natural en México. Producción de conocimiento y aplicaciones tecnocientíficas 1795-1934 [Geography and Natural History: Knowledge production and technoscientific applications, 1795-1934]* Mexico, UNAM, Instituto de Geografía-Dirección General de Asuntos del Personal Académico, 2022 (ISBN 978-607-30-4577-3).

Articles and book chapters

- AZUELA-BERNAL, Luz Fernanda, and B. URIBE-MENDOZA, "La enseñanza experimental en la Escuela Nacional Preparatoria. Espacios, prácticas y valores" ["Experimental teaching in the Escuela Nacional Preparatoria. Spaces, practices and moral values"], in ALVARADO-MARTÍNEZ-ESCOBAR, M.D.L. y R.A. VEGA-ORTEGA (Coord.), *Reflexiones y debates en torno a la enseñanza de las ciencias y humanidades en la Escuela Nacional Preparatoria, 1880-1929*, Mexico, Universidad Nacional Autónoma de México, 2022, pp.37-77 (ISBN 9786073054003)
- AZUELA-BERNAL, Luz Fernanda, "Las publicaciones científico-técnicas de los alemanes en México (1824–1850). Un estudio de caso sobre los procesos de coproducción y

- globalización del conocimiento" ["Scientific and technical publications of German authors in Mexico (1824–1850). A case study on co-production and knowledge globalization"], in VEGA-ORTEGA, Rodrigo and Luz Fernanda AZUELA-BERNAL, (Coord.), *Científicos, empresarios y funcionarios en la construcción del conocimiento y su aplicación práctica en México (1815-1940)*, Mexico, UNAM, Instituto de Geografía, 2022.
- AZUELA-BERNAL, Luz Fernanda and José Daniel SERRANO-JUÁREZ, "Rasgos del liberalismo en la ideología de la ciencia: Una lectura del Viaje de la Comisión Astronómica al Japón" ["Traits of liberalism in the ideology of science: A reading of the Mexican Astronomical Commission's Voyage of to Japan"], in VEGA-ORTEGA, R. and L. F. AZUELA-BERNAL (Coord.), *Intercambios globales de la geografía y la historia natural mexicanas, siglos XIX y XX*, UNAM, Instituto de Geografía, Mexico, 2022.
- MÉNDEZ-PÉREZ, Fredy and José Alfredo URIBE-SALAS, "El ingeniero petrolero Manuel Álvarez Jr. en la construcción del conocimiento geológico mexicano del siglo XX ["The petroleum engineer Manuel Álvarez Jr. in the construction of Mexican geological knowledge of the 20th century"]", *Ciencia Nicolaita. Scientific Journal of the Michoacana University of San Nicolás de Hidalgo*, 2022. Available in: <https://publicaciones.umich.mx/revistas/dicere/ojs/article/view/5>
- MÉNDEZ-PÉREZ, Fredy and José Alfredo URIBE-SALAS, "Scientific and technological networks in the first decades of the international oil industry", in José Alfredo URIBE-SALAS, María Guadalupe CEDEÑO-PEGUERO, Ramón Alonso PÉREZ-ESCUZIA (Coordinators), *Discourses and social practices in the environment of continental regional history*, Michoacana University of San Nicolás de Hidalgo, Faculty of History, Graduate Studies Division, 2022.
- MORELOS-RODRÍGUEZ, Lucero, "The Mexican Geological Society in its early years (1904-1912)", *Boletín de la Sociedad Geológica Mexicana*, vol. 74, no. 1, 2022. Available in: http://boletinsgm.igeolcu.unam.mx/bsgm/vols/epoca04/7401/A301121_Morelos.pdf
- MORELOS-RODRÍGUEZ, Lucero, "Mexican Geologist Day", in: *Revista Maya de Geociencias*, January 2022, (Special Edition), pp. 1-4.
- MORELOS-RODRÍGUEZ, Lucero and Omar ESCAMILLA-GONZÁLEZ, "Revelations from Rediscovered Artifacts of the National School of Engineers' Construction Material Collection", in CASTRO, Justin and James GARZA (Edited), *Tecnocratic Visions: Engineers, Technology, and Society in Mexico*, Pittsburgh, University of Pittsburgh Press, 2022, pp. 39-56.
- URIBE-SALAS, José Alfredo, "Andrés Manuel del Río", *La Voz de Michoacán*, Thursday, September 22, 2022, p. 16A.
- URIBE-SALAS, José Alfredo, "Andrés Aldasoro: between academia, politics, business activity and invention", in: AZUELA-BERNAL, Luz Fernanda and Rodrigo VEGA-ORTEGA (Coordinators), *Scientists, businessmen and civil servants in the construction of knowledge and its application practice in Mexico (1824-1938)*, Mexico, Institute of Geography-UNAM, 2022. (ISBN: 9786073059718).
- VALDIVIA-MORENO, Laura and José Alfredo URIBE-SALAS, "Manuel Orozco y Berra, Natural Sciences and the problems of evolution", in URIBE-SALAS, José Alfredo, Rosaura RUIZ, Miguel Ángel PUIG-SAMPER, María Teresa CORTÉS-ZAVALA (Editors), *Jurhenani Darwinist: reflections on evolutionism in Morelia*, Mexico, 2022. (ISBN: 9786075422091).

COUNTRY REPORTS

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.

Report for Mexico submitted by Dr. Lucero Morelos
luceromr@geologia.unam.mx

NEW ZEALAND ANNUAL REPORT 2022

All local members of INHIGEO remain active in researching the history of geology in New Zealand.

Rodney Grapes – Under Rodney's editorship one issue of Geoscience Society of New Zealand's *Journal of the Historical Studies Group* (Number 71 November 2022) was published during the year and contains four articles:

- *The Caswell Sound marble quarry* – Mary Trayes
- *Aotea stone, South Westland, and notes on pounamu* – Rodney Grapes
- *Adkin, Cotton and the Tararuas* – John Rhodes
- *On moa hunters and their tools: Museum exchange and correspondence of Adolf Bernhard Meyer (Dresden) and Julius von Haast (Christchurch)* – Christine Schlott

Mike Johnston – *Aorere Gold* the first part of Mike's history of the West Nelson goldfields has been printed (publication was in February 2023). The second part *Mohua Gold* is almost ready for layout and the third part *Wangapeka Gold* is being revised.

Simon Nathan continues as convenor of the Historical Studies Group and compiles frequent newsletters advising of forthcoming meetings and events to those interested in the history of geology. He took a leading role in the planning of the Sir Julius von Haast Bicentenary Conference, an online meeting hosted by the Canterbury Museum, Christchurch, on 30 April-1 May 2022. The conference proceedings are available at:

<https://www.canterburymuseum.com/research/haast-symposium-celebrating-the-life-of-sir-julius-von-haast/>

Simon has revised his biography of Jos Divis a quartz miner and outstanding photographer whose camera recorded several decades of mid 20th century life in the West Coast (South Island) gold mining town of Waiuta. As well as updating his book Simon was an advisor and participant in the making of the film *Jos, the forgotten photographer who saved a town* that was released in 2023.

John Taylor is progressing his research of the Globe-Progress mine, one of the major gold producers of the Reefton Goldfield. In addition, John is deeply involved in the Reefton Goldfields Museum at Blacks Point, including sorting its extensive archives. He has also taken a key role in the planning of the Australasian Mining History Association's conference to be held in Reefton on 15-22 October 2023.

Bruce Waterhouse continues his paleontological research.

Report for New Zealand compiled by Mike Johnston, Nelson

RUSSIA ANNUAL REPORT 2022

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

Leonid R. **Kolbantsev** attended the following meetings with oral presentations:

- 47th INHIGEO Symposium (Les Eyzies, France) – “Scientific relations of Alexander P. Karpinsky (1847-1936) with France” (co-author I.G. Malakhova)
- 43rd International Annual Scientific Conference of the St. Petersburg Branch of the Russian National Committee on the History and Philosophy of Science and Technology of the Russian Academy of Sciences (RAS). Academy of Sciences and Scientific Centers of the Union Republics (to the 100th anniversary of the USSR) – “Mikhail Nikolayevich Godlevsky (1902-1984) and his collections in the TsNIGR Museum”
- Scientific Conference “Modern Problems of Theoretical, Experimental and Applied Mineralogy: Yushkin Readings–2022” (Syktyvkar) – Materials on geology and paleontology of the Komi Republic in the collections of the Central Research Geological Exploration Museum named after academician F.N. Tschernyschew
- 13th Interregional Scientific and Local History Conference “Geological and mining-industrial heritage of Karelia in education, museum business and tourism” (Sortavala, Republic Karelia, Russia) – “From the history of geological research of the tundra zone of Russia”

He also organized and prepared the exposition “Collection of minerals of Boris Yatskevich (1948-2020)” – a geologist and the Minister of Natural Resources of the Russian Federation from 1999-2001. The opening of the Exhibition took place on January 31, 2022 as the part of the solemn meeting in memory of academician A.P. Karpinsky which the Russian Geological Research Institute (VSEGEI) Scientific Council dedicated to the 140th anniversary of the Geological Committee of Russia (1882).

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

Igor G. **Pechenkin** attended the next meetings with oral presentations:

- Scientific Conference “Modern Problems of Theoretical, Experimental and Applied Mineralogy: Yushkin Readings–2022” (Syktyvkar) – “Activities of the IPM–VIMS crystal optics cabinet (1930–1940)”
- International Conference of Russian National Committee for the History and Philosophy of Science and Technology of the RAS devoted to the 90th anniversary of the S.I. Vavilov Institute for the History of Science and Technology RAS, Moscow – “Geochemistry in the Soviet Union (100 years of the F.Yu. Loewinson-Lessing geochemical school): improving the efficiency of multi-scale geochemical works in the study subsoil”

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

INHIGEO members of the Geological Institute took part in few scientific meetings:

- International Conference of the Russian National Committee for the History and Philosophy of Science and Technology of the RAS devoted to the 90th anniversary of the S.I. Vavilov Institute for the History of Science and Technology RAS, Moscow: Olga V. **Martirosyan**. The Olonets anthracite: the history of study; Ivan P. **Vtorov**. On the status of the geological sciences by the middle of the XX century (based on the November Session of the Institute of Geological Sciences of the USSR Academy of Sciences, 1948).
- 15th All-Russian Palynological Conference: Sergey V. **Naugolnykh**. Actual Problems of Modern Palynology.
- Annual meeting of the Section Paleontology of the Moscow Society of Naturalists and the Moscow Branch of the Paleontological Society of the RAS, Paleostratum-2022, museums conferences (Sergey V. **Naugolnykh**)

Many papers and lectures by Sergey V. **Naugolnykh** were presented at various paleontological and geological meetings and published in different issues (see the list of publications). And there were special historical introductions in all of them.

Natalia I. **Bryanchaninova**, Irena G. **Malakhova**, Olga V. **Martirosyan** and Ivan P. **Vtorov** (Department for the History of Geology of Geological Institute RAS) continued to update the online Information System “History of Geology and Mining” (<http://higeo.ginras.ru>) which contains now about 1500 geoscientists.

The Herzen State Pedagogical University of Russia (Saint Petersburg):

Professor Yury L. **Voytekhovsky** (Figure 1) was a compiler and the editor of the 6th collection of articles on the history of geological knowledge: “Russian Mineralogical Society Through the Eyes of Contemporaries”. He participated in numerous scientific meetings in Saint-Petersburg, Karelia (Petrozavodsk), and in the Urals (Syktyvkar, Miass). The topics included: philosophy of science, development of concepts in mineralogy and crystallography, collections of rocks and minerals and rock, scientific correspondence, and recreation tourism. Some of them are listed below:



Figure 1. Yury L. Voytekhovsky at the 43rd International Annual Scientific Conference of the St.-Petersburg Branch of the Russian National Committee on the History and Philosophy of Science and Technology RAS, St. Petersburg.

- 43rd International Annual Scientific Conference of the St. Petersburg Branch of the Russian National Committee on the History and Philosophy of Science and Technology of the Russian Academy of Sciences (RAS). Academy of Sciences and Scientific Centers of the Union Republics (to the 100th anniversary of the USSR) – “Two A.K. Boldyrev’s biography papers”; “Photographs of N.K. & Yu.N. Roerich, B.M. Kupletsky and others. Urga, 1926”.
- Philosophical Seminar in the V.G. Khlopin Radium Institute, St.-Petersburg “Classical Philosophy and Modern Experimental Science” (few sessions) – “Space, time, life, infinity...”; “On living matter (according to Vernadsky) in the system of limit symmetry groups (according to Curie)”; “Polyhedral forms in mineral and living nature as manifestation of a special and integral individuality according to Hegel”, et al.
- Mining Institute, Saint Petersburg. Seminar of the Russian Mineralogical Society – “The rock – what is the purpose of nature?”
- Saint Petersburg State Museum-Institute of the Roerich Family – “Unique minerals of the Kola Peninsula”

Yury L. **Voytechovsky** read many public lectures on geology, mineralogy and cultural heritage. In October 2022, the Institute of the History of Science and Technology RAS awarded him the Medal of Honor “For Contribution to the History of Science and Technology” (Figure 2).



Figure 2. a) The Medal of Honor “For Contribution to the History of Science and Technology” on the left; b) the Diploma on the right.

Kola Science Centre of the Russian Academy of Sciences (Apatity, the Murmansk Region):

Grigory S. **Ilyin** read papers at the following meetings:

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- 4th Scientific and Practical Conference “Natural and Cultural Heritage of the Arctic Regions” (Murmansk) – “Explorations of the geographer Charles Rabaud in the Russian Lapland, 1884-1885”
- 11th Youth Scientific and Practical School (Moscow) – “Lamprophyllite from the Hackman Gorge (Yukspor Mountain, Khibiny alkaline massif)”.

Lomonosov Moscow State University. Museum of the History of the University

The curator of the Museum Tatiana K. **Ivanova** headed the creation of new expositions in the new Shuvalovsky Education Building of the University. She is the permanent guide of all excursions in scientific and art halls (Figure 3).



Figure 3. Rae Kwon Chung, Nobel Prize winner (South Korea) and author of the mineralogical exposition “The Art of Nature in a Stone” and Tatiana K. Ivanova in the Shuvalovsky Education Building during the All-Russian Festival NAUKA 0+ (October, 2022).

S.I. Vavilov Institute of the History of Natural Science and Technology RAS. Saint-Petersburg Branch:

Tatyana Yu. **Feklova** presented papers at the following meetings:

- International Congress “Travel and Religion in the (Long) 18th Century” (Halle, Germany) – “From Sporadic to Regular: the Academy of Sciences and the documentation of expeditions in the 18th and the first half of the 19th century”
- 14th All-Russian Conference with international participation “Problems of study, rational use and protection of natural resources of the White Sea” (Saint Petersburg) – “The Russian Lapland in researches of scholars of the Academy of Sciences (K.M. Baer, A.I. Schrenk) in the first half of the XIX century”.

V.I. Vernadsky State Geological Museum, Russian Academy of Sciences (Moscow):

In 2022, the V.I. Vernadsky State Geological Museum and the Interuniversity Academic Navigation Center for Mining and Geological Specialties have worked out and implemented the scientific and educational project “Maecenas of Russia”. Zoya A. **Bessudnova** was a member of the Organizing Committee for this project. The aim of the project was to popularize history of geosciences in Russia, document the practice of minerals collecting (private & for natural history museums), and examining traditions of patronage in Russia. Special scientific and methodological seminars were organized, and Zoya A. **Bessudnova** read two plenary papers: “Maecenas of the Demidov family and their heritage in the Vernadsky State Geological Museum” and “Russian statesman and philanthropist Nikolai Petrovich Rumyantsev (1754-1826) and his mineralogical collection in the Vernadsky State Geological Museum”. As a member of the expert commission Zoya A. **Bessudnova** assessed works of participants in the competition “Maecenas of Russia”. Besides that she presided over the expert commission for pupils of the secondary school (Figure 4).



*Figure 4. Zoya A. **Bessudnova** awards the contestants: members of the competition “Maecenas of Russia”:
a) a Diploma for a member of the competition Michael Gorbenko; b) the winners of the competition
“Maecenas of Russia” – the Bobylevs (Eugene and Elisabeth) with special prizes*

In 2022, Zoya A. **Bessudnova** continued to work under the traditional Museum project for children and pupils – the 10th Competition “The Mineral Wealth of My Country” designed to promote interest in ecology and professions of geoscientist and mining engineer. She assessed the competitive works of the participants.

In 1922, the Director and the President of V.I. Vernadsky State Geological Museum academician Yuri N. Malyshev passed away. To perpetuate his memory “Historical Living Room after Yuri Malyshev” with exposition (on the Museum building history and the portraits gallery of

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directors for about two centuries) was opened in the Museum. Zoya A. **Bessudnova** was the responsible executor in this project.

As a member of the editorial board of the Journal *Studies in the History of Science and Technology* Zoya A. **Bessudnova** reviewed articles submitted for publication. She also is managing editor of the *Mineralogical Almanac – Mineral Observer* (Figure 5).



Figure 5. a) The exposition “Historical Living Room after Yuri Malyshev”.
b) The cover of the Mineralogical Almanac – Mineral Observer

PUBLICATIONS

Books:

Malakhova I.G. (Ed.) Vtorov I.P., Bryanchaninova N.I., Malakhova I.G., Martirosyan O.V., Senkova E.N. 2022. *The Report of the Session of the Scientific Council of the Institute of Geological Sciences of the USSR Academy of Sciences (Moscow, Nov. 15-22, Dec. 7, 1948)*. Moscow: GEO, 2022. 512 p. (Essays on the History of Geological Knowledge: Vol. 35). (in Russian).

The Open Session of the Scientific Board of the Institute of Geological Sciences of the USSR Academy of Sciences (1948) discussed the main scientific directions of geology: stratigraphy, Quaternary geology, lithology (sedimentology), tectonics, petrography, mineralogy and geochemistry, and the geology of ore and coal deposits. Theoretical and methodological problems of geosciences and its practical results also were discussed. Reading this book one can judge the development of geological sciences in the USSR up to 1940s. The printed version is digitalized and available at <http://www.ginras.ru/library/pdf/1948IGN.pdf>

Pechenkin I.G. (Ed.) Mashkovtsev G.A., Shchetochkin V.N., Pechenkin I.G. et al. 2022. *Evgeny Mikhailovich Shmariovich / Moscow: VIMS. 144 p.* (Materials in the bibliography of scientists of the VIMS; Vol. 6). (in Russian).

Voytekhovsky Yu.L. (Ed.). 2022. *Russian Mineralogical Society Through the Eyes of Contemporaries: Collection of Articles on the History of Geological Knowledge*. St.-Petersburg: Lema, 160 p. (in Russian)

Articles:

- Bessudnova Z.A. 2021. Grigory Ivanovich Fischer von Waldheim (1771–1853) at the Moscow University and his heritage at the Vernadsky State Geological Museum (on the 250th anniversary of his birth). *Bulletin of the Moscow Society of Naturalists*. Geol. Series. 96 (4): 13-34. (in Russian)
- Bessudnova Zoya, Romanova Vera & Samsonova Nina. 2022. Collection of Johann Carl Freiesleben in Vernadsky State Geological Museum of RAS. *Mineralogical Almanac*. 27 (1): 26-36. (in Russian & English)
- Touret, Jacques, Bessudnova Zoya. 2021. Vladimir I. Vernadsky abroad: years of studies and research. *Mineralogical Almanac*. 26 (2): 6-18. (in Russian & English)
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- Martirosyan O.V. 2022. Dispute about the shungite. *Proceeding of the Russian Mineralogical Society*. 151 (3): 123-132. (in Russian).
- Martirosyan O.V. 2022. “Immature amber” – krantzite – in the Middle Urals. *Bulletin of Geosciences*. 327 (3): 25-30 (in Russian).
- Martirosyan O.V., Bogdasarov M.A. 2022. Svyatoslav Sergeevich Savkevich – Honorary member of the Russian Mineralogical Society. *Russian Mineralogical Society Through the Eyes of Contemporaries: Collection of Articles on the History of Geological Knowledge*. 6. St. Petersburg: Lema. 43-47. (in Russian).
- Naugolnykh S.V., Bicknell R.D.C. 2022. Ecology, morphology and ontogeny of *Paleolimulus kunguricus* – a horseshoe crab from the Kungurian (Cisuralian) of the Cis-Urals, Russia. *Lethaia*. <https://www.idunn.no/doi/10.1111/let.12451>
- Song H, Naugolnykh S.V., Liu X., Jin J. 2022. Fertile *Woodwardia* from the middle Eocene of South China and its implications for palaeogeography and palaeoclimate. *Plant Diversity*. 44: 565-576.
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- Naugolnykh S.V., Ivanov A.V., Uliakhin A.V., Novikov I.V. 2022. Paleoecological and depositional environment of Permian copper-bearing sandstone fossil plants and tetrapod localities: Records from Bashkortostan and Kargalka River Basin, Orenburg Region, Russia. *Paleontological Journal*. 56. (11): 1538-1555.
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- Voytekhovskiy Yu.L. 2022. To the 220th anniversary of the book "The memorabilia of Vesuvius and Etna, or a brief sketch of the most famous eruptions of these fire-breathing vents from the age of the first action to the present day". *Russian Mineralogical Society Through the Eyes of Contemporaries: Collection of Articles on the History of Geological Knowledge* (6). St. Petersburg: Lema. 101-107. (in Russian)
- Vtorov I.P. 2022. Letters to P.L. Dravert and P.N. Chirvinsky as documents on the history of mineralogy. *Ibid*. 140-158. (in Russian)
- Vtorov I.P. 2022. The best practices of cooperation between the Russian Academy of Sciences and the Omsk State Museum of the History and Local Lore in studying the scientific correspondence of P.L. Dravert and P.N. Chirvinsky (1934-1945). *State Local History in the Russian Federation in the late XX - early XXI centuries: Main Problems and development Prospects*. Omsk: 174-177. (in Russian)
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History of Natural Science and Technology named after RAS. Moscow: IHST RAS. Moscow: IHST RAS. 258-260. (In Russian).

2022 annual report prepared by Irena G. Malakhova and Olga. V. Martirosyan of the Department for the History of Geology, Geological Institute, Russian Academy of Sciences

SERBIA ANNUAL REPORT 2022

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). We continue to look for new members and people who can participate in our joint goals and improve work in our division.

Prof. Aleksandar Grubić, an Honorary member of INHIGEO is still active. He works a lot as an advisor with colleagues from the Geological Mapping Section of the Geological Survey of Serbia. Of course, historical topics and the chronology of the development of geology in ancient Serbia and ex-Yugoslavia are always relevant.

Last year, the other members of our Section were moderately active. In addition to several oral lectures within the regular sessions of the Serbian Geological Society, much attention was focused on two major events: the 18th Congress of Geologists of Serbia with international participation (June 1-4, 2022, Divčibare, Western Serbia) and the 22nd Congress of the Carpathian-Balkan Geological Association, which was held in Plovdiv, Bulgaria (September 7-11, 2022).

At the 18th national congress, while there was not a specific session for the history of geology several members of the History of Geology Division gave lectures in other fields of geology. The best news from this event was the large number of young geologists and PhD students who took part in scientific sessions (Figure 1). Professor Rundić was a leader of the post-Congress field trip on the Neogene outcrops of western Serbia (the so-called the Serbian Lake System) where he gave a short lecture regarding non-metallic research history of that area.

At the 22nd Congress of the Carpathian-Balkan Geological Association held in Bulgaria, during the opening ceremony of the congress (Figure 2), Academician Ivan Zagorchev (Bulgaria) gave a retrospective lecture about CBGA history and the 100th anniversary of the foundation of Association was officially marked. At that gathering, as part of the congress poster session, our colleague Aleksandra Maran Stevanović (Natural History Museum Belgrade) briefly presented the life and work of Professor Vladimir Petković, Serbia (1873-1935), one of the four co-founders of the CBGA. They gave initiative for establishing the new geological association at the 13th International Geological Congress in Brussels (1922) under name of Carpathian Geological Association. The present name was adopted at the 4th CBGA Congress in Kiev 1958 (then USSR). CBGA is one of the oldest geological associations in Europe which is affiliated to IUGS.

The second century of life and work of CBGA has been started (Figure 3). The next, 23rd Congress will be held in Cluj-Napoca (Romania) in four years (2026).



Figure 1. Participants of the 18th Congress of Geologists of Serbia (June 1-4, 2022). The Divčibare touristic-resort, Western Serbia (courtesy by Serbian Geological Society).



Figure 2. Participants of the 22nd Congress of the CBGA just before the official opening ceremony (Aula of the Agricultural University in Plovdiv, Bulgaria). Photo by Lj. Rundić



Figure 3. Present-day map of the member countries of CBGA (Photo taken from <https://cbga2022.geology.bas.bg>)

PAPERS

1. Maran Stevanović, A., 2022. Professor Vladimir K. Petković (1873-1935) – one of the founders of the Carpathian-Balkan Geological Association. In: Peytcheva *et al.* (Eds.): XII International Congress of CBGA, Plovdiv, September 7-11 2022. *Geologica Balcanica*, Abstracts, 243.
2. Rundić, Lj., 2021. Hundred years of the loess research in Zemun (Serbia): From an expert note to new challenges in geology. *Bulletin Natural History Museum*, 14: 25-41.
3. Rundić, Lj., 2022. 100th Anniversary of the Carpathian-Balkan Geological Association (CBGA). *Ann. Geol. Pennins. Balk*, 83 (2): 53-60.
<https://doi.org/10.2298/GABP221103006R>
4. Radivojević, D., 2022. Sir Roderick Impey Murchison (1792-1871) – stopedeset godina od smrti kralja Silura. *Zapisi SGD za 2021*, 63-67.

Annual report for Serbia prepared by Professor Ljupko Rundić

SPAIN ANNUAL REPORT 2022

Although the COVID-19 epidemic prevented some public events from being held, most of the conferences and congresses were done virtually during 2022. In any event, the activities in the History of Geology have been important and significant. One significant event was the death, after a long illness, of Carlos Martín Escorza, an active member of INHIGEO and researcher at the National Museum of Natural Sciences (Madrid), on Friday, February 25, 2022. On May 26, a

heartfelt tribute was paid to him in the Assembly Hall of the Museum, in the presence of colleagues, family and friends. Rest in peace.

ACTIVITIES

An exhibition was held from October 2021 to February 2022, at the Historical Library of the Complutense University, entitled: *The Royal Spanish Society of Natural History. 150 years of the Library (1871-2021)*.

Throughout 2022 various telematic conferences of the Spanish Society for the Defense of the Geological and Mining Heritage (SEDPGYM) were held in a program called: *Meetings with the Geological and Mining Heritage*. Highlights of the interventions by geologists included:

- Juan José Durán Valsero: *España, territorio kárstico/Spain, karstic territory* (January 20, 2022)
- Fernando Palero Fernández: *La mina de Pulpi (Almería): Referente del Patrimonio Geológico y Minero en el SE de España/The Pulpi Mine (Almería): A Reference of Geological and Mining Heritage in SE Spain* (June 16, 2022).
- Enrique Díaz Martínez: *Que es y que no es la Geodiversidad/What is and what is not the Geodiversity* (October 3, 2022)

On February 3, 2022, the Center for Studies and Research on Geological and Mining Heritage (FGP-IGME-SEDPGYM), headed by two INHIGEO members, Luis Felipe Mazadiego Martínez and Octavio Puche Riart, within its programs of conferences and webinars, sponsored two events:

- 1. Enrique Díaz Martínez (IGME=Spanish Geological Survey), with: *Spanish contribution to global progress of geoconservation*.
- 2. Ester Boixereu Vila (IGME), member of INHIGEO, with the: Presentation of the monographic issue "*Geological Heritage and Geoconservation*", special number of *De Re Metallica* review.

On February 12, birthdate of Charles Darwin (1809-1882), *Darwin Day* (#darwinday) was celebrated at the National Museum of Natural Sciences in Madrid (MNCN), in commemoration of the illustrious naturalist who revolutionized the biological sciences, with his theories of the evolution of species. The activities consisted of:

- Guided tour: *Darwin por el museo/Darwin through the Museum*.
- Puppet for children: *El viaje de Darwin/Darwin's journey*.
- Area of experiments on evolution.
- Dinner: *Darwin y la Gran Gala del Megaterio/Darwin and the Megatherium Grand Gala*.

These activities were part of those celebrated by the Museum, along with others, on the occasion of its 250th anniversary.

The Spanish Geological Institute (IGE) organized a series of informative online conferences, that took place between February and June. Due to their interest to the History of Gemology, we highlight the following:

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- On February 15, Amelia Aranda Huete spoke on *Joyería española del siglo XVIII al XX: la Casa de Borbón*/ Spanish jewelry from the 18th to the 20th century: the House of Bourbon;
- On March 22, Lourdes García y García de Consuegra, spoke on *Charles Lewis Tiffany, pionero en el mundo de la joyería*/Charles Lewis Tiffany, pioneer in the world of jewelry;
- On March 24, Lourdes García y García de Consuegra, presented on *Peter Carl Fabergé, el joyero más importante de la Rusia de los zares*/Peter Carl Fabergé, the most important jeweler in the Russia of the tsars;
- On May 24, Raquel Alonso-Pérez, spoke on *Tour de las Colecciones del Museo de Geología y Mineralogía, Universidad de Harvard*/Tour of the Collections of the Museum of Geology and Mineralogy, Harvard University;
- On May 1, Jürgen Schnellrath presented on *Ejemplos de producción de gemas en Brasil: sus desafíos y oportunidades de investigación*/Examples of gem production in Brazil: its challenges and research opportunities.

On February 25, 2022, Professor José Ignacio Catalá Gorgues, from the Cardenal Herrera University (CEU), was elected president of the Catalan Society for the History of Science and Technology (SCHCYT), which brings together more than 300 experts and is integrated into the international and European societies for the history of science.

In the Hall of the School of Mines and Energy Engineers of Madrid, from March 12 to 13, 2022, the 41st edition of *Expominerales/Expominerals* was held. It is a key event in publicizing the Earth Sciences, where minerals, fossils, gems and meteorites from all over the world can be seen, and participants can attend conferences, book presentations, educational activities for children, etc. A highlight of the exhibition was a session on *Women in mining*, sponsored by the Fundación Obra Social Montepío.

In the Casino of Salamanca, on March 22, 2022, within the framework of its Cultural Agenda, the book titled *Science and Christian Faith in History*, by the geophysicist Agustín Udías Vallina, was presented.

The new 2022 season of “*Les Nits de Sarawak/Sarawak Nights*” began on March 22, 2022, with a session titled *Cuevas y Karst del Mundo/Caves and Karst of the World*. The session was presented within the framework of the International Year of Caves and Karst and promoted by the International Union of Speleology (UIS). The session was the first in a series of public telematic sessions, organized from Barcelona by the Sarawak Exploracions & Geografia Cº, together with the Catalan Institute of Speleology and Karst Sciences (ICEK). The first session was presented by Sergio García-Dils, who spoke on *Karst del macizo de Arabika, en el Cáucaso Occidental, y las exploraciones de las simas más profundos del planeta*/Karst of the Arabika massif, in the Western Caucasus, and the explorations of the deepest chasms on the planet. During the year, other conferences focused on caves located in various Latin American countries. The sessions discussed the history and underground riches of the caves including the Yucatan with its Great Maya Aquifer, the Galapagos Islands with their lava tubes, the Volcano of the Murciélagos, the great karstic systems of Mexico, and the quartzite cavities of the tepuis of Venezuela. The sessions went on until the end of December, when George Veni, president of the UIS, closed the season of *Sarawak Nights* and with it the *International Year of Caves and Karst*.

The *Hidrogeodía/Hydrogeoday* is a day for the dissemination of Hydrogeology concepts and to recognize the profession of hydrogeologist, on the occasion of the celebration of *World*

Water Day (March 22). The day is promoted by the Spanish Group of the International Association of Hydrogeologists (AIH-GE). Of the numerous events held, it is worth mentioning the *Segovia Hydrogeoday 2022*, held on March 26, in which following question was discussed: “Where did the water from the roman Aqueduct come from?”

On March 31, 2022, within the framework of the *María Teresa Picazo Research Seminars*, of the Department of Applied Economics, Faculty of Economics and Business, of Murcia University, a session was organized by Andrés Sánchez Picón entitled: *Mining development (19th and 20th centuries): Another case of natural resource curse or institutional failure?*

Within the framework of the didactic work of *Segovia Educa en Verde/Segovia Educates in Green*, a program of the City Council of Segovia, the Commission for the History of Geology of the Geological Society of Spain (SGE), organized a training activity on April 12, 2022, about the History of Geology which was dedicated to young people. These were the *Talleres infantiles sobre Minerales bajo el microscopio/Children’s Workshops on Minerals under the Microscope*, dedicated to the geologist Salvador Calderón Arana (1851-1911) and his contribution to Spanish Mineralogy. The Commission of the Geological Society of Spain (SGE) is coordinated by Isabel Rábano, INHIGEO member, and the activities on this matter have been disseminated throughout the year.

During the first two weekends of May 2022, the *Geolodía-2022/Geoloday-2022* took place. It is a scientific-cultural activity organized by the Geological Society of Spain (SGE) in collaboration with many other entities and scientific associations. This event has been held annually since 2012. The *Geolodías* takes place in environments of great geological interest and offers simple but rigorous information. The topics covered have been quite varied, with many of a historical nature, such as the earthquakes that have affected the Alhambra of Granada.

On May 23, 2022, the *150th anniversary of the birth of the illustrious geologist Mr. Eduardo Hernández Pacheco (1872-1965)* was commemorated. For this reason, the University of Extremadura and the Geological Association of Extremadura (AGE) carried out, on May 22, a geological-naturalist tour through the Montánchez massif, between the “Cancho que se Menea” and Alcuéscar (Cáceres). Hernández Pacheco lived in the latter town. In addition to numerous neighbors, the excursion was joined by great-grandchildren and great-great-grandchildren of the geologist.

On May 23, 2022, INHIGEO member Cándido Manuel García Cruz participated in the conference entitled: *The cosmic origin of meteorites, given in La Orotava (Tenerife). From Diogenes of Apollonia (ca. 460-425 BCE) to Ernst Florenz Friedrich Chladni (1756-1827)/The cosmic origin of meteorites: From Diogenes of Apollonia (ca. 460-425 B.P. to Ernst Florenz Friedrich Chladni (1756-1827).* This took place, within the framework of the *XXXI Seminar on the History of Science*, of the La Orotava Foundation of History of Science.
<https://www.youtube.com/watch?v=LpAh2lYChzE>

From June 20 to 22, 2022, the *XIV Congreso de la Sociedad Española de Historia de las Ciencias y de las Técnicas (SEHCYT)/XIV Congress of the Spanish Society for the History of Sciences and Techniques* was held at the Institute of History of the CSIC, Madrid. The following papers were presented:

- Mavi Corell Domènech: *Los referentes pedagógicos de la enseñanza de las ciencias físico-naturales en el Diccionario de Pedagogía (1936) de Editorial Labor/Pedagogical references for the teaching of physical-natural sciences in the Dictionary of Pedagogy (1936) of Editorial Labor.*

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- Isabel Rábano, INHIGEO member: *De litoteca a museo: el largo camino de las colecciones del Instituto Geológico y Minero de España/From lithoteca to museum: the long path of the collections of the Geological and Mining Institute of Spain.*
- José Luis Yepes Hita: *Olbers, 1810: primer cálculo probabilístico de que un cometa impacte con la Tierra. Del catastrofismo al ateísmo masónico/Olbers, 1810: first probabilistic calculation of a comet impacting the Earth. From catastrophism theories to Masonic atheism.*
- Yael Díaz-Acha and Monserrat Navarro: *El Museo de Geología de Barcelona en la época franquista/The Geology Museum of Barcelona in the Franco era.*
- Gabriel Pinto Cañón: *Andrés Manuel del Río, el descubridor del eritronio (hoy vanadio) que fue diputado durante el Trienio Liberal/Andrés Manuel del Río, the discoverer of erythronium (now vanadium) who was a deputy during the Spanish Liberal Triennium.*

The Royal Academy of Exact, Physical and Natural Sciences of Spain (RAC) and the Spanish Society of Paleontology (SEP) organized a *Posthumous tribute session to paleontologist Emiliano Aguirre Enríquez (1925-2021)*, for June 22, 2022, in the RAC, with presentations by Caridad Zazo (Royal Academy of Exact, Physical and Natural Sciences of Spain), Jorge Morales (National Museum of Natural Sciences-CSIC), and Antonio Rosas (Spanish Society of Paleontology). José Luis Sanz (Royal Academy of Exact, Physical and Natural Sciences of Spain) moderated the session.

On the occasion of the 200th anniversary of the birth of the geologist Juan Vilanova y Piera (1821-1893), the *Vilanova i Piera. Path to Prehistory* exhibition was organized. On June 26, 2022, the exhibition was closed, having been open at the Museum of Prehistory of Valencia since December 2021.

From September 29 to October 2, 2022, the *XIX International Congress on Geological and Mining Heritage*, including the *XXIII Scientific Session of the SEDPGYM*, took place in the town of Cuevas del Almanzora (Almería), under the motto *Geology and mining in the centuries XIX and XX: landscapes, history and heritage*. Some of the communications presented were:

- Juan Alberto Canto García: *De las exploraciones arqueológicas, paleontológicas y geológicas almerienses de Juan Vilanova y Piera (1881-1882) y las sorpresas que le depararon/On the archaeological, paleontological and geological explorations of Juan Vilanova y Piera (1881-1882) in Almeria and the surprises they brought him.*
- Juan Antonio Soler Jódar, Antonio González Jódar, José Berruezo García, and María Magdalena Navarro Arias: *La explotación de barita en el Levante Almeriense en los siglos XIX y XX/Barite exploitation in Levante Almeriense in the 19th and 20th centuries.*
- Ramón Jiménez Martínez, Ruth González Laguna, María José Torres Matilla, and María Pilar Hernández Pinilla: *Una década de actualización en la colección de minerales españoles del Museo Geominero, Madrid, España/A decade of updating in the collection of Spanish minerals from the Geomining Museum, Madrid, Spain.*
- Fernando Pedrazuela González: *La cantería: Un oficio escrito en piedra/Stonemasonry: A trade written in stone.*
- Óscar Muñoz Aranda, Octavio Puche Riart (INHIGEO member), Luis Felipe Mazadiego Martínez (INHIGEO member), and Luis Felipe Mazadiego Martínez (INHIGEO member): *Reseña sobre las contribuciones de Mr. Henry Southern y Mr. Francis Giles en los inicios de la minería contemporánea en la Cuenca del Guadiato (Córdoba, España)/Review of the*

contributions of Mr. Henry Southern and Mr. Francis Giles in the early days of contemporary mining in the Guadiato Basin (Córdoba, Spain).

- Jesús Fernando López Cidrad, Mariano Ayarzagüena Sanz, Santiago Valiente Canovas, Magdalena Barril Vicente, and Carlos Moncó García: *El Centro Español de Documentación Histórica y de Arqueología sobre la Sal (CEDHAS)/The Spanish Center for Historical Documentation and Archeology on Salt (CEDHAS).*

On October 4, 2022. The conference by Javier Sánchez Almazán: *Spanish Naturalists and knowledge of the American natural world* was held in the assembly hall of the National Museum of Natural Sciences of Madrid (MNCN).

Within the framework of the 34th edition of the *Urrelur Mineralogy and Paleontology Week*, on November 5, 2022, at the Urrelur Museum, the geologist José María Hernández gave a lecture entitled: *Volcanic eruptions in Urretxu, similarities and differences with the volcanism of The Palm Island.*

On the occasion of the 250th anniversary of the creation of the Royal Cabinet of Natural History of Madrid, on November 12-13 and 19-20, 2022, and within the framework of *The Science and Technology Week* at the CSIC (Superior Council of Scientific Research), at the National Museum of Natural Sciences (MNCN), the following was celebrated: *250 years of history. Discovering the Royal Cabinet of Natural History.* This allowed a dynamic and highly participatory visit for families with children, where the aim was to promote the origins and history of the National Museum of Natural Sciences, accompanied by a tour of the Royal Cabinet of Natural History, to discover its secrets and curiosities. Pieces of great historical importance were shown, ranging from the time the Museum was founded to those contributed by the great expeditions of the 19th and early 20th centuries.

The director-curator of the Geology Museum of the University of Oviedo, Luis Rodríguez Terente, received the *SOGES 2022 Award* for the dissemination of Earth Sciences. The award was delivered on November 14, 2022, at the Faculty of Geology. Luis Rodríguez authored fifty scientific and informative articles and participated in many conferences related to geology, mineralogy and the history of regional mining, as well as historical meteorites. Among his publications was the co-authored book *La Fluorita. Un siglo de minería en Asturias/The Fluorite. A century of mining in Asturias.*

The National Museum of Natural Sciences (MNCN-CSIC) and the Society of Friends of the Museum (SAM) organized numerous activities in 2022. One event was designed for elementary, middle and high school students interested in the life and work of the naturalist Charles Darwin. The event was a drawing contest focused on Darwin. The event opened on December 27 (date of the beginning of the Beagle voyage) of 2022, and closed on January 27, 2023.

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- *SEQUEIROS SAN ROMÁN, L. (2022). *Paleobiología un paradigma emergente*. Ed. Bubok. <https://www.bubok.es/libros/272159/PALEOBIOLOGIA-un-paradigma-emergente>
- *SEQUEIROS SAN ROMÁN, L. (2022). *Nuevas perspectivas de la evolución. Eva Jablonka y Marion Lamb*. Ed. Bubok. <https://www.bubok.es/libros/272162/Nuevas-perspectivas-de-la-evolucion-EVA-JABLONKA-y-MARION-LAMB>
- *SEQUEIROS, L. (2022). *Epigenética y paleobiología. Repensando la evolución biológica*. Ed. Bubok. <https://www.bubok.es/libros/272168/EPIGENETICA-Y-PALEOBIOLOGIA-repensando-la-evolucion-biologica>
- *UDÍAS VALLINA, A. (2022). *Los ejercicios espirituales de Theilhard de Chardin*. Mensajero-Sal Terrae-Universidad de Comillas. ISBN: 978-84-2714-673-0
- *UDÍAS VALLINA, A. (2022). Los últimos escritos espirituales de Teilhard de Chardin: de “El corazón de la materia” a “Lo Crístico”. *Revista de Espiritualidad Ignaciana* 94(371): 183-192. ISSN: 0214-2457
- *UDÍAS VALLINA, A. (2022). The 1620 and 1644 Earthquakes in Alcoy and the Eastern Region of Spain. *Seismological Research Letters* 93(4): 2335-2346. ISSN: 1938-2057
- *UDÍAS VALLINA, A. (2022). Contribución de los jesuitas a la ciencia en España, 1540-1773. *Jesuitas. Impacto cultural en la Monarquía hispana (1540-1767)*. (PIZARRO

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*UDÍAS VALLINA, A.; BUFORN, E.; MATTESINI, M. (2022). Contemporary Publications in Europe on the Spanish Earthquake of 1884. *Seismological Research Letters* 93(6): 3489-3497. ISSN: 0895-0695

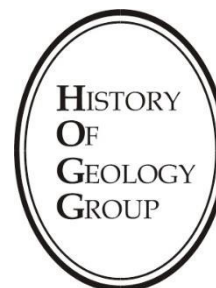
*ZAMORA ANGULO, A.; ROBLES SALCEDO, R.; TROYA GARCÍA, L.; SERRANO PÉREZ, J.; CASTILLO-VISA, O.; VICEDO VICEDO, V. (2022). Primer centenario de la colección Vidal en el Museo de Ciències Naturals de Barcelona: Últimas revisiones y nuevos datos. *Resúmenes XXXVII Jornadas de Paleontología SEP. V Congreso Ibérico de Paleontología*. Cuenca, p. 191.

Report for Spain prepared by OCTAVIO PUCHE RIART

UNITED KINGDOM ANNUAL REPORT 2022

HOGG Annual Report for INHIGEO 2022

The History of Geology Group (HOGG) is affiliated to the Geological Society of London (GSL) and has a current membership of 172. 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 2022 Chairperson and (acting) Secretary is Duncan Hawley.



The HOGG Committee met five times via an online conference in 2022. Two members retired at the AGM in November, all replenished by ‘fresh faces’. All meetings moved online.

During 2022 HOGG engaged with ‘parent’ affiliate The Geological Society of London to offer guidance, advice and support over a range of issues, viz:

- The value, importance and use of the Geological Society Library and archives and their possible future was subject to a consultation proposing ‘streamlining’, saving costs and possible re-location. HOGG’s contribution was well received and commended for the quality of its comments. HOGG was highly influential in securing that heritage material (defined as including rare, unique and historical items, as well as tracts and deposited scientific papers) should be given priority for protection and preservation, together with the staff skills and expertise required to manage that material. Also it was recommended and accepted that the Geological Society should do more to promote and expose its heritage material by showcasing it online in particular, but also at the GSL’s apartments (in London) when appropriate. Online exhibitions should be permanent and contribute to a growing collection of such material available for public access
- HOGG helped improve clarification and communication with respect to nominations for Geological Society Awards (in particular the Sue Tyler Friedman Award).
- 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.

- 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 was influential in shaping the report to reflect historical accuracy, balance and to emphasise the importance of context. The final report of the ‘Memorialisation Working Group’ made a number of recommendations that were adopted by the Geological Society Council, viz. the Geological Society should actively encourage further research to strengthen and deepen knowledge of its historical contexts and impacts, and it should share this history and Library collections with researchers around the world, welcoming research that uses of the Library collections in aiming to share and further understand these histories, particularly in foregrounding contributions that are currently less visible (such as knowledge generated with local collaborators and/or collaborators from under-served minorities and under-represented minority groups). In addition, the Geological Society seeks to elevate less known scientists, their ‘support teams’, and their contributions by seeking to widen and refresh displays. Finally, the Geological Society recognises that resources are required to carry out the contextualisation and hidden histories work to an appropriate standard, and hence is seeking to establish funding and internal resources that supports these endeavours. Such work involves the active collection of artworks, geological artefacts, research papers and notebooks associated with a more diverse range of geoscientists. The Geological Society aims to ensure that the voices of black people, people of colour, and women are centred in the development of this refreshed collection.

Events: a) Six online meetings

- February: *The A to Z of Toxic Rocks across time* with Tim Carter
- March - *Lyell, Darwin and the principle of reasoning in geology*, with Gordon Chancellor.
- April: *Andrew Crombie Ramsay: Insights into mid-19th century geology from his papers archive*, with Anne Barrett
- June: *Sedgwick’s ‘Great Dislocation’ revisited: the Dent Fault, NW England*, with Dr. Nigel Woodcock
- September: *The Great Bindon Landslip of 1839-finally a modern interpretation?*, with Richard Edmonds
- October: *Unlocking Lapworth’s Legacy: archiving the life and work of a Victorian Geologist*, with Rachel Brown.
- Numbers joining the online meetings ranged from 34 to 65, with an average of 46, and these regularly included international members. Recordings of meetings are made available to HOGG members.

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November: the HOGG AGM was followed by a lecture to mark the bicentenary of the publication of the ‘classic’ and influential book ‘*Outlines of Geology*’ by W. Phillips and W.D. Conybeare. The lecture given by Dr Leucha Veneer.

b) Two field meetings

- May: *Malvern Rocks! Geology in a Victorian Health Resort*, convened by Tim Carter supported by local experts from the Hereford & Worcester Earth Heritage Trust. This was a re-convened meeting from 2021. A comprehensive field booklet was produced and distributed, with a pdf version made available via the H&W EHT website.
- July: *Pioneer geological mapping of Anglesey: The work of John Stevens Henslow, Andrew Crombie Ramsay and Edward Greenly*, convened by Duncan Hawley and Cynthia Burek, organised with support of the GeoMôn (Anglesey) GeoPark. The meeting afforded successful explorations across the island to study the work of all three pioneers, although the record-breaking heatwave weather impacted in that not all planned locations were visited. It became clear by the end of the meeting that Anglesey has rather special geology and an equally remarkable history of understanding and mapping that geology. A comprehensive field booklet was produced and distributed.

External engagement

Over the year HOGG Committee has engaged with our ‘parent’ affiliate, The Geological Society, with representation on the Geological Society Memorialization Working Group (MWG). HOGG contributed to the final report and recommendations of the MWG to the Geological Society Council. These are prominent in taking historical context into account when considering potential issues related to historical archives, artefacts and artwork. HOGG continues to strive in ensuring that the Geological Society engages with history of geology and gives due recognition and resource its heritage.

The HOGG Committee was pleased to nominate Professor John Mather for the Sue Tyler Friedman Award of the Geological Society of London. This award is given to an individual who is deemed to have made a significant contribution to the history of geoscience. We were delighted to learn that Professor Mather was selected to receive this award and his award citation and response is available at <https://www.youtube.com/watch?v=49gw2OrNtEQ> (@42m:42s).

HOGG was a signatory to a letter, organised by the Edinburgh Geological Society to Historic Environment Scotland, querying the on-going closure of access to Hutton’s “Section on the Radical Road of Salisbury Crags, Edinburgh”, and requesting a plan for re-opening access. Subsequently there have been assurances that some sort of access will be restored, although the timescale is presently uncertain.

Publications

- a) *HOGG Bulletin*: Seven issues, from No.8 through to No.14, with updates and listing of events, publications and other news from HOGG and the wider history of geology community were published during 2022 and distributed to all HOGG members and HOGG associates. Thanks are due to Andrew Hopkins who coordinates collation of entries and distribution of the Bulletin.
- b) GeoHistories: Two issues of the *HOGG Magazine*, Nos. 73 and 74 (each 36 pages, including covers) were published and distributed to members. The issues contained the

‘proceedings’ of HOGG events, with summaries by presenters or attendees, plus a range of regular features. The high quality of the magazine was retained. Distribution was eased by integration with printing. Thanks are due to Peter Lincoln, editor of *GeoHistories* and to Consuelo Sendino for her support in design and layout. *GeoHistories* is a member-only publication and is not made available more widely, with the exception of a copy deposited in the Geological Society Library.

Publications by HOGG members in 2021-2022

- 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 Rivista Internazionale di Storia della Scienza* 56 Nuova Serie
- Clary, R.M. 2022 Recording the facts: Henry De La Beche’s maps as data repositories. *Earth Sciences History* 41(2): 245–363
- Clary, Renee. The present is the key to the paleo-past: Charles R. Knight’s reconstruction of extinct beasts for the Field Museum, Chicago. In: Clary, R.M. *et al.* (eds.) *The Evolution of Paleontological Art. GSA Memoir* 218. Geological Society of America. 161-170.
- Diemer, J. 2021 The Geology of the Ural Mountains as understood by Roderick Murchison in 1845. *Physis Rivista Internazionale di Storia della Scienza*, 56. Nuova Serie
- Diemer, J. 2022. Plate 6 of *The geology of Russia*: A product of a ‘genius of combination’. *Earth Sciences History* 41(2): 264–384
- Donovan, S.K. 2022 H. H. Swinnerton and crinoid palaeology *Proceedings of the Geologists’ Association* 133 (1), 112-113
- Hopkins, A. 2021 Overrating the exactitude: the role of Geodesy in Alfred Wegener’s arguments for Continental Drift. *Physis Rivista Internazionale di Storia della Scienza*, 56. Nuova Serie.
- Krzywiec, P., Arndt, A., Jarosz, K., Szrek, P., Jakubowski, J. 2022. Georg Andreas (Jerzy Andrzej) Helwing (1666–1748) - forgotten pioneer of geology and palaeontology on Polish territory. *Przegląd Geologiczny*, 70 (2), 547–556. <https://www.pgi.gov.pl/dokumenty-pig-pib-all/publikacje-2/przegląd-geologiczny/2022/7-lipiec-2/9269-georg-andreas-jerzy-andrzej-helwing-1666-1748-zapomniany-prekursor-geologii-i-paleontologii-na-ziemiach-polskich.html>
- Lewis, C. 2022 The fossilist and his engraver: Samuel Springsguth’s illustrations of James Parkinson’s Organic Remains. In: Clary, R.M. *et al.* (eds.) *The Evolution of Paleontological Art. GSA Memoir* 218. Geological Society of America, 19-18.
- Mather, J.D. 2022. Granite, Greywacke, and the Making of the Geological Map of Devon (Presidential Address). *Transactions of the Devonshire Association*, 153, 1-35.
- Morgan, N. 2022. Mystery Man [re: Joseph Whidbey, 1757-1833] *Geoscientist*, 32(1): 30. <https://geoscientist.online/sections/features/mystery-man/>
- Morgan, N. 2022. Geolocation *Geoscientist*, 32 (3): 25. <https://geoscientist.online/sections/features/geolocation/>
- Morgan, N. 2022. A Story in Stone: Surprising opposition to Science. *Geoscientist*, 32(4): 32. <https://geoscientist.online/sections/features/a-story-in-stone-2/>
- McKirdy, A. 2022. *James Hutton: The Founder of Modern Geology* 3rd ed. Edinburgh: NMSE Publishing Ltd.
- Rose, E.P.F. 2022. British military contributions to the geology of Malta, Part 2: The Second World War, 1939–1945. *Earth Sciences History* 41(1): 186–216.

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- Rudwick M.J.S. 2022. Georges Cuvier's appeal for international collaboration, 1800. *Episodes* 46(1): 117-125. <https://doi.org/10.18814/epiugs/2022/022002>
- Rudwick, M.J.S. 2022. On re-treading fieldwork. *Earth Sciences History* 41(1): 37–46.
- Sendino, C. 2022. The influence of scientific knowledge on mollusk and arthropod illustration. In: Clary, R.M. et al (eds.) 2022. *The Evolution of Paleontological Art. GSA Memoir 218* Geological Society of America, 81-90.
- Sharpe, T. 2022. Henry De La Beche's Lithograph, *Duria Antiquior*. *Earth Sciences History* 41(1): 47–63.
- Sharpe, T. and Clary, R.M. 2022. Henry De la Beche's pioneering paleoecological illustration, *Duria antiquior*. In: Clary, R.M. et al (eds.) 2022. *The Evolution of Paleontological Art. GSA Memoir 218* Geological Society of America, 47-54.
- Stone, P. 2022 Book Review: "James Hutton: The Founder of Modern Geology" by Alan McKirdy, *Scottish Journal of Geology* 58 <https://doi.org/10.1144/sjg2022-008>
- Taylor, M. A. 2022. *Hugh Miller: Stonemason, Geologist, Writer* (reprint of 2007 edition). Edinburgh: NMS Enterprises Ltd. Publishing.
- Taylor, M. A. 2022. *Hugh Miller [1858] The Cruise of the Betsey, with Introduction and Notes by Michael A. Taylor and Foreword by T. C. Smout* (reprint of 2003 facsimile edition). Edinburgh: NMS Enterprises Ltd. Publishing
- Taylor, M. A., and Berry, C. 2020. Science in a Somerset Quaker community: Alfred Gillett (1814-1904) fossil collecting and kinship networks in and around Street. *Proceedings of the Somerset Archaeological and Natural History Society* 164: 259-287.
- Toland, C. 2022 George Bellas Greenough's general sketch of the physical and geological features of British India (1854, 1855): Its production, distribution, variants and survivorship. *Earth Sciences History* 41(2): 285–321
- Turner, S., and Berta, A. 2022. Illustrating the unknowable: Women paleoartists who drew ancient vertebrates. In: Renee M. Clary et al. (eds.) *The Evolution of Paleontological Art. GSA Memoir 218*. Geological Society of America, 191-200.

Report submitted by Duncan Hawley, HOGG Chairperson and (acting) Secretary.

UNITED STATES ANNUAL REPORT 2022

U.S. based INHIGEO Members

Vic Baker

- Baker, V.R. 2022. Hutton, heroes, and history. *Inference* 6(4): 11 p.
- Baker, V.R., 2022, J Harlen Bretz (1882-1981): Outrageous geological hypothesizer. *GSA Today* 32(5): 50-51.
- Glazner, A.F., Baker, V.R., Bartley, J.M., Bohacs, K.M., and Coleman, D.S., 2022, The rocks don't lie, but they can be misunderstood. *GSA Today* 32. doi.org/10.1130/GSAT535A.1.
- Baker, V.R., 2022, Catastrophic flooding: A case study in the value of outrageous geological hypotheses: Geological Society of America, *Abstracts with Programs* 54(6).

A short paper was prepared for the April 2023 INHIGEO Website Anniversaries, to be

published in IUGS E-Bulletin Issue 196: “Hypothesizing mega-flooding 100 years ago: J Harlen Bretz and the cataclysmic late Pleistocene mega-flooding origin of the Channeled Scabland.”

Baker continued to work on several long-term projects dealing with history and related philosophical aspects of the geological sciences, as follows:

- History of the controversy over the origin of slaty cleavage, mainly focused on persons and ideas from the 19th century, with a particular emphasis on the theory-directed reasoning approaches employed by physicists, versus the investigative approaches used by geologists.
- A history (partly personal) of geological investigations of the planet Mars, especially during the modern era of space exploration.

Kennard B. Bork authored a chapter in the GSA Memoir 218, *The Evolution of Paleontological Art*, published in 2022: "The illustrations of Brongniart and Cuvier illuminate paleontology in the early nineteenth century."

Joanne (Jody) Bourgeois

- Participated fully (all field trips, fabulous, merci beaucoup!) in the 2022 INHIGEO meeting in Les Eyzies. Given the meeting location in France, and my own interests, I presented “A 1958 snapshot of oceanography: The 83rd CNRS international colloquium,” with a focus on ideas about the origin of submarine canyons.
- Prepared a paper on the history and significance of “Trackways in the New Red Sandstone of the Connecticut River Valley, U.S.A.” for the geoheritage volume to be published by the Geological Society of London.
- Continued as an active editor/reviewer of the “Rock Stars” series of the Geological Society of America.

William R. Brice authored a chapter in GSA Memoir 218, *The Evolution of Paleontological Art*, published in 2022: “Fossil illustrations in three dimensions: Ward’s models at Cornell University”.

Renee M. Clary

In 2022, Renee was designated a Fellow of the Mississippi Academy of Sciences for “nationwide respect for comprehension of professional issues and accomplishments as a scientist.” With Gary Rosenberg and Dallas Evans, she served as editor on the Geological Society of America Memoir 218, *The Evolution of Paleontological Art*, which was published in hard copy in 2022. She contributed four manuscripts to the volume:

- “Drawing Things Together with Paleontological Art” (co-authored with Gary Rosenberg and Dallas Evans, [https://doi.org/10.1130/2021.1218\(01\)](https://doi.org/10.1130/2021.1218(01)));
- “Henry De la Beche’s Pioneering Illustration, *Duria antiquior*” (co-authored with Tom Sharpe, [https://doi.org/10.1130/2021.1218\(06\)](https://doi.org/10.1130/2021.1218(06)));
- “The Present is the Key to the Past: Charles R. Knight’s Reconstruction of Extinct Beasts for the Field Museum, Chicago” ([https://doi.org/10.1130/2021.1218\(18\)](https://doi.org/10.1130/2021.1218(18))); and
- “‘But Why Paint a Dinosaur Blue?’: Envisioning the Cretaceous—a Vitalizing, Multidisciplinary Project in a University Museum” (co-authored with Todd Rowan and T. Brent Funderburk, [https://doi.org/10.1130/2021.1218\(27\)](https://doi.org/10.1130/2021.1218(27))).

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Additionally, Renee contributed a manuscript to *Physis*, published in February 2022, on illustrations in informal communication (which she presented at INHIGEO's 2019 conference).

A contribution on Henry De la Beche's maps, arising from a 2017 Geological Society of America session, was published in *Earth Sciences History*: Clary, R.M. (2022). Recording the facts: Henry De la Beche's maps as data repositories. *Earth Sciences History* 41(2): 245-263.

Renee currently serves as the Coordinating Editor on a Geological Society of London Special Publication, *Geology's Significant Sites and Their Contributions to Geoheritage*.

CONFERENCE PRESENTATIONS:

Renee presented on Charles Knight's prejudicial reconstructions of early hominins at the 47th INHIGEO conference at Les Eyzies, France. She also presented on women in the history of geosciences at the Geological Society of America Connects 2022 conference in Boulder, Colorado, USA.

- Clary, R.M. (2022, September). Prejudice on parade: Charles R. Knight's paintings on early hominins. Research presentation at the 47th International Commission on the History of Geological Sciences (INHIGEO). Les Eyzies, France.
- Clary, R.M. (2022, October). Women within the history of the geosciences: Using case studies to bring overdue recognition and illuminate cultural constraints and the nature of science. Research paper presented at the Geological Society of America Connects 2022, Denver, CO.

MEETINGS ATTENDED IN 2022:

- The 47th International Commission on the History of Geological Sciences (INHIGEO) in Les Eyzies, France.
- The American Geophysical Union Fall Meeting in Chicago, IL
- The Geological Society of America Connects 2022 national conference in Denver, CO
- The American Educational Research Association in San Diego, CA (virtual attendee)
- The National Science Teaching Association National Conference in Houston, TX
- The Mississippi Science Teachers Association annual conference in Biloxi, MS
- The Joint 56th North-Central/71st Annual Southeastern Section Meeting of the Geological Society of America in Cincinnati, OH.

ONGOING PROJECTS:

Renee continues to research the following persons and topics:

- Henry De la Beche (1796-1855)
- Etheldred Benett (1776-1845) and other early women contributors in geology
- Important Geoheritage sites in the history of geology;
- The role of visualizations in the emergence of modern geological sciences.

One of her new areas of research is the history of geology within the State of Mississippi, USA, including

- Charles Lyell's (1797-1875) visit to an important Eocene fossil site in Jackson, MS,
- The history of geological surveys in the state (collaborator: Mississippi Office of Geology Director, David Dockery, III).
- The foraminiferal studies of Paul Dunn

SERVICE:

Renee served as President of the History of Earth Sciences Society in 2022. She also serves the Geological Society of America's History and Philosophy of Geology Division as webmaster, permanent representative to the Joint Technical Program Committee, and as an editor for the "Rock Stars" series published in *GSA Today*. At the Geological Society of America Connects 2022, she co-convoked a Pardee session on "Geoheritage" with Christina DeVera and William Andrews. At Mississippi State University, Renee serves as the Director of the Dunn-Seiler Museum.

John Diemer continued to serve as editor, and handled 21 volunteered papers, for the journal *Earth Sciences History* during 2022. He also served as Editor of the INHIGEO Annual Record (No. 54), which is available on the INHIGEO website. He published one paper in *Earth Sciences History*. He also participated in the 2022 INHIGEO meeting held in Les Eyzies, France.

- Diemer, J. A. 2022. *Earth Sciences History*. Volume 41, Number 2, pp. 229–449. Charlotte: History of the Earth Sciences Society. Editor's Introduction, p. iv.
- _____. 2022. *Earth Sciences History*. Volume 41, Number 1, pp. 1–228. Charlotte: History of the Earth Sciences Society. Editor's Introduction, pp. iii–iv.
- _____. (ed.) 2022. International Commission on the History of Geological Sciences (INHIGEO) Annual Record No. 54. Editor's Introduction, p. viii.
- _____. 2022. Plate 6 of The Geology of Russia: Product of a 'genius of combination'. *Earth Sciences History* 41(2): 264–284.
- _____. 2022. Murchison's assessment of the Donets coal fields. Abstract for the 47th Annual INHIGEO Symposium, Les Eyzies, France.
- _____. and Diemer, L., 2022. 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)). Published online in 2021 and in hard copy in 2022.

Greg Good retired from the Center for History of Physics at the American Institute of Physics in 2022, where he had been director since 2009. He is now a visiting scholar with the History Department, West Virginia University, Morgantown, WV. In 2022 Greg began organizing two book projects: Sir John F.W. Herschel: an Astronomer who Fell to Earth, and another on the history of solar-terrestrial interactions. A chapter by Greg will appear in 2023 in a Cambridge University Press volume, *A Companion to John Herschel*. The title of the chapter is "Herschel's Planet: Earth in Cosmic Perspective."

Cliff Nelson continued preparing 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. He has completed the text and documentation for the prologue and 11 chapters. One or two additional chapters, and the epilogue, remain to be written.

Steve Rowland contributed two chapters to the Geological Society of America Memoir 218, *The Evolution of Paleontological Art*, which was published in 2022: (1) "The Fritz Zerritsch/Erich Thenius suite of paleontological roll-ups and the pageant-of-life-through-time genre of

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paleontological art,” and (2) “Benjamin Waterhouse Hawkins and the early history of three-dimensional paleontological art” (co-authored with Robert Peck). He attended the INHIGEO conference in Les Eyzies, France, at which he presented a talk on the 1930 archaeological/paleontological excavation of Gypsum Cave, near Las Vegas, Nevada; he is currently working on a musical play about this excavation. He serves on the editorial committee of the *GSA Today* “Rock Stars” series, and he is vice president for North America of INHIGEO.

David Spanagel’s highlights for 2022 included the following: In June, David finally handed off the Treasurer responsibilities for the History of the Earth Sciences Society (HESS) to his recently elected successor Donald Goldstein. David had served two consecutive terms (and then some) as HESS Treasurer since first taking on that responsibility in January 2016. In October, he was selected to receive the Geological Society of America History and Philosophy of Geology Division’s 2022 *Gerald and Sue Friedman Award for Distinguished Service*. In November, David served as Chair for “Internationalism in the Advancement of Science and Environmental Justice in the Twentieth Century” session at the History of Science Society (HSS) annual meeting held in Chicago, Ill. In December 2022, David’s contribution to a multi-author text/reference volume was published: “Science in the Early Republic,” Chapter 3 in Timothy W. Kneeland, ed., *The Routledge History of American Science* (London: Taylor and Francis Group, 2023): 44–62.

UZBEKISTAN ANNUAL REPORT 2022

In January 2021, the construction of the Campus of the University of Geological Sciences (UGS), which is located in the Akademgorodok of Tashkent (Figure 1), was completed. The University of Geological Sciences (UGS) was established in 2020 according to the Decree of the President of the Republic of Uzbekistan No. PP-4740 dated June 8, 2020. The University consists of 6 subdivisions including the Institute of Geology and Geophysics named after Kh.M. Abdullaev (IGG), Institute of Mineral Resources (IMR), Institute of Hydrogeology and Engineering Geology, Institute of Geology and Exploration of Oil and Gas Fields, Institute of Advanced Training and Retraining of Geological Staff, and State Geological Museum which are located near the scientific library, academic building, and dormitory. The University has 2 faculties, 7 departments, and provides training in 6 areas of full-time and part-time bachelor's degree programs and 4 master's degree programs (<https://uzgeouniver.uz/ru/pages/uni-haqida>). A branch of the University of Pisa, (founded in 2021), in cooperation with the University of Pisa (Italy) (undergraduate degree in General Geology) is located on the Campus. Since 2022 the University has published its journal *Geological Bulletin of the University*.



Figure 1. Site of the University of Geological Sciences. On the left side is the Institute of Geology and Geophysics and the Institute of Hydrogeology and Engineering Geology; On the right side is the Institute of Mineral Resources and the Institute of Geology and Exploration of Oil and Gas Deposits.

Conferences:

The 36th International Geological Congress was held in India in March. 39 abstracts from Uzbekistan were published in the Proceedings, of which 13 are relevant to the history of geology:

1. Tsay, O.G. and Lordkipanidze, L.N. Electronic catalog of faults of the Middle, Southern Tien Shan and adjacent area as historical information resource.
2. Islamov, B.F. Modern trends in the mineral resources sector of the economy of the Republic of Uzbekistan.
3. Tokhirjonov, O.K. and Movlanov, J. Development of earth remote sensing and GIS technologies at geological exploration of the Republic of Uzbekistan.
4. Nurtaev, B.S. Tracing Palaeozoic suture zones in the crust of Uzbekistan: A two-ocean model?
5. Isoqov, M.U. High-technology mineral resources of Uzbekistan.
6. Akbarov, Kh. and Shukurov, N. The distribution features and geology of ore deposits in Tien-Shan.
7. Mirabdullaev, A.Kh. and Janiev, Kh. Actual trends in the development of geological science in Uzbekistan.

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8. Pirnazarov, M.M. and Maripova, S. Ore formation types of gold ore deposits in Uzbekistan.
9. Abdullaev, B.D., Okhunov, F., and Andreev, D. The role of science in solving hydrogeological, engineering-geological and geoecological problems.
10. Ismailova, D.A. The role of scientific and technical information to conducting hydrogeological, engineering geological and geo-ecological research.
11. Mirabdullaev, A.Kh. Reassessment and analysis of economic efficiency for the further investigation of gold mining manifestations of Western Uzbekistan.
12. Mirxamdorov, M.M. and Sharaxmedov Kh. Transition to world trends in reassessment and analysis of economic efficiency of gold mining manifestations in Western Uzbekistan.
13. Chunji Xue, Xiaobo Zhao, Xuanxue Mo, Nurtaev, B.S. and Pak, N. Geodynamic setting, metallogenic control and exploration strategy of the “Asian Gold Belt” in Tian Shan.

On November 17-18, 2022, a Republican scientific conference titled “Actual problems of geology, geophysics, petrology and ore formation” was held at the University of Geological Sciences (Tashkent). The conference was dedicated to the 85th anniversary of the Institute of Geology and Geophysics and the 110th anniversary of academician Kh.M. Abdullaev (1912-1962) (Figure 2). At the conference, 7 sections were organized, where the leading scientists and specialists from CIS countries (Kazakhstan, Kyrgyzstan, Russia, Tajikistan) and beyond (Australia, Spain, Canada, China) delivered their reports (off- and online formats). Publications from the conference include: (1) abstracts in *Conference Proceedings* (Ed. M.U. Isokov, V. 1. 352 p.; V. 2. 283 p.), (2) the book *Scientific Schools of Geology of Uzbekistan* (Ed. A.K. Nurkhodzhaev, 305 p., in Uzbek language), and (3) the works of Kh.M. Abdullaev titled *Genetic Correlation of Mineralization with Granitoid Intrusions* translated into the Uzbek language (311 p.).



Figure 2. Conference participants (conference hall, SFU library building, 17 November, Tashkent)

Among the reports in the conference proceedings relevant to the history of geology the following 25 were noted:

1. Divaev, F.K., Mirkamalov, R.H., Kayumova, S.M. The practical application of kh.m. abdullaev's teaching of petrometallogenic ranks in the facial formation of magmatic groups (V. 1. P. 21-23).
2. Sidorova, I.P., Sakhobidinov, R.I., Golovko, E.A., Shortsman, A.T., Eshimov, Sh.A. Development of geothermal energy in Uzbekistan (V. 1. P. 45-50).
3. Tsay, O.G. A new map of the density of faults of the Middle, Southern Tien Shan and adjacent territories (V. 1. P. 60-64).
4. B. Ezhkov, A.T. Kholiyorov, R.R. Rakhimov, U.Kh. Toshmetov industrial classification and genetic features of mineral deposits (V. 1. P. 190-195).
5. Munduzova, M.A., Sabirov, Kh. S. MDI (diffusion metal extraction method) – a proven method of studying deep-sea prospecting manifestations of mineral resources. (In memory of Nikanorov Georgiy Semenovich (1931-2009), one of the founders of introduction of nuclear physical methods in geological prospecting in Uzbekistan) (V. 1. P. 226-229).
6. Protsenko, V.F. Physical-chemical thermodynamics for and against the hypothesis of rudrogenesis in the Earth (V. 1. P. 244-249).
7. Tursunmetov, R.A., Zhuraev, Sh., Olovov, Kh., Sabirov, S.S. Identification of magmatic bodies associated with uranium mining as an innovative direction for evaluation of the potential uranogenicity of the area (V. 1. P. 290-294).
8. Tursunmetov, R.A., Nurkhodzhaev, A.K., Turapov, M.K. Search for hidden deep ore deposits in the light of modern exploration geodynamics (V. 1. P. 294-298).
9. Ummatov, N.F., Turapov, M.K., Rakhmatullaev, F.F. The new method for prognostication of mineral deposits (V. 1. P. 300-303).
10. Chunji Xue, Xiaobo Zhao, Bakhtiar Nurtaev, Nikolay Pak, Xuanxue Mo. Tian Shan deformed-zone hosted gold system (V. 1. P. 333-338).
11. Shen, P., Pan, H.D., Hattori, K., Cooke, D.R., Seitmuratova, E. Paleozoic and Mesozoic porphyry copper and gold deposits in the central Asian orogenic belt (V. 1. P. 339-343).
12. Gonchar, A.D., Djamalova, G.N. Hightism of lloeds in the range Paleozoic of Uzbekistan and its correlation significance (V. 2. P. 16-17).
13. Gonchar, A.D., Soatov, N.T. Finding of footprints of Late Cretaceous dinosaurs in the south-west Gissar (Uzbekistan) (V. 2. P. 17-19).
14. Nurtaev, D.B. Concepts on genesis of turquoise minerals (V. 2. P. 45-48).
15. Razikov, O.T., Nurtaev, B.Kh. Future of energy in hydrocarbon woods (V. 2. P. 57-60).
16. Stelmakh, A.G. Modern concepts on stratigraphy of Holocene places (V. 2. P. 73-76).
17. Sharipov, Sh.F. A brief review of the history of geological studies of salt lakes of the Central Kyzylkum desert (V. 2. P. 119-121).
18. Shukurov, N.E., Kodirov, O.Sh., Peinado, F.J.M., Shukurov, Sh.R., Turesebekov, A.H., Otaboeva, N.A., Yoshuzokov, Sh.G, Rashidov, N.I. The modern state of research on study of concentration of various forms of heavy metals, their influence on soil microorganisms and plants (V. 2. P. 176-184).
19. Shukurov, N.E., Kodirov, O.S., Martin-Peinado, F.J., Shukurov, Sh.R., Turesebekov, A.H., Otaboeva, N.A, Karamatova, G.A. Ecological-geochemical features of transformation and republishment of matter in waste of mining industry under conditions of technogenesis (V. 2. P. 184-188).

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20. Francisco José Martín Peinado, Obidjon Kodirov, Nosir Shukurov. Environmental geochemistry in mining industrial sites of Spain and Uzbekistan and future research collaboration plans (V.2. P. 191-192).
21. Magbulov, A.A., Usmanova, S.A. History of application of mathematical methods in geology (V. 2. P. 209-211).
22. Mirzaev, A.U., Nurboev, K.M., Gulyamov, D.R., Umarov, Sh.A., Istablaev, F.F. The Navoi Branch of the Academy of Sciences of the Republic of Uzbekistan: Experience and perspectives of geological branch development (V. 2. P. 234-239).
23. Mirzaev, A.U., Nurboev, K.M., Umarov, Sh.A., Istablaev, F.F. Academician's contribution of Kh.M. Abdullaev in creation and development of fundamental science in Uzbekistan: A scientific workshop in Khatirchi district of Navoi Region in Langar Mountain Massif dedicated to the memory of Academician Kh.M. Abdullaev (V. 2. P. 239-242).
24. Mirkhodzhaev, B.I. Umarov, Sh. A. The code of the main principles of ethical conduct (V. 2. P. 267-271).
25. Dunin-Barkovskaya, E.A., Umarov, A.Z., Bulina, N.V. 100-year pedagogical process of geological studies training in the National University: Integration with science and production (V. 2. P. 271-276).

PhD dissertation abstracts:

1. ABDULLAEV, A.Kh. Cosmogeological characteristics and conditions of placement of gold in the Malguzar mountains (Lyaylyagunsk mineralization zone), (04.00.03).
2. TULYAGANOVA, N.Sh. Structural and geodynamic conditions of formation of gold deposits of Chadak ore field (04.00.03).
3. KURBONOV, E.Sh. Change of engineering-geological conditions at underground development of mines (case study of mines Gujumsoy and Khodzhadik), (04.00.04).
4. Khusainov, Kh.A.. Soil layers of loess deposits and their magnetic properties (case study of deposits of Chirchik basin) (04.00.01).
5. FATULLAEVA, Z.M. Geodynamic conditions of formation of geological and structural positions of gold occurrences of Auminzatau-Beltau ore field (04.00.03).
6. RAKHMATOV, U.N. Geological structure, thermo-geochemical regime and oil-gas bearing capacity of the central graben of Bukhara-Khiva paleorift (04.00.07).
7. MOILIYEV, M.Sh. Material composition, peculiarities of location and prospecting features of the Central Bukantau gold deposits (04.00.02).

There are journals in Uzbekistan which publish scientific articles, news, chronicles, and information on the history of geology: (1) *Doklady of the Academy of Sciences of Uzbekistan* (founded in 1944), (2) *Geology and Mineral Resources* (published 6 times a year, founded in 1957 by Academician Kh.M. Abdullaev), (3) *Uzbek Journal of Oil and Gas* (1957-2022, published 4 times a year), (4) *Mountain Bulletin of Uzbekistan* (founded in 1997), (5) *Problems of Seismology* (issued 2 times a year; founded in 2019 by the Academy of Sciences of Uzbekistan); (6) *Bulletin of the University of Geological Sciences* (founded in 2022, GFU).

The journal *Geology and Mineral Resources* published 7 scientific articles relevant to the history of geology:

1. Turamuratov, I.B., Ezhkov, Yu.B., Bekchanov, Zh.I. Market of lithium in the world. Forecast evaluation of lithium resources in Uzbekistan and the main directions of geological exploration in the near perspective (N 2).
2. Turamuratov, I.B. Mineral and raw material base of magnesium raw in the world and Uzbekistan, its status and development prospects (N 4).
3. Nurkhodzhaev, A.K., Akhundjanov, R., Karimova, F.B. Problems of petrology and ore formation in the works of Kh.M. Abdullaev (N 5).
4. Mirkhodzhaev, B.I. Typification of ore formations in Uzbekistan (N 5);
5. Sadikova, L.R., Rahimov, A.D. Historical review and current state of stratigraphic studies of the Zirabulak-Ziaetdin Mountains (N 6).
6. Turamuratov, I.B. The mineral resource base of aluminum in the world and Uzbekistan, the state and prospects of expanding the raw material base of the future aluminum industry of the Republic (N 6).
7. Bakiev, S.A., Ibragimov, A.S., Mumindzhanov, T.I., Ismailov, B.Zh., Gafurov, T.A. Thermal waters of Uzbekistan and prospects for their use (N 6).

The *Bulletin of the University of Geological Sciences* published 2 scientific articles relevant to the history of geology:

1. Mirakbarov, M.M., Khaidarov, M.M. The contribution of the statesman Sharof Rashidov to the development of geology of Uzbekistan and the creation of gold mines (N 2).
2. Tsay, O.G. About the software product “Catalogue of faults of the Middle, Southern Tien-Shan and adjacent territories” (N 2).

Four scientific articles related to the history of geology were published in the journal *Mountain Bulletin of Uzbekistan*:

1. Akhmedov, N.A., Ezhkov, U.B. Redkometallic strategy of Uzbekistan (potential, growth, development prospects) (N 2).
2. Akhmedov N.A. Status and perspectives of geological research for almas in Uzbekistan (N 2).
3. Norbaev, S.I., Dzhuraev, A.O. A step in the development of the energy of the Republic of Uzbekistan (N 4).
4. Raupov, X.R. From the history of uranium mines (N 4).

News, chronicle, information:

The review of H.D. Ishbaev's “Conventional problems of metasomatism and genetic relationship to their ordination” in the monograph by M.S. Karabaev *Metasomatism and Mineralization of Central Kyzylkum* published in 2019 (Figure 3) was released (*Geology and Mineral Resources* - N 1).

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Figure 3. Cover page of the monograph by M.S. Karabaev entitled Metasomatism and Mineralization of Central Kyzylkum published in 2019.

The monograph *Handbook on Local Prediction of Ore Concentrations in the Earth's Crust* was published by the Institute of Mineral Resources (Figure 4). Author: V.F. Protsenko (Ed. B.F. Islamov) (Geology and Mineral Resources. - N 1).

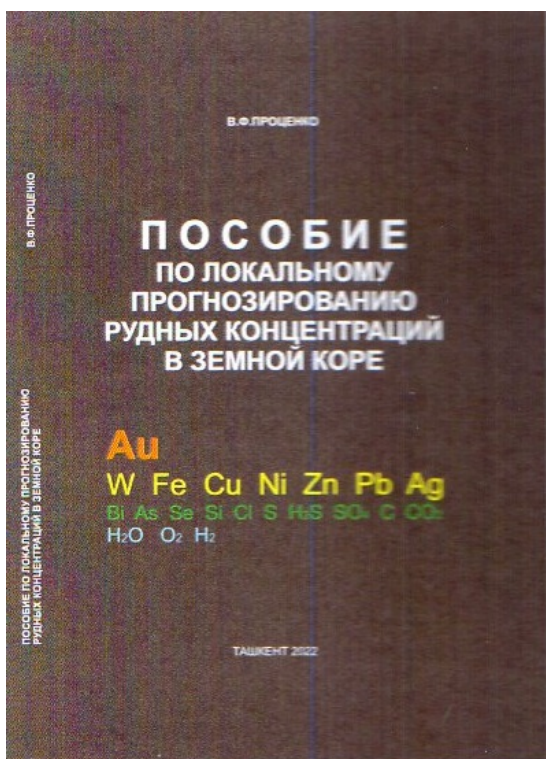


Figure 4. Cover page of the monograph by V.F. Protsenko entitled Handbook on local prediction of ore concentrations in the Earth's crust, published by the Institute of Mineral Resources.

Anniversaries:

On the 110th anniversary of the birth of:

KHABIB MUKHAMEDOVICH ABDULLAEV (1912-1962) – an outstanding geologist of world renown, a talented organizer of science in Uzbekistan, who contributed greatly to the unprecedented flowering of Uzbek science, with his active participation and leadership new institutes were created - IGIRNIGM, HYDROINGGEO, SAIGIMS (now State Enterprise "IMR"), the author of the great theoretical and philosophical work *Ore-Petrographic Provinces and Issues of Their Classification* (1961), organizer of the first united scientific-production cell in geological industry - thematic Kurama party, founder of Central Asian petrometallogenic school (*Geology and Mineral Resources* - N 4).

105th anniversary of the birth of:

ZINAIDA PETROVNA ARTEMOVA (1917-1998) – prominent expert, who contributed significantly to development of geological survey, author and co-author of 14 major geological survey reports, including extensive monograph on geology of Chirchik-Angren area, creator of geological maps at a scale of 1:200000, she participated in discovering a number of gold and polymetallic ore occurrences and deposits (*Geology and Mineral Resources*. - N 5).

On the 90th anniversaries of the births of:

DUNIN-BARKOVSKAYA ELEONORA ASHOTOVNA – DSc in geological-mineralogical sciences, author of 160 published scientific works, including 6 collective monographs, member of the Special Council for the defense of doctoral and candidate dissertations in IG&G and NUUZ in the specialties of geochemistry, mineralogy and crystallography (1980), member of Uzbekistan branch of All-Union Mineralogical Society (1956-1991), participant of International congresses and symposiums, marked by medals “Veteran of Labor” and “85th Anniversary of Uzbekistan National University named after Mirzo Ulugbek”, Honorary Diploma of the Presidium of ASU (*Geology and Mineral Resources*. - N 1).

KIM ALEKSIY IVANOVICH – one of the leading specialists-biostratigraphers of Uzbekistan, author and co-author of numerous reports and scientific articles, Chairman of the Scientific Council of the Kitab State Geological Reserve, Corresponding Member of the International Sub-Commission on Devonian Stratigraphy, Chairman of the Commission on Stratigraphy and Paleontology of the National Committee of Geologists of Uzbekistan, Chairman of the Silurian and Devonian section of the ISC of Uzbekistan, and awarded the title “Honored Explorer of Uzbekistan's Subsurface”.

ALLA ALEKSEEVNA KUSTARNIKOVA (1931-2019) – the well known scientist in the field of petrology, regional geology, paleovolcanism and ore-bearing magmatic formations, the DSc in geological-mineralogical sciences, the author of 150 scientific works, including 8 joint monographs, more than 80 publications in foreign and national editions, including, a member of the Joint specialized council of VAK RU, Academic Council of the Institute of Geology and Geophysics, was awarded by medal “Veteran of Labor”, honorary certificates of Presidium of

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Academy of Sciences of RUz and Institute of Geology and Geophysics (*Geology and Mineral Resources* - N1).

LORA NIKOLAEVNA LORDKIPANIDZE (1932-2022) – prominent scientist in the history of geology, DSc in Geology and Mineralogy, Honorary Senior Member of the International Commission on the History of Geological Sciences (INHIGEO) (2019) (see below).

80th anniversary of the births of:

ABDULLABEKOV QAXXORBOY NASIRBEKOVICH – DSc in geological-mineralogical sciences, corresponding member (1994) and full member (2000) of the Academy of Sciences of the Republic of Uzbekistan, the author and co-author of more than 400 scientific works, including the monograph *Electromagnetic Phenomena in the Earth's Crust* in two languages: Chinese (Beijing, 1990) and English (Netherlands, 1991), and awarded the Order “Dostlik” (2019), Medal of the Institute of Earth Physics and Honorary Diplomas of the Academy of Sciences, TDTU, Davgeolk, as well as the Ministry of Emergency of the Republic of Uzbekistan and Russia (Problems of Seismology. - N 2; Geology and Mineral Resources. - N 6).

ERGESHOV AZAT MADIEVICH – leading researcher of State Institution “Institute of Mineral Resources” of Goskomgeologia of the Republic of Uzbekistan, PhD in geological-mineralogical sciences, author of more than 70 scientific articles (Geology and Mineral Resources. - N 5).

IRGASHEV YUOLDOSHBOY IRGASHEVICH – DSc in geological-mineralogical sciences, author of 130 scientific works, including 4 monographs, 4 textbooks (in the national language), 2 Russian-Uzbek explanatory dictionaries on oil and gas geology and industry, 2 popular science books, 24 normative and practical documents (instructions, regulations, manuals), the winner of the national competition “Author of the best textbook and educational literature of the year”, and awarded by the Diploma of III degree of the Ministry of Secondary Specialized National Education and the Fund "TALANT" (Geology and Mineral Resources. - N 6).

70th anniversary of the birth of:

PETUKHOV OLEG FEDOROVICH – DSc in Technical Sciences, author and co-author of more than 40 copyright certificates and 13 patents of the Republic of Uzbekistan, 9 books, including 2 textbooks: *Oxidation-reduction Processes in Leaching* (2005), *Metallurgy of radioactive metals* (2012), *Handbook - Workshop (Ore Preparation - Enrichment - Hydrometallurgy - Geotechnology)* (2012), *Oxidation-Reduction Processes in Metallurgy* (2013), *Uranium* (2014), *Magic World Of Great Inventions* (2016.), *Buyuk ikhtirolarning sehrli olami* (2018), *Rhenium* (2020), *Physical and Colloidal Chemistry for Metallurgical Specialties (Theory - Practice - Calculations)* (2021); marked with Badges “Mining Glory” of II and III degree, Gold Medal of World Intellectual Property Organization (WIPO) “For Invention” (*Mountain Bulletin of Uzbekistan* - N 3).

65th anniversary of the births of:

SANAKULOV KUVONDIK SANAKULOVICH – Hero of Uzbekistan, DSc in Technical Sciences, Professor, full member of Turan Academy of Sciences, academician of Eurasian Academy of Mining Sciences, full member of International Academy of Sciences “Nature and Society”, honorary professor of Vienna University (Austria), author of 400 scientific works, including more than 40 monographs, textbooks, manuals and other books, as well as more than 40 patents and inventor's certificates, and awarded with the commemorative plaques “5, 10, 15, 20, 25, 30 years of independence of Uzbekistan”, “Friendship” (2004) and “For Disinterested Service” (2011) Orders, “Gold Star” Medal (2015) who received the title of “Hero of Uzbekistan”, the honorary title “Honored Worker of Industry of the Republic of Uzbekistan” (2009), full Cavalier of the industry breastplate “Miner’s Glory”, Senator of the Oliy Majlis of Uzbekistan (*Mountain Bulletin of Uzbekistan* - N 3).

NURTAEV BAKHTIER SAIFULLAEVICH – a leading specialist in geophysics and geodynamics, Deputy director for science at the Institute of Geology and Geophysics, PhD in Physics and Mathematics, member of the American Geophysical Union, General secretary (1998), Vice-president of the National Committee of Geologists of Uzbekistan (2008), the executive secretary of the journal “Geology and Mineral Resources”, the participant of the international projects of UNIDR UN - Radius, INTAS, the German Committee of UNIDR, UN NATO, USAID, UNCRD, congresses (31st IGC, Rio de Janeiro, 32st IGC, Florence), symposiums and conferences (USA, France, Italy, Japan, Belgium, etc.), the author and coauthor of 2 textbooks, more than 180 scientific works and monographs, certificates of authorship for databases and software products, and awarded with the memorable sign “Uzbekiston Mustakilligining 25 yil”.

60th anniversary of the births of:

SIDOROVA IRINA PETROVNA – a famous scientist in the field of geophysics, Head of Laboratory “Structure of Lithosphere” of Institute of Geology and Geophysics, DSc in geological-mineralogical sciences, participant of the International program MAGRM-IAGOD-International Association of the Genesis of Ore Deposits within UNESCO (1997-2001), coordinator of international research on the program “Darius” (2010-2017), author of 100 scientific works, including 5 monographs, copyright certificates for databases (*Geology and Mineral Resources* - N 3).

TŶKHTAEV KABUL MUXAMMADIYEVICH – one of the qualified specialists, who made his worthy contribution to the development of oil and gas and geological industry, a leader in the field of oil and gas field geology, well drilling, field operation and hydrocarbon processing, under whose direct supervision new oil and gas fields were discovered (New Kyzylcha, Kumchuk, North Tandyrecha, Feruza, Dekhkonabad), the author of more than 10 scientific articles, and awarded with the “Prize of the Oliy of Uzbekistan”, the Order of “Labor Glory” (2018) and “Serviced Industry in the Republic of Karakalpakstan” (2022) (*Geology and Mineral Resources* - N 6).

TSAY OKSANA GENNADIEVNA – specialist in the field of creation of geological and geophysical databases and 3D models in ArcGIS environment, author and co-author of more than 40 scientific articles, including the book *Catalogue of Faults of the Middle, Southern Tien Shan and Adjacent Territories* (2017, 114 p.), author certificates for databases (4) and software products

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(2); member of INHIGEO (2019), disciple and continuer of the Doctor of geological and mineralogical sciences of L.N. Lordkipanidze on the history of geology.

Losses to Science:

LORA NIKOLAEVNA LORDKIPANIDZE (1932-2022) – a prominent scholar in the history of geology, DSc in geological-mineralogical sciences, Honorary Member of the International Commission on the History of Geological Sciences (INHIGEO) (2019-2022), recipient of the Khabib ABDULLAEV Foundation, author, co-author and editor of over 200 works, including, including 30 monographs, books, reference books, a certificate of authorship for a database (2018), participant of international congresses, symposiums and meetings and was awarded the Order of Dustlik (2003), medals "Veteran of Labor" and "50th Anniversary of Republican Academy of Sciences", Honorary Diploma of Presidium of Academy of Sciences of the Republic of Uzbekistan and boards of All-Union and Republican societies "Znanie", Prize and Laureate Diploma of Academician Khabib ABDULLAEV Foundation (2011) (*Geology and Mineral Resources*. - N 3).

YUSUPZHONOV ANVAR YUSUPOVICH (1947-2022) – famous scientist and geophysicist of oil and gas sector of Uzbekistan, PhD in geological-mineralogical sciences (*Geology and Mineral Resources* - N 4).

ALEXANDR ALEXANDROVICH KOLDAEV (1939-2022) – a talented scientist, one of the lithologists who studied weathering crusts of Uzbekistan and Cuba, DSc in geological-mineralogical sciences, author and co-author of 200 published articles, including theses and four monographs, 38 scientific thematic and production reports dedicated to the study of weathering crusts of Uzbekistan, the distribution of rare and dispersed elements in them and nickel laterites of Cuba; and was awarded the medal “Veteran of Labor”, diplomas of the Presidium of the Academy of Sciences of the RUz, IG&G Goskomgeologia of the RUz (*Geology and Mineral Resources* - N 6).

Report for Uzbekistan prepared by B. S. Nurtaev and O. G. Tsay

APPENDIX A: INHIGEO AFFILIATED ASSOCIATIONS

(Current as of July 2023)

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)

Addresses are provided in the ‘INHIGEO Members’ listing, along with an asterisk (*) before the last name and the designation ‘HonSrMbr.’ Listed alphabetically by last name.

Professor Kennard B. Bork, USA
 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 2022

Dania Achermann, Germany (O)
Patricia Bobeck, USA (O)
José Eduardo Ferraz Clemente, Brazil (A)
Beris Cox, UK (A)
Khallaf El Ghalbi, Morocco (O)
Dezső Gurka, Hungary (O)
HU Weiwei, China (A)
Alessandro Iannace, Italy (O)
JIAO Qi, China (O)
Sandra Klos, Austria (A)
Salomon Bernard Kroonenberg, Netherlands (O)
LIU Niankai, China (A)
Victor Monnin, France (O)
Daniele Musumeci, Italy (O)
Zdeňka Petáková, Czech Republic (A)
Jelle Reumer, Netherlands (O)
Laura Valdivia-Moreno, Mexico (O)
Philippe Le Vigouroux, France (O)

Addresses are provided in the ‘INHIGEO Members’ list (see Appendix D).

O = Ordinary Membership; A = Associate membership

APPENDIX D: INHIGEO MEMBERSHIP

(as of December 31, 2022)

(O) Ordinary Member

(A) Associate Member

(HSM) Honorary Senior Member

Bottom line indicates national affiliation.

ALGERIA

Moulley Charaf Chabou
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Institute of Architecture and Earth Sciences
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Algeria

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ALGERIA (A)

ARGENTINA

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ARGENTINA (O)

Professor Florencio G. Aceñolaza
Bartolomé Hernández 66
Yerba Buena
Tucumán.
Argentina
Email: facenolaza@gmail.com
ARGENTINA (O)

Professor Eduardo g. Ottone
IDEAN – Instituto de Estudios Andinos Don
Argentina
Email: ottone@gl.fcen.uba.ar
ARGENTINA (O)

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ARGENTINA (O)

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APPENDIX E: INHIGEO MEMBERSHIP NOMINATION FORM



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Country: _____

Birth date: _____

Address: _____

Telephone: _____

E-mail: _____

Education (with dates):

Positions held (with dates):

Areas of interest / expertise in geosciences (*e.g.* sedimentology, vulcanology):

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)

PLEASE SEND, PREFERABLY BY EMAIL TO THE INHIGEO SECRETARY GENERAL:

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