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John Diemer, Editor
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EARTH SCIENCES HISTORY

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NOTES ON CONTRIBUTORS

Stefano Branca is a senior researcher at the National Institute of Geophysics and Volcanology (INGV), and since 2019 is Director of Etnean Observatory of INGV in Catania. His research focuses on the geological and volcanological study of the prehistoric and historical eruptions of Sicilian active volcanoes, as well as on the historical-volcanological analysis of the impact of effusive eruptions on the population and territory. He is the author of over eighty publications in national and international journals. He also undertakes research on the retrieval, cataloging and valorization of the iconographic and photographic heritage of Italian volcanoes.

Kristan Cockerill is a Professor in the Department of Interdisciplinary Studies at Appalachian State University. Her research focuses on the intersections of culture and science, including how various media shape perceptions of waterways and water management. She spends a great deal of time contemplating the Upper Mississippi River!

Annarita Franza, PhD, is a postdoctoral researcher in the Department of Earth Sciences of the University of Florence. She is an historian of science and her main research focus is on the history of geomineralogical collecting.

Luigi Ingaliso is Associate Professor of History of Science and Technology (SDS: M-STO/05) at the Department of Humanities of the University of Catania. His main research interests lie in the history of philosophy and science of the Early Modern Age (mainly on subjects strictly connected to the history of Earth, astronomy, medical science, dynamics, and fluid dynamics). He has spent the last few years extending his research field, with the addition of a series of studies concerning the history of volcanology, and the history of mathematics in Italy during the nineteenth and twentieth centuries.

Alice Kim is Information Coordinator for the Hawaii Groundwater and Geothermal Resources Center, University of Hawaii at Manoa. For HGGRC, Alice assists with developing research articles about Hawaii's geothermal exploration and development and manages digitization and HGGRC's community outreach. Alice's research interests include Hawaii's history of using geothermal resources.

Nicole Lautze is Director and Faculty Researcher for the Hawaii Groundwater and Geothermal Resources Center, University of Hawaii at Manoa. As Principal Investigator, she manages the Hawai'i Play Fairway project, which is creating an updated geothermal resource assessment for the State of Hawai'i. As co-Investigator, she manages the groundwater chemistry team for 'Ike Wai: Hawai'i EPSCoR, a multidisciplinary water resource research project. Nicole's research interests and experiences include physical volcanology, petrology, groundwater and geothermal resource assessment, and carbon storage. She strives to involve her students and employees in her research and has mentored more than thirty undergraduate and graduate students.

Barbara A. R. Mohr studied geology and palaeontology at Bonn University, Germany and received her PhD degree in 1983 in palynology. After research positions at the Free University Berlin and ETH Zurich (Switzerland), she worked at Humboldt University and at the Museum of Natural History Berlin for more than two decades as a curator of the Mesophytic fossil plant collection. During these years she taught courses in palynology, palaeobotany and museology. Her research interests are on natural history collections, history of women in science and popularisation of geosciences. Lately her interests have broadened and include the interplay between descriptive sciences and the arts. She retired in June 2018 and now enjoys being involved in the arts.

Daniele Musumeci is a PhD student in Hermeneutics, in the Department of Humanities, University of Catania, Italy. His area of research focuses on the history of volcanology and both the history and philosophy of geosciences in the twentieth century. In 2018, he was awarded a grant from AIV-IAVCEI (Associazione Italiana di Vulcanologia-International Association of Volcanology and Chemistry of Earth's Interior).

Carmela Petti, PhD, is the Curator of the Royal Mineralogical Museum of Naples. She is responsible for access to collections in the Museum as well as teaching, research, public education, and continued development of the Earth Sciences collections at the University of Naples "Federico II".

Giovanni Pratesi, PhD, is an Associate Professor of Mineralogy at the University of Florence, where he also teaches Mineral Planetology and Scientific Museology.

Edward P. F. (Ted) Rose has contributed articles and so 'Notes' to six previous issues of *Earth Sciences History*. He studied at the University of Oxford and then taught geology at the University of London whilst serving for most of this time as an officer in the British reserve army. Author or co-author of over 140 journal articles or book chapters that contribute to an understanding of geology's military applications, he was an editor for (and a major contributor to) books on historical aspects of military geology published by the Geological Society of London in the years 2000, 2012 and 2019, and by Springer Nature in its series 'Advances in Military Geosciences' in 2020.

Volkan Sarıgül graduated from Istanbul Technical University (B.Sc., M.Sc.) and Texas Tech University (Ph.D.) with degrees in geology. His academic career began with micropaleontology; then he became the first, and so far the only, Turkish paleontologist who obtained a doctoral degree in dinosaur paleontology. While trying to make a living by working in a few part-time jobs, he is maintaining his efforts to reveal primarily the Mesozoic vertebrate fossils of Turkey, and publishing in a variety of other research fields including the history of geology and paleontology in Turkey.

Tom Sharpe was formerly Curator of Palaeontology and Archives in the National Museum of Wales. He is a former Chair of the History of Geology Group of the Geological Society of London and has interests in the geological maps of William Smith; the history of the geological exploration of Antarctica; and the life of the fossilist Mary Anning of whom he has recently published a biography, *The Fossil Woman* (2020, Dovecote Press).

Gregory F.W. Todd holds a BA degree in History from Yale College and an MSc degree in History from the University of Edinburgh. His research interests include the history of geology and the history of philosophy in the eighteenth century.

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Format for References

Books

- Bullen, K. E. and Bolt, Bruce A. 1985. *Introduction to the Theory of Seismology*. 4th edn. Cambridge: Cambridge University Press.
- Good, Gregory A. (ed.). 1998. *Sciences of the Earth: An Encyclopedia of Events, People, and Phenomena*, 2 volumes. New York and London: Garland Publishing Inc.
- Suess, Eduard, 1904–1924. *The Face of the Earth (Das Antlitz der Erde)*, translated by Hertha B. C. Sollas, 5 volumes. Oxford: Clarendon Press.

Articles in journals

- Mattes, Johannes. 2013. Alexander Von Mörk and Poldi Fuhrich: The conception of heroes in cave exploration in the early twentieth century. *Earth Science History* 32(1): 132–149, doi: 10.17704/eshi.32.1.8403887w11p5j125.

Articles or chapters in books

- Branagan, D. F. 1998. Geological periodization. In: *Sciences of the Earth: An Encyclopedia of Events, People, and Phenomena*, edited by Gregory A. Good, Volume 2, 306–314. New York and London: Garland Publishing Inc.

Unpublished thesis or dissertation

- Wolter, John A. 1975. The Emerging Discipline of Cartography. PhD dissertation, University of Minnesota.

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