

# JSR

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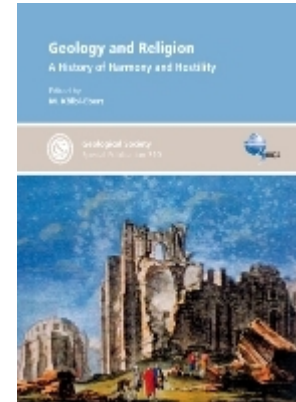
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***Geology and Religion — a History of Harmony and Hostility***, edited by M. Kölbl-Ebert, 2009. Geological Society Special Publication 310. The Geological Society of London, The Geological Society Publishing House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath, BA1 3JN, United Kingdom. Hardback, 368 pages. Price GBP 95.00; USD 190.00 (fellow price GBP 47.50, USD 95.00; corporate affiliates price GBP 76.00; other societies' price GBP 57.00; USD 114.00). ISBN 978-1-86239-269-4.



The thirty-two papers collected in this book were first presented in July-August 2007 at the annual conference of the International Commission on the History of Geological Sciences (INHIGEO) in Eichstätt (Germany). The book editor, who opens the book herself with a historical perspective on geology and religion, has grouped the various papers in three sections: Mythical Approaches to Independent Geological Expertise,” “Geology and Religion Drifting Apart,” and “Creationism.” She emphasizes that geology and religion have evolved through time, often intimately intertwined and mutually influencing one another, which makes an independent consideration of both domains a challenge for historians of science. This conclusion is taken up by D.R. Oldroyd by comparing the historiographies written about the work of Jean-André de Luc by Freethinker Charles Gillispie, Anglican Martin Rudwick, Calvinist François Ellenberg, and atheist G. Gohau. Oldroyd concludes that the theological dimensions of the history of geology are part of the tapestry of the early phase of science history, when the domains of theology and natural philosophy overlapped. It thus appears that the way in which one writes on the history of geology is influenced by the author’s own theological commitment.

L.F. Mazadiego et al. deal with Inca opinions on the cosmos, where water played such an important role that a hydrogeological model was developed, surprisingly similar to such models in contemporaneous (17<sup>th</sup> century) Europe. The sophisticated irrigation system of the Incas demonstrates some understanding of geomorphology.

P. Barbaro compares Taoist, Shintoist, Buddhist, and Neo-Confucianist beliefs, philosophies and scholarly opinions in pre-Meiji Japan (8<sup>th</sup> to mid-19<sup>th</sup> century), based on legends, traditions, comparison of fossils, volcanic eruptions, mountain shapes, and earthquakes. A fascinating picture on the origin of the Earth and its geological features is thus obtained.

J.A. Norris emphasizes 16<sup>th</sup> century pastoral sermons of Johann Mathesius from Joachimsthal (Bohemian Erzgebirge, Czech Republic), who demonstrated an extensive knowledge of metals, minerals, and mining, and who described the “gur theory” (gur is a clayey, viscous sulphurous mineral liquid, associated with mineral generation). Mathesius explains this all in the framework of God’s providence, and thus inspired his hard-working congregation.

A. Udías discusses earthquakes on the Iberian Peninsula (Malaga 1680, Lisbon 1755) that were initially widely seen as God’s punishment of sinful people but that became later, during the period of Enlightenment, more and more viewed within the contrast of supernatural versus natural causes (according to Aristotelian doctrines).

K.V. Magrudes tackles the fascinating topic of 17<sup>th</sup> century “idiom” of the six-day creation and the pictorial representations of various “Theories of the Earth.” Because the general public had, as a rule, intimate knowledge of the Bible, leading authorities allowed various speculations, which are reviewed.

G. Godard highlights the obscure and revisionist work of the Provençal savant N.F. de Peiresc, who reinterpreted an enormous fossil tooth, considered earlier by St. Augustine to be of a giant, as coming from an elephant. Such a reinterpretation seems nothing remarkable now, but at the time of the inquisition process against Galilei it was dangerous to contradict a Church father.

F. Luzzini summarizes cultural and religious interpretations of the scientific debate on fossils by the Italian Vallisneri, who made drawings in his correspondence with outstanding foreign natural philosophers in the 18<sup>th</sup> century. He arrived at a theory that contradicted a single biblical Deluge; this was, obviously, unwelcome to the Church. Therefore Vallisneri carefully applied self-censorship.

M.S. Pinto et al. review an end-18<sup>th</sup> century discussion on the age of the Earth in Portugal by A.F. Castrioto, who drew on Edward Gibbon and Richard Watson who, respectively, defended ages of 14.000 and 6.000 years for the Earth. Castrioto offered non-original and selective ideas supporting a younger earth, partly to “redeem” him from past religious censorship. Nevertheless he was the first in Portugal to raise questions on this topic.

A. Candela compares the 18<sup>th</sup> century trend in Italy to carry out field studies in volcanic (basaltic) Alpine outcrops and compare them with Werner’s Neptunian theory on the origin of basalts and with a Great Flood that might explain the Alpine morphology.

C. Schweizer focuses on the religious belief (in particular with respect to the Biblical Flood) of the three Swiss protestant natural philosophers, J.J. Scheuchzer, A. von Halle, and J.-A. de Luc, and the way this influenced their scientific results.

M.J.S. Rudwick compares concepts about the Biblical Flood and the geological deluge, for which there are theological and geological indications, respectively. From the 18<sup>th</sup> century onwards, it became increasingly clear that both floods cannot be the same. A solution was found with the hypothesis of glaciations, which explain many of the geologic indications of the putative deluge.

C.L.E. Lewis discusses the theories of the Earth developed, respectively, by Lord Bute, who was a friend and teacher of King George III as well as British prime minister, and by James Parkinson, who was a medical doctor, a co-founder of the Geological Society of London and author of the first paleontological work in Great Britain. Both admired the work of J.-A. de Luc and largely followed his binary earth theory which allowed them to retain their religious integrity, although both struggled to reconcile observed geological facts with the revealed miraculous nature of the Biblical Flood.

P. Taquet emphasizes that Cuvier, rather than accepting without comments the Biblical Flood as the last catastrophe, separated from this Biblical text everything that was not linked to natural history and only built on facts.

A. Udías reviews the seismological work carried out by Jesuits both in the 16<sup>th</sup> to 18<sup>th</sup> century (when it was strongly linked with general educational activity), and in the 19<sup>th</sup> to 20<sup>th</sup> century, when a worldwide network of seismic stations was established.

J. Zhang & D.R. Oldroyd summarize the cultural and social events in China under Mao Zedong in the 20<sup>th</sup> century, and conclude, using the activities of a Chinese glaciology study group as an example, that both the “Great Leap Forwards” and the “Cultural Revolution” considerably influenced Chinese science and technology. Maoism had, in some respects, the nature of a civil and nationalistic form of religion.

M. B. Roberts exhaustively reviews various angles of Adam Sedgwick’s attitude towards religion and geology, using interactions between him and some fellow Anglican clergymen.

D. Branagan reviews a “wide selection” of Australian clerical geologists of different Christian denominations, mainly in the 19<sup>th</sup> century, and concludes that – under changing social and professional geological conditions – no conflict arose between the belief in a divine being and the pursuit of geology.

W. Mayer summarizes the varied life of the reverend Charles Wilton in New South Wales, who focused on natural sciences, in particular geology, and clerical duties. He made his views widely known through publications and lectures, met resistance and atoned for his early errors by conscientious fulfillment of clerical duties and communication of his work in natural sciences.

G.K. Viohl reviews the life and work of Franz X. Mayr, the spiritual father of the Jura-Museum in Eichstätt (Germany).

Eugen & Ilse Seibold contrast the lives of Herman Abich and Heinrich Barth, both from a bourgeois background and both with a strict religious education. Abich became the geological “father of the Caucasus”; Barth made an extensive and dangerous expedition into North Africa. Both succeeded through drawing on their Christian religion.

Susan Turner reviews “dinosaur man” Friedrich von Huene, of pious evangelical, aristocratic Baltic decent and with strong personal beliefs that are reflected in his scientific work and Christian publications. He survived the Third Reich unscathed but failed in visiting Australia, his strong hope all his life.

H.S. Torrens casts light on the work of James Buckman, who got involved in the initial controversies emanating from Darwin’s evolutionary work, from which he personally suffered.

Marianne Klemun contrasts Franz Unger and Sebastian Brunner.

Ezio Vaccari casts light on the way in which geology and Genesis were evaluated and contrasted in Italy during the 19<sup>th</sup> century. This reveals the level of geological practice and integration between scientific work and theological opinions.

K.B. Bork puts the thinking and work of Elie Bertrand, a Swiss naturalist and protestant in the 18<sup>th</sup> century in the limelight, as a result of which his strengths and shortcomings are revealed.

D.A. Young analyses the way in which the great antiquity of the earth was documented by Herman Baverinck, the premier Dutch reformed theologian in the second half of the 19<sup>th</sup> and the first half of the 20<sup>th</sup> century. His influence through his writings is significant still today.

S.O. Moshier et al. review the process of including geology in the curriculum of the evangelical Wheaton College, Illinois, since its foundation in 1860.

R.A. Peters, in a very clear review, analyses the various “brands” of creationism.

M. Ostermann puts the Catholic doctrines on matters pertaining to “Genesis and geology” in perspective.

Finally, M.B. Roberts does the same for the Anglican opinion.

Editing this book must have been a “tour de force,” which was successfully executed by Kölbl-Ebert in a surprisingly short time (August 2007-March 2009). Her subdivision of the book is arbitrary; many other subdivisions would have been possible with so wide a range of discussed topics and themes. However, it serves the purpose of presenting a “line of commonality” between papers on a wide range of topics.

What fascinated me in particular was the glimpse thrown on exotic areas of activity and ways of thinking for instance in the Peru of the Incas, in pre-Meiji Japan, and in Mao Zedong’s communist China. These are topics that are not commonly broached by western geologists. Also revealing are the contrasting proto-geological approaches in various parts of 17<sup>th</sup> to 18<sup>th</sup> century Europe, ultimately converging in a series of philosophies and schools of thinking in 19<sup>th</sup> century Europe, but also in Australia and North and South America. Evolution, starting with some proto-geological thinking, and fully blossoming in the publications of Darwin, subsequently resulted in various Christian attitudes towards “the problem of Genesis and geology.” This is illustrated from various points of view. The topics of “Creationism” and “Intelligent Design” that gain worldwide attention nowadays are clearly presented from various angles in several chapters.

In short, a fascinating book with provocative contributions on unusual topics that have a bearing on the development of the earth sciences, including sedimentology. The book is warmly recommended to all natural scientist interested in history and in particular to geologists that want to widen their outlook on their chosen profession.

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