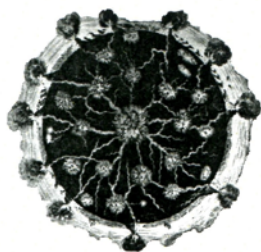
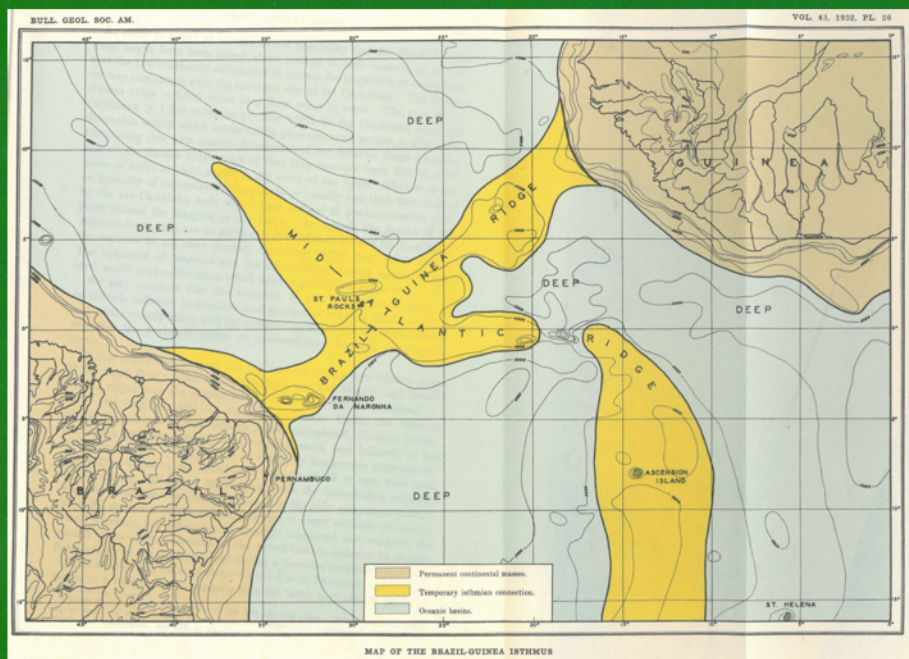


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HESS logo: Athanasius Kircher's (1602–1680) *Systema ideale prophyllaciorum*—imagined view of subterranean fires and surface volcanoes, from *Mundus subterraneus*, 1678, Vol. 1, between pp. 186 and 187.

Front-cover image: The Brazil–Guinea isthmian link, according to Bailey Willis, 1932.

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EDITOR'S INTRODUCTION

DAVID R. OLDROYD

The paper by **Claudia Schweizer** and **Johannes Seidl** discusses the holistic views of Ami Boué concerning the Earth and geological studies of the planet. Readers may recall the words of Archibald Geikie in his *Founders of Geology* (1895):

Werner's mineralogy embraced the whole of Nature, the whole of human history, the whole interests and pursuits and tendencies of mankind. . . . He would contrast the mountainous scenery of the granites and schists with the tamer landscapes of the sandstones and limestones. Tracing the limits of these contrasts over the surface of the area of Europe, he would dwell on their influence upon the grouping and characteristics of nations. He would show how the development of the arts and industries of life had been guided by the distribution of minerals, how campaigns, battles, and military strategy as a whole, had been dependent on the same cause. The artist, the politician, the historian, the physician, the warrior were all taught that a knowledge of mineralogy would help them to success in their several pursuits . . .

By such continual excursions into domains that might have been thought remote enough from the study of minerals, and by the clear and confident method, playful vivacity and persuasive eloquence with which they were conducted, Werner roused his hearers to a high pitch of enthusiasm. No teacher of geological science either before or since has approached Werner in the extent of his personal influence, or in the breadth of his contemporary fame.

Ami Boué was, via Robert Jameson in Edinburgh, a product of the Wernerian tradition. And while the direct ideas of Werner himself are rather little known (at least to Anglophones), since they mostly lie hidden in his surviving lecture notes in Freiberg, with the help of Schweizer and Seidl, we can see—from an analysis of the cosmopolitan Boué's work—what a Wernerian approach to 'geognostic' studies might look like in practice. Boué's holism even extended to an attempt to provide a geological map of the whole Earth (in 1843). Schweizer and Seidl reproduce two versions of this rather little-known cartographic accomplishment and discuss how the map was compiled.

It is well known that for many years the parallelism of organisms on opposite sides of oceans was explained by the former existence of land bridges or 'isthmian links', spanning what are now large stretches of water. This theory was proposed by Charles Schuchert and Bailey Willis in an attempt to explain phenomena that were also explicable in terms of Wegener's 'drift' hypothesis. **Allan Krill** has discussed the isthmian links theory in a recent e-book that he has privately published, and claimed that Schuchert and Willis deliberately 'fudged' their data and their evidence. I was so taken by his arguments that I invited him to give them in greater detail in the paper that is offered here. If Krill's arguments are accepted, they would go a long way towards accounting for geologists' reluctance to adopt Wegener's hypothesis in the light of what seemed a satisfactory alternative advocated by two eminent geologists. So the isthmian links model was regularly taught in geology classes up to the 1950s and early '60s.

Debra Lindsay provides a paper on the history of palaeobotany in North America, a topic on which she has written previously in *Earth Sciences History*. She focuses on debates between Othniel Marsh and Lester Frank Ward, which concerned the stratigraphic position of the 'Potomac Formation' in Virginia, for which arguments could be found for assigning it to either the Jurassic or the Cretaceous. Marsh, using animal fossils, favoured a Jurassic determination. His junior, Ward, favoured the Cretaceous, using palaeobotanical evidence. At the time, the general opinion sided with the more influential Marsh, but Lindsay shows that in the longer run Ward's arguments prevailed. I had previously encountered Ward when

teaching a course on the history of Darwinism, where he figured as an exponent of the ‘liberal’ version of Social Darwinism. It was gratifying to know, then, that he had sound scientific accomplishments preceding his later sociological work!

Turning northwards, we have a paper by **Howard Plotkin** and **Kimberly Tait** about studies of a circular structure up in the Canadian subarctic, which was thought by the prospector F. W. Chubb to have had a volcanic origin and might be a source of diamonds from a diatreme. Subsequently, it was interpreted by V. Ben Meen, of the Royal Ontario Museum in Toronto as an impact crater, even though no meteoritic materials were located. Later fieldwork proved Meen correct and led to the discovery of other meteorite craters on the Canadian Shield and the development of criteria by which they could be authenticated. The ‘Chubb Crater’ was found to have a depth and diameter that fitted well on the so-called Baldwin Curve, and supported the relationship between the meteoritic origin of lunar craters and terrestrial impact structures. The controversy over the crater’s origin is reminiscent of debates about the Meteor Crater in Arizona and the Riess Crater in Germany, but was not so heated!

Often referred to by Anglophones, but rarely read, are two letters from Giovanni Arduino to Antonio Vallisnieri Jr (published in 1760) about certain strata in the pre-Alps of Veneto, in which a four-fold division of strata was suggested for the region (Primary/Primitive; Secondary; Tertiary; and ‘Quaternary’¹). These two letters are presented in *Earth Sciences History* in fluent translations by **Theodore Ell**, the first appearing in the present issue while the second will be published in 2012. Ell describes the circumstances in which the letters were composed and published and gives an idea of Arduino’s character and work habits. The first letter was chiefly about his fieldwork in Valdagno, near Recoaro, and suggests that he was initially approaching his studies from the perspective of the study of discrete rocks and minerals, caves and mineral waters, and via chemical analysis (which was insufficiently developed to provide much stratigraphic insight). The fourfold stratigraphic subdivision, with the suggestion that it had a wider application than Veneto, appeared in the second letter. However, in 1758, Arduino had prepared a manuscript profile of the strata of Valdagno, which foreshadowed the fourfold division. This well-known diagram is reproduced here, together with a translation of its difficult-to-decipher text below. Ell’s paper is usefully complemented by one of our book reviews, in which **Gian Battista Vai** discusses in some detail a recent edition of Arduino’s correspondence, edited by Ezio Vaccari. This review adds further information about Arduino’s theoretical views and terminology.

This issue is completed by a sympathetic obituary by **Kenneth Taylor** of Alexander M. Ospovat, who was for long the major authority on the ideas of Abraham Werner in the Anglophone world; and by seven book reviews.

¹ The term ‘Quaternary’ was not, *per se*, introduced by Arduino himself.