

Anniversaries

Great Exhibition 170 years ago



GEOLOGY IN THE CRYSTAL PALACE GREAT EXHIBITION OF 1851

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Industrial trade fairs since the early 19th century had generally been national events related to innovations, technologies, and productions in specific fields such as agriculture, textiles, metallurgy, and others. *The Great Exhibition of the Works of Industry of All Nations* held in the Crystal Palace, Hyde Park London in 1851 (1st May to 11th October) also included scientific exhibitions and intended to present the role of the professional scientists. Among these was the new science of geology.

In the mid-19th century public display of the geological sciences was mainly promoted by national academic institutions, scientific societies and museums (Knell 2000). The Great Exhibition in 1851 brought geology onto the international stage and presented it to the general public with examples from individual nations around the globe (Hunt 1851).

Dickinsons' comprehensive pictures of the Great Exhibition of 1851 published in two volumes in 1854 gives us a glimpse of the exhibits presented by each country where a variety of objects were used by these geologists to tell the story of their country's geology and resources. More than 6 million visitors attended the exhibition including nearly 60 thousand foreigners (Brino 1995).



Fig. 1. Frontispiece, north transept, Waiting for the Queen,
Dickinsons' comprehensive pictures of the Great Exhibition of 1851

The exhibitions were divided into thirty classes according to subject and outlined in a catalogue with a complementary explanatory text (Hunt 1851). The content of the catalogue, especially descriptions of the exhibits, were edited and corrected for scientific accuracy by a group of scientists (see below an extract from Exhibition Catalogue Foreword by Robert Ellis 1851).

The desirableness of obtaining a symmetry of proportion in the works, and as far as possible a harmony of style and consistency of expression, in addition to the great importance of attempting to communicate to them a character of scientific accuracy, demanded the adoption of general principles of correction and reconstruction. But the varied nature of the contents of the Exhibition, and of the descriptions supplied, rendered this a duty difficult to be undertaken by any single individual. A number of scientific gentlemen accordingly united to undertake the correction of proofs belonging to certain departments, principally in regard to the scientific inaccuracies they might contain, their labours being followed by a final, general, scientific and literary revision. The descriptions of exhibitors were therefore submitted to this process, and subsequently prepared for press after receiving the official sanction for their publication. In the Descriptive and Illustrated Catalogue a number of elucidatory notes were supplied, which are intended to convey a variety of interesting and valuable information upon articles exhibited.

The exhibitions related to Earth sciences were numerous: for instance, under Machinery within the *Class of Philosophical Instruments and Processes* instruments for the measurement of space such as microscopes, compasses and theodolites were on display as well as maps and charts for surveying. While under Raw Materials there was the *Class on Mining, Quarrying, Metallurgical Operations and Mineral Products* and under Manufactures we find the *Classes on Iron and General Hardware, Working in Precious Metals, Ceramics, Manufactures in Mineral Substances used for Building or decoration*. A Royal Commission was established to nominate thirty-four juries for the evaluation of the exhibits for the purpose of awarding medals and prizes (Canning 1852).



Fig. 2. Mining & Minerals Exhibit
Dickinsons' comprehensive pictures of the Great Exhibition 1851

The Jury for the Class on Mining included famous geologists such as Charles Lyell (1797–1875), Henry De La Beche (1796–1855), Director of the Geological Survey of the United Kingdom and William Logan (1798–1875), Director of the Geological Survey of Canada. They praise in their report some exhibits of mineral ores “The study of this collection is equally interesting to the mineralogist and geologist, as well as by the different nature of the ores as by their mode of occurrence” (Canning 1852, p. 2) and as “The Royal Commission which presided over the Exhibition had the happy idea of including geological maps among the objects which ought to appear in it” (Canning 1852, p. 2) England presented a geological map at a scale of one inch to one mile prepared by the officers of the Geological Survey under the direction of Henry De La Beche showing geological formations and metalliferous veins.

William Logan presented an unpublished geological map together with a collection of minerals and ores from Canada and was much praised for his systematic arrangement of the exhibit and quality of the specimens. He was also awarded a medal for his services as juror by the president of the Exhibition Commission, Prince Albert (Zaslow 1975).

The variety of “geological objects, mineral crystals and ores” displayed also afforded an opportunity for scientists to compare and contrast their findings from around the globe and for many to hypothesize regarding the stratigraphical ages of some specimens on display (Canning 1852, p. 14: East Indian Mineral Collections). Many exhibits such as that for South Australia also provided lithological illustrations and maps and cross-sections showing surface and underground features related to ores and mines (Hunt 1851). However, it was noted in the report by the juries that many of the major mining countries had not contributed exhibits in this class such as Sweden and Germany and this was regrettable with regard to having a complete overview of the geology.



Fig. 3. Russia Exhibit. *Dickinsons' comprehensive pictures of the Great Exhibition 1851*

Exhibits by nations such as Russia showed their vast array of natural resources: eye-catching displays of doors inlaid with malachite extracted from the copper mines of the Ural Mountains, Gemstones sent by the jewelers of St Petersburg with magnificent tiaras of diamonds

and emeralds; specimens of ore and minerals representative of mining of gold, silver, platinum, copper, lead, jasper and porphyry.

Due to the interest shown by the public in geology during the Great Exhibition of 1851, when



the Crystal Palace Company moved the exhibition structure to Sydenham Hill from Hyde Park they “in one of those great efforts in an educational direction which the Crystal Palace Company are making for the benefit of their fellow men of all classes” (Hawkins 1854) established the Geological Restorations designed by Sir Joseph Paxton (1803–1865) in the Crystal Palace Park where “antediluvian Monsters” lurked (and still do!) within the vegetation and the stratigraphy of England was represented upon geological cliffs (Doyle 2008).

Fig. 4. Megalosaurus, Crystal Palace Park, Sydenham London. Photo courtesy of M. Kölbl-Ebert.

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Publication online: Posted IUGS Website / INHIGEO Website Anniversaries
September 2021
IUGS E-Bulletin Issue 178, September 2021.

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