Crystal Palace Geological Illustrations

The Crystal Palace Park gardens created in Sydenham Park included a prehistoric ‘swamp’ complete with models of Extinct Animals (the Crystal Palace Dinosaurs). They were the first prehistoric animals ever built and came only around thirty years after dinosaurs were discovered.

The swamp consisted of a 'tidal' lake (no longer operating) and three geological islands inhabited by the Extinct Animals and was part of a larger project that also included artificial cliffs beside the lake intended to give geological context to the Extinct Animals. Paxton’s rustic iron bridge provides a platform from which to view, to the south and east, the geological landscape, and to the west, water issuing from a spring beneath a representation of geological strata. "In the SE corner lies a remnant of Paxton’s original English landscape garden, a fragment populated by ‘antediluvian monsters’ and geological cliffs…. This remnant is arguably the world’s first attempt at recreating, in a systematic, scientific and ordered way, the geology of the United Kingdom". Peter Doyle

The pioneering paleontologist Professor Richard Owen (1804-1892) designed the Extinct Animals and supervised the construction work. Professor Owen also produced an illustrated ‘Handbook to the Extinct Animals and Geological Illustrations Described’ for the Crystal Palace Company. Benjamin Waterhouse Hawkins, a natural history artist and sculptor of international reputation, sculpted the replica animals. Hawkins had been an assistant superintendent of the 1851 exhibition and in 1852 he had been made director of the fossil department for the new Crystal Palace.

The Geological Illustrations were designed and constructed 1853-1855 by Sir Joseph Paxton in collaboration with geologist David Thomas Ansted of King's College, London, and assisted by Edward Milner the Superintendent of Works and Landscape Gardener, and George Eyles, also a gardener who went on to be Superintendent of the Royal Horticultural Society Gardens. The Historic England Listing states that more exhibits were planned but the money ran out so they were not built.

The Geological Illustrations, layers of rock in an artificial cliff face, were intended to show the development of the earth’s surface. The cliffs were constructed to display rock strata and formations, revealing “mountain limestone, millstone grit, ironstone and new sandstone”. Tons of actual stone were brought from around the country to build the strata. An extract from the Historic England Listing states; To the south west of the site facing the lower lake is a cliff constructed to illustrate the coal formation with old red sandstone at the base, new red sandstone above and mountain limestone and millstone grit above this. To the south west of this is a three quarters scale representation of a Derbyshire lead mine with cave complete with stalactites. To the east is the Secondary island illustrating the Secondary era with geological features including tilted red sandstone and in turn Lias Oolite and Wealden rocks, surmounted by chalk at the head of the island.

This exhibit related to the national prosperity of the Victorian era and illustrated the natural resources that had enabled the industrial revolution to take place. It also shows the role of the re-sited Crystal Palace and its Park as "an illustrated encyclopaedia." In a more twenty-first century light, it can be interpreted as a “monument to the relevance of promoting awareness of the science as a foundation to effective geoconservation” (Doyle). Sadly, by 1874 when Hawkins returned from America where he had been involved in building a similar project in New York, he found the rocks and vegetation in poor condition and overgrown.

The Extinct Animals and Geological Illustrations are the only major surviving features of the original Crystal Palace Park and have remained largely as they appeared to visitors when the park opened. The Geological Strata were restored 2001-3. Further restoration work on the Extinct Animals took place in 2016-17. The mine and cave were sealed as a safety measure in 1993.
GEOLOGICAL TIME
A matter of layers

When the Crystal Palace models were built, scientists dated fossils based on the type of rocks in which they were found. Fossils from deeper layers of rocks were known to be older than those discovered closer to the Earth’s surface. This provided a measure of the relative ages of fossils, even if no one knew exactly how old each was.

Today, geologists use absolute time – a more specific measure of age calculated from the rate of decay of naturally occurring radioactive substances. However, it is not possible to date all rocks and fossils in this way, so relative time is still important.

The sculptures on this site were placed in a sequence that reflected scientists’ understanding of the animals and their relative ages in 1854. We now know some of the models combined features of several different animals and we also define geological timescales in new ways. It can therefore be difficult to attach exact dates ranges to these historic representations.
Replacement signage, Jan Goode Photograph 2017

Geological Illustrations (Photograph by Jacqueline Banerjee, 2009)
Same view in 2016 (Jan Goode Photograph)

And again in 2017 (Jan Goode Photograph)
David Thomas Ansted (1814-1880)

‘David Ansted was a geologist, was born on 5 February 1814 in London, the son of William Ansted. He was educated at a private school, and at Jesus College, Cambridge, where he graduated BA in 1836 and was elected a fellow in 1840. He was appointed professor of geology at King’s College, London, in 1840, a post he held until 1853. On 11 January 1844 he was elected a fellow of the Royal Society. From 1845 he was also lecturer at the East India Company’s Addiscombe College, and professor of geology at the College for Civil Engineers in Putney. Ansted was elected a fellow of the Geological Society in 1838, and appointed vice-secretary in 1844, responsible for the library catalogue, the meetings programme, and for the Quarterly Journal of the Geological Society. Council was never satisfied with his performance, and in 1847 he was criticized for a 'lack of zeal and diligence' (Geological Society Council Resolution, 20 Jan 1847), and resigned. On 24 June 1848 Ansted married Augusta Dorothea Hackett Baillie (1828–1897), daughter of Alexander Baillie, merchant, and the couple had six children between 1849 and 1870. In 1844 he published Geology, Introductory, Descriptive and Practical, the first of twenty-four books that he wrote over thirty-five years. His works included elementary texts on geology, earth history, and physical geography, books on water supply and gold prospecting, local studies, and travel books. Although an obituarist observed that he wrote ‘lucidly and well’ (PRS), a reviewer in 1887 declared that ‘none of his books have kept their place in the market’ (Sanders).

Ansted was also a regular lecturer, and delivered the Rede lecture to the University of Cambridge in 1863 and the Cantor lectures to the Royal Society of Arts in 1865. He travelled throughout his life, visiting the continent in 1838, Germany and Bohemia in 1840, Belgium in 1842, North America in 1852–3, Algeria in 1853, Hungary and Transylvania in 1862, and the Ionian Islands in 1863. Much of this travelling was connected with the work as geological consultant to mining and other commercial companies, which occupied much of Ansted’s time during the latter part of his life. He and his family moved regularly, living in Guernsey for four years from 1858, near Cambridge
from 1862, and in Melton, Suffolk, from 1872 until his death at 2 The Villas, Hendon, on 13 May 1880. He was buried in Kensal Green cemetery. His wife survived him.’


By Lithograph by T. H. Maguire, 1850

https://commons.wikimedia.org/wiki/File:David_Thomas_Ansted,_Lithograph_by_T._H._Maguire,_1850,_after_Wellcome_W0006440.jpg

References


http://www.victorianweb.org/science/geology1.html

Crystal Palace Listing Entry Historic England

https://historicengland.org.uk/listing/the-list/list-entry/1000373
PREHISTORIC ANIMAL SCULPTURES, GEOLOGICAL FORMATIONS AND LEAD MINE ON ISLANDS AND ON LAND FACING THE LOWER LAKE

https://historicengland.org.uk/listing/the-list/list-entry/1067798

Palace of the People The Crystal Palace at Sydenham 1854-1936 J R Piggott

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