

# The Edinburgh Museum of Science and Art

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The architecture of science museums played an important role in constructing meanings of nature in the Victorian era, because the buildings themselves helped define natural knowledge for tourists, students, and scientists. Display strategies for natural historical objects--and the architectural decisions which sustained those strategies--reveal the contingent and shifting status of natural knowledge in Victorian Britain and Ireland. The program and architecture of the Edinburgh Museum of Science and Art were founded on a now-forgotten organizational schema, in which science, industry, and art were grouped together in a museum that educated and entertained a middle-class public.<sup>1</sup>

In 1836, arrangements were made to house Cambridge University's natural history collections in the new library, and in 1855 Oxford's natural history museum was clustered with state-of-the-art laboratories.<sup>2</sup> The original competition for the Natural History Museum in London included a patent museum, and early plans for the Museum of Natural History in Dublin devoted the ground floor to cow sheds, needed for the annual agricultural exhibition.<sup>3</sup> In Victorian Edinburgh, Scotland's most important natural history collection was displayed alongside industrial art.

## SCOTTISH NATIONALISM

During the nineteenth century, Scotland was one of the many political divisions of the British Empire subject to the rule of Queen Victoria and the laws of Parliament, but it retained a distinctive culture, sense of territory, and concept of nationhood. Scotland had been merged with England in the 1707 Act of Union, a political agreement by which Scots accepted the authority of the British monarchy and Parliament. Under the Union settlement, Scotland retained certain distinctive characteristics of her cultural institutions, including the Scottish legal system and universities.<sup>4</sup> This dichotomy resulted in cultural tensions in eighteenth- and nineteenth-century Scotland, because the landed ruling class sought to preserve Scottish national identity while maintaining close ties to the government in London.<sup>5</sup> By the beginning of the nineteenth century, Edinburgh had styled itself as "the

Athens of the North," and the program for the Edinburgh Museum of Science and Art was developed in the context of these demonstrations of Scottish national culture.

In the late 1850s, Scottish cultural leaders, openly competing with England, lobbied for a museum that would represent and celebrate the scientific contributions of Scotland. Adam White, a Scottish naturalist and early promoter of the museum, made great claims for the new institution:

A national museum *must not be limited* to Natural History; let it be coextensive with Art and Science--let it be a nucleus to which the spirited sons of Scotia may give and bequeath pictures, statues, specimens, books and manuscripts. Let it be a place to which your hardworking Sailors, Soldiers, Merchants, and Medical men in active foreign service, may delight to send specimens of Natural History or curiosities connected with rude and less civilised nations....Let it contain models of the Geological structure of your country, which in itself is almost an epitome of the world.<sup>9</sup>

The Edinburgh Museum of Science and Art, therefore, was meant to act as a central point, drawing in remnants of the periphery and re-presenting Scottish influence abroad. The museum would symbolize Scotland's place as an alleged leader among nations, perhaps in ironic imitation of England. Since natural and scientific knowledge was often presented as irreducible and universal, the use of natural knowledge as part of imperialistic and nationalistic display was a particularly stealthy cultural conceit common in Victorian Britain. This conceit was here used to justify the existence of a national museum for Scotland.

## SCOTTISH EDUCATION

The character of Scottish education also influenced the architecture of the Edinburgh Museum of Science and Art. Scottish universities were dedicated to bolstering industry. Instruction at the University of Edinburgh was inexpensive because the classes were large and the terms short. Even men from the country, who worked summer, spring, and fall,

could attend university in the winter; therefore, many considered university-level education to be a reasonable ambition.<sup>6</sup> In 1867, Matthew Arnold, the English poet, social theorist, and education critic, who also served as an inspector of schools, noted that in Scotland intellectual pursuits were linked to industry:

...so far as intellectual culture has an industrial value, makes a man's business better and helps him get on in the world, the Scotch middle class has thoroughly appreciated it and sedulously employed it, both for itself and for the class whose labour it uses; and here is their superiority to the English and the reason of the success of Scotch skilled labourers and Scotch men of business everywhere.<sup>7</sup>

Arnold believed he had identified a Scottish trait--the pursuit of education for the practical ends of industry. Arnold's observations were made a few years after the Edinburgh Museum of Science and Art opened to the public, but his comments still elucidate the general character of Scottish higher education. In contrast to Oxford and Cambridge, where business-oriented education was scorned by gentlemanly instructors and students, universities in Scotland purposely prepared middle class--as opposed to aristocratic--students for careers in commerce and manufacturing.

The value system of Scottish education explains an important circumstance in the history of the Edinburgh Museum of Science and Art: in 1855 the town council of Edinburgh, which was authorized to act as the board of trustees of the University of Edinburgh, transferred the university's natural history collection to the Board of Trade, a branch of the central British government in London that was charged with fostering economic development in Britain and the colonies. The university gave away its collections, but gained a building to house them. For them when Parliament agreed to pay for a site and a purpose-built structure to display the natural objects to their greatest advantage. The city council's decision to donate the specimens to the Board of Trade allowed the university's natural history collections to be free and easily accessible to the public.

### THE MUSEUM OF PRACTICAL GEOLOGY

One of the Edinburgh museum's goals was to imitate the Museum of Practical Geology in London. Although not well-known today, the museum was very popular in Victorian London; it was sponsored by the School of Mines, and it was meant to introduce working people to Britain's natural resources. In both the Museum of Practical Geology and in the Edinburgh Museum, the exhibitions showed how raw materials were transformed into finished commercial products; the materials were accompanied by the tools necessary to effect these transformations. The exhibitions also displayed all the intermediate stages between the natural and manufactured product--between iron ore and steel, clay and porcelain, wool and fabric, skins and leather.

In Scotland, the model of the Museum of Practical Geology was used as conceptual bridge linking the natural history collections to the industrial arts collections. Displays of steel, porcelain, wool, and leather could be mingled with larger exhibitions of decorative art. Natural substances--especially rocks and ores--could be exhibited with other geological specimens, including fossils. Fossils proved the age of the earth and provided information about its extinct and living inhabitants--hence the geology displays were linked to zoology. This inclusive and encyclopedic museum ideology led to the display of stuffed cats and whale skeletons in the same museum with ceramic vases and model ships. In Victorian parlance, natural history was made "co-extensive with art and science."

### THE DESIGN OF THE MUSEUM

In 1854, the Department of Science and Art, then a subdivision of the Board of Trade (based in London) was granted 7000 pounds from Parliament to purchase a site for an Industrial Museum to be built in Edinburgh.<sup>10</sup> The engineer Francis Fowke, an inspector for the Department of Science and Art, was appointed to design the structure. Thus, unlike many other Victorian public buildings, there was no architectural competition for the Edinburgh Museum. Fowke was an overseer at the Machinery Department of the International Exhibition in Paris in 1854, which proves his knowledge of exhibition architecture. At the Department of Science and Art, Fowke focussed his talents on building, specializing in cheap, easy-to-construct display spaces.

Fowke's facade for the Edinburgh Museum of Science and Art was purposely restrained. Since funding was a recurrent problem, the museum was built in three stages, and the building was not completed until the end of the century. As visitors approached the museum, they saw the two-story central block set back between three-story projecting wings, and reached the main entrance by climbing broad steps from the street. The channelled foundation accommodated the steep slope of Chamber Street. Columns of red sandstone in the arcades of the second story, which contrast with the gray Binny stone of the rest of the building, are the only colored stones in the facade, a vestige of more elaborate constructional polychromy mentioned in the newspaper *The Daily Scotsman* in 1861: "[the facade will] be ornamented with stone of distinctive colour, selected from various quarries in Scotland. Practically, this feature will in itself form a geological museum."<sup>11</sup> The red columns were both architectural elements and natural historical specimens, thus uniting art and science.

Architects and scientists had built similar geological displays into the fabric of the Museum of Practical Geology, the Trinity College Museum, and the University Museum at Oxford.

The exterior of the Edinburgh Museum showed the influence of both historic and modern architecture. The Lombard Renaissance was one source for the design, but

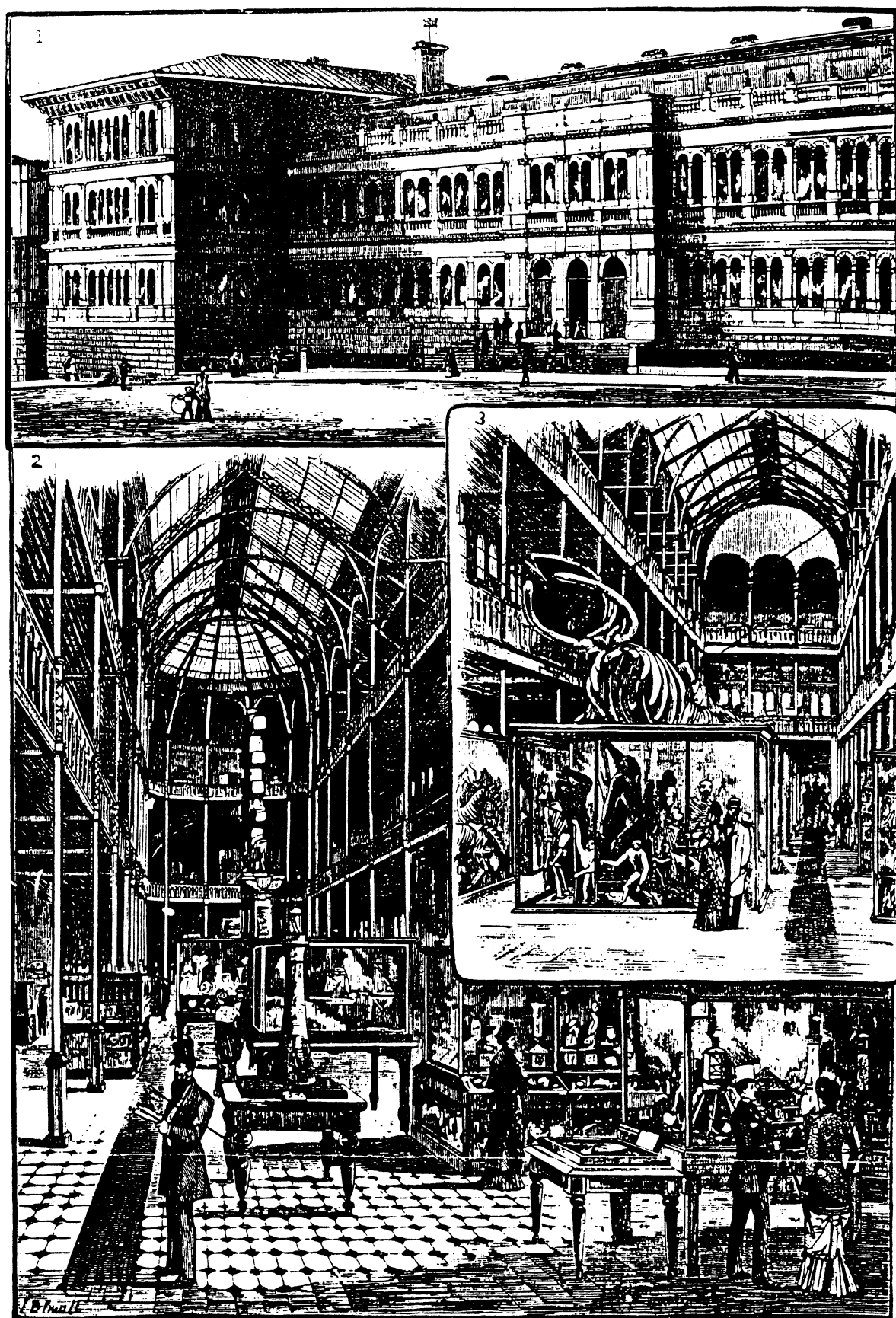


Fig. 1. Francis Fowke, Edinburgh Museum of Science and Art, 1861-1889. Exterior, Great Hall, and the Natural History Room. Grant, James. *Cassell's Old and New Edinburgh, Its History, Its People, Its Places*. London: Cassell, 1882.

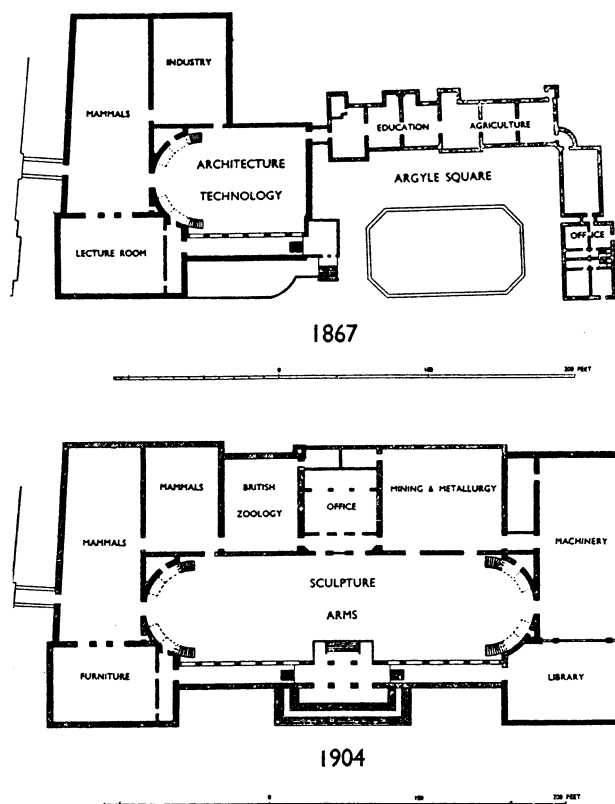


Fig. 2. Francis Fowke, Edinburgh Museum of Science and Art, 1861-1889, Plan. George Allan, *The Royal Scottish Museum 1854-1954* (Edinburgh: Oliver & Boyd, Ltd., [1954]).

Fowke also borrowed from contemporary Germany, where the *Rundbogenstil*, a round-arched basis of design, was then being used in the educational centers of Munich and Berlin. The authority of German architectural style had trickled down to Fowke through Prince Albert, who was German himself, and who encouraged Henry Cole (Fowke's boss at the Department of Science and Art) to study the cultural centers of German cities as models for South Kensington. Fowke's designs for the Edinburgh Museum were an attempt to adopt the flexible, utilitarian, contemporary German style to a Scottish purpose. Since the museum was a cultural institution, as were many of the *Rundbogenstil* buildings in Munich and Berlin, Fowke's use of the style was well-informed.

Fowke's plan was almost symmetrical. The Great Hall, which ran parallel to the facade, was the focus of the plan; other galleries were clustered around it on the rear and sides. The Great Hall enclosed a large, light, airy space, with its pitched roof on delicate timber arches. An arcade marked the upper-balcony. Originally the tile pavement of the hall was a mosaic of strong colors.

### THE CRYSTAL PALACE AND "BAZAAR" ARCHITECTURE

The obvious precedent for Fowke's stylish iron-and-glass interior was the Crystal Palace, which housed the Great

Exhibition of 1851 in London. The *Edinburgh Evening Courant* noted the influence of the Crystal Palace on the institution of the Edinburgh Museum of Science and Art:

[The Edinburgh Museum] may be said to owe its origin to that prolific mother, the Great Exhibition of 1851, whose offspring have already spread themselves over the globe. The Hyde Park Palace, the creature of a summer, was happily destined to reproduce itself not in the evanescent form of exhibitions, but in the permanent shape of museums of art, science, and industry....<sup>12</sup>

This newspaper reporter voiced a widely-held opinion in Victorian Britain: that the success of the Crystal Palace should be perpetuated in permanent museums that would charm the eye, instruct visitors on the state of industry, and inspire manufacturers and workers to invest money and labor in the economy. The purpose of the Great Exhibition was to encourage international trade by exposing visitors to the products, resources, and art of different countries; it was an unparalleled spectacle of commodities. Joseph Paxton, a greenhouse builder, was lauded for his bright cage-like design, which symbolized British ingenuity and industrial progress. Therefore Fowke's use of up-to-date ferrovitreous construction acted as a kind of advertisement for technology, which was appropriate for an industrial museum paid for by the Board of Trade.

The exhibition building-type may have also carried commercial associations; evidence of this emerged in 1864 when Francis Fowke won the public competition for the Natural History Museum in London. Fowke's competition entry was formally related to the Edinburgh Museum in that he used a Renaissance exterior wrapped around a series of iron-and-glass galleries. Fowke died in 1865, and his designs were never executed, but his entry caused a controversy in the last months of his life. Robert Kerr, a well-established architecture professor in London, was the runner-up in the Natural History Museum competition. He was something of a sore loser, but he was also an extremely articulate loser, and he wrote an cutting rebuke of Fowke's plans which he dispatched to the Office of Works and published in *The Builder*. Kerr attacked Fowke's plan for looking like a bazaar, possibly a reference to Owen Jones's colored-glass bazaar near Piccadilly. Although Kerr did not name the Edinburgh Museum, he did compare Fowke's natural history museum to exhibition halls like the Crystal Palace and the International Exhibition Building of 1862 (designed by Fowke). Kerr wrote:

A vast Bazaar, like the Crystal Palace, or the International Exhibition Building..., however suitable for other purposes, is not adapted for those of a Natural History Collection;--specimens lose scale and importance, the casual visitor is bewildered, the student is interrupted, and the display sinks from the character of science to that of show.<sup>13</sup>

The primary meaning of the word “bazaar” was an oriental marketplace.<sup>14</sup> By calling Fowke’s plan a bazaar, Kerr suggested that the form was not British. Since bazaars had strong commercial associations, the term may have implied that the scientific artifacts would be commodified, and this, according to Kerr, would have unacceptably devalued natural history.

Fowke used the exhibition style successfully in Edinburgh, where commercial associations seem not to have offended the patrons. The Department of Science and Art, as a subdivision of the Board of Trade, may have deemed the style suitable to a museum that displayed commerce and industry as well as natural science. The Edinburgh Museum of Science Art did not devalue natural history, but rather presented nature in the company of other, less lofty, objects of knowledge.

Robert Kerr pointed the way toward the natural history museums of the early twentieth century--uncluttered rooms with four masonry walls and side- or top-lighting. Kerr judged that visitors would find the openness of an iron-and-glass bazaar bewildering. But Francis Fowke may have assumed visitors would like these inviting, expansive spaces. Whereas Oxford and Cambridge’s natural history collections were kept as research institutions for science students, available to outsiders only with permission, the University of Edinburgh had given its natural history collections to the city. From that point forward, the museum had to serve the working and middle classes in addition to the academic audience.<sup>15</sup> The open, cage-like interior of the Edinburgh Museum, recalling the exceptionally popular Crystal Palace, might have suited the local requirement that the museum entertain as well as enlighten the public.

## CONCLUSION

Prince Albert died in 1861, two months after he laid the cornerstone for the Edinburgh Museum of Science and Art. It was his last public act and an especially regrettable turn-of-events for an institution allied to the Prince’s widely-known passions for education and industry. At the cornerstone ceremony, Albert had captured the spirit of the new museum, announcing that it was a practical teaching institution for university students that would at the same time stir the excitement of casual visitors:

It is particularly gratifying to me to think that in the institution of which I am to-day to lay the first stone the education object will be kept specially in view--that your Museum will not be a mere receptacle of curiosities to excite the wonder and stir the interest of casual visitors, but that by its immediate connection with the University, it will afford the means of supplying the student with practical illustrations of what he has been taught in his class-room.<sup>16</sup>

Francis Fowke responded sensitively to the program of the Edinburgh Museum of Science and Art, recognizing the

industrial bent of Scottish education, the ideals of the museum’s founders, and the needs of the public. An interaction between local and national goals for the museum thus explains the propriety of Fowke’s interior. His exhibition-style Museum of Science and Art combined natural history, industrial design, and decorative arts both for the promotion of commerce and for the edification of the public.

## NOTES

- <sup>1</sup> The museum has been popularly called the Royal Scottish Museum since about the turn of the century, but its nineteenth century name, the Edinburgh Museum of Science and Art, will be used here. For a brief period, from 1854 to 1861, before the industrial collections and natural history collections were combined, it was planned to build a home for an institution to be called the Industrial Museum of Scotland. In 1985, the Royal Scottish Museum joined with the National Museum of Antiquities of Scotland (founded in 1780), and their official name is The National Museums of Scotland.
- <sup>2</sup> For further discussion of these Victorian museums, see Carla Yanni, “Building Natural History: Constructions of Nature in British Victorian Architecture and Architectural Theory” (Ph.D. diss, University of Pennsylvania, 1994) 1-10.
- <sup>3</sup> “The Natural History Museum,” Memorandum of the Royal Dublin Society, May 1862, National Archives of Ireland, CSORP 1858/11098.
- <sup>4</sup> Bruce Lenman, *Integration, Enlightenment, and Industrialization: Scotland 1746-1832* (Toronto and Buffalo: University of Toronto Press, 1981), 1.
- <sup>5</sup> Thomas Markus, ed. *Order in Space and Society: Architectural Form and its Context in the Scottish Enlightenment* (Edinburgh: Mainstream Publishing Company, 1982), 2.
- <sup>6</sup> James Scotland, *The History of Scottish Education* volume 1. *From the Beginning to 1872* (London: University of London Press, 1969), 332.
- <sup>7</sup> Matthew Arnold, *The Complete Prose of Matthew Arnold*. Edited by R. H. Super (Ann Arbor, MI: University of Michigan Press, 1964), vol. iv. *Schools and Universities on the Continent*, 287-288. Also cited in Scotland, *History of Scottish Education*, 332.
- <sup>8</sup> Jenni Calder, ed. *The Wealth of a Nation in the National Museums of Scotland* (Edinburgh: National Museums of Scotland, 1989), 12. In the decades after the transfer of collections was settled, relations between the museum staff and natural history professors were uneasy.
- <sup>9</sup> Adam White, *Four Short Letters: The First and Fourth Addressed to the Late and to the Present Lord Provosts of Edinburgh* (Edinburgh: Edmonston and Douglas, 1850), 4.
- <sup>10</sup> Science and Art Department of the Committee of Council on Education, *Directory of the Industrial Museum of Scotland and of the Natural History Museum Edinburgh* (London: George E. Eyre, 1858), 11.
- <sup>11</sup> *Evening Courant* (Edinburgh), 22 May 1861.
- <sup>12</sup> *The Daily Scotsman* (Edinburgh) 24 October 1861.
- <sup>13</sup> Robert Kerr, “Kensington Museums: Competition of Architectural Designs,” Natural History Museum Archives, O.DES/2/1.
- <sup>14</sup> J. A. Simpson and E.S.C. Weiner, eds. *Oxford English Dictionary*. Vol. 1 (Oxford: Clarendon Press, 1989) 1019.
- <sup>15</sup> For an excellent discussion of public access to science museums, see Sophie Forgan, “The Architecture of Display: Museums, Universities, and Objects in Nineteenth-century Britain,” *History of Science* 32, no. 96 (June 1994): 139-162.
- <sup>16</sup> *Evening Courant* (Edinburgh), 24 October 1861.