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exhibition review of

*Endless Forms: Charles Darwin, Natural Science and the Visual Arts*

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**Endless Forms: Charles Darwin, Natural Science and the Visual Arts**
Yale Center for British Art, February 12 – May 3, 2009
Fitzwilliam Museum, Cambridge, June 16 – October 4, 2009

Catalogue:

**Endless Forms: Charles Darwin, Natural Science and the Visual Arts**
Diana Donald and Jane Munro, editors.
288 pp., 100 b/w illustrations, 150 color illustrations, exhibition checklist, bibliography, index.
$75
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In honor of the bicentennial of the birth of Charles Darwin (1809-1882) and the 150th anniversary of the publication of *On the Origin of Species* (1859), numerous exhibitions have been organized throughout the world, mostly in libraries and museums of science. The Yale Center for British Art and the Fitzwilliam Museum, Cambridge, however, have joined together in mounting an exhibition treating Darwin's influence on the visual arts (fig 1). There is much irony in this since Darwin himself couldn't draw, didn't collect art, and professed himself woefully ignorant of the subject. Nonetheless, the exhibition has brought together nearly two hundred works purporting to show his influence, uniting not only the painting, drawing, sculpture and photographs that one would expect in such an exhibition, but also scientific illustration, botanical, geological and animal specimens, books and treatises. As a result, though it might not have been the curators' intention, the show makes an admirable contribution to the new study of visual culture. Organized in eight thematic sections, it is accompanied by a handsome catalogue reproducing all the work exhibited, and including essays by twelve scholars of art, literature and science (fig. 2). The show is a visual delight, although its implicit premise, which seems to be that all art inspired by science in the nineteenth century can be traced to Darwin, is overdrawn; perhaps that is inevitable when an exhibition is organized for a favorite son by his alma mater (University of Cambridge).

Certainly the exhibition organized by the city of Paris, *Dans les pas de Charles Darwin* at the Parc de Bagatelle in the Bois de Boulogne, takes a more even-handed approach, with wall panels dedicated to each of the many scientists who contributed to nineteenth-century evolutionary theory, including Jean-Baptiste Lamarck (1744-1829), Thomas Robert Malthus (1766-1834), Alexander von Humboldt (1769-1859), and Charles Lyell (1797-1875).[1]
The catalogue of *Endless Forms* and the exhibition are organized along parallel lines, so it will be fruitful to consider them together. In her introductory catalogue essay, Diana Donald, who, with Jane Munro, curated the exhibition and edited the catalogue, states that Darwin's influence on the visual arts was "deep and intensive" and lists three areas of prime interest: 1) the vast age and history of the earth (*i.e.*, geology); 2) the battle for survival; and 3) the animal origins of the human race. She signals several themes to be explored in the exhibition: the attribution of aesthetic taste to animals, specifically the choice of mate to the female of the species; the contradiction between the Judeo-Christian belief in the fall of humankind from the state of grace in the garden of Eden and evolutionary theory's belief in the rise of humankind from more primitive forms of life; and the traditional idea that natural beauty was created by God for his own pleasure vs the evolutionary hypothesis that it arose simply as a result of natural selection in the struggle for survival. That these concepts are still capable of generating heated controversy in the twenty-first century, at least in the United States, should give us some notion of the depth of Darwin's challenge to traditional religious dogma concerning the origin and development of life on earth.
The first section of the exhibition, "Darwin's Eye," presents the visual images that were most familiar to Darwin, namely geological and botanical drawings, specimens, and books. This following section is "The History of the Earth" where images relating to geology such as glaciers, geysers, and volcanic eruptions are exhibited (fig. 3). Since interest in geology well predated Darwin through the work of the English geologist Charles Lyell, whose Principles of Geology (1830-33) influenced not only Darwin, but numerous earlier nineteenth-century artists as well, this highlights a problem with the exhibition as a whole, the organizing principle of which seems to adhere to the concept of the "Great Man" so familiar to art historians. Throughout the exhibition and catalogue, Darwin is credited with trends that not only began in earlier decades, but within which his interests should have been situated contextually. One problem with this kind of approach is that a "great man" chronology then necessitates the exclusion of works prior to his appearance on the scene. So, for example, the painting of William Dyce (1806-1864), Pegwell Bay, A Recollection of October 5, 1858 (1858-1860, Tate, London) is used to illustrate new geological theories in the exhibition, but not the works of Caspar David Friedrich (1774-1840) or the many German artists discussed so convincingly by Timothy F. Mitchell in his Art and Science in German Landscape Painting 1770-1840 (1993). The catalogue essay by Rebecca Bedell, "The History of the Earth: Darwin, Geology and Landscape Art," wisely ignores the Darwinian framework of the exhibition and, citing Lyell, offers instead a survey of the relationship of geology to landscape painting in mid-nineteenth-century England and the United States. She relates landscape painting to contemporaneous theories of the age of the earth and its origins in the antediluvian past. In one of the more nuanced catalogue essays, she acknowledges that by the 1830s, despite Bishop James Usher's pronouncement that the earth had been created on October 23, 4004 BC and was thus no more than 6000 years old, this account had become so widely challenged that the new scientific study of geology was able both to inform, and to transform, the artists' vision. Because Bedell was not trying to establish Darwin's supremacy, her reading of the relationship of science to art allowed her to introduce the works of John Martin (1789-1854) and Thomas Cole (1801-1848), among others whose careers largely predated Darwin's publications. As a result, she gives us a valuable survey of how art and science intertwined in nineteenth-century landscape painting in these two countries.

Fig. 3, "History of the Earth" Gallery. Visible are: Frederick Edwin Church, Cotopaxi, 1855, The Museum of Fine Arts, Houston; and Robert Farren, Duria Antiquior (An Earlier Dorset), ca. 1850, Sedgwick Museum of Earth Sciences, University of Cambridge. Installation photo by Richard Caspole. [larger image]

The third section, "The Struggle for Existence" exhibits the evidence that resulted in the theories of natural selection and the "survival of the fittest," a phrase that, though often
credited to Darwin, was actually invented by the English philosopher Herbert Spencer (1820-1903) (fig. 4). Here again, mostly English examples contemporaneous with Darwin are included, while Antoine-Charles Barye (1796-1875), probably the best-known nineteenth-century artist of animal combat, is omitted, although casts of his sculptures exist in virtually every European and American museum. In the exhibition, paintings by Edwin Landseer (1802-1873) and Herbert von Herkomer (1849-1914), illustrations by Luke Fildes (1843-1927) and John James Audubon (1785-1851), natural science illustrations and taxidermy mounts all display this struggle for existence in both the animal and the human realm. One of the most extraordinary works in the show is *Struggle with the Quarry* (1851, The Natural History Society of Northumbria, The Hancock Museum, Newcastle upon Tyne), a taxidermy mount of falcons in combat by the English ornithologist John Hancock (1808-1890). Although Hancock's work shows combat between two different species, in both the exhibition and in the catalogue there are references to same-species combat to the death, as depicted in Landseer's *Night* and *Morning* (both ca. 1853, Philadelphia Museum of Art). Had the catalogue essays been vetted by a historian of science before publication, such scientifically incorrect references, which might be culturally significant, could have been contextualized. Male animals of the same species rarely fight to the death, but usually continue only until one of them submits or flees; to do otherwise would result in extinction of the species. Nonetheless, for a cultural historian it would be interesting to trace the historiography of this fight-to-the-death concept and its significance in Victorian England. Donald's discussion of the aestheticization of violence in scenes of nineteenth-century animal combat is noteworthy, but would have been even more convincing had she explained how these images of animal combat differ (if indeed they do) from earlier ones such as those by George Stubbs (1724-1806), Eugène Delacroix (1798-1863) or Antoine-Charles Barye.

There are some mild references in this section to the Social Darwinism that is so remarkably absent from the exhibition as a whole—the term doesn't even appear in the index of the catalogue, whereas it should have merited a major essay. Darwin himself was ambivalent about applying the concept of "survival of the fittest" to human beings, but certainly his followers had no such qualms, and eugenics had perhaps the most lasting influence on artists, a modern replacement for earlier centuries' *beau idéal*. To be sure, the adoption of the eugenic ideal by National Socialism fatally compromised its respectability, but in a scholarly exploration of Darwin's influence on visual art and culture it nonetheless merits discussion.
The following essay, co-authored by Donald and Jan Eric Olsén, "Art and the 'Entangled Bank': Colour and Beauty out of the 'War of Nature,'" sets out a historiography of zoological illustration and dioramas. These developed from depictions of the isolated specimen to the depiction of the complex interdependent ecosystems within which they live. Examples of both approaches are included in the exhibition, and, for this viewer at least, a startling discovery was the work of the Swedish artist Bruno Liljefors (1860-1939), the "father of modern wildlife painting." Although his work is here related to Impressionism alone, Symbolist concepts seem equally evident not only in his work but throughout later nineteenth-century illustration and museum dioramas for, of course, the same trends were operative across the entire spectrum of visual production.

Nicola Gauld takes up the discussion of nineteenth-century illustrated natural histories, several of which are on display, in her essay "What is Meant by this System': Charles Darwin and the Visual Re-ordering of Nature." It is surprising that neither in the show nor in the catalogue are these natural histories contextualized in relation to the moralizing bestiaries of earlier centuries. Up to the nineteenth century, the lion, because of its strength and power, was considered the ruler of the animal kingdom, but the development of physical anthropology and the discovery of the gorilla, a humanoid primate previously unknown in Europe and America, challenged its supremacy. A three-way struggle ensued for pride of place, with the lion eventually displaced in popular culture by the dog as the animal that seemed most like us, while, in science, the gorilla was identified as our closest ancestor. Gauld points out that, as the nineteenth century progressed, animal illustrations became more dramatic, eschewing the "peaceable kingdom" approach in favor of dramatic animal struggle, competition and combat. While as simple description this is certainly true, we should remember that, although the struggle for survival can easily be related to Darwin, he also was part of his own era, one which in England, especially, foregrounded the social conditions of struggle and survival in an era of rapid industrialization and brute capitalism. For it is not just scientific discovery and exploration that shape our values, it is also our values and experience that give rise to our scientific concepts. Here, and elsewhere in the exhibition and catalogue, it would have been valuable to contextualize Darwin, to see how his life and times could give rise to these insights, rather than seeing him as so far removed from his own epoch that, sui generis, he is the font of all new knowledge.

The fourth exhibition section, "Animal Kin," focuses on the illustrations for Darwin's Expression of the Emotions in Man and Animals (1872), but with little acknowledgment of preceding visual traditions. Two essays discuss the human/animal relationship: Diana Donald's "A Mind and Conscience Akin to Our Own: Darwin's Theory of Expression and the Depiction of Animals in Nineteenth-century Britain," and Julia Voss's essay, "Monkeys, Apes and Evolutionary Theory: From Human Descent to King Kong." Donald cites both the physiognomic and pathognomic traditions, but without the famous series of illustrations by Charles LeBrun (1619-1690) showing the animal lurking beneath the human skin. Although she does cite LeBrun's influential treatise on the passions, of which Darwin owned a copy, no illustrations of LeBrun's men or animals are included in the exhibition or reproduced in the catalogue, thus implying Darwin's primacy in this investigation. Most of the visual material included is contemporaneous with Darwin, including a dramatic series of photographs he commissioned from Oscar Rejlander (1817-1875) illustrating the passions with human models, including Rejlander himself. By eliding the pathognomic tradition that stretches back to antiquity, however, we lose sight of
Darwin's quest to explore, and either verify or reject, the science in received culture; his attempt to ascertain whether expression is natural or learned, and whether animals as well as humans have an emotional life, must be seen as part of this project. Especially interesting here is Donald's discussion of pet-keeping: bringing animals into the home to live among us is a fairly recent practice. She correlates that with later nineteenth-century anthropomorphic depictions of animals with human traits, the pop culture aspect of Darwin's exploration of human/animal passions. This investigation continues even today with, it seems, a growing trend towards recognizing the emotional life of animals, which Darwin would certainly have found gratifying.

Julia Voss's essay "Monkeys, Apes and Evolutionary Theory: from Human Descent to King Kong" traces ape lore, pointing out that Darwin never said that humans were part of the history of evolution—he, in fact, took pains to avoid stepping into this particular quagmire though many of his followers were not so circumspect. She recounts the discovery of the gorilla in 1847. Earlier orangutans and chimpanzees were known in Europe and America, but not the gorilla, which was believed to abduct women, as in Emmanuel Frémiet's Gorilla Abducting a Woman (1887, Musée de beaux-arts de Dijon) or the film King Kong (1933). One would have welcomed some discussion here as to what this particular misapprehension might reveal about the cultures that held it. Ape and monkey lore (minus the abduction of women, which seems to be a late nineteenth-century contribution) has a long history in art, ranging from medieval manuscript marginalia and stained glass windows, to eighteenth century singeries, through the nineteenth-century paintings of Landseer and Alexandre-Gabriel Decamps (1803-1860), to cite but a few examples. Ape and Ape Lore in the Middle Ages and the Renaissance (1952) by the great art historian H. W. Janson (1913-1982), though not cited in the catalogue, brought this iconography to the attention of art historians. Instead of a historical background, however, the exhibition parachutes us into the nineteenth century with a panorama of animal depictions in various media, and although the material is engaging, the net result seems oddly superficial.

The fifth exhibition section, "The Descent of Humankind," treats the theory of evolution wherein contemporaneous living human beings were thought to be illustrative of different stages of evolution. The advantage to colonial powers of an assumed racial superiority is evident, although in the exhibition the political implications are downplayed in favor of a panorama of racial types, sort of a nineteenth-century "Family of Man." Elizabeth Edwards's essay "Evolving Images: Photography, Race and Popular Darwinism," does a splendid job of situating ethnographic photographs, a great many of which are on display, in the grey area between science and entertainment. She provides an understanding, often lacking elsewhere in the exhibition, that her subject has a long visual tradition that, in the later nineteenth century, was infused with evolutionary discourse. She concludes that ultimately it is difficult to disentangle the scientific from the commercial and the popular. What is well demonstrated, both in her essay and elsewhere in the exhibition, is the growing awareness throughout the century of the broad variety of both human and animal types. The young Darwin experienced this for the first time on his famous voyage on the Beagle, but it was already noted in the writings of earlier explorers and scientists such as Alexander von Humboldt, whose publications the young Darwin took with him on his Beagle voyage.

In 1871, Darwin published The Descent of Man, investigating beauty in nature. He was troubled that, although he could identify the aesthetic characteristics developed in the natural world, he
could not see in them any apparent advantage in survival; he even wrote that the peacock's mating display made him ill because its extravagant plumage seemed an encumbrance to flight, protection and survival (254). He resolved his dilemma through a theory of sexual selection, with two disturbing conclusions, both of which were considered indecent and immoral by Victorians: that in the animal kingdom, females choose their mates while males compete for their favor, and that the aesthetic sense is not unique to humankind. The sixth section of the exhibition, "Darwin, Beauty and Natural Selection" explores this realm of beauty, focusing on courtship rituals among animals, particularly birds (fig. 5). It contains the show's most entertaining display, a video sequence of a male argus pheasant doing its courtship dance, played over and over as an endless loop. Two of the catalogue essays specifically treat art and aesthetics, Jonathan Smith's "Evolutionary Aesthetics and Victorian Visual Culture," and Jane Munro's "'More Like a Work of Art than of Nature': Darwin, Beauty and Sexual Selection." Smith discusses the controversy in England over Darwin's thesis that the source of beauty was not divine, but utilitarian. In his 1862 publication, On the Various Contrivances by which British and Foreign Orchids are Fertilised by Insects, and on the Good Effects of Intercrossing, Darwin challenged the notion that beauty is moral, a position long held by traditional aesthetic theorists and, in particular, by John Ruskin, the most influential English writer on art. Evolutionary aesthetics, as Darwin described them, were amoral and atheistic; the purpose of beauty was, for him, ultimately reproductive and sexual. Both Smith and Munro relate evolutionary aesthetics to the growing English movement of Aestheticism, whose concept of beauty as pleasure replaced the classical ideal of beauty as synonymous with rationality, order and virtue.

Fig. 5, "Darwin, Beauty and Natural Selection" Gallery. Visible are: John Gould, case of stuffed hummingbirds, with species in the genus Agyrtria, n.d., shown in the Great Exhibition, London, 1851, Courtesy of the Trustees of the Natural History Museum, London; and video sequence of a male argus pheasant displaying to female argus pheasant, Malaysia. By Kind Permission of John Corder and the World Pheasant Association (http://www.pheasant.org.uk). Installation photo by Richard Caspole. [larger image]

In Munro's essay, we are finally given an explanation for the title of the exhibition: in On the Origin of Species, Darwin describes the natural world as "endless forms, most beautiful and most wonderful (253)." Birds and flowers held Darwin's attention as the most aesthetic of nature's forms. Munro continues Smith's discussion of orchids, pointing out that there was a mania for them in England from the 1830s, and that they were admired by Symbolists and Decadents throughout Europe and America. Martin Johnson Heade's (1819-1904) Cattleya Orchid and Three Hummingbirds, 1871, (National Gallery of Art, Washington, D. C.) illustrates
their attraction, although in combining birds and flowers from different geographical regions, this image can hardly be considered either Darwinian or scientific.

Extremely problematic in this section of the exhibition is the identification of women with birds and flowers. Although Darwin held that there were no universal standards of beauty, he nonetheless felt that there was a developed taste for decorative enhancement among women and "savages." This section displays a variety of visual material—botanical illustrations, caricatures, Pre-Raphaelite paintings—but judging by the catalogue essays and the wall labels, there doesn't seem to be any comprehension that fashion is culturally constructed. Nor does there seem to be any awareness of "the great masculine renunciation" of the eighteenth century that led to an exchange of gender roles insofar as personal adornment is concerned, with males thereafter assuming the nondescript plumage of the female. Munro's essay ends with a veritable soup of misogyny and Darwinism, uncritically citing the works of Félicien Rops (1833-1898), the writings of Octave Uzanne (1851-1931), and the infamous French misogynist Sâr Péladan (1858-1918), whose misconceptions about women exaggerated even further Darwin's own. While it is certainly true that Darwin and many of his contemporaries believed that women were by nature, not by culture, devoted to self-adornment, a bit of historical context on the part of the exhibition's organizers would have been most welcome here. After all, the nineteenth century was also one of the great ages of feminism, and its backlash of misogyny was felt across Europe and America. In this context, the insistence displayed here on women's nature as essentially frivolous and narcissistic certainly merited further discussion.

Two of the essays in the catalogue focus exclusively on Darwin's influence on art: David Bindman's "Mankind after Darwin and Nineteenth-century Art," and Richard Kendall's "Monet and the Monkeys: the Impressionist Encounter with Darwinism." Bindman's essay is, for this reviewer, among the strongest in the catalogue, not because he establishes Darwin's influence on art—he freely acknowledges that this influence was barely noticeable—but because he investigates why this was so. He acknowledges earlier precedents—the twenty-four images of a frog turning into the Apollo Belvedere (1797) by Johann Kaspar Lavater (1741-1801) and Man Descending towards the Brute (1843) by J.-J. Grandville (1803-1847); the latter, probably the best known visual commentary on evolution, should certainly have been included in this exhibition or at least reproduced in the catalogue. Bindman points out that it was the English biologist, Thomas Henry Huxley (1825-1895), and not Darwin who popularized the theory of the descent of man from apes. He situates Darwin's influence solidly within England, and although he does include some French and German examples, he acknowledges that Darwin had less influence on French artists in the nineteenth century. He even proposes some possible explanations for this, among them French artists' greater commitment to the ideal body, and the ongoing power of the classical ideal in France. He concludes that the most direct response to Darwinism in all its forms appeared in caricature, and that, among artists, the Symbolists were the most receptive. He proposes Odilon Redon (1840-1916) and Max Klinger (1857-1910) as artists whose interest in Darwinian ideas can be well documented; in the exhibition an entire gallery is devoted to Redon's 1883 lithographic series Les Origines.

Aside from a section on portraits of Darwin, the final—and weakest—section of the show is "Darwin and Impressionism." Historians of nineteenth-century French art are all too familiar with the "(x) and Impressionism" exhibition, with "x" being virtually anything that might attract an audience, so "Darwin and Impressionism" would have been funny if it weren't so pathetic.
Leaning on the "six degrees of separation" theory, Richard Kendall's related essay, "Monet and the Monkeys: the Impressionist Encounter with Darwinism," informs us that Cézanne was a friend of a supporter of Darwin, that Degas believed in animal theory (never mind that Degas specifically cited Lavater), that Monet's landscapes are rocky, hence geological, therefore Darwinian, etc. The works on display in this section appear to be chosen by the "n'importe quoi" school of Impressionist curatorship: Edgar Degas (1834-1917), The Little Dancer Aged Fourteen (1878-80, Private Collection); Claude Monet (1840-1926), Rocks at Port Coton, the Lion Rock, Belle Ile (1886, the Fitzwilliam Museum, University of Cambridge); Paul Cézanne (1839-1096), The Cistern in the Park of the Château Noir (ca. 1900, The Henry and Rose Pearlman Foundation, on long-term loan to Princeton University Art Museum). What is most unfortunate here is that there are scholars who really are knowledgeable on the subject of Darwin's influence on later nineteenth-century art: Fae Brauer, for example, co-edited with Anthea Callen Art, Sex and Eugenics: Corpus Delecti (2008). With Barbara Larson, whose study of Redon's lithographic series Les Origines (1883) inspired a significant section of this show, Brauer co-edited The Art of Evolution: Darwin, Darwinisms, and Visual Culture (2009), and these two scholars together organized the July 2009 three-day colloquium at the Courtauld Institute in London on The Art of Evolution: Charles Darwin and Visual Cultures.

Despite the reservations I have expressed in this review, the richness of the visual material on display in the exhibition is a pleasure to see; it teaches us much and raises many questions for future research. The impressive catalogue with its encyclopedic essays provides us with a broad overview of the interconnections between science and art in the nineteenth century, albeit principally in England and the United States. Some of these interconnections can be traced directly to Darwin, some to the work of his predecessors and contemporaries, since Darwinism took almost as many forms as there were adherents. For if "Darwinism" scarcely exists as a unitary concept, still less can it be traced as a coherent and identifiable inspiration for art and artists. As the exhibition demonstrates, the influence of scientific thought is seen most clearly in scientific illustration and popular culture. For artists it exists instead in that gray area where a vague familiarity with contemporaneous scientific concepts can be drawn upon, intermingled with personal experience and interpreted in a variety of ways. Ultimately, the great value of this exhibition is that it throws into sharp relief the aspects of science in nineteenth-century art, and the aspects of art in nineteenth-century scientific illustration, showing us how thoroughly they are intertwined. By throwing up a great tidal wave of visual material, the exhibition provides us, the viewers, with both inspiration and necessity for future research.

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Notes

[1] Patrick Tort is the commissaire scientifique (chief curator) of this exhibition, the principal one of four held in Paris, 29 May to 1 November 2009. The others are "Charles Darwin et la botanique" at the Jardin des serres d’Auteuil, "Le Chemin de l’évolution du règne végétal" at the Parc floral de Paris and "Espèces invasives" in the arboretum of the Ecole Du Breuil.
Illustrations


Fig. 2, Catalogue: *Endless Forms: Charles Darwin, Natural Science, and the Visual Arts*, Diana Donald and Jane Munro, ed. [return to text]
Fig. 3, "History of the Earth" Gallery. Visible are: Frederick Edwin Church, *Cotopaxi*, 1855, The Museum of Fine Arts, Houston; and Robert Farren, *Duria Antiquior (An Earlier Dorset)*, ca. 1850, Sedgwick Museum of Earth Sciences, University of Cambridge. Installation photo by Richard Caspole.

Fig. 4, "The Struggle for Existence" Gallery. Visible are: John Hancock, *Struggle with the Quarry*, 1851, The Natural History Society of Northumbria, The Hancock Museum, Newcastle upon Tyne; and Hubert von Herkomer, *On Strike*, 1891, Royal Academy of Arts, London. Installation photo by Richard Caspole.
Fig. 5, “Darwin, Beauty and Natural Selection” Gallery. Visible are: John Gould, case of stuffed hummingbirds, with species in the genus Agyrtrix, n.d., shown in the Great Exhibition, London, 1851, Courtesy of the Trustees of the Natural History Museum, London; and video sequence of a male argus pheasant displaying to female argus pheasant, Malaysia. By Kind Permission of John Corder and the World Pheasant Association (http://www.pheasant.org.uk). Installation photo by Richard Caspole.

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