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# The Charles Darwin-Wyville Thomson Debate: deep sea crinoids, scientific evidence, and the adjudication of Darwinian natural selection

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## Abstract

By the late-nineteenth century, the deep ocean floor had become "Darwin's laboratory," a place to test the "direct action of external conditions on organisms." According to dominant Victorian marine biology, the deep sea was an eternal, unchanging biogeographical space. There, and only there, could naturalists investigate how organisms evolved without the influence of changing environmental factors. Consequently, marine invertebrate specimens from the ocean floor played a large role in the formation of evolutionary theory throughout the nineteenth century. This presentation explores the 1880s dispute between Charles Darwin and Sir Wyville Thomson regarding natural selection as the culmination of a half-century of conflict over deep sea invertebrates and biological evidence. Marine invertebrates, according to some naturalists, were uniquely suited to the philosophical study of organismal complexity. Other naturalists focused on the much-anticipated discovery of Darwin's "living fossil" dredged from the sea floor as proof through consilience. Sir Wyville Thomson, on the other hand, was certain that his deep sea crinoids offered no proof of evolution by natural selection, thereby offering a serious challenge to Darwin's theory. As naturalists fought over how to apply the valuable deep sea specimens to the theory of natural selection, the crinoids themselves were also squabbled over as physical objects to be collected, routed, and eventually controlled. The use of biological specimens in the Darwin-Thomson debate illustrates the complex interactions between expertise, evidence, and rare natural objects in the history of Darwinian evolution.

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