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The Discoverers, by Daniel J. Boorstin

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Daniel J. Boorstin, *The Discoverers*. New York: Random House, 1983. xvi + 745 pp. \$18.95.

Review by Charles T. Eby

Daniel J. Boorstin's *The Discoverers*, another superb work in a long list of literary triumphs for this prolific Pulitzer Prize winning historian, carefully blends two distinct historical approaches: the study of ideas and attitudes and their role in influencing the course of human history, and the attempt to place modern science in the context of historical evolution. Blessed with a unique perspective and wide experience, Boorstin helps date "ideas" while at the same time making real the achievements of the highly immaterial quality of human curiosity. *The Discoverers*, a clear and engrossing narrative, makes science and its impact on history understandable.

CHARLES T. EBY

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Chronologically this work ranges from the ancient world of the Egyptians and the Babylonians to the era of scientific discoveries in the twentieth century, illuminating contributions to human inquiry from Western, Moslem, Hindu, and Far Eastern cultures. Organized, according to Boorstin, in a "shingle scheme," each advancement, beginning with man's grasp of the concept of time, is related to and builds upon previous discoveries. After the first book "Time," the author proceeds to man's uncovering of the mysteries of earth's geography, then to an understanding of nature, and finally to the effect of science upon society.

Without a doubt the most outstanding feature of this book is Boorstin's celebration of the human individual. In his brief preface, he relates

My hero is Man the Discoverer. The world we now view from the literate West — the vistas of time, the land and the seas, the heavenly bodies and our own bodies, the plants and animals, history and human societies past and present — had to be opened for us by countless Columbuses. In the deep recesses of the past, they remain anonymous. As we come closer to the present they emerge into the light of history, a cast of characters as varied as human nature. Discoveries become episodes of biography, unpredictable as the new worlds the discoverers opened to us. (p. xv)

Not only the greatness and imagination of Christopher Columbus, Galileo Galilei and Isaac Newton are portrayed, but also their foibles and errors. The coldness of Newton, for example, is illustrated by an assistant's comment that in five years Newton never laughed except once when a student asked him if it was useful to study Euclid.

Even lesser individuals appearing in the panorama of discovery are treated with the wit and humor of which Boorstin is noted. The astronomer, Tycho Brahe, comes to light as a rather raucous

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personality who was forced to wear a false nose of gold and silver due to the loss of the original model in a student duel. At the age of four, for instance, Adam Smith was stolen by a band of wandering gypsies and it was some time until he was recovered. Boorstin then simply asked would Adam Smith have made a successful gypsy? Almost immediately one can imagine the father of modern laissez-faire capitalism wandering around the Carpathian Mountains sporting a gaudy pair of earrings with a violin and a stolen pig under each arm!

Besides his historical characterizations, Boorstin conveys to his reader the atmosphere of scientific discovery and, more importantly, the crucial role of human curiosity in the process of uncovering Nature's mysteries. Although modern science has accustomed itself to the quantitative standards of the experimental method in which it is the body of overwhelming data rather than intuition that is paramount, quite often, Boorstin demonstrates, it was the human ability to reach beyond the facts which led to significant discovery. Copernicus' debunking of the Ptolemaic universe serves as a noteworthy illustration. "It seems that Copernicus was animated," the author concludes, "not by the force of facts but by an aesthetic, metaphysical concern." Copernicus simply "imagined" how much more beautiful another universe might be. Such a conjecture hardly fits into the accepted methods of modern science.

Another revolution as radical and dramatic as the Copernican world, that of the "Field Revolution," with its origins in the non-scientific training of Michael Faraday (1791-1867), changed the focus of physics and prepared the way for Albert Einstein's notions of relativity. Boorstin argues that it probably would not have occurred if Faraday had been formally trained in mathematics. It was not so much Faraday's method, but rather his "amateur's naive vision" combined with his "simple faith in the unity and coherence of God's creation" which accounts for his willingness to transgress the sacred laws of Newton in the 19th century. Throughout the work Boorstin consistently shows that it was the efforts of the risk-takers, the visionaries, pushed on by the intangible human need to know, which opened the paths of further discovery.

Other aspects of *The Discoverers* are just as impressive as Boorstin's recreation of historical personalities. Why did the Arab

world, for instance, refuse to extend contact with northern Europe or attempt to sail around the African coast as did the Portuguese navigator Vasco de Gama (c. 1460-1524)? The solution the author finds is that the Arabs had nothing to gain materially from such contact, and exploration of the African territories offered them nothing which they did not already control from the north African coast. Even more significantly, why didn't the Chinese with their vast natural resources, intelligence, and technology discover America? Here the answer rests in the Chinese assumption that their country was the center of the universe and by definition, they were the supreme overlords of all peoples on the earth. The exploring spirit, so crucial to the expansion of Western Civilization, had no counterpart in China.

Boorstin's remarkable aptitude to make history live in the pages of *The Discoverers* makes this book more than worth its quite reasonable price. Unencumbered by the complex jargon of pure science and mathematics usually found in similar studies, his language and style enable a layman to easily grasp the significance of this world of human discovery. For the most scientifically-minded readers Boorstin's flair for placing scientific advancements within the context of their times reinforces the need for scientists to understand and to appreciate the historical background of their particular disciplines. While the author does argue that the story of man's discovery is a story without an end, it would have been helpful if there might have been some synthesis or concluding remarks at the end of the book. Overall, however, Boorstin's *The Discoverers* serves as an outstanding explanation of human curiosity and man's desire to satisfy it.