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On Prejudices

Richard Rhodes, in his 25th-year anniversary edition of the “Making of the Atomic Bomb” (2012), says this in the new Foreword: “Bohr [Niels] proposed once that the goal of science is not universal truth. Rather, he argued, the modest but relentless goal of science is ‘the gradual removal of prejudices.’ The discovery that the earth revolves around the sun has gradually removed the prejudice that the earth is the center of the universe.” He similarly makes the case for the discovery of microbes in relation to disease and evolution in the context of Homo sapiens not being a separate and special creation.

I am in thrall about reading books about these special insights that so alter over time mankind’s perceptions about life on the planet, and about the vastness and unknown of the universe. And so I loved reading Dava Sobel’s heliocentricity account, “A More Perfect Heaven: How Copernicus Revolutionized the Cosmos” (2011).

Nicolaus Copernicus was born in Poland in 1473. His profession was canon of the Catholic church. Somehow he became immersed in the business of astronomy, using mathematics and observation to arrive at a heliocentric model of the solar system that was completely contrary to the accepted norm of his day. This was already his thinking by 1514, but so contrary was the model, and so fearful he of opposition to him, that he did not publish anything. He needed a considerable push from another character in the story.

That character was a young German mathematician named Georg Joachim Rheticus. He sought out Copernicus in Poland in 1539 and spent the next two years having Copernicus as his mentor. The product of that collaboration was publication of the “De revolutionibus orbium coelestium” or “On the Revolution of the Heavenly Spheres.”

Rheticus personally carried the text to Nuremberg where printing of “On the Revolution” began in 1542, concluding in April of the following year. But, Copernicus died on May 24, 1543 and may never have realized that his monumental work was at last in published form, despite Rheticus’ urgent efforts to put a copy of it into his hands. He would never know the power of his work on mankind and how it would come to gradually change the “prejudice” of the world.

The story of the planets and earth-centric prejudice of course continues through Galileo’s time. Accounts of notable astronomical activities immediately after Copernicus are well described in S. Drake, “Galileo at Work: His Scientific Biography” (1978) and J.R. Christianson, “On Tycho’s Island: Tycho Brahe and His Assistants, 1570-1601” (2000). Tycho Brahe (1546-1601) led a NASA-like operation for its time in Denmark, but he was no advocate for Copernicus. Galileo (1564-1642) was, of course, and had to fence with the powers of prejudice in his time.

Consider our own time. The lesson from Niels Bohr, too, is that there are contemporary prejudices to be eroded, and hopefully before consequences lead to irreparable

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damage. Of paramount interest is the matter of human-induced climate change. That it is possible for humans to cause climate change is a powerful insight, scientifically supported; yet, there is a prejudice. So, as you ponder that issue, think about Copernicus and Galileo in their times, and try out the books that tell their stories. Great, universal stories are hard to beat, and these are universal stories.

Charles B. Greenberg,
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