

the major theorem of the paper was not the proof of the denumerability of the set of algebraic numbers, but the nondenumerability of the reals.

Earlier historians, E. T. Bell in particular, have claimed that antisemitism was at the root of much of the opposition to Cantor's work. But as Dauben clearly establishes, Georg Cantor was not of Jewish ancestry; he was baptized a Lutheran and remained a devout Christian throughout his life. We obtain a deeper understanding of the nature of modern mathematics if we look to the mathematician *qua* mathematician for the source of the opposition.

It is consistent with the known facts that Kronecker's unwavering opposition to Cantor's work was the result of a total and fundamental difference of opinion as to the nature of mathematics. The extent of this difference can be seen in two aphorisms: Kronecker's "God made the integers; all else is the work of man" and Cantor's "The essence of mathematics is its freedom". For Kronecker the objects of mathematical investigation were the integers; these were fixed and unchanging. The mathematician's role was limited to the investigation of constructions built upon these eternal god-created forms. Creativity of new forms was not part of the province of the mathematician.

Cantor saw things differently. He knew that he could understand only if he had the freedom to create the forms and concepts which would encapsulate what he sought to understand. Dauben recognizes this, writing that the most important feature of his mathematical ability was "the capacity for creating new forms and concepts when existing approaches failed".

If we are to fully understand Cantor's influence on the nature of mathematical activity it is necessary to see Kronecker as belonging to the mathematical mainstream. It may be true that in his insistence that only the integers possessed an independent existence, he cast his net too narrowly, but the prevailing mathematical opinion then, as it had been since before Plato, was that the essence of mathematical activity is investigative, not creative. Philosophers still hold to this view, being far more concerned with epistemological matters than with ontological ones. However, after initial opposition, mathematicians were quick to appreciate the freedom that Cantor's conception of mathematics offered; as Hilbert wrote in 1925: "No one shall expel us from the paradise which Cantor created for us".

Just as Prometheus stole fire from the gods and instructed the human race in its use, so Cantor showed us that, like Kronecker's God, we too are free to create symbolic forms. The integers may be theogenic; since Cantor the rest of mathematics has become anthropogenic.

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Integral representations of functions and imbedding theorems, by Oleg V. Besov, Valentin P. Il'in, and Sergei M. Nikol'skiĭ, with an introduction by Mitchell H. Taibleson, V. H. Winston & Sons, Washington, D. C., vol. I, 1978, viii + 245 pp., vol. II, 1979, viii + 311 pp., \$19.95 per volume.

This book (hereinafter referred to as *Integral representations*) is closely related to, but (both in technique and content) independent of Nikol'skiĭ's [5]