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Labyrinth of Thought:

A History of Set Theory and its Role in Modern Mathematics

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REVIEW

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The language of set theory is so all-pervasive in modern mathematics that it is difficult to imagine how mathematicians ever talked and wrote without it. Yet they did, for thousands of years. People wrote about geometric *figures* rather than sets, or they phrased propositions in terms of points having a particular property, focusing on the individual points rather than their totality and thus ignoring what we would now refer to as the *set* of points having a property. The absence of this useful concept and the concept of membership in a set led to some unfortunate lapses in reasoning. In philosophical writing, for example, an object was sometimes conflated with what we now call the singleton set whose only element is that object, leading to confusion about the meaning of the word *unique*. On the other hand, the notions of set and membership in a set are so primitive that it is easy to find prefigurations of them very far in the past. The story of set theory is therefore best told as the gradual coming into focus of a common intuitive notion. The many independent trends that brought about this focusing and thus created modern set theory form the subject of the book under review.

The author's title comes from his epigram, which in turn is a quotation from Jorge Luis Borges's 1981 book *La cifra*. Discussing his reading in the subject of set theory, Borges says, "It was not given to me to enter that delicate labyrinth." And what a labyrinth it is! In studying it, the reader is constantly confronting topics that could be said to belong to logic, topology, real analysis, algebra, geometry, and so on. If you take any convenient turning, you will soon encounter another, and there simply is no systematic way to explore the entire