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*Fractions, Plants, and Planets: Extending the 19th-Century Law of Phylotaxis*

In the mid-nineteenth century, American mathematician Benjamin Peirce related contemporary plant morphology to developing planetary theory by extending the so-called “law of phylotaxis” that expressed the arrangement of leaves on plants as a series of fractions. Peirce discovered an identity between this arrangement and planetary revolutions. His result, and its place in subsequent arguments, illustrate one use of mathematics in a nineteenth-century scientific environment based on the conviction of certainty in the universe.