

Editorial

Rajaram Nityananda, Chief Editor

Our closing issue of 2016 has a distinctly mathematical flavor. Unlike other theme issues, this was not planned but just turned out that way – it was ‘contingent’. The word is borrowed from Hermann Weyl, a towering figure of early 20th century mathematics and our featured personality. He was much more than a mathematician, bringing concepts like beauty and intuition into the mathematical realm. It is a matter of some embarrassment that we at *Resonance* did not cover (and back cover!) him for 21 years!

Weyl had a deep interest in contemporary physics. One of his early discoveries was that some particles of nature could, in principle, be left-handed or right-handed. This is the popularization of a more technical statement that they exist as mirror-image pairs. The physical world as we know it, after the middle of the twentieth century, seems to prefer one member of the pair to the other. There are many ideas as to why this happen, but no final answer.

Life on earth seems to prefer one handedness as well – not just on the larger scale, like the placement and architecture of our heart, but also at the molecular level. You would not be able to digest a mirror image of food molecules. A more tragic case is a drug known as thalidomide, from the late 1950s. The beneficial effects came from one member of the pair – chemists would call it an enantiomer. The wrong handedness caused tens of thousands of birth defects before it was withdrawn. Symmetry can be a matter of life and death!

In the middle of all the mathematics stands an article on the fascinating links between plant roots and fungi. Our concept of trees as isolated individuals has undergone a lot of revision, thanks to recent research, and the root cause (pun intended) turns out to be these invisible links. We now know that trees communicate, co-operate, and coexist in complex ways.



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