Pattern Formation in Nature: What Could Be Behind It
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Pattern formation in nature is a ubiquitous and fascinating phenomenon. A simple description will be given of one possible mechanism among many: spatial nonlocality in competitive interactions [1-2]. A tutorial explanation will be presented of random walks or diffusion, then of the logistic equation, then of their combination to produce the Fisher equation, and finally of a generalization of the Fisher equation with spatial nonlocality which is capable of producing patterns. The role of diffusion in the pattern formation process will be discussed with possibilities of a remarkable shape shifting consequence of controlled motion that we have discovered recently [3].