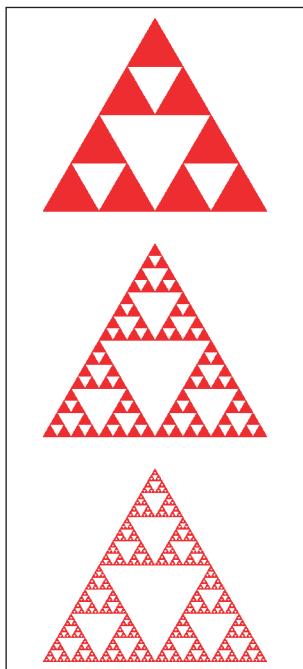


1000



GENERAL ARTICLES

977 How did Cantor Discover Set Theory and Topology?
S M Srivastava

1000 Fractal Dimension and the Cantor Set
Shailesh A Shirali

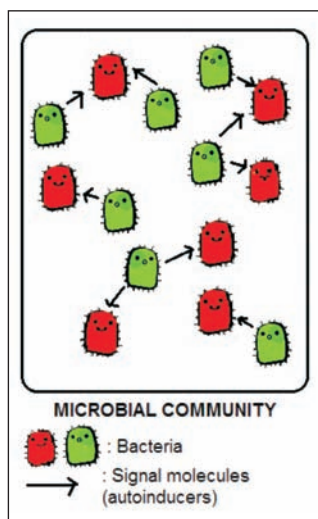
1005 Biofilms: Community Behavior by Bacteria
Vinita Shivakumar and Dipshikha Chakravorty

1017 Frustrated Lewis Pairs
Enabling via Inability
Sanjoy Mukherjee and Pakkirisamy Thilagar

1028 Goldbach Partitions and Sequences
Subhash Kak

1038 Some Remarks on Iterated Maps of Natural Numbers
Agnes M Herzberg and M Ram Murty

1005



1047 Finite Amplitude Ocean Waves

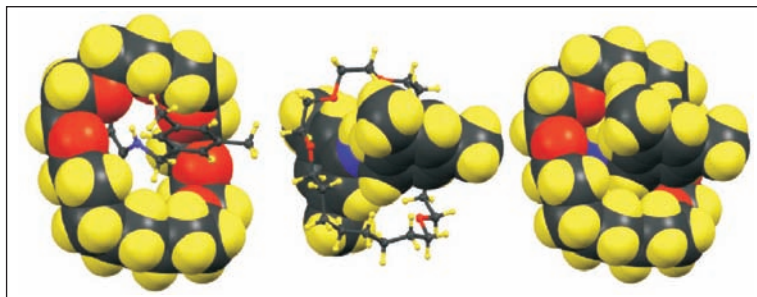
Waves with Peaked Crests and Broad Troughs
K K Varma

Self-similar fractal forms occur in nature also nearly exactly (e.g., *Romanesco Broccoli*, an edible flower bud of the species *Brassica oleracea*) that is, until some limit where the similarity breaks down due to the granularity of the underlying material.

Courtesy: Jacopo_Werther, wikimedia.org

1000





1017



Classroom

From Adiabatic Invariance to Wien's Displacement Law **1058**
Sudhir R Jain and Manan Jain



Think it Over

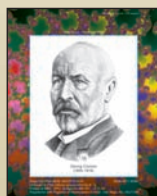
Solution to An Interesting Problem on Diophantine Triple **1061**
K S Bhanu and M N Deshpande

Front Cover



The Mandelbrot set is named after Benoit Mandelbrot (20th November 1924–14th October 2010) was a Polish-born, French and American mathematician. This is the set of complex numbers c for which the sequence of points defined by the iteration 'square and add c to get the next point' starting from 0, remains in a bounded region. This is a fractal, meaning a pattern composed of smaller copies of itself ad infinitum. (See article on page 1000.)

Back Cover



Georg Cantor
 (1845–1918)
 (Illustration: Subhankar Biswas)

DEPARTMENTS



Editorial **971**
K L Sebastian

Article-in-a-Box

Georg Cantor **972**
 (1845–1918)
S M Srivastava



Science Smiles **976**
Ayan Guha



Our Readers Write **1062**



Information & Announcements

Nobel Prize 2014 **1066**
 SynGrant **1067**

Inside Back Cover

Flowering Trees
 Credit: R Arun Singh, IISc

