

A Fractal Eye for The Colours of Nature

Michael Barnsley's exhibition record is brief. He has shown his images to family and friends and used them to illustrate publications. But *A Fractal Eye for The Colours of Nature* is the first public showing of these extraordinary images—landscape photographs and film transformed into mystifying, beautiful detail by the application of fractal geometry.

Contrasting with his exhibition record, Barnsley's career in mathematics and business has resulted in an extensive professional CV. He is a world leader in the development of fractal compression technology, and is the author of two major books, *Fractals Everywhere* published by Morgan Kaufman in the US (first and second editions) and *SuperFractals* published in 2007 by Cambridge University Press in the UK. Michael Barnsley is a professor of mathematics at the ANU who divides his time between Australia and the US.

A Fractal Eye for The Colours of Nature is the most significant visual expression of Michael Barnsley's lifelong interest in the natural world:

All my life, everyday, nature calls my eyes to stare and stare with wonder; I have a sense of the pristine, the perfect which lives both in mathematics and in the visual observable world. My art tries to capture this, to see again, as though for the first time, the beauty of it all.

Considering his background, it was not surprising that the challenge of rendering landscape in fresh, more interesting ways should have led Michael Barnsley to the work shown in *A Fractal Eye for The Colours of Nature*. The processes he has employed to produce these works will intrigue visitors to the HUW DAVIES GALLERY. But after the 'straight' images have been pulled apart and re-formed according to Barnsley's vision and complex computations, questions remain. Does the process add anything to our perception of the landscape? Are the final images interesting and worth exploring?

A Fractal Eye for The Colours of Nature is a mix of earlier works, showing the possibilities of fractal transformation on a small canvas, and large scale more recent works that demonstrate the power of this process to penetrate and illuminate landscape. Michael Barnsley's journey from the early works to the five large images in this exhibition represents, in my view, a profound shift in creative achievement and unequivocally answers questions concerning the worth of his efforts. Knowing Michael Barnsley, his passion, determination and visual inquisitiveness, I am certain this exhibition will be followed by many others that will attract great interest.

PhotoAccess is delighted to have been able to present Michael Barnsley's work to the wider Canberra community in the HUW DAVIES GALLERY at the Manuka Arts Centre.

David Chalker

Michael Barnsley



Figures in a landscape



Pathway on Mount Majura

Artist's Statement

My pictures embody the achievement of a long term goal: a deep fusion of photos of nature with fractal geometry. Each picture involves billions of computations; each photo was taken with a fractal entity in mind; each fractal entity was built with a specific picture as its target. To help make the pictures I used software that I wrote over a five year period.

Nature itself knows nothing of perspective and it contains endless tiny scenes. I refer to the intricate multiscale pattern of veins on a single leaf, the microcosm in a single drop of pond water, and the perfumed canopy of a parsley plant in seed, with insects of many sizes among the fronds. My pictures capture such notions: they shrink some regions and magnify others, careless of perspective, to reveal secret worlds of pattern and colour. My fractal transformations preserve colour and contiguity, but change the forms of structures in a picture. In this way my pictures exaggerate the essential relationships between coloured regions in a photo of nature while largely ignoring their geometrical forms.

John Murieka, in his review of my book *SuperFractals (Nature, January 2007)* says 'The author concludes by promising that superfractals will revolutionize the way mathematics, physics, biology and art are combined, to provide a unified description of the world ... I have no doubt that he is correct.'

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Michael Barnsley

April 2008



Mountain flower path



Wilson's Promontory

Biography

MICHAEL BARNSELY (B.A. 1968 Oxford University; Ph.D. 1972 University of Wisconsin, Madison) is a professor of mathematics at the Australian National University where he teaches fractal geometry and collaborates with John Hutchinson. He splits his time between Canberra and Atlanta (USA).

In previous lives he was a child of a poet, wandered Kentish lanes, was an itinerant post-doc in England, France, and Italy (1973–1979); a professor at Georgia Tech (1979–1991); and an entrepreneur—the company he co founded, Iterated Systems Inc. (1987–1998), developed fractal image compression technology used, for example, in Microsoft Encarta

List of works

1–4 and 9 artist's proofs from an edition of 5; archival inkjet prints on Sterling Rag Smooth Fine Art paper
Remaining works are framed unique images; inkjet prints on photo rag paper

1	<i>Pathway on Mount Majura</i>	1406 x 1100 mm	\$780 (unframed)
2	<i>Mountain flower path</i>	1100 x 1406 mm	\$780 (unframed)
3	<i>Figures in a landscape</i>	1406 x 1100 mm	\$780 (unframed)
4	<i>The garden</i>	1100 x 1406 mm	\$780 (unframed)
5	<i>Yellow Box Tree, Mt Majura</i>	304 x 407 mm	\$350 (framed)
6	<i>Picnic at Roaring Meg, Wilsons Promontory</i>	304 x 407 mm	\$420 (framed)
7	<i>Hiking on Wilsons Promontory</i>	300 x 400 mm	\$420 (framed)
8	<i>Two dogs hiding among rocks, Walkerville</i>	307 x 405 mm	\$420 (framed)
9	<i>Wilsons Promontory</i>	1100 x 1100 mm	\$780 (unframed)
10	<i>Shark Bay</i>	300 x 400 mm	\$350 (framed)
11	<i>Seaweed, Western Australia, with Inclusions</i>	400 x 300 mm	\$320 (framed)
12	<i>Hiking to the Lighthouse, Wilsons Prom</i>	400 x 300 mm	\$320 (framed)
13	<i>Wildflower among leaves and mosses at the Riverland, Georgia</i>	300 x 400 mm	\$320 (framed)

Film based and ambient sound works

- 14 *Seascape*
- 15 *Leaves*



The garden