

The Closing Bracket . . .

Many pieces in this issue are about the prime numbers, a topic that has fascinated human beings for over two thousand years, and continues to fascinate and please. It is remarkable that in a topic that can be introduced to a child in the primary school there are so many mysteries. In recent decades the primes have been put to uses that the ancients would have been amazed to hear — cryptography and the like. But the charm of the primes transcends their usage. It is reassuring to know this, living as we are in times when a use must be found for everything, that use quite often being perfectly diabolical in nature. It is one of the great tragedies of our time that side-by-side with so many discoveries being of great beauty being made, the world is steadily becoming a more insecure place to live in, with ever new ways being found to spread disorder and violence, and to exploit others. On the one hand we read of results like Yitang Zhang's theorem on primes separated by small gaps, Gauss's discovery of the role that certain primes play in geometric constructions, and the Prime Number Theorem, in which you find the primes and logarithms secretly holding hands under the table; on the other hand you read of rape on a scale that boggles the mind, of the destruction of the natural environment on an equally horrifying scale, and of war and ever spreading forces of darkness. How do these two worlds coexist? The question remains a compelling mystery. And what are our education systems doing about it? It is surely a matter of immense relevance to address this challenge, and to nurture minds that can look at these matters with equal insight and feeling. Recently we read of the exciting news that Voyager 1 has left the bounds of the Solar System, and in a discussion on the Scientific American website I came across the following evocative and charming poem. I thought I would close by sharing it with you.

*Oh! I have slipped the surly bonds of earth,
And danced the skies on laughter-silvered wings;
Sunward I've climbed, and joined the tumbling mirth
Of sun-split clouds, — and done a hundred things
You have not dreamed of — Wheeled and soared and swung
High in the sunlit silence. Hov'ring there
I've chased the shouting wind along, and flung
My eager craft through footless halls of air...
Up, up the long, delirious, burning blue
I've topped the wind-swept heights with easy grace
Where never lark or even eagle flew —
And, while with silent lifting mind I've trod
The high untrespassed sanctity of space,
Put out my hand, and touched the face of God*

John Gillespie Magee, Jr (1922–1941)

— Shailesh Shirali