

October 2006

News and Views

PHILIP BALL

Material Witness: Diamond dreams

doi:10.1038/nmat1730

When Robert Hazen, geoscientist at the Carnegie Institution of Washington, called his 1993 book on high-pressure research *The New Alchemists*, it was tempting to see this as yet another flippant use of 'alchemy' to describe any transformation of matter. But Hazen's evocation of alchemy in a story of the high-pressure synthesis of diamond at the General Electric laboratories in the 1950s could hardly be more apt.

For making artificial diamond is the contemporary equivalent of the alchemical quest for gold — and so diamond synthesis has a resonance that goes far beyond its practical utility. It provides an illustration of how seemingly innocuous research can take on an unguessed significance when embedded in a broader cultural context.

Joachim Schummer (Technical University, Darmstadt) has explored the links between diamond-making, alchemy and the public image of the scientist in an analysis of the 19th-century literary roots of the 'mad scientist' archetype (*Ambix* **53**, 99–127; 2006). The much older image of the avaricious and swindling alchemist had come by then to represent the striving for material goods, and often the attendant atheistic materialism, that was condemned by Romantic writers. So it is perhaps not surprising that diamond, like gold a precious natural material, became another symbol of the chemist's bad intent.

The first literary caricature of this kind is the Faustian hero of *Der Komet oder Nikolaus Marggraf* (1820–1822) by the German writer Jean Paul. *The Diamond Maker* (1894) by H. G. Wells is, as one might expect, less wary of science in general but presents an amateur chemist whose obsession with creating diamond leads to only to poverty in the manner of the medieval mad alchemist.

Balzac's hubristic chemist in *La Recherche de L'Absolu* (1834) also exclaims to his wife that 'I shall make diamonds, I shall be a co-worker with Nature!'— whereupon she scolds him for his pride. These writers often drew on contemporary chemistry to justify the plausibility of their tales — Lavoisier and Smithson Tennant had shown at the end of the eighteenth century that diamond was nothing but pure carbon. By the 1850s, there were several claims that it had been synthesized (Wells mentions that of Henri Moissan in the 1890s).

In due course diamond-making was seen as a regular capitalist pursuit. Karl Marx used it to show how rare materials become fetish objects, divorced from any true measure of value. If with minimal labour we could convert carbon to diamond, he said, 'their value might fall below that of bricks.' Olaf Nissen's 1940s Allied propaganda pamphlet *Germany: Land of Substitutes* accuses the Nazis of producing all manner of fake materials, including gems.

These tales leave their traces in broader culture. They would certainly help to explain why one critic of the GE high-pressure process, announced in 1955, objected that 'You can't make diamonds for they are nature grown.'