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Iron Pillar

The Indian heritage in metallurgy is a proud one. Zinc was extracted for the first time in the Zawar region in the 13th century AD. The brass objects of the MohenjoDaro Civilization have drawn wide appreciation. The bronze icons of the Chola Kingdom were made by the lost wax process and are a testimony to the technology as much as the artistry of the Indian metallurgist. But all these accomplishments are dwarfed by the achievements in Indian ferrous metallurgy in antiquity.

The Wootz steel (the word Wootz is a corruption of the Kannada word *ukku* for steel) has been ranked as one of the four outstanding achievements of all of metallurgy in antiquity. Indeed the foundations for modern materials science were laid by European scientists trying to unravel the properties of Wootz steel. The mastery of iron making reached its zenith in India some sixteen centuries ago with the erection of the Iron Pillar at Delhi. Towering to a height of over seven meters, the pillar weighs six tons. Its method of manufacture, the period of construction as well as the remarkable resistance to corrosion (iron is notorious for forming rust) have excited several scientific investigations. A recent book by T. R. Anantharaman (see *Curr. Sci.*, 1997, **73**, 549 for a review of the book) has compiled the available information on the subject and offered definitive conclusions to many of the tantalizing questions. Nevertheless, it has been clear that critical studies are called for to settle the questions concerning the iron pillar. R. Balasubramaniam brings fresh insights into this age-old problem. In this issue (**page 1057**) he examines the historical and dimensional evidence to demonstrate that the iron pillar has been in Delhi only for the last eight centuries and was brought to its present location from a Vishnu temple elsewhere in North India, possibly from Mathura. The article also addresses the problem of soil level corrosion. In earlier studies, Balasubramaniam has traced the remarkable corrosion resistance of the pillar to the formation of a passive film from the composite of iron and slag – a counterintuitive proposal as generally heterogeneous microstructures are more prone to corrosion. This renewed interest in Indian metallurgical heritage is a welcome development.

S. Ranganathan

Elusive power

Electrical power has become an indispensable ingredient of everyday life. Power shut-downs plague most of our cities (with some notable exceptions) and in scientific laboratories elaborate (and expensive) arrangements, for standby power and line stabilizers, have become commonplace. There is no denying the fact that enhanced power generation must also be accompanied by strategies to cut transmission losses and minimize wastage. Generations of policy planners and strategists have struggled with the increasingly difficult problems of the power sector, which occupies the centre stage in our economy. The technological options in power generation are limited. Y. K. Alagh, who currently heads the Ministry of Power (and coincidentally also presides over the Ministry of Science and Technology) addresses the issue of fuel for power on **page 1051**. Having considered many available options, Alagh concludes that 'there is unfortunately not as much discussion on the options available to us and the policies required to make the best use of them, in our interest, as is necessary'. In the power sector, as in many others, the prolonged absence of a political will to implement any sensible policy has been telling.

P. Balaram