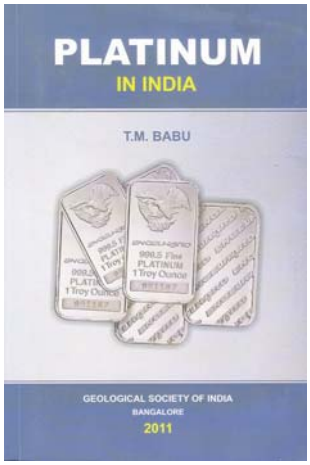


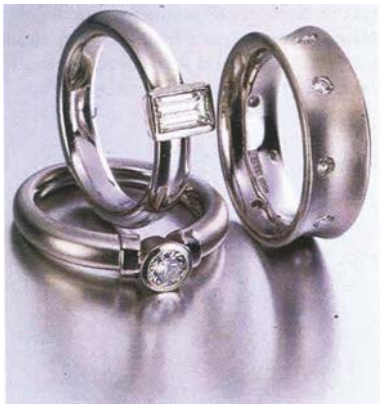
Platinum in India. T. M. Babu. Geological Society of India, PB 1922, Gavipuram P.O., Bangalore 560 019. 2011. viii + 244 pp. Price not mentioned.

Concentrations and distribution of platinum group elements (PGE: Ru, Rh, Pd, Os, Ir and Pt) in geological materials assume considerable importance in geochemical studies. The siderophile and chalcophile character and diverse redox chemistry can make this group of elements to serve as important tracers of processes taking place in the Earth's mantle. The PGE concentrations also serve as excellent fingerprints of extraterrestrial matter, as they are enriched several-fold in various meteorites compared to crustal materials. Their use in industrial applications has increased enormously during the last 25 years. Currently, there is a considerable demand for these precious metals because of their growing use in several high-technology industrial applications, such as glass, electronics, industrial catalysts, autocatalysts and anti-cancer drugs. High economic value of platinum's and its natural white shiny luster provides a rich backdrop for diamonds, but it is a metal that is just as elegant when used all by itself to create a piece of jewellery.

This book has come at the right time when PGE exploration studies in India are picking up rapidly. In the introduction, the author provides some basic information about PGE, such as their physical and chemical properties, and their use in various fields. The mineralogical and geochemical aspects are also discussed in detail. In the second chapter, a brief account of the worldwide distribution of PGE deposits from South Africa, Canada, USA, Australia and Zimbabwe is provided.

Genesis of PGE deposits and the underlying mechanisms are complex. In the third chapter, the author tries to illustrate the formation mechanisms in a brief manner and different types of PGE deposits, citing the extensive literature available in this process. The fourth chapter presents a brief review on PGE prospects in India. The subsequent chapters present an overview of PGE potential in different states such as Odisha, Karnataka, Tamil Nadu, Maharashtra, Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Goa and Kerala. Parts of the Himalayas, North East India, Andaman Islands, and seamounts in the Eastern Indian Ocean are also covered.

In the last chapter entitled 'Exploration', several important topics such as concepts of PGE mineralization, favourable environments for PGE mineralization and exploration strategies are presented. The usefulness of satellite imageries, airborne aids and other geophysical tools in this endeavour is explained. Concepts of geological mapping, geochemical exploration by stream sediments, soils, bedrock samples and drilling in exploration studies have also been covered in brief. In the end, the author also presents a brief account on the strategies of chemical analysis of various types of geological materials such as rocks, soils and sediments that are encountered during exploration studies. Popular analytical techniques like atomic absorption spectrometry and inductively coupled plasma mass spectrometry and their utility, particularly during exploration studies, are also covered in brief. Finally, the author concludes that India has a complex geological set-up with several favourable locations for PGE mineralization, and appeals to those concerned that the time has come now to make a humble beginning for bringing out the first economically viable platinum mine in our country.



Diamond studded platinum jewellery (Johnson, 2008).

CSIR–NGRI has been involved in active research on PGE exploration studies in different parts of the country, especially, in the Madawara igneous complex in Bundelkhand massif, central India during the last six years. In addition, considerable amount of work has been carried out in the area on analytical and environmental aspects of PGE. These aspects are also equally important when a book of this nature is attempted. Unfortunately these latest studies do not find a place in this book. However, this does not take away the timely importance of this publication. Overall, this book can be considered as a good source of first-hand information for the students of geology, researchers and professional explorers.

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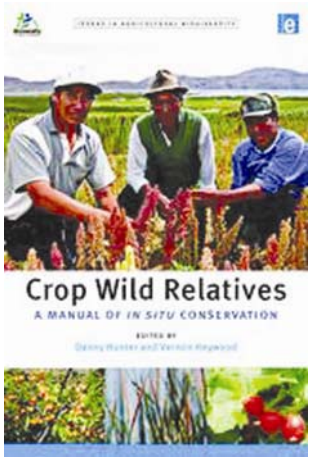

Crop Wild Relatives: A Manual of *In situ* Conservation. Danny Hunter and Vernon Heywood (eds). Issues in Agricultural Biodiversity Series, Earthscan International (with Biodiversity International), London, UK. 2011. xxvi + 414 pp. Price: £29.99 (paperback, ISBN: 978–1–84971–178–4), £90.00 (hardback; 978–1–84971–179–1).

We humans today are an aggressive, self-centred force. Our sharp intellect has

enabled us so much today that we think that we can redirect natural selection as we prefer. We have, conveniently, forgotten that we, too, are a part of Nature. 'Who in the world am I? That's the greatest puzzle!', expressive words of Charles Lutwidge Dodgson (aka Lewis Carroll, *Alice's Adventures in the Wonderland*, 1865) flash through my mind.

The cover of this book immediately reminded me the trail-blazing efforts of Tiruvãdi Sãmbasiva Venkataraman (TSV), Sugarcane Research Station (SRS; now, the Sugarcane Breeding Institute), Coimbatore, in the 1910s. The dictate to TSV and Charles A. Barber was to develop a hybrid cane crossing the wild *Saccharum barberi* with the introduced *S. officinarum*, which was expected to perform well in the northern riparian plains of India. Barber and TSV developed one, which failed. TSV persevered by crossing *S. officinarum* × *S. barberi* with *S. spontaneum*, the latter – with low-sugar content, high resistance to diseases and capacity to tolerate extreme weather conditions – that ran wild along an unnamed canal adjacent to SRS. This trial proved right and 'Co205' was born. In a decade or two, the complexion of sugar production in India changed from the 'begging bowl' status to the 'sugar bowl' status[1].

Tiruvãdi S. Venkataraman
(http://www.sugarcane.res.in/index.php/about-us/our-directors/99)

Nature has given us materials in plenty; we have developed an unkindly knack of seeing some of them as 'useful' and many of them as 'useless', and even 'harmful'. Eventually, we preferentially cultivate the useful with care; we either neglect, or even make efforts to eradicate, the useless, seldom realizing that by such action we lose valuable germplasm forever. Talking of the useless, the term 'weed' comes to my mind. The spiny *Solanum xanthocarpum* (Solanaceae) that runs wild in India, considered a weed by farmers, has been found to include compounds of substantial medicinal potential, some defined and many yet to be defined[2]. Are we looking at the biological world – the generous gift of nature – wearing the correct pair of lenses?

Botanical gardens around the world have always afforded splendid opportunities for *ex situ* conservation of plant germplasm[3–5]. Highly improved tissue culture is proving a worthwhile tool in *ex situ* conservation; how admirably clairvoyant was Gottlieb Haberlandt[6], when he predicted the versatility of tissue culture as a tool in biology[7]! Today, we have travelled far beyond what Haberlandt predicted, and use this tool deftly in different plant management scenarios, including agriculture[8]. Nevertheless, *in situ* plant conservation efforts indicate more advantages than *ex situ* conservation efforts, because of their amenability to easy manipulation and management, and maintenance of dynamic-plant profiles, since plants perform well in their natural habitats[9], whereas both garden and aseptic-culture conditions include shortcomings such as modified nutritional environments and limited space, which can modify plant expressions over time.

This book is the result of the concerted efforts of many involved in the UNEP–GEF's Crop Wild Relatives Project operating since 2004. This book includes 16 chapters grouped under 'Introduction', 'Conservation planning', 'Conservation actions' and 'Other major issues'. Three appendices, an index for the cited organisms and a general index fill the remainder. Chapter 1 sets the scene well for the material included in the book. It starts with a short explanation of what are genetic resources and what is a crop wild relative (CWR), landmark events and publications in the history of CWR, values and uses of CWR, why *in situ* conservation of CWR is critical, threats to the maintenance of CWR, the challenge of *in situ* conservation of CWR, a brief on the United Nations Environment Programme–Global Environment Facility (UNEP–GEF) (CWR) project, and how to use this book, which the editors Hunter and Heywood have preferred to call a manual, whereas I thought it fits snugly in the framework of a 'toolkit'.

The chapter 'What do we mean by *in situ* conservation of CWR?' interested me most. It provides an elegant contextual explanation of *in situ* conservation. This concept is mostly followed as a protected areas system, which also includes the generic ecosystem approach in conserving CWR. Details explaining differences between 'ecosystem approach' and '*in situ* conservation' are available. While reading this section, I remembered the efforts made in revitalizing the ecological underpinnings of sacred groves in India, triggered by the pioneering work[10] of Madhav Gadgil in the 1970s. Several new terms coined by policy planners exist in this book. For example, 'genetic-reserve conservation' was new to me. Genetic-reserve conservation, Hunter and Heywood explain, is the location, management, and monitoring of genetic diversity in natural and wild populations within defined areas designated for long-term conservation.

The section 'Conservation planning' includes well-presented chapters that pertain to sociological and policy dimensions of *in situ* conservation of CWR. It includes chapters that refer to different tactics that could be usefully deployed in *in situ* conservation efforts of CWR; for instance, chapter 11 deals with different strategies for conserving taxa that occur outside protected areas. The section 'Other major issues' deals with relevant corollaries that would be useful in launching these tactics in a village (or town) community context. The chapters on global change, capacity building and communication are useful inclusions that would empower a rural agricultural extension worker.

Reading about the National Citrus-Gene Sanctuary (West Garo Hills, Meghalaya) and its efforts to conserve the Indian citrus germplasm *in situ* in this book, I smiled to myself; I wondered how the Uttarakhand Valley of Flowers National Park[11] was missed. At this juncture, some level of discomfort filled me, reminding me how the intensified use of the high-yielding varieties of *Oryza sativa* in modern India has – literally – ousted populations of Kutiraivãli, Kitçiliçambã and Kuranguçambã, the CWRs of rice that were historically raised in the Kavéri floodplains of Tamil Nãdu[12]. Thanks to A. V. Balasubramanian, K. Vijayalakshmi, and the scientific staff at the Centre for Indian Knowledge Systems, Madras, we have known of many traditionally preserved rice germplasm in Tamil Nãdu[13], which could have been lost otherwise: Kałar-pãlai that can tolerate modestly

elevated soil salinity level, and Sirumani and Neelam-sambã particularly used for better health outcomes of lactating women. M. S. Swaminathan in his foreword in this book has waxed eloquently on the rich-biological diversity of *Oryza* in Koraput, Odisha.

This book impressed me as a valuable addition to contemporary natural resource management literature; well executed and easily readable. I could spot one or two inconsistencies in the use of terms: e.g. 'crop wild relatives' occasionally referred as 'wild crop relatives', intended to mean the same. The strength of this book is the inclusion of many international case studies and relevant information presented crisply as boxed items. This made me think, would this book not easily fill the space of a textbook for postgraduate students of natural resource management? The other vital requirements of an ideal textbook, such as 'review questions' and 'challenges' are absent. But I recognize that Hunter and Heywood have not developed this book as a textbook. Given the contemporaneousness and quality of information supplied, I am convinced that this book would be of interest to plant and crop geneticists, and be useful to natural resource managers, agriculture policy makers, extension workers and postgraduate students of natural resource management.

The theme of this book prompted me to recall India's rich natural history–heritage tapestry with pride. But, what recurred in my mind was that on the one hand, we recognize and feel proud of our natural history and heritage, whereas on the other, we continue to tread a path construed with a forceful dictatorial misalignment with nature in the context of agriculture and its management. As I write this, Rachael Louise Carson's words (*Silent Spring*, 1962) '... man is a part of nature, and his war against nature is inevitably a war against himself' were resonating in me.

The price of even the paperback edition could be beyond the purchasing power of an average Indian. The publishers indicate that the entire book is freely downloadable (http://www.cropwildrelatives.org/resources/in_situ_conservation_manual.html) and each chapter as sets of e-learning modules (http://www.cropwildrelatives.org/capacity_building/elearning/elearning.html#c6867). Worthy of consideration, I imagine.

1. Venkataraman, T. S., *Agric. J. India*, 1928, **28**, 166–176.
2. Singh, O. M. and Singh, T. P., *J. Sci. Ind. Res.*, 2010, **69**, 732–740.
3. Waylen, K., *Botanic Gardens: Using Biodiversity to Improve Human Well-being*, Botanic Gardens Conservation International, Richmond, UK, 2006, p. 32.
4. Axelby, R., *Arch. Nat. Hist*., 2008, **35**, 150–163.
5. Raman, A., *Curr. Sci.*, 2010, **100**, 1092–1096.
6. Haberlandt, G., *Kaiserl. Akad. Wiss. Wien, Math. Naturwiss*., *Kl. Denkschr*., 1902, **111**, 69–92.
7. Krikorian, A. D. and Berquam, D. L., *Bot. Rev*., 1969, **35**, 59–67.
8. Singh, G. and Shetty, S., *Biotechnol. Bioinf. Bioeng*., 2011, **1**, 147–158.
9. Goyal, A. K. and Arora, S. (eds), *India's Fourth National Report to the Convention on Biological Diversity*, Ministry of Environment and Forests, Government of India, 2009, p. 144.
10. Gadgil, M. and Vartak, V. D., *Econ. Bot.*, 1976, **30**, 152–160.
11. Kala, C. P., *Curr. Sci.*, 2005, **89**, 919–920.
12. Raman, A., *Int. J. Ecol. Environ. Sci.*, 2013, **39**, 37–49.
13. Arumugasamy, S., Subramaniyan, K., Sridhar, S. and Vijayalakshmi, K., *Traditional Rice Varieties*, Centre for Indian Knowledge Systems, Madras and Pesticide Action Network, Penang, Malaysia, 2007, p. 74.

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Annual Review of Public Health, 2012. Jonathan E. Fielding, Ross C. Brownson and Lawrence W. Green (eds). Annual Reviews, 4139 El Camino Way, P.O. Box 10139, Palo Alto, California 94303-0139, USA. Vol. 33. 473 pp. Price: US$ 83.

Public health experts in India – the kind who believe that health of the people is the Government's responsibility – would miss a heartbeat if they are asked to learn lessons from the health system in the US. But the US health system is a good example of what not to do. The country spends huge amounts of money on healthcare and yet the indicators are not commensurate. The *Annual Review of Public Health* could help experts in India prove that models in developed countries would not work in developing countries.

The *Annual Review* looks at different aspects of the public health system, usually in developed countries. Every year, it points out the problem areas in the existing healthcare systems hoping that this would help device suitable health policies in the North. The 2012 edition is dedicated to Barbara Starfield, a public health expert who promoted primary health during her lifetime. If a country wants to improve health indicators, it has to invest in primary health, she advised. Unfortunately, primary healthcare continues to be one of the most neglected areas in the US.

The *Annual Reviews'* content is predictably divided into six sections. The first is the symposium, the theme of which changes each year. In the 2012 edition, authors look for ways to reduce health disparities. This should be helpful for India where people need to deal with such disparities everyday – where the poor are unable to get treatment for kala azar, while the rich get doctors to treat flatulence. The five essays in this section lament the lack of progress in reducing the disparities, but they do not provide answers. When Diane Rowley and Vijaya Hogan (University of North Carolina, Chapel Hill, USA) analysed the disparities in infant mortality amongst different populations – Hispanics, American Indians, Alaska Natives and others, they found that clinical care is not equitable and ends up contributing to disparity. Unfortunately, solutions have not been proffered.

The remaining five sections of the volume too strengthen the evidence against the US system of healthcare. For example, in the section on epidemiology, Stephen Bezruchka (School of Public Health, University of Washington, USA) points out that in the 1950s, the US had suitable indicators of good health and ranked well among nations. But Bezruchka, then points out that in the coming years US did not have the same improvement in health outcomes as other developed countries despite spending huge amounts on healthcare services. He suggests that there should be national coordinated long-term effort to expose