

From a forest with as many as 250 species of trees per hectare we fly to northern Michigan to search the species-poor jackpine woods for Kirtland's warbler, one of the rarest birds in North America. We learn that extreme dependence on a particular habitat can be either a cause of rarity or a condition of it. And suitable winter habitat of this migratory bird, on the Bahaman island of Eleuthera, is counter-intuitively maintained by the grazing of introduced goats—a conservation villain in many other parts of the world. Concepts such as conservation-dependent species, dispersal ability, and the ecological role of warblers in controlling insects bring science to the chapter, and the value of a Canadian Forces base in Ontario for the conservation of Kirtland's warbler adds an intriguing new potential partner to the mix.

We then trek to Nepal's Chitwan National Park, where the author has spent many years studying species such as tigers and the greater one-horned rhinoceros. Chitwan reveals the importance of long-term studies of population dynamics, genetic variability, and the role of large herbivores in 'designing' their own habitat (called the megafaunal fruit syndrome). From the flood plains of Nepal we hop to the Cerrado, the savannah habitat of giant anteaters and maned wolves in southern Brazil as well as attractive land for the expansion of industrialized agriculture. Countryside biogeography, matrix conservation, convergence, ecological equivalents, sources and sinks, and the role of fire in ecosystem management are parts of its story, along with the many wounds inflicted on rarities by agriculture expanding to help feed the growing human population.

The volcanic Hawaiian archipelago is our next stop, credited by the author as once having 'perhaps the highest concentration of rarities on Earth'. But then humans arrived, with the first Polynesians bringing rats, pigs, and chickens with them, and hundreds more non-native species following Captain Cook and other aliens to the islands, bringing devastation to the native species. Adaptive radiation, island biogeography, and more climate change are all introduced here, before we move on to Indochina, where scientists found an amazing diversity of large mammals, several new to science, after the end of the Indochina War. It is no surprise that the war had adverse impacts on species but a disheartening surprise is that peace may be even worse for some species, judging from the disappearance of Javan rhinos and kouprey after the war.

We end our pilgrimage on a more positive note in the Himalayan Kingdom of Bhutan, where the King prefers the use of gross national happiness to gross national product as a measure of human well-being. Finally,

an answer to conserving the world's rarities: 'Developing our gift for compassion is a critical contribution to the persistence of rarities.' But what works in isolated Bhutan may not be easily applied to the whole world, so we learn that our ethical support needs to be accompanied by science, control of invasive species, economic incentives, and improved governance at all levels from the village to the globe (for example, through the climate change and biodiversity conventions).

This short review hardly does justice to the rich diversity of species and issues presented in a highly entertaining way. The conservation discussion would have been enriched by more thorough consideration of the economics of conservation (who wins, who loses, who pays, who suffers). Madagascar, southern Africa, marine rarities, and polar regions were missing, and zoos and botanic gardens certainly deserve more attention. But these are just quibbles about a thoroughly engrossing book that the readers of this journal will surely enjoy.

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Churning the Earth: The Making of Global India by Aseem Shrivastava and Ashish Kothari (2012), xxi+394 pp., Penguin Books India, New Delhi, India. ISBN 978-0670086252 (hbk), INR 699.

India strides the earth like a future economic colossus. One of the BRIC countries (Brazil, Russia, India and China), its sustained economic growth through the economic crisis of the first decade of this century has sucked in restless capital in search of high returns impossible in established industrial economies. Indian corporations have become global players, buying mines, manufacturing plants and land, selling everything from motorcars to film. What is the source of all this razzmatazz? What are its effects, on Indian society and on nature? These are among the questions *Churning the Earth* sets out to answer.

Aseem Shrivastava is an environmental economist, and Ashish Kothari is an environmentalist, founder of the environmental NGO Kalpavriksh. Together they have written a wordy but worthy book, and tell a sobering tale. Their starting point is the neoliberalization of the Indian economy in the 1990s, when 'structural adjustment' became the price of massive loans from the International Monetary Fund and World Bank to deal with a balance of payments crisis. The result was a deregulated economy in which corporate

commerce has overreached bureaucratic and democratic governance to refashion lives and landscapes over vast tracts of India. The economy that developed was one that involved massive inequality, a delirious stock market and a brittle vulnerability. *Churning the Earth* does not pussyfoot about: liberalization has created a wealthy elite and satisfied the demands of international capital, but left the vast majority of Indians exposed to the same old problems of hunger, entrenched poverty and unemployment, caste and gender inequalities, limited access for the poor to land and livelihoods, and political tension. Far from resembling a tiger, India's economy has grown like 'a drunken stunted dog' (as Shrivastava & Kothari entitle their second chapter).

Churning the Earth is long, and a curious mix of outraged journalistic and didactic styles. It is full of facts and figures and footnoted references. It demands a familiarity with the geography and governance of India, and the peculiarities of weights and measures (lakh, crore and quintal). But the story is clear enough. The deregulated economy drew a vast number of people (some 250 million) into the global consumer economy, important participants in globally networked patterns of production, advertisement and consumption. But it left the vast majority of Indians behind.

These people, the rural and urban poor, form the moral heart of the book. The book has two parts, of unequal length. The first eight chapters review the experience of economic liberalization, setting out in detail the failure of economic growth to trickle down to the poor, and the way policies have undermined India's ecological security. The country is described as 'a house on fire' (chapter 4), with pollution and resource depletion everywhere, unplanned and more or less unchecked. Successive chapters analyse the failure of governance to provide a secure frame for decision-making about development (chapter 5), the abandonment of agriculture (and of the vast number of smallholder farmers whose land is offered up for business investment through a series of schemes and scams such as Special Economic Zones). Shrivastava & Kothari argue that these have driven processes of population displacement and socio-economic exclusion. They draw a direct link between the rapacity of industry, variously inept, weak and corrupt governance, and the rise of radicalism, such as the Maoist Naxalite movement in north-east India.

The second part of *Churning the Earth* attempts to match this fierce critique with an alternative. Inevitably perhaps, this section is shorter. It is also more speculative, with three chapters that seek to explain how to achieve 'an imaginative cooperation perhaps unprecedented in history' (p. 246). A short prologue

(opened by a long quote from the incomparable Wendell Berry) ushers in a call for 'radical ecological democracy'. In the neoliberal economy, decisions about resource use are taken in corporate boardrooms far away from the places where they have impact. The authors' solution is a radical localism, and they discuss examples of attempts to give local communities a voice in decision-making about their future. They offer this struggle for 'socio-economic and ecological justice' as a sign of hope in a time of restless despair. It is

never easy to set out alternative futures, but Shrivastava & Kothari do a good job, concluding "between the seemingly 'impossible' path and the manifestly insane one, we prefer the former" (p. 308).

The critique of India's political economy in *Churning the Earth* has real bite. Moreover it is not something that can be dismissed as a quarrel 'in a far away country between people of whom we know nothing' (as Neville Chamberlain had it). The world is indeed joined in the way Shrivastava & Kothari

describe, and lives in India, USA, Europe and Africa are inextricably linked by global markets and corporate and political structures. It is important to ask, as Shrivastava & Kothari do, what kind of world do we want, and what kind of democracy might get us there?

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