



**FIGHTING HUNGER & MALNUTRITION** • edited by *Ashim Choudhury*  
Observer Research Foundation • New Delhi • 2000 • Rs 95 • 74p

This volume is an in-depth debate on the nexus between hunger, poverty and malnutrition and its impact on human capital.



**NEGOTIATING WATER RIGHTS** • edited by *Bryan Randolph Bruns and Ruth S Meinzen-Dick*  
Sage Publications • New Delhi • 2000 • Rs 475

Instead of focussing only on state law, this volume recognises that water rights claims are also based on customary law and local practices.



**ENVIRONMENTAL PLANNING: THE CONSERVATION AND DEVELOPMENT OF BIOPHYSICAL RESOURCES** • *Paul Selman*  
Sage Publications • London • 2000 • £17.99

This edition is a comprehensive overview of the principles behind the planning of rural and urban environments.

REVIEWS

BOOK

'Ant'ics and antibiotics

**THE EARTH DWELLERS — ADVENTURES IN THE LAND OF ANTS** • Erich Hoyt • A Touchstone Book • Published by Simon and Schuster • 1996 • 319 pp • US \$13

RAGHAVENDRA GADAGKAR

THIS book has two kinds of heroes — ants and ant watchers. It is a book about the fascinating lives of ants and about the equally fascinating lives of two most accomplished myrmecologists, as ant researchers are technically called — Edward O Wilson and William L Brown. Having had the good fortune of meeting both Wilson and Brown, I read the book with great pleasure.

There is no reason why readers who have not met Wilson or Brown should enjoy it any less. Field

biologists like Wilson and Brown, indeed, lead a rich life that lends itself more readily to accounts like the one under review.

Having read the original writings of Wilson and Hölldobler in *The Ants* and *Journey to the Ants*, (both published by Harvard University press) and having some experience in researching ants myself, I found Hoyt's description of the lives of various groups of ants less absorbing, but that fault cannot be credited to the author.

Hoyt's narrative should fascinate many a reader as it alternates between amazing tales of leaf cutter ants, fire ants, army ants and many other kinds of ants and descriptions of seemingly trivial, and hence, even more interesting details of the thoughts, actions, biases, idiosyncrasies, and

adventures of Wilson and Brown and several other myrmecologists that feature in the book.

Hoyt's book should be read widely both on account of its human protagonists and for its ant protagonists.

Wilson, Professor at Harvard University, USA, is one of the most influential biologists of our times. Having made significant contributions to the study of ants, biogeography, evolution and speciation, having invented the fields of animal and human sociobiology, he nevertheless describes himself as follows: "Most children have a bug period. I never grew out of mine."

Brown, Professor at Cornell University, USA, until his death in May 1997, made lasting contributions to ant taxonomy, and particularly to the relationship between taxonomy and evolution. Bill Brown as he was affectionately called, will be most fondly remembered for the countless travel and



AKHILESH

natural history stories that he loved to tell — including many from his experiences in India during the second World War.

Originating at about the same time as the Dinosaurs, ants have risen to become one of the most important components of terrestrial ecosystems. Ants can be found everywhere. It has been estimated that something of the order of ten thousand trillion ants inhabit the earth at any given time!

Some 350 genera and 20,000 species of ants are conservatively estimated to exist although ants, unknown to science, almost certainly outnumber known species. The world's enormous biodiversity, of which ants form no small

succeed we need to take our people back to nature and this is just where the ants, Wilson, Brown and Hoyt have a crucial role to play.

Personally, I think the love of ants or any aspect of nature for that matter, goes far beyond conserving biodiversity. Any one interested in nature cannot ever claim to experience boredom.

Let us take the example at hand — ants. Let me quote from Wilson: "The colony is the unit of meaning in the lives of ants. The workers' loyalty to it is nearly total. Perhaps as a result, organised conflict among colonies of the same species is far more frequent than human war... ants employ propaganda, deception, skilled surveillance, and mass

economic surpluses, all of which were pre-requisites for the development of modern civilisation. But the ants did it much before us. They invented agriculture some 50 million years ago.

There are some 200 species of ants that derive all their nutrition from fungus farming. Thousands, even millions of workers march out, find particular species of plants, cut leaves to a size that is convenient for carrying, and march back to the nest. In the nest, the leaves are cut into pieces 1-2 mm in diameter coated with oral secretions and inoculated with tufts of fungal mycelia from another portion of the colony's fungus gardens.

Manuring their gardens with their fecal pellets

## Agriculture, considered the most important development in human history, was invented by ants some 50 million years ago

part, is being destroyed at an alarming rate even before it can be scientifically documented. The only way we can ever hope to retard the speed of this trend, if not reverse it, is to get the support of young people all over the world.

Lives like those of Wilson and Brown and books like those of Hoyt are the best tools we have in capturing the imagination and enthusiasm, and enlisting the support of young people around the world.

The surest way of generating a healthy concern for the environment is to expose people, especially during their formative years, to the fascination of natural history and the adventures involved in unravelling nature's mysteries.

Nature is her own best protector but for her to

assaults singly or in combination to overcome their enemies... some fight by dropping stones on their adversaries, while others conduct slave raids so as to increase the numbers of their labour and fighting forces.

But not all is harmony inside the warrior states, even those engaged in territorial defence. Selfish behaviour is common, even among ants, especially during conflicts over reproductive rights."

Consider another feat of the ants. Human agriculture which is believed to have originated some 10,000 years ago, has rightly been considered the most important development in human history.

Agriculture made possible high rates of population growth, urbanisation and

and using unknown antibiotics, they manage to maintain a pure culture of the desired species of fungus. A similar feat would give microbiologists an inferiority complex!

When a new queen leaves to found her own colony, she receives a dowry from her mother's nest — a tuft of fungal mycelia carried in her mandibles.

The so-called leaf cutter ants of South America are believed to have thus clonally propagated fungi for millions of years, a feat that leaves evolutionary biologists most puzzled.

I could go on and on both about Wilson and Brown and about ants and their ways but I would rather let the reader enjoy Hoyt's first hand account of the tiny creatures. ■

## ON THE SHELF



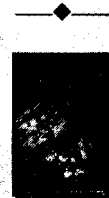
**CHEMLINE BOOK OF QUOTABLE SCIENCE**  
compiled, edited and presented by Dilip M Salwi-Konark  
Publishers-New Delhi-1999-Rs 400-434p

This book contains more than 3,500 quotes, on science and of scientists, addressed to anybody interested in science.



**SCIENCE IS THEIR GOD AND OTHER PLAYS**-Dilip M Salwi-Ocean Books-New Delhi-1999-Rs 190

A collection of plays that provides an insight into the relationship between science and Indian society.



**TRADED RESOURCE FLOWS FROM HIGHLAND TO LOWLAND — UNDERSTANDING ECONOMIC LINKAGES**-Kamal Banskota and Bikash Sharma-ICIMOD Publications-Kathmandu-1999-99p

This study provides methodological leads and evidence of the nature of highland-lowland economic links in the case of Nepal.