

In This Issue

LINKING ECOLOGY AND HEALTH IN THE DEVELOPMENT OF ANTIBIOTICS

The effects of pharmaceutical agents in the environment demonstrate complex relationships among humans, wildlife, and ecosystems and the potential feedback loops of health and disease across scales. **Jjemba and Robertson** use the example of synthetic 4-quinolone compounds—increasingly used to meet clinical and veterinary antibiotic needs—to argue that the environmental fate of pharmaceuticals should be explicitly included as part of drug design and development. They propose an approach based on enviropharmacokinetics and enviropharmacodynamics that expands on clinical approaches and calls for integration of public health and ecological concerns in both research and development of antibiotics.

SHEDDING LIGHT ON THE COMPLEX ORIGINS OF TRYPANOSOMIASIS

The heuristic importance of conceptual models to graphically display complex phenomena is a growing theme in the sustainability literature. **Berrang-Ford et al.** use a systems approach to synthesize significant evidence for the economic, sociopolitical, environmental, and social influences in outbreaks of sleeping sickness (trypanosomiasis) in Uganda. They examine the ways in which these influences have been modeled in the past and compare previous models with their conceptualization. From this analysis, they identify opportunities for research and an improved understanding of the disease dynamics for trypanosomiasis.

COMPLEX ENVIRONMENT-HEALTH LINKAGES IN CANADIAN COASTAL COMMUNITIES

Integrated socioecological approaches are increasingly applied to understand and respond to interrelationships between the health of individuals, communities, and the biophysical environment. Over time, these relationships are influenced by abrupt transformations in environmental, industrial, institutional, and social sectors, called *restructuring*. Drawing on research conducted as part of the interdisciplinary Coasts under Stress research program, **Dolan et al.** examine the implications of restructuring on the health of people, places, and communities on Canada's east and west coasts. Their case studies and proposed socioecological framework delineate pathways and challenges for promoting health in the context of restructuring.

ACUTE INFLUENZA-LIKE REACTIONS AND CYANOBACTERIA-ASSOCIATED ENDOTOXINS

An observation of repeated episodes of an acute influenza-like reaction by humans after exposure to tap water vapor led **Annadotter et al.** to investigate water quality issues in Scandinavia and Zimbabwe. In this article, they are able to relate the syndrome to the occurrence of endotoxins in the water supply. Intriguingly, the concentrations were highest in waters where cyanobacteria occurred. Endotoxins were found to be associated with both the cyanobacteria and the extensive colonies of gram-negative bacteria linked with the most common bloom-forming species. The authors point to the need to address eutrophication as a catchment-level

phenomenon, taking an ecosystem health approach rather than relying on water treatment.

GEOGRAPHIC INFORMATION SYSTEMS AND DISEASE RISK ASSESSMENT IN GREAT APES

Spatial analysis using Geographic Information Systems technology has been increasingly relied on in natural resources and environmental management, as well as in public health. These applications are uniquely combined by **Sleeman** to generate hypotheses associating human health, habitat fragmentation, and great ape health in terms of the risk of acquiring human diseases. The results suggest that improvements in public health infrastructure in target countries would benefit the health of both human and great ape populations.

COMMENTARIES ON THE MILLENNIUM ECOSYSTEM ASSESSMENT REPORT

The Millennium Ecosystem Assessment (MA), a global effort to assess the state of the world's ecosystems, was released in March 2005. **Weinstein** and **Confalonieri** each present their views on the MA report. **Weinstein** provides a summary of the four key findings and brings them together to build a case for better tools to assess the economic consequences of ecosystem management decisions and for better evaluation of these tools. **Confalonieri** focuses on one part of the MA, arguing that the health consequences of ecosystem degradation are unequally distributed globally because most emerging infectious diseases are located in developing countries in the tropics.

Published online: July 19, 2005