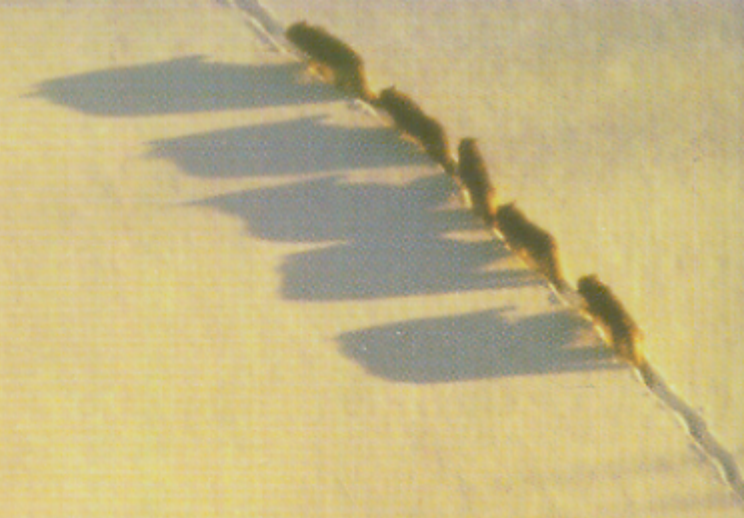




Cause and Correlation in Biology

This book goes beyond the truism that “correlation does not imply causation” and explores the logical and methodological relationships between correlation and causation. It presents a series of statistical methods that can test, and potentially discover, cause–effect relationships between variables in situations in which it is not possible to conduct randomised or experimentally controlled experiments. Many of these methods are quite new and most are generally unknown to biologists. In addition to describing how to conduct these statistical tests, the book also puts the methods into historical context and explains when they can and cannot justifiably be used to test or discover causal claims. Written in a conversational style that minimises technical jargon, the book is aimed at practising biologists and advanced students, and assumes only a very basic knowledge of introductory statistics.

BILL SHIPLEY teaches plant ecology and biometry in the Department of Biology at the Université de Sherbrooke, Quebec, Canada. His present ecological research concentrates on comparative eco-physiology and the ways in which plant attributes interact to produce ecological outcomes. He has also contributed significantly to research in topics including plant competition, species richness and plant community ecology. His statistical research is equally diverse, covering areas such as permutation and bootstrap methods, path analysis, dynamic game theory and non-parametric regression smoothers. This rare combination of practical experience in both experimental science and statistical research makes him well positioned to communicate statistical methods to practising biologists in a meaningful way.

Front cover image © Tony Stone

CAMBRIDGE
UNIVERSITY PRESS
www.cambridge.org

ISBN 0-521-79153-7



9 780521 791533 >