The past decade has witnessed a major revival in attempts to separate biodiversity signals from biases imposed by sampling and the architecture of the rock record. How large a problem this poses to our understanding of biodiversity patterns remains debatable, and new approaches are being developed to investigate this question. Here palaeobiologists with widely differing approaches and interests explore the problems of extracting reliable information on biodiversity change from an imperfect geological record. Topics covered range from the application of information-theoretic approaches that identify directional causal relationships to an in-depth study of how geological biases could influence our understanding of dinosaur evolution. A wide range of new insights into the links between the land, shallow-marine and deep-sea rock and fossil records are presented, making this volume invaluable to anyone in the Earth or life sciences who wishes to remain abreast of this dynamic and rapidly evolving research area.