

Methods in Quaternary Ecology - Introduction

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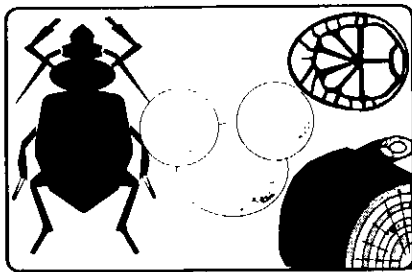
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Articles



Methods in Quaternary Ecology – Introduction

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A new special series devoted to various biological groups used in the reconstruction of Quaternary environments is being launched by *Geoscience Canada*. Quaternary fossil studies have a long tradition in Canada, beginning with Dawson's 1857 paper on fossils from Champlain Sea deposits near Montreal. Subsequently, Canadians have maintained a strong commitment to Quaternary fossil analysis, most importantly during the last 20 years. It is intended that the review papers included in the "Methods in Quaternary Ecology" series will bring to light the accomplishments and progress of Canadian research.

The unique Canadian landscape and its Quaternary history have contributed much to the understanding of Quaternary processes and events, some not clearly evident in other geographical regions of the world. For instance, pollen studies in eastern Canada have been involved in demonstrating the importance of forest pathogens on shaping past forest communities. Consequently, forest pathogens have been accepted as a plausible explanation for unusual trends in pollen records in parts of Europe. Newly discovered

fossil packrat middens in British Columbia provide new sources of paleoenvironmental information. Hopefully, Canadian fossil middens will play as major a role in Quaternary paleoenvironmental reconstructions as middens have in the southwest United States. A somewhat novel area of research being conducted in Canada is freshwater sponge analysis. Systematic fossil freshwater sponge analysis is not being undertaken outside of North America. These and many other topics contained in the papers of this series are rarely covered in most review papers.

This series is not intended to be a reiteration of Berglund's (1986) recent manual. The papers in that volume and many other review papers published recently have a European focus. There are comparatively few papers of a similar nature from North America. The word "methods" in the series title is not intended to denote strict recipe-style papers. Rather, it is intended to reflect the general nature of respective biological groups as the basis for research methods in Quaternary ecology, in the same way that thermoluminescence and electron spin resonance are methods of Pleistocene dating (Rutter, 1985). In as much as laboratory processing and analysis employ standard techniques, each paper briefly outlines the available technique, but where appropriate Berglund's volume remains the standard handbook. It is hoped that this series will reinforce the importance of Quaternary environmental studies within the geoscience community and will increase the profile of Canadian contributions in their respective disciplines.

Recently, West (1985) reminded us of the role and importance of Quaternary research as a science. Fossil studies give us the means by which to assess natural processes and rates of change through geological time. Processes viewed from Quaternary time are equally applicable to earlier geological time periods. As Quaternary deposits provide a major economic resource, fossil studies may aid in identifying or evaluating their true economic value. West states further that the key to the future is the past. Thus, when dealing

with problems of environmental change, Quaternary paleoecological methods play a central role in tracing the environmental impact of pollution, acid rain, "greenhouse effects" and ecosystem behaviour. This type of information is important in predicting environmental impact and change which can be used in resource and governmental management programs.

The papers contained in this series exemplify the multidisciplinary nature of Quaternary ecology. The future of Quaternary research depends upon close collaborative efforts between respective specialists and upon the teaching of multidisciplinary courses. These points were emphasized by the Report of the Committee investigating the Quaternary Geosciences in Canada (Bird, 1987). It is hoped that this series will be of interest to all Quaternarists, and will serve as an introduction to students and non-specialists actively engaged in Quaternary research.

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