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See table of contents

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Comptes rendus

KARROW, P. F. and CALKIN, P. E., ed. (1985): ***Quaternary Evolution of the Great Lakes***, Geological Association of Canada, Special Paper 30, 258 p.

This is a proceedings volume for the symposium of the same name that was held at the Geological Association of Canada annual meeting in London, 1984. It contains 18 papers and is a companion to the Lake Agassiz volume which was published as Geological Association of Canada Special Paper 26. Fittingly this volume is tied to the earlier work by a concise summary of Lake Agassiz history by Jim Teller, the editor of the earlier volume.

The Great Lakes volume is divided into separate sections for each of the five lake basins, each starting with a general review paper. These papers are complete syntheses which review and discuss earlier work (with understandable emphasis on summary reports) and present a picture of Late Wisconsinan and Holocene evolution of the lake basin in question, complete with ample diagrams and maps.

In addition to the five review articles on the main lake basins, there are papers presenting new information or reviewing individual aspects of single basins. These vary in number from 4 papers for the Lake Huron Basin to 1 for the Lake Ontario Basin and the topics covered vary from shoreline features in the Sault Ste. Marie area (W. R. Cowan), to molluscan faunal changes in the Huron Basin (B. B. Miller, P. F. Karrow and G. L. Mackie), to discussion of glacial Lake Algonquin and the Fenlon Falls outlet (P. F. Finemore). Some contain considerable detail and are restricted in coverage to a relatively small area (such as "Postglacial history of the Minesing Basin" by W. D. Fitzgerald) and will probably be mainly of interest to regional specialists. Most, in this group however, relate the subject discussed to events and features of the lake basins as a whole. Some of the factors brought out in these are: There probably was no well defined hinge line for isostatic tilting and consequently some of the deposits and features that have been related to Late Pleistocene lakes in the Michigan Basin are probably related to mid and late Holocene high lake levels ("Lake level, uplift and outlet incision, the Nipissing and Algoma Great Lakes", C. E. Larsen); Lake Algonquin shorelines apparently project 45 m below the Port Huron outlet, suggesting that Lake Algonquin could not have used this outlet ("History of glacial Lake Algonquin in the Haliburton region, south-central Ontario", C. A. Kaszicki); and till and rock benches on the south shore of Lake Erie probably relate to Plum Point Interstadial and older events ("Chronology and nature of the Pleistocene beaches and wave-cut cliffs and terraces, of northeastern Ohio", S. M. Totten).

The volume is well illustrated, includes many paleogeographic diagrams and contains an abundance of information on lake levels and isostatic uplift. In addition it presents a variety of ideas on the relationship between lake levels and threshold elevations, uplift and shifting outlets, and position of lake level in relationship to certain sediments.

One of the good points of this book is that it begins with a paper that ties Great Lakes basin Quaternary history with that of Lake Agassiz basin. This gives the reader a starting point at the head end of the basins. When the proceedings volume of the Champlain Sea Symposium, which was held in 1986 is published, the editors will hopefully follow this precedent and begin the Champlain Sea volume with a review article on the history of the Great Lakes basins.

About the only criticism I can make of the Great Lakes volume is that it does not contain a general summary article or a summary table. The interrelationships of the different lake basins are very complex and individual authors have done good jobs of working out the histories in the different basins. However the Quaternary development of the region as a whole would be much easier to follow if there was a single summary paper and table. The volume does include a comprehensive index which makes it possible to find all information on a specific glacial lake or phase but it does not take the place of a summary table defining all glacial lakes and phases in terms of the area covered, level and age.

One thing that comes clearly is that even though the existence of the glacial Great Lakes has been known for more than 150 years and they have been the subject of countless studies, papers, theses and books, we still have much to learn about the late and postglacial history of the area. This is not to belittle what has been done or to say that this book does not present a comprehensive history, but is a measure of the complexity of the subject being discussed.

In summary this volume is another milestone in our knowledge of the Quaternary history of the Great Lakes area. It contains a balance of review articles for the generalist and papers on details which will interest the specialist. It should be of interest to all Quaternary scientists who are interested in regional aspects of the Quaternary and it will be many years before it will be equalled.

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