

Geology of the continental margin of the Eastern Canada, Geology of Canada, no 2

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Review by Christopher G. Kendall

This volume is part of the DNAG Project which covers the progress in geology and geophysics studies of North America for the 1980's and is intended to point the way to work which could be carried out in the next decade. This volume is one of nine volumes assembled by the Geological Survey of Canada. Included with it is a map box containing fourteen wall maps at a scale of 1:5,000, 000 that summarize amongst other things the geology, tectonics, magnetics and gravity anomaly patterns, regional stress fields, thermal aspects, seismicity, and neotectonics of this part of North America and its surroundings.

The beautifully illustrated text is divided in fifteen chapters that are themselves grouped into an introduction, regional geology, margin evolution, Quaternary studies, resources , and a short postscript describing the a view of future work beyond 1987. This awesome book is breathtaking in the breadth of its coverage of the geology and geophysics of the Eastern continental margin of Canada. It is essentially the work of teams of Canadian, American and European scientists working with data largely gathered during exploration for hydrocarbons in this region. Information ranges from gravity, magnetics, shallow surface samples, to deep offshore wells for hydrocarbons to seismic lines shot to establish the hydrocarbon potential of the region. Topics covered in the text cannot be adequately covered in a review like this but list as: Paleozoic geology, geology of the SE margin of Canada, continental margin of Newfoundland, the geology of the Labrador Shelf, Baffin Bay and Davis Strait, aspects of North Atlantic paleo-oceanography, geodynamics of rifted continental margins, Quaternary geology, Modern sedimentary processes, petroleum resources, mineral resources and finally constraints on development.

Some of the chapters are so long they might have easily been published as books themselves. For instance the chapter on geodynamics of rifted continental margins was particularly striking in its innovative use of the new data available to the writers. It is illustrated by numerous diagrams, corss-sections and maps. When they are finished reading this, not only will the readers understand the mechanisms of the regional plate tectonics but they will have a much wider perspective on plate tectonic behavior on other continental margins, since the techniques applied here are applicable in many other locations. It is in fact unfair to select this or any other chapter from the others since the level of professionalism the pervades each paper should be an inspiration to us all. The book represents the results of a monumental undertaking and the authors have done justice to their work.

The book is obviously of prime importance to geologist and geophysicists playing the Eastern Canadian continental shelf, and should be on all their shelves. Similarly geologists studying continental margins will find they have a great reference book for themselves. I would think a University Earthscientist professor could teach numerous courses from this material. The size of the book and its government origin should not drive the potential reader away, for really this text is a mine of information which will be used by earthscientists for many years to come. The Canadian Survey, the editors and the authors have created a major geological work and should be congratulated for their work.