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C. B.'s Geology: A Talk on the Rocks! From a Conversation with Dr. Robert Raeside

Cape Breton has not always been surrounded by water. Cape Breton has not always ridden on the surface of the earth, and it has not always been in the northern hemisphere. The story of its moves and transformations can be read through its geology • the rocks we find today. And in terms of geology, Cape Breton Island was only discovered in the 1980's.... Dr. Rob Raeside: Cape Breton Island is really the • well, it was the centre of the world, back 3 or 4 hundred million years ago! (It was) right in the middle of a huge continent which stretched from California to China. And it was probably buried 30 kilometers down in the crust of the earth, at the middle of where a large ocean basin had recently closed up, within the previous 20 million years. And as a result of that, its geological history is very, very complex. When we first mapped the geology • the bedrocks of Cape Breton in 1983, '84, '85 • 'we were encountering one new rock type every day. And I suspect that there is probably a greater variety of igneous rocks • plutonic rocks that were once magmas • in the Cape Breton Highlands than there is anywhere else, certainly in North America and perhaps anywhere in the world except along the Himalayas or the Alps. down into America. But here in Cape Breton it's all squeezed into just 150 kilometers. So, we've got an exciting story. We're really at a fulcrum of the Appalachian origin, a centre of the Devonian world. And we've enjoyed working that story out. We've enjoyed trying to figure out what all the little pieces are that were players in it. But that's all been eroded down through the last 3 hundred million years. We talk of that as the recent past • 3 hundred million years or so. And now it's exposed for a view. We were so exposed when we first mapped that area. It had never really been looked at by geologists before. We didn't know what we were going to find when we went in there. And it was really thrilling. It was a sense of discovery. It was like what the explorers must have felt when they first found places like North America. We were finding these rocks for the first time. Every bend in the river was something new. Unfortunately, that's gone. We've now been up every brook in Cape Breton Highlands and we've been down all the rivers and all the logging roads. So we're not going to find anything new. But we're still doing detailed scientific measurements and work and • 'more lab work, now, rather than field work. But the initial sense of discovery of this centre of tectonic activity • 'which is the mountain-building activity that forced Africa into North America and sent up this huge mountain range • that was the initial discovery. And it's such a narrow little belt here in Cape Breton. It expands to be something the width of the whole of the island of Newfoundland or the whole of the Appalachians when you get in the far north we've got the Pre-Cambrian Shield. Down in southern Nova Scotia, we've got a fragment of Africa. That's south of a line from Canada to Truro. And everything between that line and the Cape North region is what was scattered out across an ocean. And 3 or 4 hundred million years ago! was eventually all squeezed together and compressed to make a mountain range that was the height of the Himalayas 300-odd million years ago,



and has now been worn down. Cape Breton Island was the centre of the world, In a nutshell, that's the story. All the details account for all the debris and bits and pieces of islands, and continental plateaus, and things that sit out in oceans. And they all got scraped off and plastered against North America when Africa bumped into it, 360 million years ago. And that's the story that we're trying to unravel in detail now. In the last couple of million years or so, we have the Ice Age. We sometimes say the ice sheets surged across, but they only moved centimeters a year. But they came across the continent. They came out across Cape Breton and Nova Scotia, far off onto the Continental Shelf. Then they melted back. And this happened 4 or 6 or 20 times, depending on who you listen to. And the ice sheets scraped off the surface material and exposed the bedrock, and filled up the valleys with all kinds of boulders and sand, and the deposits which are now quarried for road metal and so on, around Middle PIPER'S TRAILER COURT Featuring: Fully Licensed Dining Room Laundromat Mini-Mart Ocean-Side Campsites Swimming Pool 929-2233 929-2067 Indian Brook on the Cabot Trail (Halfway between Baddeck and Ingonish) From either direction on the Cabot Trail, plan for comfort and welcome Piper's Old Manse GUEST HOUSE with Bed and Breakfast OPEN YEAR ROUND