

Natural regional variations in climate could account for the breakup of ice shelves such as Larsen B in Antarctica.

Nature behind melting ice

MICHAEL R. LEGAULT

This past June, 46 distinguished climate scientists sent Paul Martin an open letter supporting environmental protection in general, but "strongly" disagreeing with the scientific rationale for the Kyoto Protocol. A copy given to the *National Post* was published, but the letter was otherwise generally ignored, both by Martin and most of the media.

Instead, government types and the print and broadcast industry have diligently avoided involvement in any intelligent debate of the theory that humans are inducing large-scale global warming. "Why bother?" seems to be the attitude. After all, you can't argue with melting ice.

Despite common knowledge that ice has been freezing and thawing to greater or lesser extents on Earth for millions of years, thinning ice in the form of glaciers, shelves and sheets has become the *cause célèbre* of global-warming apparatchiks, not to mention fodder for the news wires. A Canadian edition of *Time* magazine in September, 2000, ran a cover story titled "Arctic Melt-down." The title and story derived in part from a *New York Times* article that reported scientists had discovered open water at the North Pole "for the first time in 50 million years." Since then, no ice formation in the world has been spared scrutiny. The decline and fall of ice has been documented in articles detailing the collapse of an ice shelf in Antarctica, the melting of snow on Kilimanjaro and wilting glaciers in remote corners of the world. Now comes word that the 443-square-kilometre Ward Hunt ice shelf off Ellesmere Island in Nunavut has split in two, eliciting new fears of a melting world.

predicted by the same climate models that foretell large-scale greenhouse gas warming of many degrees over the next century.

Because of these inconsistencies with the man-made global warming theory, many researchers believe the most likely explanation for thinning ice in regions of the arctic is regional, natural variations in climate. These shifts in regional climate are what allowed the Vikings to grow crops in Greenland a thousand years ago. On similar geological time scales, the Earth is currently recovering from a previous cold period, the "Little Ice Age," which ended around 1850.

Dr. Madhav Khandekar, an environmental consultant and former senior research scientist with Environment Canada, is one of those who believes the formation of a crack in the Ward Hunt ice shelf is most readily explained by natural regional fluctuations in climate. Local warming, perhaps induced by the Earth's recovery from the Little Ice Age, may have played a part in speeding up the splitting. However, Dr. Khandekar reports that ice shelves — large protrusions of ice pushed by weight and gravity on to open water — are inherently unstable formations. The Ward Hunt ice shelf is itself a remnant of a much larger ice formation that extended along the northern coast of Ellesmere Island at the beginning of the last century. This origi-

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The split up of the ice shelf is reported in a paper published in the journal *Geophysical Research Letters* this month. In an e-mail, one of the three authors of the paper, Professor Warwick Vincent at the University of Laval, said that while the event does not directly prove global climate change, it is consistent with predictions of such change.

That's not exactly the way it was interpreted by the many newspapers that ran the story. The *National Post's* headline was "Shelf's breakup a clear sign of global warming." In an editorial, *The New York Times* suggested a direct link between the splitting ice shelf and climate change caused by industrial emissions.

This is not just quibbling over semantics. There are two major problems with these statements. First, as suggested by Prof. Laval, there currently is no conclusive proof of global warming, despite the legions of people who believe so "because summers seem hotter and winters seem milder." Second, if it is occurring, there is even less proof that industrial emissions are the cause of it.

The Earth's average surface temperature has risen about one degree Celsius since the late 1800s. At least half of that increase took place before 1940, when atmospheric carbon dioxide buildup due to man-made emissions was relatively minor. Neither has the warming been consistent: Dr. Peter Chylek, a professor of physics and atmospheric science at Dalhousie University, found that summer temperatures over the Greenland ice sheet have been decreasing steadily since the 1980s.

Similar cooling has been observed over the Antarctic continent. Further, satellite measurements show little or no warming of the upper atmosphere — warming

nal ice sheet contracted 90% between 1906 and 1982 by separating from its northern edge.

Dr. Claire L. Parkinson, Oceans and Ice Branch, NASA Goddard Space Flight Center, reports that while the sea ice has thinned in the high Arctic, it has thickened in the Antarctic. Ice has also thickened in Baffin Bay/Labrador Sea and the Gulf of St. Lawrence. She also points out the evidence that many of the retreating mountain glaciers in the news began melting long before the invention of the internal-combustion engine. The Whitechuck Glacier in the Northern Cascades of Washington state, for instance, reached its peak coverage at the end of the Little Ice Age and has been in retreat ever since.

Dr. Parkinson played a role in *The New York Times's* eventual retraction that open water appeared for the first time at the North Pole. As much as 10% of the Arctic Ocean is unfrozen, open water, depending on time of year and other conditions. She says scientists do not know whether the mass balance for ice formation on Earth is currently negative (more ice melting) or positive (more ice forming). The Antarctic ice sheet is three kilometres thick and more than 13 million square kilometres in area, larger than the total land area of Canada. Likewise, Greenland's ice sheet is substantial and apparently thriving. Today, there is more ice on Earth than in many previous epochs, according to Dr. Parkinson.

Not enough, apparently, for the global-warming worriers who, contrary to record of geological history, believe that once water is frozen it should stay that way forever.

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