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**Why the Wind Blows: A History of Weather and Global Warming, M. Levy (Ed.). Upper Access, Inc., Hinesburg, VT (2007). 192 pp., Price: US\$ 14.95, ISBN: 978-0942679-31-1**

This book was written by a civil engineer who was the principal of a consulting engineering firm. It is his fifth book, but the first dealing with the environment which, by the way, is not the topic of discussion until the last chapter. That chapter is preceded by the following chapters that deal mainly with the weather:

- Imported from Siberia – meteorology and the origins of weather
- The currents of Patagonia – Magellan's 38-day adventure
- Force Ten – the sunken treasures of the buccaneers
- Hurricane strength – no region is immune
- Dorothy's whirlwind – great plains tornadoes and cyclones
- The last great adventure – transglobal balloon flight
- Transformations – clouds shed tears
- Conquering the top of the world – snow, blizzards and avalanches
- The unsinkable *Titanic* – ripped open by an iceberg
- Monsoon and other big winds – death and renewal
- The cradle of civilization – floods enrich the Nile valley
- The modern floods – the Missouri and the Mississippi
- El Nino – the mysterious current

For readers of this journal, the most interesting information is in the last chapter entitled: Our changing climate – global warming and our altered future. This chapter calls that topic “. . . the greatest weather related change in human history” which is an ominous trend that began a little over a century ago and continues today; it is the result of human activity. The change in weather has been gradual, but Levy opines that it could be abrupt in the future. The problem, Levy notes, is that “For the past thousand years, the average temperature in the world has been relatively constant, though it had very slowly crept downward until the end of the 19th century. Since then, there has been a sudden, sharp, and continuing rise in temperature of 0.7 °C.”

Global warming results from the emissions of gases that includes carbon dioxide, methane, etc. that are emitted in amounts that overwhelm nature.

Given current trends, the situation will not get better. In the next 50 years, the world's energy use is expected to double led by increased industrial development in China and India. In China, Levy notes, a new coal-fired power plant comes on line every 7–10 days and by 2025 China may exceed the US in carbon dioxide emissions. Not the least of the potential impacts of these emissions is the melting of the glaciers with a concomitant rise in sea level.

Other factors supporting this global warming also are cited. Several key ones are listed below:

- The carbon dioxide in the atmosphere during the last ice age was 180 ppm and, after the glaciers retreated, climbed to 280 ppm. The concentration remained relatively constant after that time but now has reached 380 ppm and is projected to go to 500 ppm before the end of the century.
- The temperature has increased 0.7 °C since the end of the 19th century and is expected to rise 3 °C by the end of this century.
- The habitat of plant and animal species has migrated northward approximately 50 km per decade.
- The Antarctic is losing 150 km<sup>3</sup> of ice per year.
- Glaciers throughout the world are retreating.
- Over the last century, seas have risen 150–200 mm.
- The increase in dissolved carbon dioxide in the sea resulted in increased acidity.
- Permafrost is melting in Siberia and Alaska yielding methane and carbon dioxide that had been trapped since the last of the ice age.
- The 10 hottest years in historical record have occurred since 1990.
- The most costly natural disasters have occurred since 1988.

The trends noted above are disturbing and clearly the result of human activity. I recommend that all scientists read this book. It is a sobering look at the impact of society on nature.

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