The Truth about Climate Change

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By MICHAEL P. COLLINS, Author, *Saving American Manufacturing*

Global warming has become such a hotly debated issue that the country is polarized — and most citizens get lost in the claims and counterclaims.

Manufacturers fear that these dire warnings will lead to more government regulation, and anti-government factions believe that there is a climate conspiracy in which top scientists have been caught cooking their books, falsifying temperature data and excluding colleagues who disagree.

Representative Michelle Bachman, whose Earth Day speech in 2009 was titled “An Ode to Carbon Dioxide,” made a claim that carbon dioxide levels are “a part of the regular cycle of the earth.” In pandering to her right-wing supporters, it is easy for her to dismiss the problem because she won’t be around to see it happen.

Both sides of the argument got all tangled up in rising temperatures and sea levels. Proponents see recent extremes in weather, such as hurricanes, droughts, floods and melting glaciers, as factors that confirm the dire predictions of global warming. I believe that the detractors are correct when they say that science can’t make a case for global warming based on temperatures from the last 10 years or even the last century.

Since the end of the ice age, there have been many fluctuations in temperature from the little ice age during medieval times to long periods of heat and drought. I think that climate changes must be evaluated over long periods of time (maybe over millenniums) to really make sense.

In his recent article “Global Warming’s Judgment Day [1],” Mr. Karl Stephan argued against the idea of climate change. He cited the work of Princeton Physicist William

Happer in a recent article in *First Things* magazine. Happer said, “[A]bout 80 million years ago, the level (of C02) was 1,000 parts per million (PPM) and guess what? The plants loved it. (They need a certain amount in the air to survive at all), and life was just as abundant on earth as it is now, if not more so."

I would like to take issue with Mr. Happer’s sweeping generalization by offering some proof that the rise of C02 is a real threat to the eart,h and people should pay attention to its continued growth from now on.

There have been five major extinction events since multi-cellular life began around 600 million years ago (MYA):

Ordovician	440-450 MYA
Devonian	360-375 MYA
Permian	250 MYA
Triassic	205 MYA
(KT) Cretaceous/Tertiary	65 MYA

What did all of these extinction events have in common? In each extinction event, C02 levels reached 1,000 PPM. New studies of collected fossils, as well as carbon cycling, show evidence for extinction events that lasted hundreds of thousands (or even millions) of years. In recent years, geologists have partnered with biochemists to study environmental conditions during the major extinctions. They looked for biomarkers, which are organic traces of ancient organisms that are left behind after they die.

These ancient biomarkers suggest that the oceans have reverted to a low oxygen condition known as anoxia more than once. Some of these biomarkers were the remains of photosynthetic green sulfur bacteria along with purple sulfur bacteria. These bacteria live and thrive in anoxic marine environments, such as stagnant lakes like the Black Sea. These bacteria produce (oxidize) hydrogen sulfide gas (H2S), which is a poison to most forms of life, and convert it to sulfur. The discovery of these bacteria around the extinction events made scientists consider a new cause for extinction.

Scientists have known for a long time that oxygen levels were low around extinction events. Some speculated that this might be caused by volcanic activity that would raise C02 levels, increase global warming and lower oxygen. This is certainly a logical assumption around the time of the Permian Extinction (250 MYA) when the Siberian Traps erupted 3 million cubic kilometers of material, as well as billions of tons of gas. However, volcanic eruptions do not adequately explain extinctions in the ocean and plant deaths on land. (Vegetation loves C02.)

Scientists think that if the oxygen levels drop far enough in the oceans, then the

anaerobic bacteria (who hate oxygen) would proliferate and produce large quantities of hydrogen sulfide (H2S), which is poisonous. If the buildup of H2S overcomes the oxygen in the ocean and rises to the surface, then great bubbles of toxic H2S would be released into the atmosphere.

Further studies indicate that enough H2S was released over thousands of years to kill animals and plants on land and sea. The H2S would also attack the planet's ozone shield, allowing UV radiation to intensify as an additional killer of life. Evidence of the ozone shield problem has been found in Greenland in fossil spores that show deformities of microorganisms from UV radiation during the Permian Extinction.

Lee R. Kump and Michael A. Arthur of Penn State University estimate that, during the Permian Extinction, there was 2,000 times more H2S gas in the atmosphere than given off by volcanoes today.

The lethality of H2S gas increases with the rise of global temperatures. It is known there was a lot of volcanic activity at the same time as most of these extinctions. Volcanoes erupt with enormous amounts of C02, which raised temperatures and kick-started the increase of H2S. The poisoning of the oceans would have killed marine life first, but eventually would choke the land animals, and kill the plants and the food chain.

Another version of the poisoning theory was published in a 2010 *Scientific American* article by Marah Hardt and Carl Safina — who also subscribe to the poisoning of the ocean theory, but in a different way.

Safina and Hardt assert that as C02 levels go up, the oceans would not be able to simply absorb it, and instead, the reaction with seawater would form carbonic acid. They say, "As the water becomes more acidic, corals and animals such as clams and mussels have trouble building their skeletons and shells. But even more sinister, the acidity can interfere with basic bodily functions of all marine animals, shelled or not. By disrupting processes as fundamental as growth and reproduction, ocean acidification threatens the animals' health and even survival of species."

This theory does not seem to apply to land animals or the plants that also died in the big four extinctions. But it could be that CO2 caused multiple acidification problems in the oceans.

The theory of poisoned oceans and a toxic atmosphere make a lot of sense in the Permian Extinction, which lasted hundreds of thousands of years. Unlike the later asteroid extinction that killed off the dinosaurs, the Permian Extinction killed off 96 percent of marine species, 70 percent of land species and most plants. The same biomarkers also indicate that the oceans were poisoned, and CO2 was high in the Devonian, Triassic and middle Cretaceous periods.

The Key Facts

The media is focused on global warming and rising oceans from ice melting, but

they are missing the point. Extinctions begin with rising C02 levels, but eventually these conditions bring on ocean anoxia and the proliferation of the anaerobic microbes that make H2S gas. They also may acidify the ocean with carbonic acid.

As things progress, the hydrogen sulfide gas rises out of the ocean and poisons the atmosphere. So, the real killers are C02 levels, acidity, microbes, UV radiation and hydrogen sulfide gas, which take centuries to poison the oceans and atmosphere. Global warming and rising sea levels are a minor precursor to the big event. Science has proven that C02 levels were more than 1,000 PPM in all five extinction events. Today, C02 levels are 385 PPM and rising.

I was surprised to learn that dead (anoxia) zones in the ocean have been increasing since the 1970s. Most of these dead zones are caused by nitrogen from fertilizer runoff. A study by the UN Environmental Program shows that there are now 146 dead zones in the world's oceans, ranging from under a square mile to 45,000 square miles.

These dead zones do kill bottom-dwelling creatures like clams, lobsters and oysters, but that is not the real problem. The real threat is that these zones could be breeding zones for anaerobic bacteria that produce H2S gas. With the help of increasing global temperatures, the H2S gas could expand to the point where large tracts of the ocean are poisoned and the H2S eventually gets into the air.

It is interesting to note that, despite the likely possibility of an extinction event, there are still many citizens who do not believe in rising C02 levels and feel it is just another government conspiracy. Citizens should ignore the political debates and speculations on whether the planet is warming or the oceans are rising; these are secondary issues. The critical measurement is the rise of C02 and the expansion of dead zones in the ocean.

C02 has been rising for a short period of time. It is now at 385 PPM and continues to rise at approximately 2 PPM per year. At this rate, we will be at 585 PPM. At the end of the next century, it will rise to 765 PPM. If C02 continues to rise, regardless of the reasons, and if it ultimately gets past 900 PPM, an extinction event will be underway.

I personally think part of the increase in C02 is caused by man, and it is a good idea to begin a program to reduce man-made pollutants in the atmosphere as a defensive measure. If the C02 in terms of parts per million begins to rise steeply, it may get beyond our control. So why not accept that it could be a real danger and do something?

Don't listen to the media debate about rising sea levels and global warming; it is in their best interest to have a political debate and polarized, contentious views. Just track C02 levels. Over the next 20 years, you can monitor the rise of C02 on your own. If it is still climbing at 2 PPM, we are really heading for trouble. .

This is an excerpt from Michael Collins' upcoming book: The Intelligent Man's Guide to Science*. Michael P. Collins is also the author of the book* Saving American

Manufacturing*. You can find related articles on his website via* www.mpcmgt.com *[2].*

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