

Backlash against ozone hoax moves into the public eye

After years of promoting the doomsday theory that the ozone layer is being depleted by chlorofluorocarbons (CFCs), the U.S. news media are quickly backpedaling from the scenario. On Feb. 24, ABC's Nightline broadcast featured a special report covering the backlash in the scientific community against the "global warming" and "ozone depletion" scare stories. The backlash, as Nightline host Ted Koppel remarked, has been influenced by the book The Holes in the Ozone Scare: The Scientific Evidence that the Sky Is Not Falling, one of whose authors, Rogelio A. Maduro, was interviewed for the show. Anchor Ted Koppel pointed out that the late Dr. Dixy Lee Ray, former Washington State governor and Atomic Energy Commission head, spoke highly of the book.

Environmentalists are scared, according to Nightline. Michael Oppenheimer, staff member of the Environmental Defense Fund, is quoted as saying, "If they can get the public to believe that ozone was not worth acting on, that they were led in the wrong direction by scientists, then there is no reason for them to believe anything the environmentalists are saying." And indeed, if the truth were fully known, the ban on CFCs would be quickly overturned.

In order to assist readers in finding out the scientific evidence that the news media tried to cover up since the ozone hoax first reared its head, EIR excerpts below the introduction to the 1992 Holes in the Ozone Scare, with the permission of the publisher, 21st Century Associates.

The ozone depletion story

The theory that man-made CFCs would deplete the ozone layer is only one of many theories claiming that ozone depletion would lead to doomsday. The theory originated in March 1971, when James McDonald, an atmospheric physicist from the University of Arizona, testified at congressional hearings on the Super-Sonic Transport (SST) program. At the time there was a major fight to kill the SST program, but all of the arguments of the opponents had failed so far. McDonald's testimony centered around his theory that water vapor emissions from the SST were going to wipe out the ozone layer, allowing a large amount of ultraviolet radiation to penetrate the surface of the Earth, which would allegedly cause a massive increase in skin cancer incidence. . . . The news media seized upon the skin cancer story and made it the issue of the

day. Funding for the SST was killed, and the ozone depletion theory was born.

(McDonald, it should be noted, had previously testified in Congress as an ardent proponent of the theory that UFOs—unidentified flying objects—regularly visited the Earth, causing major electrical blackouts in the process of recharging their alien spacecraft.)

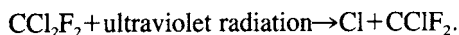
Once the skin cancer scare had been established as an issue that would get the news media's attention, ozone depletion theories began to proliferate. These theories maintained that the ozone layer was going to be wiped out by nitrogen oxides (rather than water vapor) from SST exhausts, by nitrogen oxides from atmospheric nuclear tests, by nitrous oxide from nitrogen fertilizer, by chlorine from the Space Shuttle exhaust, and by emissions from pesticides, fumigants, and whatnot.

The theory claiming that CFCs would deplete the ozone layer was theory number 5, invented by F. Sherwood Rowland and Mario Molina in December 1973. F. Sherwood Rowland was then head of the chemistry department at the University of California at Irvine, and Molina was his assistant. At the time, the first three ozone depletion theories (SSTs, atmospheric nuclear tests, and fertilizers) had faded into the background. The theory in vogue was that chlorine from the Space Shuttle exhaust would wipe out the ozone layer. Rowland and Molina, however, found a much better source of chlorine in the stratosphere than the Space Shuttle—CFCs.

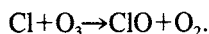
The Rowland and Molina theory says that CFCs are so inert that there are no sinks (nothing to capture or destroy them) in the troposphere (the portion of the atmosphere below the stratosphere). Therefore, CFCs have very long lifetimes in the atmosphere. According to the theory, the most common CFCs, CFC-11 and CFC-12, both very long lived, remain in the atmosphere about 75 and 120 years, respectively. After 5 years in the troposphere, the CFCs are transported into the stratosphere. There ultraviolet rays break them up into "free" chlorine atoms (those that can combine with other elements) and other molecules. This free chlorine then breaks down ozone molecules.

Specifically, according to the theory, the following reaction is alleged to happen to the CFC-12 used in household refrigerators. CFC-12, or CCl_2F_2 , undergoes the following

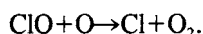
chemical reaction:



The single chlorine atom (Cl) then combines with an ozone molecule (O₃) to form a chlorine monoxide molecule (ClO) and molecular oxygen (O₂):



The chlorine monoxide molecule left by this step is also quite reactive and, according to Rowland and Molina's claims, it quickly combines with atomic oxygen (O) in the stratosphere to release another oxygen molecule plus more atomic chlorine:



To sum up the Sherwood and Molina disaster theory, we quote from a July 1988 article in *Physics Today*: "The net result is that ozone molecules are removed from the stratosphere and chlorine atoms are free to begin the process over again. A single chlorine atom may destroy hundreds of thousands of ozone molecules during its residence in the stratosphere. This reaction cycle is interrupted when the free chlorine atoms become sequestered in so-called reservoir compounds."

From this purely hypothetical beginning spring major catastrophe theories of allegedly harmful ultraviolet radiation wreaking destruction on Earth.

The evidence

Fortunately, Rowland and Molina's version of atmospheric chemistry is not the whole story, nor are the various ultraviolet radiation catastrophe theories.

CFCs are inert, nonreactive, nontoxic, nonflammable chemical compounds that do not destroy ozone or anything else. Omitted from the hypothetical stories of CFCs' mass destruction of ozone is the fact that the amounts of chlorine contained in all the world's CFCs are *insignificant* compared to the amount of chlorine put in the atmosphere from natural sources.

Further, there has yet to be published a single scientific paper that presents any documented *observations* of CFC molecules actually breaking up in the stratosphere. The chemical reactions described by Rowland and Molina have been carried out only in laboratory experiments. Rowland and Molina have based their *theoretical model* on just a few chemical reactions in a carefully controlled laboratory setting. In the real world, at least 192 chemical reactions and 48 photochemical processes have been observed to occur in the stratosphere. Most of these reactions are very fast processes involving highly reactive species, particularly free radicals and atoms in excited states, whose reactions can affect the chemistry of the stratosphere

at very small concentrations. These reactions are extremely difficult even to reproduce in the laboratory; measuring their rates would be yet more difficult.

Some scientists have challenged Rowland and Molina's laboratory experiments. One of the criticisms is that they carried out their experiments of CFC photolysis in the laboratory with the gas confined in glass tubes and that they disregarded the possible edge effects in these tubes that can greatly distort results.

To take a couple of reactions involving just a few molecules, carry them out in an isolated laboratory environment, and then claim this is what happens in the stratosphere (where it cannot be measured) is scientifically preposterous. For this reason, Rowland and Molina carefully prefaced their 1974 ozone scare paper with the following disclaimer: "We have *attempted* to calculate the *probable* sinks and lifetimes for these molecules" [emphasis added]. Such disclaimers, however, are never mentioned by the press; instead, a theoretical model is reported as observed fact.

This book aims to provide the scientific evidence that will enable the reader to make his own informed judgment on the issue. Although there is great deal of scientific detail in the book, we have written the book for the layman. The detail was necessary because the proponents of the ozone depletion theory have deliberately obfuscated the facts about ozone research and omitted the most critical factors that would enable an informed citizen to make his own judgment based on the evidence.

Beyond the work that we present in the book, we have gone a step further and enlisted the help of the great pioneer of ozone research, Gordon M.B. Dobson. There is no more crushing refutation of the ozone depletion theory than Dobson's writings. Born in England in 1889, Dobson became the foremost researcher of the ozone layer in this century and remained so until his death in 1976. As a result of his contributions, the units that measure the thickness of the ozone layer were named after him.

As a lecturer at Oxford University, Dobson's qualities were manifested not only in his great scientific discoveries but also in his special ability to inspire his students and his audience. His many students and collaborators have become some of the leading figures in atmospheric sciences today. Dobson's ability to excite his audience with the beauty of science and to make complex subjects understandable is reflected in his 1968 book, *Exploring the Atmosphere*, a classic work in atmospheric science. . . .

Descriptions of the ozone layer found in the press today are so incompetent as to make it impossible for even the best-educated reader to determine what is really going on. In contrast, Dobson's chapter reveals the complexities and behavior of the ozone layer in language understandable to the layman. Dobson's description of the dynamics and chemistry of the ozone layer by itself should enable the reader to judge why the ozone depletion theory is a fraud.