

INSTITUTE OF CURRENT WORLD AFFAIRS

DRP-6

4284 Hemlock Road  
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Today's Theories - Tomorrow's Myths

Peter Martin  
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Dear Peter:

In one week I will be leaving for Costa Rica to work on the Automated Web for Canopy Exploration (AWCE). Barbara Bright, of this institute, asked a question about AWCE and I've decided to begin this letter by answering her. She wondered how AWCE might be used for films, and what exactly was covered by the "GEO: A Ticket to the World" television program that was video taped this February in Costa Rica. This program is independent of the West German GEO magazine and that organization's television unit. There was once a U.S. GEO magazine but it is now defunct. Presently, I am writing an article about my treetop adventures for the German GEO magazine. They are sending a photographer with me to Costa Rica to document the beginning of AWCE.

The producer of the GEO television program, Mike Cerre, and his crew accompanied me to Costa Rica. It took us about four days to produce about eight to ten minutes of footage for the hour-long commercial television program, which included three other subjects. This was time for only a brief taste of my canopy work. There were scenes of Mike and I climbing up ropes, visiting a platform and catwalk, swimming in a pool beneath a waterfall, and walking through the jungle. The main points of the film were that the canopy is the last unexplored major habitat, and that tropical forests are quickly disappearing. Unfortunately this program did not air in all U.S. cities and many people missed seeing it.

The web will make it possible to do a substantial amount of jungle photography that was impossible before. A gyroscope (or other devices) mounted to the chair could give the stability necessary to make high quality film footage. I am now preparing to film treetop life, including the building of the web. Since many producers have asked for film footage of my work, it seems probable that this footage would soon pay for itself.

My plans for technical research using AWCE include studies of pollination biology and animal behavior. I am looking for the funds to support at least one field researcher. Other scientists

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Donald Perry is an Institute Fellow who is developing a new system of access for conducting research in the tops of jungle trees.

are waiting to use the system for studies of tropical rain forest nutrient cycling, ornithology, mammology, and entomology. Once the word spreads that AWCE is in operation, I expect to hear from biologists around the world.

My next television appearance will be on PBS's Nova, in December of 1986. The program, made by Wolfgang Bayer Productions, will be about the introduction of excaptive orangutans into the wild.

I traveled to Borneo last September to work on this program. It was quite a thrill to climb in one of the world's tallest lowland rain forests (one tree was about 200 feet tall) and have orangutans on the rope with me. You can imagine how I felt when the apes began testing the rope with their teeth. Some day I hope to be able to tell you the details about all the other exciting and trying events, such as picking terrestrial leeches off my body; being buzzed by a three-foot-long, Giant Red Flying Squirrel when I was 130 feet above the ground; having my room at Leakey Station (a primate research facility owned and operated by Professor Birute Galdikas) ransacked by apes; finding blood on my sheets from bedbugs bites; avoiding malaria; and more.

It appears that a comment in my first report, about the price paid for certain park land in Costa Rica, was in error. I had said, "Interestingly, this [land] is being purchased at perhaps twice the going rate per acre..." This statement was based upon the views of Costa Ricans who were employed by the Costa Rican park service. I had assumed they were reasonable judges of property values in that part of the world. Nature Conservancy, a purchaser of the land, and Gary Hartshorn, a past fellow, kindly supplied me with figures. The average price per acre was \$72, which is slightly higher than the price paid by Amos Bien (about \$50 per acre) for property in the same area. Considering that access to Amos' property is poor, and that portions of the park land have good access, the price paid for the park land was not unreasonable.

Also I have an update on the situation at Corcovado National Park where an "invasion" by gold miners was causing considerable ecological damage. According to Kenneth Margolis, of Nature Conservancy, the Costa Rican government has succeeded in peacefully removing the gold miners from the park. Costa Rican conservationists deserve a hand for solving this serious problem.

In May, the cover of SCIENCE DIGEST magazine in a grocery store caught my eye, and I snatched it up hoping to find some new developments concerning one of my favorite topics -- the extinction of dinosaurs. The cover art was of dinosaurs suffocating in a red-hot cloud of smoke and ash -- a "proto-nuclear winter." This event is imagined to have developed from the energy released when a huge comet struck the earth. I perused the article only to find that it lacked new evidence about this subject, despite the claim on the cover.

However, certain issues in the dinosaur-extinction article took me by surprise. I was unaware that others shared some of my views, especially a point made in DRP-2 where I said that there seemed to be a relationship between the asteroid-collision

hypothesis and disarmament. There apparently is a closer relationship than I had thought, according to a mini-article embedded in the dinosaur extinction article entitled, "Are Dissenting Views Being Suppressed?" (A portion of this article is discussed in DRP-5 as it applies to scientific publications.)

"....Some critics of the extraterrestrial-impact theory charge that their views are being withheld, kept out of scientific journals and meetings for political and other non-scientific reasons.

...perhaps the most serious charge is that criticism of the impact theory is being suppressed because it is seen as implicit criticism of the highly politicized "nuclear winter" theory.

The reasoning is as follows: the nuclear-winter theory originated as an offshoot of the extraterrestrial-impact theory. If debris from a comet impact could trigger a global freeze, so could debris from a nuclear war. Computer simulations supported the link. Those scientists who are also anti-nuclear war activists, and therefore naturally receptive to any argument against the survivability of nuclear war, were quick to rally behind the linked theories of nuclear-winter and impact-extinction.

Critics of impact-extinction argue that control of scientific journals is predominantly in the hands of the antiwar activists and that, therefore, the journals are disinclined to publish articles that cast doubt on the impact-extinction theory."

Also, it is my view (DRP-5) that the scientific publication process has major flaws, and this article suggests that many scientists share my feelings. (Science Digest claims this article was written on information supplied by a number of scientists who asked that their names remain anonymous.)

This mini-article was interesting for another reason: it leaves us guessing as to who these anti-nuclear war activists might be. The most prominent anti-war activist I know of, who is also an ardent supporter of the impact-extinction hypothesis, is none other than Stephen Gould, a regular columnist for Natural History magazine. I have already established that Gould is a prime voice behind the impact-extinction hypothesis, but why do I suggest he is an anti-nuclear war advocate? Remember when the television film "The Day After" hit the air waves? It was around that time when Gould, Carl Sagan, and a few other scientists had a highly publicized anti-nuclear war meeting with the Pope. Gould, by the way, was a prominent figure in the larger article about impact-extinctions. If these facts were available to the magazine, and it would be difficult to believe that they weren't, then why were they not brought into the open?

Even if Gould was one of the above, unnamed anti-nuclear war activists, I find Science Digest's article very puzzling because I have seen a number of articles that are critical of the collision-extinction theory in scientific journals. If suppression is taking place, it may only be happening in the

popular media where nearly all the articles I've seen favor the collision-extinction hypothesis. It is possible that overt suppression may not be taking place; the popular press finds anything preferable to an unanswered biological mystery. This mystery has nagged at theoreticians for over a century. Thus, the collision-extinction story will not be eclipsed by undermining the meager evidence that gives it support. An alternative explanation that fits the available facts is needed. For this reason I will soon be publishing my explanation in the popular media.

Before I continue, I would like you to know that my manuscript on dinosaur extinction has never been submitted to a scientific journal and has not been suppressed. Nor, for that matter have I had any trouble publishing scientific papers about other topics in scientific journals. I say this because in my previous report I had been very critical of the publication process as well as the grant-proposal-writing process and there was some concern by readers that my report sounded like sour grapes. If the fact that I will not spend months writing a proposal just to get a ticket to a lottery is sour grapes then indeed the grapes are sour. Nevertheless, I have adequate funds to continue my work, which is more than can be said for most of my colleagues. Report number five grew out of watching many of my friends abused by what I think is an antiquated and unprofessional system. Things should be changed.

Evidence in support of the collision-extinction hypothesis was presented in DRP-2. I mentioned that Walter Alvarez and others had found high concentrations of iridium in sediments at the end of the geologic age of the Cretaceous. Since iridium comes largely from space, it was quickly assumed by these authors that they had discovered the event that killed the dinosaurs -- a massive comet had struck the earth depositing iridium and producing a deadly "proto-nuclear winter". This was followed by a statistical study, by D. Raup (one of Gould's students) and J.J. Sepkoski Jr., that found an apparent 26 million-year periodicity in extinctions over a period spanning about 200 million years. Not long after, Nemesis was born, a hypothetical massive planet or dim star that has circled the sun periodically disrupting a cloud of comets. These comets then struck the earth. The combined theories had an explosive chemistry that sent them flying directly into the popular media. Many of us who were closely watching the flight knew that the theory could never land -- it had too many flaws.

Now a technical article in a June edition of Science (Vol.232:4755) entitled "Accretion rate of extraterrestrial matter: Iridium deposited 33 to 67 million years ago" has delivered a knock-out punch to the only evidence supporting the collision-extinction hypothesis. The authors, Frank Kyte and John Wasson, studied a long cylinder of sediment from the Pacific ocean bottom, representing a period of thirty-three million years. Those sediments preserve an enigmatic record, a natural "tape recording" of the iridium influx from space. The full implications of these findings are not clear, but the authors' conclusion about comet showers is clear.

"[There is] strong evidence against the occurrence of comet showers. This evidence confirms other arguments disputing [the existence of comet showers and Nemesis] and casts serious doubt on the existence of periodicities in catastrophe-induced extinctions."

That startling sedimentary layer, discovered by Alvarez, with its bounty of iridium is little more than a single brush stroke of a far more complex history -- one that says there are no periodic swarms of comets that kill the earth's life. That iridium layer propelled a bandwagon of gullible scientists into blindly proposing that a new evolutionary order was on its way.

"Indeed, some biologists now say that the notion of extraterrestrial impacts has already gained enough support that it could force a reappraisal of evolutionary theory, the kind of fundamental transformation called a paradigm shift." (Science Digest, May 1986, page 31).

"...catastrophic theories of mass extinction rate high on the scale of [scientific] significance, not because big bangs grab our fancy, but because the rapid and potentially random death that they impose challenges a core belief of Darwinian theory -- that natural selection regulates both origin and elimination through a pervasive competition among organisms for reproductive success." (S.J. Gould, Natural History, August, 1986, page 18.)

Darwinian theory stands unshaken and, might I say, laughing. More than a comic book theory will be needed to challenge its basic tenets. I take my hat off to a remarkable scientific hypothesis that has finally died, although I would not be surprised if it is occasionally resurrected by popular media-- never has there been a more fanciful and gripping theory about the end of the dinosaurs.

Most people accept scientific conjecture, such as the impact-extinction hypothesis, as fact because they believe scientists have an abundance of conclusive evidence to support their theories. This is not always true, especially in areas that are out-of-reach, such as the universe, the past, and the origins of life. When new theories take the place of the old, they are not necessarily correct.

Surely such things as the vastness of space, the nature of time, and the origins and evolution of life are not wholly fathomable. Can we truthfully claim that scientific explanations of these phenomena are any more than modern day myths? I find little comfort in theories, even my own.

Sincerely,

  
Received in Hanover 7/31/86