

**ACCEPTANCE SPEACH OF THE TYLER PRIZE**

**BY**

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**December 2, 1994  
Los Angeles, California**

When people ask me, "What are you?" I often say that I am not sure. I am botanist by training, a field ecologist in practice, an anthropologist by necessity, a rural developer by conviction and a taxonomist -or better, ~~one~~ <sup>an</sup> ~~insatiably~~ curious scientist of biodiversity- in my heart.

Since I haven't yet figured out which of these multiple identities fits me best, I often also wonder if the unconventional methods I have applied to environmental problems were the right ones.

But some people think they are; or at least some people think that unusual ideas are worth trying in light of the complexity, enormity, and urgency of the environmental challenges the world is facing. It's because of those people who <sup>were</sup> ~~are~~ willing to take chances <sup>with me</sup> that I am here tonight.

One such persons, Dr. Enrique Beltran, Mexico's greatest conservationist, is not with us now. Dr. Beltrán who nominated me for this prize, passed away a few weeks ago. He is well represented here, however, by his son and close collaborator, Enrique. *Thank you Enrique for doing this*

Dr. Beltrán was my hero, the first one to push me to take on a completely impractical task that would consume the rest of my life.

When I was 24, he was the undersecretary for forestry. He called one day and asked me to be in charge of an ecological survey of the Mexican tropics. He told me: "We know very little of the ecology of tropical forests. We badly

need information on which to base the permits for extraction of some Dioscorea species -a wild species of yam- used for the steroid pharmaceutical industry. Your professor, Faustino Miranda, recommended you for the job. You can do it." While my only experience in the tropics had been some holidays in Acapulco, I accepted the task. My absolute ignorance made me think the job was simple. That was the beginning of my work in the tropics, and I owe that, and my presence here tonight, to Dr. Enrique Beltran.

For as I entered the rain forest to investigate the wild yam populations, I discovered a curious thing. The yams grew wild in the undisturbed old-growth rainforest, but they were extremely abundant in secondary vegetation--the recently abandoned milpa agricultural field of the local people. There, I became intrigued by the role human intervention could play in influencing the abundance or scarcity of wild species. And later I began to learn about the sophisticated and productive ways the ancient Maya manipulated their natural resources, supporting a vast population through managed cycles of destruction and regeneration of forested areas.

Thirty-six later, I'm still trying to understand the tropical forests, and how to protect their biodiversity, but at least, I know now, that it's not a simple problem. Putting a wall around a forest to protect it from humans while human scientists race to identify and inventory the contents is like closing a pasture gate after the horse has jumped the fence. There is no way to isolate human intervention in tropical forests, because there is no wilderness untouched by humans--modern or ancient. And, in fact, the very act of protection of nature from humans may be a negative intervention.

To be a scientist today is a privilege and a challenge. It is the best thing that can happen to anyone. What a gift to be free to do whatever you want in search for the truth about nature!

The need to search for truth has driven human success on earth. The quest is as old as human kind. It is the most important cultural inherited trait in human evolution.

The unceasing search for the truth is responsible for the simple things we take for granted: the food we eat, the cloth we wear, the medicines we take and, of course, our deeper need for a diverse, clean and safe environment. Such miracles are the result of inquisitive minds observing nature and asking the right questions.

But the real challenge is to find the best ways to, then, find the best answers. These are the obligations that come with the privileges with which society endows the scientists it supports. In some traditional fields of science, where enormous fields of knowledge have been built, and a multitude of questions raised, this is not such a problem. Meeting the obligation requires only good minds, good laboratories, and hard work.

In other fields even the main questions are not clear. Two such fields are: biodiversity conservation and sustainable development, ~~topics~~ well known topics of the general public, but very poorly understood by all. We are beginning to understand the importance and the urgency of these issues--indeed, they are crucial for human welfare on earth--but we have not yet framed the scientific questions well.

*Let us broadly view some of the*

When we talk about biodiversity we are only concerned about flowering plants and vertebrates, yet the great majority of species on earth are the other groups: such as algae, fungi, bacteria, protozoa, insects, etc. We know very little about them, the great majority have yet to be discovered!

Some ancient cultures, flourished for centuries in the tropical forest environment, sustaining population densities higher than today's, apparently without diminishing the biodiversity of the regions they inhabited. What food production systems did they use? Did they had a defined conservation plan, or was nature pre-adapted to human disturbances? Why are major extinctions occurring in some heavily disturbed places, and not in others? Since diversity has been a major force in biological evolution, are we witnessing a rapid speciation process as a natural counter-effect of nature to extinctions in some groups of organisms, like weeds and insects?

They questions are challenges for the next generation of scientists in the natural sciences as well as the social sciences, and their hybrids.

There are no sharp differences between the so called natural sciences, social and behavioral sciences, the humanities and the arts. They are all constructs of our mind. As Murray Gell-Mann the novel laureate and conservationist wrote: "What has always impressed me is the unity of human culture, with science being an important part. Even the distinction between nature and human culture is not a sharp one; we human beings need to remember that we are part of nature".

I want to thank the Tyler committee and the colleagues who endorsed my candidacy to obtain this unique and precious recognition for my efforts in search of the truth.

This prize is also possible because of the many great students and colleagues I had the privilege to work, both in Mexico and the United States. Nothing I have achieved could have been accomplished without their support, criticism, intellectual contributions and hard work.

I want also to recognize my most current scientific home: the University of California, Riverside, for giving me the opportunity to work in this outstanding University and in this great country. But most of all, I am grateful for the most precious gift: the support for and freedom to do my work. No questions asked. It's risky, I'll tell you.

However, my greatest recognition goes to my family: my wife, my sons, my daughters and my sister, who are here with me tonight, for their patience, love and understanding. Thank you Norma for the wonderful family you gave me.