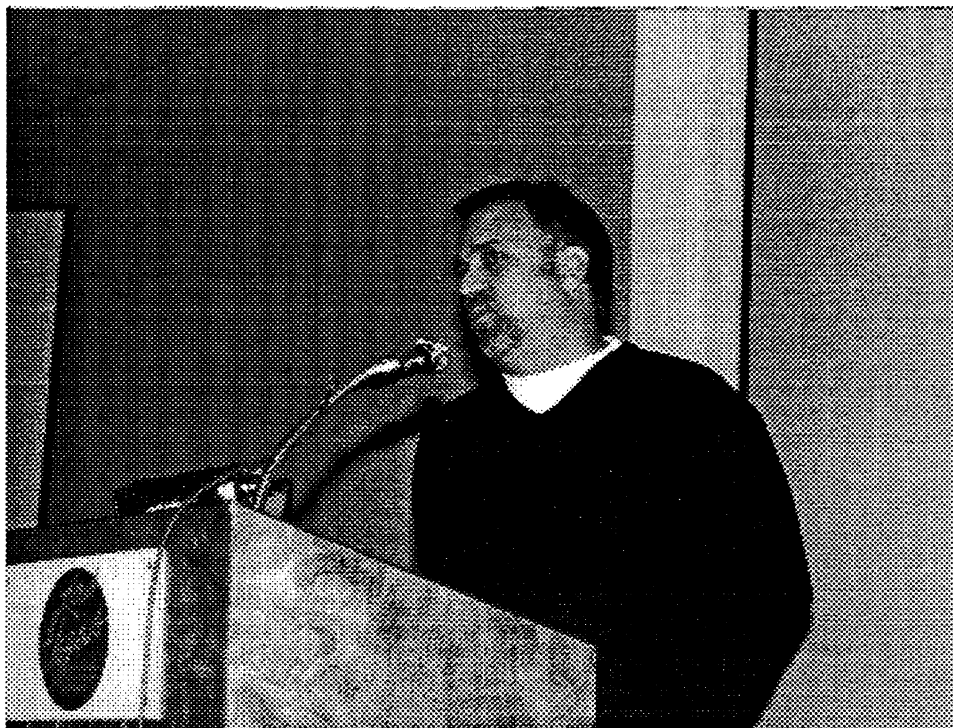


Valuing the Unknown

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In July of 1999, my friend Que Hales asked me if I would provide keynote remarks for a water chemistry symposium held in conjunction with the National Spa & Pool Institute's International Exposition in Las Vegas, Nevada in November of that year. I was flattered and honored by the invitation and I gladly accepted.

The agenda for the daylong event was chalk full of fascinating research reports by a host of distinguished water chemistry experts. The point of having a magazine editor deliver the event's opening remarks was, as I understood it, to provide context for the proceedings by offering some sort of useful insight.

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I outlined a speech and prepared several three-by-five cards with the main points I wanted to cover. I practiced my presentation a few times and felt ready to give it my best. On the morning of the symposium, however, watching the large room fill to near capacity, I became a bit nervous and my presentation was something less than I would've liked. I learned that talking to a crowd at 8 a.m. was more of a challenge than I'd thought.

Although the early start time and my own jitters may have made for a ragged discussion on my part, the point I hoped to make on that cold Las Vegas morning remains relevant. I offer a fresh crack at it here in the more familiar

confines of the printed word:

WHAT YOU DON'T KNOW

My brief discussion that day focused on what I call "the power of ignorance." Admittedly this is a peculiar and even provocative phrase that bears some explanation. Let me first say that I do not think that "ignorance is bliss" nor that education is worthless, nor that being stupid is "cool," nothing of the sort - quite the opposite in fact. What I do mean when I say there's power in ignorance is to suggest that you can use the things you don't know as keys to education and exploration.

I firmly believe that the first step along any learning curve is to begin by understanding our own ignorance. In other words, to accept as fact that no one knows everything.

As a journalist - a class of professional often

accused of thinking that we know everything – I've spent my career delving into subjects that are at first unfamiliar to me. I'm well suited to the work because I'm curious about almost everything, and my job provides a regular scratch to this constant itch for information.

More than anything, this pursuit of the unfamiliar has taught me that the world is loaded with stuff that I don't know and that each point of unfamiliarity presents an opportunity to go in a new direction and uncover something I didn't know before. I've accepted my own ignorance so well that I'm actively on the lookout for references and phrases I don't understand. When I read something or hear something unfamiliar, I write it down or make a mental note and I make a point to do some digging later on.

On the morning of November 30th, when I gave my presentation, I offered an example that some people later told me they found somewhat confusing. Hopefully it makes more sense here. I used as an example the popular game show, "Jeopardy." I explained that I occasionally watch the show and like many people who tune in, I play along trying to come up with the questions to the answers that are grouped by category. Whenever I really ace a category I'm always flushed with pride, of course, but when I completely fail in a category, I make a note of it as a potential area of inquiry.

One of the things I do is use these subjects as keyword searches on the Internet, or in a library database. Most the time, I find things that catch my interest; other times I find that a particular subject is not too high on my curiosity list. I apply this basic process of "target acquisition" in most aspects of my life. Whether I find my own ignorance reading the newspaper, in a conversation at the grocery store, or with fellow parents on the soccer field, whenever I am presented with an unknown idea, I take notice.

I suppose some people do this naturally, but for me, this on-going exploration is deliberate. I don't rely on the notion that things will just sink in. Instead I actively make a practice of looking for these points of inquiry. The more I do it, I've found the easier it gets.

ACUMEN WORKING

When it comes to professional education, the areas of inquiry are obviously more focused than the random sets of ideas that everyday life throws your way – but the process is similar. These printed proceedings offer a perfect example and a perfect opportunity. Water chemistry is entirely relevant to most people in the pool and spa industry, yet because it is extremely complex, even those who know a lot about it will find fodder for further exploration in papers such as those in this publication.

Indeed, as you read the presentations contained

herein, you will no doubt find many answers and come away with many questions. The richness of scientific thought and exploration that follows these words is truly impressive. Yet, in order to truly benefit from this compendium as well as other good sources of information, we must view our own gaps in knowledge as a guide.

For some people, this is not a short hurdle. In fact, I think it's in human nature to dodge unfamiliar facts, theories and ideas. To help overcome that natural aversion, I offer this historic example:

The great Albert Einstein spent the latter part of his career seeking what he called the "unified field theory." He believed that there is a physical principle at work in nature, one that can be expressed mathematically, that will explain the behavior of all energy and matter. He believed that this unified theory would serve as a proof of his belief that, as he said, "God does not roll dice." In other words, Einstein believed that there is a physical principle in nature that organizes everything. In this ultimate search for the unified field theory, Einstein was unsuccessful. He died seeking to satisfy his own lack of knowledge.

He also went on to be regarded as the greatest mind of the modern era, a mind and spirit that was devoted to replacing ignorance with understanding. It can be said that all scientific research and experimentation is an attempt to transform ignorance into understanding. In a very real sense, all of human kind's breathtaking technological development is the result of journeys launched by a desire to solve the unanswered equation, to prove the unproven theory, or to create something that had not previously existed.

ALLIES IN DISCOVERY

It could be said, I believe, that if necessity is the mother of invention, then ignorance and the desire to overcome it is the appetite of progress. But what does any of this have to do with water chemistry?

The answer to that can be found in a brief tour of the great history of the exploration of H₂O, its physical properties and associated phenomena. Consider the sweeping benefits of sanitation and disinfection of water, or of hydroelectric power, or of controlled irrigation. The modest studies contained in these pages are contemporary installments in this broad school of learning and I believe they should be regarded with equal reverence, as should all honest excursions into scientific discovery.

One of the things I've found that really trips up some people is what they perceive to be the ignorance of others. As you explore the results of other people's research, you're bound to run into ideas and assertions that are counter to things you believe to be true. The urge to discredit dissonant information can be

strong and it seems to me that this impulse to reject things we don't agree with acts as an obstacle to learning.

The better approach is to look at ideas you believe to be false or even objectionable as, again, opportunities to learn. First, by acknowledging that there are things you don't know, it is useful to weigh fairly arguments made by those with whom you do not agree. And perhaps more importantly, disagreements give us the opportunity to refine our own arguments and test our own ideas.

The scientific process is based on the premise that as new information is uncovered, prior assumptions can and should be challenged. Again, this is essential to the all forms of technological advancement. I therefore argue that those people who present ideas that do not ring true are indispensable colleagues in our own pursuit of ideas.

When Que recently asked me for a written version of my discussion, he told me that tapes of the proceedings will be available. There was a good bit of give and take during question and answer time and I urge you to consider obtaining recordings of the dis-

cussions that interest you most. If for some reason, you are considering buying the recording of my presentation, I strongly urge to save your money.

My point is a simplistic one, but one that may served me well and it's likely to do the same for you. I know that accepting my own ignorance as guide to learning has truly enriched my life and fostered an appreciation for the value of the vast stores of ideas that remain unknown.

About the Speaker

Eric Herman is the Editor of *WaterShapes Magazine*, and was the Technical Editor for *Pool & Spa News* from 1989–1996. He was graduated from California State University at Fullerton with bachelor degrees in Journalism and English. Eric has published over 1000 articles, many of them technical in nature, in various publications, including *WaterShapes*, *Pool & Spa News*, *Technical Resource Magazine*, and the *Sound and Video Contractor* trade journal.