A FLAWED IDOL: My kind of poetry

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Walt Whitman's "Leaves of Grass" had a special attraction for me. It was not the objective content or even the subjective interpretations I might impose on it that held any special meaning. It was the music. The way those words rolled on, the rhythms and sounds that flowed from here to forever, capturing the movement of time, made a connection with something basic and primitive in me. That compound of desire, awe and mystery that all young people feel was crystallized for me at a purely non-verbal level by Whitman and I labeled him great.

But later, when I saw the Phase Rule and remembered his poem "When I Heard the Learned Astronomer", I felt sorry that Whitman could only touch a part of the mystic sense.

I had learned the Phase Rule in a physical chemistry course at Rutgers. It was a simple thing that arose from just counting the number of certain thermodynamic equations, but it governed the conditions under which all the different kinds and states of matter could coexist. In a purely intellectual way I knew that its power was immense, but I did not really appreciate that until I was walking along Raritan Road in Linden one winter night about a month or so after I had completed the course.

It was not unusual for me to walk at night. There were many days when I got home from school after six and didn't start to study and do homework until after eight. By midnight or one o'clock I was losing the ability to concentrate, the ideas and images were starting to race around without control and there was no more order in my mental world. I was tired enough that it made no sense to keep working but it was not possible to get to sleep so I went for a walk. After a mile or two the turmoil in my head would
quiet down and I could go home and go to bed. We lived on the sparsely populated outskirts of town, more rural than suburban, and the walk was usually quiet, calming and pleasant.

This night was really extraordinary. A combination of snow, sleet and rain had left everything coated with ice. It was late enough that nobody was on the streets, all was silent and no lights were on. But the night was marvelously clear and bright. In those days the stars over Linden were not merely visible, they were an overwhelming presence. Fence posts, leaves and tree branches were all covered with a hard, transparent layer that captured the light from the sky and sent it back in all directions. The trees were particularly striking. They were made of glass, full of small shining point sources and were the dominant factor that made everything seem magical and strange. I was not yet twenty years old and could still respond to the incredible beauty of such a scene instantaneously, with wonder and delight. It all sounds a bit callow and banal now, encumbered as I am with decades of ordinary reality, but at the time it was an experience of Nature's poetry, more intense than Whitman's music.

The temperature must have been quite close to the melting point because there were places where ice had melted and was in contact with water. And there it was; ice, liquid water, air, water vapor, wood, telephone wires, sidewalks and stones, coming together to form a stunning visual harmony in which the temperature, pressure and material parts were all connected by the Phase Rule. The knowledge of that simple mathematical relationship and its embodiment in that night of crystal multiplied the beauty. The beauty existed because of the mathematics and the mathematics organized the beauty, and I felt that I was in touch with something profound and fundamental. This was why I had been drawn to study science. It was an attraction born of mysticism; I could not believe that the world was just there, prosaic and ordinary, without something marvelous at its core. I wanted to come face to face with the awesome and
wonderful, to immerse myself in it and above all to see its structure and foundations. I wanted to know IT, the secret of everything, to understand, and therefore command, the elemental forces of nature.

I now know that this is a common motivation for studying science. Newton's locked chest of papers shows that, at bottom, he was the ultimate mystic, and surely, the desire to come to grips with fundamental mysteries must be a strong part of anyone who takes science seriously. We want to know the deepest secrets and we do not believe that emotions, revelations or magic can help us. Science is the only method of getting at that hidden treasure that is not completely laughable.

But poor Whitman couldn't see this. He was clearly confused and bored by a lecture on astronomy. He thought it was cold and sterile and had nothing to do with beauty or the mystic sense. Before the lecture was over, he went outside and "look'd in silent wonder at the stars". He did not understand that an appreciation of gravitational forces, the laws of motion and theories of stellar evolution enhance the sense of wonder many fold and brings one inside the mysterious, as a participant, not just an observer. I learned later that I was not the only scientist that had loved Whitman and was then disillusioned by that silly and revealing poem.

There are many people like Whitman. Followers or creators of literature and art often see science as something inhuman or even anti-human that has nothing to say about the really important aspects of the human condition and is actually hostile to our best aspirations. Perhaps they see science as the origin of technologies that are responsible for great evils from alienation to the H-bomb; perhaps they dislike scientific analysis because it breaks the world into parts to be studied instead of a whole to be simply experienced; perhaps they will not accept the restrictions on the meaning of reality imposed by science because such restrictions limit the freedom of the imagination; perhaps they don't want a competitive priesthood whose practical power is
much greater than theirs. And perhaps they just don't understand the language of science, whose mastery requires a kind of intellectual discipline and rigor that is alien to the artistic mind.

At any rate, they are missing a lot and are always in danger of being trapped by the unreal.