

The standard response is always, "You cannot argue unless you know what you are arguing about." This is perfectly true, but you do not have to pour a person full of the handbook of chemistry and physics so that he can tell you what the boiling point of nitroquinone is, like that, and then say he is a scientist.

Only in the last 2 years of graduate school, I feel, does American science qualitatively being to enter into--again, it is purely personal--what I feel is the very guts of science, namely, the excitement of seeing it as a creative human activity in which ideas are important and in which this constant dialogue between the ideas of the individual and nature itself takes place. This is qualitatively.

Quantitatively we are in the middle of a real revolution which worries me very much, for this reason. You can now make a living as a scientist; this is a very recent phenomenon. I shall never forget when I was in high school, and during the war I was fascinated by atomic physics. My brother was in the Air Corps overseas. He came home and I had time to work up some atomic physics for myself and I showed him my notebook, etcetera. He was my big brother and I said, "I want to be an atomic physicist." My brother told me, "Well, that is very good, but you will never make a living at it." So, I became a chemical engineer and ultimately ended up a historian; I think to the ultimate advantage of atomic physics.

In any case, it is certainly within my lifetime that one could point out that the economics of science were such that you had to be a very dedicated man to go into it. Now, of course, this is all changed. The bright students go on in science because there is money; lots of fellowships; there is always a job. And, we are creating, I think, a whole new class of people; I will call them the scientific technicians. They are men with Ph. D. s; they are men with published papers. But they are men who are basically really not committed to science--and this may sound corny but, again, I feel very strongly about this--they do not see science as a calling; as a way of life.

What do you do? They are bright guys. They are almost always and inevitably, Baconians because you can do science in a Baconian fashion without much trouble. The right guy can, in fact, publish three papers, four papers, five papers a year, on what he is doing in the laboratory. He makes his living this way.