ganic and physical. Members of the latter group, practicing predominantly the two types of activities, were thought of more or less as pure chemists. In turn, they were separated from the applied chemists, the technologists, or chemical engineers, who reduced "pure chemistry" to practice. These are artificial categories embodied in institutions—societies, divisions, departments—because this is useful. But it is most important to recognize that *they are artificial* and that the three activities are not comparable. The pure chemistries are neither better nor worse than the applied—only different. The three are mutually complementary and supplementary.

That all three activities are supplementary and complementary to each other becomes very evident when the activities involve something beside chemicals—when they involve symbols and concepts. For the triad of activities can operate at all levels of abstraction within the domain of each activity. Hence the chemical engineer has courses in the theory of reduction to practice, as well as in the "analysis" of his methods and the "reduction to practice" of his theory. Likewise, a theorist in chemistry engaged in "synthetic" activities may well be concerned with the "analytic" approach to his theories, but at the level of investigative activity. He is also concerned as well with "higher" synthesis and its application.

We see, then, that *analysis* as it is used in chemistry has broad meaning. It comprises qualitative, quantitative, and relationship components. It applies not only at the level of substances, but also at the level of concepts by means of which substances are manipulated by the intellect. It applies also at the levels of generalizations of concepts.

"Analysis" must in the nature of things precede "synthesis," or theory, in the temporal development of any natural science. Hence there is a tendency for chemists on the theoretical side to see theory as in some way purer, or higher, than "analysis." Bound up in this are many legacies from the past—works of the hands are less noble than