

Introduction to Symposium on Discovery and Invention in Contemporary Chemistry¹

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ALL THE MATERIAL WORLD of which we are directly aware consists of chemicals. Chemical structures range in complexity from the simplest monoatomic gases, such as helium, through small polyatomic molecules (carotene, cortisone, cocaine . . .) and polymeric molecules (polyethylene, proteins, DNA . . .) to the supra-molecular entities that make up the biotic kingdom. Beginning in the second half of the eighteenth century, chemistry entered a quantitative phase that rapidly propelled it from an essentially descriptive discipline to a science that could begin to provide genuine insights into the nature of both the abiotic and biotic worlds around us. After more than two centuries of intensive study, chemistry can certainly be regarded as a mature science with a strong theoretical framework. Nevertheless, there is very much that we are still learning, and the recent APS Symposium on “Discovery and Invention in Contemporary Chemistry” was devoted to presenting exemplary accounts of exciting chemical research that we considered particularly noteworthy. The two papers published here provide first-hand descriptions of chemical discovery that relied initially on the keen observation of nature. Following an initial discovery phase, the application of contemporary analytical and/or synthetic techniques then resulted in the acquisition of important bodies of “useful knowledge.” We hope that these two papers will provide the non-chemist reader with a feeling for the remarkable kinds of research opportunities that are available to chemists interested in learning from nature.

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