SYMPOSIUM INTRODUCTION

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This special issue of the *Bulletin* is based on a symposium in honor of the "Bicentennial of the Chemical Revolution", sponsored by the Division of the History of Chemistry at the 197th National Meeting of the American Chemical Society, held in Dallas, Texas, on 9-14 April 1989.

The first paper, by Dr. William A. Smeaton of University College - London, presents us with an overview of Lavoisier's legacy and with an evaluation of how well his ideas have withstood the test of time. This is followed by two papers, by Arthur Donovan and J. Edmund White, which provide some general biographical background on Lavoisier, while focusing on his involvement in late 18th century politics. The next four papers, by Robert Siegfried, Frederic Holmes, Truman Schwartz and Ben Chastain, treat various aspects of Lavoisier's scientific work, whereas the final two papers, by Derek Davenport and Kathleen Ireland and by William Jensen, deal with post-revolutionary reactions to Lavoisier's new system of antiphlogistic chemistry. For the benefit of the nonspecialist, the original papers have been supplemented by the addition of a general bibliography and a timetable.

Though, as Ben Chastain reminds us in this issue, the Chemical Revolution was process which extended over many years and not a single datable event, there are several reasons for choosing 1989 to celebrate its bicentennial. 1789 was a year of revolutionary activities in France. The bicentennial of the French Revolution was celebrated on 14 July of this year, on the occasion of the fall of the Bastille. This event signaled the start of the political revolution in France. We, on the other hand, are in many ways celebrating the conclusion of the Chemical Revolution. Its beginnings can be traced back to 1772, which Henry Guerlac has identified "the crucial year"(1). By 1789 most of Lavoisier's experimental research was completed; the *Traité Élémentaire de Chimie*, the summary volume explaining the work, was published; the *Annales de Chimie*, the journal of the new chemistry, was inaugurated; and most French chemists, and an increasing number of foreign chemists, openly espoused the system.

There are among contemporary historians those who question whether Lavoisier's work was as revolutionary as he would have had his contemporaries believe or that his was indeed a revolution in chemistry. Evan Melhado suggests that Lavoisier's contribution was not primarily chemistry, but physics (2). Jerry Gough considers Lavoisier's work as a fulfillment of that of Stahl (3). Robert Siegfried rightly argues that, without the work of Dalton and the acceptance of the atomic theory, we could not have our modern understanding of chemistry (4). However, to those interested in chemistry in 1789, the ideas of Lavoisier, his intuitive insistence on acceptance of the conservation of mass, his emphasis on the recognition of the elemental nature of metals and oxygen, and his evidence of a simpler, more experimental chemistry than that practiced by the phlogistonists, provided a system which was both stimulating and useful to the men who gathered to learn and use this new chemistry. The debates and questions led to enthusiastic acceptance of Lavoisier's ideas and, as Arthur Donovan has recognized, Lavoisier succeeded in bringing chemistry into science (5). These young chemists, with great fervor, declared that they were called to cultivate chemistry, new elements were discovered (the catalog almost doubled between 1791 and 1825), analyses were carried out with confidence, a useful nomenclature was invented, and within 20 years, the phlogiston theory had been effectively displaced by Lavoisier's chemistry.

Although one may argue that there was a tradition of analysis, a recognition of the importance of conservation, and that Lavoisier's conclusions were often incorrect, one cannot argue that there was no change in the way chemistry was viewed and in the way it was practiced after Lavoisier.

In conclusion, I would like extend my thanks to Bill Jensen for his efforts in editing this volume and to Jeff Sturchio and Jim Traynham for assistance in the proofing. I would also like to thank the Monsanto Company, E. I. du Pont de Nemours, Inc., the Petroleum Research Fund, H. B. Alsobrook, Jr., and Mallinckrodt, Inc. for their generous support of the original symposium.

References and Notes

1. H. Guerlac, *Lavoisier - The Crucial Year: The Background and Origins of his First Experiments on Combustion in 1772*, Cornell University Press, Ithaca, NY, 1961.

2. E. Melhado, "Chemistry, Physics, and the Chemical Revolution", *Isis*, **1985**, *76*, 195-211.

3. J. B. Gough, "Lavoisier and the Fulfillment of the Stahlian Revolution", *Osiris*, **1988**, *4*, 15-33.

4. R. Siegfried, "The Chemical Revolution and the History of Chemistry", *Osiris*, **1988**, *4*, 34-50.

5. A. Donovan, "Lavoisier and the Origins of Modern Chemistry", *Osiris*, **1988**, *4*, 214-231.

La chimie est une science francaise; elle fut constituée par Lavoisier, d'immortelle mémoire.

A. Wurtz, *Histoire des Doctrines Chimiques*