

Preface

After having delivered more than 150 “experimental” lectures outside Göttingen, and in eight different countries, I decided to write a third book containing spectacular experiments. These experiments are introduced by poems, anecdotes, epigrams, and interesting stories, which elucidate the ubiquitous character of chemistry and arts.

I realized that the existence of the two cultures, as stated by C.P. Snow in 1959 for science and arts, is perceived only after puberty. This is due to the different kinds of education and different schools of thought which are presented to school children. As early as 1947, the mathematician Wiener referred to this difference in his book, *The Intellectual and the Scientist*:

“We have seen, that communication is the mortar of society and that those, who charge themselves to maintain undisturbed the means of communication are mostly responsible for the continuation or the decay of our culture. Unfortunately, these priests of communication are separating in two orders or sects, which defend different principles and have a different education. These two orders of communication priests are, on the one hand, the intellectuals and the arts scholars, on the other hand, the scientists. [. . .] I do not criticise the hostility of the intellectuals and arts scholars towards science and machine age. Hostility is positive and creative, and much of the progression of the machine age demands active and deliberate resistance. I rather criticise him because of his lack of interest in the machine age. He thinks that it is not important to know thoroughly the principles of science and technology, and to become active where these principles are concerned. He is hostile but his hostility does not urge him to do something. It is some kind of homesickness of the past, a vague uneasiness with regard to the present more than any deliberate attitude.”

Moreover, I think it is important that chemistry is presented in a charming and inspiring way, and not only with “bang and smoke” experiments. “Chemistry has to be good”, people say, and this means positive rather than deterring experiences in the lecture hall. Communication and inspiration between science and arts is also very important.

The experiments in this book are not presented in any systematic order. Apart from the classical experimental art, two new types of presentation are introduced. On the one hand, these are reactions in the gas phase, for example the precipitation of silver chloride and the identification of alcohol. On the other hand, we use a digital camera in order to record the reaction in pictures; this process can be found in Part VII, the “Art Gallery of Chemistry”. Using this method, the person performing these experiments can demonstrate his or her work convincingly, even outside the laboratory, such that science and art – two demanding and creative activities – can be shown together.

During the writing of this book I have greatly appreciated the books of B.Z. Sakhshiri, *Chemical Demonstration – A Handbook for Teachers of Chemistry*, the *Journal of Chemical Education*, and *Chemie in unserer Zeit*. I am also very grateful to Henry Fraatz, who not only supervised and optimized all the experiments but without whom this book would not have been written.

Finally, I would like to quote the advice of Franz Kafka for all those who have decided to perform experiments to fill the audience with enthusiasm:

“Do not spend your time by searching obstacles, maybe there are none.”

Herbert W. Roesky