CONVERSATIONS ON CHEMISTRY; FIRST STEPS IN CHEMISTRY. PART I: GENERAL CHEMISTRY

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W. OSTWALD

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CONVERSATIONS ON CHEMISTRY

FIRST STEPS IN CHEMISTRY

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AUTHORIZED TRANSLATION

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PART I

GENERAL CHEMISTRY

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AUTHOR'S PREFACE.

THE causes which led me to write this work lie partly in the past, partly in the future. The former spring from the feeling of thankfulness with which I even now regard the "Schule der Chemie" of Stöckhardt, whose memory still lingers among us. By a stroke of good fortune this excellent work was the first text-book of chemistry which was placed in my hands, and it influenced the whole of my subsequent activity in science. Owing to the carefully thought-out directness in representing the facts to the pupil, the skill in selecting experiments suitable to the physical and mental powers of the beginner, I have never lost touch with experiment, although I have been chiefly occupied with general questions of science. The request of the publishers, who used to issue this work, that I should write a modern Stöckhardt, was both an honour and an opportunity of paying off an old debt of thankfulness.

So much for the past.

As regards the future, chemistry has undergone during the past century an enormous development, in which Germany has played an important part. Chemical science in Germany has been furthered by the work of thousands of diligent hands and greatly aided by educational institutions which have become a pattern for the whole world, which have brought about a constant interchange between

science and its applications, and which have given an uninterrupted proof of a continued healthy existence. It was almost entirely organic chemistry which developed in the direction of the discovery of new bodies and their systematic arrangement; and even to this day, by far the majority of young chemists, after hurrying through a short course of analysis, are trained in these methods.

But hasty progress has its dangers, and it is the duty of every man who tries to look into the future to give a timely word of warning; for inorganic chemistry was a science before organic chemistry was thought of; moreover, the processes of inorganic chemistry form the basis of chemical technology, on which that of organic compounds is a superstructure.

The cry was first raised in manufacturing circles that the young chemist trained exclusively in organic chemistry was unfit to cope with the solution of general problems; with that reciprocity between science and technology so characteristic of the German race, the teachers of our science have at once grappled with the problem.

Among the many proposals which have been made to escape, in good time, the pressing danger of chemical onesidedness, none appears to me more suitable than the encouragement of the growth which has developed upon the soil of science during the last ten years. I refer to general and physical chemistry. It deals with questions which lie at the base of organic and inorganic, of pure and applied chemistry; it forms a foundation for all real chemical education, and must be regarded as lying at the root of all chemical teaching, especially in its earlier stages.

By writing a series of text-books dealing with different stages of the subject I have tried to bring about the

knowledge of these principles as they at present exist, first among my colleagues in science, and next among students of chemistry.

The necessity of repeatedly revising the matter of these books, as well as daily experience in teaching, led to my early conviction that the very first steps of a young pupil must point in this direction; I also gained assurance that such an introduction was possible, and this book is the result of my efforts.

I must not omit to mention that it forms the first introductory volume, and that it will be followed as soon as possible by a second of about equal length, in which the system will be more developed.

I have chosen the form of dialogue, because after several attempts it appeared to me the most suitable; moreover, I have come to the conclusion that it occupies no more space than an ordinary description, while the impression it makes is much more penetrating and lively. I venture to hope that it will be found that it is at the same time the result of a varied experience in teaching, and not an accidental choice.

W. OSTWALD.

LEIPZIG, 1903.