

New Books

Lars Gunnar Sillén, Paul W. Lange and C. Olof Gabrielsson. *Fysikalisk-kemiska räkneuppgifter*. Hugo Gebers Förlag, Uppsala, 1948. 300 pp. 17 Swedish crowns.

In teaching physical chemistry the working of numerical problems plays a very essential rôle. Before the student has obtained a training in applying the physico-chemical laws to definite problems, the greater part of his knowledge is sterile. He will obtain an idea of the potentialities as well as the limitations of the laws only when he is trained in their application. And this training ought also to give him the self-confidence which is necessary when he has to attack the problems which later occur in his own scientific work.

The collection of numerical physico-chemical problems, which has now appeared, will certainly prove extremely valuable in furnishing both the teacher and the students with appropriate exercises. No less than 614 problems are given, many of them covering fields of research which have not earlier been represented in collections of problems. Nearly all of them have been selected from the literature and thus obtain a touch of reality and usefulness which is quite stimulating. It is true that this method has been practised in earlier collections of problems but hardly to such an extent as here. The same applies to the mode of giving complete references. A student who has access to a library can, therefore, check problems of special interest and obtain a very valuable idea of the basis of the work and the experimental conditions.

The standard of the problems is on the level with the requirements for the higher classes in the Swedish degrees »filosofie kandidat» and »filosofie magister». Many of them have already served as examination questions.

The problems have been arranged in 11 different chapters. Each chapter begins with a recapitulation of the more important laws in the field in question, which will certainly serve as a useful means of checking the knowledge before beginning with the problems. In connection with this introduction the treatment of certain typical and illustrative problems is shown. In the actual collection of problems, which follows the introduction, no hints facilitate the work. Answers are given to all problems.

The printing and paper of the book are excellent and the general appearance quite attractive (with the exception of the wrapper). Some practical typographical features have been introduced, amongst which the space-saving setting of the small tables within the problems ought to be mentioned.

The reviewer is convinced that this book will serve a very useful purpose in all physico-chemical teaching on the university level, where a book in Swedish can be read.

G. Hägg

Festskrift tillägnad J. Arvid Hedvall.
Edited by Erik Hemlin. Gumperts AB, Gothenburg, 1948. 659 pp. 30 Swedish crowns.

To celebrate Professor Hedvalls' sixtieth birthday, a number of his friends have

dedicated to him a festival publication, containing a large number of contributions from different authors.

An objection often raised against such jubilee volumes is that they act as cemeteries, where pieces of valuable research work are buried in a form almost inaccessible to the majority of future scientists. For example, one of the foundations of the modern methods of studying complex equilibria is a paper by Bodländer in the »Festschrift für R. Dedekind, Braunschweig, 1901», which is often quoted but which I, for instance, have never managed to get hold of.

This objection does not apply to the present volume. Most of the contributions are not of the original, rather dry type that one would rather have seen in a scientific journal. On the contrary, the stress seems to have been put on readability. An unusually large number of the papers are entertaining surveys on various topics that might be read with pleasure by any chemist.

The book begins with a long list of congratulants, which could easily have been made still longer, had only more of Hedvall's friends and admirers been asked. It ends with an impressive list of Professor Hedvall's own publications. Between these two lists there are 49 papers by in all 61 authors. The language is Swedish in 28, English in 11, and German in 10. About a third of them are directly connected with the fields of science in which Hedvall is famous: reactions in the solid state, and the chemistry of oxides, and especially silicates. The rest are on a wide variety of subjects.

He who understands Swedish can read here surveys of various technical subjects, such as acid-proof materials, sugar from wood, synthetic rubber, and modern ion exchangers; or on the history of chemical symbols, on patents as a part of scientific literature, and on the latest changes in the periodic system of elements. But if he

prefers, he can also enjoy articles on Chinese poets from the T'ang period, or on the correlation between winter temperature and the frequency of *Glaucium flavum* Cr. on Store Vassholmen in the archipelago of Fjällbacka. The latter article, of course, is written by our famous chemist The Svedberg.

Among the Swedish scientists contributing in one of the international languages we find de Hevesy on the preparation of radioactive tracers, Hössjer on the foundations of electrodynamics, von Euler on plasticizers, and Enkvist and Hägglund on sulphur lignins.

A number of prominent scientists from abroad have also honoured Hedvall by sending articles, generally on subjects related to Hedvall's own work. Bragg writes on atomic rearrangement in metals, Cohn and Kolthoff on the thermal aging of silica, Fricke on active solids, Hahn on radioactive methods for studying surfaces, Hüttig and Dreithaler on experiments on dehydration, Niggli and Brandenberger on solid state reactions in minerals, Schwab and Pesmatjoglou on the poisoning of nickel catalysts, Vogel and Füllung on equilibria Fe-FeS-FeO, and Zawadzki on the action of gaseous oxides on metal oxides. Walden has given an essay on the oscillations between the speculative and the experimental trend in scientific thinking, containing some rather amusing samples of speculative work.

The examples given above may suffice to show that Hedvall's friends have honoured him by composing not only a heavy volume to put on a shelf but a book to be read. If there is anyone claiming to be an inorganic or physical chemist, or a chemical engineer, who would not read with great interest at least ten of the articles in this volume, then there must be something wrong both with his interest in his own science and with the breadth of his general outlook.

Lars Gunnar Sillén