

## BOOK NOTICES AND REVIEWS.

*Die aetherischen Oele*, VON E. GILDEMEISTER und FR. HOFFMANN. Dritte Auflage von E. Gildemeister. Bearbeitet in Auftrage der Schimmel & Co. Aktiengesellschaft, Miltitz bei Leipzig. Dritter Band, pp. XXXI, 1071, mit sechs Karten und zahlreichen schwarzen und bunten Abbildungen. Verlag der Schimmel & Co. Aktiengesellschaft, Miltitz bei Leipzig (Fuer den Buchhandel: L. Staackmann, Leipzig), 1931. Price \$9.50.

Do. *Register Band*, pp. 124, 1931. Price \$1.50.

With the publication of the index volume, Dr. Gildemeister's task has been completed once more. May he, in his advanced years and in his home on the border of the Harz mountains, enjoy the well-earned rest. To Schimmel & Co., in spite of the reverses which all Germany has suffered and from which she is still suffering to an extent that we in the United States can scarcely conceive, we are indebted for having financed this monumental scientific undertaking. The very sight of the four volumes in their attractive binding is a delight to the eye. Supplemented by the volume of C. v. Rechenberg's "Einfache und fraktionierte Destillation in Theorie und Praxis" (1923, a volume of XV—814 pages) and by the annual reports culminating in the "Jubilaeums Ausgabe" (1929, pp. 327 containing four chapters of historical content and sixteen original contributions) of the "Bericht der Schimmel & Co. Aktiengesellschaft, Miltitz Bz. Leipzig ueber aetherische Oele, Riechstoffe, etc.," this set of books constitutes a library that possibly has not its equal in the literature on phytochemical technology or any other technology or branch of chemistry.

If the outward appearance of the series pleases the eye, the contents are no less satisfy-

ing to the scientist in search of information in this particular field. It is a little over three decades that the first edition made its appearance. An indication of the growth of this branch of phytochemistry may be had by a comparison of the several editions.

It will be seen that in little more than three decades, the number of volatile oils isolated and studied has trebled. What is more, our knowledge of the older oils has increased proportionately.

If in the early days of the life work of Wal-lach (the messiah of the terpenes as Flueckiger designated him, the master who has recently passed away) the revelation of the structure of the hydroaromatic "terpenes and camphors" did so much to bridge the chasm between aliphatic and aromatic and thereby contributed to do away with that pernicious dualism in organic systematics, our increasing knowledge of the occurrence of these substances in an ever-increasing number of plants, constitutes one of the most valuable contributions to the biochemistry of to-day.

That this knowledge of an important group of plant products has also made possible numerous contributions to the science and art of perfumery is but an incident, though a very important one.

Great as has been the progress during the life time of the writer, the worker in this field recognizes more than anyone else that the surface has been but scratched. If more than thirteen hundred oils have been distilled and studied, this is but the beginning. But our knowledge of the volatile substances of plants is increased in an even more important direction. One has but to compare the chapter on sesquiterpenes in the three editions to realize the enormous advance that has been made in the

TABLE I.

Edition.	Year.	Vols.	Oils.	Number of pages.	Cuts.	Maps.	Illustrations.
1st	1899	1	422	V, 919	75	4	
2nd	1910 (I)			VIII, 697	75	2	
	1913 (II)			XVIII, 713	53	4	
	1916 (III)			XVIII, 836	52	5	
	Total	3	953	XLIV, 2246	180	11	
3rd	1928 (I)			XVI, 864	78	2	..
	1929 (II)			XXIII, 959	56	9	7
	1931 (III)			XXXI, 1071	59	6	9
	1931 (Index)			124			
Total		4	1371	LXX, 3018	193	17	16

structural interpretation of these complex compounds which for so long a time baffled the organic chemist. But here also, in spite of the progress, only a beginning has been made, as becomes apparent from the large number of the numerous isomers  $C_{15}H_{24}$  still in the lumber chamber. As to the groups of diterpenes, triterpenes and polyterpenes, we have reached a stage comparable to that of the sesquiterpenes a generation ago.

Great progress has been made in organic synthesis since Berthelot, in the early sixties of the past century, published his "Chimie organique fondée sur la synthèse" and since Kekulé gave expression to his structural theories. To-day the pendulum seems to have swung in the other direction once more. We are no longer interested as intensely as formerly in mere synthesis, but we use it as a tool in proving the structure of compounds that interest us biochemically first and foremost.

Fortunate, indeed, is the age in which theory and practice combine to solve its problems.—E. K.

A. Gamir, *Farmacologia de la Digital, Editorial Paracelso*; Madrid, 1931; 308 pages. Price 7 pesetas. Published by A. Gamir. This beautifully printed monograph should appeal to all those who are interested in the pharmacology of digitalis whether they be pharmacologists, pharmacists or clinical practitioners. The work is a monograph sponsored and paid for by A. Gamir, who is a prominent pharmaceutical philanthropist occupying in Spain a position not unlike that of Dr. H. S. Wellcome in England. This gentleman is evidently anxious to promote the advancement of pharmacy and materia medica in Spain and for that reason has engaged the coöperation of scientific specialists for the compilation of the present volume. Judging from the prologue written by Dr. Obdulio Fernandez, who is professor of chemistry on the pharmaceutical faculty of the University of Madrid, the object of the monograph is to bring together in convenient form all the salient facts concerning digitalis from the earliest times to the present day for the use of pharmacists and physicians; and the author has certainly succeeded in writing a most interesting informative treatise on the subject.

The work begins with a chapter on the history of digitalis and in this connection does not content itself merely with citing the classical work of Withering but also includes references to other worthies who worked with foxglove from the earliest day until now; and

mention is made of such men as Stokes, Cullen, Farriar, Fowler, Salmon, Haase, Homolle, Walz, Schmiedeberg, Kiliani and the more recent investigators, Windaus, Kraft, Cloetta, Magnus, Cushny and others. Chapter II, entitled, *Fitologia*, is really a botanical treatise, covering 12 pages of text, on various species of digitalis. Chapter III introduces a newly coined word, "*Farmacoergasia*," which deals with the culture of the foxglove, its collection, drying of the leaves and conservation; and Chapter IV is devoted to the pharmacognosy, both microscopical and chemical. A fifth chapter, embracing 32 pages, deals with the materia medica of various preparations of digitalis. In Chapter VI fourteen pages are devoted to the pharmaceutical chemistry of digitalis leaf and the active principles contained therein. This chapter is very much up-to-date and contains a great deal of useful information for those interested in the chemical aspects of digitalis and related bodies. The researches of Kiliani, Windaus, Cloetta, Schmiedeberg and a host of other original workers in this field are succinctly set forth and should furnish a convenient starting-point for further researches along this line. Chapter VII is devoted to the pharmacology proper—that is, to the pharmacodynamics—of digitalis and deals with the absorption of the drug, its elimination, its effect on the heart, blood vessels, kidneys, respiration and various other physiological functions of the body as well as with the cumulative effects of the digitalis glucosides. Chapter VIII, embracing 25 pages, is a strictly pharmacotherapeutic treatise on the clinical uses of digitalis, discussing those clinical conditions in which digitalis is indicated and others in which it is contraindicated. Chapter IX devotes 50 pages to a detailed description of the various methods of digitalis assay. The pharmacologist and the pharmacist engaged in bioassay will find this chapter of special interest as it discusses all the various methods employed in assaying digitalis both by chemical and by physiological means. Here are described not only the standard and older methods of digitalis assay but also the more recent innovations in this field. The standard frog and cat methods are given in full and include comments on the work of the International Committee on Digitalis Standardization and the statistical researches of Lind van Wijnngaarden. Among the most recent contributions on the subject included in this chapter are references to the Knaffl-Lenz method of