who remained. For this purpose she has evaluated many archives and questioned a large number of contemporary witnesses, either by letter or in personal conversation.

The considerable amount of material investigated is sensibly divided: 1. Jewish scientists in academic research and teaching in Germany up to 1933. 2. The year 1933: the expulsion of Jewish scientists and the behavior of their non-Jewish German colleagues. 3. The dismissal and emigration of chemists and biochemists. 4. The scientific importance of chemist and biochemist emigrants in their respective haven countries. 5. Membership (of the remaining university teachers) in the NSDAP, careers, and research support in chemistry and biochemistry. 6. International comparison of natural product chemistry and biochemical research from the background of developments up to 1933. 7. Careers and research of individual chemists and biochemists in National Socialist Germany. 8. The influence of National Socialism on chemistry and biochemistry in Germany after 1945.

Decisive for the dismissals was the act on the reestablishment of the permanent civil service passed on the 7th of April, 1933 with which the dismissal of racially undesirable and politically unpopular state employees was given a mantle of legality. The special ruling for Jewish frontline forces and former officials pushed through by Hindenburg was abolished after his death by the "Nuremburg Laws" of 1935.

This "cleansing" of the civil service of undesirables was the first step in the "harmonization" of universities, the second was the introduction of the "Leadership Principle" in the autumn of 1933 according to which the earlier jurisdiction of the faculties was transferred to the rector as "Leader" of the university. The initially independent Kaiser Wilhelm Gesellschaft was first harmonized in 1937, after Max Planck had retired as president. However, a process of "self-harmonization" had already taken place and in "precipitate obedience" co-workers were dismissed before the respective laws demanded this.

In Ute Deichmann's opinion three reasons were responsible for the silence of non-Jewish colleagues and the absence of solidarity: obedience opposite the measures of the state, anti-Semitism, and, above all, the opportunity of advantage. It is astonishing how low the resistance of non-Jewish scientists was in respect to the dismissal of their Jewish colleagues. It appeared that non-Jewish scientists were not prepared to take a stance against the anti-Jewish political science in 1933, when it would still not have represented a risk for prominent representatives. Only a few professors behaved with a lack of conformity. Adolf Windaus offered his resignation after demonstrations against a Jewish postgraduate student, and by this achieved a cessation of harassment. Hildegard Hamm-Brücher, who gained her doctorate under Heinrich Wieland in Munich, considers him as one of the few anti-Nazis, a great exception amongst the leaders of institutes in Munich. She considers her work in his institute as a lifesaver when he protected her from interrogation arising from the fly sheets of the "White Rose". Max Volmer tried to protect his former assistant Briske, and in a disciplinary hearing he was consequently sentenced to a reduction in salary. The pharmacologist Otto Krayer was the only non-Jewish scientist to refuse a position which had become vacant after the expulsion of a Jewish colleague. That led to his immediate dismissal. In 1943 Fritz Strassmann hid the Jewish pianist Andrea Wolffenstein in his apartment. He never belonged to a National Socialist organization, and in 1933 he resigned from the harmonized Verein deutscher Chemiker. He is the only German chemist to be honored in Yad Vashem with a tree in the Avenue of the Righteous.

After 1945 normalization of relationships of German scientists with their displaced Jewish colleagues was very limited. A general recall by the ministries of education as a sign that the dismissals were recognized as an injustice did not take place. Only four university chemistry teachers, for example, Alexander Schönberg, returned to Germany. Whereas many politically incriminated university teachers retained their positions after 1945, or were later reinstated with full earnings and pension rights, emigrants had to take recourse to law to gain such rights. This left a feeling of bitterness, skepticism, and mistrust amongst those affected.

Ute Deichmann has produced a most valuable book that is worth reading and which not only makes clear the considerable injustice inflicted upon Jewish colleagues, but also the damage done to German research in the area of chemistry by the Nazi regime—for example, 11 of the emigrated (bio)chemists were awarded the Nobel Prize. The book is an encyclopedic historical document of enduring value.

A few facts could be supplemented, and omitted personalities, such as Gerhard Herzberg, considered in a future edition. Accounts of forgery, mistakes, and self-deception which do not represent typical National Socialist behavior could be omitted, or at least described in less detail. One can only hope that a similar document on science in the GDR will soon be published, not like this, more than half a century after the events.

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Solid Support Oligosaccharide Synthesis and Combinatorial Carbohydrate Libraries. Edited by *Peter H. Seeberger*. John Wiley & Sons, Inc., New York 2001. xii + 308 pp., hardcover £ 71.50.—ISBN 0-471-37828-3

Oligosaccharides are of central importance in bioorganic chemistry, and a familiarity with them is essential for the chemist involved in synthetic work. Combinatorial approaches to synthesizing oligosaccharides on solid supports or in solution is a field of research occupying many laboratories worldwide. Nevertheless, combinatorial carbohydrate chemistry is still at a pioneering stage, in contrast to the situation for peptides and oligonucleotides. This monograph provides scientists working in the area and advanced students with the first thorough and up-to-date survey of the subject.

The book contains articles by a large number of well-known authors, reporting on synthetic and analytical work from 1966 to the beginning of 2000, and providing a thorough and comprehensive overview of developments and strategies in this highly topical area. A

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short summary of earlier studies (up to 1991) is followed by six chapters which describe different glycosidation strategies for solid-phase syntheses and suitable linkers for binding saccharide structures to polymeric supports. These chapters show that many different glycosidation methods applicable to polymeric supports have already been investigated, for example, glycal-based methods, the use of glycosyl sulfoxides, the trichloroacetimidate method, and methods based on thio- and pentenylglycosides and on glycosyl phosphate. As well as explaining the basic principles and mechanisms, the authors provide details of synthetic sequences and of compound libraries that have been prepared. A separate section is devoted to the use of a soluble polyethylene-glycol-monomethyl ether (MPEG) in carbohydrate chemistry, in addition to references to MPEG in individual chapters describing methods. The important question of "on-bead" reaction control is mentioned in one chapter, with special regard to studies using ^{1}H and ^{13}C NMR spectroscopy, although unfortunately it is too brief. The final third of the book contains excellent articles about the preparation of combinatorial carbohydrate libraries. Aspects covered include bidirectional synthetic methods, libraries of compounds in solution, random libraries, and the preparation and investigation of biologically relevant glycopeptide libraries.

The book provides a mainly well-balanced survey of combinatorial oligosaccharide chemistry. Unfortunately it has not always been possible to avoid overlapping of subject matter between chapters. For example, the use of trichloroacetimidate glycosides on MPEG resins is reported in detail in two places. Also, in a few of the chapters the authors have failed to treat their subject matter from a critical and unbiased standpoint. In this new and rapidly developing field, in which many of the procedures are still at an early and juvenile stage, it is especially important to carefully examine the advantages and disadvantages, the scope, and limitations of different approaches, and to consider how well they compare with conventional solution chemistry methods. Lastly, in some chapters the figures show a lack of care and consistency in their preparation; the book could have been improved by more careful attention to these.

However, these criticisms do not detract seriously from the value of the contents, and therefore we can recommend the book to interested readers, as it is the first comprehensive monograph on the subject.

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Chiral Intermediates. By *Cynthia A. Challener.* Ashgate Publishing Ltd., Hamphire 2001. 804 pp, hardcover $ 295.00.—ISBN 0-566-08412-0

The first impression of a book with a large number of drawings is certainly determined by its drawings' quality. However, in "Chiral Intermediates", the approximately 4000 formulas and drawings do not leave a good impression. Firstly there is an inconsistent and unorthodox usage of wedged bonds for designating chiral centers. Secondly there are quite a few structures that are, at least, confusing if not even a steric paradox (e.g. camphoric acid, camphor quinone, ketopinic acid). Formulas are also drawn in various different formats and sizes (e.g. oversized fig. 3.33, undersized fig. 4.15). The arbitrary use of wedged bond symbolism, Haworth formulas, and Fisher projections is as confusing as it seems to be coincidental whether and which chiral centers are represented (e.g. pp. 442–443, 490–493, 526–527, etc.). As a consequence of the numerous formal inconsistencies, it is not surprising that factual errors occur. For example: all chiral centers of the 2-alkyl-1,2-epoxides (p. 525) are represented with the wrong configuration; false use of stereo descriptors are also to be found in entries 3663/64 (2-methyldodecanic acid and alcohol, respectively), 3940/41 (nirvanol), 3039/40 (2-chloro-1-hexadecanediol), 2605 (2-ethylhexylamine), and 2170/71 (represents *meso*-dimenthyl succinate); to highlight but a few. Taking these multiple faults into consideration it is not surprising that under an entry X, a totally different molecule Y can be found (p. 586 hydratopic acid alias 5-hydroxytetracycline). Although this discussion already indicates a poor assessment, the question of the content and the purpose of the book still remain to be answered. The book aims to provide the chemical professional with a comprehensive listing of available chiral chemicals and specific data of interest. Part I, chapter I of the book gives a short introduction and overview of chirality. It continues with a short chapter that describes the increasing demand for chiral (enantiomerically pure) compounds and two chapters covering the supply of enantiomerically pure chemicals (isolation, separation, and synthesis). The main entries (part II) of the book describe 4734 chiral compounds and represent most of them. They are alphabetically listed, giving CAS registry number, EINECS number, and Merck index number. Other trade names, manufacturers, some physical properties, and specific rotations are also provided. However, contrary to the claims on the book cover the latter is only true for a maximum of two thirds of the entries for the optical rotations and even less for other physical prosperities. After all 4734 entries have been processed, part III of the book gives indexes of CAS and EINECS numbers, names, and synonyms. A mailing list of suppliers and manufacturers then completes the volume. Let's come to the main question: Is the provided information really helpful for chemical work and research and can they justify the high price of $ 299? Rather not. Probably, in this day and age, the majority of work places can easily access most of the provided information from common databases (e.g. SciFinder, Beilstein, ACD-Finder) that are, in addition, updated on a regular basis. Whether all of the referred companies still exist in two years or operate under the same name is rather uncertain. However, what is quite certain is that in two years there will be more then 4734 chiral compounds on the market. My first impression was not wrong. I am sorry, but I cannot recommend a "chemical catalogue" which is riddled with inaccuracies and numerous faults.

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