

PREFACE TO SECOND EDITION

第二版前言

本书第一版出版的这三年中,我们收到了大量关于本书内容及风格的反馈,令人高兴的是大部分反馈都是称赞本书!在我们读到的反馈中有一些是关于修改或增加内容的建议。我们在新版中采纳了这些建议,同时也增加了一些自认为有助于读者理解本书的内容。一些比较大的改进罗列如下:

作为生物学家及相关学者的用书,鉴于水是生物体系的溶剂,因此我们(在C部分)增加了更多的内容,用以描述水这种溶剂是如何奇特的,以及为什么会这么奇特。在这一版中还加入了生物学中重要的小分子部分(F部分),在此部分中阐述了氮分子和氧分子,在上一版中这两个分子仅在金属部分(G部分)一带而过,而没有专门论述。第一版中核酸和蛋白质只是在介绍它们的单体时顺便提及,在这一版中我们有机会增加蛋白质和核酸的内容,与此同时,还同时引入关于脂的内容(形成了K部分)。在重新审视热力学部分时,我们修改了关于吉布斯自由能和熵的统计学定义。最后,为了内容的完整,我们在谱学部分加入了圆二色的内容,因为CD是结构生物化学中非常有用的技术。本书作者及许多审稿人,都认为这个专题应该放在化学家们常用的谱学技术之外。

一如既往地献给伊丽莎白及阿尔盖尔!

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In the 3 years that have passed since the publication of the first edition we have received significant feedback on the book's content and style. Happily the majority of this has been very favourable! Amongst the comments we have read have been a few suggestions for modifications or additions to the text. We have taken note of these in preparing this new edition, whilst also incorporating some changes we ourselves felt would improve the readers understanding. A number of the more significant changes are outlined below.

As the book is for biologists and the like, and as water is the biological solvent, we have provided (in Section C) more information about how and why this solvent is so unique. We now include a section on small inorganic molecules of biological interest (Section F) which permits us to cover molecular nitrogen and molecular oxygen, previously not considered except in passing in the section on metals (Section G). In the first edition nucleic acids and proteins were mentioned in terms of their building blocks. We have taken the opportunity with this new edition to include information regarding their respective roles. In doing this we thought it sensible to consider other biological macromolecules, hence we have included a topic covering the composition and function of lipids (Section K). We have looked again at the section on thermodynamics and have made some modifications to our discussion of Gibb's free energy and the statistical definition of entropy. Finally, for completeness we have included a description of circular dichroism in the section on spectroscopy (Section Q). CD is a very useful technique in structural biochemistry. We, in common with a number of reviewers, felt this topic should be presented alongside the spectroscopic techniques more commonly used by chemists.

For Elizabeth and Abigail, as always!

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