

Preface

The men of experiment are like the ant, they only collect and use; the reasoners resemble spiders, who make cobwebs out of their own substance. But the bee takes the middle course: it gathers its material from the flowers of the garden and field, but transforms and digests it by a power of its own. Not unlike this is the true business of philosophy [science]; for it neither relies solely or chiefly on the powers of the mind, nor does it take the matter which it gathers from natural history and mechanical experiments and lay up in the memory whole, as it finds it, but lays it up in the understanding altered and digested. Therefore, from a closer and purer league between these two faculties, the experimental and the rational (such as has never been made), much may be hoped.

Francis Bacon, *Novum Organum*, 1620

(Republished in 1960 by Liberal Arts Press, New York, p. 93)

Each time a new researcher joins a laboratory, there is a passing on of methods and technical know-how from existing members, so that expertise is maintained and refined. As long as the procedures are current, then the information remains easily accessible, and can be transferred to other research groups by exchange visits, or when a researcher moves labs. But it is seldom that the methods are published in anything other than an abbreviated form, or with the inclusion of technical tips that can make the difference between a method working or failing. With the handling and manipulation of tetrapyrroles, a discipline that has been carried out over the last hundred years or so, there have been a number of excellent handbooks published over the years that detail the characteristics of these important compounds, and provide methods for their preparation, analysis, and use. However, these books are now mostly out-of-print, and in many cases had a theoretical rather than practical orientation. In the experience of one of us (MW), as someone new moving into the area of tetrapyrrole research, despite collecting all the methods from publications and colleagues, the knowledge was disjointed and hard to put into practice. Furthermore, it seemed that although many modern and state-of-the-art procedures were practiced, the simpler, more traditional methods had been forgotten about, or lost with the retirement of older scientists.

Our goal in producing this book, therefore, was to ask scientists who routinely carry out the experiments, to describe their basic protocols and technology for the study of chlorophyll, heme, and related molecules, including technical tips and ways to avoid common pitfalls. In the editing process, we have worked hard to ensure that the contributions from each author provided a coherent and accessible introduction to their topic, be it chemical, biophysical, or molecular biological, and that the protocols were comprehensible to novices (us!). We are extremely grateful to all the contributors for

their willingness to modify their chapters as we requested, and for their forbearance in the length of time it has taken to complete the project. We would also like to thank Tom Lanigan at Humana Press Inc., for being prepared to take the project on, and Christine McAndrew for all her help at a difficult time.

Alison G. Smith
Michael Witty