
Preface

This book is aimed at all biologists. Certainly, I started out with the intention to write a biological text rather than a mycological one because I believe the fungi are too important to remain in an intellectual ghetto in some faintly plant-like place which most people visit rarely, and then with unease.

Throughout, I have attempted to blend together physiological, biochemical, structural and molecular descriptions within an evolutionary framework, combining the older literature with the most recent. Without attempting a comprehensive description of fungi, I hope that I have provided sufficient information about fungal biology to give the general reader a rounded view of the mycological context within which fungal morphogenesis is played out without obscuring the broader biological significance. If I have got the balance right, the reader with knowledge of basic biology should not need to bring any other knowledge with him or her, nor need to refer elsewhere, in order to appreciate fungal morphogenesis.

The first chapter aims to give an overview of the evolutionary origins of fungi and the central role they played (and still play) in the evolution of life on Earth. The second chapter introduces hyphal growth, the essence of the fungal lifestyle, and identifies features which are crucial aspects of morphogenesis. Chapter 3 summarises fungal primary and secondary metabolism, necessary here because adaptation of primary metabolism and exploitation of secondary metabolism are both critical to fungal morphogenesis. In Chapter 4 the impact of physiology on morphogenesis is discussed, the genetic components of differentiation and morphogenetic change being dealt with in Chapter 5. The development of form and structure is the main theme of a lengthy Chapter 6, and the ideas developed here are brought together and summarised in the final Chapter 7.

I would like to thank Peter Barlow for suggesting the book in the first place and for helpful comments on the manuscript and the proof. Most of the planning, and then the writing, of this volume were done during two extended visits I was able to make to the Chinese University of Hong Kong. My sincere thanks are due to the Leverhulme Trust for the award of a Research Grant which enabled the first of these, in 1995, and also to the Royal Society for award of a Kan Tong Po Visiting Professorship which enabled my second (writing) visit to the Department of Biology at CUHK in 1996. I wish also to extend my thanks to the School of Biological Sciences and The University of Manchester for leave of absence on these occasions and to the staff in Manchester for managing to get along without me. I greatly appreciate the hospitality of the Department of Biology at CUHK, the CUHK Guesthouse system and Shaw College and particularly thank Professors Samuel Sun and Norman Woo for all they did to facilitate my visits. Special thanks are reserved for Professor Siu Wai Chiu for her constant encouragement and help. She also commented on early drafts of the manuscript and produced many of the photographic illustrations. Thanks for everything, Suzie! I also thank Ms Carmen Sánchez and Dr Halit Umar for providing me with previously unpublished photographs, Rebecca Jane Moore for advice on organic chemistry and for drawing most of the structural formulae and Sophie Anne Moore for help with index preparation. I offer my deepest appreciation to my wife and daughters for tolerating my eccentric behaviour whilst writing this book.