could be inherited (and if God could act on the human mind and body), then it was possible to believe that the course of human evolution could be guided by God or humanity toward just and noble ends.

According to Bowler's interpretation, it was the undermining of this optimistic, progressionist outlook by such events as the Great War, the depression, and the rise of European fascism that contributed most to the ultimate failure of the attempted reconciliation. Thus, from the 1930s onward, it was the neo-Darwinian synthesis, anti-religious rationalism, Marxism, and Christianity (in neo-orthodox and evangelical forms) that attracted followers at the expense of the optimistic world view of modernists and humanists. These other world views were more in keeping with the growing sense of the sinfulness, injustice, and violence inherent in human societies.

In an epilogue, Bowler offers a glimpse into his own thoughts on the lessons that might be learned from this historical study. He warns readers that many proponents of science-religion reconciliation in the 1930s were from an older generation of scientists who were grounding their arguments in outdated if not downright misleading accounts of the latest scientific developments. (They were very slow, for example, to recognize the resurgence of Darwinism within biology.) One conclusion might thus be that we should be suspicious today of the reliability of the science being used by religiously motivated reconcilers.

However, a different moral could also be drawn from Bowler's account. The material in the book reveals that the issues really at the heart of discussions about "science and religion" are enduring philosophical and theological questions about nature, humanity, knowledge, and God: questions such as whether human beings are innately vicious or virtuous, what humans can know of God and nature, whether they have free will, whether they are in need of salvation, and whether they can save themselves or need to appeal to powers beyond themselves. The mistake of the reconcilers may not have been trying to answer these questions using outdated science. After all, even if they had used up-to-the-minute science, that would soon enough have become outdated as well. Their mistake may rather have lain in relying too heavily on scientific ideas when dealing with deeper questions. Bowler's account of the failed reconciliation might, therefore, be read as a warning that those who seek to ground their answers to enduring questions in the latest scientific developments should be prepared for the fact that the questions are likely to endure longer than their answers.

NOTA BENE: FOOD SCIENCE

The Kitchen Chemist

The Science of Cooking
by Peter Barham
Springer, Berlin, 2001. 252 pp. $34.95, £19.95. ISBN 3-540-67466-7.

When the dough spilled out of the bread machine and threatened to take over the kitchen, it proved to be a simple matter to diagnose what had gone wrong. As I was told how the dough had been prepared, I realized that the recipe must have had a typo. It had called for two tablespoons of yeast instead of two teaspoons. Although this mistake was easy to spot, many kitchen disasters are much more difficult to understand. Helping cooks figure out what might have gone wrong and increasing the chances that recipes turn out as planned are at the heart of Peter Barham's *The Science of Cooking*.

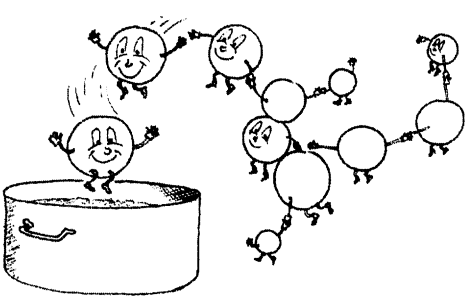
A physicist at Bristol University, Barham combines a love of science with a passion for cooking (and food) into this small and enjoyable book. Although chemistry is not a topic that everyone enjoys learning and thermodynamics tends to be even less popular, Barham does a good job explaining the key principles as they relate to food and its preparation. He discusses the changes that occur to various food molecules—fats and oils, sugars, polysaccharides, and proteins—as they are processed. Besides covering these topics, the early chapters of the book delve into aspects of what gives food its flavor and how different cooking methods and utensils affect the finished product. Although it may be tempting to skip this preliminary material, these sections are worth at least a casual read because they also introduce the terminology that reappears in later chapters.

In the rest of the book, Barham presents the science behind cooking particular types of foods such as meat, fish, pastry, and soufflés by discussing recipes that illustrate the scientific principles involved. The development of the topics reflects Barham's own discovery of cooking science and his gastronomic passions. You may be pleased to find an entire chapter devoted to "Cooking with Chocolate."

Many chapters include experiments for readers to try at home. A few of these exercises, such as frying an egg on a piece of paper, are a little elaborate. But most are simple enough to be performed without adult supervision. And they are surprisingly effective at showing how small changes to the preparation of a recipe can affect the final outcome.

The author infuses the chapters with many interesting stories and personal anecdotes. We learn that hot water often does freeze faster than cooler water, what gives meat its color, how meat is aged, and how to quickly peel chestnuts. On the more humorous side, Barham relates his first experience with garlic (in which he mistook a bulb for a clove) and the minute details of his introduction to Lutefisk.

Amateur chefs may wish to keep a copy of the book in their kitchens for its collection of "what could go wrong" tables, which are scattered throughout the chapters. In these tables, Barham lists common problems, identifies their likely causes, and suggests steps to prevent future failures. Perhaps more important, he also offers tips on how to salvage what you currently have in front of you, so that you can feed your hungry guests.



Barham is a strong advocate for the public understanding of science and is known throughout Great Britain for the many lectures, radio interviews, and television presentations he has given on the science of food. Built on his experiences with these demonstrations, *The Science of Cooking* is as much a primer on certain aspects of chemistry that we are familiar with from everyday life as it is about the arts of food preparation. Even if you prefer not to turn your kitchen into a laboratory, you will find this book worthwhile. And should you have the opportunity to catch one of Barham's talks, you may enjoy an additional treat. He often ends these presentations by mixing together eggs, milk, cream, sugar, fruit, and a little liquid nitrogen, which makes a delicious quick-freeze ice cream.

—MARC LAVINE

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