

## A Measure for Accounting

**Why Calories Count: From Science to Politics.** Marion Nestle and Malden Nesheim. University of California Press, Berkeley, 2012. 298 pp. \$29.95, £20.95. ISBN 9780520262881.

*Why Calories Count: From Science to Politics* lives up to its subtitle. In it, Marion Nestle and Malden Nesheim cover just about all aspects of the humble calorie. The topic is of interest to most of us. Averaged across the world, we eat about a million calories per year. Those of us who live in the United States have a two in three chance of being overweight or obese, which means at some point we consumed a few too many.

Written by academics (Nestle and Nesheim are nutrition scientists at, respectively, New York University and Cornell University), the text does not shy away from being dry, something that might inhibit its more widespread appeal. But readers comfortable with graphs and references to the literature will find that the book really delivers the facts through clear, short chapters from a host of perspectives.

For starters, the calorie, as Nestle and Nesheim explain, is physics. Energy is neither created nor destroyed. We need energy to function and move. In addition, the calorie is chemistry. Lavoisier proposed oxidation as the main reaction of metabolism, and he was proven correct. Along with such historical tidbits, the authors introduce more obscure chemistry topics such as doubly labeled water and ketones.

Of course the calorie is also biology. Our bodies have encoded feedback loops that help us maintain our weight in times of starvation but leave us weak to the charms of food when it is abundant. Geneticists debate whether there is a “thrifty gene” responsible for these systems or whether they can be explained by a “drifty gene.”

Americans in particular face an abundance of food. Nestle and Nesheim cite that on average we have about 3900 calories available per day, almost twice the U.S. Department of Agriculture (USDA) recommended guideline for daily consumption.

This abundance not only poses a problem because we can't stop eating, it additionally creates its own economic pressures that keep us spiraling into overconsumption. Beholden to stockholders and competing in a market flooded with supply, food companies fine-tune marketing strategies to get us to eat more and more of their products. The book does a decent job of outlining various political pressures that created and continue to exacerbate this environment, although it doesn't go into much detail.

The authors thoroughly explain the history and logic behind the USDA nutrition labels, which many food companies would rather erase from their packages. That history is dominated by Wilbur O. Atwater (1844–1907), the “father of modern nutrition science,” whose determinations of the number of calories in each gram of protein (4), carbohydrate (4), and fat (9) are still used in the United States. The actual values, as we learn, vary from food to food and are slightly different from the “official” estimates.

Which brings us to the largest issue regarding calories. What is known is, embarrassingly, not that much. Our ignorance is not the fault of nutrition scientists but stems from human nature. When surveyed about our calorie intake,

we always underestimate. When asked to document our calorie intake, we modify our eating patterns. And not many people want to be lab rats, although Nestle and Nesheim discuss experiments where the “volunteers” (in one case they are prison inmates) were either overfed or underfed. Some of these studies are now recognized as unethical. Thus, when it comes to quantitative nutrition studies, the uncertainties can often overwhelm the signal. But one thing is repeatedly confirmed, despite the noise from diet gurus: as far as body weight, it matters more how much you eat than what you eat.

Whether you're interested in the twin public health crises of obesity and malnutrition, curious about the process of digestion, or just looking for a scientifically supported path to a beach body, you should find *Why Calories Count* an enlightening read.

– Kerstin Nordstrom<sup>1</sup>

## Stories for the Bar

**The Drunken Botanist: The Plants That Create the World's Great Drinks.** Amy Stewart. Algonquin Books, Chapel Hill, NC, 2013. 399 pp. \$19.95. ISBN 9781616200466. Timber Press, London. £14.99. ISBN 9781604694765.

Amy Stewart's ode to potable horticulture offers a bacchanal for science-minded alcohol enthusiasts. *The Drunken Botanist* opens in Portland, Oregon, at a convention of garden writers, where Stewart is trying to convince Scott Calhoun, a cactus and agave expert, that gin is a fabulous drink. Calhoun isn't persuaded, so she tempts him by describing a gin, jalapeno, cilantro, and cherry-tomato concoction that sounds tasty and like it belongs at a boutique cocktail bar in San Francisco or New York. (Those who want to experiment can find the recipe in the book.)

Calhoun is sold, and the pair embark on a day-long adventure chasing down ingredients for this spicy cocktail. At a local store, they browse bottles of liquor and mixers, whose ingredients Stewart describes with almost drunken pleasure. “This is horticulture! In all of these bottles!” She recounts, “Before we left, we stood in the doorway for a minute and looked around us. There wasn't a bottle in the store that we couldn't assign a genus and species to.” Her excitement about the biological heritage of the various spirits is almost intoxicating. Stewart then provides a quick taxonomy of bourbon, absinthe, vodka, and beer. Although it's usually hard to get excited about taxonomy, somehow in the context of potions we drink on a regular basis, Stewart breathes some life into the often arcane subject.

This opening scene with its glimpse into the multifaceted botanical world of alcoholic drinks hints at what follows. Unfortunately, the remainder of the book leaves one thirsty for the kind of adventure story Stewart had in Portland. Instead, it generally reads like a mash-up of botanical-history tome; cocktail-recipe book; do-it-yourself agriculture guide; and an abridged encyclopedia of the trees, roots, leaves, fruits, flowers, and seeds that come in contact with, flavor, or are made into your booze of choice.

However, the book more than makes up for its lack of a cohesive story line with its ample supply of anecdotes. These are perfect for sharing at a cocktail party or summer barbecue with scientists, historians, lawyers, cooks, or mixologists—basically with anyone who enjoys a fine drink. For example, you can impress your chemist friends with your knowledge of why scotch tastes better with a splash of water. It turns out that water causes flavor-



Tonic source (*Cinchona* bark).



Santorio Sanctorius's balance for tracking the effects of his food intake on his weight.

<sup>1</sup>Institute for Research in Electronics and Applied Physics, University of Maryland, College Park, MD 20742, USA. E-mail: knordstr@umd.edu