

He Is the Eggman

The past and future of scientific cooking

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Kitchen Mysteries

By Hervé This

Columbia University Press, 2007

Molecular Gastronomy

By Hervé This

Columbia University Press, 2005

Food: A History of Taste

Edited by Paul Freedman

University of California Press, 2007

Hervé This makes a really good hard-boiled egg. He doesn't cook it for ten minutes in boiling water; he doesn't start by putting it in cold water, either. Instead, he places the egg in an oven that's exactly 149 degrees Fahrenheit for an hour, or a few hours, or overnight. The resulting egg is supposedly soft, fragile, tender—extraordinary. A Celsius degree higher and the yolk is firmer but pliable. A French chemist, This discovered that the amount of time you cook an egg doesn't matter much.

What matters is the temperature: At 154 degrees, the yolk proteins coagulate; at 184 degrees, the egg white firms up. Which is why boiling an egg—nudging it ever closer to 212 degrees—is a bad idea.

Molecular gastronomy is basically the field of figuring out exactly what's happening inside an egg yolk; Monsieur This is the grandfather of the field. The discipline occupies the space between home cooking and industrial food science, but its discoveries have made molecular gastronomy into, if not a cuisine, a style. It's the approach that inspires—to pick a weird-science chef at random—Homaro Cantu at Moto in Chicago when he cooks with a surgical laser or serves images of food printed on edible paper rather than the food itself. With several books translated into English, including the recent *Kitchen Mysteries*, This, who is something of a showman, has become molecular gastronomy's popularizer.

If you can popularize an approach, that is, that results in sentences like these:

When a green vegetable is heated, some of its cells burst, releasing various organic acids. The hydrogen ions of these acids react with chlorophyll molecules (which contribute to the green color of green vegetables) because these molecules contain a large square chemical pattern, the porphyrin group, at the center of which is a magnesium atom.

Apparently, people get awfully excited about magnesium atoms: Both of This's recent books have been highly successful, receiving lots of adjectives in the glossy food world. *Kitchen Mysteries* took off so fast that the publisher briefly ran out of copies. It has received up-front placement in bookstores, often alongside the just-out *Food: A History of Taste*, a collection of academic writings on the historical role of taste. A decade ago, both books would have been shelved somewhere more obscure; the current interest in food hasn't stopped at eating it.

Hervé This's success isn't a total surprise. Food-science books have been around for years—Harold McGee's monumental *On Food and Cooking* established the genre a quarter-century ago. In fact, as scientists have accumulated more and more technical knowledge about cooking, many cooking books have successfully turned from competence (how to roast a chicken) to curiosity (how a chicken roasts): see Russ Parsons's *How to Read a French Fry*, Shirley Corriher's *Cookwise*, Robert Wolke's *What Einstein Told His Cook*. The trend is partly ironic, because over the same period almost everyone agrees that Americans have lost elementary cooking skills and knowledge. These days the real question isn't how the protein structure in a soufflé functions. It's not even how best to make a soufflé. It's, well, what's a soufflé?

What distinguishes This from other kitchen-science writers is his supreme impracticality. (Note the how-the-hell-do-I-do-this technique for a perfect hard-boiled egg.) McGee, who wrote *On Food and Cooking* after finishing a doctoral thesis on Keats and (metaphysical) taste, published a very technical book that somehow always stayed close to the counter. Parsons and Corriher wrote about science explicitly to clue in the clueless cook. But Hervé This is different; he's the hyperactive party guest who won't let you blow out the candles until you understand why carbon dioxide smothers the flames. Cake? Who cares about the cake?

An example: In a chapter in *Kitchen Mysteries* on tenderizing meat, he describes an experiment by a late colleague who injected

fresh pineapple juice, using a hypodermic syringe, into half of a pork roast. After roasting, the untreated roast pork was normal, but the treated half "was almost reduced to puree. Naturally, the meat had a distinct pineapple taste, but isn't there a recipe for pork with pineapple?" The experiment's point is that the powerful enzymes in pineapple juice can tear apart meat proteins. But the tossed-off "naturally, the meat had a distinct pineapple taste" offers the definitive argument for why our man is not the ideal person to be giving cooking advice.

Kitchen Mysteries has a lot that's fascinating: why fat has flavor; how to tell an unpeeled raw egg from a cooked egg; why to add vinegar to water for poaching eggs. (There's a lot on eggs.) But the book is also a lurching, almost free-associative tour: An interesting partial explanation of tea's continuing popularity in Britain—adding milk before boiling water eliminates the bitterness of tea leaves—is followed by a few paragraphs on why tea spouts drip so much. (His not-entirely-practical advice: Pour before purchasing.) An examination of pectin never addresses the key jam-making question—the taste differences between packaged pectin and fruit-derived pectin—and includes this official, empirically verified insight: "The quality of the jam depended heavily on the quality of the fruit used in it."

Mind you, there's something satisfyingly quixotic about a man whose list of unanswered questions, which make up the final section of *Kitchen Mysteries*, includes: "Is it true that a suckling pig served at the table must have its head cut off immediately, or its skin will not be tender?" And it is pleasing to know, in the way that having caricatures confirmed often is, that there is a laboratory at the prestigious Collège de France that looks like a pantry, stocked with butter, flour, and eggs.

To an almost comical degree, Hervé This is the stereotypical man of science. In *Molecular Gastronomy*, he writes, horrified, "We cook today the way people cooked in the Middle Ages, content to mechanically execute fixed recipes—this at a time when space probes are being sent to Mars." (It's a sentence custom-built for parody:

“We still put on our pants one leg at a time—this at a time when...” To eliminate (to expunge!) inefficiencies, the author has collected twenty-five thousand culinary precisions—instructions, maxims, old wives’ tales from cookbooks—and he’s determined to empirically test them all. As This has written elsewhere, “Without more knowledge, culinary books cannot be regarded as reliable.” They must be purified of falsehoods! Here we have a technocratic cuisine: Food must be solved. His books are the exaggerated endpoint of the kitchen-science genre. The only thing left is for the flavor laboratories on the New Jersey Turnpike to publish their patented chemical formulas.

The current high-pitched interest in food has brought new attention not just to the intricacies of food science but to the intricacies of food history. You can see it in the popular rise of *Gastronomica*, a sexy but inarguably academic journal that is now sold in the checkout line at Whole Foods. University publishers like Columbia and California are trumpeting their now-mainstream food books, cultural histories of everything from pasta to Camembert.

Among the best of the recent work is *Food: A History of Taste*, a collection of essays about what people have wanted to eat, and occasionally eaten, from prehistory to Hervé This. Edited by Yale professor Paul Freedman, who argues in the first chapter for the importance of taste as a tool for looking at social history, *Food* is illustrated as lavishly as many art monographs. (Freedman also provides superbly dry captions, such as, “This meal in a bathhouse/brothel from a German manuscript of about 1470 is allegorical rather than an accurate portrayal of ordinary medieval dining habits.”)

A few chapters are dull, but the finest are outstanding, including essays on imperial China, documenting the cosmopolitan restaurant scene in the capital of the Song Dynasty (a contemporary reminiscence reads like a post on Chowhound), and the birth of medieval Islamic cuisine. “Muhammad,” we learn in the latter, “was a man who enjoyed what might be considered good, honest, country cooking, or at least the Arabian Desert version.” (But he didn’t go for

roasted lizard. Asked whether it was *haram*, the Prophet reportedly said, “No, I just don’t like it.”)

If contemporary food culture seems to have entered a late-Baroque period—see the use of hypodermic syringes—it is something of a consolation to read about dining in ninth- and tenth-century Baghdad, when “dozens of cookery books and specialized culinary tomes” were in wide circulation and a respectable guest “was expected to know a bewildering variety of topics related to dining, from which wines went with which dishes, to how to stack desserts in an eye-pleasing manner, to the latest culinary innovations in spices, to famous poems suitable for recital during dinner.”

No word, however, on their recommended cooking temperature for eggs.