

with leeks, Worcestershire sauce, garlic, sugar, wine and vinegar, among other ingredients) with the *sous vide* version in *Modernist Cuisine*. This technique — in which ingredients are vacuum-sealed in a plastic bag before being cooked at low temperature in a water bath or combi oven — plays a major part in the set, and the authors go to great lengths to argue its value. I have tasted meats cooked this way, and am unconvinced that it is essential to home cooking. But I am willing to give the pasta marinara a shot. It calls for tomato water, which I was happy to discover could be produced with a simple wine filter (to separate the flavourful water from the pulp after first processing the tomatoes in a juicer) rather than with the preferred piece of kitchen equipment in *Modernist Cuisine*, the centrifuge.

The format of the recipes will also challenge most cooks. Because the authors consider that “volume measurements are not sufficiently accurate”, all ingredients, even liquids, are measured by weight in grams. One recipe, for example, calls for 100 g of wine — good luck with that. The amounts of ingredients are also presented in the baker’s percentage system, in which the weight ratios of each are scaled to a reference ingredient. Having to weigh liquids and work with percentages will mystify most non-professional cooks, and will probably vex scientists who want to relax at the end of a long day in the lab.

So who is the audience for *Modernist Cuisine*? In its present form, the volumes will be bought by those who can afford their three-figure price tag and have time for slow, precise cooking — people who are already familiar with the chefs and cognoscenti mentioned in volume I: Blumenthal, Ferran Adrià and Harold McGee, among others. Purchasers will also need space to store the bulky set, and a table on which to rest the book to delve into its pages. The volumes are so heavy and large that they are difficult to hold open.

Modernist Cuisine is too important to be offered only to an elite audience. The stunning visual impact of the printed volumes supports the publisher’s choice to produce the initial work on paper. Still, I hope the authors bring out the book in an electronic form, so that a larger audience can explore its many layers of information. Like a good meal, this remarkable effort needs to be shared. ■

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Q&A Nathan Myhrvold

Steakhouse science

Nathan Myhrvold trained as a quantum cosmologist with Stephen Hawking and was chief technology officer of Microsoft before founding Intellectual Ventures, a US company that funds inventors and acquires patents. As he publishes a six-volume work on the science of cooking, Myhrvold explains why chemistry techniques could soon be seen in every restaurant.

Why did you write a six-volume scientific cookbook?

When I was two years old, I told my mother that I would be a scientist; when I was nine I insisted on cooking Thanksgiving dinner. In the mid-1990s, I took a leave of absence from Microsoft and went to culinary school in France, and got back into cooking with a vengeance. The only way to learn about modern cooking techniques now is to work at a cutting-edge restaurant. I saw an opportunity to write a book that would cover modern techniques and the science behind them [see page 574]. I hired a team and we kept getting more ambitious. I think ours is the only cookbook in the world to cover prion science and quorum sensing in cells. We could have gone further. We decided not to include pastry and desserts.

Can you see science-driven cooking catching on?

Yes. Chocolate cake with a liquid centre was once a novelty, but is now in every shopping mall in the United States. Some of these techniques are incredibly convenient and tasty. We have a chapter on emulsions, with an indestructible vinaigrette, and a rapid soufflé recipe. I think most steakhouses should use *sous vide* cooking [slow cooking in an airtight plastic bag immersed in a low-temperature water bath]. You can get the steak done perfectly without worrying about timing, and cheaper cuts are just as tender as a prime filet mignon. I think science-based cooking will be in every US steakhouse within a few years. Once you explain the science, people will find uses for the techniques.

You have many interests, including palaeontology and wildlife photography.

How do your pursuits fit together?

Each makes a good diversion from the other, and occasionally they filter back into my work at Intellectual Ventures. Wildlife photography is about travelling to a beautiful place and taking pictures. Palaeontology is about going into the desert and walking around until you find a bone sticking out of the ground. Our chapter on meat opens with



R. M. SMITH/THE COOKING LAB

a picture that I took of a lion cub eating a wildebeest. Some of the technical solutions that we cover in the cookbook have led us to consider inventions to improve food safety in developing countries, where adequate sanitation is often lacking.

In 2000, you pledged US\$1 million to help Microsoft co-founder Paul Allen fund the Allen Telescope Array in California.

Why do you believe in the private funding of science?

Venture capital has grown faster than government science funding. If you can show that you can make money rather than begging for a grant, people will compete to fund you. I’m not suggesting this is a panacea. Outside the life sciences, people don’t tend to fund things with a level of technical risk. We’ve created Intellectual Ventures to do just this. We invest in existing patents, help institutions to develop new technologies, and fund inventors and scientists to come up with new ideas. If we could find a way to fund more science and innovation at venture-capital growth rates, that would be a wonderful thing.

What makes an invention successful?

The best way to stimulate invention is to get the right set of smart people in a room talking to each other. What separates successful from unsuccessful inventions is not the quality of the idea. To be successful, an invention needs to have a passionate advocate. It requires the initial flash of genius — then believing and investing in it. ■

INTERVIEW BY JASCHA HOFFMAN

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For a Q&A with molecular chef and chemist Hervé This: go.nature.com/wdrmrcc