

September 5, 2007

## THE CURIOUS COOK; The Essence of Nearly Anything, Drop by Limpid Drop

By HAROLD MCGEE

MANY new ideas bubbling up in restaurant kitchens aren't of much use to a home cook without a machine shop and acres of counter space. But some are simple and flexible enough that they just may trickle down to everyone else. In the case of an easy technique called gelatin filtration, that would be a very slow trickle.

Gelatin filtration is a way to make sparklingly clear liquids that are intensely flavored with ... well, whatever you like: meats, fruits, vegetables, cheeses, breads, any and all combinations of ingredients.

Why would anyone want to make such a thing? Think of such liquids as essences. They have no fibers, no pulp, no fat, no substance at all. They're just flavor in fluid form, perhaps with a tinge of color, like a classic beef consommé. In fact chefs are calling these essences consommés, and they often use them the same way, as a soup or a sauce. And they can be delightfully surprising, because their appearance often gives no hint of the pleasure they're about to deliver.

A traditional consommé is made crystal clear by stirring in and then skimming off a foam of egg whites, which trap solid particles. The new technique uses gelatin instead. The process, though it takes two or three days, is simple. First you make juice or flavorful broth and strain it to remove any particles. Then you dissolve gelatin in the liquid, but only a little bit -- just a fraction of what you'd use in a set gelatin dessert. (You don't need to add gelatin to meat stocks, which already contain it.)

Then you freeze the liquid overnight, place the frozen block in a strainer over a bowl and let it thaw in the refrigerator a day or two. Liquid slowly drips into the bowl. This is the consommé.

It's ingenious. As the jelly freezes, the water in it begins to form solid ice crystals, while the gelatin, the solid food particles, the droplets of fat and the flavors are concentrated in the remaining liquid. The long gelatin molecules bond to each other to form an invisibly fine net that traps everything else in its crevices.

The refrigerator plays a key role. It keeps the net cold enough so the gelatin doesn't dissolve and the fat doesn't melt. But the ice crystals do, and as they do they wash the dissolved flavors out of the net. Meanwhile the net's crevices act like a microscopic filter, trapping particles, solid fat and other impurities. What drips out of the thawing mass is a clear, flavorful liquid.

The idea of clarifying gelatin-rich meat stocks in the cold originated with a German food technologist, Prof. Gerd Klöck of the Hochschule Bremen, who spread the word at a 2004 meeting of Inicon, a European consortium for culinary innovation. In early 2005 the New York chef Wylie Dufresne saw a freeze-clarified venison stock in the kitchen of the Fat Duck in England, and immediately thought of a way to take the technique one giant step further: adding gelatin to flavorful liquids that don't already contain it. He soon succeeded in making a crystal-clear carrot juice.

He took the technique back to his Manhattan restaurant, WD-50, where as he recently recalled, "I went crazy

with it." The possibilities were endless.

Mr. Dufresne now has at least two gelatin-clarified consommés on his menu at all times. Currently he serves seared scallops in an essence of clams and smoked grapes, and lamb loin with an elixir of pretzels. At Blackbird in Chicago, Mike Sheerin, the chef de cuisine and a WD-50 alumnus, serves pork belly in a consommé that he makes from his mother's recipe for barbecue sauce.

A blog called Ideas in Food ([ideasinfood.typepad.com](http://ideasinfood.typepad.com)), written by two chefs, H. Alexander Talbot and Aki Kamoza, is sprinkled with suggestions for an impressive variety of gelatin-clarified consommés including Parmesan and Roquefort, foie gras, olive oil, caramelized banana, ranch dressing, butter pecan, kimchi, pumpernickel and baked potato "with all the fixings." Mr. Talbot likes to keep consommés handy in the freezer, like one he brews from brown butter, soy sauce and Tabasco.

"They're great with seafood, asparagus -- anyplace you would want those flavors without all the fat," he wrote in an e-mail message. "We also use consommés as brines and braising mediums. Artichokes cooked in horseradish consommé are remarkable."

At Jean Georges on Central Park West, the executive pastry chef, Johnny Iuzzini, makes a strawberry soda as part of his strawberry dessert course. "I clarify a purée of strawberries and the water I cook them in and get a beautifully clear red liquid with a bright, fresh flavor," he said. "I don't have to add any sugar. I carbonate it and top it with a birch-beer foam and diced strawberries."

Mr. Iuzzini also uses the technique to make an even more surprising dish for his chocolate course. He makes separate "stocks" of dark and white chocolate by cooking them in water, then clarifies them into fat-free liquids, one brown and one colorless. He then adds sugars and xanthan gum, a thickener, to give the two liquids different densities and a slight cohesiveness. This allows him to build a two-story drink, a layer of cold white chocolate consommé riding on a base of hot dark chocolate consommé.

So far I've used gelatin clarification to make tomato, Parmesan and chicken consommés. The flavors are so distinct and appealing that I've been content just to sip them straight, alone or mixed with one other.

Interestingly, fans of the new consommés differ about the best way to make the original. Mr. Dufresne likes to freeze and thaw his beef stock to remove the gelatin and avoid the stickiness that develops when the stock is reduced. Instead, he gives his consommé a slight viscosity by adding xanthan gum.

By contrast, David Kinch of Manresa in Los Gatos, Calif., serves many imaginative consommés, but draws the line at modifying the classic meat version. "To my hopelessly romantic mind," he said, "if you remove all the gelatin, you remove the seamless integration of flavor and consistency that you create by carefully cooking the stock in the first place."

They both sound good to me.

Recipe: Savory Brown Butter Consommé Adapted from H. Alexander Talbot Time: 1 hour, plus 2 to 3 days for freezing and defrosting

1 pound butter

2 1/2 tablespoons lemon juice

Finely grated zest from 1 1/2 lemons

3/8 cup soy sauce

1 1/2 teaspoons Tabasco sauce

1 package powdered gelatin (7 1/2 grams).

1. Place large heavy-bottom pot over medium-low heat, and add butter. Cook until butter solids turn dark brown. Add juice, zest, soy sauce, hot sauce and 6 cups water. Bring to a simmer. Butterfat will rise to surface; skim off with large shallow spoon. Cook and skim for 20 minutes. Place a chinois or fine-mesh strainer over large bowl, line with cheesecloth and pour in broth.
2. Remove 1 cup broth; cool to room temperature. Sprinkle gelatin on it, and let rest 5 minutes. Stir into broth in bowl, blending well. Put in a covered container and freeze solid, possibly overnight.
3. Place in cheesecloth-lined colander over 2-quart bowl. Thaw in refrigerator until all liquid has dripped out, leaving gelatin behind, 24 to 48 hours. Save consommé from bowl, and discard gelatin. Can be frozen for 3 months. Use as broth with seared scallops or lobster ravioli, or as artichoke poaching liquid.

Yield: About 1 quart consommé.

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